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Marguerite K Kennedy
MARGUERITE K. KENNEDY
Chief, Archives Branch
The Albert F. Simpson Historical Research Center

Billie H. Hix
BILLIE H. HIX
Chief, Technical Systems Branch
The Albert F. Simpson Historical Research Center

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202.2-60
1922-1947
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RETURN TO
Historical Research Division
3825/HOA
Maxwell AFB, AL 36112

DECLASSIFIED
CASE HISTORY OF KING COUNTY AIRPORT
(BOEING FIELD)
SEATTLE, WASHINGTON
1922 - 1947
DOCUMENTS 151 - 258 & EXHIBITS
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CASE HISTORY OF KING COUNTY AIRPORT (BOEING FIELD)
SEATTLE, WASHINGTON
1922 - 1947

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ADDRESS REPLY TO
COMMANDING GENERAL, ARMY AIR FORCES
WASHINGTON 25, D. C.

ATTENTION:

HEADQUARTERS, ARMY AIR FORCES
WASHINGTON

6 June 1944

SUBJECT: Paving Field Improvements
~~Boeing Aircraft Company~~
Seattle, Washington
RCS Project 3 G-1

TO: Commanding General
AAF Materiel Command
Resources Control Section
Wright Field, Dayton, Ohio

1. Attached hereto is a copy of an R&R dated 1 June 1944 from the Buildings and Grounds Section, and copy of 1st Indorsement to the Chief of Engineers which indicates final action taken on the paving project, RCS Project 3 G-1.

2. Particular attention is invited to Paragraph 2a which states that the request for two field service buildings and the flight delivery building have been omitted from this project. The financing of the construction of two field service buildings should probably be handled under an Emergency Plant Facilities Contract or a Special Facilities Contract under a separate processing letter.

3. It is desired that the Materiel Command submit a project covering the flight delivery building which is required for Army Air Forces personnel and this Headquarters will then attempt to have this flight delivery building constructed by the Corps of Engineers, utilizing Army Service funds.

By command of General ARNOLD:

John C. Vaughan Col AC
for

FREDERICK M. [illegible], JR.
Brigadier General, U.S.A.
Chief, Resources Division
Office, AC/AS, M. M. & D.

Incl:
Cy, R&R fr B&G, dtd 6/1/44
Cy, 1st Ind. to C of E, dtd 6/1/44

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COPY CONFIDENTIAL Unit Bombing

Additional Construction, Boeing Fld. 13th Ind. AFASW/SA/RMS/RSC/sm
HQ AAF, Air Transport Command, Washington 25, D.C.
24 June 1944

TO: CG, Material Command, Resources Control Section, Facilities Unit, Wright Field, Dayton, Ohio

1. The preceding basic letter and subsequent indorsements thereto are forwarded for your information.

2. As noted in paragraph 1 of the eighth indorsement and the eleventh and twelfth indorsements, Air Transport Command activities at Boeing Field do not indicate the necessity for the subject proposed construction.

For the Commanding General:

O. B. LeFevre
Major, Air Corps
Executive
Supply & Service

4 Incls:
n/c

14th Ind. Jack R. Marshivap
90-L-1-1 26825

Army Air Forces Material Command, Wright Field, Dayton, Ohio
28 June 1944

TO: District Supervisor, Western Procurement District, AAF Material Command, 3696 Beverly Blvd., Los Angeles 54, California, Attention: Resources Section.

1. Attention is directed to Paragraph 2 of the 13th Indorsement and Paragraphs 2 and 3 of the 12th Indorsement, which nullify statement in Paragraph 2 of the 3rd Indorsement, justifying the additional paving.

2. In view of the information contained in above-referenced paragraphs, the necessity for the additional paving has not been established and, therefore, the Material Command does not recommend this proposal to pave 13,255 square yards of area, as requested in the basic communication.

3. It is recommended that the Commanding Officer at Boeing Field be so notified.

By Command of Major General Meyers:

Incls: n/c

H. S. HARLINGS
Colonel, Air Corps
Chief, Resources Control Section

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Rec.Ltr., Boeing Fld., dtd 19/Feb/44
10th Ind. this Hqs. dtd 5 June
Subj: Additional Contr., Boeing Field
400/61 12 th Ind. FMR/EAS/KMH/FMR/pjd

HEADQUARTERS FERRYING DIVISION, AIR TRANSPORT COMMAND, Cincinnati 2, Ohio
17 June 1944

TO: Commanding General, Air Transport Command, Washington 25, D. C.
Attn: Chief of Engineering Division

1. Reference is made to 3rd Indorsement, dated 4 March 1944, paragraph No. 1. This Division contemplates the operation of one (1) flight daily in and out of Boeing Field of military cargo planes operating from Long Beach, California, and Great Falls, Montana. In addition, there will be a maximum of four (4) flights daily of Military Air Transport service from Great Falls, Montana to Boeing Field. This Headquarters contemplates this maximum of six (6) flights daily on this field.

2. Reference is made to paragraph No. 2 of the same indorsement and to the 11th Indorsement in which it is stated that the 7th Ferrying Group will move an average of eighteen (18) planes per day out of Boeing Field. It is pointed out that this movement consists of fly-aways of aircraft manufactured at this station, which are serviced by this Division.

3. This Division does not contemplate any movement into Alaska through Boeing Field.

For the Commanding General:

JAMES IRVINE
Major, Air Corps
ASST. Director of Supply
& Service

Encls:
N/C

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CONFIDENTIAL

Hdq. 1Air., Boeing Field, Wash 20 Feb. 1944
Subj; Additional Construction, Boeing Field

10th Ind. FWR/RMS/RMC/FWR/pjd

HEADQUARTERS FERRYING DIVISION, AIR TRANSPORT COMMAND, Cincinnati 2, Ohio
5 June 1944

TO: Commanding Officer, 597th AAF Base Unit (7TH FERRYING GROUP) FERRYING DIVISION, ATC, Gore Field, Great Falls, Montana
Attention: Executive for Post Maintenance

Your attention is invited to the 7th Indorsement from Headquarters Air Transport Command requesting a survey of the subject area to determine the extent of use by Air Transport Command Operations and to the 8th Indorsement from Headquarters Alaskan Wing. Request that your comments and recommendations be furnished this Headquarters as a basis to reply to 9th Indorsement.

By Command of Brigadier General TURNER:

NELSON G. KLEIN
Captain, A.C.
Asst. Dir. of
Supply & Service

Encls:
n/c

11th Ind.

JMK/alm

Hq, 597th AAF Base Unit, (7th FERRYING GROUP), FD, ATC, Gore Field, Great Falls, Montana, 6 June 1944.

To: Commanding General, Ferrying Division, Air Transport Command, 309 Vine Street, Cincinnati 2, Ohio. ATTENTION: Director of Supply and Service.

Reference paragraph 2, 8th Indorsement, the average movement of airplanes by the 7th Ferrying Group in and out of Boeing Field is eighteen per day. Backlog of planes, caused by weather delays, has run as high as forty this past winter, and even as high as eighty the winter before last.

For the Commanding Officer:

JAMES M. KENYON
Major, Air Corps,
Asst. for Post Maintenance

Encls: n/c

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Subject: Construction Field Service Buildings and Flight Delivery Building, Boeing Field.

6.3(Seattle Airport-Warehouses)44
PADBG-1A 1st Ind.

U. S. Engineer Office, Seattle 1, Wash., 22 July 1944

To: Resident Representative, Army Air Forces, Materiel Command, Boeing Aircraft Company, Seattle 14, Washington.

1. Inclosed herewith in compliance with the request contained in paragraph 2 of the basic letter are an engineering analysis and a cost estimate in the amount of $65,740 for Construction of a Flight Delivery Building and Two Field Houses at Boeing Field, Seattle, Washington.

2. Also inclosed are prints of lay-out plan No. N-9-199, in 3 sheets, showing the proposed locations and floor plans of the requested buildings. In the event that the lay-out is favorably considered by your office, it is requested that the inclosed prints of Drawing No. N-9-199, in 3 sheets, be signed by the Resident Representative, Boeing Field, prior to submission to higher authority.

3. It is the understanding of this office that the inclosed instruments will be used as basis of request through established Command channels for authorization and funds.

For the Acting District Engineer:

/s/ Carl A. Anderson,
Major, Corps of Engineers,
Chief, Engineering Division.

3 Incls. (15 copies):
Engineering Analysis dtd 21 July 44.
Cost Estimate dated 20 July 44.
Prints of Dwg. No. N-9-199, in 3 sheets.

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ENGINEERING ANALYSIS
FOR FLIGHT DELIVERY BUILDING AND TWO FIELD HOUSES AT
BOEING FIELD,
SEATTLE, WASHINGTON 21 July 1944

1. Reference: Letter dated Office of the Army Air Forces Representative, Materiel Command, Boeing Aircraft Company, Seattle, Washington, 8 July 1944, subject, "Construction Field Service Buildings and Flight Delivery Building, Boeing Field."

2. Instruments Received: Plans, cost estimate, and engineering analysis covering construction of two Field Service Buildings and one Flight Delivery Building at Boeing Field, Seattle, Washington.

3. Instruments Prepared:

a. Lay-out plan No. N-9-199, in 3 sheets, showing general and detailed locations and proposed floor plans of both the North and South Field Service Buildings and the Flight Delivery Building.

b. Cost estimate in the amount of $65,740 for use in requesting authorization and funds.

4. Comment:

a. Design of both the North and South Field Service Houses, which will have identical floor plans, has been based on adaption of a standard OCE drawing for a warehouse, type WH-3-T, Plan No. T.O. 700-6005. The size of these buildings and the extent of the modifications is shown on sheet 3 of Drawing No. N-9-199. The inclosed cost estimate has been based on providing concrete floors in both structures; a concrete walk, covered by a porch-type roof connecting the buildings with the aprons now under construction as indicated on the above reference drawing, and service road connections around the buildings as well as to the perimeter road.

b. Design of the Flight Delivery Building has been based on adaption of a standard OCE drawing for a Headquarters Building, type DHQ-A-T, Plan No. T.O. 700-5204. Modifications and size of the proposed structure are shown on sheet 2 of Drawing No. N-9-199. The cost estimate includes funds for construction of service roads and a connection, through a large double gate, to the existing paved parking area adjacent to the south end of the Engineering Building.

c. The cost estimate has been predicated on accomplishing the following types of construction not specifically indicated on Drawing No. N-9-199, in 3 sheets,

(1) Constructing all three buildings with mineral-surfaced siding, asbestos board interior partitions, salvage lumber for roof sheathing, salvage lumber or dimension stock re-sawn at the job site for all framing material except for size larger than 2" x 6".

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(2) Heating all buildings with individual low pressure, coal-fired, steam boilers connected to a direct radiation heating system.

(3) Constructing service roads of crushed rock treated with an armor coat similar to that specified for the adjacent perimeter road.

4. Location of the Field Service Buildings adjacent to an apron now under construction violates current clearance restrictions which prohibit the presence of any fixed object within 75 feet of the near edge of an apron. However, it will be noted on sheet 1 of Drawing No. 11-9-199 that numerous light poles are to be located on the apron. In the event a waiver is required, it must be obtained prior to the initiation of construction. Further, location of the Flight Delivery Building only 2 feet from an existing concrete casualty station violates the 30-foot minimum building clearance restriction specified in the Engineering Manual. The inclosed cost estimate does not provide funds for removal of this station in the event that the necessary waiver is not granted. This casualty station was constructed and equipped to function in the event an enemy air raid resulted in injury to personnel working or stationed in the vicinity. It has been noted that the air raid shelters of similar type construction are currently being removed.

3. Construction of the requested buildings will require approximately 45 days. However, in the event this project is authorized, the period of construction should be correlated with related phases of the work now being accomplished under Directive Consecutive No. A 20993.

Seattle District Engineer Office

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ARMY AIR FORCES
MATERIEL COMMAND
Office of the AAF Resident Representative
Boeing Aircraft Company

Seattle 14, Washington
8 July 1944

Subject: Construction Field Service Buildings and Flight Delivery Building, Boeing Field

To: District Engineer
U. S. Army Engineers
Textile Tower Building
Seattle, Washington

1. Attention is invited to the following extract from a TWX transmitted by the Commanding General, AAF Materiel Command to AAF Materiel Command, Western Procurement District:

"RE BOEING AIRCRAFT CO. SEATTLE, WASH., RCS PROJECT 3 G-1, MATERIEL COMMAND HAS BEEN NOTIFIED BY ECS DIV MM AND D, THAT TWO FIELD SERVICE BLDGS COSTING $52,000 AND ONE FLIGHT DELIVERY BUILDING COSTING $30,000 WERE WITHDRAWN FROM SUBJECT PROJECT OF BUILDINGS AND GROUNDS, MM AND D. IT HAS FURTHER BEEN REQUESTED BY RESOURCES DIV THAT THE THREE ABOVE MENTIONED BUILDINGS BE RESUBMITTED IN A NEW PROJECT TO BE FINANCED WITH CORPS OF ENGINEERS FUNDS. * * * *"

2. In accordance with the foregoing, it is requested the Seattle District Engineer furnish Cost Estimates and Engineering Analysis including plot plans and related drawings utilizing the following:

Two Type TO 700-6309, Warehouse Buildings--modified for Field Service Buildings.

One Type TO 700-5204, Headquarters Building--modified for Flight Delivery Building.

3. Subject buildings are needed concurrently with completion of present Directive Construction No. A-20893, and for this reason expeditious action is desired.

4. In order that this office may process an Appendix "A" for the project, it is desired fifteen (15) copies of all documents be furnished.

For the AAF Resident Representative:

/s/ HAROLD R. HANSEN
Major, Air Corps
Boeing Field Coordinator

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TELETYPE MESSAGE

AWL:111:HQH:2-3137
11:30 AM

DATE: 29 July 1944

FROM: Adjutant General, Materiel Command

ATTENTION: Office Assistant Chief of Air Staff, Materiel and Services, Hq. AAF. Attn: Lt. Col. A. P. Tappan

A. W. LOEHR
Captain, Air Corps

HQH-1192. . . . . .IN RE YOUR AFDMA-1-471 THE MATERIEL COMMAND HAS REVIEWED THE DRAFT OF PROPOSED REVISION TO AAF REGULATION NO. 85-9, AND IT MAY BE INTERPRETED BY READING PARAGRAPH A (1) and B (1) THAT THE AIR FORCE OR COMMAND TO WHOM AN AIRFIELD IS ASSIGNED WILL BE RESPONSIBLE FOR THE MAINTENANCE AND UPKEEP OF ALL GOVERNMENT PROPERTY WITHIN THE MILITARY RESERVATION REGARDLESS OF WHAT BRANCH OF SERVICE IS USING THE PROPERTY OR BY WHOM CONSTRUCTED. IN ADDITION TO THIS RESPONSIBILITY IT COULD BE INTERPRETED THAT THE COMMAND OR AIR FORCE TO WHOM THE AIRPORT IS ASSIGNED WILL ALSO BE RESPONSIBLE FOR SUPPLY AND SERVICING OF TRANSIENT ARMY AIRCRAFT.

ATTENTION IS INVITED TO LETTER TO THIS HEADQUARTERS DATED 20 JUNE 1944 FROM AIR INSTALLATIONS DIVISION, M&SD, WHICH OUTLINES THE POLICY THAT WAR DEPARTMENT LANDS AND THE MAINTENANCE AND INSTALLATION REQUIRED THEREUNDER ARE THE RESPONSIBILITY OF THE CORPS OF ENGINEERS. IT IS BELIEVED THEREFORE THAT THE PROCEDURE OF THE MATERIEL COMMAND IN PROVIDING MX FOR MAINTENANCE OF PROPERTY ASSIGNED TO THE JURISDICTION OF THE MATERIEL COMMAND SHOULD BE TO REQUEST THE CORPS OF ENGINEERS EITHER TO PROVIDE PROPER MAINTENANCE OR MAKE APPROPRIATE CONTRACTUAL ARRANGEMENTS FOR THE SAME. IT IS RECOMMENDED THEREFORE THAT ANY REVISION OF AAF REG 85-9 [redacted] THIS INTERPRETATION.

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C.F. 686 Airports 2(a) 5

AC-8-WF-3-5-42-500M

TELETYPE MESSAGE

DATE: 25 July 1942

FROM

ATTENTION:

IT IS NOT BELIEVED THE RESPONSIBILITY FOR MAINTENANCE AND SERVICING OF TRANSIENT AIRCRAFT IS A BASIC RESPONSIBILITY OF THE MATERIEL COMMAND. IT IS RECOMMENDED THEREFORE THAT THE MAINTENANCE OF TRANSIENT ARMY AIRCRAFT AT AIRFIELDS ASSIGNED TO THE JURISDICTION OF THE MATERIEL COMMAND BE LIMITED TO SUCH SERVICING OF TRANSIENT AIRCRAFT WITH GAS AND OIL AS CAN BE PROVIDED WITHOUT NECESSITATING THE ESTABLISHMENT OF MAINTENANCE DETACHMENTS. AN ALTERNATE SOLUTION WOULD BE FOR THE AIR SERVICE COMMAND TO FURNISH A MAINTENANCE DETACHMENT AND PROVIDE NECESSARY MAINTENANCE AT SUCH FACILITIES AS MAY BE DECIDED TO BE NECESSARY BY HEADQUARTERS ARMY AIR FORCES.

WITH THE EXCEPTION OF THE COMMENTS OUTLINED ABOVE, THIS COMMAND CONCURS IN PROPOSED DRAFT OF AAF REGULATION 85-9. END AFMMC

WOLFE, MATERIEL COMMAND

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ANALYSIS EXISTING WEST TAXIWAY, BOEING FIELD

27 July 1944

1. General: This report consists of a brief analysis of the pavement failures on the West Taxiway at Boeing Airfield, Seattle, Washington, as of 23 July 1944, and recommendations for correcting the failures at the site based on visual inspection and field investigations as requested in the 1st indorsement dated 19 July 1944, subject, "Failure of West Taxiway, Boeing Field" (Basic dated 15 July 1944).

2. Construction History: The West Taxiway or Taxiway No. 1 was constructed in 1942 under a contract awarded by Boeing Aircraft Co. during their emergency construction program. This taxiway was designed for B-17 loadings of 30,000 lb. wheel load and there was constructed an 8"-6"-8" portland cement concrete pavement with a 6" gravel base course placed on a compacted subgrade. The total area of this taxiway is approximately 34,500 sq. yds.

3. Pavement Failures to date: Of the total area of approximately 34,500 sq. yds. in Taxiway No. 1 there is about 9,600 sq. yds. of distressed concrete pavement or approximately 27% of the total paved area. The largest percentage of the distressed area is found on the south end of Taxiway No. 1, on the easterly half of this portion of the taxiway. This area is approximately 2,300 feet long by 25 feet in width or approximately 6,500 sq. yds.

4. Analysis of Pavement Failures: It is believed that the fundamental reason for failure or cracking of the pavement slab on Taxiway No. 1 is

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overloading. The recent traffic of B-29 bombers weighing twice as much as the original capacity design loadings has caused the cracking and spalling of the concrete slabs. This statement is substantiated by the fact that prior to the initial traffic of B-29 bombers there were no reports of failed areas and as the traffic of the heavier type planes increased new distressed areas developed and the intensity of the pavement failures increased. It was determined from recent investigations made during the evaluation program, that Taxiway No. 1 had a gross load carrying capacity of 36,000 lbs. for capacity operation and 72,000 lbs. for limited operation which further substantiates the predication that the overloading of the pavement has been the fundamental cause for the occurrence of the failures.

5. Drainage Characteristics: The drainage characteristics in the area of Taxiway No. 1 are not changed by the construction now in progress for the improvements at Boeing Field. The original drainage plan provided for surface runoff from the west edge of Runway No. 1 to flow transversely across Taxiway No. 1, being ultimately picked up by a storm sewer system to the west of this taxiway. The possibility that a portion of this surface runoff seeps beneath the pavement on Taxiway No. 1 causing a saturated condition conducive to lowering the bearing power of the subgrade can not be ignored and possibly is a contributing factor in some areas to the fundamental reason given for pavement failure. From this assumption any permanent reconstruction of Taxi-

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way No. 1 should also provide for the construction of an intercepting storm sewer system between Runway No. 1 and Taxiway No. 1 to alleviate the possibility of additional future saturation.

6. Recommendations for Reconstruction: a. On the basis for consideration of a permanent repair to the existing taxiway it is recommended that the entire paved area of Taxiway No. 1 be removed and existing grades re-established by replacement of a 13-1/2"-9"-13-1/2" portland cement concrete pavement. This pavement should have a minimum of 6" of crushed rock base course placed upon a compacted subgrade or pit run gravel sub-base course if deemed necessary. Under this consideration further drainage facilities should be provided by the construction of an intercepting storm sewer system.

b. If consideration is given to the temporary repair of the existing taxiway which will require continued maintenance and repairs, it is recommended that the distressed areas be removed and replaced with portland cement concrete pavement. The slab thickness on the replaced panels should be 9" with thickened edges to 13-1/2" and having 6" of crushed rock base course placed upon a recompacted subgrade.

7. Estimates: a. Reconstruction of Taxiway No. 1, Boeing Field:

Item	Description	Quantity	Unit Price	Amount
1	Concrete Pavement Removal	34,500	Sq.Yds.0.50	17,250.00
2	Unclassified Excavation	30,000	Cu.Yds.0.36	10,800.00

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Item	Description	Quantity	Unit	Price	Amount
3	Pit Run Gravel	20,000	Cu.Yds.	1.50	30,000.00
4	Cr. Rock Base Course 1/2" Minus	6,000	Cu.Yds.	2.00	12,000.00
5	Cement Conc.Pavement 13-1/2"-9"-13-1/2"	34,500	Sq.Yds.	2.75	94,875.00
6	Water, in Place	100	M.Gals.	3.00	300.00
7	Drainage	1	Unit	L.S.	25,000.00
					$[illegible]
	15% Contingencies				[illegible]
					$213,758.19
	5% Engr. & Overhead				10,687.91
					$224,446.09
	5% Military Overhead				11,221.83
	Total U. S. Cost				$241,181.52

b. Repair to Taxiway No. 1, Boeing Field: (Replacing of failed Sections).

Item	Description	Quantity	Unit	Price	Amount
1	Cement Conc. Pavement Removal	9,600	Sq.Yds.	0.75	7,200.00
2	Unclassified Excavation	6,000	Cu.Yds.	0.50	3,000.00
3	Pit Run Gravel	3,000	Cu.Yds.	1.50	4,500.00
4	Cr. Rock Base Course 1-1/2" Minus	1,600	Cu.Yds.	2.25	3,600.00
5	Cement Conc. Pavement 13-1/2"-9"-13-1/2"	9,600	Sq.Yds.	3.50	33,600.00
6	Water, in Place	25	M.Gals.	5.00	125.00
					$52,025.00
	15% Contingencies				7,803.75
					$59,828.75
	5% Engr. & Overhead				2,991.44
					$62,820.19
	5% Military Overhead				3,141.01
	Total U. S. Cost				$65,961.20

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Appendix A
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WAR DEPARTMENT
UNITED STATES ENGINEER OFFICE
SEATTLE, WASHINGTON

Subject: Analysis of Pavement Failures and Cost Estimate, West Taxiway, Boeing Field.

To: The Post Engineer, Boeing Field, Seattle, Washington.

Transmitted herewith for your information are two (2) copies of Analysis of Pavement Failures and Cost Estimate for the West Taxiway, Boeing Field as requested by the Division Engineer in 1st indorsement to basic letter from the Ninth Service Command, dated 15 July 1944, subject, "Failure of West Taxiway - Boeing Field."

For the District Engineer:

Carl A. Anderson,
Major, Corps of Engineers,
Chief, Engineering Division

1 Incl. (in dup.):
Analysis and Cost Estimate.

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WAR DEPARTMENT
United States Engineer Office
Seattle, Washington

631(Seattle Airport-
Administration Bldg.)5 PADBG-1A

1 August 1944

Subject: Construction Field Service Buildings and Flight Delivery Building, Boeing Field.

To: Resident Representative, Army Air Forces, Materiel Command, Boeing Aircraft Company, Seattle 14, Washington.

1. Reference is made to the informal request of the Resident Representative, AAF Materiel Command, Boeing Aircraft Company, for revision of the lay-out plan for the Flight Delivery Building to show the re-orientation of the building, removal of the existing casualty station and air raid shelter, addition of parking area east of the existing perimeter road, and minor changes in the floor plan lay-out of the proposed structure

2. The inclosed revised cost estimate in the amount of $67,000 incorporates the changes described in the preceding paragraph and as further amplified in the supplemental engineering analysis.

3. Prints of revised sheets 1 and 2 of lay-out plan No. N-9-199, in 3 sheets, are also inclosed.

For the District Engineer:

/s/ Carl A. Andereon,
Major, Corps of Engineers,
Chief, Engineering Division.

3 incls. (15 copies):
Supplemental Engineering Analysis dtd 31 July 44.
Revised Cost Estimate dtd 31 July 1944.
Prints of Sheets 1 and 2, Dwg. No. N-9-199, in 3 sheets.

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SUPPLEMENTAL ENGINEERING ANALYSIS FOR
FLIGHT DELIVERY BUILDING AND TWO FIELD SERVICE BUILDINGS
AT BOEING FIELD,
SEATTLE, WASHINGTON. 31 July 1944

1. References:

a. First indorsement dated, this office, 22 July 1944, on letter dated, Office of the Army Air Forces Representative, Materiel Command, Boeing Aircraft Company, Seattle, Washington, 8 July 1944, subject, "Construction, Field Service Buildings and Flight Delivery Building, Boeing Field."

b. Informal request on 24 July 1944 from the above reference Command for further revision of the floor plan and relocation of the Flight Delivery Building.

2. Instruments Requested: Revised plans, cost estimate, and engineering analysis covering relocation and remodification of the Flight Delivery Building.

3. Instruments Prepared:

a. Revision of sheets 1 and 2 of lay-out plan No. M-9-199, in 3 sheets.

(1) Sheet No. 1 showing the relocation of the Flight Delivery Building.

(2) Sheet No. 2 showing the revised floor plan and detailed relocation of the Flight Delivery Building.

(3) No changes have been made to sheet No. 3.

b. Revised cost estimate in the amount of $67,000 for use in requesting authorization and funds.

4. Comment:

a. In complying with the request referred to in paragraph 1b above, paragraph 4 of the engineering analysis dated 21 July 1944 and submitted with the reference 1st indorsement is revised in the following particulars:

(1) Elimination of the surfaced area around the building and at the junction of the former perimeter road and substitution in lieu thereof, a parking area east of the former perimeter road as shown on revised sheet 2 of Drawing No. M-9-199.

(2) Elimination of the concrete walk and double gate connecting with the existing concrete parking area and substitution of surfaced walks and necessary fence relocation as indicated.

(3) Surfacing the walks and parking area as noted in paragraph 4c (3) of the engineering analysis dated 21 July 1944.

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(4) Removing the concrete casualty station and air raid shelter indicated on revised sheet 2 of Drawing No. N-9-199.

b. Removal of the casualty station eliminates the building clearance violation referred to in paragraph 4d of the engineering analysis dated 21 July 1944.

c. The estimated time required for completion of the project remains as set forth in paragraph 4g of the original engineering analysis, or 45 days.

Seattle District Engineer Office.

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REVISED COST ESTIMATE
FOR FLIGHT DELIVERY BUILDING AND T.O FIELD SERVICE BUILDINGS
AT BOEING FIELD,
SEATTLE, WASHINGTON

31 July 1944

Item	Description	Material	Labor
1	Construct Flight Delivery Bldg., size 140' x 54', Plan No. T.O. 700-5204 (Mod.), including electrical service	$ 8,135	$ 5,100
2	Construct Service Road and Parking Area	368	434
3	Remove casualty Station and Air Raid Shelter		850
4	Remove Portion of Existing Fence		26
5	Relocate Portion of Fence	13	13
6	Connect Sanitary Sewer Service	65	91
7	Extend and Connect Water Service	104	104
8	Construct North Field Service Building, size 128 x 48', Plan No. T.O. 700-6005 (mod.), including Electrical service	10,013	6,085
9	Extend and Connect Sanitary Sewer Service	468	2,301
10	Connect Water Service	65	130
11	Construct Service Road	60	71
12	Construct South Field Service Bldg, size 128' x 48', Plan No. T.O. 700-6005 (mod.), including electrical service	10,013	6,085
13	Extend and Connect Sanitary Sewer Service	624	1,242
14	Connect Water Service	65	130
15	Construct Service Road	86	104
		$ 30,079	$ 22,766
	Contingencies 15%	4,512	3,415
	Sub-total	$ 34,591	$ 26,181
	Engineering and Overhead 5%	1,729	1,309
	Sub-total	$ 36,320	$ 27,490
	Military Overhead 5%	1,816	1,374
	Total Estimated U. S. Government Cost	$ 38,136	$ 28,864

Recapitulation

Total Cost Material	$ 38,136
Total Cost Labor	28,864
Total Estimated U. S. Government Cost	$ 67,000

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Seattle District Engineer Office

*Approved. Resources Control Section

16 SEP 1944

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AO-I-1-1

3 August 1944

SUBJECT: Boeing Aircraft Co., Seattle, Washington (Renton) 1377

3F

TO: District Supervisor
Western Procurement District
AAF Material Command
U.S. Box 344, Terminal Annex
Los Angeles, California
Attention: Resources Section

1. It is requested that an investigation be made concerning subject cancellation to determine the advisability of freezing available funds.

2. The Defense Plant Corporation's Monthly Status Report of 31 July 1944 indicates that the construction is now 96.5% completed and is scheduled for completion on 10 August 1944. It is further indicated that the machinery and equipment is 71.5% complete and should be completed on 1 September 1944. Approximately $107,137 remains as unexpended funds.

3. Your recommendations in this respect are requested at your earliest convenience.

By command of Brigadier General Wolfe:

L. E. MCCARTY
Colonel, Air Corps
Acting Chief, Resources
General Section

W. Findlay
R.A.

Copy to:
AAFRR, Boeing, Seattle

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ADDRESS REPLY TO
COMMANDING GENERAL, ARMY AIR FORCES
WASHINGTON 25, D. C.

ATTENTION:

HEADQUARTERS, ARMY AIR FORCES
WASHINGTON

AFDIN 3D/1

12 AUG 1944

MEMORANDUM FOR THE DEPUTY CHIEF OF AIR STAFF (Attn: General Timberlake)

Subject: Hangar Doors at Boeing Field, Seattle, Wash.

I. Discussion

1. Reference is made to attached staff study (Tab C) dated 29 May 1944, same subject, which was previously submitted and returned for additional information as to why the Boeing Company should not pay for installation of the subject doors. In order to obtain the necessary information, this office forwarded the correspondence to Office, Chief of Engineers by 13th Ind. (Tab D) requesting information as to the provisions of the existing arrangements or agreements by which the Boeing Company is permitted to use this Government-owned facility for industrial purposes.

2. Attention is invited to 17th Ind. from the office of the AAF Resident Representative at Boeing Field (Tab E) and file of correspondence between Buildings and Grounds Section, Hq. AAF and the Chief of Engineers, marked Incl. #4 (Tab F). Information contained in Tabs E and F indicates that Hq. AAF and the Office, Chief of Engineers were fully cognizant of the fact the revetted hangar was to be occupied by the Boeing Aircraft Company concurrently with the housing of Army aircraft and in view of the above, the need for any legal instrument covering the Boeing Aircraft Company's occupancy of the building has never been apparent nor executed. It is also indicated by the Contracting Officer that there is no possibility of approving the cost of the hangar doors as an allowable item under either the Supply Contract or the Experimental Contract Supplement and the Boeing Aircraft Company will not pay for the door installation because the hangar does not belong to them.

3. It is stated by the AAF Resident Representative at Boeing Field (Tab E) that the only party which will suffer through the failure to provide the doors requested is the Army Air Forces through a retarding of B-29 experimental work during cold and inclement weather.

II. Action recommended

It is recommended that authority be granted for the installation of hangar doors at the north end of XB-29 Hanger at Boeing Field, Seattle, Washington, at a total estimated cost of $24,908.

2 Incls.
#1-Ltr fm P.E. Boeing Fld.
dtd 31 Dec 43 w/19 inds.
& 4 incls.
#2-Memo for DC/AS dtd 29 May 44.

GEORGE MAYO, Col., C. E.
Chief, Air Installations Division
Assistant Chief of Air Staff
Materiel and Services.

APPROVED
PATRICK W. TIMBERLAKE
Brigadier General, U. S. A.
Deputy Chief of Air Staff
for

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SUBJECT: XB-29 Hangar Doors (Boeing Field, Seattle, Wash.).

20th Ind. AFDIN 3D/1

Headquarters Army Air Forces, Washington 25, D.C.

TO: Chief of Engineers (Attention: Military Construction Division, Repairs and Utilities Branch).

The subject project, covering installation of steel hangar doors at the entrance of the XB-29 hangar at the revised estimated cost of $24,808.00, is approved.

For the Commanding General, Army Air Forces:

4 Incls. n/c

LEO J. [illegible] Lt. Col., A. C.
Air [illegible] Division
Office of Asst. Chief of Air Staff,
Materiel and Services

MEMO FOR FILES:
Basic ltr dtd 25/8/44
from CE, Boeing Fld to
CG, 4th S.C. Area, Boeing Fld. w/10 inds &
4 Incls in files under
Memo for DC/AS dtd 12 Aug 44.

(Approved by Deputy Chief of Air Staff "General Timberlake" 14 Aug. 44)

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OUTGOING 17 AUG 1944

OFFICE SYMBOL	1 AFDIN 3D/1	2	3	4	5	6
SIGNATURE OF RESPONSIBLE OFFICER	Leo J. Erbe.					
INTERNAL OFFICE COORDINATION						

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Subject: Failure of West Taxiway
Boeing Field
~~HCS Project 5 C-5~~ 39-

Roy H. Heidinger/vmp
90-L-1 30134

8th Ind.

Army Air Forces, Material Command, Wright Field, Dayton, Ohio
31 August 1944

To: Commanding General, Army Air Forces, Washington 25, D. C., Attention: Ass't C/AS, M&S, Resources Division

1. Forwarded inviting attention to paragraph 1 of 6th Indorsement wherein previous recommendation is indicated as having been sent by District Supervisor, Western Procurement District to Headquarters, Ninth Service Command.

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2. Paragraph 3 of 6th Indorsement is concurred in as the minimum requirement to maintain the leased airport for the test flight of B-29 production as currently scheduled. The actual costs in the amount of $52,025 have been evaluated by this Command and appear reasonable. It is noted that the overall Corps of Engineers estimate amounts to $65,961.20

For the Commanding General:

ORVAL R. COOK
Brig. General, U.S.A.
Chief, Production Division

3 Incls

Incl 1 - Photographs (3)
Incl 2 - Plot Plan
Incl 3 - Corps & Eng. Analysis & Cost Est (in dup)

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AIR MAIL
ASF,9th Serv.Comd.Ltr.of Ft.Doug.,Utah,dtd
15 July 1944,to Div.Engr.,Pac Div,San Francisco.
Failure of West Taxiway - Boeing Field. 7th Ind. TJC/mee RCS

Headquarters, Western Procurement District, AAF Materiel Command, 3636 Beverly Blvd., Los Angeles 54, California, 23 August 1944.

To: Commanding General, AAF Materiel Command, Chief, Resources Control Section, Wright Field, Dayton, Ohio.

1. With reference to request in basic communication for improvements to taxiways at Boeing Field, this office previously recommended the repair to Taxiway No. 1 in a 2nd Indorsement, dated 9 August 1944, to letter from Post Engineer, Boeing Field, dated 2 August 1944, directed to Ninth Service Command, Fort Douglas, Utah. It was recommended at that time, and concurred in by this office, that for economy measures and in order to expedite this work the proposal (b), namely, repairs to taxiway No. 1 replacing the failed sections, be accomplished.

2. On the same date the above mentioned Indorsement was being forwarded to Ninth Service Command, the 4th Indorsement to basic communication was being forwarded to Commanding Officer, 3711th AAF Base Unit, Seattle, Washington, recommending that attached file be forwarded to your Headquarters for approval.

3. In view of the accelerated B-29 production schedule at the Boeing Renton-Seattle plants under which it is contemplated that all B-29 airplanes will be flight tested at Boeing Field, an immediate repair job to the taxiways referred to in basic communication is considered essential. As noted in preceding 6th Indorsement the Government is responsible for repair and maintenance to this airport, and it is therefore recommended that approval be given to accomplish this work.

E. F. STACK,
Brigadier General, U. S. A.,
District Supervisor.

2 Incls. N/C

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19

S/Sgt. Russell Ward
ax.Tel. 2-6127

September 19[illegible].

Subject: Engineering Officer,
Seattle, Washington,
Planeour 1577

District Supervisor,
Western Procurement District,
Air Materiel Command,
9460 Beverly Boulevard,
Los Angeles 48, California
Attention: Mr. [illegible]

1. Reference is made to your telegram of 29 August 1944 relating to the [illegible] of available funds on subject planeour.

2. All available funds within this planeour will be frozen as of [illegible]. No funds are to be set aside to prepare the [illegible] Appendix A.

3. This command has been advised by Resources Division, M & S, that funds available under service costs, schedule II and may be used for preparation of the Textual Appendix "A" reports. Should no funds are [illegible], you are requested to provide necessary [illegible] to move funds available.

By Command of Brigadier General [illegible].

E. A. [illegible]RTY,
Colonel, Air Corps,
Acting Chief, Resources Control Section

Copy to:
[illegible]

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(AR 345-20)

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SAVE

ARMY AIR FORCES

[redacted]

Jack R. Marsh
bt:Tel. 26121

HEADQUARTERS, AIR TECHNICAL SERVICE COMMAND
WRIGHT FIELD DAYTON OHIO

[redacted] Proc. Div.
99-A-1-1

4 September 1944

SUBJECT: Boeing Field Improvements
Boeing Aircraft Company
Seattle, Washington
RCS Project 3 G-2

TO: Commanding General
Army Air Forces
Washington 25, D. C.

Attention: Assistant C/AS, M & S
Resources Division

1. Boeing Aircraft Company has submitted through and with the recommendation of the District Supervisor, Western Procurement District, a proposal covering three small airport buildings necessary for the B-29 flight testing program at Boeing Field, Seattle, Washington.

2. Production: In accordance with the Joint Aircraft Committee W-11 Working Schedule, as revised 31 August 1944, Boeing-Seattle is scheduled to produce 210 B-17 airplanes in September 1944, with production decelerating to final 9 B-17 airplanes to be produced in April 1945. Inasmuch as all B-29 final flight testing operations and acceptance flights will be performed at Boeing Field, Boeing-Renton's B-29 production schedule will directly indicate the extent of B-29 flight testing operations on Boeing Field. The revised W-11 Working Schedule indicates Boeing-Renton will produce 20 B-29 airplanes in September 1944 with production accelerating to a maximum of 215 B-29 airplanes in June 1945 at which level production is scheduled through December 1945.

3. Estimated Costs:

Buildings, Installations & Leasehold Improvements	$ 52,845
Contingencies - 15%	7,927
Engineering and Overhead - 5%	3,038
Military Overhead - 5%	3,190
Total	$ 67,000

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Com. Gen., AAF, Res. Div.
SUBJECT: Boeing Airc. Co.
4 September 1944

a. The estimated costs of the proposed facilities are based upon a cost analysis of the project by the Corps of Engineers. The allocation of funds should not exceed the total estimated cost.

b. There are inclosed three copies of preliminary Appendix "A" which forms the basis of this processing letter. It is the understanding of this office that one copy will be forwarded to the Corps of Engineers for its information and guidance.

4. Plan of Financing: Allocation of funds to the Corps of Engineers.

5. Type of Facilities: The proposed facilities consist of two field service buildings and a flight delivery service building. The two field service buildings will be [illegible] wash and are of standard type OCE construction, being modifications of type T0700-6005 warehouse buildings. The flight delivery service building will be standard construction, 140' x 54', according to modified plan T0700-5204. All three buildings are to be constructed with mineral-surfaced siding, asbestos board inner partitions and salvage lumber for roof sheathing and framing.

6. Justification:

a. The three buildings were previously submitted in RCS Project 3 G-1, processed in letter dated 6 May 1944 which also included request for paving and night lighting of parking aprons at Boeing Field, Seattle, Washington. Subject buildings were deleted by Buildings and Grounds, M. M. & D., for the reason that subject buildings were to be used by contractor's personnel and it was requested that such buildings be submitted in a separate project. However, it is to be noted that the parking aprons and night lighting system processed in RCS Project 3 G-1 were also to be used by contractor's personnel.

b. The two field service buildings will be located adjacent to work aprons at east and west sides of Boeing Field. The installation of these facilities will eliminate excessive travel time of employees working on B-29 airplanes on the parking aprons. These buildings will provide for housing tools, equipment and materials required by the workmen as well as Army Inspection and Boeing Inspection. The flight delivery building will provide means for improved coordination of flight operations of the Army Air Forces and the contractor and will provide facilities to meet the requirements of flight personnel.

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c. Also included in this proposal is the removal of the existing concrete casualty station and air raid shelter which is no longer needed and violates a 30' minimum building clearance restriction specified in the Engineering Manual. Small amounts are also included for crushed stove roadway connections, walks and relocation of fence.

d. Due to the use of standard OCE construction in lieu of that formerly proposed in RCS Project 3 G-1, the costs of this project have been reduced from $96,400, including contingencies, engineering and overhead, to $67,000, including contingencies, engineering and overhead.

7. Labor, Housing and Utilities: No additional requirements under the above heading are involved in this proposal with the exception of electrical power which will be negligible in amount.

8. Special Requirements:

a. Location of the field service buildings adjacent to aprons now under construction violates current clearance restrictions which prohibit the presence of any fixed object within 75' of the near edge of an apron. However, it is to be noted that numerous light poles are to be located on the apron. In the event a waiver is required, it must be obtained prior to the initiation of construction.

b. Construction of the proposed buildings will require approximately 45 days and construction should be correlated with related phases of the work now being accomplished under Construction Directive Consecutive #A20993 which was processed as RCS Project 3 G-1.

9. Certification: It is hereby certified that the requested facilities are a military necessity and represent the minimum requirements essential for the operations to be conducted at Boeing Field, Seattle, Washington.

10. Recommendations: The costs of the proposed facilities as submitted herein by the Corps of Engineers have been evaluated by this Command and found to be reasonable and not excessive. It is, therefore, recommended that approval of all agencies concerned be obtained to this proposal in the amount of $67,000, and that the Chief of Engineers be authorized to issue a construction directive for the acquisition of the herein proposed airport facilities.

For the Director:

K. B. WOLFE
Brigadier General, U.S.A.
Chief of Engineering and Procurement

1 Incl.:
Appendix "A" (In trip.)

Distribution:
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Chief, Fac.Office, Proc. Div.
Inspection Division

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CE686.61 (Boeing Field, Wash.)-SPEUM Subject: Failure of Taxiways - Boeing Field.

4th Ind.

ASF, Office, C. of E., 6 September 1944.

TO: COMMANDING GENERAL, ARMY AIR FORCES, A.C.A.S., M. & S.

1. Project request in the revised amount of $70,000.00, covering the repair of West Taxiway No. 1 at Boeing Field, Seattle, Washington, is forwarded for comments and recommendation.

2. Estimate has been reduced to eliminate maintenance and repair items (Nos. 8 and 9), not pertaining to Taxiway No. 1, on which separate action is being taken.

3. Pavements constructed at this field during 1943-44, namely the B-29 Taxiway and Apron, Apron B, C, D, Apron E1, F1, F2, Apron E-2, and Warm Up Pads A-1, A-2, A-3, and A-4 are evaluated at well over 100,000 pounds gross for capacity operation. Other taxiways, including Taxiway No. 1, and the flight apron are evaluated at 38,000 pounds and Runway No. 4 at 48,000 poundsgross for capacity operation. The latter pavements are under-designed for B-29 planes and will inevitably fail if present traffic continues.

4. This office does not concur in the proposed partial reconstruction, involving approximately one-fourth of the area of Taxiway No. 1, since progressive failure of the entire taxiway is anticipated. Stage reconstruction would add materially to the total cost and greatly increase interference with field operation. Complete reconstruction or strengthening of the pavement should be accomplished unless an early reduction in amount and weight of traffic is contemplated. Reference is made to paragraph 7a of Inclosure No. 2 for estimated cost of removing and replacing the existing pavement.

5. It is estimated that drainage corrections, Items No. 2b and 7 of inclosed project estimate, and bituminous resurfacing of failed sections of Taxiway No. 1 can be accomplished for approximately $18,000.00. The effectiveness and durability of this type of repair is very doubtful if present use of the field is to continue.

For the Chief of Engineers:

/s/ J. L. Vincens,
J. L. VINCENS,
Assistant; Repairs & Utilities Branch,
Military Construction Division

3 Incls:
#1 - Fm 105, Ser. 66-45 w/Just. - 1 cy w/d
#2 - Analysis w/att. Dwg. - 1 cy w/d
#3 - Prints (set of3) - 1 set w/d

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CC: C.G., 9th S.C., ASF

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V3 Boeing Field Seattle 20 1Ha

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611 SFRSE (Boeing Field) 3rd Ind. 103205 MMB/ee

ASF, Headquarters Ninth Service Command, Fort Douglas, Utah, 15 August 1944.

To: Commanding General, Army Service Forces, Washington, D.C.
ATTENTION: Chief, of Engineers.

1. Herewith is OCE Form No. 105, Serial No. 66-45, Individual Project Estimate for repairing East Taxiway, West Taxiway, sealing concrete points and improving drainage at Boeing Field.

2. The plan and estimate have been reviewed and the work as proposed is considered the minimum necessary to meet operational requirements and the cost in accordance with prevailing prices for such work in this area. In this connection, attention is invited to the inclosed engineering Analysis and Cost Estimate prepared by the District Engineer.

3. The items of Contingencies, Engineering and Overhead are considered high. However, due to the nature of the work to be performed, it is believed that these items should remain in the estimate, as any funds not actually required will be withdrawn upon the termination of the job.

4. Favorable consideration of this project is recommended.

5. It is requested that thisproject be given early consideration and teletype approval granted, in order that the work may be initiated and completed prior to the beginning of the fall rains.

For the Commanding General:

/s/ M. F. McConnell
M. F. McCONNELL
Captain, Corps of Engineers
Executive Assistant
Office, Service Command Engineer

3 Incls -
#1 - Fm. 105, Serial 66045 (quad) - 1 cpy w/drn
#2 - Analysis w/atchd dwg (trip) - 1 cpy w/drn
#3 - Set of 3 Prints (dupl)

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Basic Letter: HLW/lak
Subj: Failure of Taxiways - Boeing Field
2 August 1944

1st Ind HRH:ll:BFLD
103205

AAF, Resident Represnetative, Boeing Aircraft Co., Seattle 14, Washington
4 August 1944

To: Western District Supervisor, AAF Materiel Command 3636 Beverly Boulevard
Los Angeles 54, California
Attention: Resources Section

1. Attention is invited to basic communication and inclosures thereto.

2. It is desired the Western District Supervisor approve enclosed project and forward same to Commanding General, Ninth Service Command for further action.

For the AAF Resident Representative:

/s/
HAROLD R. HANSEN
Major, Air Corps
Boeing Field Coordinator

3 Incls: n/c

Post Engineer, Boeing Fld., Seattle, Ltr.
2 August 1944.
Taxiways Failure - Boeing Field 2nd Ind 103805

Headquarters, Western Procurement District, AAF Materiel Command, 3636 Beverly Blvd., Los Angeles 54, California, 9 August 1944.

To: Commanding General, Ninth Service Command, Fort Douglas, Utah.
Attention: Service Command Engineer.

1. In view of the accelerated B-29 production schedule at the Boeing Renton-Seattle plants, under which it is contemplated that all B-29 airplanes will be flight tested at Boeing Field, an immediate repair job to the taxiways referred to in basic communication is considered essential.

2. It is therefore recommended that approval by higher authorities be obtained and necessary action taken to accomplish this work.

/s/
D. F. STACE,
Brigadier General, U. S. A.,
District Supervisor.

3 Incl - n/c exc
1 cy Incl 2 w/d

cc: AAFRR Boeing, Seattle,
Attn: Major Herold R. Hansen

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OFFICE OF THE POST ENGINEER
Boeing Field

HLW/lak

Seattle, Washington
2 August 1944

Subject: Failure of Taxiways - Boeing Field

To: Commanding General,
Ninth Service Command, 103205
Fort Douglas, Utah.
Attention: Service Command Engineer.

Through: Materiel Command, Boeing Field, Seattle 14, Washington.

1. Under date of 15 July 1944, this office advised Salt Lake by telephone that the west taxiway, also known as Taxiway No. 1, at this station was failing under B-17 and B-29 traffic, and also that minor distress had occured in several locations along the east taxiway, known at Taxiway "C".

2. Inclosed is OCE Form No. 105, Post Request No. B-1-45, dated 2 August 1944, covering reconstruction & temporary repairs.

3. Attention is invited to that portion of the job sheet dealing with preventive maintenance of portland cement concrete pavement, with particular emphasis to peragraph 7.

a. Concrete surfaces have been periodically inspected for the past six months.

b. The last inspection was made on 1 July 1944.

c. Joints and cracks are not properly sealed.

d. Joints and cracks will require sealing this season.

e. Work in Item d. is ienluded in the attached OCE Form 105.

4. As the rainy season in this location extends from September through June, an early approval of this project is requested.

/s/
HARRY L. WEST,
Major, C. C.,
Post Engineer.

3 Incls
#1 - OCE Form 105 (quint)
#2 - Analysis w/atchd dwg (quint)
#3 - Prints (set of 3) (dup)

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Subject: Failure of Taxiways - Boeing Field, Seattle, Washington.

5th Ind. AFDMSD/2

Hq Army Air Forces, Washington 25, D. C. 12 Sep 1944

To: Chief of Engineers ATTN: Military Construction Division, Repairs and Utilities Branch.

1. The subject correspondence is returned as requested by your office in view of teletype from Ninth Service Command to your office, to the effect that further consideration is being given to technical phases of the proposed work.

2. With reference to your informal inquiry as to the proposed future utilization of Boeing Field, information is furnished that Army Air Forces has no interest beyond the delivery of the planes contracted for.

For the Commanding General, Army Air Forces:

/s/ Leo J. Erler
LEO J. ERLER, Lt. Col., A. C.
Air Installations Division
Office of Ass't. Chief of Air Staff,
Materiel and Services

3 Incls:
n/c

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ADDRESS REPLY TO
COMMANDING GENERAL, ARMY AIR FORCES
WASHINGTON 25, D. C.

ATTENTION

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HEADQUARTERS, ARMY AIR FORCES AFDIN-3B/1
WASHINGTON

14 SEP 1944

MEMORANDUM FOR THE DEPUTY CHIEF OF AIR STAFF (Attn: General Timberlake)

Subject: Failure of West Taxiway, Boeing Field, RCS Project 3 C-3, Washington.

I. Discussion

1. The attached project has been presented to this Division by the Chief, Resources Division, for action. The project covers reconstruction of the failed portions of Taxiway No. 1 at Boeing Airfield, Seattle, Washington.

2. In this connection attention is invited to projects which were approved by the DC/AS during the last week in May in order to utilize 1944 funds on as many of these projects as possible. Included in this group was a large project for additional parking apron, floodlighting, etc., for Boeing Airfield, totalling $3,000,000. It is unfortunate that this small taxiway reconstruction project was not included in the major project which was approved by the DC/AS on 29 May 1944. This project can be accomplished, however, as a modification of existing contract.

3. In view of B-29 production at the nearby Boeing Renton Plant, and subsequent modification at Boeing Airfield, it is believed that this taxiway reconstruction is necessary. Sufficient military justification has been established in the attached correspondence and the project has been presented over the signature of the Chief, Resources Division. The estimated cost of the work, including overhead and contingencies, is $65,961.20. Sufficient funds are available in the 1945 Budget to adequately finance this specific work.

II. Action recommended.

It is recommended that this project for taxiway reconstruction at Boeing Airfield, be approved at an estimated cost of $65,961.20.

1 Incl.
RR#1, 9/7/44 fr. Resources Div. to Air Inst. Div. w/2 Incls.

for GEORGE MAYO, COL., C.E.,
Chief, Air Installations Division,
AC/AS, Materiel & Services.

APPROVED

for PATRICK W. TIMBERLAKE
Brigadier General, U. S. A.
Deputy Chief of Air Staff
SEP 21 1944

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"To Central File"
9/22/44

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Maj. Daddisman/ei
Ext. 2641 9/22/44

Subject: Failure of West Taxiway, Boeing Field, HCS Project 9 G-3, Washington.

9th Ind. AFDIN-3B-2

Hq Army Air Forces, Washington, 25 D. C.

To: Chief of Engineers.

1. With reference to the preceding correspondence, approval is granted to reconstruct the failed portions of Taxiway No. 1 at Boeing Army Airfield, Seattle, Washington.

2. This approval is based upon the submitted estimate, Paragraph 7b, which indicates the cost of this construction of $65,961.20.

3. Funds for this construction are available under Project 210, Engineer Service Army, reserved for Air Forces construction. It is requested that a copy of this allotment be furnished this Headquarters.

For the Commanding General, Army Air Forces:

LEO J. KELLY, Lt. Col., A. C.
Air Installations Division
Office of Ass't. Chief of Air Staff,
[illegible] Services

2 Incls.
Incl. 1 - Corps of Eng. Analysis & Cost Est. (1 cy. w/d)
Incl. 2 - Photographs n/c

FILE COPY

SEP 23 1944

[redacted]

(Forwarded by Air Staff, Gen. Headquarters, Sept. 21, 1944.)

[illegible]: Basic ltr. 15 July 1944, AFDIN-3B-2, (9 Serv. Comd., to C.E. ... 1st Ind. same subj. with 8th Ind. dtd 31 Aug. 1944 in C. E. & A. I. D. files.

(The above correspondence filed with ... dtd. 14 Sept. 1944 & ..., dtd. 7 Sept. same subj.)

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OFFICE SYMBOL	1	2	3	4	5	6
SIGNATURE OF RESPONSIBLE OFFICER						
INTERNAL OFFICE COORDINATION	RAD					

- 9 -

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RESTRICTED AFDRE-2

30 September 1944

MEMORANDUM FOR: Office, Chief of Engineers
Military Construction Division
Troop Facilities Branch
Attn: Major J. A. Downs
Room 5224, New WD Bldg.

SUBJECT: Boeing Aircraft Company
Seattle, Washington
RCS Project 3 C-2

1. Attached hereto for your information and necessary action is Appendix "A" covering additional facilities to be constructed at subject plant in the amount of $67,000.

2. The proposed facilities consist of two field service buildings and a flight delivery service building. The two field service buildings will be 128' x 48' each. The flight delivery service building will be standard construction, 140' x 54'. There is also included in this proposal the removal of the existing concrete casualty station and air raid shelter.

3. It is therefore requested that the Corps of Engineers issue a directive to cover the construction of the above-mentioned facilities in the amount of $67,000 . It is the understanding of this office that sufficient funds have been made available to cover this proposal.

For the Commanding General, Army Air Forces:

FREDERICK M. HOPKINS, JR.
Brigadier General, U.S.A.
Chief, Resources Division
AC/AS, Material & Services

Incl:
Prel Appendix "A" (dup)

MMH:mfh
AFDRE-2

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READ SEP 30 1944

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Facilities 88

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Files

3A-

Boeing Aircraft Co.
Seattle, Washington

TSNRC
Col. G. H. Moriarty

TSNRCA

26 Oct. 1944
Lt. Col. Bowling
21251

1. The undersigned talked to Brig. General Wolfe over the telephone this date at 4:00 P.M. relative to additional flight hangar space on the Kings County Airport adjacent to the Boeing Plant for flight testing. It is proposed to utilize the three standard portable hangars 130' x 160' now available at Great Falls, Montana, which have received clearance and approval from Colonel S. A. Griggs, Construction Utilities Section, Area A, Wright Field. Boeing will in due time submit the necessary paper work to cover this expenditure, but processing to Resources Division by TNX will be arranged, in order to obtain letter of intent, so work can start without delay.

2. These flight test hangars have no connection with the warehousing space of approximately 350,000 sq.ft. required and to be located at Auburn, Washington, which is located about six miles from Seattle. An Appendix "A" for Corps of Engineers will be submitted in the next few days covering this project and General Wolfe was informed by the undersigned that this office was providing and taking care of this development as well as the above. General Wolfe was well satisfied with the contemplated plans that were being made towards the provision of the above.

J. L. BOWLING
Lt. Colonel, Air Corps
Chief, Industrial Service Sub-Section
Procurement Division

Cy: Major Walsh
Mr. Marsh

FOR [illegible] ONLY

(A.R 11-30)

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Capt. H. J. Ebert
Ext. 2-1803 or 2-0134
vol:TS WHC2

27 October 1944

P R I O R I T Y

DISTRICT SUPERVISOR
WESTERN PROCUREMENT DISTRICT
3636 BEVERLY BOULEVARD
LOS ANGELES, CALIFORNIA

E. E. WOLFE
Brigadier General, U.S.A.
Chief of Engineering
and Procurement

TSERC2-10-15 . . . . IT IS REQUESTED THAT YOUR DISTRICT CONTACT THE SPOKANE AIR SERVICE COMMAND FOR ANY AND ALL ASSISTANCE NEEDED IN CONNECTION WITH REPAIR AND UTILITY ACTIVITIES FOR BOEING FIELD, SEATTLE, WASHINGTON. THE AAF RESIDENT REPRESENTATIVE AT THIS INSTALLATION SHOULD BE NOTIFIED OF THIS MATTER BY YOUR OFFICE. UNDER INSTRUCTIONS CONTAINED IN CHANGE 13, AR 170-10, SPOKANE AIR SERVICE COMMAND IS ASSUMING THE FUNCTIONS HERETOFORE PERFORMED BY THE CORPS OF ENGINEERS THROUGH THE SERVICE COMMAND. END AATSC

WOLFE - MYERS, AIR TECHNICAL SERVICE COMMAND

This teletype was coordinated by Colonel Harmon, Colonel Moriarty, Mr. Donnelly, General Cook and General Wolfe. Original teletype bears their indorsement.

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Jack R. Marsh:bt
TSBRC4C:Tel. 26121

XXXXXXXXXXXXXXXXXXXXXXXXX

XXXXYXX
DATE: 27 October 1944
TIME: 4:30 PM
FROM: RESOURCES CONTROL SECTION

Boeing 3-y.

TO: DISTRICT SUPERVISOR
WESTERN PROCUREMENT DISTRICT
AAF AIR TECHNICAL SERVICE COMMAND
3636 BEVERLY BOULEVARD
LOS ANGELES 54, CALIFORNIA

G. H. MORIARTY
Colonel, Air Corps

170

TSBRC4C-10-392 . . . . . ATTENTION: RESOURCES SECTION, MAJOR F. C. WHITING.

RE RCS-T-3266 TJC RCS PROJECT 3 0-2 FOR CONSTRUCTION OF THREE SERVICE BUILDINGS AT BOEING FIELD, SEATTLE HAVE BEEN APPROVED BY RESOURCES DIVISION AND FORWARDED TO THE CHIEF OF ENGINEERS TO ISSUE CONSTRUCTION DIRECTIVE, (END) ATSC.

WOLFE - MEYERS
AIR TECHNICAL SERVICE COMMAND

27 Oct 44

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(AFR 11-30)

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170 Eng. Br.

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ASC-1624 ASCMT4A 14 AUG 44 75,000

323.3
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ROUTING AND RECORD SHEET

HEADQUARTERS, AIR SERVICE COMMAND

35

File 84

FILE NO.:

CROSS TO.:

INSTRUCTIONS:
1. Use this form for informal notes.
2. Number all notes consecutively from top to bottom.
3. Attach supporting papers.
4. Separate each note by horizontal line—width of sheet.
5. Conserve paper, use entire width of sheet, both sides.

SUBJECT: Repair and Utilities Responsibilities, Boeing Field, Seattle, Wash

TO: TSPER FROM: TSCON DATE: 28 Oct 44 COMMENT NO. 1.

1. In compliance with provisions of War Department Circular No. 388, together with provisions of AAF Regulation No. 85-9, it is requested that the following action be taken by your office:

a. That the 9th Service Command be requested to issue orders on the present Post Engineer, AAF, together with his funds, personnel, and equipment, at Boeing Field, transferring him to the Army Air Forces for duty with the Air Technical Service Command, and to report to the Resident Representative at Boeing Field for immediate duty.

2. In this connection, it should be stated that Boeing Field is assigned to the Air Technical Service Command, and is jointly used by the Air Transport Command, the Western Technical Training Command, and the Army Airways Communications System, all of whom have personnel stationed at this installation. The administrative control of the above-referenced Post Engineer should be under the AAF Resident Representative at Boeing Field, and the technical control vested in the Commanding General, Spokane Air Service Command.

3. This office is notifying the Air Transport Command, the Western Technical Training Command and the Army Airways Communication System that this command assumed repair and utility responsibilities at Boeing Field in accordance with War Department Circular No. 388 and AAF Letter No. 85-14.

323.3 Boeing Fld

TSCON/JGG/jmj
JOHN G. GRIGGS
Colonel, Air Corps
Construction Officer

5-5270
Post 111B
Bldg. 287

Show—To: From: Date: and Comment No: Preceding each comment.

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Address reply to:
A.A.F. LIAISON OFFICE,
Pacific Division,
730 Pittock Block,
PORTLAND 5, OREGON

WAR DEPARTMENT
HEADQUARTERS OF THE ARMY AIR FORCES
WASHINGTON

AIRMAIL

2 November 1944

Subject: Supplemental Report, Boeing Field, Washington.

To: Commanding General, AAF, Air Installations Division, AC/AS, Materiel and Services, Washington 25, D. C.
ATTN: Inspection Section.

1. Additional information is furnished herewith in connection with Current Facility Data Report from this office, dated 28 October 1944, for Boeing Field, Washington:

a. General Situation: As previously reported, general operations at this station are still very complicated due to the lack of a commanding officer and an adequate base headquarters complement.

At present, there are three major AAF organizations operating on this field, namely: AAF Air Technical Service Command, AAF, Western Technical Training Command and detachments from the 7th Ferrying Division and the Alaskan Division of the AAF Air Transport Command. In addition, the C.A.A. and commercial airlines are active at this station.

Under existing arrangements, the AAF Resident Representative for the Air Technical Service Command is the officer in charge, although he is not designated as commanding officer. In any case, a good deal of his time is taken up with matters that should be handled by a base commander. In view of the extreme importance of the combined activities at this field, it seems highly desirable that a full time commanding officer be assigned, together with a suitable base complement. This situation is reported on in more detail in the following:

(1) Field Inspection Report, June 7, 1943
(2) Field Inspection Report, November 6, 1943
(3) Field Inspection Report, February 12, 1944
(4) Teletype, Sr. AAF Liaison Officer to Commanding General, AAF, AID, February 24, 1944
(5) Current Facility Data Report, August 15, 1944

TO: Mail & ...

From: Air Installations Division
..., MAS, Room 1440, AAF Annex No. 1

21 NOV 1944

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FOR VICTORY BUY UNITED STATES WAR BONDS AND STAMPS

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b. Post Engineer Affairs, Repairs and Utilities: Heretofore, the Post Engineer has been attached to the 3711th Base Unit, under the jurisdiction of the senior officer of the AAF Western Technical Training Command school detachment, and has served all agencies located on the field. It is estimated that approximately half of the Post Engineer's time has been devoted to the Western Technical Training Command and the balance of his time to other using agencies.

The provisions of War Department Circular No. 388 were not put into effect until about 20 October 1944, due to a lack of concurrence in assuming responsibility for the Post Engineer and his organization. Post Engineer personnel were finally picked up by the Western Technical Training Command in compliance with orders, but informal information now indicates that the Post Engineer is being transferred to the Spokane Air Service Command for Repairs and Utilities activities but will be under the direction of the AAF Air Technical Service Command Resident Representative for all other matters. In general, the Post Engineer's situation is changed very little by the foregoing. The principal change is merely the transfer from the AAF Western Technical Training Command to the AAF Air Technical Service Command. Additional informal information indicates that there is a possibility that the Post Engineer may be designated as Vicinity Maintenance Engineer for other Spokane Air Service Command installations in this area, such duties being in addition to his principal duty as Post Engineer at Boeing Field.

During the past year, the incumbent, Major Harry L. West, A.C., has functioned in a superior manner under complicated situations seldom encountered by the average Post Engineer. He has shown a high degree of professional knowledge, tact and good judgement and the undersigned desires to commend him for his outstanding work. During the past several months, Major West has been ably assisted by 1st Lt. Robert F. Bennett, A.C., who has been serving as Assistant Post Engineer.

The foregoing was discussed with Lt. Col. H. B. Musser, A.C., Chief, Inspection Section, Air Installations Division, Hq. AAF, in a telephone conversation on 24 October 1944.

c. Maintenance of Buildings and Grounds: An inspection of facilities at this station indicates that the Post Engineer has recently completed a program of maintenance on all old sections of airfield pavements that have failed because of poor drainage, high water table and overloading. As previously reported, major reconstruction is required on Taxiways "C" and No. 1. It is understood that the Seattle District Engineer is preparing a cost estimate and engineering analysis for this project.

Maintenance of buildings and other facilities is handled as rapidly as possible. Since the Post Engineer cannot pay civilian employees the high wages paid by the Boeing Aircraft Company, he has had considerable difficulty in procuring and maintaining an adequate force.

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2 November 1944 Subject: Supplemental Report, Boeing Field.

d. Traffic Control: As a result of the AAF Liaison Officer's recommendations, the Resident Representative has notified all using agencies that dummy taxiways and roads are not to be used for traffic. This situation was the subject of further discussion with the Assistant Resident Representative during the Liaison Officer's visit. The provisions of War Department Circular No. 211 were discussed, especially in connection with traffic control on the sections of the field that are to be seeded for erosion and dust control.

Marlboro K. Downes

Marlboro K. Downes,
Lt. Colonel, Air Corps,
AAF Liaison Officer.

cc: CG, WPD, AAF ATSC
WPD Engr. L/O, AAF ATSC
CG, SPASC
Engr. Officer, SPASC
AAF Res. Rep., Boeing Fld.
CO, 3711th AAF Base Unit
Post Engr., Boeing Fld.
Pac. Divn. Engr., San Francisco
Pac. Divn. Engr., ATTN: R&U, Pt. Douglas
Seattle Dist. Engr.
Sr. AAF L/O.

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[redacted]

Failure of Taxiways - Boeing Field, Seattle, Washington.

AC/AS, M&S - Resources Division.

AC/AS, M&S - Air Installations Division.

-8 NOV 1944

1

RAD/ei Ext. 6981

1. Forwarded for review and recommendation.

2. Attention is invited to M&R, Comment No. 1, dated 7 September 1944, from AC/AS, M&S, Resources Division, to this Division, which presented a similar project to the one indicated in the attached correspondence. A staff study was prepared on the original project submitted, and an approval was made for an estimated cost of $65,951.20.

3. The attached correspondence recommends that the originally authorized project be increased to include a three (3) or four (4) inch asphalt overlay over the entire taxiway No. 1. The estimated cost for this revised project is $90,970.04, for a three (3) inch asphalt overlay and $102,230 for a four (4) inch asphalt overlay.

4. Should this revised project be considered advisable, another staff study will have to be prepared before any action can be taken.

1 Incl.
Ltr. 2 Aug. 44, to CG, 9th Serv. Comd. fr. P.E. Boeing Fld. same subj; with: 11 Inds. & 5 Incls.

ROBERT KAUCH, Brig. General, USA,
Chief, Air Installations Division,
Office of Ass't Chief of Air Staff,
Material and Services.

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(AFR 11-5)

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Failure of Taxiways - Boeing Field, Seattle, Washington.

AC/AS, MRS, Air Installations Division 6 Nov '44

AC/AS, MRS, Resources Division 2

ELN:PMD:3750

1. In view of the accelerated B-29 production schedule at the Boeing, Renton and Seattle plants, immediate improvement of the taxiways referred to in basic communication is considered a military necessity.

2. Inasmuch as the initial correspondence was submitted as of 2 August 1944, it is requested that this proposal for the improvement of subject airport be expedited.

FREDERICK M. HOPKINS, JR.
Brigadier General, U.S.A.
Chief, Resources Division

Incl:
n/c

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Subject: Commanding Office for Boeging Field, Seattle, Washington.

1st Ind.

Hq, AAF Western Technical Training Command, 1108-15th St., Denver, Colo.
4 November 1944
TO: Commanding General, AAF Training Command, Texas and Pacific Bldg.,
Ft. Worth 2, Texas.

1. This Headquarters does not concur with the implication in paragraph 2 of the basic communication that the Technical Training Command installation, namely, the Boeing Factory School and 3711th AAF Base Unit, are on Boeing Field. The facilities now occupied by the factory school and the 3711th AAF Base Unit were constructed and established adjacent to Boeing Field but have never been officially designated as being on or a part of Boeing Field. The AAF installation Directory lists Boeing Field as assigned to the Air Technical Service Command with joing use by the Air Transport Command. The 3711th AAF Base Unit operated as a detachment of this command and, therefore, is definitely limited in its ability to perform for itself those serivces and functions listed in paragraph 2 of the basic communication, with the exception of repair and maintenance of real property and operation of utilities.

2. The 3711th AAF Base Unit is based and dependent on McCord Field for those services itemized in paragraphs 2b and 2e and 2f, which were formerly the responsibility of the 9th Service Command. The 3711th AAF Base Unit is able to perform 1st, 2nd and a limited amount of 3rd echelon automotive maintenance on vehicles assigned to it. For the remainder of the 3rd echelon maintenance, automotive supplies and parts, the Base Unit is based on McCord Field. Operation of fixed signal communications (paragraph 2a, basic communication) is performed now with funds allotted through this Command. Due to the fact that the 3711th AAF Base Unit is a detachment and has not the organization permanent party personnel or facilities to be even self-supporting, it is not feasible that Boeing Field or activities thereon be based on the 3711th AAF Base Unit for any services except repairs and utilities as hereinafter explained.

3. On 2 March 1944 the Commanding General of the 9th Service Command assigned a Post Engineer to the 13th AAFTTD (now the 3711th AAF Base Unit) by paragraph 35, SO 56, Headquarters, 9th Service Command. Since the factory school and detachment constituted the largest military establishment in the vicinity of Boeing Field, this was consiered a logical arrangement and the activities on Boeing Field were based on this post engineer for repairs and utilities activities. Subsequent to publication of Change 13, AR 170-10 and WD Circular 388, 1944, the Commanding General, 9th Service Command on 27 September 1944, in General Order 206, Headquarters 9th Service Command, 17 October 1944, transferred the post engineer personnel to the 3711th AAF Base Unit. Inasmuch as prior to 1 October 1944, the post engineer was furnishing repairs and utilities services to Boeing Field, and the activities thereon, it may be assumed that such relationships will continue in accordance with paragraph 8 h WD Circular 388, 1944. Accordingly, funds have been allotted through this Headquarters to the 3711th AAF Base Unit for repairs and utilities services for its facilities as well as all government owned buildings on Boeing Field, together with the runways, taxiways, and parking apron.

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4. Due to the apparrent lack of a duly appointed Command Officer of Boeing Field several questions have arisen and are in need of immediate clarification. Particularly is this true as to the extent of responsibility of the Commanding Officer of the 3711th AAF Base Unit and this Command with regard to the AAF activities located on Boeing Field. These questions and difficulties are enumerated as follows:

a. Will a Commanding Officer be designated for Boeing Field and will all R&U matters for the other AAF activites on Boeing Field be cleared through him to the Commanding Officer of the 3711th AAF Base Unit and Post Engineer or will each activity on Boeing Field continue to deal separately with the post engineer as has been the practice in recent months?

b. What responsibility, if any, does the Commanding Officer of the 3711th AAF Base Unit and this Command have for the sufficiency of repairs and maintenance on Boeing Field. For example - should an airplane accident occur and be charged to lack of sufficient runwaymaintenance, could negledt be charged to the Commanding Officer of the 3711th AAF Base Unit or this Command?

c. The amount of funds allocated are sufficient only for the operation of utilities and for normal recurrent maintenance and repairs. Although T.C. Memorandum 65-0-9 limits local authorization for non-recurrent repairs and utilities projects to $200, AAF Letter 85-14 places a limit of $1000 on the amount of funds that can be locally authorized by the post engineer. Will the Commanding Officers of installations on Boeing Field, not under jurisdiction of this Command, be permitted to authorize non-recurrent R&U projects up to $1000?

d. Will non-recurrent repairs and utilities projects from Boeing Field, costing more than $1000 be forwarded through AAF Training Command channels for authorization and funds, or will they be forwarded through command channels of the Commanding Officer of Boeing Field or through command channels of separate AAF activity concerned.

5. Answers and clarification of the above questions are urgently requested in order that the responsibilities of the Commanding Officer of the 3711th AAF Base Unit and this Command can be definitely established.

For the Commanding General:

/s/ Ernest S. Fletcher,
1st Lt., ACD
Asst Adj General

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ATSC Form No. 43 (16 SEP 44)

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COORDINATION
DIRECTOR OR DEP.
AIR INSPECTOR
MGT. CONTROL
CHIEF OF ADMIN.
SPECIAL STAFF
CHIEF, SUPPLY DIV.
ENGINEERING DIV.
PROCUREMENT DIV.
READJUST DIV.
OTHER

Assignment of Command Jurisdiction, Boeing Field.

TSCEP TSPER 7 Nov 44 1.

1. Boeing Field is assigned to the ATSC who presently has stationed there an AAF resident representative who functions in accordance with Materiel Command Circular #85-5.

2. A few days ago we were advised by Headquarters, AAF, that we should assume the repair and utility function at Boeing Field in accordance with AD Circular #388 although the AAF resident representative at this installation does not have an organization to discharge his command responsibilities in accordance with this Circular and AAF Regulation 85-9.

3. In conversation on this subject with Brigadier General Donald F. Stace, Supervisor, Western Procurement District, he advised that it was his opinion Boeing Field should be transferred to the command jurisdiction of SPASC, in order that command responsibilities and duties described in AAF Regulation (4 Nov 44), AAF Regulation 65-22, AR 170-10 and other pertinent directives command responsibilities be complied with, thus freeing the AAF resident representative from base responsibilities entirely.

TSPBS1
TSPBS1
TSPBS1

4. If this is concurred in by TSCEP, paragraph 1 b (4) of AAF Regulation 85-9 will be invoked and personnel allotment applied for to discharge command responsibilities at Boeing Field by SPASC.

5. Proper measures will then be taken by this Division to effect such transfer and application for personnel allotment, coordinating contemplated action fully with other interested activities within Headquarters, ATSC, before appropriate orders are published. Should further clarification be necessary, it is suggested that the matter be further discussed by your office with General Stace.

TSPBS1/JF/hbl
3-2358
Post 1/B
Bldg 125

SIGNED
BY WWW

LUCAS V. BEAU
Brigadier General, USA
Chief, Personnel & Base Services Division

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ATTENTION:

HEADQUARTERS, ARMY AIR FORCES AFDIN-3B/2
WASHINGTON

14 NOV 1944

MEMORANDUM FOR THE CHIEF OF AIR STAFF (Attention: General Timberlake)

Subject: Failure of Taxiways, Boeing Field, Seattle, Wash.

I. Discussion:

1. The attached correspondence recommends a modification of Directive Consecutive No. A 22075, District Sequence No. PD Seattle A787, Job No. Boeing ESA 210-4, Subject: " Reconstruction of Portion of Taxiway No. 1", (Tab A). It is recommended that the referenced Directive Consecutive be modified to include the overlaying of Taxiway No. 1 (approximately 35,000 square yards) with a 3" or 4" asphaltic concrete surface and the construction of additional storm drains at the south end of the taxiway.

2. The original project for the reconstruction of approximately 9600 square yards of the failed portion of taxiway No. 1 at an estimated cost of $65,961.20 was approved by the Deputy Chief of Air Staff, General Timberlake, on 21 September 1944, (Tab B). Approval was forwarded to the Chief of Engineers by 9th Indorsement, dated 22 September 1944. The above referenced Directive Consecutive was then issued on 26 September 1944 by the Chief of Engineers.

3. It is now considered necessary by all concerned that the original repair project be amended to provide for a complete reconstruction project, which includes a 3" or 4" asphaltic concrete overlay over the full length of the subject taxiway and additional necessary drainage. With reference to Paragraph 3, 4th Indorsement, (Tab C), statement is made by the Chief of Engineers that concurrence is not made to the proposed partial reconstruction involving approximately one-fourth of the area of Taxiway No. 1, since, progressive failure of the entire taxiway is anticipated. Since the B-29 production at the Boeing, Renton and Seattle plants has been accelerated, the subject construction is considered a military necessity, reference MAR, Comment No. 2 from AC/AS, MRR, Resources Division, (Tab D).

4. The amended project is estimated to cost $90,978.[illegible] for a 3" overlay and $102,230 for a 4" overlay. These estimates include the necessary portion of the work to be performed under the original directive plus the cost of the surfacing course. Attention is invited to Paragraph 4, 11th Indorsement, (Tab E), which indicates that the 4" surface course is required for B-29 operation. Reference is also made to photographs (Tab F), supplemental analysis for concrete overlay (Tab G), and layout map (Tab H).

5. Because of the enormous investment in the B-29 factory and airfield facilities at Seattle, it is apparent that no other facility can be substituted which will obviate this [illegible].

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CONFIDENTIAL

[redacted], Boeing Field, Seattle, Wash. (Cont'd.)

[redacted] that approval be granted to modify the [redacted] to include the construction of a 4" [redacted] and necessary drainage. This modification will increase the original allotment from $65,961.20 to $102,230. [redacted] over the previously approved project.

Robert Kauch

ROBERT KAUCH, Brig. General, USA,
Chief, Air Installations Division,
Office of Ass't Chief of Air Staff,
Material and Services.

[redacted]
Incls. 1 - [redacted] Div.,
[redacted] & Incl.
Incls. 2 - [redacted]
[redacted]
Incl. 3 - [redacted]
[redacted]

APPROVED

for [redacted]
Brigadier General, U. S. A.
Deputy Chief of Air Staff

NOV 17 1944

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Ltr Hq 3711th AAF [illegible] Unit, 24 Oct 44, 322 subj: [illegible]manding Officer for Boeing Field, Seattle, Washington.

210.3 2d Ind. 46M/ez
Headquarters AAF Training Command, Fort Worth 2, Texas,

TO: Commanding General, Army Air Forces, Washington 25, D.C.
Attn: AG/AS, Materiel & Services, Air Installations Division.

1. Correspondence initiated by the Commanding Officer of the 3711th AAF Base Unit, Seattle, Washington, is forwarded for clarification and a decision as to the policy to apply in instances where the Post Engineer performs Repairs and Utilities for several installations.

2. This particular situation has been further obscured by the following teletype received by Commanding General, Western Flying Training Command from the Director, Air Technical Service Command.

"IN ACCORDANCE WITH INSTRUCTIONS CONTAINED IN WD CIRCULAR 388 ATSC HAS ASSUMED UTILITIES RESPONSIBILITIES FOR ALL GOVERNMENT LEASED FACILITIES ON BOEING FIELD. REPRESENTATIVES OF YOUR COMMAND AT BOEING FIELD HAVE BEEN SO INFORMED."

3. This Headquarters desires information as to the Command having jurisdiction over Boeing Field and particularly desires clarification of questions raised in paragraph 4 of the 1st Indorsement as they apply to this particular station and to similar installations.

4. This Headquarters is of the opinion that the Post Engineer should report individually to the Commanding Officer of each installation, and that projects should be processed through the Command channels of each separate Army Air Force activity and then direct to the Command having jurisdiction over the funds. All installations should comply with the directives and regulations pertaining to authorizations and funds issued by the Command having control of the funds. In addition, the Post Commander to whom the Post Engineer is assigned should not be responsible for the sufficiency of maintenance, repairs and operations on the other installations. Your concurrence in this procedure is desired.

For the Commanding General:

[illegible]
Assistant Adjutant General

FOR [illegible]

1st

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[redacted]

Lt. Col. Addisman/ei
Ext. 6981 11/20/44

(1)

Subject: Failure of Taxiways, Boeing Field, Seattle, Washington.

12th Ind. AFDIN-3B/2

Hq Army Air Forces, Washington 25, D. C. 21 NOV 1944

To: Chief of Engineers.

1. With reference to the preceding correspondence, approval is granted to modify Directive Consecutive No. A 22075, District Sequence No. PD Seattle A787, Job No. Boeing BSA 210-4, Subject: "Reconstruction of Portion of Taxiway No. 1", to include the overlaying of Taxiway No. 1 (approximately 39,000 square yards) with a 4" asphaltic concrete surface and the construction of additional storm drains at the south end of the taxiway, which increases the original project from $65,961.20 to $102,230.

2. With reference to the estimate submitted for a 3" surface course at a cost of $90,970.04, a revised estimate was made for the recommended 4" asphalt surface at a cost of $102,230. This revised estimate was coordinated informally with the Chief of Engineers. It is, therefore, requested that the modification of the above referenced Directive Consecutive be accomplished for the estimated cost of $102,230.

For the Commanding General, Army Air Forces:

LEO J. ERLER, Lt. Col., A. C.
Air Installations Division
Office of Ass't. Chief of Air Staff,
Material and Services

4 Incls.
Incl. 1 - OCE Form 105 (cy. w/d)
Incl. 2 - Analysis w/attached dwg (cy w/d)
Incl. 3 - Prints (set of 3) w/c
Incl. 4 - Cpy memo dtd 21 Sept. 44 w/d
Incl. 5 - Suppl. Report w/c

cc: Dir. AAF Air Tech. Serv. Comd.
(Incl. 4 w/d fr AID Airfields File)
"Approved by Air Staff (/s/ NMK for Timberlake) Nov 17 1944"

MEMO FOR RECORD: Basic ltr. 2 Aug. 1944 fr P.E. Boeing Fld. to CG, 9th Serv. Comd. sam subj. with 11 th Ind. 27 Oct. 44 in Classified Files (The preceding corres. filed with Memo to C/AS dtd 14 Nov. 1944)

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9 December 1944

ENGINEERING ANALYSIS
FOR HANGAR FACILITIES AND PARKING AREA,
BOEING FIELD,
SEATTLE, WASHINGTON.

1. References:

a. Letter dated, the Office of the Army Air Forces Representative, Air Technical Service Command, Boeing Aircraft Company, 29 September 1944, subject, "Request for Drawings and Preliminary Estimates for Hangar Facilities on Boeing Field," with inclosure thereto dated, the Boeing Aircraft Company, 26 September 1944, subject, "Hangar Facilities - Boeing Field."

b. Letter dated, the Office of the Army Air Forces Representative, Air Technical Service Command, Boeing Aircraft Company, 19 October 1944, subject, "Automotive Parking Area, B-29 Revetment," with inclosure thereto dated, the Boeing Aircraft Company, 12 October 1944, same subject.

2. Instruments Requested:

a. Engineering analysis, plans, and cost estimate for four hangar bays, cement concrete apron and hard surfaced roadway as described in the inclosure to reference 1a.

b. Engineering analysis, plans, and cost estimate for vehicle parking area adjacent to the proposed hangar buildings, as described in the inclosure to reference 1b.

3. Instruments Prepared:

a. Lay-out Plan No. N-9-229, in 2 sheets.

(1) Sheet No. 1 of this drawing shows the proposed location, floor plan, and primary truss detail elevation of the steel frame structure. In addition, the locations of existing structures, existing utilities, and the proposed appurtenant facilities are included on the drawing. It will be noted that the proposed project would necessitate the removal and/or relocation of some facilities which are either existing or currently under construction.

(2) Sheet No. 2 of this drawing shows the proposed location, floor plan, and primary truss detail elevation of the timber frame structure. In addition, the drawing includes information similar to that listed for the steel frame structure in paragraph 3a (1) above.

b. Alternate cost estimates "A" and "B" in the amounts of $1,327,220 and $1,207,820 respectively, for use in requesting authorization and funds.

(1) Cost estimate "A" is complete for all proposed items of work in the event that steel frame construction is selected for the hangar structure.

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(2) Cost estimate "B" is similar to estimate "A" except that timber frame construction is contemplated in lieu of steel framing.

4. Basic Design of the Steel Frame Hangar Structure: Except for the critical clearance dimensions specified in Boeing Aircraft Company letter inclosed with reference 1a above, the truss spacing and overall dimensions of the structure shown on Sheet 1 of Drawing No. M-9-229 are not fixed but will be determined at the time of actual design in the event of authorization. The following items have been provided for in cost estimate "A".

a. Structural framework would consist of nine 160-foot and four 225-foot Pratt or similar type steel trusses supported on fabricated steel columns spaced at intervals of approximately 45 feet. Vertical clearance of the 160-foot trusses would be 45 feet, and of the 225-foot trusses, 50 feet. Lateral roof trusses between the main trusses would be spaced approximately 23 feet apart on both the 160-foot and the 225-foot trusses. Timber beam roof purlins would connect these trusses. Ends of the lateral trusses not supported by the main trusses, as well as similar type lateral trusses spanning the shops area, would be supported on steel columns. The basic design provides for all necessary lateral and sway bracing.

b. The sides of the structure would be constructed of corrugated cement-asbestos or equal material, interior partitions of gypsum board, and the roof of timber plank covered with a fire resistant roofing material.

c. The floor of the structure would be constructed of 9 inches of cement concrete on a 6-inch base course of crushed rock. In view of unstable foundation conditions encountered at Boeing field during previous construction work, consideration has been given, in the absence of detailed soil bearing tests, to the possible necessity of providing a piling foundation, where required, to support the structure and floor loads. Past experience with pavement construction at Boeing Field has shown that the area contains extensive soft spots which require removal prior to placing the base course. Adequate provision has been made in the cost estimate for removal of any soft spots encountered and for building up the resultant holes with layers of sand and compacted pit-run gravel.

d. Heating of the Hangar spaces to a minimum temperature of 50° Fahrenheit would be accomplished by the installation of 10 unit heaters of 680,000 B.t.u. capacity each in the large hangar and six unit heaters of 500,000 B.t.u. capacity each, in each of the three small hangars. Heating of the shop space to a minimum temperature of 70° Fahrenheit would be accomplished by the installation of several small unit heaters, the number and capacity dependent upon the ultimate size of the shops area. Heating of the lavatory, locker room, rest room, and office areas would be accomplished by the installation of low-pressure steam radiators. The heating plant, located in the approximate area shown on Sheet 1 of Drawing No. M-9-229, would consist of two high pressure, coal-fired steel boilers having a rated capacity of 250 hp. each.

e. Lavatory, rest room, and locker room facilities for 400 men and 100 women would be provided in two identical units conveniently located in the shop area. In accordance with policy established by letter dated, Office, Chief of

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Engineers, 25 January 1943, subject, "Provision of Toilet Facilities for Women in Buildings Under Construction," file No. CE 412.2 SPEOT, the following fixtures would be provided in the lavatory of each of these units:

	W.C.	L.	U.
Men	10	10	5
Women	4	3	-

Five drinking fountains would be conveniently located throughout the structure.

f. In addition to providing general water requirements for utilities, heating, and fire protection, the installation of three 3/4-inch water outlets in the hangar areas and two in the shop areas has been included in the project.

g. Approximately twenty 3/4-inch compressed air outlets would be provided in the structure. Four of these would be located in each of the hangar areas and four in the shops area.

h. Electrical service would include the following:

(1) Incandescent lighting having an intensity of 20 foot candles in the hangar areas, 30 foot candles in the shops area, 5 foot candles in lavatories, locker room, rest room, and boiler room areas, and 20 foot candles in the offices.

(2) Approximately 100 power outlets for 110-volt current would be located in service pits, on exterior walls, on interior columns, and on interior partitions in the shop and office areas.

(3) Sixteen 440-volt, 3-phase, 15-hp. power outlets placed in an equal number of service pits located in the approximate corners of each of the four hangar areas. In addition, these pits would include some of the 110-volt power outlets noted above as well as compressed air outlets.

(4) One 440-volt, 3-phase, 100-hp. power service would be made available in the shop area for the operation of equipment.

i. A deluge type sprinkler system, connected to the field fire reporting telephone station nearby, would be provided throughout the entire structure. In addition, draft stops would be installed between each of the hangar bays at the main truss columns. These three stops would be located in the lateral roof trusses and would extend at least 2 feet below the botton chord. An adequate supply of water for operation of the sprinkler system would be provided by installing a 14-inch diameter wood-stave pipe line. This proposed water main would connect, near the southwesterly corner of Boeing Field, to an existing City of Seattle 20-inch cast iron pipe line which parallels East Marginal Way and would extend around the south boundary of the field to the project site, a distance of approximately 5,000 feet.

j. The hangar structure would be equipped with obstruction lights.

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5. Basic Design of the Timber Frame Hangar Structure: The following alternate design has been based on the use of timber bowstring trusses supported on wood columns. Critical clearance dimensions specified in Boeing Aircraft Company letter inclosed with reference 1a above have been adhered to. As in the case of the steel frame structure, the truss spacing and overall dimensions of the structure shown on Sheet 2 of Drawing No. N-9-229 are subject to modification in the event the project is authorized for construction. The following items have been provided for in cost estimate "B":

a. Structural framework would consist of eighteen 160-foot and eight 225-foot bowstring timber trusses supported on latticed wood columns. The 160-foot trusses and the adjacent six 225-foot trusses would be spaced approximately 22 feet apart. The two remaining 225-foot trusses would be spaced approximately 25 feet apart. Vertical clearance of the 160-foot trusses would be 45 feet and of the 225-foot trusses, 50 feet. Lateral bracing would be provided between alternate trusses and timber beam roof purlins spaced approximately 6 feet apart would span the main truss intervals. The basic design includes supporting columns and necessary bracing throughout the structure.

b. The sides of the structure would be constructed of "Celo-Siding" or similar material over a well braced lumber framework, with a wainscot around both interior and exterior hangar and shop walls of salvage sheathing, interior partitions of gypsum board, and roof of timber plank covered with built-up roofing.

c. The floor of the structure would be constructed as noted in paragraph 4c above.

d. Except for the difference in location of the boiler room as shown on Sheet 2 of Drawing No. N-9-229, heating of the hangar, shop, lavatory, and office areas would be accomplished in a manner similar to that stated in paragraph 4d above.

e. Lavatory, rest room, and locker room facilities similar to those provided for in the steel frame structure would be provided in two separate units. One unit would be located in the area between hangars 1 and 2 and the other, between hangars 3 and 4.

f. Water, air, and electrical service would be provided comparable to that planned for the steel frame structure and outlined in paragraphs 4f, 4g, and 4h above.

g. A deluge type sprinkler system supplied from the pipe line described in paragraph 4d above would be installed throughout the entire structure. Eight draft stops each 7 feet deep would be provided in the locations shown in the typical cross section on Sheet 2 of Drawing No. N-9-229.

h. The entire structure would be equipped with obstruction lights.

6. Basic Considerations for Exterior Utilities and Appurtenant Structures: With the exception of specific differences resulting from a variation in the

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overall size and arrangement of the two types of structures, the following items are applicable to construction of either the steel frame hangars or the wood frame hangars.

a. Dimensions of the proposed apron are shown on Drawing No. N-9-229 and the basic design would be similar to that used in construction of the adjacent apron. This design includes a 9-inch cement concrete pavement placed on a 6-inch base course of crushed rock. In addition, the following apron facilities would be provided:

(1) Adequate surface drainage into catch basins connected to the existing 18-inch storm sewer located approximately 80 feet off the easterly edge of the adjacent apron.

(2) Tie-down rings throughout, spaced to conform with criteria set forth in paragraph 20-68, Chapter XX of the Engineering Manual.

(3) Eight properly drained service pits containing air, water, and 110-volt and 440-volt electric services. In view of the fact that 440-volt electric service has been provided in alternate pits on the adjoining apron, it is possible that this service could be eliminated from the pits on the proposed apron.

(4) Flood lighting would be accomplished by the installation of one additional light on each of the present apron poles affected and by the installation of 3-way reflector lamps attached to the proposed structure roof at intervals of approximately 145 feet.

(5) Exterior fire protection would be accomplished by the relocation of one fire hydrant as indicated on Drawing No. N-9-229 and the installation of three 2½-inch hose type connection street washers placed along the easterly portion of the proposed apron 50 feet from the hangar structure.

b. The design of all access roads and walks, including the relocated perimeter road, would be similar to that used in the construction of the present perimeter road. This design provides for a 2-inch plant-mix bituminous surfacing on a 6-inch base course of crushed rock. Drainage of the roads would be accomplished by means of adequate crown and shallow roadside ditches leading into catch basins connected to the existing storm drainage system.

c. The proposed parking area shown on Drawing No. N-9-229 has been located approximately asshown on Boeing Aircraft Company Drawing No. 17-19 submitted with reference 1b above. The entire area shown on the drawing, as well as both approach roads connecting with Airport Way would be surfaced with a 2-inch layer of asphaltic concrete over a base course of 4 inches of crushed rock. With the exception of the approach roads which would drain into the Airport Way roadside ditch. Drainage of the entire parking area would be accomplished by sloping the surfaced area toward a trunk on the northeast corner of Apron No. 1.

d. The following primary utilities connections have been contemplated in the preparation of the cost estimate:

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(1) All storm drainage would be connected to the nearest existing storm drainage trunk line.

(2) All sanitary sewers would be connected to a septic tank which would drain into the nearest existing storm sewer trunk line. Construction of the septic tank has been included in the cost estimate.

(3) All electrical service would be connected to the existing primary metered line serving the adjacent apron.

(4) All water service, except for the sprinkler system, would be connected to the existing 8-inch loop line running along the east edge and approximately 62 feet off the adjacent apron.

(5) All air service, including that on the proposed apron, would be connected to a compresser located in the hangar structure. The procurement and installation of a 50-hp. air compressor unit has been included in the estimate.

e. The following facilities either existing or being constructed under present authorizations would be removed or relocated.

(1) Relocation of one fire hydrant as noted in paragraph a (5) above.

(2) Relocation of the power service crossing the proposed parking area and serving both the fire station and its related sanitary sewer pumphouse.

(3) Relocation of one fire reporting telephone and its serving line as indicated on Drawing No. N-9-229 and installation of an additional phone on the northwest corner of the hangar structure.

(4) Relocation of the perimeter road as shown on Drawing No. N-9-229. Removal of those sections of the perimeter road not in conflict with the proposed project is not contemplated.

(5) Removal of five or six spoilers.

(6) Removal of a section of armor coat as indicated on Drawing No. N-9-229.

(7) No relocation of the boundary fence has been included in this project. However, a 12-foot gate would be installed in the existing fence on the access road entering the field from the proposed parking area. In addition, a sentry box, type SK-A-T, would be located just outside this gate.

(8) Relocation of a trap on the northerly end of the compressed air line to move it off the relocated perimeter road.

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7. Comment:

a. A portion of Apron No. 1 currently being constructed under authority of Directive Consecutive No. A 20993 has been indicated on Drawing No. N-9-229 as available for use in conjunction with the proposed project. The area extends throughout the entire length of the proposed apron and to a depth of 100 feet. This proposed elimination of five or six plane positions from their original intended use has been discussed with representatives of the Boeing Aircraft Company who have informally advised personnel of this office that their aircraft production program will not be adversely affected. In view of the present large number of planes assigned to the experimental program, this portion of Apron No. 1 will be needed to afford access to the proposed apron and hangars and to provide parking and outside work areas for those planes which, due to space limitations, cannot be sheltered in the proposed hangars or in hangars presently assigned to experimental work as stated in Boeing Aircraft Company letter referred to in reference 1a above.

b. With reference to paragraph 4i of this analysis it will be noted that a full deluge type sprinkler system is proposed for the hangar areas. Further, that sufficient water for the operation of this system be provided by the installation of a 14-inch diameter wood-stave pipe supply line. This method for providing an adequate supply of water has been selected in the interests of economy in view of the apparent temporary use which the project may be required to fill. A comparative estimate indicates that the installation of a storage system having a capacity of 540,000 gallons of water, plus the installation of necessary pumps, would increase the total estimated U. S. Government cost for the proposed project in the amount of $22,400. A storage capacity of 540,000 gallons was arrived at by applying criteria set forth in Office, Chief of Engineers, Amendment to Engineering Manual - Chapter XVII, FIRE PREVENTION, dated 1 July 1943, file No. CE 300.)SPENQ, ENGINEERING MANUAL. This storage will provide an excess of 1,000 g.p.m. for the operation of 2½-inch hose streams including make-up water from the existing 8-inch cast iron pipe supply line. In the event that this project is authorized for construction, it is believed that consideration should be given to the relative advantages of installing a combination closed head automatic and open head deluge system; to a further reduction in the required amount of storage by making available for this project the existing storage capacity of 150,000 gallons currently held for protection of the riveted hangar only, cognizant of the fact that sufficient reduction would make installation of a storage system more economical than a supply line system; and to the possibility that the City of Seattle would be interested in financing all or part of a water supply line of cast iron pipe which would constitute a permanent addition to the existing Boeing Field water main system. Installation of a cast iron pipe supply line, of equal diameter, in lieu of a wood-stave pipe line would increase the total estimated U. S. Government cost by $10,650. In the event that a water supply line is authorized for construction, it is proposed to make two or three 8-inch pipe connections to the 8-inch water main which parallels the easterly edge of the adjacent apron now being constructed. This would effect a looping of the entire water main system on the field.

c. In the preparation of cost estimate "A", provision has been made for the installation of power-operated, vertical-lift hangar doors. Horizontal,

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hand-operated hangar doors running on steel tracks into door pockets is proposed for the timber frame structure. Installation of this type of hangar door on the steel frame structure would not be possible without spacing the hangars far enough apart to permit construction of the necessary door pockets.

d. With reference to paragraph 4g of this analysis it will be noted that siding of cement-asbestos over salvage sheathing has been included in the proposed design of the steel frame hangar structure. Further, paragraph 5b of this analysis states that "Celo-Siding" or similar material is included in the proposed design of the timber frame hangar structure. Substitution of "Celo-Siding" or similar material for the cement-asbestos siding on the steel frame structure would reduce the total estimated U. S. Government cost in the amount of $28,550. Conversely, the substitution of cement-asbestos siding on the timber frame structure would increase the total estimated U. S. Government cost for that structure in the amount of $35,250.

e. Completion of the proposed project will require approximately 180 days from the date construction is initiated.

Seattle District Engineer Office.

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December 1944

COST ESTIMATE
FOR HANGAR FACILITIES AND PARKING AREA
AT BOEING FIELD,
SEATTLE, WASHINGTON.

STEEL FRAME STRUCTURE - ALTERNATE "A"

Item	Description	Material	Labor	Total
1	Construct 225' x 180' hangar portion of structure			
a.	Grading, excavation, backfill, and piling	$ 4,360	$ 6,370	$ 10,730
b.	Concrete footings in place	17,250	13,940	31,190
c.	Structural steel, fabricated and erected	59,030	8,430	67,460
d.	Lumber, millwork, cement-asbestos siding, and roofing	30,590	24,640	55,230
e.	Vertical-lift hangar door	62,170	14,620	76,790
f.	Electrical service	8,130	3,250	11,380
g.	Air service	490	330	820
h.	Heating distribution system	11,170	2,230	13,400
i.	Painting	2,730	4,210	6,940
j.	Install monorail	12,500	8.120	20,620
k.	Sprinkler system, including draft stops and fire alarm system	6,990	6,990	13,980
	Sub-totals	$ 215,410	$ 93,130	$ 308,540
2	Construct 160' x 135' hangar portions of structure (3 sections)			
a.	Grading, excavation, backfill, and piling	$ 9,280	$ 4,940	$ 14,220
b.	Concrete footings in place	23,110	19,110	42,220
c.	Structural steel, fabricated and erected	76,660	10,950	87,610
d.	Lumber, millwork, cement-asbestos siding and roofing	36,810	28,150	64,960
e.	Vertical-lift hangar doors	119,340	28,080	147,420
f.	Electrical service	10,560	4,390	14,950
g.	Air service	1,300	980	2,280
h.	Heating distribution system	17,870	3,660	21,530
i.	Painting	3,360	5,460	8,820
k.	Sprinkler system, including draft stops and fire reporting system	11,380	11,370	22,750
	Sub-totals	$ 309,690	$117,090	$ 426,780
3	Construct shop and office space, size 45' x 490':			
a.	Grading and excavation	$ 2,500	650	$ 3,150
b.	Concrete footings in place	6,580	4,770	11,350
c.	Framing lumber	6,110	6,100	12,210
d.	Structural steel columns, erected	790	790	1,580

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Item	Description	Material	Labor	Totals
	e. Structural steel roof beams, erected	$ 7,020	$ 700	$ 7,720
	f. Millwork, cement-asbestos siding, and roofing	3,880	2,230	6,110
	g. Interior partitions and walls	2,610	2,610	5,220
	h. Painting	1,740	3,240	4,980
	i. Plumbing	8,940	6,010	14,950
	j. Electrical service	5,480	3,250	8,730
	k. Heating distribution system	7,910	6,870	14,780
	l. Sprinkler system	2,760	2,760	5,520
	Sub-totals	$ 56,320	$ 39,980	$ 96,300
4	Install heating plant:			
	a. Boilers and pumps	$ 36,250	$ 6,240	$ 42,490
	b. Erect stack	2,920	4,080	7,000
	c. Fireproofing boiler room	650	650	1,300
	Sub-totals	$ 39,820	$ 11,770	$ 51,590
5	Install compressor unit	$ 5,690	$ 3,250	$ 8,940
6	Construct apron and facilities:			
	a. Grading, excavation, sub-grade, and concrete	$ 62,340	$ 27,300	$ 89,640
	b. Tie-down rings	390	110	500
	c. Service pits	3,250	2,020	5,270
	d. Floodlighting	1,100	280	1,380
	e. Street washers and hydrants	490	110	600
	Sub-totals	$ 67,570	$ 29,820	$ 97,390
7	Service roads, relocate perimeter road, walks, and parking area	$ 8,130	$ 7,310	$ 15,440
8	Area drainage and installation of septic tanks	$ 8,130	$ 6,500	$ 14,630
9	Primary electrical service	$ 1,630	970	$ 2,600
10	Relocate existing power and fire reporting telephone lines	$ 620	$ 450	$ 1,070

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		Material	Labor	Totals
11	[illegible] and gate in existing fence	$ 130	$ 100	$ 230
12	Remove spoilers	———	$ 550	$ 550
13	Relocate trap on existing compressed air line	$ 60	$ 70	$ 130
14	Water service including 1/4-inch wood-stave pipe supply line	$ 15,670	$ 6,950	$ 22,620
	Totals	$ 728,870	$ 317,940	$1,046,810
	Contingencies 15%			157,020
	Sub-total			$1,203,830
	Engineering and Overhead 5%			60,190
	Sub-total			$1,264,020
	Military Overhead 5%			63,200
	Total Estimated U.S.Government Cost			$1,327,220

"Approved, Resources Control Section"
Seattle District Engineer Office.
13 MAR 1945

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13 December 1944

COST ESTIMATE
FOR HANGAR FACILITIES AND PARKING AREA
AT BOEING FIELD,
SEATTLE, WASHINGTON.

TIMBER FRAME STRUCTURE - ALTERNATE "B"

Item	Description	Material	Labor	Total
1.	Construct 225' x 180' hangar portion of Structure:			
a.	Grading, excavation, and backfill	$ 3,850	$ 1,760	$ 5,610
b.	Piling in place	3,350	2,290	5,640
c.	Concrete footings in place	20,660	16,350	37,010
d.	Lumber, including trusses and framing	62,400	21,120	83,520
e.	Roofing and siding in place	9,600	6,960	16,560
f.	Hangar doors	46,410	7,310	53,720
g.	Millwork	1,070	480	1,550
h.	Electrical service	5,690	2,280	7,970
i.	Air service	490	330	820
j.	Heating distribution system	8,940	1,790	10,730
k.	Painting	2,730	4,210	6,940
l.	Install monorail	12,500	8,120	20,620
m.	Sprinkler system, including draft stops and fire alarm system	4,940	4,940	2,880
	Sub-totals	$ 182,630	$ 77,940	$ 260,570
2.	Construct 160' x 130' hangar portions of structure (3 sections):			
a.	Grading, excavation, and backfill	$ 5,940	$ 2,700	$ 8,640
b.	Piling in place	4,720	3,220	7,940
c.	Concrete footings in place	24,990	15,500	40,490
d.	Lumber, including trusses, framing, and millwork	81,000	27,530	108,530
e.	Roofing and siding in place	12,690	9,330	22,020
f.	Hangar doors	79,040	19,240	98,280
g.	Electrical service	10,080	4,470	14,550
h.	Air service	1,140	810	1,950
i.	Heating distribution system	17,390	3,570	20,960
j.	Painting	3,760	5,930	9,690
k.	Sprinkler system, including draft stops and fire alarm system	7,800	7,800	15,600
	Sub-totals	$ 248,550	$100,100	$ 348,650

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Item	Description	Material	Labor	Total
3.	Construct shops and office space along 3 - 260' hangars, size 30' x 600':			
a.	Structure, including footings, framing, roofing, siding, painting, and partitions	$ 17,430	$ 14,190	$ 31,620
b.	Heating distribution system	6,500	5,610	12,110
c.	Electrical service	3,660	1,830	5,490
d.	Sprinkler system	2,850	2,840	5,690
	Sub-totals	$ 30,440	$ 24,470	$ 54,910
4.	Construct shops and lavatory space between all hangars:			
a.	Structure, including footings, framing, roofing, siding, painting, and partitions	$ 13,800	$ 11,300	$ 25,100
b.	Heating distribution system	5,200	4,490	9,690
c.	Electrical service	2,930	1,460	4,390
d.	Plumbing	8,940	6,010	14,950
e.	Sprinkler system	2,200	2,270	4,550
	Sub-totals	$ 33,150	$ 25,530	$ 58,680
5.	Install heating plant:			
a.	Boilers and pumps	$ 36,250	$ 6,240	$ 42,490
b.	Breet stack	2,920	4,880	7,800
c.	Fireproofing boiler room	650	650	1,300
	Sub-totals	$ 39,820	$ 11,770	$ 51,590
6.	Install compressor unit	$ 5,690	$ 3,250	$ 8,940
7.	Construct apron and facilities:			
a.	Grading, excavation, sub-grade, and concrete	$ 72,200	$ 31,620	$103,820
b.	Tie-down rings	450	130	580
c.	Service pits	3,250	2,020	5,270
d.	Floodlighting	1,300	340	1,640
e.	Street washers and hydrants	490	110	600
	Sub-totals	$ 77,690	$ 34,220	$ 111,910
8.	Service roads, relocate perimeter road, walks, and parking area	$ 8,130	$ 7,310	$ 15,440

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Item	Description	Material	Labor	Total
9.	Area Drainage and installation of septic Tanks	$ 8,130	$ 6,500	$ 14,630
10.	Primary electrical service	$ 1,630	$ 970	2,600
11.	Relocate existing power and fire reporting telephone lines	$ 620	$ 450	1,070
12.	Install sentry box and gate in existing fence	$ 130	$ 100	230
13.	Remove spoilers		$ 660	$ 660
14.	Relocate trap on existing compressed air line	$ 60	$ 70	$ 130
15.	Water service including 14" wood-stave pipe supply line	$ 15,670	$ 6,950	$ 22,620
	Total	$ 652,340	$300,290	$952,630
	Contingencies 15%			142,890
	Sub-total			$1,095,520
	Engineering and Overhead 5%			54,780
	Sub-total			$1,150,300
	Military Overhead 5%			57,520
	Total Estimated U. S. Government Cost			$ 1,207,820

Seattle District Engineer Office.

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[illegible]

Subject: Request for Drawings and Preliminary Estimates for Hangar Facilities on Boeing Field.

634 (Seattle Airport Hangars) 45
FADBG-1C 1st Ind.

U. S. Engineer Office, Seattle 1, Wash., 14 December 1944

To: The Resident Representative, AAF, Air Technical Service Command, Boeing Aircraft Company, Seattle 14, Washington.

1. Inclosed herewith in compliance with request contained in paragraph 2 of the basic letter are an engineering analysis and alternate cost estimates listed as follows for the proposed construction of Additional Hangars, Appurtenant Facilities, and Automotive Parking Area at Boeing Field, Seattle, Washington.

a. Cost estimate "A" in the amount of $1,327,220 for construction of a factory type, steel frame hangar structure.

b. Cost estimate "B" in the amount of $1,207,820 for construction of a bowstring truss type, timber frame hangar structure.

2. Also inclosed are prints of Lay-out Plant No. N-9-229, in 2 sheets.

a. Sheet 1 of this drawing shows the proposed location of the steel frame hangar structure and appurtenant facilities, together with a floor plan and two sections indicating the arrangement and type of construction proposed.

b. Sheet 2 of this drawing shows the proposed location of the timber frame hangar structure and appurtenant facilities, together with a floor plan and typical cross section indicating the arrangement and type of construction proposed.

3. It is the understanding of this office that the inclosed instruments will be used as basis of request through command channels for authorization and funds.

For the District Engineer:

5 Incls.:
Letter dated 26 Sep 44 (print withdrawn).
4 Incls. added (15 copies):
Engineering Analysis dtd 9 Dec 44
Alternate Cost Est. "A" dtd 13 Dec 44
Alternate Cost Est. "B" dtd 13 Dec 44
Print of Dwg. No. N-9-229, in 2 sheets

/s/ Rex J. Allan
Rex J. Allan,
Major, Corps of Engineers,
Acting Chief, Engineering Division.

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BLDGS & GROUNDS

SUBJECT: Commanding Officer for Boeing Field, Seattle, Washington.

3rd Ind. AFDIN 3½/2

Hq Army Air Forces, Washington 25, D. C. 28 [illegible] 1944

TO: Commanding General, Army Air Forces Training Command, Texas and Pacific Building, Fort Worth 2, Texas.

180

1. Boeing Field is under the command jurisdiction of the Air Technical Service Command.

2. Command jurisdiction includes the provision of repairs and utilities functions. The commanding officer of Boeing Field will be designated by the Air Technical Service Command. Echelons of all other commands at Boeing Field are in the status of joint users.

3. Answers to specific questions presented in paragraph 4, 1st Indorsement, are contained in correspondingly lettered subparagraphs as follows:

a. The commanding officer of Boeing Field will be established in accordance with AR 210-10 by the Air Technical Service Command. He will be responsible for repairs and utilities activities at this station. The post engineer will perform repairs and utilities duties in accordance with established directives under the commanding officer appointed by ATSC.

b. The responsibilities of the commanding officer designated by the ATSC will be as prescribed in AR 210-10 and pertinent Army Air Forces Regulations. With particular reference to repairs and utilities, the responsibilities of the commanding officer and his post engineer are prescribed in AR 100-80, Cir. 388, WD, 1944, AAF Letter 85-14 and other established regulations and directives.

c. The commanding officer of a station is authorized to approve nonrecurrent or other repairs and utilities projects up to $1,000 in accordance with par. 4 c., AR 100-80, par. 8 1., Cir. 388, WD, 1944 and par. 11 b., AAF Letter 85-14. Such authority is vested in the station commander alone. Commanding officers of organizations garrisoned at Boeing Field have no authority to approve any repairs and utilities project, but will look to the station commander for the accomplishment of such repairs and utilities work as the station commander may consider necessary for the facilities which they occupy.

d. Nonrecurrent repairs and utilities projects exceeding $1,000 will be forwarded by the station commander through channels, to the Director, Air Technical Service Command, who in turn may request comments of other commands occupying Boeing Field.

4. It is desired that the post engineer organization now operating under the control of the 3711th Base Unit and all personnel therewith be

OFFICE SYMBOL	1	2	3	4	5	6
SIGNATURE OF RESPONSIBLE OFFICER						
INTERNAL OFFICE COORDINATION						

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Maj.F.T.Thayer/bg/4688
wrtn. 12/12/44
r/wrtn 12/20/44

SUBJECT: Commanding Officer for Boeing Field, Seattle, Washington (Cont'd.)

transferred as soon as possible to the Air Technical Service Command for assignment to Boeing Field. The Commanding General, AAF Training Command and the Director, Air Technical Service Command will mutually make necessary arrangements for effecting such transfer.

By command of General ARNOLD:

ROBERT KAUCH, Brig. Gen., USA,
Chief, Air Installations Division,
Office of Ass't Chief of Air Staff,
Materiel and Services

1 Incl.
Cy ltr to ATSC

cc: Director, AAF Air Technical Service Command
Wright Field, Dayton, Ohio.

cc: Commanding General,
Air Transport Command,
Washington 25, D. C.

FOR [illegible] USE ONLY
(AFR 11-30)

HQ AAF
28 DEC 1944
Air Installations Division,

OFFICE SYMBOL	1 AFDIN, 3E/2	2 [redacted]	3	4	5	6
SIGNATURE OF RESPONSIBLE OFFICER	R. Kauch					
INTERNAL OFFICE COORDINATION	12-22-44					

10—29242-8 U. S. GOVERNMENT PRINTING OFFICE

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83 TJC/mee RCS 23

SAVE

ADDRESS REPLY TO:
WESTERN DISTRICT SUPERVISOR
ATTENTION:

ARMY AIR FORCES
AIR TECHNICAL SERVICE COMMAND
[redacted]
WESTERN PROCUREMENT DISTRICT

FOR VICTORY BUY WAR BONDS

AIR MAIL

3686 BEVERLY BOULEVARD
LOS ANGELES, CALIFORNIA
13 January 1945

SUBJECT: Hangar Facilities - Boeing Field.

TO: Director,
Air Technical Service Command,
Wright Field, Dayton, Ohio.

Attention: TSBRC4C. 3G-4

1. Boeing Aircraft Company, Seattle, Washington, are requesting the construction of four (4) hangar buildings to be located on Boeing Field and to be used as sheltered areas for modification and experimental work on B-29 and other airplanes manufactured by the Boeing Company.

2. Attached hereto are plans, estimates, and description of the buildings furnished by the Corps of Engineers at Seattle. Attached letter, dated 2 January 1945, by AAF Plant Representative at Boeing, Seattle, recommends this project. A supplemental letter of the same date by AAF Plant Representative suggests an alternate proposal of birch wood-type timber hangars available at present to the Corps of Engineers.

3. In a teletype of 4 January 1945 this office is informed that the use of these available hangars will save approximately $50,000 to $100,000. Although the size of these hangars is not identical with those requested by Boeing Company, the Contractor states that they would be usable.

4. In the attached letter, dated 26 September 1944, from Boeing Aircraft Company, information is furnished pertaining to the needs and justification for the construction of these hangars.

5. This office feels that some additional shelters are required at the Boeing Seattle plant for working on experimental airplanes and, therefore, requests recommendations regarding the processing of this proposal either in its entirety or at least in part, if approval can be expected.

For the Commanding General:

FOR [redacted] USE ONLY
(AFR 11-30)

F. C. WHITING,
Major, Air Corps,
Chief, Resources Control Section.

3 Incls. (in dupl.)
1. Cys.AAFRR Boeing Ltr.1-6-44,w/BAC ltr.9-26-44
2. AAFRR Boeing Ltr.1-2-45,abv subj.
3. AAFRR Boeing Ltr.1-2-45,abv subj.,w/6 incls.

cc: Major H.B.Smith,Cons'n O.,West.Dist., w/cy.incls.2 & 3

AAFNC-227-WPT-6-1-44-500M

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facilities

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RF V LA 150
FROM STAGE CG WDATSC LOS ANGELES CALIF JAN 231602Z
TO DIR ATSC WF ATTN TSBRC4C
WDPRS-26. . . REF PARA 3 OF LTR DTD 13 JAN 45 FR THIS O TO UR HQ, SUBJ "HANGER FACILITIES - BOEING FIELD", THIS O ADVISED BY AAF PLANT REP AT BOEING, SEATTLE, TT USE OF 150 FT WOOD TRUSSES SUGGESTED BY CORPS OF ENGRS AS ALTERNATE PROPOSAL WL NOT BE SATISFACTORY. REQ ADVICE OF ACTION BEING TAKEN ON PROJECT MENTIONED IN ALV REF"D LTR. END ATSC.

3G

BM

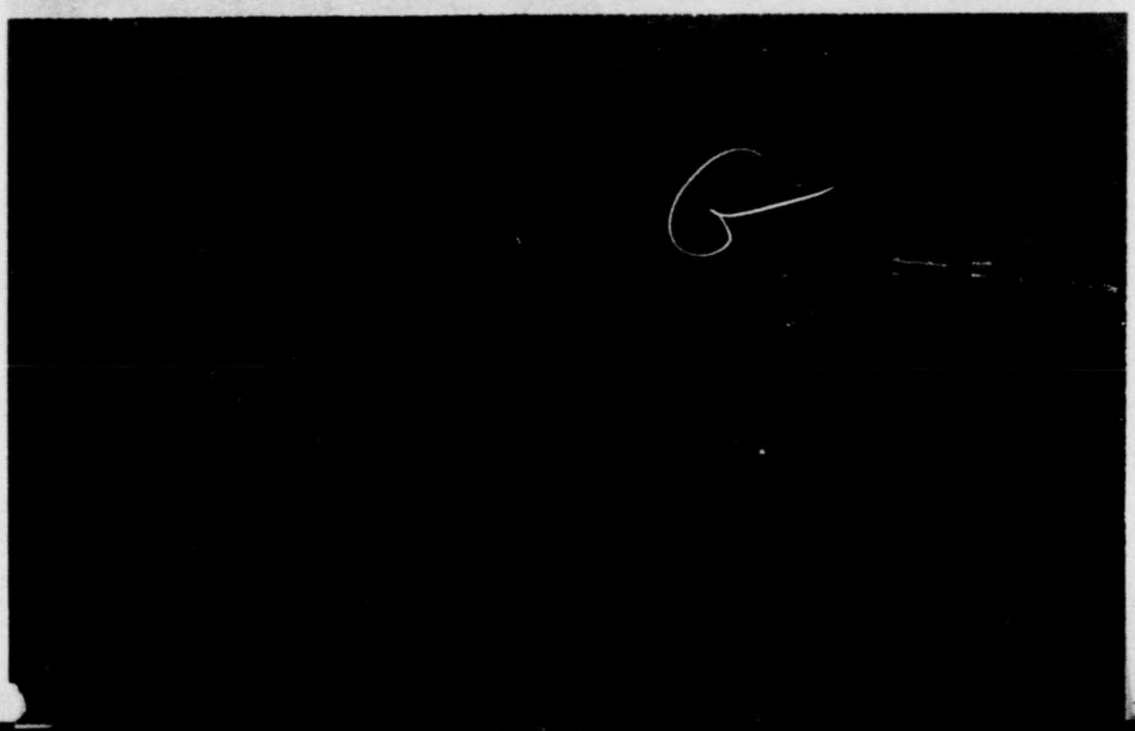
BM

JAN 23 1945

ASG INFOR

1945 JAN 23 PM 1:09

PROCUREMENT DIVISION
MAIL UNIT



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322 Hq 3711th AAF Base Unit, Boeing Field, Seattle, Wash., 24 Oct 44, Subj, "Commanding Officer for Boeing Field, Seattle, Washington".

322M 4th Ind. 46H/hvc
Headquarters, AAF Training Command, Fort Worth 2, Texas, 24 January 1945.

To: Commanding General, Army Air Forces, Washington 25, D. C.
Attn: AC/AS, Materiel and Services, Air Installations Division.

1. Correspondence is returned for further consideration in view of the fact that the 3711th AAF Base Unit is an installation separate and apart from Boeing Field and is not an organization garrisoned at Boeing Field.

2. This Headquarters has no objection to the transfer of the Post Engineer organization to the Air Technical Service Command; however, your attention is invited to the fact that approximately 70% of repairs and utilities cost are expended by the factory school under the jurisdiction of this command; the remaining 30% being expended on units os seven other commands located on or in the vicinity of Boeing Field. Your attention is also invited to the fact that ATSC has stated in telephone conversation by Colonel Rogers to this Headquarters that the maintenance on this field has been performed in a highly satisfactory manner and that the only difficulties presently encountered are of an administrative nature.

3. This Headquarters concurs in the statement made in paragraph 3 of the 3rd Indorsement when organizations are garrisoned at a station. However, it is believed that this policy should differ where two or more separate installations are served by one Post Engineer. It has been the policy in the past for the Post Engineer to be assigned to one installation with the additional duty of Post Engineer at another station. This procedure is authorized since the transfer of responsibilities at Class III installations by paragraph 3e, Circular 338, WD 44.

4. The arrangement prescribed in the previous indorsement places the Commanding Officer of the Training Command unit at the discretion of the Commanding Officer of Boeing Field. It is not considered that the mission of this command can be accomplished in the most efficient manner under the above circumstances. It is therefore the opinion of this Headquarters that the Post Engineer should be assigned to the Commanding Officer of one installation with the additional duty of Post Engineer at another installation. The Commanding Officer to whom the Post Engineer is assigned will be responsible for the availability of funds and personnel and compliance with directive pertaining to their use. However, the Commanding Officer to whom the post engineers is assigned should not be held responsible for the maintenance, repair and operation on the other installation. Projects requiring funds not available at the station or requiring approval by higher headquarters should be processed through the command channels of each separate AAF installation and then to the command having jurisdiction over the funds. In this respect it will be necessary to assign separate cost account numbers for each separate installation.

5. It is therefore requested that the 3711th AAF Base Unit be considered as a separate installation and not as a detachment garrison at

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Boeing Field. It is further requested that the Post Engineer be assigned to either the Air Technical Service Command or Training Command with additional duty of Post Engineer at the other installation in accordance with post procedure.

FOR THE COMMANDING GENERAL:

H. P. BONNEWITZ,
Colonel, AGD
Asst Adj Gen

1 Incl. n/c

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Maj. F.T.Thayer/bg/4688
wrtn 30 Jan 45

BLDGS. & GROUNDS

SUBJECT: Commanding Officer for Boeing Field, Seattle, Washington.

5th Ind. AFDIN 3E/2

Hq Army Air Forces, Washington 25, D. C. - 5 FEB 1945

TO: Director, AAF Air Technical Service Command, Wright Field, Dayton, Ohio. Attention: Construction Officer, ATSCON

1. Attention is invited to preceding correspondence relative to the assumption of repairs and utilities functions at Boeing Field, Washington.

2. It is desired that you take steps to assume the responsibilities for repairs and utilities activities at the subject installation. The post engineer will be assigned the additional duties required to accomplish repairs and utilities functions for AAF Training Command and such other on and off post installations in the vicinity of Boeing Field which are the responsibilities of the Army Air Forces.

3. It is desired that you correlate such assumption of repairs and utilities responsibilities with the Commanding General, Army Air Forces Training Command, who is being furnished a copy of this indorsement.

By command of General ARNOLD:

R. B. BATTE, Lt. Col., C. E.
Air Installations Division
Office of Ass't Chief of Air Staff
Materiel and Services

1 Incl. n/c

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cc: Commanding General,
AAF Training Command,
Texas and Pacific Building,
Fort Worth 2, Texas.

MEMO FOR FILES: B/L fm CO Boeing Fld to CG, AAFTTC - 24 Oct 44 w/3rd Ind. fm CG/AAF to CG, Training Cmd. dtd 28 Dec 44 in files.

5 Feb. 45

OFFICE SYMBOL	1. AFDIN 3E/2	AAF, AA P	3.	4.	5.
GRADE AND SURNAME OF COORDINATING OFFICERS	Col Batte	VJH			
	Lt Col				

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ATSC Form No. 10-506 (3 Jan 45)
(Old AAF Form No. 43)

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27 FEBRUARY 1945

COORDINATION
DIRECTOR OF DEF. [redacted] ATSC
AIR INSPECTOR CG, SCATSC
MGT. CONTROL CG, WD, ATSC (BOOK TELETYPE)
CHIEF OF ADMN.
SPECIAL STAFF
CHIEF, ENG. & PROC.
CHIEF, SUPPLY & MAINT.
PERS. & BASE SERV. DIV. TSPBS
TSPBS1-2-182
MAINT. DIV.
SUPPLY DIV.
ENGINEERING DIV.
PROCUREMENT DIV.
READJUST DIV.
OTHER

0930

PAUL S. BLAIR
Colonel, Air Corps
Chief, Base Services Section
3-2358 JF/jl

TSPBS1-2-182.....ORDERS BEING PUBLISHED

323.3 Moving 34.

TRANSFERRING COMMAND JURISDICTION OF BOEING FIELD FROM WESTERN DISTRICT TO SPATSC EFFECTIVE 1 MARCH 1945 AND DIRECTING SPATSC TO ESTABLISH THE 4169TH AAF BASE UNIT (AIR BASE) THEREAT. JURISDICTION OF OPERATIONS AT BOEING AIRCRAFT CORPORATION NOT AFFECTED. SIGNED PERSONNEL AND BASE SERVICES DIVISION.

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WF, Area B-1-1-45-600M

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ATSC Form No. 10-508 (3 Jan 45)
(Old ATSC Form No. 43)

PRIORITY

323.3 1/1 O 32

28 FEBRUARY

COORDINATION

DIRECTOR, DMSC

CG, SPATSC

AIR INSPECTOR

CG, WD, ATSC (BOOK TELETYPE)

MGT. CONTROL

CHIEF OF ADMN.

SPECIAL STAFF

CHIEF, ENG. & PROC.

CHIEF, SUPPLY & MAINT. DIVISION.

PERS. & BASE SERV. DIV.

TSPBS

TSPBSI

TSPCP

MAINT. DIV.

TSCHT

SUPPLY DIV.

ENGINEERING DIV.

PROCUREMENT DIV.

READJUST DIV.

OTHER

1500

PAUL S. HLAIR
Colonel, Air Corps
Chief, Base Services Section
3-2358 JF/jl

TSPBS-2-185

TSPBS-2-185.....IN ACCORDANCE WITH TELEPHONE CONVERSATION, GENERAL STACE AND COLONEL MARTIN - LT. COLONEL FRIEDLANDER, THE WESTERN DISTRICT WILL RETAIN CIVILIAN PERSONNEL FUNCTIONS AT BOEING AIRCRAFT AND PERFORM CIVILIAN PERSONNEL SERVICES FOR THE 4169TH AAF BASE UNIT (AIR BASE), BOEING FIELD. THIS DECISION IS BASED ON THE UNDERSTANDING THAT THE WESTERN DISTRICT CAN AND WILL RENDER FULL AND COMPLETE CIVILIAN PERSONNEL SERVICES AT BOEING. SIGNED PERSONNEL AND BASE SERVICES

FEB 28 1945

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WF, Area B-1-1-45-500M

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FROM IGNICO SPATSC SPOKANE WASH 0100187

TO DIR ATSC WRIGHT FLD OHIO

GRNC

SPATSCPERJAWAQP REF TSCONS-2-93 AND TSPBS1-2-182 THIS COMMAND PREPARED TO ASSUME RESPONSIBILITY OF R AND U ACTIVITIES AT BOEING FIELD SEATTLE CONCURRENTLY WITH ASSIGNMENT OF BOEING FIELD TO THE COMMAND JURISDICTION OF THIS HQ AND THE TRANSFER OF PERSONNEL ALLOTMENTS EQUIIMENT SUPPLIES AND FUNDS IERTAINING TO THE OPERATION OF THAT INSTALLATION STOP COLONEL GEORGE S WARREN 07523 AC HAS BEENN MAR 1 DESIGNATED CO BOEING FIELD AND ORDERED TO PROCEED THERETO UNDER AUTHORITY OF TELETYPE TSPBS1-2-182 TO EFFECT PRELIMINARS NEGOTIATION OF ASSUMPTION OF COMMAND STOP ASSUMING ORDERS WILL BE PUBLISHED AS CONTEMPLATED IN ABOVE REFERENCE TELETYPE THIS COMMAND WILL ASSUME JURISDICTION OF BOEING FIELD INCLUDING REPAIRS AND UTILITIES FUNCTI NS ON 5 MARCH 1945

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ATSC Form No. 10-804 (3 Jan 45)
(Old ATSC Form No. 41)

TSARCMC/JRM/bt

COORDINATION
DIRECTOR OR DEP.
AIR INSPECTOR
MGT. CONTROL
CHIEF OF ADMN
SPECIAL STAFF
CHIEF, ENG. & PROC.
CHIEF, SUPPLY & MAINT.
PERS. & BASE SERV. DIV.
MAINT. DIV.
SUPPLY DIV.
ENGINEERING DIV.
PROCUREMENT DIV.
TRANS. DIV.
OTHER

SUBJECT: Cost Analysis for Additional Paving (Field Service & Flight Delivery Buildings)

4th Ind.

Headquarters, AAF, Air Technical Service Command, Wright Field, Dayton, Ohio. 3 March 1945.

To: Commanding General, Army Air Forces, Washington 25, D. C., Attention: Assistant C/AS, M & S, Resources Division.

1. Reference is made to letter from this Headquarters dated 4 September 1944, subject of which is Boeing Field Improvements, Boeing Aircraft Company, Seattle, Washington, BCS Project 3 G-2, in the amount of $67,000. Such project provided for three buildings on Boeing Field, one of which was the flight delivery service building with adjacent parking area.

2. It has been determined that additional parking area is necessary for Army and Boeing employees of such building and adjacent area, and it is herein proposed to relocate the fence immediately adjacent to the new perimeter road and north of the old flight apron in such a manner that no personnel can gain access to the field without passing the guard station now established at the south end of the new flight delivery apron. The remaining unpaved area outside the fence is to be surfaced with 2" of asphaltic concrete on 4" of crushed rock. The Corps of Engineers estimate for such work in the amount of $9,780 is included in the first indorsement and is based on the presumption that a separate contract award will be made for this work.

3. It is anticipated that this minor construction change will be performed concurrently with remainder of work on flight delivery service building and that savings in cost will result thereby.

4. It is, therefore, recommended that the Chief of Engineers be requested to issue a Construction Directive incorporating the above change in construction.

For the Director:

ORVAL R. COOK
Brigadier General, U.S.A.
Chief, Procurement Division

Incls.:
n/c

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Subject: Cost Analysis for Additional Paving Flight Delivery Service Bldg., Boeing Field. (Basic: 16 Jan. 1945 from AAF Representative, Boeing's, to D.E., Seattle.)

619.4(Seattle Airport)6--PADBG-1Blst Ind.

U. S. Engineer Office, Seattle 1, Wash. 26 Jan 1945

To: Army Air Forces Resident Representative, Boeing Aircraft Company, Seattle, 14, Washington.

1. Following is a cost analysis for additional paving, drainage and relocation of fence within the area adjacent to the Flight Delivery Service Bldg., at Boeing Field, as requested in Paragraph 1 of the basic letter dated 16 January 1945.

2. This estimate of cost is based upon the presumption that a separate contract award will be made for this additional work.

ESTIMATE OF COST

Item No.		Quantity	Unit	Price	Amount
1.	Unclassified Excavation	2800	Cu.Yds.	0.90	$2520.00
2.	1-1/2" minus Cr. Stone Surfacing	380	Cu.Yds.	3.40	1292.00
3.	MC-2 Prime Coat	3	Tons	47.00	141.00
4.	Asphalt Cement (120-150 Pen.)	15	Tons	36.00	540.00
5.	Bituminous Mixture in place	325	Tons	7.60	2470.00
6.	Remove and reset existing fence	500	Lin.Ft.	0.50	250.00
7.	Concrete Culvert Pipe 12" Diam.	150	Lin.Ft.	2.80	420.00
8.	Inlet Catch Basin	1	Only	80.00	80.00
			Total		$7713.00
			+ 15% Contingencies		1157.00
			Sub-Total		8870.00
			+ 5% Engr. & Overhead		443.00
			Sub-Total		9313.00
			+ 5% Military Overhead		467.00
			Total Cost to Government		$9780.00

For the District Engineer:

Carl A. Anderson,
Major, Corps of Engineers,
Chief, Engineering Division.

Former Incls. w/d

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ARMY AIR FORCES
AIR TECHNICAL SERVICE COMMAND

DSC:gf

16 January 1945

Subject: Cost Analysis for Additional Paving.

To: District Engineer,
U. S. Army Engineers,
Textile Tower Building,
Seattle, Washington.

Ref: AAFRR ltr dtd 8 July 44, Subj:"Construction Field Service Buildings and Flight Delivery Building, Boeing Field."

1. It is requested that a cost analysis be furnished this office for additional paving as shown on the attached drawing.

2. This office has approval from Western District Headquarters, ATSC, to request subject analysis.

3. Boeing Aircraft Company's request for the additional paving has been thoroughly reviewed and this office is in full accord with the request.

4. Because of the following reasons, it is recommended that the subject area be paved:

a. There is at the present time a critical shortage of of parking space for both Army and Boeing employees in the area immediately adjacent to the proposed area. Furthermore, this area could not be used for any other purpose than parking.

b. A certain expense will be necessary in any event to grade the area to insure adequate drainage.

5. Attention is also invited to the facts stated in letter from Boeing Aircraft Company, copy attached, all of which are concurred in by this office.

For the AAF Resident Representative:

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DUNCAN S. COOMBS,
1st Lt., Air Corps,
Plant Engineering Officer.

(AFR 11-30)

Att:
1 cy BAC ltr dtd 3 Jan 45, #PF-748-EX
1 cy Drawing #TD 17-18

17

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Form No. 10-304 (19 Oct 44)

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VICTORY BUY WAR BONDS

ARMY AIR FORCES
HEADQUARTERS
AIR TECHNICAL SERVICE COMMAND

IN REPLY ADDRESS BOTH COMMUNICATION AND ENVELOPE TO ATTENTION OF FOLLOWING OFFICE SYMBOL:
TSBRCL4C

TSBRCL4C/JRM/bt
WRIGHT FIELD, DAYTON, OHIO
13 March 1945

SUBJECT: Boeing Field Hangars
Boeing Aircraft Company
Seattle, Washington
RCS Project 3 C-4

TO: Commanding General
Army Air Forces
Washington 25, D. C.

MAR 29 ENTD

Attention: Assistant C/AS, M & S
Resources Division

1. Boeing Aircraft Company has submitted through and with the recommendation of the Commanding General, Western District, ATSC, a proposal covering four hangars necessary for the experimental flight testing program at Boeing Field, Seattle, Washington.

2. Estimated Costs:

Building	$ 675,260
Building Installations	217,120
Leasehold Improvements	154,430
Contingencies 15%	157,020
Engineering & Overhead 5%	60,190
Military Overhead 5%	63,200
Total	$ 1,327,220

MAR 29 ENTD

a. The estimated costs of the proposed facilities are based upon a certified cost estimate of the project by the Corps of Engineers. The allocation of funds should not exceed the total estimated cost. There are inclosed four copies of Appendix "A" containing such cost estimate. It is the understanding of this Command that one copy will be forwarded to the Office, Chief of Engineers, for its information and guidance.

3. Plan of Financing: Allocation of funds to the Corps of Engineers.

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Gen. Gen., AAF, Res. Div.
SUBJECT: Boeing Field Hangars
Boeing Aircraft Company
13 March 1945

4. Type of Facilities: The proposed facilities consist of a steel frame hangar of three sections 160' wide x 135' deep each, one section 225' wide x 180' deep and a shop and office space 45' x 480'. This, in effect, will be one building separated by partition walls into four hangars and one section of shop and office space. The overall building size will be approximately 705' x 180' with a clear height under trusses of 45' in the three smaller hangars, 50' in the large hangar and 16' in the shop and office space, the land on which the proposed hangar is to be located is part of Boeing Field Airport and is leased by the Corps of Engineers from King County, Washington. Also included are toilet facilities, electric power, heating by unit heaters which are supplied by two 250 horsepower boilers, compressed air and water services, and automatic sprinklers. Approximately 151,200 square feet of apron pavement will connect with the parking apron previously approved and now under construction. It will be necessary to relocate the present perimeter road.

5. Justification:

a. Due to the rapid expansion of the Army Air Forces and its experimental and production program, aircraft contractors have been called upon to greatly increase the amount of flight testing. As a result, difficulties and deficiencies of the initial design have been determined and the contractor has been able to make production changes quite rapidly, with the result that greatly improved combat aircraft have been obtained. However, in the accomplishment of this work, Boeing Aircraft Company has been handicapped in ground maintenance work due to lack of hangar facilities. The amount of work that could have been accomplished, had adequate hangar facilities been available, would have been materially increased.

b. The proposed hangar building is necessary in order to efficiently perform experimental flight test work as directed by the Army Air Forces on B-17, B-29 and C-97 airplanes. The existing hangar facilities available for this work are inadequate, consisting of one Boeing-owned hangar 90' x 150' and the B-29 revetment hangar which was constructed by Corps of Engineers primarily for the protection of an XB-29 airplane. The existing facilities will house a total of one B-17 airplane and one B-29 airplane. The contractor is presently conducting experimental flight tests on three B-29 airplanes and four B-17 airplanes and it is expected that Boeing will soon be testing at least three XC-97 airplanes. At the present time, much of the experimental ground work is being performed out-of-doors without benefit of heat and necessary utilities services.

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Com. Gen., AAF, Res. Div.
SUBJECT: Boeing Field Hangars
Boeing Aircraft Company
13 March 1945

e. The necessity of the proposed hangars for Boeing experimental flight testing operations for the Army Air Forces is concurred in by the Engineering Division of this Command.

6. Labor: A maximum of 150 or an average of 100 employees will be required for construction of the proposed facilities. No additional production employees will be required. There is inclosed one copy of WPB Form 4A-862 as approved by the Chairman, Area Production Urgency Committee, Seattle, Washington.

7. Utilities: The additional utility requirements for the proposed facilities are small in amount and the present sources of supply are adequate.

8. Special Requirements:

a. It is to be noted that Paragraph 7-d of the Engineering Analysis from the District Engineer dated 9 December 1944, indicates that the use of Celo-Siding in lieu of cement asbestos siding on the steel frame structure would reduce the cost in the amount of $28,550. Inasmuch as the Boeing Aircraft Company concurs in this change in specification, it is the recommendation of this Command that such substitution be made by the Corps of Engineers.

b. It is estimated by the District Engineer that the construction of the proposed facilities can be completed in approximately 180 days after construction is initiated.

9. Certification: It is hereby certified that the requested facilities are a military necessity and represent the minimum requirements essential for the experimental flight test operations to be conducted at Boeing Field, Seattle, Washington.

10. Recommendations: The costs of the proposed facilities as submitted herein have been evaluated by this Command and found to be not excessive. It is, therefore, recommended that approval of all agencies concerned be obtained to this proposal in the amount of $1,327,2[illegible], and that the Chief of Engineers be authorized to issue a construction directive for the acquisition of the herein proposed facilities.

For the Director:

2 Incls.:
Incl 1 - Appendix "A" (in quad.)
Incl 2 - WPB Form 4A-862

ORVAL R. COOK
Brigadier General, U.S.A.
Chief, Procurement Division

Distribution:
Budget & Fiscal Office
Chief, Fac.Office, Proc.Div.
Quality Control Section

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DRE-2

14 March 1945

MEMORANDUM FOR: The Under Secretary of War
Attn: Brig. Gen. E. S. Greenbaum
Room 3E-724, Pentagon Bldg.

190

SUBJECT: Boeing Field
Boeing Aircraft Company
Seattle, Washington
Addition to RCS Project 3 C-2

1. Reference is made to letter from this office dated 26 September 1944, similar subject, in which approval was requested for the construction of three small airport buildings, one of which was the flight delivery service building with adjacent parking area, necessary for the B-29 flight testing program at Boeing Field, Seattle, Washington. This project was approved by the Under Secretary of War under Memorandum of Approval No. 2403, dated 28 September 1944.

2. It has now been determined that additional parking area is necessary in connection with the above-mentioned flight delivery service building, at a total estimated cost of $9,780. Data relative to this proposal are included in letter from the Boeing Aircraft Company, dated 16 January 1945, with indorsements and inclosure, copies of which are attached hereto.

3. This project does not require the approval of the War Production Board, inasmuch as it is for construction totalling less than $10,000.

4. It is recommended that necessary action be taken to obtain the approval of the Under Secretary of War for this proposal and that an authorization in the amount of $9,870 be made from Expediting Production Funds, which will enable the Army Air Forces to allocate this amount to the Corps of Engineers to allow them to proceed with the construction of this additional paving.

5. It is hereby certified that the items of expenditure herein referred to are essential to enable this facility to attain the productive capacity required of it in order to meet the peak requirements of the currently authorized aircraft program.

For the Commanding General, Army Air Forces:

KLH/mfh
AFDRE-2

FREDERICK M. HOPKINS, JR.
Brigadier General, U.S.A.
Chief, Resources Division
AC/AS, Materiel & Services.

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Inclosures (APR 11-30)

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ROUTING AND RECORD SHEET — AIR TECHNICAL SERVICE COMMAND

Use individual office symbols to designate addressees and sequence. Number all comments consecutively. Place initials of dictator and typist, telephone number and location to right of signature. Separate comments by horizontal lines across page.

SUBJECT: Boeing Field, Seattle, Washington

TO: TSCAD — FROM: TSPBS1 — DATE: 17 Mar 45 — COMMENT NO. 1.

1. Reference is made to teletype, SPATSCCG-3-1, 15 March 1945.

2. A number of field trips to Boeing Field, Washington, have been made in the past by representatives of SPATSC and from reports submitted, the following information is presented. The following organizations were functioning on that station prior to 1 March 1945:

a. ATSC

b. WTTC

c. ATC

(1) Seventh Ferrying Group (Ferrying Division)

d. CAA

e. Army Flight Control

f. Army Communications

3. A complexity of activities were existent with the following commands performing the indicated functions:

a. WTTC performing the following functions:

(1) Post Engineer functions: two (2) officers and seventy-five (75) civilians.

(2) Certain interior guard and security duties.

(3) Operation of a portion of base motor pool.

(4) Operation of one dispensary.

(5) Operation of separate civilian personnel section.

In referenced teletype, it is indicated that WTTC declines to recognize jurisdiction of ATSC apparently on the premise that WTTC installation is actually outside the boundaries of Boeing Field. In this respect, a former report indicates that WTTC conducts a B-29 training school utilizing three hangars and several of the barracks located in the field area.

b. ATC and separate Ferrying Division of that command performing the following functions:

(1) Base operation and flight clearance.

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AAFC Form No. [illegible] Oct 43

ROUTING AND RECORD SHEET 27

AIR TECHNICAL SERVICE COMMAND

Use this form for inter-office correspondence within headquarters. Use authorized office symbols to designate addressor and addressees. Place initials of dictator and typist, telephone number and location to right of signature.

Use entire width of sheet, both sides. Number all comments consecutively. Separate comments by horizontal lines across page.

SUBJECT: Boeing Field, Seattle, Washington (Cont'd)

TO: TSCAD Thru: TSPER FROM: TSPBS1 DATE: 17 Mar 45 COMMENT NO. 1

(2) Maintenance of forty-five (45) general and special purpose vehicles.

(3) Operation of separate civilian personnel section.

c. WTTC and ATC combined were performing the following funotions:

(1) Property accounting and receiving.

(2) Certain quartermaster responsibilities.

d. In addition to that indicated above, several commercial agencies were performing guard and security functions. Each of these organizations being interested solely in the security of their respective equipment and facilities.

4. In view of the conditions as expressed above, there existed an extreme duplication of both functions and personnel, and further, because of lack of individual authority, responsibilities were not being adequately discharged. There were four (4) authorities on this field which granted flight clearance, however, there was no central operations office.

5. In view of the above conditions, it was recommended that a base unit be established at Boeing Field, so that responsibilities for facilities, flight operations, and all other functions at this station be discharged under one central command.

a. Boeing Field was assigned to jurisdiction of Materiel Command by 2nd indorsement, Headquarters, AAF, 4 June 1943, and current authority is established in accordance with War Department Circular 29, 24 January 1945. No base commander was assigned this station as the AAF representative discharged responsibilities for production facilities only.

6. Accordingly, on 27 January 1945, Management Control, this Headquarters, submitted to Headquarters, AAF, a request for adjustment of personnel allotment between WTTC, ATC (Ferrying Division), ATC, and ATSC as follows:

	Officers	Enlisted Men	Civilians
WTTC	2		138
ATC (Ferrying Div)			6
ATC		12	48
TOTAL	2	12	192

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7. ATSC authorization was increased by this total. It is assumed that total authorization granted ATSC by Headquarters, AAF, was gained by a reduction of allotment as indicated in table above. In this respect, it is understood that the R&U functions formerly performed by WTTC involved the transfer of allotment of two (2) officers and seventy-five (75) civilians and that the additional allotment of sixty-three (63) civilians from WTTC was derived because of the base functions which were performed by WTTC. Upon receipt of this allotment authorization from Headquarters, AAF, this Headquarters issued lettered orders to SPATSC directing the transfer of Boeing Field from Western District

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AAF Form No. 10-3 (17 Oct 44)

ROUTING AND RECORD SHEET — AIR TECHNICAL SERVICE COMMAND

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Use entire width of sheet, both sides. Number all comments consecutively. Separate comments by horizontal lines across page.

SUBJECT: Boeing Field, Seattle, Washington (Cont'd)

TO: TSCAD — FROM: TSPBS1 — DATE: 17 Mar 45 — COMMENT NO. 1

Thru: TSPER

jurisdiction to SPATSC jurisdiction, effective 1 March 1945, and concurrently organizing the 4169th AAF Base Unit (Air Base). Command jurisdiction of the Boeing Aircraft Corporation facilities at Boeing Field was not effected by this transfer. Direct communication was authorized SPATSC with the interested commands to accomplish this action.

3. In view that it is indicated that WTTC is not completely located on Boeing Field yet certain of their activities are conducted on the station, it is recommended that Headquarters, AAF, be requested clarification as to the extent of performance of base service activities to be assumed by the Commanding Officer, Boeing Field (4169th AAF Base Unit) both in respect to WTTC and ATC activities, and upon such determination by Headquarters, AAF, request that a positive directive be issued to the commands concerned accordingly.

Paul S. Blair

PAUL S. BLAIR — CHC/J1
Colonel, Air Corps — 3-2358
Chief, Base Services Section — Bldg 125
Personnel and Base Services Division — Post 19B

TO: TSPER — FROM: TSCAD — DATE: 21 Mar 45 — 2.

Attn: Col. Blair

1. Reply to teletype SPATSCCG-3-1, has been dispatched this date as per the attached copy. As you will note, the reply is basically the one prepared by Colonel Friedlander and coordinated by you in your office on 20 March 1945. Changes in final copy released are as underlined.

2. Also, in accordance with your request, you will find file from your office.

EJM:hw
5-0147

T. A. SIMS
Colonel, Air Corps
Chief of Administration

Incl: File
Teletype (carbon)

ORIG FILE COPIES TO:	INITIALS
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PRIORITY 3233 4/4 28

21 March 1945

KNUDSEN ATSC
CG, SPATSC
ATTN: General Ignico

B. E. MEYERS
Major General, USA
3-2358 JF/jl

TSPBS1-3-170 REFERENCE SPATSCCG-3-1. LETTER, HEADQUARTERS, ATSC, DATED 1 MARCH TRANSFERRED COMBAT JURISDICTION BOEING FIELD TO YOUR COMMAND, AND INSTRUCTED YOU TO TRANSFER APPROPRIATE FUNCTIONS, PERSONNEL, EQUIPMENT, FACILITIES, AND RECORDS PERTINENT TO THE OPERATIONS OF THIS INSTALLATION FROM VARIOUS USING ACTIVITIES. THIS ACTION WAS TAKEN AS RESULT OF REPORT OF VISIT TO BOEING FIELD DATED 11 DECEMBER 1944 SIGNED BY LT. COLONEL PAINTER, YOUR HEADQUARTERS, PARAGRAPH 3 OF WHICH RECOMMENDS THAT WTTC BE ALLOWED TO CONTINUE AS AT PRESENT. UNDER THESE CIRCUMSTANCES ACCEPT AT THIS TIME REPAIR AND UTILITY FUNCTIONS FROM WTTC TOGETHER WITH RELATED BUDGET AND FISCAL MATTERS, AND ALLOW WTTC TO CONTINUE THE OTHER FUNCTIONS THAT THEY ARE NOW CONDUCTING UNTIL THE MATTER CAN BE FURTHER CLARIFIED IN WASHINGTON. FOR YOUR INFORMATION, MANAGEMENT CONTROL HEADQUARTERS, AAF, HAS INDICATED THAT CONSIDERATION IS BEING GIVEN BY HEADQUARTERS, AAF, TO ELIMINATE DUPLICATION AT BOEING BY POSSIBLE TRANSFER OF ADDITIONAL FUNCTIONS TO YOUR BASE UNIT AT A LATER DATE.

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Facilities (Barracks) 1(j)

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A.S.C. — 3 — A.G.O.
ACTION INFOR INFOR

BUY

ACTION COPY

EXECUTIVE OFFICE RESOURCES CONTROL SECTION

EX

WB102

ORIG: TSBRC14
cc TSBRC1A

17 15

MAR 26 1945 AM

URD V WART WR16

FROM ARNOLD WASHINGTON DC 2416562

Boeing

TO HQ AAF AIR TECHNICAL SERV COD WRIGHTFLD DAYTON OHIO ATTN LT COL J J BOWLINGRESOURCES CONTROL SECTION PROCUREMENTDIV TSBRC BRIG GEN USA

3G-2

GRNC

AFDRE-2 7248 PD THE OFFICE UNDER SECRETARY OF WAR IS RELUCTANT TO APPROVE ADDITIONAL PARKING AREAS RECOMMENDED BY FOURTH INDORSEMENT DATED 3 MARCH 1945 FROM YOUR OFFICE ADDITIONAL INFORMATION JUSTIFYING THE PROPOSED PARKING AREAS IS REQUESTED IT IS ALSO DSIRED THAT A DRAWING BE SUBMITTD TO THIS OFFICE SHOWING THE EXISTING PARKING AREAS WHICHMIGT BE AVAILABLE TO THE TEE FLIGH SERVICE BUILDINGS

1709Z

AFDRE-2 7248 3 1945

Holding WD Reply 3/22.

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28 March 1945

MEMORANDUM FOR: The Under Secretary of War
Attn: Brigadier General E. S. Greenbaum
Room 3E-724, Pentagon Building

SUBJECT: Additional Funds
Boeing Aircraft Company
Seattle, Washington
MCC Project # C-4

1. Reference is made to Boeing Aircraft Company, Seattle, Washington, for which funds in the amount of $70,780 have been approved by the Under Secretary of War.

2. It has been determined that additional funds in the amount of $1,327,220 will be required for this proposal. Data relative to this increased cost are contained in Wright Field letter, dated 13 March 1945, copies of which are attached.

3. This project was approved by the Construction Requirements Committee, War Production Board, on 24 March 1945.

4. It is recommended that the increased cost of this project be approved, and that funds in the amount of $1,327,220 be apportioned from Expediting Production Funds, which will enable this office to make the necessary allocation to the Corps of Engineers.

For the Commanding General, Army Air Forces:

FREDERICK M. HOPKINS, JR.
Brigadier General, U.S.A.
Chief, Resources Division
AC/AS, Material & Services

Incl.
WF ltr. dtd. 3/13/45
(2 cys.)

EMH/mnl
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MAR 2 1 1948

[illegible]

TO: [illegible]
Headquarters of the [illegible] Air Forces
Materiel Division
[illegible]

SUBJECT: [illegible]

In accordance with the authority granted by the Secretary of the Air Force, approval is hereby given to the subject modification in the amount of $1,587,880.00 covering construction of steel hangars, three sections 150' x 175', and one section 105' x 150' with shop and office space 45' x 400' for use in experimental flight tests at Howard Field.

In order to avoid delay and duplication of effort, a signed copy of this memorandum must be included in the case folder as part of the permanent record.

[illegible]

BY: _____

Distribution:

Orig. & 1 cc Orig. Gen'l. F. M. Hopkins, Jr.
2 cc Project Review Section (Aircraft) (Signed)
cc Maj. E. F. Angerson
2 cc Files.

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Basic: WD ltr dtd 28 Mar 45, Ref. TJC/mhe ADPRS, Subj: Additional Paving for Field Service and Flight Delivery Buildings.

1st Ind. DSC:gf

Office, AAF Plant Representative, Boeing Aircraft Company, Seattle, Washington, 3 April 1945.

To: Commanding General, Western District, Air Technical Service Command, 3636 Beverly Boulevard, Los Angeles, California. Attn: Chief, Resources Section, Production Division, Major F. C. Whiting.

1. In accordance with request contained in basic communication, the following information is submitted:

a. There are no existing parking areas adjacent to the Flight Delivery Service Building that could be made available for outstanding requirements.

b. The attached drawing shows the proximity of the Army Office and the limited parking area now available and occupied by the Army Office.

c. The revised surfacing plan (copy attached) will accommodate approximately ninety automobiles. Of this the Army will need seventy-five spaces and Boeing Aircraft will need approximately one hundred twenty-five spaces to accommodate Army personnel in the Army Office and Army and Boeing Aircraft personnel in the Flight Delivery Service Building. It is therefore obvious that more parking space is needed than presently available, including the proposed parking area.

2. Attention is also invited to the fact that a much larger number of personnel are required in Flight Operations on the B-29 airplane than there were on the B-17, thereby increasing the number of personnel in this area.

3. It should be noted that it is absolutely essential that the requested fence location be accomplisned for plant protection reasons. Both the Army Intelligence Officer and the Boeing Aircraft Company concur in this opinion.

4. Early approval of this project is requested inasmuch as the Flight Delivery Service Building is now ready for occupancy and full scale operations.

For the AAF Plant Representative:

APR 3 1945 DISTRICT

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DUNCAN S. COOMBS,
1st Lt., Air Corps,
Plant Engineering Officer.

Att:
Dwg. TD 17-18 (5)
Cost Analysis (5)

195.

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9 April 1945
TSUROaC/JHW/bt

HQ AAF ATSC (TSHRC4C)

WRIGHT FIELD, DAYTON, OHIO

COMMANDING GENERAL
WESTERN DISTRICT, ATSC
3636 BEVERLY BOULEVARD
LOS ANGELES 54, CALIFORNIA
ATTENTION: REQUIRMENTS SECTION
MAJOR F. C. WHITING

G. H. MOFIARTY
Colonel, Air Corps
Chief, Resources Control Section
Procurement Division

TSHRC4C-4-68 JHW . . . . . THE ABOVE LETTER HAS BEEN AUTHORIZED BY THE UNDER SECRETARY OF WAR FOR BOEING AIRCRAFT COMPANY, SEATTLE, WASHINGTON, ROS PROJECT 3 G-4, IN THE AMOUNT OF $1,327,220 DATED 6 APRIL 1945. THIS PROJECT IS TO BE FINANCED THROUGH THE ORDERS OF PROGINEERS.

Copy to:
AAF Plant Representative

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COMMUNICATIONS CENTER
WRIGHT FIELD, OHIO

1945 APR 04

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WB2

WRD V WARJ WB624

FROM ARNOLD WASHINGTON DC 1021402

TO CG AAF TNG COND FTW

INFO DIR ATSC WRIGHTFLD OHIO

CRUC

AFDMC 1794 PD RE BASIC LETTER THREE FEBRUARY ONE NINE FOUR FIVE SUBJECT COMMANDING OFFICER FOR BOEINGFLD SEATTLE WASHINGTON CNA IT IS THE POLICY OF THIS HEADQUARTERS FOR BASE COMMANDER TO PERFORM ADMINISTRATIVE PERSONNEL SUPPLY AND MAINTENANCE FUNCTIONS PD THE FOUR ONE SIX NINE BASE UNIT BOEINGFLD WILL DISCHARGE RESPONSIBILITIES FOR THE BASE AND IMMEDIATE AREA ADJACENT THERETO INCLUDING THOSE PRESCRIBED IN PARAGRAPH TWO BASY OF BASIC LETTER PD THE THREE SEVEN ONE ONE BASE UNIT WILL NOT PERFORM SUCH HOUSEKEEPING AND ADMINISTRATIVE SERVICES FROM GATES

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AFDMC 1794

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ARMY SERVICE FORCES
Office of the Chief of Engineers
Washington

Dir. Cons. No. A 23253
Dist. Seq. No. PI-Seattle-A 515
Job No. Boeing A(8-2)

CE SPEMT

3 May 1945

SUBJECT: Directive Authorizing Additional Paving - Boeing Field, Seattle, Washington

TO: The Division Engineer
Pacific Division
Corps of Engineers, USA
351 California Street
SAN FRANCISCO, CALIFORNIA

3G-2

1. Construction is authorized of the project described below.

2. a. Job location: Boeing Field, Seattle, Washington; supervision by the District Engineer, Seattle, Washington.

b. Reference: Letter, Headquarters, Army Air Forces, dated 1 May 1945, subject: Additional Paving, Boeing Aircraft Company, Seattle, Washington, requesting the construction herein authorized and 1st indorsement of the District Engineer, Seattle, dated 26 January 1945, subject: Cost Analysis for Additional Paving, Flight Delivery Service Building, Boeing Field.

c. Completion date will be determined by the Division Engineer.

3. Construction authorized:

a. Automobile Parking Area at Flight Delivery Service Building at location shown on inclosed Drawing No. TD-17-18.

b. Removal and reerection of existing fence - 500 lineal feet, approximately.

c. Minimum essential drainage.

4. Engineering Instructions:

a. Type of pavement for parking area will be determined by the District Engineer and will be the minimum consistent with essential service.

b. Provisions of Circular Letter No. 3265 (War Planning No. 26), 29 August 1944, subject: "Conservation of Critical Materials for Construction Work", as modified by Circular Letter No. 3541, will be complied with in the accomplishment of the construction authorized herein.

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Dir. Cons. No. [illegible]3253
Dist. Seq. No. PD-Seattle-[illegible] 818
Job No. Boeing A(8-2)

CE SPEMT
TO: Pacific Division Engineer

5. No additional land is required.

6. This project will not require review on V-E Day.

7. For the construction authorized, an allotment of funds in the amount of $9,780 is being made from the appropriation "Expediting Production of Equipment and Supplies for National Defense, 1940-45". Procurement authority conveying this allotment is being made to the District Engineer, Seattle, Washington.

BY ORDER OF THE CHIEF OF ENGINEERS:

/s/ J. A. Downs

Reference:
Dwg. No. TD-17-18

J. A. DOWNS
Major, Corps of Engineers
Chief, Western Sector Operations Branch
Command Construction Division

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CC: Hq, AAF, Resources Divn.

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SAVE

IN REPLY REFER TO:

HEADQUARTERS, ARMY AIR FORCES
WASHINGTON

5 May 1945

RECEIVED MAY 8 1945

SUBJECT: Directive Authorizing Additional Paving
Boeing Field, Seattle, Washington

TO: Headquarters
AAF, Air Technical Service Command
Wright Field, Dayton, Ohio
Attention: Chief, Procurement Division, TSBRC

Attached correspondence is forwarded for your information and files.

By command of General ARNOLD:

RCS 3G-2

Miller M. Gray Maj A.C.
FREDERICK M. HOPKINS, Jr.
Brigadier General, U.S.A.
Chief, Resources Division
AC/AS, Materiel & Services

Incls:
Ltr frm ASF
dtd 5/3/45

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ADDRESS REPLY TO: COMMANDING GENERAL, ARMY AIR FORCES, WASHINGTON 25, D. C.

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HEADQUARTERS, ARMY AIR FORCES
WASHINGTON

20-96
2 Pages
Page 1

AAF LETTER 20-96 26 May 1945

SUBJECT: Base Functions of Air Transport Command and Air Technical Service Command at Boeing Field, Seattle, Washington.

TO: Director, Air Technical Service Command
Commanding General, Air Transport Command

1. The purpose of this Letter is to clarify responsibilities of Air Technical Service Command and of the Air Transport Command at Boeing Field. It is understood that representatives of the two commands have agreed to the assignment of responsibilities as stated herein.

2. The Air Technical Service Command will perform all base functions, which will include the following, though this list is not presented as being a complete list of all base functions.

a. Budget and fiscal - funds for the payment of Air Transport Command civilians will be furnished by Air Transport Command.

b. Civilian personnel administration - Air Technical Service Command will be responsible for procurement and administration of all civilian personnel whether the authorization for such civilians is vested in Air Technical Service Command or in Air Transport Command.

c. Air supply (including local issue).

d. Signal (including teletype operation at priorities and traffic terminal).

e. Motor pool operation and motor maintenance.

3. The Air Transport Command will be responsible for the following functions:

a. Command and administration of Air Transport Command personnel and activities, subject to base regulations.

b. Operations liaison for clearance and flight control. (Air Technical Service Command will maintain base operations section).

c. First and second echelon aircraft maintenance of Air Transport Command aircraft. (Air Technical Service Command will perform fuel servicing and inert functions).

d. Priorities and Traffic Air Technical Service Command will assist in air cargo warehousing during periods of heavy volume, to extent of available personnel.)

Incl #1

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e. Transient services.

f. Messing and billeting of Air Transport Command permanent party and transient personnel.

g. Port of aerial embarkation.

h. The Air Transport Command will retain its authorization for its military personnel administration, but persons engaged in this function will be incorporated in the Air Technical Service Command personnel section.

4. Appropriate transfer of personnel authorizations have been made in connection with the transfer of responsibilities. Arrangements will be made locally for the actual transfer of individuals.

BY COMMAND OF GENERAL ARNOLD:

IRA C. EAKER
Lieutenant General, United States Army Deputy Commander, Army Air Forces

REPRODUCED, Hq, 4169th AAF Base Unit, Boeing Fld.
25 June 1946.

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20-96A

HEADQUARTERS, ARMY AIR FORCES
WASHINGTON

AMENDMENT

26 June 45

AAF LETTER 20-96A

SUBJECT: Base Functions of Air Transport Command and Air Technical Service Command at Boeing Field, Seattle, Washington

TO: Director, Air Technical Service Command
Commanding General, Air Transport Command

AAF Letter 20-96, 26 May 1945, is amended as follows:

* * * * * * *

2. The Air Technical Service Command will perform all base functions, which will include the following, though this list is not presented as being a complete list of all base functions:

a. Budget and fiscal - funds for the payment of Air Transport Command civilians will be furnished by Air Technical Service Command in accordance with the provisions of paragraph 4, AAF Letter 40-35A 7 May 1945.

* * * * * * *

BY COMMAND OF GENERAL ARNOLD:

IRA C. EAKER
Lieutenant General, United States Army
Deputy Commander, Army Air Forces

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26 June 46

Incl #2

5-10528

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20-96B

HEADQUARTERS, ARMY AIR FORCES
WASHINGTON

4 December 1945

AMENDMENT

AAF LETTER 20-96B

SUBJECT: Base Functions of Air Transport Command and Air Technical Service Command at Boeing Field, Seattle, Washington

TO: Commanding General, Air Technical Service Command
Commanding General, Air Transport Command

AAF Letter 20-96, 26 May 1945, is amended as follows:

* * * * *

3. The Air Transport Command will be responsible for the following functions:

* * * * *

h. Delete.

* * * * *

BY COMMAND OF GENERAL ARNOLD:

IRA C. EAKER
Lieutenant General, United States Army
Deputy Commander, Army Air Forces

OFFICIAL:

H. G. CULTON
Colonel, Air Corps
Air Adjutant General

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26 June 1946

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Incl #1

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Orig. Boeing-2
Fwd Bi
OAC/AS-4

ADDRESS REPLY TO
CHIEF OF ENGINEERS, U. S. ARMY
WASHINGTON, D. C.

REFER TO FILE NO. CE

WAR DEPARTMENT

OFFICE OF THE CHIEF OF ENGINEERS
WASHINGTON

SPEKT

31 May 1945

SUBJECT: Experimental Flight Test Building, Boeing Aircraft Company, Seattle, Washington

TO: The Commanding General, Army Air Forces
ATTENTION: Col. J. G. Vaughan, Room 5 C 880, The Pentagon

1. Reference is made to letter of your office dated 5 April 1945, subject: "Boeing Aircraft Company, Seattle, Washington, RCS Project 30-4" wherein it was requested that an Experimental Flight Test building containing four (4) hangars be constructed.

200

2. For your information there is tabulated below breakdown of estimated cost of the subject building based on low bid of eight (8) bids received by the District Engineer, Seattle:

Construction	$1,283,181
Architect Engineer Cost	67,500
Gov't Furnished Materials (Purchased)	1,820
Contingencies	67,625
District & Division Overhead 10%	142,013
Total Estimated Cost	$1,562,139

$1 1/2 M.
Award To Burgess

3. Funds in the amount of $1,327,220 were previously provided for the construction involved. It is requested that additional funds in the amount of $234,919 be furnished this office at the earliest practicable date. Awarding of contract is being held by the District Engineer, Seattle, pending authorization and allotment of the additional funds required.

FOR THE CHIEF OF ENGINEERS:

J. A. Downs. Actg

J. A. DOWNS
Major, Corps of Engineers
Chief, Western Sector Operations Branch
Command Construction Division

FOR VICTORY BUY UNITED STATES WAR BONDS AND STAMPS

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JDA

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2 June 1945

MEMORANDUM FOR: Office, Under Secretary of War
Attention: Major F. H. Otto
Room 3D-718, Pentagon

SUBJECT: Experimental Flight Test Building
Boeing Aircraft Company
Seattle, Washington

RCS 36-4

1. Reference is made to memorandum from this office dated 28 March 1945, similar subject, concerning the release of Expediting Production Funds in the amount of $1,327,220 for the construction of an Experimental Flight Test Building.

2. Attention is invited to the attached copy of a letter from the Office, Chief of Engineers dated 31 May 1945 indicating that additional funds in the amount of $234,919 will be required to complete the subject proposal.

3. It is therefore recommended that the additional cost of $234,919 be approved and that funds in the same amount be apportioned from Expediting Production Funds which will enable this office to make the necessary allocation to the Office, Chief of Engineers.

4. It is hereby certified that the items of expenditure herein referred to are essential to enable this facility to attain the productive capacity required of it in order to meet the peak requirements of the currently authorized aircraft program.

5. The Construction Requirements Committee, War Production Board approval is not required as this request covers overruns only.

For the Commanding General, Army Air Forces:

FREDERICK M. HOPKINS, JR.
Brigadier General, U.S.A.
Chief, Resources Division
AC/AS, Materiel & Services

Incls:
Cy ltr dtd 5/31/45
fr C. of E.

Maj.K.L.Hartung/cm/3750
AFDRE-2

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DRE

ADDRESS REPLY TO
CHIEF OF ENGINEERS, U. S. ARMY
WASHINGTON, D. C.

REFER TO FILE NO. [illegible]

WAR DEPARTMENT
OFFICE OF THE CHIEF OF ENGINEERS
WASHINGTON

SPEXT

19 June 1945

SUBJECT: Experimental Flight Test Building, Boeing Aircraft Company, Seattle, Washington

TO: The Commanding General, Army Air Forces
ATTENTION: Brigadier General Frederick M. Hopkins, Jr.
Room 5 C 888, The Pentagon

1. Reference is made to recent telephone conversation of your office concerning the item of District and Division overhead as included in our letter dated 31 May 1945, subject same as above. The District and Division overhead charge of 10% is high in view of the item included for Architect Engineer services; therefore, this office desires to reduce this figure to 6% on this particular job.

2. It is understood that the Office of the Under Secretary of War has referred to a curve for computing overhead charges furnished by this office. For your information, a memorandum was furnished the Office of the Under Secretary of War, dated 22 December 1944, subject: "Curve of Estimated Total Overhead and Engineering for Construction of Munitions Plants", on which was shown the percentage amount to be added to the estimated net construction cost to represent the estimated total overhead and engineering costs for the construction of munitions plants. This curve applies only to Chemical Warfare Service and Ordnance manufacturing plants and does not apply to industrial construction for the Army Air Forces. It so happens that on a one million job, the total estimated percentage for overhead and engineering from the curve referred to above equals 11.15%. On the job in question, Architect Engineer cost is $67,500 and Division and District overhead computed at 6% would be $85,208, or a total of 10.14% of the entire job cost for overhead and engineering charges.

3. In all future requests for funds in connection with Army Air Forces Industrial Facilities, the District and Division overhead and engineering percentage will be based on actual costs experienced by the Corps of Engineers and may vary from a low of 7.5% up to 15%, depending upon the nature of the work and District that supervises the job.

4. Contingencies item in the amount of $67,625 included in estimate is based on 5% of the construction cost and Architect Engineer cost. Contingencies item was included in estimate to cover unforeseen difficulties in construction which may normally be expected. Although construction contracts have been awarded, it may be anticipated that the entire amount of the contingencies item will be utilized in expediting the construction. In this respect, your Headquarters has advised informally that a completion

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CE SUBJECT
Ltr to CG, AAF Cont'd 19 June 1945

...ate of 28 February 1946 for the subject construction is not adequate for the needs of the Army Air Forces." As previously advised, this completion date is contingent upon the inability of placing the steel required in the rolling schedule for this quarter. Expediting of this job as requested by your Headquarters consequently will involve additional charges over and above the contract award price.

5. Based on revised Division and District overhead costs, the new estimated cost of the project is $1,508,884. Funds were previously transferred to this office for the work in the amount of $1,327,2[illegible]0. Accordingly, it is requested that additional funds in the amount of $178,114 be provided at the earliest practicable date.

FOR THE CHIEF OF ENGINEERS:

J. S. BRAGDON
Brigadier General, U. S. A.
Director of Military Construction

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22 June 1945

MEMORANDUM FOR: Office, Under Secretary of War
Attention: Brig. Gen. L.S. Greenbaum
Room 3E-724, Pentagon Bldg.

SUBJECT: Experimental Flight Test Building
Boeing Aircraft Company
Seattle, Washington

1. Reference is made to memorandum from this office dated 7 June 1945, subject - Experimental Flight Test Building, Boeing Aircraft Company, Seattle, Washington, in which it was requested that $234,919 be apportioned from Expediting Production Funds. After re-examination of the project by the Office, Chief of Engineers as requested by the Chief, Contracts & Facilities Division, Office, Under Secretary of War, it has been determined that additional funds in the amount of $179,114 be approved instead of $234,919 as previously requested.

2. Attention is invited to the attached copy of letter dated 19 June 1945 from the Office, Chief of Engineers indicating that additional funds in the amount of $178,114 must be provided at the earliest practical date.

3. It is therefore recommended that the additional cost of $178,114 be approved and that funds in the same amount be apportioned from Expediting Production Funds which will enable this office to make the necessary allocation to the Office, Chief of Engineers.

4. It is hereby certified that the items of expenditure herein referred to are essential to enable this facility to attain the productive capacity required of it in order to meet the peak requirements of the currently authorized aircraft program.

5. The approval of the Construction Requirements Committee, War Production Board is not required as this request covers overruns only.

For the Commanding General, Army Air Forces:

FREDERICK A. HOPKINS, JR.
Brigadier General, U.S.A.
Chief, Resources Division
AC/AS, Materiel & Services

Maj.WB/May/em/72517
AFDRE-2

Incl
Cy ltr dtd 6/19/45
fr C.of E. to AAF

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SAVE

HEADQUARTERS, ARMY SERVICE FORCES
WASHINGTON 25, D. C.

SPTPS

VICTORY BUY WAR BONDS

28 June 1945

MEMORANDUM FOR THE ASSISTANT CHIEF OF AIR STAFF, MATERIEL AND SERVICES, ARMY AIR FORCES:
ATTENTION: Brig. General F. M. Hopkins, Jr

SUBJECT: Boeing Aircraft Company
Seattle, Washington

1. Additional funds required to cover overruns for project of the Boeing Aircraft Company at Seattle, Washington for the construction of an Experimental Flight Test Building, have been approved by all necessary agencies, including the approval of the Under Secretary of War for the allocation of funds on 27 June 1945.

2. The increased cost is $178,114.

FOR THE COMMANDING GENERAL:

W. M. DAY
Lt Colonel, AUS
Chief, Facilities Branch
Production Division

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KING COUNTY AIRPORT
BOEING FIELD
SEATTLE, 8

September 17, 1945

Senator Warren G. Magnuson,
Senate Office Building
Washington, D. C.

Dear Senator Magnuson:

The United States Army leased the King County Airport (Boeing Field) in 1943 for the duration and six months. During Army occupancy, extensive improvements were made at the field, which we expect will revert to the County as compensation for the use of the field.

As the Boeing contract has terminated, for all practical purposes, there is no justification for further excluding the public from using the field. Could we therefore request your assistance in petitioning the Air Corps to release the field to King County? The Army Transport Command will doubtless desire to continue operations here for an indefinite time and the Army could retain essential facilities needed for A. T. C. purposes, together with landing privileges.

A further word to emphasize the need for immediate action along these lines. Companies and individuals are daily requesting space at the field for industrial, commercial, sales, service and general flying operations. Several are anxious to build suitable structures for new enterprises at the field. Unless we can assure them that they can locate here in the reasonably near future, they will locate elsewhere, thus depriving our community of the enterprise and our residents of gainful employment and generally retarding development of aviation.

Sincerely yours,

KING COUNTY AIRPORT

/s/ Ernest R. Gluck

ERNEST R. GLUCK
Airport Supervisor

ERG/fc

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KING COUNTY AIRPORT
Boeing Field
Seattle, 8

September 17, 1945

Hon. Hugh DeLacy,
House of Representatives,
Washington, D. C.

Dear Hugh:

The United States Army leased the King County Airport (Boeing Field) in 1943 for the duration and six months. During Army occupancy extensive improvements were made at the field, which we expect will revert to the County as compensation for the use of the field.

As the Boeing contract has terminated, for all practical purposes, there is no justification for further excluding the public from using the field. Could we therefore request your assistance in petitioning the Air Corps to release the field to King County? The Army Transport Command will doubtless desire to continue operations here for an indefinite time and the Army could retain essential facilities needed for A. T. C. purposes, together with landing privileges.

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Sincerely yours,

KING COUNTY AIRPORT

/s/ Ernest R. Cluck

ERNEST R. CLUCK,
Airport Supervisor

ERC/fc

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RECONSTRUCTION FINANCE CORPORATION
Washington 25, D. C.

20 September 1946 [1945]

Commanding General
Headquarters, Army Service Forces
War Department
Washington, C. C.

Attention: Lt. Col. Stoughton Walker
Storage Division

Re: RFC Warehousing Program
Facilities for Trainees
Boeing Field
Seattle, Washington

Dear Sir:

Information received by this Corporation indicates that Facilities for Trainees at Boeing Field, Seattle, Washington, will be discontinued on or about October 12, 1945, and that such property will be available for the establishment and operation of a surplus property disposal center.

The property in which this Corporation is interested for disposal center purposes consists of the following buildings:

Administrative Buildings	(2)	43,200 sq. ft.
Hangar Building No. 1		9,600 " "
Hangar Building No. 2		9,600 " "
Hangar Building No. 3		17,600 " "
Total		80,000 " "

In addition to the structures, this Corporation is interested in obtaining the use of the three concrete aprons leading to the three hangars which would provide for approximately 120,000 square feet of open area suitable for outside storage.

It is requested that a license to use the subject property for a period of ten years be granted to the Reconstruction Finance Corporation, and it is suggested that the instrument permitting such use follow the form of license instrument used in the case of the Milwaukee Ordnance Plant, Military Reservation, Wisconsin, RFC Warehouse Chicago No. 12.

In order that the establishment of the necessary warehousing facilities may not be delayed unduly it is requested that this corporation be granted the immediate right to use and occupy the space referred to above pending the preparation and execution of a license agreement to be entered into between the Secretary of War and this Corporation covering the land required.

Very truly yours,

/s/ A. Hobson, Secretary

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Mr J W C cy/amc/va/2482 4530
AFDIN-2B/2 wrtn 2 Oct 45

FILED
MAY 28

OCT 1945

Honorable Hugh De Lacy
House of Representatives
Washington, D. C.

Dear Mr. De Lacy:

Your letter of September 4, 1945, inclosing a communication received by your office from Ernest R. Gluck, Airport Supervisor of King County Airport (Boeing Field) Seattle, Washington, concerning release of that airfield, has been referred to this office for reply.

King County Airport (Boeing Field) is presently being used for activities of the Army Air Forces. No firm determination can be made at this time of plans for the peacetime Army Air Forces. Such determination will depend upon future decisions of Congress as to the size of the air forces. However, it is believed that by October 15, 1945, a list of airfields surplus to peacetime requirements of the Army Air Forces will be released for publication by the War Department.

In the event that King County Airport is declared surplus to the requirements of the War Department, the Surplus Property Act of 1944 (Public Law 457, 78 Congress) will apply to that portion of the property owned by the War Department. The portion of the property held by the War Department on lease will be disposed of by the Division Engineer, Pacific Division, San Francisco, California.

I regret that my reply cannot be more conclusive at this time. I trust, however, that the foregoing will serve your purpose.

Sincerely yours,

1 Incl
Ltr fr E. R. Gluck
Sep 17, 1945

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OFFICE SYMBOL	1. AFDIN-2B/2	2. AFCSS	3. AFAAG
GRADE AND SURNAME OF COORDINATING OFFICER			

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HUGH DE LACY
First District of Washington
136 House Office Building
HOME ADDRESS:
Seattle, Washington
H. RICHARD SELLEN
SECRETARY

17

MEMBER:
COMMITTEE ON NAVAL AFFAIRS

Congress of the United States
House of Representatives
Washington, D. C.

September 24, 1945

Commanding General
Army Air Forces
War Department
Washington 25, D. C.

Dear Sir:

May I call your attention to the enclosed communication from Mr. Ernest R. Cluck, supervisor of the King County Airport, Boeing Field, Seattle, Washington.

Any information you can give me as to the Army's plans for release of this airport to the county again will be greatly appreciated.

Sincerely yours,

HUGH DE LACY, M. C.

hd:br
Enclosure

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Oct 45/jw 9 Oct 1945
AFDIN-2A/5 Bldgs & Grounds
Mr. Young/4444

WDSS, L&LD

INFORMATION

Boeing Field, Washington

1. Reference is made to the attached memorandum received by your office from Senator Magnuson dated 26 September 1945, concerning the possible use of Boeing Field, Washington, by civilian interests.

2. The Army Air Forces is currently utilizing Boeing Field in connection with production and modification work. This activity, however, does not require the full utilization of the installation. It is, therefore, believed that favorable consideration could be given a request of the county authorities for joint use of the station pending termination of Army Air Forces activities in order that the county will not lose their commercial interests.

3. At such time as it is determined that this facility is no longer required by the War Department the Division Engineer, Pacific Division, San Francisco, California, will be responsible for disposition of the leased property and facilities located thereon. The Surplus Property Board, New Municipal Building, Fourth and Indiana Avenue, N. W., Washington, D. C., will be responsible for the disposition of Government-owned property and facilities located on such property.

4. It is suggested that the county authorities be advised to contact the Commanding Officer of Boeing Field and make their desires known. The Commanding Officer will then process the request through normal channels for consideration.

FOR THE COMMANDING GENERAL:

/s/ Robert Kauch

ROBERT KAUCH, Brig. Gen., U.S.A.
Chief, Air Installations Division
Assistant Chief of Air Staff - 4

1 Incl
Memo. fr Sen. Manguson
to Brig. Gen. McIntyre
dtd 26 Sep 45, w/1 Incl.

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UNITED STATES SENATE

September 26, 1945

Respectfully referred to

Brigadier General J. D. McIntyre
WAR DEPARTMENT
Washington, D. C.

With thanks for such favorable consideration as the communication herewith submitted warrants, and for a report thereon, to accompany return of enclosure.

By direction of

/s/ Warren G. Magnuson

WARREN G. MAGNUSON, U.S.S.

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ATSC Form No. 10-506 (3 Jan 45)
(Old ATSC Form No. 43)

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REWRITE
18

COORDINATION
DIRECTOR OR DEP.
AIR INSPECTOR
MGT. CONTROL
CHIEF OF ADMN.
SPECIAL STAFF
CHIEF, ENG. & PROC.
CHIEF, SUPPLY & MAINT.
PERS. & BASE SERV. DIV.
TSPRS Blair
TSPBA Cash
TSPBA1 Morrill
TSPBA1 Chas E Baker
MAINT. DIV.
SUPPLY DIV.
ENGINEERING DIV.
PROCUREMENT DIV. n/e
READJUST DIV.
OTHER

Project for Combining All Units of Base Hq Group and ATC into Area 2, Boeing Field

Hand carried

OCT 15 1945

To: TSCOM5 From: TSPBA Date: 15 October 1945 Comment No. 2

It is contemplated that a portion of the government owned facilities at Boeing Field will be retained in the interim and post war period for servicing transient military aircraft in that area. The proposed consolidation of activities into government owned facilities is desirable and is recommended providing the ATC has approved the relocation of its activities at subject installation. Prior to approval by this Headquarters it is believed that SPATSC should be contacted to determine whether ATC concurs in the movement of its activities at Boeing Field.

1 Incl:
n/c

PAUL S. BLAIR
Colonel, Air Corps
Chief, Base Services Division

CAB/rkh
2-2147
Post 19C
Bldg 125

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CON/HAC/kf

ARMY AIR FORCES
HEADQUARTERS
4169TH AAF BASE UNIT
SEATTLE 4, WASHINGTON

601.53

15 October 1945

SUBJECT: Excess Real Estate.

TO: Commanding General, Spokane Air Technical Service Command, Spokane, Washington. ATTN: CON

1. Reference is made to par. 10b (2) of Section IV AAF Reg. 85- 3. The information requested in par. 11 of above regulation is as follows:

2. a., b., The excess facility is Boeing Field located in Seattle, Washington.

c. Leases covering the installation are shown in par. 6 and 8.

d. Boeing Field was used jointly by the U. S. Government and by Commercial Airlines whose leases were in no way interfered with. The improvements made by the Government include flat-surfaced camouflage of the entire field, new concrete warm-up pad, concrete runway extension, concrete aprons and taxiways, perimeter road, hangars, field service buildings, warehouses, fire station with Fire Re[illegible]ting telephone system, complete drainage system, additional utilities and miscellaneous barracks and mess buildings of T.O. construction cost approximately $6,774,467.00 which amount does not include the cost of the work accomplished on the contract for erection of four additional hangars, which work was stopped at the cessation of hostilities with Japan. This unfinished contract was for $1,521,134.00 of which approximately 10 to 15% will be spent for its final settlement.

210

e. The field is in excellent condition.

f. This installation is used for storing, servicing, testing and receiving airplanes manufactured by the Boeing Aircraft Company and also as a depot for the Air Transport Command.

g. The facility will be excess to the needs of this Base, except for very limited use after 15 October 1945.

h. Area No. 3 (see map File No. PE-30) comprising ten (10) Government owned buildings and eight (8) leased buildings located at 6600 Corson Avenue on land leased from King County under lease No. W04-193eng-2702 for $1.00 for the duration. This Area is in excellent condition as to Government owned buildings. The King County buildings have been condemned as they are in poor condition.

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601.53, 15 October 1945, continued.

i. No contractural commitments have been made and only one project was under way on V. J. Day and that has been cancelled by the contracting agency of the U. S. Engineer Division. The contract called for the erection of four hangars at the cost of $1,521,134.00. 10 to 15% of this amount will be spent in settlement although only the grading and about 40% of the foundations were complete, which would constitute less than 1% of the total contract. The 10 to 15% settlement price reflects the cost of prefabrication of steel trusses, etc., which materials were not delivered to the job. This contract was under jurisdiction of the Seattle District Office of the U. S. Engineering Division.

j. There is no service now being rendere d which will not continue to be available.

k. This installation is now excess to the needs of this station.

3. With the discontinuance of the Flying Fortress School, Area No. 2, as shown on accompanying print File No. FS-30, with all its buildings, hangars and facilities has become available as a headquarters area for the 4169th AAF Base Unit.

4. The Government owned facilities in the area formerly occupied by the Flying Fortress School are sufficient for the accomodation of all functions under this command, with the sole exception of the AAF Plant Representative to the Boeing Aircraft Company.

5. The proposed, and tentatively approved, consolidation of areas and functions would obviate the necessity of Government operation of Boeing Field proper, therefore, all of Boeing Field including runways, taxiways, warm-up aprons, over-all drainage facilities, all remaining flat-surface field camouflage, Government leased buildings, Government owned buildings and all camouflage on both Government owned and Government leased buildings, hangars, etc., with the following specific exceptions are now considered excess to the needs of this headquarters;

Exceptions:-

The Government is to retain jurisdiction by lease over the portions of Boeing Field on which the following Government owned facilities exist, together with exclusive use of same, -

a. S E Apron No. 1, N W Apron No. 2 and Apron No. 3.

b. Taxiways No. 3 and 4.

c. Approximately seven (7) acres at the North end of the field now used for coal storage.

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601.53, 15 October 1945, continued.

d. Bldgs. No. T-637 (X B-29 Hangar) with concrete apron in front thereof, T-639 (Boiler House), T-645 (pump house), T-643 and T-647 (Water Storage Tanks), T-661 (Compressor House), T-665 (Septic Tank), T-663 (South Field Service Bldg.), T-673 (Work Shop), T-687 (Machine Gun Firing Revetment, T-736 (Septic Tank), T-734 (North Field Service Bldg.), T-732 (Compressor House), T-764 (Flight Delivery Service Bldg.).

e. Fire Reporting telephone system.

f. Area of approximately 23.4 acres at the N W corner of Field inclosed within the existing boundary fence comprising hangar facilities formerly used by the Flying Fortress School.

g. All facilities directly adjacent and pertinent to the successful operation of the above aprons, hangars, buildings, etc.

6. The new lease will cover the facilities as ennumerated in par. 5 together with the right of ingress and egress to airfield facilities and the following leases should be cancelled:

Lease No.	Lessor	Description	Amount
W04-193-eng-3584	King County	Boeing Field	$ 1.00 Duration
" " " 5716	" "	Off. Bldg. T-604	9950.00 per yr
" " " 4217	United Air	L 0.084 acres	15.00 " "
" " " 672	R E Shaw	7500 sq ft land	40.00 mo
" " " 2702	King County	13 acres	1.00 Duration

7. The new lease will include a statement as to the proportionate shares of the water bill for King County Airport and for the Government.

8. The following leases and permits covering the installation of the drainage system for Boeing Field will be assumed by King County as pertinent to the operation of the Airport:

Lease No.	Lessor	Description	Amount
W04-193-eng-4628	Isacson Iron	0.13 acres	300.00 per yr.
" " " 4728	Com Water Dist	1.25 "	300.00 " "
" " " 4823	Teresa Greco	0.384 "	300.00 " "
" " " 5577	Dept Hiways		None
Permit	Union Pac RR		"

9. Since the leased facility is excess to the needs of this Base and since jurisdiction of the field is urgently desired by the owner, King County, it is recommended that same be declared surplus and that proceedings be handled as expeditiously as possible.

MARSHALL R. GRAY
[illegible], Air Corps

[illegible], File No. 82-[illegible]

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2nd Ind AFSFO-1

Hq, Army Air Forces, Washington 25, D.C. 1 November 1945

TO: Commanding General, Air Technical Service Command, Wright Field, Dayton, Ohio

Effective immediately Boeing Field, Seattle, Washington, is designated as a clearing station in accordance with A/F Regulation 61-4, dated 3 April 1945, to clear flights to Alaska and Canada.

BY COMMAND OF GENERAL ARNOLD:

JOHN G WILLIAMS
Brigadier General, U. S. Army
Chief, Flight Operations Division
Assistant Chief of Air Staff-3

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ATSC Form No. 10-508 (1 Jan 45)
(Old A.C.F. No. 43)

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COORDINATION

DIRECTOR OR DEP.

AIR INSPECTOR

MGT. CONTROL

CHIEF OF ADMN.

SPECIAL STAFF

CHIEF, ENG. & PROC.

CHIEF, SUPPLY & MAINT.

PERS. & BASE SERV. DIV.

TSPRS Cynthia

TSPFL Layman

TSPFL Hays

MAINT. DIV.

SUPPLY DIV.

ENGINEERING DIV.

PROCUREMENT DIV.

READJUST DIV.

OTHER

Basic: ltr frm Hq, AAF, subj: "Proposed Reestablishment of Boeing Field as a clearing station to Alaska, dtd 19 Sept 45

1st Ind. TSPFL1/RWH/jl

HQ ATSC, Wright Field, Dayton, Ohio 24 October 1945

TO: Commanding General, Headquarters, Army Air Forces, Washington 25, D. C.
Attn: AC/AS-3

This Headquarters concurs in the necessity for establishing an AAF clearing station at Boeing Field, Seattle, Washington.

FOR THE COMMANDING GENERAL:

PAUL S. BLAIR
Colonel, Air Corps
Chief, Base Services Division

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(AR 11-5)

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HEADQUARTERS, ARMY AIR FORCES
WASHINGTON

AFCFO-1/C

19 September 1945

SUBJECT: Proposed Reestablishment of Boeing Field as a clearing station to Alaska

TO: Commanding General, Air Technical Service Command, Wright Field, Dayton, Ohio

1. On a recent visit to the Seattle, Washington, area, officers from this Headquarters informally discussed with officers from Boeing Field, Paine Field and McChord Field the desirability of reestablishing Boeing Field as a clearing station to Alaska.

2. Several advantages would accrue, viz:

a. Customs and immigration facilities are located on Boeing Field whereas McChord and Paine have to secure inspectors from Tacoma and Everett respectively.

b. Officers frequently spend the night in Seattle, leaving their airplanes at Boeing Field and would be convenienced by being cleared from Boeing rather than having to go to Paine or McChord.

c. There is some danger in the case of C-54's and possible other aircraft, with a full gas load being required to land so close to Boeing (15 minute flight time to either Paine or McChord) in order to obtain clearance.

3. In discussing the reestablishment of Boeing Field as a clearing station the operations officer thereat stated that no additional personnel would be necessary.

4. It is not contemplated that McChord or Paine Fields would be removed as clearing stations.

5. Request the comments of your Headquarters relative to the above.

BY COMMAND OF GENERAL ARNOLD:

J. S. MARRIOTT
Colonel, Air Corps
Chief, Flight Operations Branch
Flight Operations Division, AC/AS-3

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J. HAROLD SPARGER
COMMISSIONER, FIRST DISTRICT

ARCHIE F. PHELPS
COMMISSIONER, SECOND DISTRICT

JOE A. WHETSTONE
COMMISSIONER, THIRD DISTRICT

ERNEST R. CLUCK
AIRPORT SUPERVISOR

KING COUNTY AIRPORT
BOEING FIELD
SEATTLE, 8

November 6, 1945

Brigadier General H. M. Arnold,
Army Air Forces,
Room 3E1025, Pentagon Building,
Washington, D. C.

Dear Sir:

[illegible] the [illegible] King County Airport [illegible]
[illegible] the Army [illegible]
[illegible] complete the [illegible]
[illegible] Engineering Department [illegible]
[illegible] little used for Army [illegible]
[illegible] Army [illegible]
[illegible]

May I [illegible]

Sincerely yours,

[illegible]
Airport Manager

Ernest R. Cluck
Ernest R. Cluck,
Airport Supervisor

ERC:ec

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DSC;ehd/PCB

8 November 1945

Boeing Field Building Retentions
by the Boeing Aircraft Company on
Air Corps Cost-Plus-A-Fixed-Fee
Contracts.

Commanding Officer
4169 AAF Base Unit
Boeing Field
Seattle, Washington

Ref: Verbal request of Post Engineer

1. The Post Engineer and representatives of this office requested the Boeing Aircraft Company which of the various Government-owned buildings, facilities, taxi-ways and aprons on Boeing Field they wish to retain for further use.

2. The following is a list of the facilities and dates for which the Boeing Aircraft Company will need or release the facilities:

Facility	Date
South Apron Service Bldg. #T-663	4 March 1946
B-29 Revetment Bldg. #T-637	Indefinitely
North Apron Service Bldg. #T-734	"
Flight Delivery Bldg. #T-764	"
Firing Revetment #T-677 and its Accompanying Bldg. #T-673 and all adjoining facilities and build ngs serving the above list	"
Bomb Shelter #21, Zone (H) (P.E.#P-536)	"
Bomb Shelter #12, Zone F (P.E. #P-497)	"
Bomb Shelter #6, Zone F (P.E. #P-482)	"

3. It is also requested that the exclusive use be granted for the use of Southeast Apron No. 1, Northwest Apron No. 2, Apron No. 3, Taxiway 3 and 4 and egress to all taxi-ways and runways without charge.

4. The need for these build ngs is justified by present Army Air Forces contracts that will run through 1947 and the fact that there are at all times approximately ten experimental aircraft on the field for Army and Navy research and experimental contracts.

FOR THE AAF PLANT REPRESENTATIVE:

BURT R. ECKSTEIN
Major, Air Corps
Chief, Production Section

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Basic ltr, Hq., 4169th AAF Base Unit, Seattle 4, Washington, file 601.53, subj: "Excess Real Estate," dtd 15 Oct 45.

601.53 (Boeing Fld) 1st Ind. SPCONT/RWR/ob

Hq, SPATSC, Spokane, Washington. 13 November 1945.

TO: Commanding General, Air Technical Service Command, Wright Field, Dayton, Ohio. Attn: TSCON.

1. Subject recommendation with respect to declaration of surplus and retention of needed facilities at Boeing Field is concurred in by this Headquarters and forwarded for continuance of action.

2. With respect to cancellation of Lease No. W04-193-eng-3584 as indicated in paragraph 6 of basic letter, it is recommended that consideration be given to possibility of revision rather than cancellation, revision to indicate only facilities listed in paragraph 5. The Seattle Real Estate Office of the Division Engineer has a copy of the plan and is in a position to effect the required revision when authorized. Reference is made to the inclosed copy of letter from the AAF Representative, Boeing Aircraft Company, subject: "Boeing Field Building Retentions by the Boeing Aircraft Company on Air Corps Cost-Plus-A-Fixed-Fee Contracts," dated 8 November 1945, which lists also those facilities to be retained under the revised lease. With respect to the bomb shelters listed, no action is contemplated at this time pending further clarification, inasmuch as all bomb shelters were transferred to the Seattle District Engineer under authority Surplus Real Estate Directive from Office, Division Engineer, dated 21 September 1945.

3. Reference is made to Project SP6B17, subject: "Combining All Units of Base Headquarters Group and ATC into Area 2, Boeing Field, Seattle, Washington." The consolidation as proposed is referred to in paragraph 3 of basic letter. As noted on the inclosed print, the following leases covering areas in vicinity of Area 2, which is the basis for referenced project, will be retained as necessary for the proper operation of activities at Boeing Field:

Lease No.	Lessor	Description	Amount
W 04-193-eng-1528	King County	1.75 acres unimproved land	$1.00 per yr.
W 04-193-eng-1933	Puget Sound Pwr & Lgt	Approx. 1 Acre	$1.00 per yr.
W 04-193-eng-1630	City of Seattle	Approx. 20,400 sq.ft. unimproved land	$1.00 per yr.

Note: - Two (2) Government-owned buildings are located on land covered by Lease W 04-193-eng-1630, namely: Bldg. T-198 (Theater) and Bldg. (T-199) (Barracks and [illegible].)

[illegible] W 04-193-eng-1528 and W 04-193-eng-1933 cover land adjacent to [illegible] property and provide a means of access to area being retained [illegible] W 04-193-eng-3584.

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Basic ltr., Hq., 4149th AAF Base Unit, Seattle 4, Washington, file 601.53, subj: "Excess Real Estate," dtd 15 Oct 45, 1st Ind. cont'd.

4. The target dates set for termination of leases as outlined in confidential teletype from this Headquarters, dated 9 November 1945 are based on the approval and completion of the project referenced in preceding paragraph.

5. The consolidation of all activities into Area 2 will permit completion of the action as outlined in basic letter. It is therefore requested that favorable action be taken for authorization at the earliest possible date. It is further requested that this Headquarters be advised as to action taken on termination and revision of leases referenced in basic letter and preceding paragraphs.

FOR THE COMMANDING OFFICER:

RICHARD M. WIGHTMAN,
Colonel, Air Corps,
Deputy Commander

2 Incls:
Incl 1 - n/c(4 copies, 2 cy w/d)
Incl 2 - Cy ltr AAF Representative, Boeing Aircraft Co. dtd 2 Nov 45, w/1st Ind. dtd 5 Nov 45

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Basic ltr fr Hq Army Air Forces, Washington, D.C. dtd 10 Oct 45,
Subj: Boeing Field, B-29 School, Seattle, Washington

3rd Ind. T5DDNSC/LLP/LTR/iw

(00.12 (10 Oct 45)

Hq ATSC Wright Field, Dayton, Ohio NOV 1 5 45

To: Commanding General, Army Air Forces, Washington 25, D.C.
Attn: Asst Chief of Air Staff, Materiel and Services,
Air Installations Division

1. Attention is invited to preceding 2nd Indorsement wherein it was stated that the buildings, the use of which had been requested by the Reconstruction Finance Corporation, are located within the area wherein the facilities of the ATSC and AAC are to be consolidated.

2. Although the actual numbers of the buildings, desired by the Reconstruction Finance Corporation, are not given, they are presumed to be Buildings Nos. 2-301, 314, 316 and 316 and are located within Area No. 2, which is proposed for retention.

3. There are other buildings and areas which are proposed for release, as indicated on the attached layout map, that might serve the needs of the Reconstruction Finance Corporation satisfactorily.

4. This headquarters, at this time, is processing approval for the consolidation of AAF activities as referred to in Par. 1, second indorsement. Above referenced consolidation has been coordinated and approved by AAC.

FOR THE COMMANDING GENERAL:

JOHN C. GRIGGS
Colonel, Air Corps
Chief, Air Installations Division

5 incls - nc

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Basic ltr, Hq, AAF, Washington, dtd 10 Oct 45, subj: "Boeing Field, B-29 School, Seattle, Washington," w/1st Ind.

500.12 2nd Ind. 556 SPCON/MEP/bb

Hq, SPATSC, Spokane, Washington.

To: Commanding General, Air Technical Service Command, Wright Field, Dayton, Ohio. ATTN: TSPBAl.

1. Reference is made to letter, Headquarters, Boeing Field, Seattle, Washington, dated 2 October 1945, subject: "Combining All Units of Base Headquarters Group and A.T.C. Into Area No. 2," and to 1st Indorsement thereto from this Headquarters to Headquarters, Air Technical Service Command, dated 5 October 1945.

2. Inclosed herewith is an additional copy of the Plot Plan indicating the consolidation outlined in letter referenced in paragraph 1 above. As shown on this plan, all buildings within Area No. 2 are essential to the peace time operation of Boeing Field.

3. It is believed that Buildings Nos. T-301 and Buildings Nos. 314, 316 and 318 are the facilities desired by the Reconstruction Finance Corporation for their use. All of these buildings are within Area No. 2, which is required for the operation of Boeing Field.

4. All buildings indicated in Red on the plan and those inclosed in Area No. 3 are to be declared excess and may be made available to the Reconstruction Finance Corporation as far as Army Air Forces activities are concerned.

5. It is recommended that the Reconstruction Finance Corporation be advised that the buildings requested in their correspondence cannot be released, since they are very essential to the peace time plan for the operation of Boeing Field. It is further suggested that the warehouse facilities at the nearby Auburn Sub-Depot be investigated as to possible space to meet the Reconstruction Finance Corporation's requirements.

FOR THE COMMANDING OFFICER:

Richard M. Wichman

RICHARD M. WICHMAN
Colonel, Air Corps
Deputy Commander

5 Incls.:
Incls 1 thru 4, n/c.
Added:
Incl 5 - Dwg, File No. PE-30, Layout Map, Boeing Fld & Vicinity (Scale).

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SAVE

HEADQUARTERS, ARMY AIR FORCES
WASHINGTON

IN REPLY REFER TO:

AFDIR-2A/4

4804

10 OCT 1945

SUBJECT: Boeing Field, B-29 School, Seattle, Washington

TO: Commanding General
Air Technical Service Command
Wright Field, Dayton, Ohio
Attn: Base Services Division, TSPBS

1. Attention is invited to the attached copies of correspondence from Reconstruction Finance Corporation, addressed to Commanding General, Army Service Forces, concerning the granting of a license to use facilities at Boeing Field, Seattle, Washington.

2. It is requested that remarks and recommendations on the proposal, set forth by Reconstruction Finance Corporation, be furnished this headquarters at the earliest practicable date.

BY COMMAND OF GENERAL ARNOLD:

JOHN [illegible], Brig. General
Ass't Chief, Air Installations Division
Assistant Chief of Air Staff-4

4 Incls
1. Memo for Dir, Readjustment Div (cy) dtd 18 Sept 45
2. Ltr to Hq, ASF (Cy) fr RFC dtd 13 Sept 45
3. Memo for Dir, Readjustment Div (Cy) dtd 26 Sept 45
4. Ltr to Hq, ASF fr RFC (cy) dtd 20 Sept 45

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REPLY TO COMMANDING GENERAL, ARMY AIR FORCES, WASHINGTON 25, D. C.

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4 December 1945

Reconstruction Finance Corporation
811 Vermont Avenue, Northwest
Washington 25, D. C.

Attention: Mr. F. W. Huston
Chief, Warehousing Division

Re: Facilities for Trainees, Boeing Field,
Seattle, Washington

Gentlemen:

This is in answer to your letter of 13 September 1945 and Mr. A. Hobson's letter of 20 September 1945 requesting use of the subject facilities under a license for ten years, for a disposal center.

Your attention is invited to the inclosed plan of Boeing Field and environs. Although the actual numbers of the buildings you wish use of are not given in your requests, they are presumed to be Nos. T-301, 314, 316 and 318. These are located within Area No. 2 which it is expected will be retained for a consolidation of Army Air Forces activities, and so will not be available to the Reconstruction Finance Corporation.

However, there are other buildings and areas proposed for release, which might serve your purpose. It is suggested that you survey the possibilities and make request for such as might be acceptable to you, upon receipt of which every effort will be made to make them available to you as soon as possible.

Sincerely yours,

D. N. Hauseman
Brigadier General, GSC
Director, Readjustment Division

1 Incl
Map

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Vg Facilities

2 CONFIDENTIAL

Fac. Br.

Excess Real Estate

TSBCCB
Attn: Capt. P. C. Malli

TSBRC2A

7 Dec. 45

3 G- 4

1. Subject declaration of surplus as proposed in the attached correspondence will not effect procurement activities at Boeing Field inasmuch as the necessary aprons, hangars, field service buildings, flight delivery service buildings, etc., are being retained under lease by the Government. In connection therewith, your attention is directed to Paragraph 2 j of basic letter dated 15 October 1945 from the Commanding Officer, Boeing Field, which states as follows: "There is no service now being rendered which will not continue to be available".

2. With reference to Paragraph 2 of the 1st Indorsement dated 13 November 1945 concerning whether a new lease should be written covering the facilities to be retained by the Government, or whether the existing lease should be revised, it is the opinion of this office that this is a matter for the Corps of Engineers to decide.

3. With reference to Paragraph 2 of Comment #2 dated 3 December 1945, this office has no information concerning the volume of transient aircraft or permanently based reserve flying aircraft. However, it is noted that the subject proposal will retain for the use of the Government the large parking aprons and the hangar buildings which were constructed by the Government.

W. H. SACHS
Major, Air Corps
Chief, Industrial Facilities Section
Procurement Division

JRJ/vwp
2-6121, Bldg. 11

Incls: n/c

12/7/45

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Bldg - Land. - Wash - Seattle - 1945

3 3

BLDGS & GROUNDS

AFDIN-2A/5
Capt. McGowan/bm/4444
Written 13 Dec 45

AFDIN-2A/5

18 DEC 1945

SUBJECT: Issuance of Temporary Permit for Use of Facilities at Boeing Field, Seattle, Washington.

TO: Chief of Engineers
Washington 25, D. C.

ATTENTION: Real Estate

1. The Airport Manager has requested this headquarters to issue a permit to the county allowing that agency the use of all facilities at Boeing Field not requiring active military operations pending return of leased facilities to the county.

2. It is requested that your office initiate action on the issuance of temporary permit to King County in accordance with the above request.

FOR THE COMMANDING GENERAL:

JAS. A. MOLLISON, Brig. Gen. U.S.A.
Acting Chief, Air Installations Div.
Assistant Chief of Air Staff - 4

EPS

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HQ AAF
18 DEC 1945
AFDIN MAIL SECTION

OFFICE SYMBOL	AFDIN-2A/5	2.	3.	4.	5.
GRADE AND SURNAME OF COORDINATING OFFICERS					

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AC/AS-4

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WAR DEPARTMENT
AFDIN-2A/5
Capt. RFMcGowan/mtp/4444
Wrtn 18 December 1945

Mr. Ernest N. Cluck
Airport Supervisor
King County Airport
Seattle, Washington

19 DEC 1945

Dear Mr. Cluck:

Your letter of November 6, 1945, concerning the release of King County Airport ((Boeing Field)) by the Army Air Forces, has been referred to me as principal staff officer on such matters for reply.

The Army Air Forces has conducted extensive studies on the utilization of facilities at King County Airport during the period in which reduction in military operations at this airfield will be made. Although the production of military aircraft by Boeing at this location is being drastically cut back, the Army Air Forces has a continuing necessity for retaining certain flying activities at this airport. As soon as a final determination has been made on the extent of the facilities desired, steps will be taken, through the Corps of Engineers, to renegotiate the present leases. Pending this determination and pursuant to your telegram of December 6, 1945, this headquarters forwarded a request to the Chief of Engineers that a permit be issued to King County allowing the County the use of buildings and facilities not required for active military operations.

The Army Air Forces is very appreciative of the splendid cooperation given by the County in conjunction with the military activities at Boeing Field, and I can assure you that we will make every effort to assist in the early release of control of this airfield by the Army.

Sincerely yours,

JAS. A. MOLLISON, Brig. Gen. U.S.A.
Acting Chief, Air Installations Div.
Assistant Chief of Air Staff - 4

FOR [illegible] RELEASE ON [illegible]

OFFICE SYMBOL	AFDIN-2A/5		HQ. A.A.F.	
GRADE AND SURNAME OF COORDINATING OFFICERS			19 DEC 1945	
			AFDIN MAIL SECTION	

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AGC 151-6
175-10-4.3

A. G. I.	
PRIORITY	
ROUTINE	
MULTIPLE ADDRESS	

TELETYPE MESSAGE

AIR SERVICE COMMAND TELETYPE NETWORK

[illegible]/JPW/vwp

FROM: [illegible] DATE: 4 JAN 46

TO: CG, AAF
[illegible], D.C.

. W. [illegible], MAJOR, AIR [illegible]
[illegible], INDUSTRIAL FACIL. BRANCH.
NAME, RANK AND TITLE OF AUTHENTICATING OFFICER

CLASS:

3A-P

[illegible]-1-17 JA[illegible]....AT: OAO/[illegible]-4, CG. J. O. VAUGHAN. BR BOEING AIRCRAFT CO., SEATTLE, WASHINGTON, MAYOR 1577. AIR TECHNICAL SERVICE COMMAND [illegible] MAYOR 1577 IN THE AMOUNT OF $1,151,300 [illegible] TO BE PROCURED [illegible] THE COMMAND. IT IS THE UNDERSTANDING OF THIS COMMAND THAT BOEING AIRCRAFT COMPANY INTENDS TO NEGOTIATE A LOAN AGREEMENT WITH RECONSTRUCTION FINANCE CORPORATION [illegible] PERMIT CONTINUED USE OF THE ENGINEERING ANNEX BUILDING AND ITS PARKING LOT. SIGNAL, PROCUREMENT DIVISION.

220

COPY TO: Mr. [illegible]
[illegible]

J. Mauch 1/4/46

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COORDINATION	C. G. OF C. O.	CONTROL OFFICE	MAINTENANCE	P & T	SUPPLY	BUDGET & FISCAL	OTHERS
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- Ridge - Bds. - Wood - Seattle - Wyo

1st Ind 4 Jan 46

SUBJECT: Joint Use of Facilities at Boeing Field, Washington

Office, Chief of Engineers, Washington 25, D. C. 4 January 1946.

TO: CG, Army Air Forces, Attn: AFDIN

1. In the opinion of this office it would be better to authorize the use of Boeing Field by King County as contemplated by amending the lease to the U. S. to provide for joint use of the airfield.

2. Your further remarks and recommendations are requested.

FOR THE CHIEF OF ENGINEERS:

ROBERT H. FABIAN
Lt. Col., C.E.
Ch/ Management & Disposal
Division, Real Estate

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✓ Bldg + Grds. - Wash. - Seattle 1946 11

ARMY AIR FORCES
HEADQUARTERS, BOEING FIELD
SEATTLE, 4, WASHINGTON

5 January 1946

Brig. Gen. James A. Mollison,
Actg Chief Air Installation Div.,
Asst. Chief of Air Staff-4,
Headquarters, Army Air Forces,
Washington, 25, D. C.

Dear General Mollison:

I recently received a copy of your communication to the King County Airport Supervisor with respect to the status of Boeing Field, and I wanted to take this opportunity to drop you a personal note to see if I can find out some information as to what is going to happen out here.

I have been trying since the 6th of October to effect a consolidation of most of the activities of the field, and to give back to the Indians all the rest of it. I don't know where this action has been blocked, but the civilians are making life a little hectic for me by their constant questioning. I have been out here now since the early part of June and have been having a lot of fun refereeing different squabbles between the Training Command, the Air Transport Command, Army Airways Communication System and Western District Air Technical Service Command, just to mention a few of the different activities which we have here. Needless to say, any advance information which you can give me with respect to the future status of Boeing Field will be greatly appreciated.

I am sorry I didn't get to see you when you were in Italy. I stopped around your office in Bari about five times, but every time I got there you were out.

Sincerely yours,

Marshall P. Gray

MARSHALL P. GRAY,
Colonel, Air Corps,
Commanding.

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AFDRP-7/Maj mLHartung/mg/3750

7 January 1946

3F

MEMORANDUM FOR: Office, Under Secretary of War
Industrial Activities Division
Attn: Major F. H. Otto
Room 3D-732, Pentagon

SUBJECT: Excess Facilities - RFC Agreement of Lease with Boeing Aircraft Company, Plancor 1577, Established for the Production of Airplanes.

1. Reference is made to facilities consisting of land, buildings (75,400 sq. ft.), machinery and equipment, located at or near Seattle, Washington, covered by the above lease agreement.

2. Pursuant to instructions contained in memorandum from the Office, Under Secretary of War dated 29 August 1945, you are hereby advised that the above facilities are excess to the production requirements of the Army Air Forces.

3. The subject facilities are not required by the Army Air Forces for standby purposes or war reserve.

For the Commanding General, Army Air Forces:

JOHN C. VAUGHAN
Colonel, Air Corps
Special Adviser on Facilities
Readjustment and Procurement Division
OAC/AS-4

AFDRP-7
Maj. mLHartung

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Basic: Ltr dtd 15 October 1945 fr 4169th AAF Base Unit, Seattle, Washington, subj: "Excess Real Estate".

TS 601 (15 Oct 45) 2nd Ind. TSCON6/FRM/ejq

HQ ATSC Wright Field, Dayton, Ohio. 17 Jan 1945 [1946]

To: Commanding General, Army Air Forces, Washington 25, D. C.
Attn: AC/AS-4, Air Installations Division.

1. In concurrance with the preceding correspondence, this Headquarters recommends that Boeing Field, Seattle, Washington, be declared excess to the requirements of this Command subject to retention of the following described leases which will provide minimum facilities required for servicing of transient aircraft and reserve flying activitiesL

a. It is recommended that Lease No. W 04-193 eng 3584, which is the lease covering Boeing Air Field proper, be amended to include only the following facilities:

(1) Southeast Apron No. 1, Northwest Apron No. 2. Apron No. 3.

(2) Taxiways No. 3 and 4.

(3) Approximately seven (7) acres at the north end of the field, now used for coal storage.

(4) Buildings No. T-637 (XB-29 Hangar) with concrete apron in front thereof, T-639 (Boiler House), T-645 (Pump House), T-643 and T-647 (Water Storage Tanks), T-661 (Compressor House), T-665 (Septic Tank), T-663 (South Field Service Building), T-673 (Work Shop), T-677 (Machine Gun Firing Revetment),T-736 (Septic Tank), T-734 (North Field Service Building), T-732 (Compressor House), T-764 (Flight Delivery Service Building).

(5) Fire reporting telephone system.

(6) Area of approximately 23.4 acres situated at the northwest corner of the field and included within the existing boundary fence comprising the hangar facilities formerly used by the Flying Fortress School.

IMMEDIATE ACTION
RSTRICTED (AFR 11-30)

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Basic: Ltr dtd 15 October 1945 fr 4169th AAF Base Unit, Seattle, Washington, subj: "Excess Real Estate". 2nd Indorsement, Cont'd.

(7) All facilities directly adjacent to and pertinent to the use of the hangars, aprons, buildings and facilities above described.

2. It is also recommended that the following leases covering certain areas and facilities at Boeing Air Field, indicated on the attached plot plan, be retained:

Lease No.	Lessor	Description	Amount
W 04-193 eng 1528	King County	1.75 acres unimproved land.	$1.00 per Year
W 04-193 eng 1933	Puget Sound Pwr & Lgt	Approximately 1 Acre.	$1.00 per year
W 04-193 eng 1630	City of Seattle	Approximately 20,400 sq. ft. unimproved land	$1.00 per year

3. It is recommended that the following leases and permits covering the installation and operation of the drainage system for Boeing Field be terminated provided that obligation will be assumed by King County and used in conjunction with the operation of the air field.

Lease No.	Lessor	Description	Amount
W 04-193 eng 4828	Iancson Iron	0.13 Acres	$300.00 per yr
W 04-193 eng 4728	Com Water Dist	1.25 Acres	300.00 per yr
W 04-193 eng 4828	Teresa Greco	0.384 Acres	300.00 per yr
W 04-193 eng 5577	Dept Hiways		None
Permit	Union Pec RR		None

4. Retention of the facilities herein above described will permit cancellation of the following leases, provided right of ingreas and agrese to the air field is retained for the Government:

Lease No.	Lessor	Description	Amount
W 04-193 eng 3584	King County	Boeing Field	$1.00 Duration
W 04-193 eng 5716	King County	Off. Bldg T0604	9950.00 per yr
W 04-193 eng 4217	United Air L	0.084 Acres	15.00 per yr
W04-193 eng 672	R E Shaw	7500 Sq ft land	40100 mo
W 04-193 eng 2702	King County	13 Acres	1.00 Duration

IMMEDIATE ACTION
RESTRICTED

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Basic: Ltr dtd 15 October 1945 fr 4169th AAF Base Unit, Seattle, Washington, subj: "Excess Real Estate". 2nd Indorsement, Cont'd.

5. Attention is invited to attached plot plan of Boeing Field which sets forth in detail the areas desired to be retained and those which may be relinquished. In the event additional information is required, it is requested that this office be informed in order that supplementary information may be forwarded.

6. Project referenced in paragraph 3 of the preceding 1st Indorsement was forwarded to Headquarters, AAF, by 4th Indorsement, dated 12 December 1945, subject, "Combining all Units of Base Headquarters Group and ATC into Area "", requesting concurrence in proposed plan.

FOR THE COMMANDING GENERAL:

JOHN G. GRIGGS
Colonel, Air Corps
Chief, Air Installations Division

2 Incls: n/c except 1 cy
#1 w/d.

cc: Div. Engr., Pacific Div.,
351 California St., San
Francisco, California.

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(AFR 11-30)

IMMEDIATE ACTION

RESTRICTED

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Building + Grounds - Seattle - 1946 (2) 1

BLDGS. & GROUNDS

AFD. 30C/2 Corp. Howard/ga/4463 347
Written 14 Jan 1946

SUBJECT: Issuance of Temporary Permit for Use of Facilities at Boeing Field, Seattle, Washington

AFDIN 30/2 2nd Ind 21 JAN 1946

Hq Army Air Forces, Washington 25, D. C.

TO: Chief of Engineers
Attn: Director of Real Estate

1. This headquarters concurs in recommendation contained in 1st indorsement hereon.

2. It is recommended that action be taken to effect the necessary amendment to the lease to provide for joint use and proportionate maintenance.

FOR THE COMMANDING GENERAL:

PHILIP HAAS, Lt. Col., A. C.
Air Installations Division
Assistant Chief of Air Staff

48

HQ A A F
21 JAN 1946
AFDIN MAIL SECTION

cc: AAF TRNG. COMMAND
U&A
I.D.

Memo for the record: Action based on TDR from U&A dtd 9 Jan 1946 (Capt. McCabe)

Basic letter written in U&A (AFDIN 32A/5) dtd 18 Dec 45. (see AFDIN File for correspondence, basic ltr and [illegible] Central Files.

OFFICE SYMBOL	1. AFDIN 30/2	2.	3.	4.	5.
GRADE AND SURNAME OF COORDINATING OFFICERS					

2

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ARC-351-C
(75-10-43)

A. G. P.	
PRIORITY	
ROUTINE	
MULTIPLE ADDRESS	

323.3
1/1

14

TELETYPE MESSAGE

AIR SERVICE COMMAND TELETYPE NETWORK

FROM: ATSC

DATE: 28 Jan 46

Howard A. Cherry
HOWARD A. CHERRY
Colonel, Air Corps
Chief, Base Services Division

NAME, RANK AND TITLE OF AUTHENTICATING OFFICER

3-2358 CAM/id 1245

TO: REGIONAL ADMINISTRATOR
CIVIL AERONAUTICS ADM.
SEATTLE, WASHINGTON

CLASS:

TSPBA-1-114 . . . IN REPLY TO YOUR TELETYPE DATED 27 DECEMBER 1945 REQUESTING AUTHORIZATION TO UTILIZE CERTAIN HANGARS AT BOEING FLD, SEATTLE, WASH., REPRESENTATIVES OF SPOKANE ATSC HAVE INVESTIGATED PRESENT AND PROPOSED REQUIREMENTS FOR AAF ACTIVITIES AT BOEING FLD AND REPORT THAT IT IS IMPOSSIBLE TO AUTHORIZE THE REQUESTED UTILIZATION AT THIS TIME. IT IS ANTICIPATED THAT FUTURE AAF ACTIVITIES AT THIS INSTALLATION WILL REQUIRE ALL OF THE PRESENT HANGAR SPACE. SIGNED BASE SERVICES DIVISION.

323.3 Boeing Fld

TSPBS
TSPBA Faust
TSPBA O Baker
TSCON
TSCAD

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COORDINATION	C. G. OR C. O.	CONTROL OFFICE	MAINTENANCE	P & T	SUPPLY	BUDGET & FISCAL	OTHERS

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1 601.53 Boeing Fld, Wash 4

MG/nmg

CE 601.53 (Boeing Field) SPELS

3rd Ind.

King County

Subject: Joint Use of Facilities at Boeing Field, Seattle, Wash.

Office, C. of E., 31 January 1946

TO: Division Engineer, Pacific Division,
SAN FRANCISCO, CALIFORNIA

1. Based upon recommendation of the Commanding General, Army Air Forces, as contained in preceding 2nd indorsement, it is requested that necessary action be taken by your office to amend lease W-04-193-eng-3584 so as to authorize joint use of Boeing Field by King County, a municipal corporation.

2. Since the lessor is obligated to maintain the premises under the terms of paragraph 9 of the lease, this office suggests that no change be made to this provision.

3. In preparing amendment of the lease, consideration should be given to retaining exclusive use of that portion of the building area on which the government has constructed buildings or made improvements for the exclusive use of the government.

BY ORDER OF THE CHIEF OF ENGINEERS:

JOSEPH CONNOLLY
Chief, Acquisition Division
Real Estate

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Bldgs Inds-Wash. Seattle 1946

10

AFDIN-2A/5
Cent. McCabe/ba/4444
Written 7 Feb 46
Rewrtn 15 Feb 46

BLDGS. & GROUNDS

19 FEB 1946

Marshall R. Gray
Colonel, Air Corps
Commanding Officer
Boeing Field
Seattle 4, Washington

Dear Colonel Gray:

In the absence of General Mollison, your letter, dated 5 January 1946, requesting information concerning the future status of Boeing Field has been referred to me for acknowledgment.

With reference to the future status of Boeing Field the Army Air Forces intends to declare it excess with the exception of enough facilities to carry on reserve flying and servicing of transient aircraft. In this regard provision will be made for maintenance and parking facilities, and for transient service on the basis of 50% of the transient aircraft accommodated in June 1945.

In addition it has been agreed to combine the air forces activities of the Air Technical Service Command and the Air Transport Command in the area indicated as No. 2 on the layout plan of your field, File No. PE-30.

It is hoped that this information will be of value to you in any decisions you may be required to make concerning Boeing Field.

Sincerely yours,

ROBERT KAUCH, Brig. Gen., USA
Chief, Air Installations Division
Assistant Chief of Air Staff-4

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(AFR 11-30)

OFFICE SYMBOL	1. AFDIN-2A/5	2.	3.	4.
GRADE AND SURNAME OF COORDINATING OFFICERS	R. Kauch 15 Feb			

HQ. A A F
19 FEB 1946
AFDIN MAIL SECTION
228

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Cpf 602 Bulky file 34

J. HAROLD SPARLMAN
COMMISSIONER, FIRST DIST. KING COUNTY AIRPORT
RICT
BOEING FIELD
SEATTLE, 8

ERNEST R. CLUCK
AIRPORT SUPERVISOR

February 23, 1946

United States Engineers,
Real Estate Division,
Textile Tower,
Seattle, Washington

Gentlemen:

Under a lease dated September 1, 1943, King County granted the United States Air Forces Material Command use of the King County Airport except areas occupied by tenancies existing at the time of execution and subject to the right of the County to derive normal revenues from field operation and subject also to the right of theCounty to operate the field as a civil air terminal. The lease was for the duration of the war and six months at a $1.00 consideration, and was executed to aid military operations during the war.

It is essential to field operation, and the County's right to draw revenue from such operation, that all temporary or portable structures on the east side of the field, particularly in the north one-half thereof, which structures have been abandoned by theArmy, be immediately removed and the area cleared for normal flight operations and construction incident thereto.

In the interest of reducing the Government's liability for infringing on the rights reserved in the County by unnecessary continued technical possession of these area, we propose to immediately clear this area of such structures. The County will accept full responsiblity for their salvage value in the final settlement between the County and the Government on legal termination of the existing lease and immediately assumes all liability incident to possession, such as the enforcement of fire protection regulations, policing, and public liability.

This action is taken for the further reason that certain of the structures constitute a hazard to aircraft operation as defined under the terms of the lease above mentioned.

Respectfully yours,

KING COUNTY AIRPORT

/s/ Ernest R. Cluck
Ernest R. Cluck,
Airport Manager

ERC/fc
cc: Marshall C. Gray,
Colonel, A.A.F.

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(AFR 11-30)

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AGO-861-C (5-10-45)

Facilities 3 TSHRCGN/JEH/vmp 3

A. G. P.	
PRIORITY	
ROUTINE	
MULTIPLE ADDRESS	

TELETYPE MESSAGE

AIR SERVICE COMMAND TELETYPE NETWORK

FROM: TWINING, ATSC

DATE: 4 March '46

W. E. SACHS, LT. COLONEL, AIR CORPS
CHIEF, INDUSTRIAL SECTION
PROCUREMENT DIVISION
NAME, RANK AND TITLE OF AUTHENTICATING OFFICER

TO: CG, AAF
WASHINGTON 25, D. C.

CLASS: 3A-

TELETYPE NO. TSHRCGA-3-6 JRM.....ATTENTION: GAO/AS-4, COL. J. C. VAUGHAN. RE OUR TELETYPE TSHRCGD-12-67 ALF DATED 12 DECEMBER 1945 WHEREIN BOEING AIRCRAFT COMPANY, SEATTLE, WASHINGTON, HPF CONTRACT DA W535 AC-196 IN ITS ENTIRETY WAS DECLARED EXCESS TO THE PRODUCTION REQUIREMENTS OF THIS COMMAND.

BOEING AIRCRAFT COMPANY HAS NOTIFIED THIS COMMAND THAT IT WILL REQUIRE THE CONTINUED USE OF THE GROUND OPERATIONS BUILDING, INCLUDING INSTALLATIONS WHICH WERE CONSTRUCTED AT A COST OF $38,640 AND THE ADJACENT WARM-UP APRON WITH UTILITIES APPURTENANCES WHICH WERE CONSTRUCTED AT A COST OF $112,807, WHICH ARE LOCATED ON KING COUNTY AIRPORT AND WHICH WERE ACQUIRED BY THE GOVERNMENT UNDER HPF DA W535 AC-196. THE LAND ON WHICH THE APRON BUILDING AND APRON ARE LOCATED IS LEASED TO THE GOVERNMENT BY KING COUNTY ON AN ARMY AIR FORCES LEASE AT A DOLLAR A YEAR FOR A PERIOD OF TWENTY-FIVE YEARS. INASMUCH AS THE GROUND OPERATIONS BUILDI 230 AND THE APRON ARE LOCATED ON KING COUNTY AIRPORT, IT IS NOT PRACTICABLE FOR BOEING AIRCRAFT COMPANY TO PURCHASE SUCH FACILITIES AND IT WOULD NOT BE TO THE INTEREST OF THE GOVERNMENT TO TURN SUCH FACILITIES BACK TO KING COUNTY AND REQUIRE BOEING TO PAY A SUBSTANTIAL RENTAL WHICH WOULD, IN TURN, BE CHARGED TO THE COST OF THE AIRPLANES.

IT IS, THEREFORE, RECOMMENDED THAT THE OFFICE CHIEF OF ENGINEERS BE REQUESTED TO LEASE THE SUBJECT GROUND OPERATIONS BUILDING AND APRON, WHICH ARE GOVERNMENT-OWNED, TO THE BOEING AIRCRAFT COMPANY FOR A NOMINAL RENTAL. SIGNED, PROCUREMENT DIVISION.

J Marsh 3/4

Cy to: Maj. Simmons
Mr. Amatuzio
Mr. Neffner

COORDINATION

C. G. OR C. O.	CONTROL OFFICE	MAINTENANCE	P & T	SUPPLY	BUDGET & FISCAL	OTHERS
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(AAF 11-30)

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1946 MAR 27 22 06
GREENWICH CIVIL TIME

1946 MAR 31

URR V WAR NRC149 WD

FROM SPAATZ WASHINGTON DC 272108Z

TO AIR MATERIEL COMMAND WRIGHT FIELD DAYTON OHIO

ATTN PROC DIV LT COL WM SACHS

GRNC

AFDRP-3 JCV 2546 PD RETEL TSBRC2A3-6 CONCERNING LEASE OF GROUND OPERATIONS BUILDING AND WARM UP APRON TO BOEING AIRCRAFT SEATTLE WASHINGTON THE NEGOTIATION OF A LEASE ON A NOMINAL BASIS BETWEEN THE GOVERNMENT AND BOEING IS NOT FAVORABLY CONSIDERED BOEING WILL ALSO HAVE THE USE OF THESE FACILITIES FOR COMMERCIAL AIRCRAFT PRODUCTION. REQUEST BOEING BE ADVISED TO NEGOTIATE FOR THESE FACILITIES WITH THE DIVISION ENGINEER ON THE SAME BASIS AS FOR OTHER EPF FACILITIES WHICH THEY MAY DESIRE TO ACQUIRE FROM THE GOVERNMENT IF IT IS NOT PRACTICABLE FOR BOEING TO PURCHASE THE FACILITIES IN QUESTION THEY SHOULD BE LEASED FROM THE ENGINEERS ON A SUBSTANTIAL RENTAL BASIS THE AMOUNT OF SUCH RENTAL TO BE DECIDED BY THE ENGINEERS

272138Z

2546VTSBRC2A-3-6

ORIG: Mr. Filbert

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ASC-251-C (15-10-43)

Facilities 1/2

4 4

A. G. P.	
PRIORITY	
ROUTINE	XX
MULTIPLE ADDRESS	

TELETYPE MESSAGE

AIR SERVICE COMMAND TELETYPE NETWORK

Mr. J. B. Morris (AC) Tel. 3-6181

FROM: WRIGHT FIELD, AMC

DATE: 29 MARCH 1946

L. V. SIMMONS, Major, A.C. Chief, Industrial Section, Procurement Division
NAME, RANK AND TITLE OF AUTHENTICATING OFFICER

TO: AAF PLANT REPRESENTATIVE BOEING AIRCRAFT COMPANY SEATTLE, WASHINGTON

CLASS:

3a

Facilities file

WRIGHT-3-66-JEH.....RE LEASE OF GROUND OPERATIONS BUILDING AND WASH UP APRON TO BOEING AIRCRAFT COMPANY, SEATTLE, WASHINGTON. ON 4 MARCH 1946 THIS HEADQUARTERS RECOMMENDED TO HEADQUARTERS, AAF, CM&S/AB-4 THAT SUBJECT GROUND OPERATIONS BUILDING AND WASH UP APRON BE LEASED TO BOEING AIRCRAFT COMPANY AT A NOMINAL RENTAL BY THE CORPS OF ENGINEERS. HOWEVER, HEADQUARTERS, AAF REQUESTED THIS COMMAND TO ADVISE BOEING TO NEGOTIATE FOR THESE FACILITIES WITH THE U. S. DIVISION ENGINEER ON THE SAME BASIS AS FOR OTHER NEW FACILITIES WHICH THEY MAY DESIRE TO ACQUIRE FROM THE GOVERNMENT. IF IT IS NOT PRACTICABLE FOR BOEING TO PURCHASE THE FACILITIES IN QUESTION, SINCE THEY ARE LOCATED ON BOEING FIELD, THE FACILITIES SHOULD BE LEASED FROM THE U. S. ENGINEERS ON A SUBSTANTIAL RENTAL BASIS WITH THE AMOUNT OF SUCH RENTAL TO BE DETERMINED BY THE U. S. ENGINEERS. IT IS REQUESTED THAT BOEING BE ADVISED TO START NEGOTIATIONS WITH THE U. S. DIVISION ENGINEER FOR SUCH PURPOSE.

SIGNED, PROCUREMENT DIVISION.

A March 3/29

COORDINATION	C. G. OR C. O.	CONTROL OFFICE	MAINTENANCE	P & T	SUPPLY	BUDGET & FISCAL	OTHER

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Bldg + Lnds - Wash - Seattle - 1946

(7) 1x 1 D (Wash. - Boeing Fld) Seattle 9

AFDIN-2A/5
Capt. McCabe/bm/4444
Written 5 April 1946

AFDIN-2A/5

8 APR 1946

Disposal of Buildings Located at Boeing Field, Seattle, Washington.

Chief of Engineers, Washington 25, D. C.
ATTN: Management and Disposal Branch, Real Estate

Pending declaration of excess property at Boeing Field, Seattle, Washington, authorization is granted to remove buildings Nos. 541, 543, 545, 549, 553, 555, and 559. Subject buildings were acquired under lease No. W04-193-eng-2564.

FOR THE COMMANDING GENERAL:

LEO J. ERLER, Col., A. C.
Deputy Chief, Air Installations Division
Assistant Chief of Air Staff-4

MEMO FOR RECORD: Coordinated by telephone with Mr. O'Neil, Management & Disposal Branch, OCE, 4 April 1946, Capt. McCabe - AFDIN-2A/5

OFFICE SYMBOL	AFDIN-2A/5		
GRADE AND SURNAME OF COORDINATING OFFICERS		(AR 11-30)	8 APR 1946

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Bldgs + Grds - Wash - Seattle 1946

(9)

13

AFDIN-2A/5 10 APR 1946

Captain McCabe /hm/ 444

Written 9 April 1946

WDSS, LALD

Central Files

BLDGS. & GROUNDS

X INFORMATION

Boeing Field, Seattle, Washington.

Action is now being taken to declare Boeing Field excess to the needs of the Army Air Forces with the exception of those facilities required for transient servicing and reserve flying and a small Air Transport Command operation. All facilities to be retained will be located in one area in the NW portion of the field. The Air Materiel Command will continue to exercise command jurisdiction over the small airways detachment which will continue in operation in the area to be retained. The above action will be accomplished in the very near future.

FOR THE COMMANDING GENERAL:

LEO J. FRIER, Col., A. C.
Deputy Chief, Air Installations Division
Assistant Chief of Air Staff-4

1 Incl
R/S fr WDSS, LALD
to CG, AAF, dtd
5 Apr 46, w/1 incl.

OFFICE SYMBOL	1. AFDIN-2A/5	2.	3.	4.	5.
GRADE AND SURNAME OF COORDINATING OFFICERS					

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Bldgs + Utils - Wash - Seattle - 1946

(11)

14

AFDIN-2A/1
Lt Col Price/va/3217
wrtn 21 May 46

AFDIN-2A/1

28 MAY 1946

SUBJECT: Boeing Field, Seattle, Washington - Surplus to War Department.

TO: Commanding General, Air Materiel Command, Wright Field, Dayton, Ohio.

ATTENTION: Base Services Division - TSPBA

1. Confirming telephone conversation with a representative of this headquarters, forwarded herewith is copy of communication from War Department General Staff, G-4, declaring Boeing Field, Seattle, Washington, surplus to the War Department effective 23 April 1946, with certain exceptions.

2. It is requested that the commanding officer of subject installation be advised of this action.

BY COMMAND OF GENERAL SPAATZ:

1 Incl
Cy DF fr WDGS, G-4
23 Apr 46 re abv subj

LEO J. ERLER, Col., A. C.
Deputy Chief, Air Installations Division
Assistant Chief of Air Staff-4

MEMO FOR FILES: cy incl not reqd. files will be furnished copy by separate correspondence.

MEMO FOR RECORD: ATSC (Capt Craig) notified by phone 21 May 46 by Capt McCabe.

OFFICE SYMBOL	1. AFDIN-2A/1	2.	3.	4.
GRADE AND SURNAME OF COORDINATING OFFICERS				

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COPY

Headquarters, Army Air Forces
Washington

5 Jun 1946

SUBJECT: Activation of Transient Service and Air Reserve Bases

TO: Commanding General, Air Materiel Command, Wright Field, Dayton, Ohio.

1. It is desired that you transfer command jurisdiction of the following fields to the Air Defense Command. These fields will be used for transient servicing and reserve flying activities:

a. Transfer of jurisdiction and activation on or about 1 June 1946.

Base	Location
Des Moines Mun Apt	Des Moines, Iowa
Jackson AAB	Jackson, Miss.

b. Transfer of jurisdiction and activation on or about 15 June 1946.

Base	Location
New Orleans Mun Apt	New Orleans, La.
Syracuse AAFld	Syracuse, N. Y.
Orchard Place Apt	Chicago, Ill.
Cleveland Mun Apt	Cleveland, Ohio
Boeing Field	Seattle, Wash.
Bedford AAFld	Bedford, Mass.
Fairfax Field	Kansas City, Kansas
Hensley Field	Dallas, Texas
Billy Mitchell Field	Milwaukee, Wis.

2. Your command and the Air Defense Command jointly will determine the strength, military and civilian, to be transferred because of the changes in jurisdiction. A request to adjust the personnel allotment of your command based on the new workload resulting from the release of jurisdiction of these stations will be transmitted to this headquarters. An adjustment of funds resulting from this transfer will be accomplished in accordance with paragraph 12, AAF Letter 30-25, 4 August 1945.

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(AFR 11-30)

TSBRC2A/vwp/26121
28 June 1946

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Facilities 18

SUBJECT: Activation of Transient Service and Air Reserve Bases.

3. It is also desired that your command furnish facilities to the Air Defense Command at the following fields for the purpose of conducting transient servicing and reserve flying activities. These fields will remain under your command jurisdiction:

a. Joint use and activation on or about 15 June 1946:

Base	Location
Newark Mun Apt	Newark, N. J.
Olmsted Field	Middletown, Pa.
Tinker Field	Oklahoma City, Okla.
Miami AAB	Miami, Fla.
Oakland Mun Apt	Oakland, Calif.

4. Applicable paragraphs of AAF Regulation 85-2, 13 June 1945, as amended by AAF Regulation 85-2A, 12 December 1945, will govern these joint uses.

5. The Air Defense Command will contact your command directly relative to the effective dates and other details of these transfers and joint uses.

6. Accomplishment of these changes in jurisdiction will be reported to this headquarters in the Daily Organization Status Change Report.

7. This Headquarters will initiate action to amend War Department assignment list and will also notify the Interdepartmental Air Traffic Control Board of these changes in jurisdiction.

BY COMMAND OF GENERAL SPAATZ:

/s/ Robert Kauch
ROBERT KAUCH, Brig. Gen., USA
Chief, Air Installations Division
Assistant Chief of Air Staff-4

1 Incl:
Cy ltr to ADC
subj as above

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TSERC2A/JRM/vwp/26121

NOTES FOR FILE: 15 June 1946 3G

SUBJECT: Boeing Field

1. Base Services Section, this Headquarters, has received a letter dated 4 June 1946 in which General Keuch (Ch, Air Instal Div - OACofAS) has authorized the transfer to Air Defense Command, effective 15 June 1946, of the jurisdiction over all Boeing Field installations retained by the Army Air Forces at that location. This does not include any industrial installations.

2. The Commanding Officer, Boeing Field, was so notified by Base Services and Air Installations Division, this headquarters, is cognizant of the situation.

JACK R. MARSH
Facilities Review Branch
Industrial Section
Procurement Division

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323.3
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SAVE

HEADQUARTERS
SPOKANE AIR TECHNICAL SERVICE COMMAND SPPBS/CWT/blr

SPOKANE ARMY AIR FIELD
SPOKANE, WASHINGTON
27 June 1946

SUBJECT: Letter of Transmittal

TO: Commanding General
Air Materiel Command
Wright Field, Dayton, Ohio

ATTN: TSPBS1

In compliance with Paragraph 3b (Report B), AMC Regulation 15-55-1, dated 21 March 1945, ten copies of the Board Proceedings concerning the transfer of command jurisdiction of Boeing Field, Seattle, Washington from the Air Materiel Command to the Air Defense Command are transmitted herewith.

FOR THE COMMANDING OFFICER:

WILLIAM F. HANLON
Colonel, Air Corps
Deputy for Base Services (T-6)

1 Incl - 10 cys B/P, Boeing Fld

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File

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ARMY AIR FORCES
HEADQUARTERS, BOEING FIELD
SEATTLE 8, WASHINGTON

25 June 1946

TRANSFER OF COMMAND JURISDICTION OF BOEING FIELD, SEATTLE, WASHINGTON, FROM AIR MATERIEL COMMAND TO AIR DEFENSE COMMAND

SECTION I

GENERAL

1. a. Pursuant to authority contained in letter from Headquarters, Army Air Forces, Washington, D. C., to Commanding General, Headquarters, Air Materiel Command, Wright Field, Dayton, Ohio, Subj: "Activation of Transient Service and Air Reserve Bases", dated 5 June 1946, and TWX AF741, dated 10 June 1946, from Headquarters, Army Air Forces, Washington, D. C., to Commanding General, Air Defense Command, Mitchell Field, New York, and Commanding General, Air Materiel Command, Wright Field, Dayton, Ohio, Subj: "Transfer or Joint Tenancy for Air Reserve Training", a meeting was held at Boeing Field, Seattle, Washington, on 25 June 1946, between representatives of Headquarters, ADC and Spokane Air Technical Service Command, Spokane, Washington, for the purpose of arranging details relative to the transfer of command jurisdiction of Boeing Field, Seattle, Washington, and associated facilities now assigned Boeing Field from the Air Materiel Command to the Air Defense Command.

b. Air Defense Command has authorized the personnel listed below to deal direct with Spokane Air Technical Service Command relative subject transfer.

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Representing Air Defense Command:

Col Boyd Hubbard, Jr.	020431	AC
Col Samuel M. Smith	0401863	AC
Maj Strode L. Ely	0916460	CE

c. Air Materiel Command has authorized Spokane Air Technical Service Command to deal direct with Fourth Air Force personnel relative to subject transfer. (TWX, TSFBA-4-6-82, Air Materiel Command, dated 14 June 1946).

Representing Air Materiel Command:

Col Clarence L. Strike	05950	IGD
Maj George Sarli	0560324	AC
Maj Charles W. Tennant	0661396	AC
Maj George H. Mathews	0560082	AC
Capt Wildy G. Stiles	0561249	AC
Capt Donald J. Hartburg	0453052	AC
Capt Kenneth C. Peterson	0566412	AC
Capt Millard F. Pedigo	0751029	AC
1st Lt Wayne G. Adler	0764159	AC
Robert E. Williams, Adm Asst	Civ	

d. Representing Boeing Field:

Col Haynie McCormick	012572	AC
Maj John A. Duganne	0401148	AC
Capt Herbert Buxton, Jr.	0489561	AC

2. The Air Technical Service Command responsibilities as delineated in AAF Letter 20-96, 26 May 1945 as amended by 20-96A, 29 June 1945 and 20-96B, 4 December 1945 and attached as incl 1 to this transfer agreement are to be assumed by Air Defense Command effective on the date of transfer.

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SECTION II

EFFECTIVE DATE OF TRANSFER

1. a. Command jurisdiction of subject station and associated facilities was transferred from its present assignment to Air Defense Command effective 2359 PST, 14 June 1946.

b. Responsibility for jurisdiction of subject station will be assumed by Air Defense Command effective 0001 PST, 26 June 1946.

SECTION III

PERSONNEL

1. a. Military Personnel.--All officer and enlisted personnel of the 4169th AAF Base Unit now assigned duty at Boeing Field under Air Materiel Command will be transferred to Air Defense Command, effective date of transfer.

b. All personnel on Spokane Air Technical Service Command orders for permanent change of station prior to effective date of transfer and on whom transfer has not been effected, will remain assigned to Boeing Field.

2. a. Civilian Personnel.--All civilian personnel now assigned to duty at Boeing Field will be transferred to the Air Defense Command, effective 2359 29 June 1946.

b. Civilian personnel on duty with AAF Plant Representative and AAF Resident Auditor at Boeing Aircraft Corporation will be administered by the base civilian personnel administrative section in accordance with AAF regulations.

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SECTION IV

RECORDS

1. Present station historian will complete the periodic report up to and including 30 June 1946, and forward the report to Headquarters, Air Defense Command in quadruplicate. Copy will be retained for station files.

2. a. Administration and property records of the station will remain intact and will be transferred with the installation in accordance with TM 12-259.

b. Classified documents will remain at the installation being transferred.

3. Command copies of all files pertaining to real estate, both leased and acquired, containing all correspondence and all other instruments pertaining to the War Department interests in the station will be transferred to Air Defense Command.

4. Command copies of WD Form 66-2 and 201 files of officers will be transferred to Air Defense Command.

5. All statistical control reports due through 30 June 1946 will be processed to and by Spokane Air Technical Service Command with information copies to the Air Defense Command.

SECTION V

PERSONNEL SERVICES

Boeing Field, Seattle, Washington, will retain responsibility for all personnel service activities for which they are now charged.

-4-

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Trf of Cond Jurisdiction of Boeing Fld, Seattle, Wn, fr Air Materiel Cond to Air Defense Cond, 25 June 46, - Continued.

SECTION VI

BUDGET AND FISCAL

1. Appropriated Funds:

a. Procedures established in Par. 12, AAF Ltr 30-25, dated 4 August 1945, will be followed with regard to Appropriated Funds.

b. All contractual obligations through 30 June 1946 will be charged to the Air Materiel Command, Spokane, Washington, where the larger portion of the billing period falls prior to 30 June 1946. Air Defense Command funds will be charged where the larger portion of the billing period falls subsequent to 30 June 1946.

2. a. Spokane Air Technical Service Command, Spokane, Washington, will retain funding responsibility for civilian personnel of the AAF Resident Auditor and AAF Plant Representative at Boeing Aircraft Corporation, Seattle, Washington. "Obligation Authority" to Budget and Fiscal Officer, Boeing Field, Air Defense Command to effect payment will be accomplished by Spokane Air Technical Service Command, Spokane, Washington.

b. Radar Maintenance personnel attached to Boeing Field from Spokane Air Technical Service Command, Spokane, Washington, (eighteen (18) civilians) will be paid by Air Defense Command with obligation authority as furnished by Spokane Air Technical Service Command, Spokane, Washington.

3. Non-appropriated Funds:

a. All non-appropriated funds which will continue to be utilized will be transferred with the installation. Unit Central Post funds will

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be transferred under the provisions of Paragraph 18a, or closed out under the provisions of Paragraph 24, AR 210-50, dated 13 December 1945. Sundry funds will be transferred or closed out under the provisions of AAF Letter 30-30, dated 30 November 1945.

b. Audits of all non-appropriated funds exclusive of U. S. Army Motion Picture Fund, will be performed by the station Budget and Fiscal Officer as of 2359 PST, 25 June 1946. Custodians of non-appropriated funds, except those enumerated above, will close their books and obtain bank balances as of 2359 hours, 25 June 1946. Certificates of Audit will be forwarded in triplicate to Air Defense Command.

(1) All assets and properties of the Officers' Club are transferred with the station.

(2) Inventories of the property, furniture, and fixtures of the Officers' Club will be obtained as of 2359 PST, 25 June 1946.

SECTION VII

PROPERTY

1. All supplies, equipment, subsistence stores, salvage materials and responsibility and accountability thereto now at and under control of the station listed in Section I above, are transferred to the jurisdiction of the Air Defense Command effective 0001, 26 June 1946, except transportation equipment assigned to the Plant Representative of the Boeing Aircraft Corporation, and property pertaining to the Communications Repair Detachment of the 4134th AAF Base Unit, Spokane Air Technical Service Command.

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2. All aircraft now assigned to the 4169th AAF Base Unit will be transferred with the station.

SECTION VIII

COMMUNICATIONS

All contracts covering communications and other services will be transferred by Spokane Air Technical Service Command to Air Defense Command effective 2359 hours, 30 June 1946. Command copies of files pertaining to such contracts will be transferred to Air Defense Command.

SECTION IX

BUILDINGS AND GROUNDS

1. All real property identified as Boeing Field is transferred from the jurisdiction of the Air Materiel Command to the Air Defense Command.

2. All records, files and correspondence pertaining to incompleted construction projects and statistical data concerning facilities and equipment at subject station will be transferred to Air Defense Command.

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SECTION X

CONCLUSION

The foregoing terms and commitments outlined in the agreement are hereby agreed to subject to approval of the Commanding Generals of the commands concerned.

Representing Air Defense Command

BOYD HUBBARD, JR, 020431
Colonel, Air Corps

Representing Air Material Command

CLARENCE L. STRIKE 05950
Colonel, Ord. Gen. Dept.

SAMUEL M. SMITH 0401863
Colonel, Air Corps

GEORGE SAGLI, 0560304
Major, Air Corps

STRODE L. ELY 0[illegible]60
Major, Corps of Engineers

CHARLES W. TENNANT, 0661396
Major, Air Corps

SECTION XI

APPROVAL

Approved. (25 June 1946.)

FRANK D. HACKETT
Colonel, Air Corps
Commanding
Spokane Air Technical Service Command

3 Incl's.
1. AAF Ltr 20-96 dtd 25 May 45
2. AAF Ltr 20-96A dtd 26 June 45
3. AAF Ltr 20-96 dtd 4 Dec 45

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RESOLUTION NO. 10076

WHEREAS, the duration lease covering Army tenancy at the King County Airport provides, "Paragraph 20. It is expressly understood and agreed that control of operations on the field shall be administered by the Army Air Forces Material Command, and that any change of control of operations on the Field to any agency or command other than the Army Air Forces Material Command, shall be subject to written approval by King County", and

WHEREAS, It appears that on June 26, 1946, without written or any approval by King County, command jurisdiction of Boeing Field was transferred from Air Material Command to the Air Defense Command, and

WHEREAS, it is not to the interests of King County that the above lease be continued and that it is to the best interests of King County that a new lease be executed covering Army operations at Boeing Field,

NOW, THEREFORE, BE IT RESOLVED, By the Board of County Commissioners that the above lease be declared terminated as of this date, and that a copy of this resolution be sent to the Division Engineer, Pacific Division, 351 California Street, San Francisco 19, California, Attention Real Estate Division; and a copy sent to James Austin, Chief, Real Estate Division, Textile Tower, Seattle, Washington.

PASSED, This 1st day of July, 1946

/s/ J. Harold [illegible], Chairman
J. HAROLD [illegible], Chairman

/s/ A. E. [illegible]
A. E. [illegible]

/s/ [illegible]
[illegible]

BOARD OF COUNTY COMMISSIONERS
KING COUNTY, WASHINGTON

ATTEST:

ROBERT A. MORRIS
Clerk of the Board

By /s/ [illegible]
Deputy

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601.53 Boeing Fld 3

PD
ENGLM
6206

Real Estate

WA24

SA41

KA25

WCE V UKDE NR2 WD

FROM WEAVER DIV ENGR NPD PORTLAND OREG 140013XXX 140003Z

TO OCE WASH
GRNC

ATTN REAL EST DIV - ENGLD THIS O JUST IN RECEIPT OF RESOLUTION

BRD OF COUNTY COMMISSIONERS CMA KING COUNTY WASH TERMINATING

EFF 1 JULY 46 LEASE W04-193-ENG-3584 FROM KING COUNTY COVERINGG
BOEIGXXX BOEING FLD SEATTLE WASH PD LEASE TERMINATED W/OUT NOTICE
ON THE GROUNDS THAT PARAGRAPH TWENTY OF LEASE PROVIDES THAT OPERATIONS
OF FIELD SHALL BE ADMINISTERD BY ARMY AIR FORCES MATERIEL COMMAND
AND NO CHANGE CAN BE MADE W/OUT CONSENT OF KING COUNTY PD RESOLUTION
STATES THAT CHANGE WAS MADE FROM AAF MATERIEL COMMAND TO AIR
DEFENSE COMMAND CONSTITUTING VIOLATION OF PARA TWENTY PD RESOLUTION
STATES THAT TXX IT IS TO THE BEST INTEREST OF KING COUNTY
THEREFORE THAT A NEW LEASE BE EXECUTED COVERING ARMY OPERS AT BOEING FLD
PD ON 25 JUNE DIST ENGR SEATTLE DIST AWARDED TO BRAZIER CONSTR CO
CONTRACT FOR CAMOUFLAGE REMOVAL ON LEASED PREMISES AT COST
OF 74190 DLRS CMA WHICH MATTER IS INCLUDED IN ABOVE LEASE
TERMINATION PD THIS O RECOMMENDS THAT URO CONTACT THE

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CHIEF OF ENGINEERS
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JUL 15 8 09 AM '46
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601.S 3 Boeing Fld

STANDARD FORM NO. 64

Office Memorandum · UNITED STATES GOVERNMENT

TO : [illegible]

DATE: 16 July 1946

FROM :

SUBJECT: Boeing Field, Washington

1. The lease provides "it is expressly understood and agreed that control of operations on the field shall be administered by the Army Air Forces, Materiel Command, and that any change of control of operations on the field to an agency or command other than the Army Air Forces Materiel Command shall be subject to written approval by King County (the lessor). Right of termination is not given to lessor. Lease for 6 months after emergency. Notice of renewal not necessary.

2. This field was declared surplus to War Department requirements effective 23 April 1946, with the exception of areas known as 1 and 3, a portion of Northwest Apron No. 2, 72 Government owned buildings, together with the reservation for joint use of taxiways, runways and existing fuel storage facilities.

3. The Air Forces advises that the area reserved by the Air Forces from the surplus declaration, as outlined above, is included within the land covered by the subject lease except for three hangars.

4. The Air Forces advise that the Air Defense Command has control of operations. It is the opinion of the Air Forces that some action of the War Department may be the cause of irritation to the lessor and that we should determine the real cause for the desire to cancel.

5. If we took the position that the Government had not breached the contract and, therefore, the lessor had no right to terminate, it might make it difficult for the Air Forces to retain the portion desired by them when the lease expires under its own terms.

6. Some of the buildings which Air Forces proposes to retain are to be made available to Boeing Aircraft. It may be that this is the cause of irritation to the lessor.

7. Subject lease covers approximately 450 acres. Quarterly Inventory shows 3 acres Government - 447 leased.

8. Dist Engr assumed custody 7 June 46
Air Corps still has custody of retained portions.

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601.53 Boeing Fld. Wash. 2

OCE - REAL ESTATE - MANAGEMENT & DISPOSAL BRV. HO'N/pmm

THE DIVISION ENGINEER
NORTH PACIFIC DIVISION
PORTLAND, OREGON

ROUTINE

Co 1.53- Boeing Canfield Wash
King County Commissioners

RECRTT WPDEM 128-7, 14 JULY 1946 BOEING FIELD LEASE WO4-193-ENG-3584 DETERMINE BY CONFERENCE WITH KING COUNTY OFFICIALS THE REASON FOR LESSOR'S DESIRE TO CANCEL LEASE WITH VIEW THAT THERE MAY BE SOME SOURCE OF IRRITATION WHICH MIGHT BE REMOVED BY THE WAR DEPARTMENT PD IN ANY EVENT LESSOR'S CANCELLATION OF LEASE SHOULD NOT BE RECOGNIZED PENDING INSTRUCTIONS FROM THIS OFFICE PD TELEGRAPHIC ADVICE REQUESTED END 2864 ENGLT

602 Boeing Field, Washington ENGLT

CHIEF OF ENGINEERS
OFFICE
A.P.O. [illegible]

JY 11 10 [illegible]

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c/c. 60153 Boeing Fld., Wash.

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CHIEF OF ENGINEERS

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WCE V UKDE NR4 WD

FROM WEAVER DIV ENGR NORTH PAC DIV PORTLAND ORE 250035Z

TO OCE USARMY WASH
GRNC

5.

ATTN R E DIV-ENGLT PD REURTT 2864 284 ENGLT 17 JULY LEASE W04-193ENG-3584 KING COUNTY WN BOEING FIELD PD CONFERENCE HELD WITH AIRPORT MGR 19 JULY PD MRXXX MGR STATES OBJECT OF COUNTY IN SERVING NOTICE CANCELLATION WAS TO BRING MATTER TO ATTN GOVT WITH VIEW TO RENEGOTIATING LEASE TO PROVIDE FOR GOTS PORTION OF MAINT MONEY FOR OPERATION FIELD AND TO EXPEDITE REMOVAL OF LARGE NUMBER T/O GOVT BLDGS PD FURTHER CONFERENCE TO BE HELD BY SEATTLE SUB-O WITH MGR IN WHICH SUB-O WILL REQU DEF STATEMENT COUNTYS POSITION IN THE MATTER PD 4TH AF BY 1ST IND 18 JULY REQS THAT INTERIM PERMIT OR NEW LEASE BE NEGOTIATED IN EVENT SUBJ LEASE IS TERMINATED BY COUNTYS RESOLUTION 1 JULY END NPDRO 22-7

0037Z

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1XX 284 17 W04-193-ENG-3584 19 4TH 1ST 18 1 222-7

CORR 5TH LINE 3RD WD SHD RD GOVTS RPT GOVTS NOT GOTS

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C 1st 602. Runway Ldg 36

KING COUNTY AIRPORT
Boeing Field
Seattle,8

July 31, 1946

United States District Engineer,
Real Estate Division
Textile Tower,
Seattle, Washington

Attention Mr. McCaustland:

Dear Mr. McCaustland:

Your Mr. England presented for signature a supplement to a Joint Survey and Condition Report, which instrument listed items covered by interim permit dated July 1, 1946. Signature is refused for the following reason: The lease dated September, 1943, has been revoked by the Board of County Commissioners as of July 2, and notice of such rescission has been forwarded through the proper channels to your San Francisco office.

If there is any Federally owned property on the Field which you need or want, please cause the same to be removed immediately, otherwise we assume no responsibility for any such property.

Through your Mr. Walker we have requested that the Field be restored or that King County be paid funds to cover the cost of restoring the original landing pattern, drainage system, and lighting facilities. We take this opportunity of renewing this request.

Our position in reference to the first matter might seem arbitrary considered apart from the history of wartime occupancy of this airport, so some explanation is therefore necessary.

Under the September, 1943, lease King County reserved the right to operate a civil air terminal and collect revenues from normal sources. During the past year, the area on the east side of the field has been abandoned by the Army and it has remained littered with shacks and debris making it unusable for airport purposes and confining normal operations to such an extent as to cause serious congestion around the ramps and aprons. This condition has constituted fire hazard, has been unsightly and a source of embarrassment to us. We have patiently waited for the condition to be corrected and have taken every opportunity to solicit aid from all Federal agencies interested. We have attempted to police the area and have met interference from certain Federal agencies. The provision of this 1943 lease against assignment to any command other than the materiel Command must have had some meaning. It must have been designed to protect King County against the very contingency which is threatened—the institution of reserve flight training in an already congested traffic pattern.

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C.f.P. 602 Bulky File 37

The recission of this lease affords us an opportunity to intelligently approach the problem, reasonably provides for full utilization of the field to serve both Federal and local needs, and to provide adequate finances for operation of the field. Recission also affords us an immediate procedure by which the problem of title to properties which were placed on the Airport during Army occupancy might be solved.

We have, through the Post Engineer and the United States Engineers, concluded one year of fruitless negotiations and anticipate with rather restrained enthusiasm the prospect of reinstituting negotiations during the next year through another disposal agency.

Sincerely yours,

KING COUNTY AIRPORT

/s/ Ernest R. Cluck
Ernest R. Cluck
Airport Manager

MRG/fe

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Cafe 607 Buckley Ltr 38

KING COUNTY AIRPORT
Boeing Field
Seattle, 8

August 2, 1946.

United States Army Engineers,
Real Estate Division,
Textile Tower,
Seattle, Washington.

Attention Mr. McCaustland:

Dear Mr. McCaustland:

This letter is written following our discussions, to outline the terms to govern continued Army tenancy at this Airport, which we would recommend for adoption by the Board of County Commissioners.

1. Payment to King County, in lieu of restoration of runways, field lighting, and drainage, $50,000.00.

2. Annual contribution toward cost of field maintenance, commencing as of July 1, 1946, to include rentals of all areas now occupied or facilities used by the Army, $25,000.00

A lease agreement should contain the following stipulations:

1. In the event more land is required, the same to be included at a rental based on the fair value or purchased at the fair value. The amount can either be agreed on in advance or at the time of actual possession.

2. The lease should provide that all fire fighting, crash, and maintenance equipment now on the field remain after termination of the lease and be subject to joint control during the lease period.

3. The number of aircraft under Army operation should be limited to 35, additional planes to be included only with consent of Airport Management.

4. The lease should contain the condition that all aircraft are subject to control from the tower.

In urging prompt action in this matter, might I point out that we are receiving applications from private concerns for locations in the areas desired by the Army and should any of these applications be accepted by the Board, a serious inconvenience might result.

Sincerely yours,
KING COUNTY AIRPORT
/s/ Ernest R. Gluck
Ernest R. Gluck, Airport Manager

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AFDIN-2A/5/Capt.McCabe/amw
Ext. 4444 12 Aug 46

Bldg & Grds. Wash Seattle - 1946 17

BLDGS & GROUNDS
19 AUG 1946

Mr. William M. Allen
President
Boeing Aircraft Company
Seattle 14, Washington

Dear Mr. Allen:

Reference is made to your letter dated June 25, 1946, concerning your request for use of the former Army Air Forces Superfortress School facilities at Boeing Field, Seattle, Washington, which was received July 30, 1946.

Boeing Field has been designated as one of the fields in the Seattle area to absorb part of the work load of the Army Air Forces Reserve Flying program. As such certain facilities at Boeing Field will be required to accommodate these activities. However, in view of Boeing Aircraft's requirements at the field, and a lesser need by the Air Forces than was at first contemplated, it has been determined that your request can be granted with certain exceptions.

Hangar 2-316, a B-17 hangar, will be retained for use by the Army Air Forces and, in addition, joint use of the apron will have to apply so that access to and from this hangar may be had. This designation will leave Buildings 2-316, 2-314, 2-301, 2-310, 2-199, and 2-198 for the use of Boeing Aircraft Company in conjunction with the training program for the Air Transport Command. In this connection it must be realized that present regulations will require the payment of a fair rental for the use of the above-mentioned facilities and the lease may be revocable at will by the Government.

The Chief of Engineers has been requested to negotiate a lease between the Government and Boeing Aircraft Company so that early utilization of the requested facilities may be realized. It is hoped this action will prove satisfactory to you.

Sincerely yours,

ROBERT KAUCH, Brig. Gen., USA
Chief, Air Installations Division
Assistant Chief of Air Staff-4

Copy furnished: Boeing Aircraft Co.
730 15th St., N.W.
Room 507
Attn: Mr. Murray

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OFFICE SYMBOL	1. AFDIN-2A/5	2.	3.	4. AAF	5.
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C-7 Cargo
686.41 Boeing Fld., Wash.
Cargo Co.

[redacted]

ROBERT KAUCH, Brig. Gen., USA
Chief, Air Installations Division
Assistant Chief of Air Staff-4

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C. J. Cage
680.41 Boeing
Fld., Wash., King Co.

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BMS
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680.41 Boeing Field, Washington
Boeing Aircraft Company - ENGLR

1st Ind HEB

SUBJECT: Requested Lease to Boeing Aircraft Company 1181

OCE, Washington 25, D. C., 12 September 1946

TO: The Division Engineer, North Pacific Division, PORTLAND, OREGON

1. Forwarded for compliance with instructions contained in basic letter.

2. Authority is granted to give immediate right of entry to Boeing Aircraft Company covering facilities involved at Boeing Field, Washington, pending issuance of a formal lease provided compensation is agreed upon.

3. A draft of instrument and the information required by existing regulations should be furnished this office.

BY ORDER OF THE CHIEF OF ENGINEERS.

HARRY E. BRADY
Chief, Management Branch
Management and Disposal Division
Real Estate

X 680.41 Boeing Aircraft Co.

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C.A.F. & D. Buckfields

33

TERMINATION OF LEASE BY KING COUNTY
AND
REQUEST FOR RESTORATION

Lease number W04-193-eng-3584 was terminated by King County Commissioners Resolution Number 10076 dated July 1, 1946. Grounds for this action by King County being that the terms of the lease as set forth in paragraph number 20 were violated by the War Department on June 26, 1946 when a change in command of Boeing Field was made without written notice to, and the approval of, King County.

Subsequent to termination of the lease by King County, a formal request for restoration was submitted by King County. A payment to King County in lieu of restoration of runways, field lighting, and drainage in the amount of $50,000. was demanded in addition to an annual payment of $25,000. for the use of the field commencing July 1, 1946. Letter dated August 2, 1946 signed by Ernest R. Clunk, King County Airport Manager, making demand for restoration is made a part of this report for ready reference.

A copy of the directive changing commands at Boeing Field, which was the basis for cancellation of the lease by King County, is included for reference.

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WCE V UKDE NR10 WD

FROM WEAVER DIVN ENGR NPD PORTLAND OREGON 211746Z

TO OCE WASH DC
GRNC

REUTT 4370 ENGLT OF 4 NOV DECLARING REMAINING ACTIVITIES BOEING FIELD SEATTLE WASH SURPLUS AND YOUR TT 284 ENGLT OF 17 JUL o DISREGARD LESSORS NOTICE OF TERMINATION OF LEASE W04-193ENG-3584 COVERING BOEING FLD FOR VIOLATION BY GOVT OF CLAUSE THEREIN AGAINST TRANSFER OF AIR COMD PD KING COUNTY CLAIMING RENTAL FROM JUL OF SEVENTY FIVE THOUSAND DOLLARS PER ANNUM OR MORE AND IS RENTING GOVT BUILDINGS FOR OWN BENEFIT W/O AUTH PD YOUR ATTN INVITED TO SUBDIVISION 4 OF SECTION 812 REMINGTONS REVISED STATUTES OF WASH VOLUME THREE AND TO DECISION WASH SUPREME COURT IN BOYD VS NORTH 114 WASH 540 CWA 195 PACIFIC 1011 THAT LEASE IS AUTOMATICALLY FORFEITED EVEN THOUGH LEASE CONTAINS NO FORFEITURE PROVISIONS IF TENANT HAS BREACHED ANY EXPRESS COVENANT THEREIN AND NOTICE HAS BEEN SERVED ON TENANT BY LESSOR PD SEATTLE SUB-OFFICE ADVISES THAT COMMANDING OFFICER AAF AT BOEING HAS ONLY VERBAL INSTRUCTIONS TO MOVE TO MCCHORD FLD AND DOES NOT WISH TO MOVE UNTIL 1 JAN 1947 ALTHOUGH THIS OFFICE HAS COPY OF MEMO FROM HQ AAF WASH CMA FILE AFDIN DASH 2B SLANT 1 TO LT COL CULPEPPER AAF LIAISON OFFICER THAT AIR TRANSPORT WAS BEING AUTHORIZED TO MOVE FROM BOEING TO MCCHORD FLD EFFECTIVE 25 OCT AND THAT AIR DEFENSE CMA WILL CONDUCT ACTIVITIES AT MCCHORD IN LIEU OF BOEING PD RECOMMEND YOUR OFFICE IMMEDIATELY CONTACT AAF THAT ORDERS ISSUE TO 4TH AAF AND AIR DEFENSE COM AT BOEING TO EXPEDITE MOVE TO MCCHORD FLD AND THAT THIS OFFICE BE FURNISHED BY TT DEFINITE INSTRUCTIONS RELATIVE TO PROCEDURES TO BE FOLLOWED IN DEALING W/KING COUNTY AND REMOVAL OF GOVT IMPROVEMENTS ON LEASED PREMISES END NPDRC 106-11 1753Z
CORRN PLS 11TH LINE 7TH WORD SHD READ BRANCHED RPT BRANCHED NOT BREACHED

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OCE, REAL ESTATE, MANAGEMENT & DISPOSAL, DISPOSAL BR.

THE DIVISION ENGINEER
NORTH PACIFIC DIVISION
PORTLAND, OREGON

ROUTINE

REURTT NPDRM 106-11 DTD 21 NOV 1946 CMA RELATIVE TO FACILITIES AT BOEING FLD UNDER LEASE NO W 04-193-ENG-3584 PD RQST YOU EXPEDITE TRANSMISSION OF WAA FORM 1005 ADDITION TO WAA FORM 1005 REPORTING AGENCY NO WD 962 COVERING REMAINING FACILITIES AT BOEING FLD PD THE WAA FORM 1005 SHOULD CONTAIN COMPLETE RECITATION OF FACTS CONCERNING RENTAL OF LEASED BLDGS BY KING COUNTY TO THIRD PARTIES AND OTHER ESSENTIAL FACTS RELATING TO ACTION BY COUNTY PD REMOVAL OF GOVT IMPROVEMENTS FROM LEASED PREMISES WILL BE A MATTER FOR DETERMINATION BY WAA PD RQST YOU FURNISH THIS OFFICE COMPLETE INFORMATION CONCERNING CLAIM OF KING COUNTY FOR RENTAL FROM JULY OF $75,000 OR MORE CMA WHEN AND IF SUBMITTED PD HDQ AAF HAS INFORMALLY ADVISED THAT AIR TRANSPORT COMMAND MOVED TO MCCHORD FIELD ON 25 OCT 1946 AND THAT ON 28 OCT 1946 AIR DEFENSE COMMAND WAS INSTRUCTED TO MOVE TO MCCHORD FIELD AS SOON AS POSSIBLE PD HDQ AAF WILL COMMUNICATE WITH AIR DEFENSE COMMAND AT BOEING FLD AND RQST THAT MOVE BE EXPEDITED END 4577 ENGLT

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602 Boeing Field, Seattle, Washington ENGLT

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(AR 11-20)

ENGLT 11/26/46 R. W. LOVE, LT. COL. C. E.

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CF Wash.
1/2

AFDIN-2A/6
Capt. McCabe/amw/44444
Wrtn: 3 Dec 1946

BLDGS. & GROUNDS

9 DEC 1946

Second Lieut. Richard B. Tayler, A. C. Res.
6407 109th Place
Kirkland, Washington

Dear Lieutenant Tayler:

Your telegram addressed to the War Department concerning Boeing Field was received November 15, 1946, and referred to me as the principal staff officer in charge of air installations matters for reply.

In connection with reserve flying activities at Boeing Field, it must be pointed out that the installation is not War Department owned, the property formerly occupied by the Army Air Forces being leased from local authorities. Despite the fact that the Army Air Forces contemplated a reserve unit at Boeing Field, the local authorities were not receptive to such a plan and negotiations were discontinued. As a result of the above factors, the Army Air Forces had no alternative but to transfer its Air Reserve activities from Boeing Field to McChord Field at Tacoma, Washington.

Sincerely yours,

Copy furnished: SS&P

ROBERT KAUCH, Brig. Gen., USA
Chief, Air Installations Division
Assistant Chief of Air Staff-4

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OFFICE SYMBOL	1. AFDIN-2A/6	2. CRN	3.	4.	5.
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Telephone Conversation between Col. H. A. Shepard, talking from Los Angeles, California, and Colonel W. M. Knowles, Deputy Chief, Procurement Division, Wright Field, Dayton, Ohio.

8:50 A. M.
14 January '47.

SUBJECT: Re. Building for Boeing Aircraft

DIST: cc TSERC Mr. Filbert
TSEUYIA Mr. Donnelly

Col. S: I want to ask you about the matter I called you from Sacramento on - trying to get this building for Boeing to use in connection with their schoolwork?

Col. K: I haven't heard back from Colonel Griggs on that yet. He was going to go right to work on it, and did go right to work on it, and was going to let us know how he came out. I haven't heard from him yet.

Col. S: Get one of your people to follow him up today, somebody that would be concerned with that school contract. I don't know whether that would be Col. Schaetzel or Col. Zoeckler, but get someone to follow it up and get the fire going under it.

Col. K: Okay, will do.

W. M. KNOWLES,
Colonel, Air Corps,
Deputy Chief,
Procurement Division

NOTE: A meeting between General Couch, Mr. Murray, Boeing Washington, D. C. Repr., Colonel Vaughan, WAA, someone from the Engineers Corps was held in Washington Monday, 13 January in which it was agreed that the Engineers would turn the property over to WAA today, 15 January, and that WAA would immediately draw a lease with Boeing for use of Building T-108 and the School Building on Kings County Airport to Boeing. Total buildings being turned over to Boeing are - (1) B-29 Hangar (2) B-17 Hangars (3) School Building. This information was obtained from Mr. Filbert, TSERC, who was working with Col. Griggs on this project. EKG.

INFO HELD FROM MAJ OTTMAN (TSEUW) BY PHONE 1/16

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hw/

Telephone Conversation between Col. H. A. Shepard, talking from Sacramento, California, and Col. W. M. Knowles, Acting Chief, Procurement Division, WF, Dayton, Ohio.

1:00 P. M.
10 January 1947.

SUBJECT: Re. to Leasing Building Number T-102 in Old 4th Air Force Area on Boeing Field

3 G-

DIST: cc TSCOM Col. J. G. Griggs (Action Copy)

Col. S: I have something here which I want you to handle for General Twining which is to go to Colonel John Griggs in Air Installations. The Boeing people had planned on obtaining from War Assets Administration by lease a temporary building Number T-102 in this old Fourth Air Force Area on Boeing Field which they had expected to use in conjunction with their school work - they're going to teach a lot of technical people how to handle the C-97, the B-50, and so on. It was going to be one of those straight lease deals Boeing and War Assets in accordance with our current facilities practice, and the building actually had been declared surplus by the Army Air Forces and was enroute to War Assets for leasing or other disposal. Just before War Assets got their hands on it the Alaska Engineers, whoever they are, announced as a Government Agency they had first crack at it and they wanted to use the building for a warehouse. As a result of that Boeing cannot lease the building from War Assets. Now we also found that the Air Reserve Unit in Seattle would like to use the building also and they were going to pick it up if the Alaska Engineers didn't get it. So we had two Government Agencies with higher priority who were going to get the building and Boeing couldn't have it. Now we talked locally with the Air Reserve people and they agreed to withdraw their request for the building. We did not talk with the Alaska Engineers but General Twining would like very much for Colonel Griggs to get busy and find out who they are and to appeal directly to them to relinquish their request for the building. Now we feel that's the proper way to do it because that would permit the building to go on to War Assets as originally planned and War Assets will lease it to Boeing. Boeing definitely needs this in connection with their contract for training technical personnel.

Col. K: Okay.

Col. S: Well you get that to Colonel Griggs and tell him the boss-man said to go to work on it right away.

Col. K: I'll do that.

H. A. Shepard,
Colonel, Air Corps,
Chief, Procurement Division

MET W/ KNOWLES
GEN KAUCH - AIR INSTALLATIONS

SHE TALKED WITH COL KNOWLES (WPAFB) WHO SAID THAT GEN KAUCH + MURRAY (BOEING) HERE WORKING OUT A DEAL WHEREBY BOEING COULD USE, LEASE, COL GRIGGS WANTED TO CONFIRM THIS W/ GEN KAUCH.
PHONED THIS INFO TO MAJ STEARN 1/10/47, WHO WILL PHONE GEN KAUCH'S OFFICE + HAVE TSCOM NOTED.

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[illegible] Field, Seattle, Washington

2006 (25 Nov 46) 2nd Ind.

[illegible] Air Materiel Command, Wright Field, Dayton, Ohio

TO: Commanding General, Army Air Forces, Washington 25, D. C.

1. On 13 November 1946, this Headquarters issued General Order No. 98 redesignating the 4109th AAF Base Unit at Boeing Field from Reserve Training to Standby.

2. By TWX on 14 November 1946, this Headquarters authorized Headquarters Fourth Air Force to transfer all Reserve activities from Boeing Field to McChord Field.

3. On 19 December 1946, this Headquarters issued General Order No. 104 discontinuing 4109th AAF Base Unit (Standby), effective 15 December 1946.

4. By TWX on 31 December 1946, this Headquarters directed Headquarters Fourth Air Force to instruct the Commanding Officer, Boeing Field, to transfer immediately all Reserve activities from Boeing to McChord and to utilize facilities at McChord Field for Reserve training.

FOR THE COMMANDING GENERAL:

2 Incls:
n/c

Richard C. Lunn

TO CENTRAL FILES: 20 Jan 1947

Capt Steinle/cag/4444

TO: Util & Records Division, AAG.
Fiscal Air Installations Division
AC/AS-4, Room 5E1067, The Pentagon

JAN 24 1947

Date

Chief, Administration Section

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Subject: Boeing Field, Seattle, Washington

AFDIN-2B/1 1st Ind -5 DEC 1946

Hq AAF, Washington 25, D. C.

To: Commanding General, Air Defense Command, Mitchel Field, New York

1. Reference is made to the following letters:

a. 1st Indorsement from this headquarters, dated 25 October 1946, subject: "Air Reserve Activities, Seattle Area".

b. Letter from this headquarters, dated 28 October 1946, subject: "Status of Boeing Field, Seattle, Washington".

2. In view of the statement in the attached copy of teletype, that the Commanding Officer at Boeing Field has no official instructions to move Air Reserve to McChord Field, your command will expedite instructions to the Commanding Officer to use facilities at McChord Field for Air Reserve in lieu of Boeing Field as soon as possible.

BY COMMAND OF GENERAL SPAATZ:

Leo J. Erler

LEO J. ERLER, Col., A. C.
Assistant Chief, Air Installations Division
Assistant Chief of Air Staff-4

2 Incls
n/c

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Cof Engr
680.41 Boeing Fld, Seattle
Lndg Co

COPY 11

WAR DEPARTMENT
CORPS OF ENGINEERS
OFFICE OF DIVISION ENGINEER
Seattle Real Estate Sub-Office
4735 E. Marginal Way
Seattle 4, Washington

NPDSM

28 January 1947

NPDSE 680.4 (Seattle, Wn. -
Permit to Boeing Aircraft Co.)

Boeing Aircraft Company
7755 East Marginal Way
Seattle 8, Washington

Gentlemen:

Pending the execution of a formal instrument the Boeing Aircraft Company, a corporation organized and existing by virtue of the laws of the State of Washington, is hereby granted a right-of-entry effective as of the date of this letter, revocable at the will of the Secretary of War or the officer of the Government having jurisdiction over the premises, to that part of Boeing Army Airfield, Washington, as shown in red on the attached sketch, excepting therefrom the streets, roadways and sidewalks located thereon but including the use of the same in common with others, together with the joint use with the Army Air Forces of the apron serving the buildings located upon the land. The Boeing Aircraft Company shall have the right of ingress and egress over along and across the established streets and roadways adjacent to the above described land area.

This right-of-entry is granted for the use of the premises in the operation of the aircraft industry and the Boeing Aircraft Company shall pay an annual rental in the sum of Fourteen thousand nine hundred and Seventy-five Dollars ($14,975.00) for the use of the premises, the same to be paid quarterly in advance beginning on the date of this letter.

This right-of-entry is granted subject to the following provisions and conditions:

1. That the compensation as above reserved shall be made payable in advance and the Boeing Aircraft Company shall also pay to the United States on demand any sum which may have to be expended after the expiration, revocation, or termination of this right-of-entry or the formal instrument, to be executed later, in restoring the premises to the condition required by provision 15 hereof.

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Boeing Aircraft Company 28 January 1947.

Compensation shall be made payable to the Treasurer of the United States and forwarded by the Boeing Aircraft Company direct to the Division Engineer, North Pacific Division, 500 Pittock Block, Portland 5, Oregon, Attention : - Fiscal Branch.

2. That the use and occupation of the premises to which this right-of-entry extends shall be subject to the general supervision and approval of the officer of the Army or employee of the Government having immediate jurisdiction over the property and to such rules and regulations as may be prescribed by him from time to time.

3. That the premises covered hereby are occupied by the United States under lease #W04-193-eng-3594, from King County, a municipal corporation of the State of Washington, for the period beginning 1 September 1943, and ending 30 June 1944, which lease provides that, unless and until the Government shall give notice of termination in accordance with the terms thereof, the said lease shall remain in force thereafter from year to year without further notice, but in any event it shall expire automatically six months after the date of termination of the unlimited National Emergency as declared by the President of the United States in Proclamation No. 2487 dated 27 May 1941. That the term of this right-of-entry and the instrument to be later executed shall be subject to all of the provisions and conditions of the aforementioned lease and the term thereof shall not extend beyond the expiration, termination or revocation of the aforementioned lease.

4. That the Boeing Aircraft Company shall neither transfer nor assign the rights herein granted or any property covered hereby, nor sublet the whole or any part thereof or any property thereof, nor grant any interest, privilege, or license whatsoever in connection with this right of entry without permission in writing from the Chief of Engineers, or the officer of the Government having jurisdiction over the premises.

5. That the Boeing Aircraft Company shall cut no timber, conduct no mining operations, remove no sand, gravel, or kindred substances from the ground, commit no waste of any kind, or in any manner substantially change the contour or condition of the property covered by this right-of-entry.

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6. That the said officer or employee, his officers, agents, and employees shall have the right to enter upon and also to cross the premises herein granted in the performance of official duties at any time during the occupancy by the Boeing Aircraft Company.

7. That the Boeing Aircraft Company shall at all times exercise due diligence in the protection of the premises herein granted against damage or destruction by fire or other causes.

8. That any property of the United States damaged by the Boeing Aircraft Company incident to its use and occupation of the said property shall be promptly repaired or replaced by the Boeing Aircraft Company to the satisfaction of the said officer or employee, or in lieu of such repair or replacement the Boeing Aircraft Company shall, if so required by the said officer or employee, pay to the United States money in an amount sufficient to compensate for the loss sustained by the U. S. by reason of damages to or destruction of Government property.

9. That the Boeing Aircraft Company shall not construct any permanent structure on the premises covered by this right-of-entry, and shall not construct any temporary structure thereon without the prior written consent of the said officer or employee as well as the prior written consent of the lessor in the aforementioned Lease No. W04-193-eng-3584.

10. That the Boeing Aircraft Company shall comply with all applicable laws, ordinances, and regulations of the State, County, and municipality wherein the said premises are located, with regard to construction, sanitation, licenses or permits to do business, and all other matters.

11. That the United States shall not be responsible for damages to property or injuries to persons which may arise from or be incident to the use and occupation of the said premises, nor for damages to the property of the Boeing Aircraft Company, nor for damages to the property or injuries to the person or persons of the officers, agents, servants, or employees of the Boeing Aircraft Company or others who may be on the premises at their invitation or the invitation of any one of them, arising from Governmental activities, and the Boeing Aircraft Company shall hold the United States harmless from any and all such claims.

12. That the Boeing Aircraft Company shall pay all charges for water, heat, gas, electric current and other utilities, if furnished, based upon meter readings or such other methods as may be determined by the said officer or employee. Payment shall be made by the Boeing Aircraft Company to the producing company covering such services as are not produced by the Government.

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COPY 14

For such services as are produced by Government-owned plants, the Boeing Aircraft Company shall pay to the Government, upon bills rendered, its proportionate share, as determined by the said officer or employee, of the cost of operation and maintenance of said plants.

13. That this right-of-entry, or the instrument later to be executed, may be terminated by the Boeing Aircraft Company at any time by giving to the Secretary of War, or the officer of the Government having immediate jurisdiction over the premises, through said officer or employee, at least ten (10) days' notice thereof in writing; provided that in case of such termination, no refund by the United States of any rental theretofore paid shall be made.

14. That at the commencement of the occupancy by the Boeing Aircraft Company, a written joint inventory and condition report of the land, improvements, facilities and operational equipment, embraced therein shall be made and executed by representative of the Government and a representative of the Boeing Aircraft Company. Said joint inventory and condition report shall be supplemented from time to time by adding thereto such additional Government property, fixtures and installations as are furnished by or at the expense of the Government. At the expiration or termination of this right-of-entry, or the instrument later to be executed, a similar joint inventory and condition report shall be prepared in the same manner. If this final joint inventory and condition report discloses any property of the Government to be unaccounted for, the Boeing Aircraft Company shall make replacement to the satisfaction of the said officer or employee, or in lieu of such replacement, the Boeing Aircraft Company shall, if so required by the said officer or employee, pay to the United States money in an amount sufficient to compensate for the loss sustained by the United States.

15. That, on or before the date of expiration of this right-of-entry, or the instrument later to be executed, or its termination by the Boeing Aircraft Company, the Boeing Aircraft Company shall vacate the premises, remove its property therefrom, and restore the premises to a condition satisfactory to the said officer or employee, damages beyond the control of the Boeing Aircraft Company or due to fair wear and tear excepted. If, however, this right-of-entry, or the instrument later to be executed, is revoked, the Boeing Aircraft Company shall vacate the premises, remove said property therefrom, and restore the premises to the condition aforesaid within such time as the Secretary of War, or the officer having jurisdiction over the premises, may designate. In either event, if the Boeing Aircraft Company shall fail or neglect to remove said property and so restore the premises, then, at the option of the Secretary of War, or the officer of the Government having jurisdiction over the premises, said property shall either become the property of the United States without compensation therefor, or the Secretary of

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Boeing Aircraft Company 28 January 1947

War, or the officer of the Government having jurisdiction over the property, may cause it to be removed and the premises to be so restored at the expense of the Boeing Aircraft Company, and no claim for damages against the United States or its officers or agents shall be created by or made on account of such removal and restoration work.

16. That no Member or Delegate to Congress or Resident Commissioner shall be admitted to any share or part of this right-of-entry, or the instrument later to be executed, or to any benefit to arise therefrom. Nothing, however, herein contained shall be construed to extend to any incorporated company, if this right-of-entry, or the instrument later to be executed, be for the general benefit of such corporation or company.

FOR THE DIVISION ENGINEER:

Very truly yours

J. C. McCAUSTLAND
Chief, Seattle Sub-Office

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Real Est.

680.41 Boeing Fld, Wash. King Co.

Subject: Amendment to Right-of-Entry. (Basic: 30 Jan 47 fr NPDSE to NPDRM)

NPDRM
NPD 680.4 (Seattle, Wn. - Lease to Boeing Aircraft Co.) 1st Ind.

ENCLM NPD-2214

Office, Division Engineer, North Pacific Division, Portland, Oregon
4 February 1947.

TO: The Chief of Engineers, Corps of Engineers, U. S. Army,
WASHINGTON 25, D. C.

1. Reference is made to 1st Indorsement, 12 September 1946, from OCE to NPD, basic: 19 August 1946, File No. 680.41 (Boeing Field, Wn.-Boeing Aircraft Company), Subject: Requested Lease to Boeing Aircraft Company, from Headquarters AAF to Chief of Engineers, in which authority is granted to give immediate right-of-entry to Boeing Aircraft Company covering facilities involved at Boeing Field, Washington, pending issuance of a formal lease, provided compensation is agreed upon, and directed that draft of instrument and information required by existing regulations should be furnished to your office.

2. The original request involved Buildings T-301, T-310, T-314, T-316, T-318, T-198, and T-199. T-198 and T-199 are no longer desired by the Boeing Aircraft Company and were omitted in the grant of right-of-entry to the Boeing Aircraft Company.

3. Boeing Field was certified to War Assets Administration on 22 October 1946, and WAA 1005 report covering portions of the Boeing Field, and including the buildings above enumerated, was forwarded to your office 22 January 1947 for certification to War Assets Administration.

4. Right-of-entry was granted, effective 28 January 1947, pending execution of a formal instrument and upon provisions and conditions of the type contained in Form ENG 1367, 1 June 1945. A copy of letter right-of-entry is attached for reference, Paragraph 13 of which contains the provision that in case of termination by the Boeing Aircraft Company, no refund by the United States of any rental theretofore paid shall be made.

5. Boeing Aircraft Company, by [redacted] dated 29 January 1947, copy of which is attached, proposes [redacted] to Paragraph 1, which is intended to make refund of unused rental, payable in the event either the Government cancels the contract or the company cancels the contract.

6. This office recommends as follows:

(1) That the authority contained in 1st Indorsement, 12 September 1946, referred to in Paragraph 1 above, be amended to exclude T-198 and T-199 from the requested grant.

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4 February 1947 Subject: Amendment to Right-of-Entry.

1st Ind. (Cont'd)

(2) In the light of circumstances that might be created by the facts stated in Paragraph 2 of basic, 30 January 1947, this office concurs in the recommendation made therein and requests instructions by teletype reply to this office, to amend the ~~right-of-entry~~ to include the amendment suggested by Boeing Aircraft Company.

THERON D. WEAVER
Colonel, Corps of Engineers
Division Engineer

2 Incls.
Incl. 1 n/c
(except cy subst. for orig.)
1 Incl. Added:
Incl. 2 - Cy ltr dtd 1-29-47 fr
Boeing Aircraft Co. to NPD

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C. Thigpen
680.41 Boeing Fld., Wash
King Co.

WAR DEPARTMENT
CORPS OF ENGINEERS
OFFICE OF DIVISION ENGINEER
NORTH PACIFIC DIVISION
SEATTLE REAL ESTATE SUB-OFFICE
4735 E. MARGINAL WAY
SEATTLE 4, WASHINGTON

NPDSM

NPDSE 680.4 (Seattle, Wn., - Lease to Boeing Aircraft Co.)

30 January 1947

SUBJECT: Amendment to Right-of-Entry.

TO: Division Engineer, North Pacific Division, Corps of Engineers, 500 Pittock Block, PORTLAND 5, OREGON.

ATTENTION: Real Estate Division.

1. Attached hereto as inclosure number one (1) is a letter addressed to this office from the Boeing Aircraft Company dated 29 January 1947, in which that company requests that the letter right-of-entry be amended to provide for a refund of unused rental in the event the right of occupancy is terminated by either party.

2. The officials of the company have informed this office that the need for the premises being granted is occasioned by contracts which the company has been granted by the Government. In the event the Government cancels these contracts, the company will no longer need the premises and will be forced to terminate the occupancy.

3. It is recommended that the request of the Boeing Aircraft Company be favorably considered.

W. M. TRUESDELL
Chief, Management & Disposal Branch

1 Incl.
Ltr. dtd 29 Jan 47

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Copy 680.41 Boeing 74 acct King Co.

WAR DEPARTMENT
Corps of Engineers
OFFICE OF DIVISION ENGINEER
North Pacific Division
Seattle Real Estate Sub-Office
4735 E. Marginal Way
SEATTLE 4, WASHINGTON

NPDSM

NPDSE 680.4(Boeing Factory Trainee Area - Permit to King County)

March 5, 1947

Board of County Commissioners, King County
County-City Building
Seattle 4, Washington

Gentlemen:

Pending the execution of a formal instrument the Board of County Commissioners, King County, Washington is hereby granted right-of-entry, effective as of the date of this letter, to use, maintain and operate the buildings numbered T-102, T-195, T-198 and T-199 located on Boeing Army Airfield, Seattle, Washington, as listed in the Joint Inventory and Condition Report prepared in the manner hereinafter prescribed. This right-of-entry shall extend to the use of the roads and streets, necessary for ingress and egress, in common with others.

This right-of-entry shall be revocable at the will of the Secretary of War or the official of the Government having jurisdiction over the premises, and further shall be subject to the following provisions and conditions.

1. That the Board of County Commissioners shall pay to the United States compensation in the amount of ONE DOLLAR ($1.00) per year in advance for the uses and privileges herein granted. Payments shall be made payable to the Treasurer of the United States and forwarded to the Division Engineer, North Pacific Division, 500 Pittock Block, Portland 5, Oregon, Attention: Fiscal Branch.

2. That the exercises of the privileges hereby granted shall be without cost or expense to the United States, under the general supervision and subject to the approval of the officer of the Army or the Government employee having immediate jurisdiction over the property, and subject also to such regulations as may be prescribed by him from time to time.

3. That any property of the United States damaged or destroyed by the Board of County Commissioners incident to the exercise of the privileges herein granted shall be promptly repaired or replaced by the Board of County Commissioners to the satisfaction of the said officer or employee, or in lieu of such repair or replacement, the

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Board of County Commissioners

Board of County Commissioners shall, if so required by the said officer or employee, pay to the United States money in an amount sufficient to compensate for the loss sustained by the United States by reason of damage to or destruction of Government property.

4. That the United States shall not be responsible for damages to property or injuries to persons which may arise from or be incident to the exercise of the privileges herein granted, for damages to the property of the Board of County Commissioners or for damages to the property or injuries to the person of the officers, agents, servants, or employees of the Board of County Commissioners or others who may be on said premises at the invitation of anyone of them arising from governmental activities on the said premises, and the Board of County Commissioners shall hold the United States harmless from any and all such claims.

5. That the Board of County Commissioners shall pay all charges for water, gas, heat, electric current and other utilities, if furnished, based upon meter readings or such other methods as may be determined by said officer or employee. Payment shall be made by the Board of County Commissioners directly to the producing company covering such services as are not produced by the Government. For such services as are produced by Government-owned plant, the Board of County Commissioners shall pay to the Government, upon bills rendered the Board of County Commissioners' proportionate share, as determined by the said officer or employee, of the cost of operation and maintenance of said plant.

6. That the Board of County Commissioners shall, at its own expense, take proper precautions in regard to guards, maintenance and fire protection of the premises herein authorized to be used.

7. That a written Joint Inventory and Condition Report covering the premises set out in this right-of-entry, showing the exact conditions thereof on the date of occupancy by the Board of County Commissioners, will be made and executed by a representative of the War Department and a representative designated by the Board of County Commissioners. A copy of said report shall be furnished the Board of County Commissioners. On the date of the cessation of the occupancy by the Board of County Commissioners a similar Joint Inventory and Condition Report shall be prepared in the same manner.

8. That, on or before the date of expiration of the privileges herein granted or the relinquishment thereof by the Board of County Commissioners, the Board of County Commissioners shall vacate the said Government premises, remove all property of the Board of County Commissioners therefrom, and restore the premises to a condition

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Board of County Commissioners

satisfactory to the said officer or employee. If, however, the privileges herein granted are revoked, the Board of County Commissioners shall vacate the premises, remove said property therefrom, and restore the premises as aforesaid within such time as the Secretary of War or the official of the Government having immediate jurisdiction over the premises may designate. In either event, if the Board of County Commissioners shall fail or neglect to remove said property and so restore the premises, then at the option of the Secretary of War or the official of the Government having immediate jurisdiction over the premises, said property shall either become the property of the United States without compensation therefor, or the Secretary of War or the official of the Government having immediate jurisdiction over the premises may cause the property to be removed and the premises to be so restored at the expense of the Board of County Commissioners, and no claim for damages against the United States or its officers, or agents shall be created by or made on account of such removal and restoration work.

FOR THE DIVISION ENGINEER:

Very truly yours,

J. C. McCAUSTLAND
Chief, Seattle Sub-Office

cc: Division Engineer
District Engineer

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Real Estate

ENGLM
NPD

Subject: Transmittal of Lease (Basic: 4 April 47 fr NPDSE to NPD)

43-NPDRM
NPD 680.4 (Seattle, Wn. - Lease to Boeing Aircraft Co.) 1st Ind.

Office, Division Engineer, North Pacific Division, Portland, Oregon
21 April 1947

TO: The Chief of Engineers, Corps of Engineers, U. S. Army,
WASHINGTON 25, D. C.

ATTENTION: Real Estate Division - ENGLM.

1. The authority for the action taken in reference to subject lease and the information required by Real Estate 1106.01c, Real Estate Manual, is contained in the basic.

2. Pursuant to aforesaid authority, subject lease was drawn, revocable at will by the Secretary of War, intending to grant the use of Buildings T-301, T-310, T-314, T-316 and T-318 and the use of equipment therein, located in that portion of Boeing Army Airfield, Washington, shown in red on the map attached to said lease and marked Exhibit "A".

3. Lease was executed on behalf of the Boeing Aircraft Company, and the evidence of authority of the officer executing said lease on behalf of the lessee, is attached to said lease. Execution by authority of the Secretary of War and under direction of the Chief of Engineers was made by the Division Real Estate Officer, North Pacific Division, 17 April 1947. An executed copy of said lease is inclosed for your files and bears the contract symbol number W35-063-eng-158.

4. The following copies were forwarded to the Seattle Sub-Office on 18 April 1947 for distribution to the following:

a. Grantee - Boeing Aircraft Company
7755 East Marginal Way
SEATTLE 8, WASHINGTON
One (1) executed copy.

b. District Engineer, Seattle District, Corps of Engineers, 1400 Textile Tower, SEATTLE, WASHINGTON
One (1) conformed copy.

c. Real Estate Sub-Office, North Pacific Division, Corps of Engineers, 4735 E. Marginal Way, SEATTLE, WASHINGTON
One (1) conformed copy.

FILE
BMS
4/29/47

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21 April 1947

Subject: Transmittal of Lease (Basic: 4 April 47 fr NPDSE to NPD)

1st Ind. (Cont'd)

5. Further distribution pursuant to Real Estate 1106.08, Real Estate Manual, was made this day as follows:

a. General Accounting Office, Army Audit Branch
Reconciliation and Clearance Sub-division
Building 203, 4300 Goodfellow Boulevard
ST. LOUIS 20, MISSOURI
Original executed copy.

b. Judge Advocate General, U. S. Army
2049 Munitions Building, WASHINGTON 25, D. C.
One (1) executed copy.

c. Fiscal Branch, North Pacific Division
Corps of Engineers, 500 Pittock Block
PORTLAND, OREGON
Two (2) conformed copies.

d. Division Real Estate Officer, North Pacific
Division, Corps of Engineers, PORTLAND, OREGON
One (1) conformed copy.

6. It is recommended that the lease as executed and the action of this office taken thereon be approved.

FOR THE DIVISION ENGINEER:

DON E. MELDRUM
Division Real Estate Officer

9 Incls. n/c
(Except 3 cys Incl. 1 w/d
3 cys Incl. 6 w/d
2 cys Incl. 7 w/d
2 cys Incl. 8 w/d)
Incl. 10 w/d

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REGISTERED

WAR DEPARTMENT
CORPS OF ENGINEERS
OFFICE OF DIVISION ENGINEER
NORTH PACIFIC DIVISION
SEATTLE REAL ESTATE SUB-OFFICE
4735 E. MARGINAL WAY
SEATTLE 4, WASHINGTON

NPDSR

NPDSE 680.4 (Seattle, Wn. - Lease to Boeing Aircraft Co.)

4 April 1947

SUBJECT: Transmittal of Lease

TO: Division Engineer, North Pacific Division, Corps of Engineers, 500 Pittock Block, PORTLAND 5, OREGON

ATTENTION: Real Estate Division

1. Attached hereto as inclosure number 1 are five (5) executed and five (5) conformed copies of the lease to Boeing Aircraft Company for use of certain buildings on Boeing Army Airfield.

2. The authority for this lease is set out in the following correspondence:

a. 1st indorsement dated 12 September 1946 from Office, Chief of Engineers to Division Engineer to basic letter dated 19 August 1946 from Headquarters, Army Air Forces to Office, Chief of Engineers, subject, Issuance of Lease to Boeing Aircraft Company, Seattle, Washington. (Division Engineer file same as above.)

b. 1st indorsement dated 18 September 1946 from Office, Chief of Engineers to Division Engineer to basic letter dated 12 September 1946 from Headquarters, Army Air Forces to Office, Chief of Engineers, subject, Issuance of Lease to Boeing Aircraft Company, Seattle, Washington. (Division Engineer file same as above.)

3. The authority referred to in the above paragraph 2 directs that buildings numbered T-198, T-199, T-514, T-516, T-518, T-198 and T-199 be leased to the lessee. The Boeing Aircraft Company notified this office by letter dated 20 February 1947 that buildings numbered T-198 and T-199 would not be required, copy of said letter is attached hereto as inclosure number 2. [illegible] to omit these two buildings from the lease by letter dated 26 February 1947 from your office, subject, Assignment to Right of Entry, this date to cease, copy of which is attached hereto as inclosure number 3.

[illegible]

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REGISTERED 4

4 April 1947 Subject: Transmittal of Lease

4. The lessee has furnished this office with a copy of the original request and the same is attached hereto as a part of inclosure number 2.

5. The approval of the District Engineer for making this outgrant is attached hereto as inclosure number 4.

6. The lessee made certain minor changes in the lease as submitted and initialed the same. A letter from the lessee dated 31 March 1947 explaining the changes is attached hereto as inclosure number 5.

7. Four (4) copies of the appraisal report are attached hereto as inclosure number 6. Four (4) copies of the grant record card are attached hereto as inclosure number 7. Three (3) copies of form 1036 are attached hereto as inclosure number 8.

8. The following additional information required by paragraph 702 of the North Pacific Division, Real Estate Management and Disposal Manual is furnished with reference being made to the applicable sub-paragraphs of said paragraph 702.

a. Reference a (2): A map of the area being granted is attached to each copy of inclosure number 1 as exhibit "A".

b. Reference b (1): The location of the land is shown on the map referred to as exhibit "A" above. The land is being held by the Government under lease number W04-193-eng-3584 in which the lessor is King County. The approval of the lessor as to this lease is set out in inclosure number 9 attached hereto.

c. Reference b (2): The compensation reserved is $14,975.00 per year and is supported by the appraisal report attached hereto as inclosure number 6

d. Reference b (3): This lease was negotiated under the authority set out in paragraph 2 above. Therefore, bids were not invited.

e. The remaining sub-paragraphs of paragraph 702 are not applicable to this outgrant.

9. Inclosed hereto as inclosure number 10 is the lessee's check number 555 in the sum of $3,743.75 drawn on Pacific National Bank, Seattle, Washington and dated 31 March 1947. This check is to cover the payment of first quarters rental.

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REGISTERED 3

4 April 1947

Subject: Transmittal of Lease

10. It is recommended that the lease be executed on behalf of the Government.

W. M. THUESDELL
Chief, Management and Disposal Branch

10 Incls.
Incl. 1 - Lease (in dec)
Incl. 2 - cy ltr dtd 10 Feb 47 w/incls.
Incl. 3 - cy ltr dtd 19 Feb 47
Incl. 4 - chain corres, basic dtd 24 Jan 47
Incl. 5 - ltr dtd 31 Mar 47 w/o incls.
Incl. 6 - Appraisal Rpt (in quad)
Incl. 7 - Grant Record Card (in quad)
Incl. 8 - Form 1036 (in trip)
Incl. 9 - ltr dtd 23 Jan 47
Incl.10 - Check No. 555 -

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9

"C O P Y"

BOEING AIRCRAFT COMPANY

Seattle 14, WASHINGTON.

October 16, 1947

FY-11,563

Mr. M. P. Crews,
1002 Harries Building
Dayton 2, Ohio.

Dear Pappy:

As indicated in the postscript to your memo of October 9, the Boeing Company has never held any title to any part of King County Airport. The facilities which we use are leased.

The name of the field was originally King County Airport but has always been called Boeing Field and the Commissioner officially changed the title about a year and a half ago to Boeing Field. It now consists of 640 acres, which is approximately 60 acres more than the original tract.

Boeing, under an Army Emergency Plant Facility contract, built the taxi way and large apron on the west side of the field. The Army built the taxi way on the east side of the field and two very large aprons. The Army also built warm-up paths on each end of the field and a 3,000 foot extension on the south end of the runway.

As you know, the field is now being used for experimental flight testing and production flight testing of all our aircraft. The field is serving this purpose with the exception that its length is not sufficient for a testing program such as that of the XB-47.

Sincerely,

BOEING AIRCRAFT COMPANY

/s/ Harold Mansfield

Director
Public Relations and Advertising

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EXHIBITS

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Compiled by Helen M. Schmie, Historical Office, HD-AFD, February 1949, Source: Records in files of AFD Facilities Br.; files of CAC/AC-4, Washington; Corps of Engineers, Washington, records; Modification Case History.

EXPANSION OF KING COUNTY AIRPORT (BOEING FIELD), SEATTLE, WASH.

Project	Type of Facilities	Method of Financing	Amount	Authority for Purchase	Contract	Approval Date	Processing Letter	Take-out Letter	Remarks	Disposition
30-3	Miscellaneous Improvements on King County Airport (Boeing Field)	Chg. O. to ENP contract	$ 270,680.00	178132 176430 (176430 superseded 178132)	Chg. O. No. 2 to DA W 535 eo-196	25 July 1942			Change Order No. 4 to W 535-eo-196, approved 11 Jan. 1943, at no increase in cost. The change order covered the construction, on county land leased to the Government, of an addition to ground operations building.	King County Airport was transferred to the Air Defense Command on 14 June 1946.
3F	An office building with furniture and fixtures, located on the west side of King County Airport	RFC agreement	505,300.00		Finnegy 1577		21 Nov. 1942	28 Dec. 1942	Work completed by 11 Sept. 1944 and funds frozen on that date.	Lease agreement to expire 1 Jan. 1947.
3H	Repair of airplane parking areas on King County Airport	Corps of Engineers	540,000.00			30 Oct. 1943		By 25 Nov. 1943	Actual cost to depend upon bids received by the Corps of Engineers.	King County Airport was transferred to the Air Defense Command on 14 June 1946.
30-1	Paving, buildings, and household improvements on King County Airport	Corps of Engineers	2,623,579.00			1 June 1944	6 May 1944	By 1 June 1944	The 2 field service buildings and one flight delivery building, included in this project, were not approved. They were submitted separately as Project 30-2.	See Project 30
30-2	Two field service buildings and one flight delivery building on King County Airport	Corps of Engineers	69,000.00 9,780.00			3 May 1945	4 Sept. 1944	By 30 Sept. 1944	Originally part of Project 30-1 and re-submitted after being disapproved. To the cost of Project 30-2 was added an amount of $9,780 for paving near flight delivery building.	See Project 30
30-3	Repair of taxiways on King County Airport	Corps of Engineers	65,961.20 102,230.00			21 Sept. 1944 17 Nov. 1944	31 Aug. 1944	Not available	Taxiway reconstruction proposed after project started. Partial repairs to taxiway approved 21 Sept. 1944. However, reconstruction of entire taxiway approved 17 Nov. 1944 at a cost of $102,230.	See Project 30
30-4	Four hangars on King County Airport	Corps of Engineers	1,327,220.00				13 Mar. 1945	6 Apr. 1945	$178,114 additional cost was approved on 27 June 1945.	Project was terminated before completion; had been contracted by 14 Oct. 1945.
	Permanent Drainage System	Corps of Engineers	340,000			3 July 1943				

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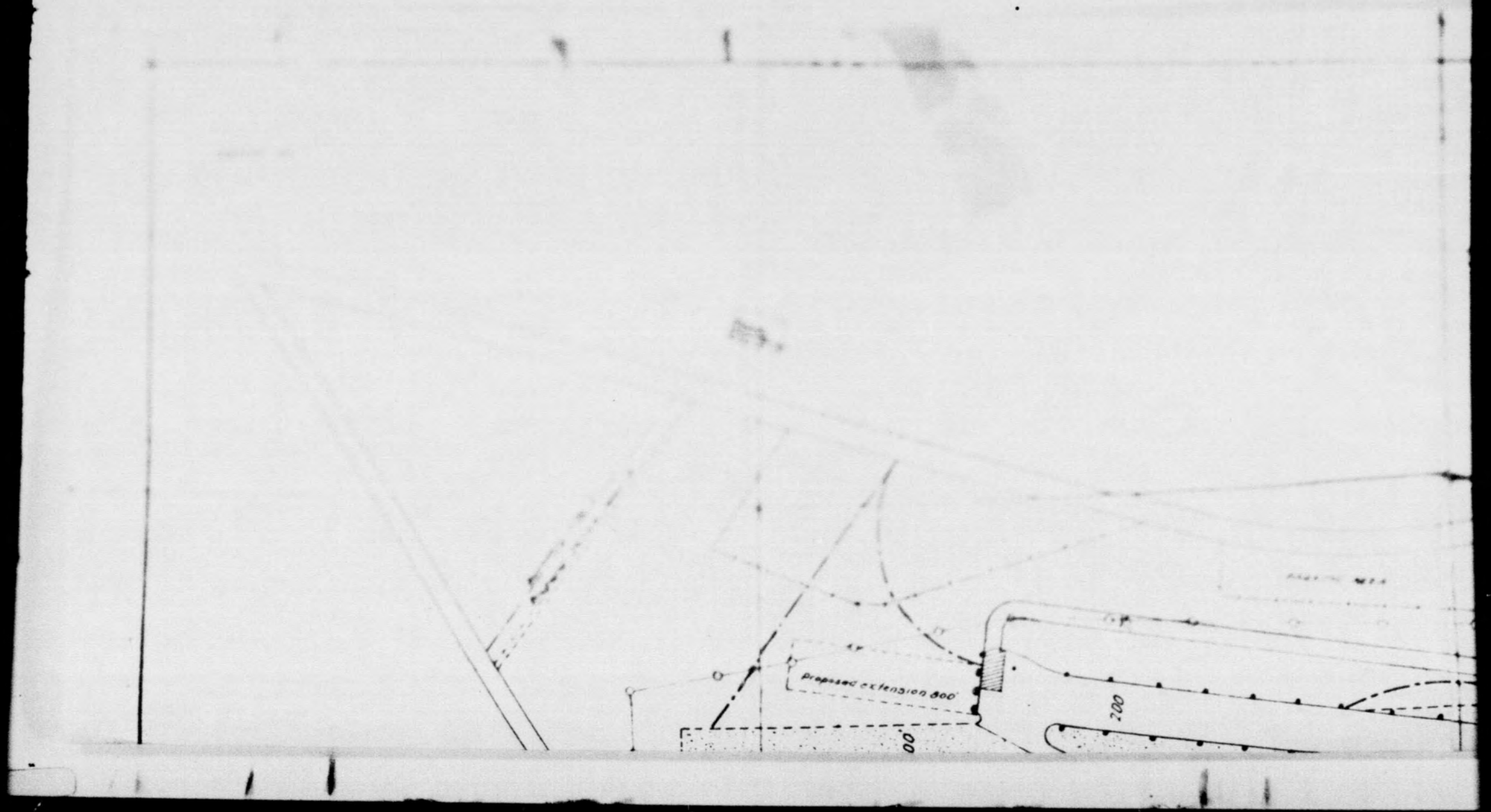

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RECEIVED
SEP 24 1941
INDUSTRIAL PLANNING Section
WRIGHT FIELD

E MARGINAL WAY

City Limits

Boeing Float No 2

PARKING AREA

Gate #5

conc. warm up strip

A

Bomber taxi strip

200

4400

N 66° 35' 05" W

N 38° 47' 03" W

7300

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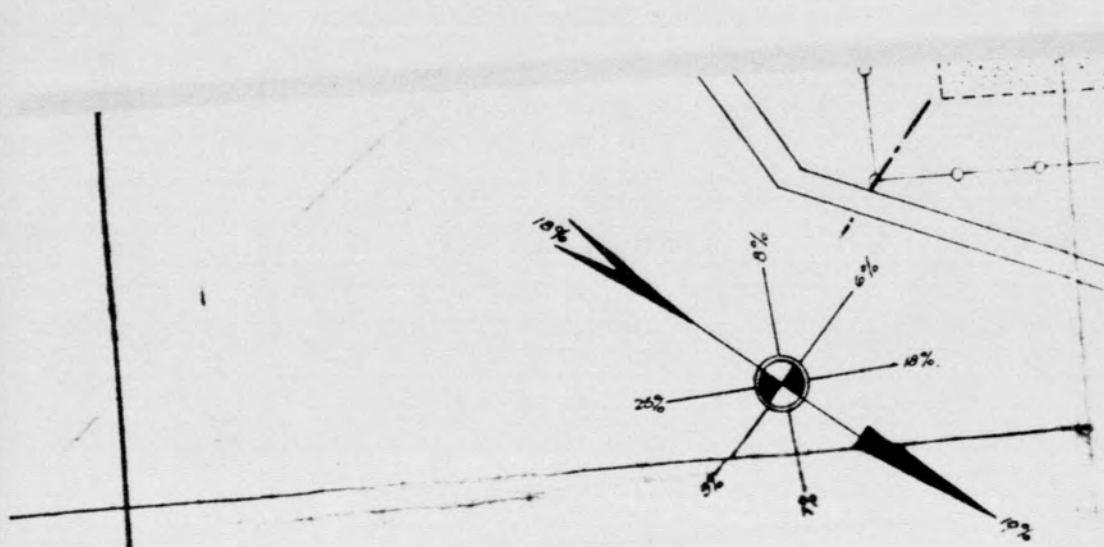

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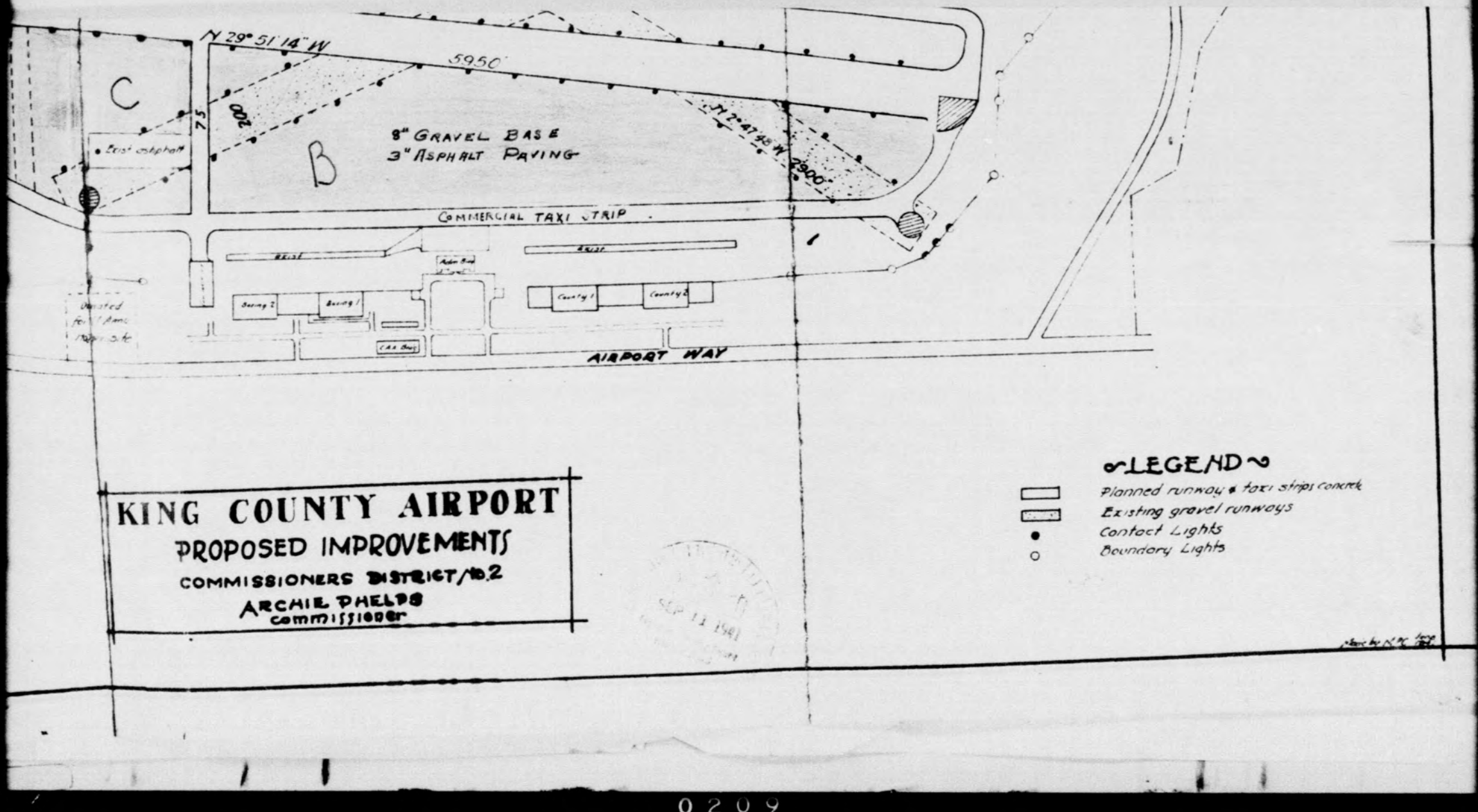

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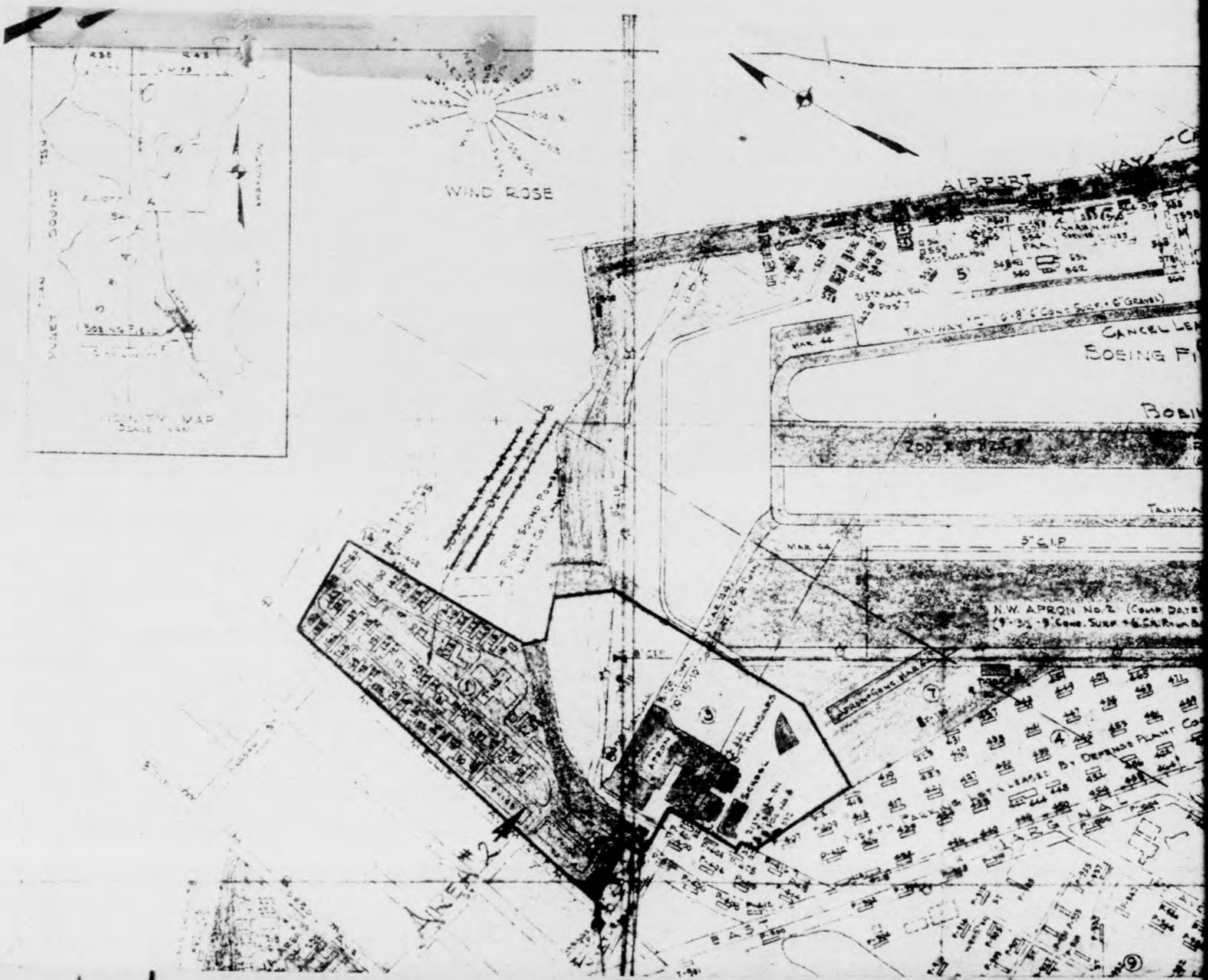

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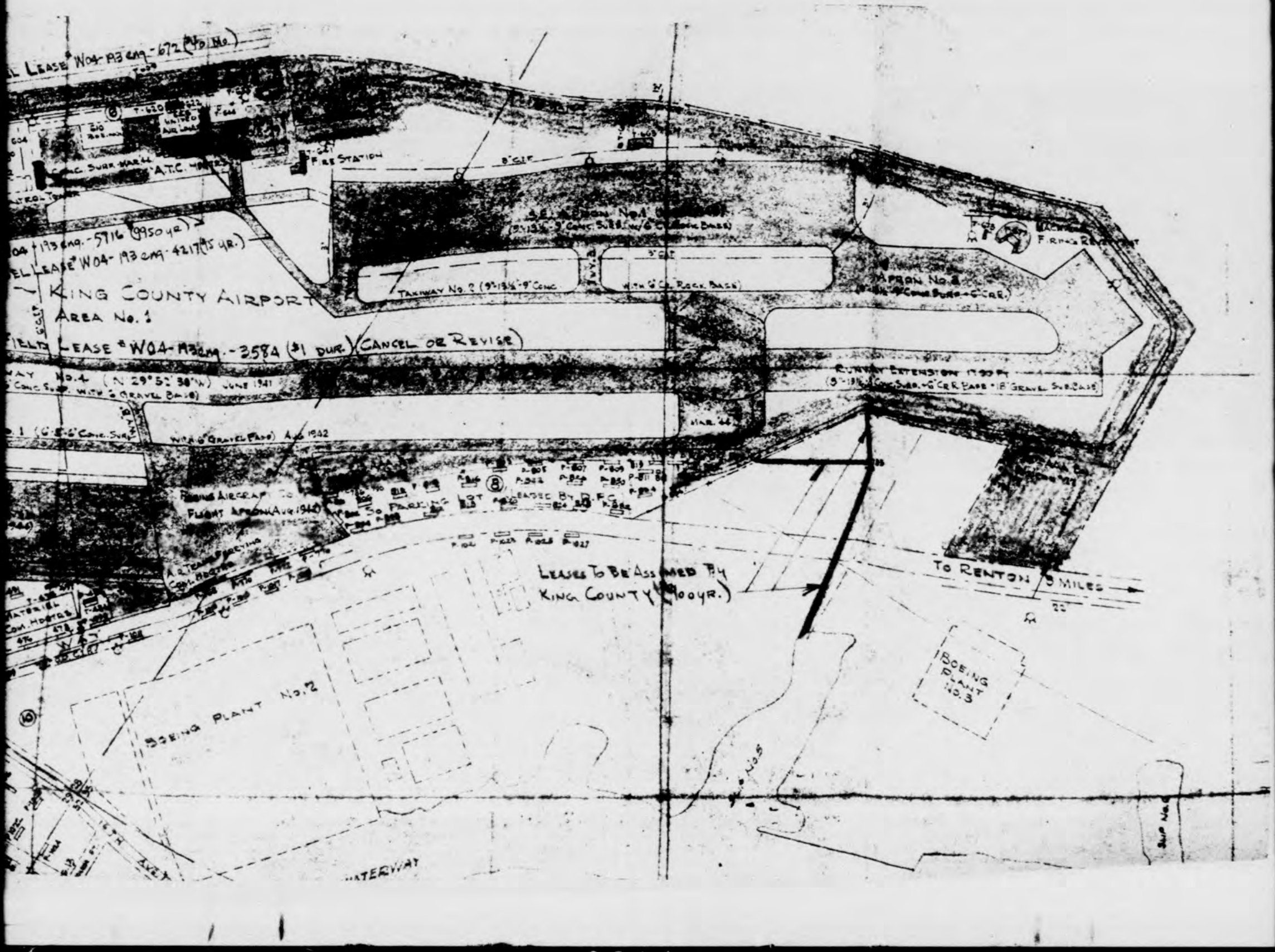

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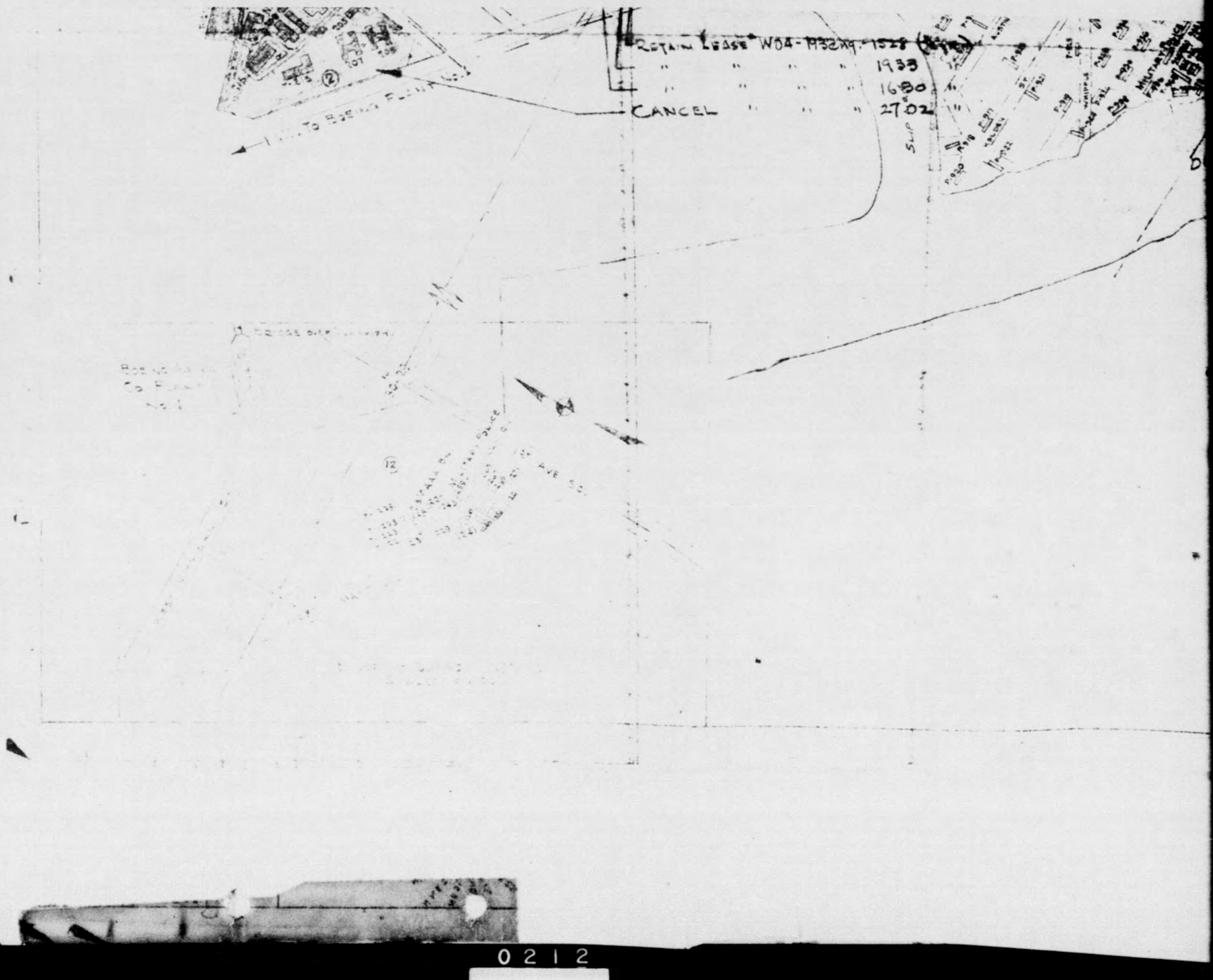

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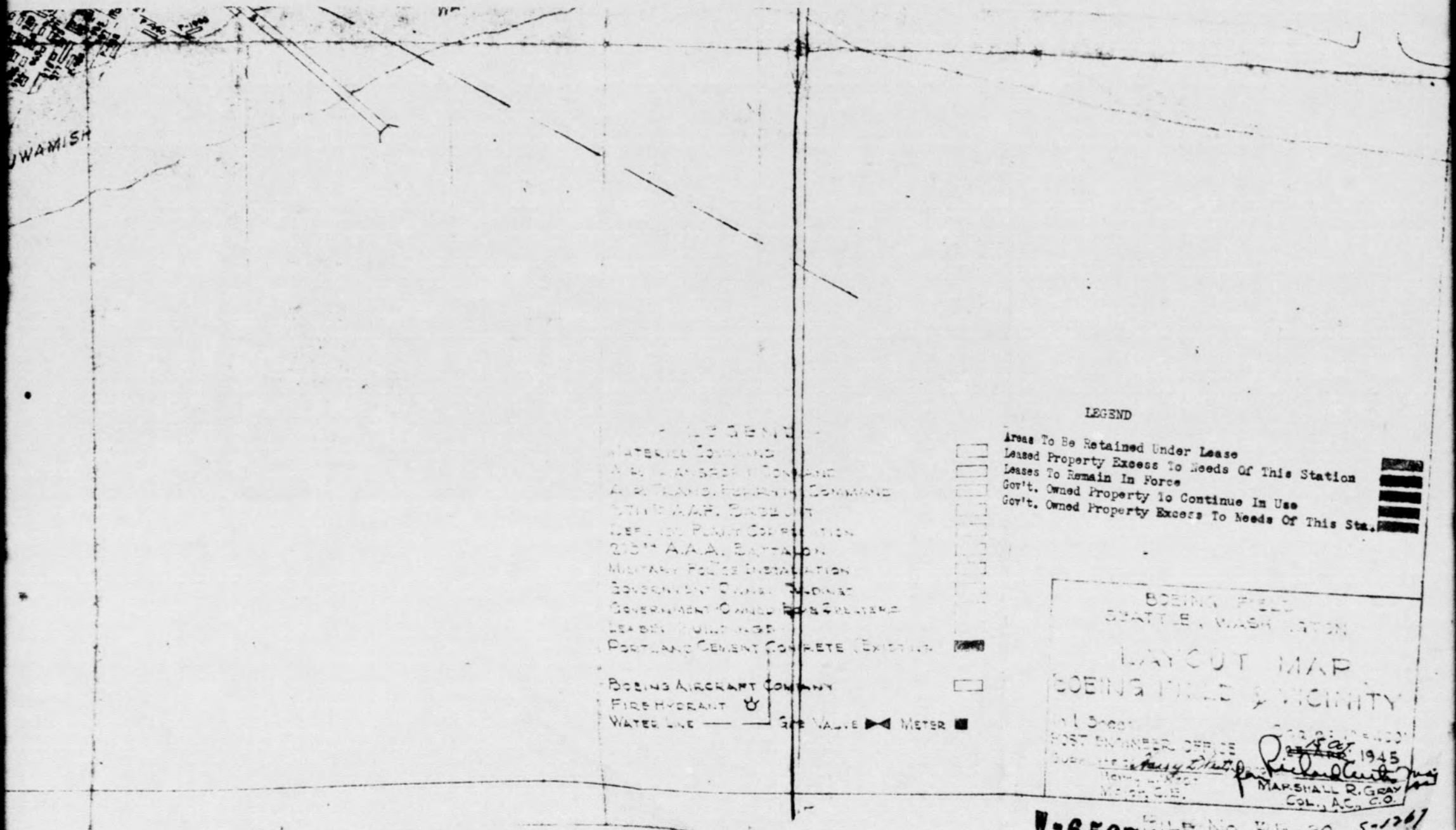

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JAN 1950
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CASE HISTORY OF THE VDT ENGINE

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[redacted]

TO IMA
OF THE WA
PISTON
Jan 1950
202.2-61
V-1

[redacted]

Auth: CG, AMC
Initials: MRS
Date: 12-22-49

CASE HISTORY OF THE VDT ENGINE

UNCLASSIFIED
Classification canceled (changed to _____)
by authority of Ltr AFLC (mcKH) 10 Jun 64
by E Rey date 24 Jun 64

DOWNGRADED AT 3 YEAR INTERVALS;
DECLASSIFIED AFTER 12 YEARS.
DOD DIR 5200.10

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CASE HISTORY OF THE VDT ENGINE

SECRET
Auth: CG, AMC
Initials: MQ&
Date: 12-22-49

Prepared by
Historical Office
Executive Secretariat
Air Materiel Command
Wright-Patterson Air Force Base
January 1950

By

Ethel M. DeHaven
Historian

Prepared under provisions of AF Regulation No. 210-3 as a part of the USAF Historical Program.

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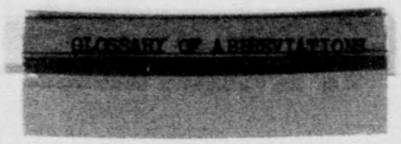

GLOSSARY OF ABBREVIATIONS

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Glossary of Abbreviations*

Actg.	Acting
Actg. Chief	Acting Chief
Add.	Addendum
Adj.	Adjutant
AG	Adjutant General
AGO	Adjutant General's Office
Admin.	Administration
Admin. Sect.	Administration Section
Admin.	Administrative
Admr.	Administrator
Adm.	Admiral
Aero. Bd.	Aeronautical Board
Aero. Equip. Br.	Aeronautical Equipment Branch
Aero. Med. Lab.	Aeronautical Medical Laboratory
Agree.	Agreement
AAG	Air Adjutant General
Air Chem. Officer	Air Chemical Officer
Air Commun. Officer	Air Communications Officer
AC	Air Corps
ACFR	Air Corps Factory Representative
Air Crew Tng. Div.	Air Crew Training Division
ADC	Air Defense Command
Air Docs. Div.	Air Documents Division
ADRC	Air Documents Research Center (London)
Air Engr.	Air Engineer
Air Eng. Dvlpmt. Center	Air Engineering Development Center
AI	Air Inspector
A.I.R. Div.	Air Intelligence Requirements Division
AJA	Air Judge Advocate
AMA	Air Materiel Area
AMC	Air Materiel Command
ANG	Air National Guard
Air Ord. Officer	Air Ordnance Officer
APG	Air Proving Ground
APGC	Air Proving Ground Command
Air QM	Air Quartermaster
ARC	Air Reserve Corps
AS	Air Service
ASC	Air Service Command
Air Serv. Div.	Air Service Division
ATC	Air Training Command
ATI	Air Technical Index
Air Tech. Intell.	Air Technical Intelligence

* A list of special abbreviations used only in this history is appended to this glossary.

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ATIG	Air Technical Intelligence Group
ATLO	Air Technical Liaison Officer
ATSC (E)	Air Technical Service Command (Europe)
ATC	Air Transport Command
Air Trans. Div.	Air Transport Division
AU	Air University
Airborne Com.	Airborne Command
Airc.	Aircraft
Airc. Component Req. Br.	Aircraft Component Requirements Branch
Airc. Components Br.	Aircraft Components Branch
Airc. Lab.	Aircraft Laboratory
Airc. Mod. Br.	Aircraft Modification Branch
Airc. Proc. Br.	Aircraft Procurement Branch
Airc. Proj. Sect.	Aircraft Projects Section
Airc. Radio Lab.	Aircraft Radio Laboratory
ARCO	Aircraft Resources Control Office
ASU	Aircraft Scheduling Unit
Alloc.	Allocations
alum.	aluminum
amend.	amendment
AFL	American Federation of Labor
ASA	American Standards Association
amp.	ampere
Anal.	Analysis
Anal. Div.	Analysis Division
approx.	approximately
ADTIC	Arctic, Desert, and Tropic Information Center
Arm.	Armament
Arm. Lab.	Armament Laboratory
AAC	Army Air Corps
AAF	Army Air Forces
AAF Bd.	Army Air Forces Board
AAF CF	Army Air Forces Central Files
AAFIT	Army Air Forces Institute of Technology
AAFPR	Army Air Forces Plant Representative
AAFPFO	Army Air Forces Procurement Field Office
AAFRR	Army Air Forces Resident Representative
AAF Tact. Center	Army Air Forces Tactical Center
AAFTB	Army Air Forces Technical Base
AACS	Army Airways Communications System
AFF	Army Field Forces
AGF	Army Ground Forces
ANB Stdz. Br.	Army-Navy-British Standardization Branch
AN Mun. Bd.	Army-Navy Munitions Board
AN Pet. Bd.	Army-Navy Petroleum Board
AN Stds. Br.	Army-Navy Standards Branch
AR	Army Regulation

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ASF	Army Service Forces
assy.	assembly
Asst.	Assistant
AC/AS, Intell.	Assistant Chief of Air Staff, Intelligence
AC/AS, MM&D	Assistant Chief of Air Staff, Materiel, Maintenance, and Distribution
AC/AS, OC&R	Assistant Chief of Air Staff, Operations, Commitments, and Requirements
AC/AS, Pers.	Assistant Chief of Air Staff, Personnel
AC/AS, Plans	Assistant Chief of Air Staff, Plans
AC/AS, Tng.	Assistant Chief of Air Staff, Training
Asst. Secy. War	Assistant Secretary of War
Asst. Secy. War (Air)	Assistant Secretary of War for Air
Assoc.	Association
AOAMD	Atlantic Overseas Air Materiel District
AEC	Atomic Energy Commission
attach.	attachment
attn.	attention
ADP	Authority for District Purchase
AFP	Authority for Purchase
aux.	auxiliary
Avn.	Aviation
Avn. Ord. Eng. Office	Aviation Ordnance Engineering Office
Base Tng. Units	Base Training Units
B/L	bill of lading
Bd.	Board
Bomb.	Bombardment
Bomb. Br.	Bombardment Branch
bhp	brake horsepower
Br.	Branch
BAC	British Air Commission
B.T.U.	British Thermal Unit
BuAer	Bureau of Aeronautics
BAGR	Bureau of Aeronautics General Representative
BuOrd	Bureau of Ordnance
BuShips	Bureau of Ships
cg	center of gravity
C	Centigrade
CF	Central Files
CPD	Central Procurement District
chap.	chapter
Chem.	Chemical
Chief of Admin.	Chief of Administration

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C/AC	Chief of Air Corps
C/AS	Chief of Air Staff
C/S	Chief of Staff
Cir.	Circular
CAA	Civil Aeronautics Administration
CAA	Civil Aeronautics Authority
Civ. Pers. Div.	Civilian Personnel Division
CTI	Classified Technical Instruction
CC/S	Combined Chiefs of Staff
CIOS	Combined Intelligence Objectives Sub-Committee
Comdt.	Commandant
Com.	Command
Comdr.	Commander
CG	Commanding General
CO	Commanding Officer
Comm.	Committee
Commn.	Commission
Commun.	Communications
Commun. Equip. Officer	Communications Equipment Officer
Co.	Company
comp(s).	compiler(s)
conf.	conference
C	Confidential
Cong.	Congress
CIO	Congress of Industrial Organizations
Cong.	Congressional
contd.	continued
Contr.	Contract
Contr. Files	Contract Files
Contr. Law Br.	Contract Law Branch
Contr. Sect.	Contract Section
Contr.	Contracting
Contr. Officer	Contracting Officer
CFE	contractor-furnished equipment
Control Br.	Control Branch
Control Sect.	Control Section
CMP	Controlled Materials Plan
Coord.	Coordination
Coordr.	Coordinator
Corp.	Corporation
Corps of Engrs.	Corps of Engineers
CPFF	Cost-Plus-a-Fixed-Fee
CIC	Counter Intelligence Corps
Counter Intell. Div.	Counter Intelligence Division
DA	Defense Aid
DPC	Defense Plant Corporation

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Dept.	Department
Deputy C/AS	Deputy Chief of Air Staff
Deputy C/S	Deputy Chief of Staff
Det.	Detachment
dvlpmt.	development
Dvlpmt. Eng. Br.	Development Engineering Branch
Dir.	Director
Dir. Mil. Req.	Director of Military Requirements
Disposal Sect.	Disposal Section
Distrib.	Distribution
Dist.	District
Dist. Eng. Div. Liaison Officer	District Engineering Division Liaison Officer
Dist. Serv. Sect.	District Service Section
Dist. Supvr.	District Supervisor
Div.	Division
DNI	Division of Naval Intelligence
doc(s).	document(s)
East. Dist.	Eastern District
EPD	Eastern Procurement District
ed.	editor
EPF	Emergency Plant Facilities
Engr(s).	Engineer(s)
(E)	Engineering [as used after AC/S (MM&D)]
Eng.	Engineering
Eng. & Proc.	Engineering and Procurement
Eng. Div.	Engineering Division
E.O.	Engineering Order
Eng. Sect.	Engineering Section
Eng. Shops Lab.	Engineering Shops Laboratory
Equip.	Equipment
Equip. Lab.	Equipment Laboratory
ETO	European Theater of Operations
Exec.	Executive
Expend. Control Br.	Expenditure Control Branch
Expend. O.	Expenditure Order
Exp.	Experimental
Exp. Eng. Br.	Experimental Engineering Branch
Exp. Eng. Sect.	Experimental Engineering Section
Fac.	Facilities
Fac. Br.	Facilities Branch
Fac. Eng. Br.	Facilities Engineering Branch
Fac.	Facility
F	Fahrenheit

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FBI	Federal Bureau of Investigation
FM	Field Manual
Field Serv. Sect.	Field Service Section
Fighter Br.	Fighter Branch
Fiscal Br.	Fiscal Branch
Fiscal Records Br.	Fiscal Records Branch
FY	Fiscal Year
FP	Fixed-Price
Flight Sect.	Flight Section
FTC	Flying Training Command
fr.	from
Gen.	General
GHQ	General Headquarters
G.O.	General Order
Gen. Proc. Br.	General Procurement Branch
GSC	General Staff Corps
Glider Br.	Glider Branch
Govt.	Government
GFE	Government-furnished equipment
GFE Br.	Government-Furnished Equipment Branch
Ground Safety Sect.	Ground Safety Section
Hq.	Headquarters
Hist.	Historical
hist.	history
hp.	horsepower
H. Rpt.	House Report
Incl.	Inclosure
Inc.	Incorporated
IAS	Indicated Air Speed
Ind.	Indorsement
Indust.	Industrial
Indust. Fac. Sect.	Industrial Facilities Section
Indust. Plan. Sect.	Industrial Planning Section
Indust. Serv. Br.	Industrial Service Branch
Info.	Information
Insp.	Inspection
Insp. Div.	Inspection Division
Insp. Sect.	Inspection Section
Inspr.	Inspector
Inspr.-in-Charge	Inspector-In-Charge
IG	Inspector General

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Instr.	Instrument
Intell.	Intelligence
IDC	Inter-Desk Correspondence
IDM	Inter-Desk Memorandum
IATA	International Air Transport Association
ICAN	International Committee for Air Navigation
IOM	Inter-Office Memorandum
ICC	Interstate Commerce Commission
JAC	Joint Aircraft Committee
JC/S	Joint Chiefs of Staff
Joint Comm.	Joint Committee
JIC	Joint Intelligence Committee
JIOA	Joint Intelligence Objectives Agency
Joint R&D Bd.	Joint Research and Development Board
JAG	Judge Advocate General
JAGD	Judge Advocate General's Department
Lab.	Laboratory
LMAL	Langley Memorial Aeronautical Laboratory
Legal Br.	Legal Branch
Ltr.	Letter
Ltr. Contr.	Letter Contract
L. I.	Letter of Instruction
Ltr. Intent	Letter of Intent
Ltr. Term. Notice	Letter Termination Notice
Lib.	Library
Ltd.	Limited
Log.	Logistics
Log. Plan. Div.	Logistics Planning Division
Maint.	Maintenance
Maint. Control Sect.	Maintenance Control Section
Maint. Div.	Maintenance Division
Mgr.	Manager
Mgmt.	Management
Mgmt. Control	Management Control
Mfg. Methods Staff	Manufacturing Methods Staff
MS	manuscript
MIT	Massachusetts Institute of Technology
Mat. Distrib. Br.	Materials Distribution Branch
Mat. Lab.	Materials Laboratory
Mat.	Materiel
M&S	Materiel and Services
Mat. Center	Materiel Center

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Mat. Com.	Materiel Command
Mat. Div.	Materiel Division
MM&D	Materiel, Maintenance, and Distribution
Med.	Medical
MTO	Mediterranean Theater of Operations
Memo.	Memorandum
Memo. Rpt.	Memorandum Report
MIAD	Miami Air Depot
MCPD	Midcentral Procurement District
MAMA	Middletown Air Materiel Area
MWPD	Midwestern Procurement District
mph	miles per hour
Mil.	Military
MID	Military Intelligence Division
Mil. Intell. Serv.	Military Intelligence Service
Mil. Pers. Div.	Military Personnel Division
misc.	miscellaneous
Misc. Br.	Miscellaneous Branch
MOAMA	Mobile Air Materiel Area
Mod.	Modification
Mod. Center	Modification Center
Mun.	Munitions
NACA	National Advisory Committee for Aeronautics
NDRC	National Defense Research Committee
Natl. Mil. Estab.	National Military Establishment
NRC	National Research Council
NSC	National Security Council
ND	Navy Department
n.	note
No.	number
Office Admin. Sect.	Office Administration Section
OCAC	Office, Chief of Air Corps
OCSO	Office of Chief Signal Officer
OEM	Office of Emergency Management
O.I.	Office Instruction
OJA	Office of the Judge Advocate
ONI	Office of Naval Intelligence
OPM	Office of Production Management
OSRD	Office of Scientific Research and Development
OSS	Office of Strategic Services
Office, Under Secy. War	Office of the Under Secretary of War
OAMA	Ogden Air Materiel Area
OCAMA	Oklahoma City Air Materiel Area
Op'l	Operational

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Op'l Div.	Operational Division
Op'l Tng. Unit	Operational Training Unit
Ops.	Operations
OC&R	Operations, Commitments, and Requirements
Ops. Div.	Operations Division
Ord.	Ordnance
Ord. Dept.	Ordnance Department
Ord. Motor Maint. Co.	Ordnance Motor Maintenance Company
Org.	Organization(al)
Org. Plan. Div.	Organizational Planning Division
OAMD	Overseas Air Materiel District
POAMD	Pacific Overseas Air Materiel District
p.(pp.)	page(s)
par.	paragraph
Pat. Liaison Br.	Patent Liaison Branch
Pers.	Personnel
Pers. & Base Servs. Div.	Personnel and Base Services Division
Pers. Sect.	Personnel Section
Photo.	Photograph
Photo.	Photographic
Photo. Lab.	Photographic Laboratory
Plan.	Planning
Plans, Anal. & Rpts. Div.	Plans, Analysis, and Reports Division
Plans & Liaison Div.	Plans and Liaison Division
psi	pounds per square inch
Power Plant Lab.	Power Plant Laboratory
pres.	president
Proc.	Procurement
Proc. Control Sect.	Procurement Control Section
Proc. Div.	Procurement Division
Proc. Field Offices	Procurement Field Offices
(P)	Production [as used after AC/S (MM&D)]
Prod.	Production
Prod. Coord. Br.	Production Coordination Branch
Prod. Div.	Production Division
Prod. Eng. Sect.	Production Engineering Section
Prod. Req. Plan	Production Requirements Plan
Prod. Resources Sect.	Production Resources Section
Prod. Survey Br.	Production Survey Branch
Proj(s).	Project(s)
Proj. Records	Project Records
Prop.	Propeller
Prop. Lab.	Propeller Laboratory
PGC	Proving Ground Command
PRO	Public Relations Office
Pub(s).	Publication(s)

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Pubs. Br.	Publications Branch
Pubs. Lib.	Publications Library
P.O.	Purchase Order
Purchase Sect.	Purchase Section
Quality Control Sect.	Quality Control Section
QM	Quartermaster
QMG	Quartermaster General
Radiation Lab.	Radiation Laboratory
RG	radiogram
Readj.	Readjustment
Readj. Div.	Readjustment Division
Rear Adm.	Rear Admiral
RFC	Reconstruction Finance Corporation
Records Br.	Records Branch
Redistrib.	Redistribution
Redistrib. & Salvage Office	Redistribution and Salvage Office
ref.	reference
Ref. Lib.	Reference Library
Reg.	Regulation
rpt(s).	report(s)
Rep(s).	Representative(s)
Req.	Requirements
Req. Br.	Requirements Branch
Req. Div.	Requirements Division
Res.	Research
R&D	Research and Development
Res. & Eng. Div.	Research and Engineering Division
Resources Control Sect.	Resources Control Section
Resources Div.	Resources Division
R	Restricted
rpm	revolutions per minute
RAMA	Rome Air Materiel Area
R&R	Routing and Record Sheet
RAF	Royal Air Force
RCAF	Royal Canadian Air Force
SAMA	Sacramento Air Materiel Area
SAAMA	San Antonio Air Materiel Area
SBAMA	San Bernardino Air Materiel Area
School of Avn. Medicine	School of Aviation Medicine
S	Secret
Secy.	Secretary
Secy. War	Secretary of War

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Sect.	Section
Serv(s).	Service(s)
SF	Service Forces
Serv. Group	Service Group
Serv(s). Subsect.	Service(s) Subsection
SOS	Services of Supply
Sess.	Session
shp	shaft horsepower
Sig. C	Signal Corps
SAE	Society of Automative Engineers
SME	Society of Mechanical Engineers
SEPD	Southeastern Procurement District
Special Asst.	Special Assistant
S.O.	Special Orders
Special Serv. Div.	Special Service Division
Spec(s).	Specification(s)
Specs. Br.	Specifications Branch
SPAMA	Spokane Air Materiel Area
Sqdn.	Squadron
Std(s).	Standard(s)
Stdz.	Standardization
SWNCC	State-War-Navy Coordinating Committee
Stat.	Statistical
Stat. Control Office	Statistical Control Office
Stat. Div.	Statistical Division
Stat.	Statutes
SAC	Strategic Air Command
Subdiv.	Subdivision
Subsect.	Subsection
Supt(s).	Superintendent(s)
Supvr(s).	Supervisor(s)
Supp.	Supplement
Supp. Agree.	Supplemental Agreement
Supply & Maint.	Supply and Maintenance
Supply Div.	Supply Division
SHAEF	Supreme Headquarters, Allied Expeditionary Forces
SPB	Surplus Property Board
Tach.	Tachometer
Tact.	Tactical
TAC	Tactical Air Command
Tech.	Technical
Tech. Data Lab.	Technical Data Laboratory
Tech. Exec.	Technical Executive
TI	Technical Instruction
TM	Technical Manual

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T.O.	Technical Order
Tech. Serv. Div.	Technical Service Division
TTC	Technical Training Command
Tech. Tng. Div.	Technical Training Division
TG	telegram
TG Term. Notice	Telegram Termination Notice
tel.	telephone
Tel. Conv.	Telephone Conversation
TT	teletype
Term(s).	Termination(s)
Term. Contr. Officer	Termination Contracting Officer
Term. Sect.	Terminations Section
Traffic Div.	Traffic Division
Tng.	Training
TAD	Training Aids Division
Tng. & Trans. Br.	Training and Transport Branch
Tng. Plans Div.	Training Plans Division
Trans.	Transport
Trans.	Transportation
Treas.	Treasurer
TCC	Troop Carrier Command
TWX	teletypewriter exchange message
U	Unclassified
Under Secy. War	Under Secretary of War
USCO	Unit Security Classification Officer
Unit Tng. Div.	Unit Training Division
UAW	United Automobile Workers
U.K.	United Kingdom
USAF	United States Air Force
USMC	United States Marine Corps
UN	United Nations
USN	United States Navy
USSTAF	United States Strategic Air Forces
Univ.	University
v.	vice
v. pres.	vice president
VE Day	Victory in Europe Day
VJ Day	Victory in Japan Day
vol(s).	volume(s)
WAA	War Assets Administration
WD	War Department
WDGS	War Department General Staff

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WDSS	War Department Special Staff
WMC	War Manpower Commission
WPB	War Production Board
WRAMA	Warner Robins Air Materiel Area
Wash.	Washington, D. C.
Weather Div.	Weather Division
West. Dist.	Western District
WPD	Western Procurement District
WW I	World War I
WW II	World War II
WF	Wright Field
WF CF	Wright Field Central Files
W-PAFB	Wright-Patterson Air Force Base
ZI	Zone of the Interior

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SUPPLEMENTARY

GLOSSARY OF ABBREVIATIONS

AFPR	Air Force Plant Representative
c.	circa
CCN	Contract Change Notice
Chg. O.	Change Order
Chg. T-4	Termination Change 4
Cmt.	comment
DCS/M	Deputy Chief of Staff, Materiel
Del.	Delivery
Ext.	Extract
Fld.	Field
GFP	Government-furnished property
GSUSA	General Staff, United States Army
PR	Purchase Request
PWA	Pratt & Whitney Aircraft (used in short titles of the company's reports)
R&R-1; -2	Routing and Record Sheet, Comment No. 1; Comment No. 2
sfc	specific fuel consumption

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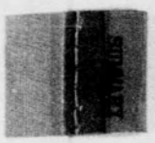
SUMMARY



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CASE HISTORY OF VDT ENGINES

SUMMARY

Origin of VDT Engines

During World War II and the following years, the Army Air Forces used various types of Pratt & Whitney's 28-cylinder R-4360 reciprocating engine in its heaviest bomber and transport airplane designs. While wartime orders were lucrative, Pratt & Whitney financed the improvement of the engine, but with the cutbacks in orders at the end of the war, the company asked the Air Forces to bear the cost of further development of the engine to meet Air Forces needs. By special arrangement with the Navy, which normally procured Pratt & Whitney engines for the armed services, the Air Forces entered into direct negotiation of development contracts with the company.

In February 1946, Pratt & Whitney proposed a $16,000,000 development program consisting of two parts: (1) improving the basic engine for higher ratings and modifying it for use of fuel injection and for use with exhaust-driven gas turbines; and (2) compounding the improved engine with exhaust-driven external superchargers or other auxiliary power units for further augmentation of the power output and for operation at higher altitudes.

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At the same time, the company presented a contract proposal for that portion of the program it could accomplish in one year, which constituted the first phase of a three-phase, or three-year, research and development program. This first proposal included the improvement and modification of the basic engine and the design work (design study and mock-up of a direct turbo feed-back engine) for the second portion of the development. Under the technical supervision of the Power Plant Laboratory, Pratt & Whitney completed this first part under Contract W33-038 ac-14294, producing three XR-4360-39 engines, preparing 17 reports of design studies covering methods of compounding the engine, and building a mock-up of one compounded with an external exhaust-driven turbosupercharger. This compound type was referred to as the "VDT," or variable discharge turbosupercharger, type. The design study of the VDT engine was released by Pratt & Whitney in March 1947 as PWA Report TR-42R and PWA

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NOTE: Numbers in the left margin refer to the documents used as source material and reproduced in Appendixes A and B.

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6B

6C; 107

Report TR-46, the latter a special version for airplane contractors. PWA Report TR-46 was used by both Boeing and Consolidated Vultee in estimating the performance of the B-50C and B-36C airplanes.

2; 3; 4; 5; 6A

From December 1946 through March 1947, the Power Plant Laboratory and Pratt & Whitney negotiated for development of this design, or the second and third phases of the three-year program. Under the second phase to be completed by 30 June 1948, Pratt & Whitney was to complete a satisfactory 150-hour qualification test of the XR-4360-39 and prepare a report of dynamometer calibrations on the basis of at least 250 hours of testing of an R-4360-C engine with fuel injection under simulated VDT operation. Under the third phase to be completed by 30 June 1949, Pratt & Whitney was to perform a satisfactory 150-hour qualification test of a VDT type and build eight engines for flight testing. These were to be in accordance with Pratt & Whitney's model specification A-7065 for the R-4360-43 engine for application to the B-50 airplane. The company was also to perform and report on dynamometer calibrations of this type with pistons of higher compression ratios, thus preparing for further improvement of the performance ratings.

Development as Production Improvement

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These proposed second and third phases of the program, however, were postponed when the Engineering Division declared its Fiscal Year 1948 budget inadequate for all the airplane and supporting engine projects on its program. The development of the VDT R-4360 engines was a supporting project specifically for the improvement of B-50 and B-36 bombardment airplanes then in production.

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From March to July 1947, the Air Forces reviewed the projected research and development program in relation to its long-range strategic plans and the availability of funds. As presented by the Engineering Division, the limited funds available made necessary a choice between (1) the competitive improvement of the B-50 and B-36, together with the associated development of VDT R-4360 engines, and (2) financing of the design phase of a new medium bomber. In March 1947, Headquarters, Army Air Forces, tentatively decided in favor of the latter but asked for more information. In May, the Engineering Division furnished the additional information and emphasized the fact that apportioning its power plant budget awaited a decision as to the direction the over-all program was to be given. Upon reviewing this information,

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Headquarters, AAF, reversed its earlier tentative decision and directed the Engineering Division to prepare a detailed statement of the projects that would have to be canceled from its 1947 and 1948 programs in order to support improvement of the current bombers as well as initiation of a new medium bomber design. At the same time, Headquarters, AAF, pointed out that, inasmuch as the improvement of the B-50 and the B-36 was in reality a modification of these airplanes already in production, the cost was a proper charge against production (Project 110) funds rather than research and development (Project 611) funds. Similarly, the improvement of R-4360 engines to power the advanced airplane types might feasibly be production, rather than research and development, projects. At a conference on 23 May 1947, Headquarters, AAF, and AMC agencies agreed to go ahead with the model improvement of the airplanes and the engines. On 10 July 1947, Headquarters, AAF, issued the decision as a directive for the modernization of one B-50 and one B-36 to be financed by cutting back the number of production airplanes on the proposed Fiscal Year 1948 procurement program and for the use of Fiscal Year 1948 procurement funds for development of the R-4360 engines for these modernizations.

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The VDT Engine Program

In May 1947, Pratt & Whitney presented a revised proposal for development of the engines, and throughout the succeeding year the AMC negotiated with the company for the following program covering (1) the conversion of XR-4360-39 engines to approved installation types; (2) limited production of these types for installation in the prototypes of the proposed modernized airplanes; and (3) quantity production of the VDT types for the proposed improved airplanes. (See also Exhibit A.)

Contractual Authorization	Contract No.	No. of Engines	Deliveries To Begin	Deliveries To Be Completed
Development				
8-28-47	W33-038 ac-18653	2 R-4360-43		12-31-47
		1 R-4360-51 (later converted to R-4360-43)		3-31-48
		150-Hr. qualification test		(11-1-48) 12-31-48
		50-Hr. flight test		1 year after receipt of B-50 airplane

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Contractual Authorization	Contract No.	No. of Engines	Deliveries To Begin	Deliveries To Be Completed
Prototype				
12-4-47	W33-038 ac-19032	8 R-4360-43	March 1949	July 1949
2-3-48	NOa(s) 8333	8 R-4360-51	April 1949	May 1949
Production				
12-31-47	NOa(s) 9511	14 R-4360-43	July 1949	
2- 3-48	NOa(s) 8333	213 R-4360-51	September 1949	May 1950
6-17-48	MIPR R-49-5N	186 R-4360-43	September 1949	August 1950

36; 55; 61; 67; 73; 83; 147; 183

The engines were to be developed and produced to equip the following airplanes: 22 F-12C's (production model designated R-12A); 43 B-50C's (production model designated B-54); and 34 B-36C's. The procurement authority for F-12's, however, was withdrawn, and the 14 production engines initially procured with funds allotted for the F-12's were diverted to the B-54 program. (See also Exhibit A.)

227; 233

133; 217A; 222

Changes in the airplane programs precluded the carrying out of the foregoing VDT engine program beyond the delivery of eight R-4360-43 prototype engines. Neither the YB-50C nor the YB-36C (the prototype VDT airplanes) reached the flight test stage. (See also Exhibit A.) Therefore the performance on the program was limited to (1) the conversion of XR-4360-39 engines to R-4360-43's, qualification and flight testing of this type, and production of the prototype engines for the YB-50C; and (2) the attempted development of an R-4360-51 for application to the B-36.

R-4360-43 Engines

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The R-4360-43 engine incorporated the results of the two-year development program initiated with the Pratt & Whitney proposal on 15 May 1947 and completed in April 1949 with the final delivery on the eight prototype engines for the YB-50C.

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However, Pratt & Whitney did not start the actual assembly and test work until late in August 1947, for until that time the company had no contract authorization from the AMC. Within a month following the directive of 10 July 1947 for the modernizations, the Procurement Division, AMC, endeavored to expedite the program by issuing a letter contract for the engine development, but the WDGS refused to authorize one. Pratt & Whitney therefore did not receive an approved contract until 28 August 1947.

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Under the contract, W33-038 ac-18653, Pratt & Whitney was to convert two R-4360-39 engines to the VDT configuration approved for installation in the B-50C airplane (the R-4360-43 type). The company was also to carry out an acceptable 150-hour qualification test and a 50-hour flight test of this type and develop a satisfactory electronic power control. Pratt & Whitney subcontracted the development of the power control to the General Electric Company, which was also responsible for the development of the
24 CH4-2 turbosupercharger to be compounded with the engine. For the flight test work on the development engines Pratt & Whitney was to have the use of a Government-owned B-50 airplane to be
37 modified by Boeing for a single-nacelle installation of the VDT engine. Thus Pratt & Whitney's development program was dependant for a large measure of its success on the co-operation of the Boeing Airplane Company and the General Electric Company.

Under Contract W33-038 ac-14294 Pratt & Whitney had delivered to the Air Force three XR-4360-39 engines in fulfillment of the first part of the general improvement program initiated in February 1946. These three engines, also identified as Pratt & Whitney engines Nos. X-151, X-152, and X-155, were to remain with the company for development testing in the remaining parts
14; 29A; 37 of the program. Under Contract W33-038 ac-18653 Pratt & Whitney converted these to the VDT type, R-4360-43. The first two were
75 delivered in lieu of mock-ups to the Boeing Airplane Company in October and December 1947. Boeing used these in initiating the design work on the YB-50C, and in modifying a Government-owned B-50 airplane with a single-nacelle installation of one engine
107 for Pratt & Whitney's use in its flight test program. The third of these engines was first converted to an R-4360-51 and later to the R-4360-43 type. As the development, qualification, and flight testing proceeded, these were progressively modernized to incorporate the approved results of the test work. In addition to the Government-owned engines, Pratt & Whitney used other company-owned engines, and before the end of the program was
131 utilizing a total of 12.

The development testing resulted in (1) improvements that were incorporated in the new type, the R-4360-43; (2) a more dependable crankshaft for R-4360 engines; and (3) basic data for future development of the engines with still higher ratings. The principal improvements incorporated in the basic R-4360-43 engine passing the official qualification test were a hydraulically damped flywheel construction in the crankshaft, an improved exhaust system, and cylinders with improved cooling characteristics. The cooling characteristics of the engine were the critical item. In February and March 1948 the company had to revise downward

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110; 238B

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169; 238B

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179; 187

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80A; 89

82A

116; 137; 146

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its previous performance estimates of the engine as to cooling requirements. These resulted in a decrease in some of the earlier estimates of the performance of the YB-50C airplane, although the AMC believed the engine still cooled as well as or better than B-29 or B-50A engines. Pratt & Whitney therefore conducted special development testing, redesigned the cylinders, and, concurrently with completion of the official qualification test, issued revised cooling curves that were more nearly in accord with the original estimates. Another result of the development testing was a five-piece crankshaft to replace the single-piece crankshaft in Pratt & Whitney production engines. This item, however, was not ready for the VDT qualification test. As part of the R-4360-43 test program Pratt & Whitney also initiated development tests on pistons with higher compression ratios and performed other tests to evaluate the fuel consumption with these. On the basis of the early tests and analyses, the company believed that it would be possible further to improve the power output of the engine and also reduce the specific fuel consumption to .37.

The terms of the official 150-hour qualification test were a matter of extended negotiation with the AMC. From November 1947 to August 1948, Pratt & Whitney made three attempts to complete an official model test. In November 1947 the contractor announced a schedule for the first one. This test was started on 30 December 1947 but, after 11.5 hours of running, the engine had to be torn down for redesign and fabrication of parts that failed. Pratt & Whitney proposed to continue the test after reassembling the engine. The Power Plant Laboratory supported the Air Force Inspector in his belief that the test should be started over again if it were to be accepted as official. Pratt & Whitney continued the test as unofficial until May 1948 when 150 hours of endurance testing had been accumulated, but with several more interruptions for redesign and rebuilding of parts.

Several events delayed until 8 June 1948 the start of the next attempt at the official 150-hour qualification test. It has already been noted that Pratt & Whitney revised the cooling requirements of the engine in February and March and initiated development tests on cylinders with increased cooling fin areas. Pratt & Whitney proposed using these cylinders in the next official qualification test. The AMC urged Pratt & Whitney to conduct the test with all of the VDT components, the propeller, and the engine-driven accessories that would be used in the B-50C. Pratt & Whitney agreed to do so provided the accessories were available and functioned so as not to delay the test. However,

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the CHM-2 turbosupercharger was not available until early in June, when Pratt & Whitney further learned that General Electric expected to make frequent development inspections of the item
146; 149 during the qualification test, thus slowing down the test. The test was started on 8 June 1948, with the CHM-2 turbosupercharger added after several hours' running time. On 10 June 1948, after 1.5 hours' time with the turbosupercharger, the test was dis-
151 continued because of a cracked crankshaft.

Early in July, Pratt & Whitney completed a 150-hour endurance test on a flywheel damper construction in the crankshaft and expected to avoid similar crankshaft failures by using the
156 improved damper in the third attempt at the qualification test. On 6 July 1948 the company announced the schedule for the test. General Electric had recommended against using the CHM-2 turbosupercharger in an official qualification test of the engine for the reason that the turbosupercharger had yet to complete factory endurance tests. Pratt & Whitney therefore proposed to go ahead
158 with the engine qualification test without it. The Power Plant Laboratory recommended against accepting the test as official and cited the following major deviations from the requirements for an official qualification test: the proposed cylinder head temperatures and the engine ratings were not those guaranteed in the model specification; the B-50C engine-driven accessories
160 were not being used, nor was the VDT power control. Pratt & Whitney reiterated its willingness to use the B-50C flight equipment if it were available in time and functioned so as not to interfere with the running of the test. However, Pratt & Whitney had the test already under way and pointed out two further reasons for concluding it as quickly as possible: (1) the company was carrying on the work with its own funds, having expended Government funds to the extent of the ceiling price on the contract; and (2) the contractor could not go ahead with the production schedule until the bill of materials for the production engines had been approved by an acceptable qualification test on
165 the development engines. The AMC finally conceded that the development status of B-50C engine-driven flight accessories would indeed delay the qualification test, and, to avoid delaying production, authorized Pratt & Whitney to continue the test with the engine accessory drives loaded to the torque limits prescribed in the specification. At the same time, the AMC asked the company to submit a contract proposal for another 150-hour qualification test to be run later when the various items of equipment would
168 be available. The company concluded the test on 5 August 1948 and the AMC accepted it as qualifying the basic R-4360-43 engine, but with the understanding that the complete VDT assembly, together with the B-50C propeller and other engine-driven

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169; 177; 179; 187; 192; 206

accessories, would be given a 150-hour test later.

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The full complement of VDT components was used in the 50-hour flight test program of the engine. For this the power control was ready in December 1947. By March 1948 the Air Force had delivered to Pratt & Whitney the B-50 airplane modified by Boeing with a single-nacelle VDT engine installation, but the

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CH4-2 turbosupercharger was not available until April. The first test flight was made 26 May 1948, and the test work

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continued until December 1948. An additional five hours' flight testing was added to the contract for the purpose of

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making a vibration stress survey of a C-6455-A Curtiss propeller with the R-4360-43 engine. Besides demonstrating improvements necessary in the VDT components, particularly in the turbosupercharger, the test program also proved the necessity for several changes in the airplane modification. For instance, it was found necessary to change the airplane cowling to improve the compressor entrance, to enlarge the nacelle exit for better cooling of the turbine, and to change the material of the

169; 179; 209

compressor housing from magnesium to aluminum. These requirements were passed on to Boeing for incorporation in the prototype YB-50C and production B-54's. At a B-54 co-ordination

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conference in January 1949, AMC representatives agreed with the manufacturers (Boeing, Pratt & Whitney, General Electric) that additional single-nacelle flight testing of the VDT assembly would demonstrate other improvements that could be made in both the airplane structure and the engine components, improvements that would not otherwise be defined until the YB-50C was flight tested late in the summer. Boeing, Pratt & Whitney, General Electric, and Curtiss Propeller would all participate in and

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benefit from the additional single-nacelle flight testing, and the B-54 production program would be advanced. Negotiations were therefore under way for an additional 95 hours of engine flight testing by Pratt & Whitney when the B-54 airplane program

221-224; 228; 229

was canceled.

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In general, Pratt & Whitney completed in advance of the delivery schedule all of the major articles of work on the development contract. In November 1948 the contractor announced an accelerated schedule for the delivery of the eight engines

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for the prototype YB-50C, and completed the deliveries in April 1949, several months ahead of the contract delivery schedule.

R-4360-51 Engine

Contrasted with the full-scale development of the R-4360-43, the R-4360-51 "died a-borning." The cancellation of the project

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before delivery of the first development engine may have been due in some measure to the prolonged uncertainty over the adoption of the B-36C airplane program. It has been noted that policy-making groups of Headquarters, USAF, and the AMC debated the modernization of B-50 and B-36 airplanes with VDT engines from March until 10 July 1947, when Headquarters, USAF, authorized procurement of the prototype VDT airplanes and engines with production funds. This decision had been supported in part by Consolidated's performance estimates and production schedules for the prototype YB-36C (also termed B-36Z) and the B-36C airplanes presented on 5 May 1947. Following the agreement reached on 23 May 1947 to go ahead with the VDT program, Consolidated amplified these in a contract proposal on 4 June 1947. Although both of these statements from Consolidated included estimated production schedules for B-36C airplanes based on an assumed production contract to be let in August 1948, the immediate concern of the AMC was the prototype YB-36C and its limiting component, namely, the development and prototype VDT engines.

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In several conferences late in May and early in June 1947, the AMC, Consolidated, Pratt & Whitney, and General Electric arrived at the configuration of the R-4360 VDT engine to be developed by Pratt & Whitney. This was the R-4360-51. In addition to the VDT components it had in common with the R-4360-43, the R-4360-51 engine was to incorporate special features for driving tractor propellers in the B-36, the airframe of which was designed for a pusher-propeller installation. Inasmuch as the engine was to be mounted in the rear of the B-36 wing, it was to be developed with a special extension propeller shaft with the reduction gear box at the propeller end of the shaft. Under Contract W33-038 ac-18653, one of the three XR-4360-39 engines was to be converted to the R-4360-51 type and delivered without qualification testing.

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However, on 22 August 1947, at about the same time as the contract was in process of approval, the USAF Aircraft and Weapons Board canceled the B-36Z project and decided to terminate production of B-36 airplanes with the 100 on contract. On 26 August 1947, the Deputy Chief of Staff, Materiel, forwarded the decision to the AMC as approved by the Chief of Staff, USAF.

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Consolidated promptly presented on 4 September 1947 to both Headquarters, USAF, and AMC, a revised proposal based on immediate reinstatement of the B-36Z project and on the improvement of the last 34 airplanes on contract with VDT engines. The company further proposed to finance the modification by cutting the number of airplanes on contract from 100 to 95, and to complete these by June 1950. Although this proposal would prolong the

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B-36 production program from November 1949 to June 1950, it represented an acceleration of several months over Consolidated's first B-36C schedule proposed on 5 May 1947. In the Research and Engineering Division, USAF, one officer questioned Consolidated's motives in making the proposal, and both aircraft and engine specialists were confident the company could not meet the schedules. On the whole, however, Headquarters, USAF, found the proposal attractive but believed the engine availability on which it was based was "overly optimistic." Therefore, the Requirements Division asked that the AMC furnish a B-36C schedule based on realistic engine schedules, and the Chief of Staff directed that members of the USAF Aircraft and Weapons Board evaluate Consolidated's new proposal and reconsider their decision to terminate the B-36Z project. On 30 September 1947, the AMC sent to Headquarters, USAF, a revised B-36 schedule based on the latest estimates of Pratt & Whitney's engine production. This schedule was contingent on immediate approval of the program and expedited contract authorizations. By November each member of the USAF Aircraft and Weapons Board had reviewed Consolidated's new proposal and all members except the Chief of the Strategic Air Command had approved it. On 5 December 1947, Headquarters, USAF, directed the AMC to proceed with the B-36C program as outlined by that command on 30 September 1947. Thus, from March until December 1947, the modernization of the B-36 with VDT engines was the subject of so many decisions and reversed decisions that it was in a continuously doubtful position.

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One of the effects of this uncertainty was delay in the initiation of the program finally adopted. From August until December 1947, Pratt & Whitney and the Procurement Division agreed to delay work on the development of the first R-4360-51 until the B-36C program was definite. Pratt & Whitney, therefore, did not begin conversion of the XR-4360-39 until January 1948, and had the first R-4360-51 engine assembled and ready for development testing by the end of March 1948, the scheduled delivery time for the engine. During the acceptance testing in May a special extension shaft coupling gave way, and, at the time the B-36C project was terminated, the engine was only ready to undergo further testing of the shaft.

Another effect of the eight-month debate over the B-36C program was retarded delivery schedules for the production engines, which in turn resulted in revision of the B-36C airplane delivery schedules. Prior to September 1947, the AMC's B-36C engine planning with Pratt & Whitney had been in terms of only the development and prototype engines; R-4360-51 engines in production quantities had not been considered in formal

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proposals from Pratt & Whitney. Consolidated's proposal in September for an accelerated B-36C program was based on an availability of production engines in May 1949. On 18 September 1947, in conferences with Consolidated and Pratt & Whitney, the AMC received Pratt & Whitney's production schedule for R-4360-51 engines and for all R-4360 VDT types. The latter did, indeed, promise four VDT engines in May 1949, but they were R-4360-43's because Pratt & Whitney had planned on bringing the R-4360-43 for the B-50 airplane into production first. No R-4360-51's could be delivered before July 1949. Therefore the AMC, basing the "realistic" B-36C schedule of 30 September 1947 on an engine lead time of three months, set delivery of the first production airplane in October 1949. On 3 October 1947, Pratt & Whitney confirmed the delivery schedules for production engines verbally presented in the conference on 18 September 1947. Delivery of the R-4360-43's in May 1949 was contingent on Pratt & Whitney's receipt of contract authorization for them by 15 November 1947, thus establishing 18 months as the minimum time between contract authorization and delivery of the first engine. The AMC's schedule of 30 September 1947 assumed early contractual commitments. However, two months had elapsed before the program was approved on 5 December 1947, and two more before Pratt & Whitney received from the Navy on 3 February 1948 the notice of award of a contract for both the prototype and production R-4360-51 engines. The company therefore insisted that, in accordance with its quotation of 19 June 1947 on prototype engines, the first R-4360-51's for the YB-36C would be delivered in April 1949 and that those for the B-36C would start in September 1949, in accordance with its 3 October 1947 quotation. Consequently, in March 1948 the AMC had to retard the B-36C delivery schedule to call for the YB-36C in July 1949, the first B-36C airplane in December 1949, and the last in September 1950. This final schedule differed only slightly from Consolidated's original proposal in May 1947. (See also Exhibit A.)

370
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73; 92
19; 51; 95
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Thus far the worst that had happened to the program was delay; the program was no longer an "accelerated" B-36C schedule. The one advantage remaining in the project was the promise of higher performance in the airplane by reason of VDT engines. Early in 1948, events began shaping up that made achievement of that aim doubtful. Consolidated had based the estimated performance of the B-36C on Pratt & Whitney's VDT design study, PWA Report TR-46. By December 1947, when Headquarters, USAF, authorized the accelerated B-36C program, Pratt & Whitney had been working for three months on development of the R-4360-43 engine; but the first attempt at a 150-hour qualification test had yet to be made, and the parts for the first R-4360-51 test engine, an

6C; 10A; 40

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48; 80A; 89; 104 admittedly more complex engine, were yet to be fabricated. Thus, planning for the YB-36C, to be available in July 1949 and to be followed in five months with the first production airplane, had to proceed on the basis of only estimated, experimental values for the engine.

Early in January 1948, Consolidated sent to the AMC a statement of the most urgently needed information for proceeding 77 with the design and manufacturing work for the VDT installation. On 26 January 1948, the AMC, Consolidated, and Pratt & Whitney conferred on these requirements. The AMC pointed out that the B-36C program could be canceled if engine performance should compromise airplane performance. Among the problems that Pratt & Whitney would have to solve if Consolidated were to meet the scheduled performance and delivery of the YB-36C and B-36C's were three that illustrated the difficulty inherent in using experimental data in planning modernization of production aircraft. One was delivery of the mock-up of the engine; another was development of a two-speed drive for the cooling fan; and the third was establishment of dependable cooling curves for 90 the engine. During the next three months the proposed solutions to these forecast only further delay in the B-36C program and ultimate loss of the performance claimed for the airplane.

With reference to the mock-up, on 1 March 1948 Pratt & Whitney agreed to furnish one within five months at no cost to the Government, pointing out, however, that it would have to be a mock-up of the engine as it was then, rather than one of its final accepted configuration. Pratt & Whitney proposed to revise it from time to time as development of the engine 102 progressed to the delivery of the first prototype. However, Consolidated required the mock-up in June rather than August if it were to keep abreast of its engineering and manufacturing 108 schedule.

At the conference on 26 January 1948 it had been agreed that Pratt & Whitney would furnish a two-speed fan drive similar to that used with the R-4360-41 engines and that Consolidated would later provide the gear ratios and horsepower loadings 90 based on the latest cooling data from Pratt & Whitney. On 23 February 1948, Pratt & Whitney presented its contract proposal for the fan drive based on data received from Consolidated at a conference on 16 February 1948 and on use of the drive which Pratt & Whitney was already producing for the R-4360-41 for the 98 B-36B airplanes. On 19 March 1948 Consolidated released revised 109 gear ratios and horsepower loadings for the fan. On 6 April 1948, Pratt & Whitney pointed out that these requirements would

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necessitate the design and development of a completely new fan drive, which in turn would result in serious delays to both the R-4360-51 and B-36C schedules. For instance, it would require more than 18 months after contract authorization to provide the fan drive for the production engines.

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The most urgent of Consolidated's requirements for its engineering work on the engine installation was definitive cooling data from Pratt & Whitney. In the conference on 26 January 1948, Pratt & Whitney pointed out that these data were impossible in view of the development status of the engine, and asked that Consolidated and General Electric jointly study with Pratt & Whitney the cooling requirements and draw up a revised report on the performance of the engine. During February, Pratt & Whitney completed the study and in March published the results in PWA Reports TR-56 and TR-57. These included the latest cooling characteristics of the VDT engines and performance estimates of the R-4360-51. On 12 and 13 April 1948, AMC, Pratt & Whitney, General Electric, and Curtiss Propeller representatives conferred with Consolidated at Ft. Worth on the effect these revised engine characterfstics would have on the B-36C performance. The data presented at the conference indicated a reduction in the estimated performance originally claimed for the airplane.

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The AMC promptly took steps to recommend termination of the project. On 15 April 1948 the Chief of the Ft. Worth Procurement Office advised Consolidated to slow down factory operations in anticipation of termination of the B-36C program. On or about 21 April 1948, the AMC asked Headquarters, USAF, to re-evaluate the B-36 airplane project in view of these latest developments and outlined four possible courses of action, all of which excluded any further consideration of the B-36C. This recommendation aroused so much adverse criticism, particularly in the Research and Engineering Division and in the Control Group of his staff, that the Deputy Chief of Staff, Materiel, asked the Inspector General to make a complete investigation of the B-36 project. The scope of this investigation, however, was scaled down early in June to include only the VDT phase and the information available at Headquarters, USAF. On 24 June 1948, at a conference in the office of the Secretary of the Air Force, the B-36C program was canceled and a program of 95 airplanes authorized, of which 22 were to be B-36A's and the remaining 73, B-36B's.

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143; 145; 239

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Prompt cancellation of the B-36C misadventure in its infancy resulted in a very small expenditure for the engines.

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173; 176; 182

Pratt & Whitney offered to convert the one R-4360-51 development engine to an R-4360-43 at no cost to the Government. The Navy estimated that approximately $200,000 in termination charges would have to be paid to Pratt & Whitney for the changes in

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Contract NOa(s) 8333 from R-4360-41 engines to R-4360-51's and back again to R-4360-41's. These charges were covered by credits accruing to the contract through reduction in the number of spare R-4360-41 engines to be purchased.

Plans for Further Development of the R-4360-C Engines

124

On 13 April 1948, the Power Plant Laboratory asked Pratt & Whitney to prepare a design study and a contract proposal for further development of the R-4360-43 engine for operation in a B-50C airplane at altitudes of 40,000 to 45,000 feet. Pratt &

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Whitney preferred to postpone this next development phase of the engine until the company completed the development work under Contract W33-038 ac-18653. Accordingly, in October 1948, on the basis of the development and qualification tests completed on the R-4360-43, Pratt & Whitney prepared PWA Report TR-61 and presented it, together with a contract proposal for further improvement of the engine. Some of the most significant performance possibilities of the improved engine were a military and take-off rating of 4800 horsepower and operation at 43,000 feet with a specific fuel consumption of .375. Pratt & Whitney proposed a 12-month development program to include: (1) conversion of two R-4360-43 engines; (2) a 150-hour qualification test; and (3) development testing of the Eclipse power control.

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The quoted cost was $3,920,000, with flight testing as an additional cost at the rate of $3,000 per hour.

From November 1948 until February 1949 the Engineering and Procurement Divisions reviewed the proposal. The Director of Research and Development believed the R-4360-43 had exceeded expectations, and that the engine would be the principal power plant for heavy transport airplanes for several years to come. He believed the proposal represented sound engineering development practice and recommended that a general improvement program

203; 207

be continued out of Project 110 funds. The Director of Procurement and Industrial Planning agreed.

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However, in April 1949, Headquarters, USAF, directed that the B-54 airplane program be cancelled, and in May 1949 directed that 36 additional B-36 airplanes be procured. The AMC had invested approximately $12,500,000 in the development of the R-4360-43 and had committed approximately $22,000,000 for

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production of the engine for the B-54's. The contract termination costs for the production engines were estimated at $7,500,000, and for the associated CH4-2 turbosuperchargers, $1,500,000. Thus, the Air Force, and tax payers, was faced with the loss of approximately $21,000,000 in development and production that would become useless if the engine were abandoned with the B-54.

238C

Although the under-developed R-4360-51 VDT engine had proved impractical in the B-36, the fully developed R-4360-43 had later been established as a high-performance R-4360-C type, with possibilities of still higher ratings with more development. Moreover, the B-36 needed power plant improvement.

238C

Therefore, early in June 1949, with the approval of the Under Secretary of the Air Force, the Director of Procurement and Industrial Planning, AMC, asked Headquarters, USAF, to authorize the further development and procurement of an advanced type of R-4360-C engine for use in the additional 36 B-36's to be procured. By doing so, up to 80 per cent of the termination charges for engines, turbosuperchargers, and allied Government-furnished property for the B-54 could be salvaged. Headquarters, USAF, agreed with the plan in principle but withheld final approval until more detailed justification could be presented. On 15 June 1949, the Director of Procurement and Industrial Planning presented the justification, which was supplemented on 30 June and 18 July with detailed plans for the development and production program and the means of financing it.

235-238

238A; 238C; 240; 241

The proposed program consisted of two phases: (1) developing the engines and turbosuperchargers and service testing them in prototype B-36 and C-124 airplanes; and (2) procuring R-4360-53 engines and installing them in the 36 B-36 airplanes authorized by Procurement Directive 49-52. The second phase was contingent on acceptance of the first.

238C; 240; 241

In the first phase, R-4360-C engines were to be converted and developed to an R-4360-55 (with low-compression pistons and cylinders) and an R-4360-57 (with high-compression pistons and cylinders). The associated CE-3 and CH4-2 turbosuperchargers to be compounded with these were also to be developed. The whole power plant was to be arranged for a pusher-propeller installation in the B-36. Twenty-four engines and twenty-four sets of turbosuperchargers were to be procured for testing in two prototype B-36 airplanes. Similarly, an internally supercharged R-4360-C engine for use with tractor propellers was to be developed and 16 engines procured for testing in two prototype

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2380 C-124 airplanes. The total cost of this first phase of the program was estimated at $12,286,000.

The second phase of the program called for the procurement of R-4360-53 engines and installation of them in the additional 36 B-36 airplanes. This included modification of the airframes and procurement of new propeller hubs as well as engines, the cost of all of which was estimated at $31,251,680. By applying against this cost funds already available for procurement of additional B-36 engines, current unallocated funds, and credits available through reduction of termination charges on B-54 engines, the Procurement Division expected to finance the second phase of the program with approximately $4,792,912 of additional funds. The estimated cost of the total program was therefore 240; 241 $17,060,912, to be obtained from Fiscal Year 1950 funds.

On 20 July 1949, Headquarters, USAF, approved these plans. By 5 August 1949, the Procurement Division had initiated procurement action with the Navy for the R-4360-53 engines in lieu of 242; 243 R-4360-41 engines previously contracted. By agreement with the Navy, the USAF was to contract directly with Pratt & Whitney for the development and the prototype engines. The greater part of the research and engineering work for these had been completed with the development of the R-4360-43 engines. The eight prototype R-4360-43's were to be returned to Pratt & Whitney for conversion into R-4360-55 engines. Pratt & Whitney expected to complete conversion of these engines within 6-1/2 months from date of the contract; to deliver the remainder of the new prototype engines within 11-1/2 months; and to make initial delivery of the production engines within 12 months after date 244 of the contract.

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DIGESTS

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1. (U) Ltr., 11 Feb. 1946
   Fr: P&W Airc. Div., East Hartford, Conn.
   To: CG, ATSC
   (File: AMC Contr. & Res. Records Center, W-PAFB)

Pratt & Whitney Airc. Div. [hereafter P&W] presented (1) estimates of time and cost for further development of the R-4360 Series "C" engine, and (2) contract proposal for that portion of the development program it could complete in 1946. P&W conceived the total program as consisting of two stages: (1) improving the basic R-4360 engine; and (2) combining the improved engine with exhaust-driven turbosuperchargers, or with other auxiliary power units, or with both to obtain still higher performance. Contract proposal included two articles of work constituting design phase of the second stage of the total program: (1) preparation of a report of the analysis and a design study of a direct turbo feed-back compounded engine, and (2) fabrication of a mock-up of this type of compounded engine.

2. (U) Copy of ltr., 26 Dec. 1946
   Fr: P&W
   To: CG, AMC
   (File: Power Plant Lab., Eng. Div.)

P&W outlined contract proposal for a second increment of the development program proposed 11 Feb. 1946 [Doc. 1]. Estimated cost was $5,000,000, of which $900,000 was applicable to development of a proposed Navy model.

3. (U) Ltr., 14 Jan. 1947
   Fr: Col. R. J. Minty, Chief, Power Plant Lab.
   To: P&W
   (File: Power Plant Lab., Eng. Div.)

The Air Materiel Command [hereafter AMC] wanted to proceed with a second phase of the engine development, but suggested that P&W modify proposal dated 26 Dec. 1946 [Doc. 2] in two respects: to eliminate development of the Navy model, and to include dynamometer calibration of one engine with fuel injection and with specified features simulating the externally supercharged engine described in PWA Rpt. TR-42.

4. (U) Ltr., 21 Jan. 1947
   Fr: P&W
   To: CG, AMC
   (File: Contr. Distrib. & Files Br., Proc. Div.) [Hereafter Contr. Files.]

P&W presented contract proposal revised in accordance with AMC's suggestions on 14 Jan. 1947 [Doc. 3]. Estimated cost was $3,200,000, of which $200,000 would be eliminated if AMC dropped the previously established requirement for developing the Chandler-Evans Corp. as a second source of supply for fuel injection equipment.

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5. (U) PR No. 14589, 7 Feb. 1947 (File: Contr. Files)	$3,000,000 of Proj. 611 [R&D] funds was obligated for the development proposed 21 Jan. 1947 [Doc. 4]. However, purchase request was canceled 6 May 1947. [See also Docs. 11 and 12.]
6. (U) Ltr., 11 Mar. 1947 Fr: Col. G. E. Schaetzel, Chief, Airc. Sect., Proc. Div. To: Consolidated Vultee Airc. Corp., Ft. Worth, Tex. (File: Contr. Files)	On the basis of [verbal] information from Power Plant Lab. that the R-4360-C P&W engine would be satisfactory for AAF use, Airc. Sect., Proc. Div., asked Consolidated Vultee [hereafter CVAC] to present estimate of the performance of a B-36 airplane using the engine in a tractor configuration. [See also Docs. 6B and 6C.]
6A. (U) Ltr., 13 Mar. 1947 Fr: P&W To: CG, AMC (File: Power Plant Lab., Eng. Div.)	P&W presented contract proposal for the third and last part of the development program initiated 11 Feb. 1946 [Doc. 1]. Articles of work were to include: (1) 150-hour qualification test; (2) dynamometer calibration of the engine; and (3) eight prototype engines. All were to be in accordance with PWA Spec. 7065, dated 10 Mar. 1947 [for the R-4360-43 engine. See Doc. 7]. Estimated cost was $5,300,000 for development work plus $187,500 for each prototype engine. [Power Plant Lab. initiated purchase request for this phase but did not process it. See also Docs. 11 and 12.]
6B. (U) Ltr., 13 Mar. 1947 Fr: P&W To: J. B. Coyle, Power Plant Lab., Eng. Div. (File: AMC Contr. & Res. Records Center, W-PAFB)	P&W reported progress in the 150-hour endurance test on an R-2800 engine to obtain preliminary information on operation of an R-4360-C variable discharge, externally supercharged [VDT] type. The company had also completed the design study of this type of engine and published the results in PWA Rpts. TR-42R and TR-46, the latter a shorter version of TR-42R for distribution among airplane companies. [See also Docs. 6 and 6C.]
6C. (U) Info. copy of TWX message, 19 Mar. 1947 Fr: CVAC, Ft. Worth, Tex. To: O. H. Snyder, CVAC, Dayton, Ohio (File: B-36 Unit, Bomb. Br., Proc. Div.)	CVAC gave estimate of B-36 performance with six tractor R-4360-C3 [VDT] engines based on data contained in PWA Rpt. TR-46, dated 7 Mar. 1947, and on use of the engines without cooling fans. [See also Docs. 6, 6B, and 10.]

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7. (U) TT message, 8 Apr. 1947
Fr: Col. R. J. Minty, Chief, Power Plant Lab.
To: P&W
(File: Lab. Area Br., CF Sect., AGO) [Hereafter CF-B]

Power Plant Lab. asked P&W for cost estimate on development of an XR-4360-43 engine, including a 150-hour qualification test.

8. (U) Ltr., 14 Apr. 1947
Fr: Col. R. J. Minty, Chief, Power Plant Lab., Eng. Div.
To: General Electric Co., West Lynn, Mass.
(File: CF-B)

Power Plant Lab. asked General Electric [hereafter G. E.] to review turbosupercharger data for installation of an R-4360-43 engine in a modified B-50 airplane and to advise what available turbosupercharger would be best for use with this airplane-engine combination.

8A. (C) Ltr., 14 Apr. 1947
Fr: P&W
To: J. B. Coyle, Power Plant Lab., Eng. Div.
(File: AMC Contr. & Res. Records Center, W-PAFB)

P&W reported on problems encountered in the endurance test being made on an R-2800 engine to obtain advance development information on operation of the proposed R-4360-VDT type.

9. (U) TWX message, 23 Apr. 1947
Fr: P&W
To: Col. R. J. Minty, Chief, Power Plant Lab., Eng. Div.
(File: Contr. Files)

In a preliminary reply to the Power Plant Lab. request dated 8 Apr. 1947 [Doc.] P&W indicated that it could complete development of the R-4360-43 engine through a satisfactory model test by 31 Dec. 1948 for $5,590,600.

10. (U) TWX message, 30 Apr. 1947
Fr: AAFPR, CVAC, Ft. Worth, Tex.
To: CG, AMC
(File: Contr. Files)

On the basis of additional information from P&W, CVAC revised some of the performance estimates furnished 11 Mar. 1947 [Doc. 6C]. Principal change was an increase in estimated maximum range. Study was continuing on the cooling fan and other details. [See also Doc. 10A.]

10A. (U) Ltr., 5 May 1947
Fr: F. A. Learman, Gen. Sales Mgr., CVAC, San Diego, Calif.
To: Lt. Col. H. E. Warden, Airc. Proj. Sect., Eng. Div., and Lt. Col. T. P. Gerrity, Airc. Sect., Proc. Div.
(File: Contr. Files)

CVAC quoted cost and furnished production schedule for the installation and testing of P&W R-4360-C3 [VDT] engines in a B-36A airplane to be evaluated as a production prototype. The company also outlined two programs for production of this type after completion of the 100 airplanes then on contract. For the prototype airplane, the company used the same performance figures it furnished 30 Apr. 1947 [Doc. 10]. Estimated cost was $3,230,989.28. Salient features of the prototype manufacturing

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schedule were the following: (1) CVAC was to receive a contract for the work in June 1947; (2) the company would use the 40th B-36 on contract for the prototype modification; (3) engines for this modification were to be available in Aug. 1948; (4) if the foregoing conditions were fulfilled, the company would complete the prototype VDT airplane by Dec. 1948; and (5) if all of the foregoing were accomplished, CVAC would complete the flight tests of the prototype in Mar. 1949. CVAC based the two alternate production programs on cutting back the schedule of airplanes then on contract from six to four a month. It based Program "A" on receipt of a contract for the production VDT airplanes in Sept. 1948, immediately following the evaluation of the prototype design. The company believed this early award would provide a continuous manufacturing schedule from the contract then in force into that for the VDT airplanes. Such a schedule would eliminate the high cost of maintaining the plant and of retaining skilled personnel during a shutdown period such as would occur under the alternate Program "B." In the latter program, the company was to receive the VDT production contract about May 1949 after evaluation of the flight-tested prototype. The manufacturing schedule thus initiated would entail a time lag of approximately eight months between completion of the 100 airplanes then on contract and the first production VDT airplane. The company estimated the cost of this lag at approximately $10,000,000. [See also Docs. 37C and 40.]

11. (C) Ltr., 6 May 1947
Fr: Maj. Gen. L. C. Craigie, Chief, Eng. Div.
To: CG, AAF
(File: CF-B)

Eng. Div. presented additional cost and scheduling information, including CVAC's letter of 5 May 1947 [Doc. 10A], to substantiate agreement reached with Air Staff representatives in a conference at Hq., AAF, 25 Mar. 1947. AAF personnel had reviewed Boeing's and Consolidated's proposals for modernizing B-50's and B-36's with VDT engines, and had concluded that

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AAF funds should be expended on development of a new medium bomber to become the AAF's most efficient weapon within the next several years. Eng. Div. stressed that planning its power plant budget awaited statement of this agreement as AAF policy, and emphasized that the amount of funds available made it necessary either to modernize the bombers then in production or to develop a new medium bomber. Modernization of the B-36 and the B-50 required development of VDT engines competitively with development of the turbo-propeller engines for the XB-52. The amount of funds available precluded concurrent development of all airplanes and all engines involved.

12. (C) Ltr., 8 May 1947
Fr: Maj. Gen. E. M. Powers, AC/AS-4
To: CG, AMC
With: 1st Ind., 27 May 1947
(File: CF-B)

At a conference on 6 May 1947 at Hq., AAF, the Air Staff tentatively reversed agreement reached in conference on 25 Mar. 1947. [See Doc. 11.] The reversed decision resulted from review of the additional information and conclusions presented by the Eng. Div. 6 May 1947 [Doc. 11] in relation to tactical and strategic plans for the next five to seven years. Eng. Div. was to compile a list of projects that would have to be canceled from the FY 1948 R&D Program and was to prepare an analysis of adverse effects of each cancellation. [See also Doc. 13.] This decision contemplated that modernization of the B-50 and the B-36 would proceed concurrently (1) with the initiation of a new medium bomber development; (2) with development of the VDT engines; and (3) with development of the XB-52 airplane as the project having the highest priority. Inasmuch as the proposed improvement of B-36 and B-50 airplanes was, in fact, a modification of airplanes on production contracts, the Air Staff believed the cost of airframe changes was a proper charge against production funds. Moreover, the Air Staff had concluded that engines and propellers required for the improved models might also be purchased

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with production funds. Eng. Div. presented required data to Air Staff representatives at a conference in the office of the Chief, Eng. Div. [on 23 May 1947]. [See also Docs. 13, 15A, and 23.]

13. (C) Ltr., 12 May 1947
Fr: Maj. Gen. Grandison Gardner, Deputy AC/AS-4
To: CG, AMC
(File: CF-B)

The Air Staff amended directive of 8 May 1947 [Doc. 12] to include FY 1947 R&D projects for which contracts had not been concluded, and requested that all information be ready for delivery at a conference to be held at AMC on 23 May 1947 which representatives of the Air Staff would attend.

13A. (C) Ltr., 13 May 1947
Fr: P&W
To: Dir., AMC
(File: AMC Contr. & Res. Records Center, W-PAFB)

P&W reported progress on the 150-hour endurance test being run on an R-2800 as a VDT engine. The company had forwarded to Wright Field on 1 April 1947 quarter-scale mock-up of a VDT engine as described in its PWA Rpt. TR-46.

14. (U) Ltr., 15 May 1947
Fr: P&W
To: CG, AMC
(File: Contr. Files)

P&W presented its contract proposal for completing the VDT engine development. The second increment [see Docs. 4 and 5] had been eliminated, and the new proposal superseded that for the third dated 13 Mar. 1947 [Doc. 6A]. The latest proposal covered design and development of an R-4360 variable discharge, turbosupercharged engine to have the performance characteristics set forth in PWA Rpt. TR-46. Proposed articles of work included conversion of three R-4360-39 engines to the VDT type described in PWA Spec. 7065 [for the R-4360-43 engine], 150-hour qualification test, and flight testing of the engine in a Government-furnished B-50 airplane. Development was to be completed by 31 Dec. 1948 at an estimated cost of $5,505,000. [See also Doc. 37.]

15. (U) Ltr., 23 May 1947
Fr: Brig. Gen. J. S. Stowell, Chief of Admin., AMC
To: CG, AAF
With: 1st Ind., 11 June 1947
(File: Hist. Off.)

Airc. Sect., Proc. Div., recommended, and Hq., AAF, approved, retarding production schedule of B-36 airplanes from six to four airplanes per month in view of critical shortages of GFE. Advantages cited included retention of the Ft. Worth plant in operating condition for a possible production contract for additional B-36's with VDT engines.

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15A. (C) R&R, 26 May 1947
Fr: Lt. Col. H. E. Warden, Chief, Bomb. Br. Eng. Div.
To: Chief, Airc. Proj. Sect., Eng. Div.
With: List of personnel attached
(File: CF-A)

In the conference on 23 May 1947 [personnel listed on attached sheet], AAF decided to go ahead with modernization of the B-50 and B-36 with R-4360-43 engines. [See also Docs. 11, 12, & 13.]

16. (U) Ltr., 29 May 1947
Fr: Lt. Col. B. H. Warren, AAFPR, CVAC, Ft. Worth, Tex.
To: Lt. Col. T. P. Gerrity, Airc. Sect., Proc. Div.
(File: Contr. Files)

At a conference at Ft. Worth 28 May 1947, Proc. Div. and CVAC personnel made plans for a co-ordination conference at Wright Field on 6 June 1947 with GFE manufacturers. By 4 June 1947, CVAC was to present complete program data and cost quotations on production and testing of the VDT prototype airplane. At the same time the company was to furnish unit costs of the last five airplanes on production contract in force. It seemed likely that the prototype would have to be financed by cutting back the number of airplanes on the production contract. AMC was to complete conference arrangements with manufacturers of the principal items of GFE and was also to attempt to have ready information on availability of the GFE.

17. (U) Ltr., 4 June 1947
Fr: CVAC, Ft. Worth, Tex.
To: Bomb. Br., Airc. Sect., Proc. Div.
(File: Contr. Files)

In accordance with plans made at Ft. Worth 28 May 1947, CVAC presented contract proposal data for the prototype VDT B-36. In addition, the company stated requirements for the following supporting programs: (1) wind tunnel models and engineering data for them; (2) special tools; (3) engine test stand installation; (4) engine mock-up; and (5) flight test. The company had also prepared schedules from receipt of contractual authorization to initial deliveries for the prototype airplane and for production VDT airplanes. Lastly, CVAC quoted unit costs for the last five B-36 airplanes on contract.

17A. (U) Ltr., 12 June 1947
Fr: CVAC, Ft. Worth, Tex.
To: Bomb. Br., Airc. Sect., Proc. Div.
(File: Contr. Files)

CVAC reported decisions reached 6 June 1947 in conferences at Wright Field with personnel of Eng. and Proc. Divs., G. E., and P&W regarding installation of the VDT engines in a B-36 airplane. They agreed (1) to

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use the CH4-2 turbosupercharger already selected for use with VDT engines in the B-50 airplane; (2) to continue study on whether a cooling fan would be required with this turbosupercharger; and (3) to use the 4-bladed, 19-foot propeller already in use on the B-36's, but with tractor blades and 4-blade hubs in the prototype VDT B-36.

18. (U) Ext. fr. IDM, 19 June 1947
Fr: Brig. Gen. A. R. Crawford, Chief, Res. & Eng. Div., Hq., AAF
To: (not known)
(File: Hq. Area Br., CF Sect., AGO) [Hereafter CF-A]

At a staff meeting 16 June 1947, General Spaatz had approved proceeding with the prototype VDT B-36. Maj. Gen. Grandison Gardner had informed Brig. Gen. D. L. Putt [Eng. Div.] of the approval.

19. (U) Ltr., 19 June 1947
Fr: P&W
To: CG, AMC
(File: Contr. Files)

As a result of conferences on 6 June 1947, P&W presented contract proposal for 12 prototype R-4360-51 engines for the B-36 and 8 R-4360-43 prototype engines for the B-50, in addition to the development engines covered by proposal of 15 May 1947. Unit cost of the R-4360-51 was $206,500, and of the R-4360-43, $187,000. Initial deliveries were to be made 15 months from date of acceptance of the proposal, which, in turn, was contingent upon acceptance of the contract proposal for development of the engines. [See also Docs. 14, 17A, 22, 52, and 84.]

20. (U) Ltr., 20 June 1947
Fr: Brig. Gen. S. R. Brentnall, Chief, Eng. Op., Eng. Div.
To: P&W
(File: CF-B)

In conferences on 5 and 6 June at Wright Field with personnel of P&W, G. E., and Minneapolis-Honeywell Regulator Co., AMC had announced that P&W would have full responsibility for developing the power control for the R-4360-43 engine. Following the conferences, P&W had informally indicated that G. E. was to be its subcontractor for the power control. G. E. had roughly estimated the unit cost to AMC personnel at $75,000 to $100,000, whereas P&W's estimate had been $290,000. Power Plant Lab. urged P&W to develop a second source of supply for the power control.

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21. (U) Ltr., 26 June 1947
Fr: Col. G. E. Schaetzel, Chief, Airc. Sect., Proc. Div.
To: CVAC, Ft. Worth, Tex.
(File: Contr. Files)

Bomb. Br., Airc. Sect., confirmed agreements reached in conference with CVAC and P&W at Ft. Worth on 12 June 1947 regarding details of proposed installation of R-4360-VDT tractor-type engines. Basic features of the installation were: (1) turning the engines around in their position at the rear of the wing; (2) driving tractor propellers through extension shafting; and (3) locating propeller reduction gearboxes at the propeller end of the extension shafts. They had not yet determined whether cooling fans similar to those used in the pusher-propeller installation would be required. Design problems centered about (1) mounting the engine and turbosupercharger; (2) designing and fabricating the extension shafting; and (3) installing the propeller reduction gearboxes.

22. (U) Ltr., 7 July 1947
Fr: Lt. Col. P. S. Walker, Actg. Chief, Aero. Equip. Sect., Proc. Div.
To: R. W. Smith, BuAer, USN, Wash.
(File: Contr. Files)

AMC gave the Navy advance notification of the following changes being considered for the R-4360 engine production contract with P&W: (1) substitution of 12 R-4360-51 engines for 36 of the R-4360-41's for B-36 airplanes; (2) substitution of 8 R-4360-43 engines for 8 of the R-4360-35's for B-50 airplanes. [See also Docs. 19, 23, 52, and 84.]

23. (C) Copy of ltr., 10 July 1947
Fr: Maj. Gen. Grandison Gardner, Actg. AC/AS-4
To: Tech. Exec., AMC
(File: CF-A)

Hq., AAF, approved modernization of one B-36 and one B-50 by installing the R-4360-VDT engines and directed the means of financing to be used. Prototype airplanes were to be paid for by cutting back the number of airplanes on production contracts. Development of the engines was to be handled as an item on the engine production contract. For these, FY 1948 procurement funds, either available or supplemental, were to be used. As a last resort, funds for the engine development were to be provided by canceling not more than three B-45 airplanes from the proposed FY 1948 Procurement Program. [See Docs. 31 and 36.]

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24. (U) Ltr., 11 July 1947
Fr: P&W
To: Power Plant Lab., Eng. Div.
(File: CF-B)

P&W adhered to its intention of retaining G. E. as the primary source for development and manufacture of the VDT power control. The company planned to have Minneapolis-Honeywell and others study the power control requirements and to establish one of them as the second source. P&W believed, however, that this study should follow initial flight testing of the turbosupercharger in combination with the engine. G. E. had revised its unit cost quotation to P&W upward to $205,000.

25. (U) TWX message, 16 July 1947
Fr: P&W
To: J. C. [E.] Coyle, Power Plant Lab., Eng. Div.
(File: Contr. Files)

P&W's VDT engine contract proposals did not include 150-hour model test on the R-4360-51 engine. The company would complete such a test on the R-4360-51 at no cost to the Government to back up production order of the engines, but the test could not be performed on either the development or the low-production contracts within the schedules of those contracts.

26. (U) R&R-1, 22 July 1947
Fr: Col. F. R. Dent, Jr., Chief, Airc. Proj. Sect., Eng. Div.
To: Power Plant Br., Proc. Div.
(File: CF-B)

Airc. Proj. Sect. asked that CHM-2 turbosuperchargers for the B-50Z be procured at the same time that CHM-2's were bought for the B-36Z.

26A. (U) Ltr., 23 July 1947
Fr: J. C. Jones, Actg. Chief, Eng. Liaison Sect., Eng. Div.
To: Maj. J. L. Murray, AMC Eng. Liaison Off., NACA, Ames Aero. Lab., Moffett Fld., Calif.
(File: CF-B)

Eng. Div. outlined the wind tunnel program proposed for the Ames Aeronautical Lab. on the prototype VDT B-36.

26B. (U) Ltr., 23 July 1947
Fr: J. C. Jones, Actg. Chief, Eng. Liaison Sect., Eng. Div.
To: AMC Eng. Liaison Off., NACA, LMAL, Langley Fld., Va.
(File: CF-B)

Eng. Div. outlined the wind tunnel program proposed for the LMAL on the prototype VDT B-36 airplane.

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27. (U) Ltr., 4 Aug. 1947
Fr: Col. H. A. Shepard, Chief, Proc. Div.
To: Chief, Proc. & Indust. Plan. Div., Wash.
With: 1st Ind., 7 Aug. 1947
2nd Ind., 15 Aug. 1947
3rd Ind., 27 Aug. 1947
(File: Contr. Files)

Proc. Div. requested, and WDGS granted, authority to negotiate contract with P&W for conversion of three R-4360-39 engines to two R-4360-43 and one R-4360-51 engines. Proc. Div. also requested authority to issue letter contract in order to expedite the airplane programs contingent on the engine development, but WDGS withheld authorization.

28. (C) Ltr., 6 Aug. 1947
Fr: Maj. Gen. E. M. Powers, AC/AS-4
To: Proc. Div.
(File: CF-B)

Hq., AAF, authorized immediate procurement of one B-50Z airplane on the FY 1948 Airc. Proc. Program.

29. (U) Ltr., 7 Aug. 1947
Fr: Col. R. J. O'Keefe, Actg. Chief, Power Plant Lab., Eng. Div.
To: P&W
(File: CF-B)

Power Plant Lab. asked P&W to put both the primary and the secondary source of supply for the VDT power control to work on the problem at the same time. Moreover, the laboratory asked the company to have this work started at the beginning of the engine program rather than have the secondary source wait until some flight testing had been accomplished.

29A. (U) Ltr., 7 Aug. 1947
Fr: P&W
To: J. B. Coyle, Power Plant Lab., Eng. Div.
(File: AMC Contr. & Res. Records Center, W-PAFB)

P&W furnished its final progress report on the R-4360-39 engines developed under Contr. W33-038 ac-14294, which had included a design study and the fabrication of a quarter-scale mock-up of the VDT engine. PWA Rpt. 677, the final report on the development, had been forwarded to AMC on 20 June 1947 and included 17 reports of analyses and design studies of compounding the basic engine.

30. (U) Ltr., 14 Aug. 1947
Fr: Col. G. E. Schaetzel, Chief, Airc. Sect., Proc. Div.
To: CVAC, Ft. Worth, Tex.
(File: Contr. Files)

The [first or prototype] B-36 incorporating the R-4360-51 engine was designated the YB-36C.

31. (S) Excerpt fr. Summary Minutes of the First Meeting of the USAF Airc. & Weapons Bd., 19-22 Aug. 1947, Wash.
(File: CF-B)

The board decided to cancel the B-36Z [another designation for the prototype VDT B-36] project and to carry production of the B-36 no further than the 100 airplanes on contract.

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32. (U) Ltr., 22 Aug. 1947
Fr: P&W
To: G. J. Callaghan, Negotiator, Power Plant Br., Proc. Div.
(File: Contr. Files)

P&W executed Contr. W33-038 ac-18653 for the conversion of three R-4360-39 engines into VDT types and indicated the company's willingness to go ahead with the work pending issuance of notice of award of the contract. [See also Docs. 33 and 37.]

33. (U) Ltr., 25 Aug. 1947
Fr: Brig. Gen. D. F. Stace, Chief, Proc. & Indust. Plan. Div., Wash.
To: Chief, Current Proc. Br., WDGS
With: Stamped Approval Notice, 28 Aug. 1947
1st Ind., 29 Aug. 1947
2nd Ind., 2 Sept. 1947
(File: Contr. Files)

AAF requested, and WDGS approved, awarding of a fixed-price contract to P&W for conversion and development of three R-4360-39 engines to two R-4360-43 and one R-4360-51 engines. Production, rather than research and development, funds were committed. The R-4360-43's were to be delivered by 31 Dec. 1947 and the R-4360-51 by 31 Mar. 1948. [See also Doc. 56.]

34. (U) R&R, 26 Aug. 1947
Fr: Lt. Col. J. R. Martin, Chief, Servs. Sect., Proc. Div.
To: Power Plant Br., Proc. Div.
(File: Contr. Files)

The price analyst reviewed circumstances surrounding the pricing of the articles of work on Contr. W33-038 ac-18653 and the exception authorized for use of the Form V renegotiation clause.

35. (U) R&R-1, 26 Aug. 1947
Fr: Maj. Gen. B. W. Chidlaw, Deputy CG, T-3
To: Brig. Gen. A. R. Crawford, Chief, Eng. Div.
(File: Hist. Office)

General Chidlaw stated that General Craigie, Hq., AAF, had directed the immediate cancellation of work on the B-36Z in line with the decision of the USAF Airc. and Weapons Bd. on 22 Aug. 1947 [Doc. 31].

36. (R) Ltr., 26 Aug. 1947
Fr: Maj. Gen. E. M. Powers, AC/AS-4
To: Chief, Proc. Div.
(File: CF-B)

General Powers stated that the USAF Airc. and Weapons Bd. had reviewed the FY 1948 Airc. Proc. Program on 22 Aug. 1947 and that the Chief of the Air Staff had approved a number of the agreements reached. On the basis of this approval, he further stated: (1) that $10,300,000 would be reserved for procurement of VDT engines; (2) that one B-50Z airplane would be procured; (3) that 25 F-12C airplanes would be procured; (4) that development of the B-36Z with the R-4360 VDT engines would be dropped; and (5) that the quantity of B-36's currently on order would fulfill requirements. [See also Docs. 23, 42, and 239.]

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37. (U) Excerpt fr. Contr. W33-038 ac-18653, 28 Aug. 1947, P&W
(File: Contr. Files)

Contr. W33-038 ac-18653 was awarded P&W for conversion and development of three R-4360-39 engines to VDT types, with model testing and flight testing to be performed on the R-4360-43 type. The company was also to develop an electronic power control for the engines and to prepare monthly progress reports on the whole program.

37A. (U) Ltr., 29 Aug. 1947
Fr: Col. R. J. Minty, Chief, Power Plant Lab., Eng. Div.
To: P&W
(File: AMC Contr. and Res. Records Center, W-PAFB)

Power Plant Lab. accepted P&W's flight test reports on the R-4360-39 engines contingent on the company's agreeing to develop the R-4360-43 and R-4360-51 engines so as to eliminate four deficiencies brought out by the flight testing of the R-4360-39's.

37B. (U) Ltr., 3 Sept. 1947
Fr: P&W
To: J. B. Coyle, Power Plant Lab., Eng. Div.
(File: AMC Contr. and Res. Records Center, W-PAFB)

P&W agreed to develop the R-4360-43 and R-4360-51 engines so as to eliminate the deficiencies in the R-4360-39's cited by Power Plant Lab. [Doc. 37A].

37C. (C) Excerpt fr. TT message, c. 4 Sept. 1947
Fr: Ft. Worth Div., CVAC
To: (Addressee not given)
(File: Hist. Office)

CVAC presented to Hq., AAF, a proposal that (1) called for immediate reinstatement of the project for the prototype VDT B-36 [B-36Z]; (2) set forth a revised production schedule in which the last 34 B-36's would be equipped with VDT engines and would be designated as 1 YB-36C and 33 B-36C's; and (3) announced that a further proposal would be prepared for modifying the first 61 B-36's into B-36C's. The total number of airplanes on contract was to be reduced to 95 to provide funds for production of the 34 B-36C's. The YB-36C was scheduled for delivery in Nov. 1948, the first production B-36C in Aug. 1949, and completion of the contract in June 1950. This schedule was contingent on receipt of the first 6 engines [1 ship set] from P&W in May 1949, 12 in June, 18 in July, and 24 per month thereafter. [See also Docs. 10A, 38, 39, 39A, 40, and 239.]

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38. (S) Excerpt fr. IDM, 5 Sept. 1947
Fr: Lt. Col. N. C. Appold, Propulsion Br., Res. & Eng. Div., Wash.
To: Col. M. C. Damler, Propulsion Br., Res. & Eng. Div., Wash.
(File: CF-A)

Propulsion Br. had reviewed CVAC's proposal for reinstating the B-36 VDT project [Doc. 37C], had asked the Chief of the Power Plant Lab., AMC, to comment on it, and had found him in agreement that actual deliveries would lag the proposed schedules by six months.

39. (S) Excerpt fr. IDM, 5 Sept. 1947
Fr: Maj. W. D. Brady, Airc. Br., Res. & Eng. Div., Wash.
To: Col. J. S. Holtoner, Airc. Br., Res. & Eng. Div., Wash.
(File: CF-A)

Major Brady was of the opinion that CVAC's proposal to improve the last 34 B-36's with VDT engines [Doc. 37C] stemmed from the Airc. and Weapons Board's decision to limit B-36 production to the 100 on contract. He believed production schedules were "quite optimistic" in view of the F-12 and B-50Z requirements for the VDT engines. Moreover, he pointed out that the outcome of the supercharger and power control developments was still uncertain.

39A. (C) Ext. fr. R&R-1, 8 Sept. 1947
Fr: Req. Div., AC/AS-3, Wash.
To: Res. & Eng. Div., AC/AS-4, Wash.
(File: AAG CF Wash.)

CVAC's proposal for the 34 B-36C's had been submitted to Hq., AAF, 4 Sept. 1947. Req. Div. found it attractive but believed it was too optimistic as to engine schedules and requested that AMC be asked to submit a feasible plan whereby a reasonable number of B-36C's could be produced, and also to comment on CVAC's proposal to modify all B-36's to B-36C's.

40. (C) Cy of ltr., 10 Sept. 1947
Fr: Maj. Gen. L. C. Craigie, Chief, Res. & Eng. Div., Wash.
To: Chief, Airc. Sect., Proc. Div.
With: 1st Ind., 30 Sept. 1947
(File: CF-A)

Chief of the Res. & Eng. Div., Hq., AAF, asked Airc. Sect., Proc. Div., to comment on CVAC's latest proposal [Doc. 37C], particularly in view of commitments of P&W VDT engines to the F-12 and B-50 airplane programs as well as to the B-36. He further asked the Airc. Sect. to submit a plan capable of realization if further investigation of engine schedules confirmed the opinion of Hq., AAF, that CVAC's B-36C schedules were "overly optimistic." He also requested the Airc. Sect. to comment on CVAC's proposal to modify B-36A's and B-36B's to B-36C's. In compliance with the foregoing requests, on 30 Sept. 1947 AMC outlined changes in contracts and manufacturing schedules whereby CVAC's proposal to produce the B-36C's could be realized. The airframe modification could be financed

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with funds allocated to the production contract if the number of airplanes on contract were cut back from 100 to 95. Modification of the engines, propellers, and turbosuperchargers, however, would require $15,000,000 more than was available in the production contracts for these items. AMC believed proposed modification of the B-36A's and B-36B's to B-36C's was feasible, but postponed firm recommendation on the proposal until CVAC submitted complete engineering and cost data. [See also Docs. 73 and 239.]

41. (U) Confirmation cy. TG, 10 Sept. 1947
Fr: R. H. Begg, P&W
To: Messrs. D. E. Garrett & E. W. Dichman [Dayton reps. of P&W]
(File: Contr. Files)

P&W recommended use of a No. 60 propeller shaft on VDT engines installed in B-50's and a No. 70 propeller shaft on VDT engines installed in B-36's until more propeller shaft stress data on the two airplanes could be accumulated. [See also Doc. 43.]

42. (S) Excerpt fr. memo., 12 Sept. 1947
Fr: Actg. Chairman, Airc. & Weapons Bd.
To: CG, AAF
With: 1st Ind., 8 Oct. 1947
(File: CF-A)

CG, AAF, directed members of the Airc. & Weapons Bd. to reconsider decision to discontinue the B-36Z project and to evaluate CVAC's proposal to install VDT engines in the last 34 B-36's. [See also Docs. 36 and 239.]

43. (U) R&R-1, 12 Sept. 1947
Fr: Lt. Col. J. L. Zoeckler, Chief, Aero. Equip. Sect., Proc. Div.
To: J. B. Coyle, Power Plant Lab., Eng. Div.
With: R&R-2, 22 Sept. 1947
(File: Contr. Files)

Prop. Lab. had recommended a No. 80 propeller shaft on the R-4360-51 engines in the B-36Z airplane, whereas P&W wanted a No. 70 shaft. Power Plant Lab. asked for a conference with the GFE manufacturers if the B-36Z project were reactivated. [See also Doc. 41.]

44. (U) Ltr., 15 Sept. 1947
Fr: R. H. Begg, Proj. Engr., P&W
To: Power Plant Lab., Eng. Div.
(File: Contr. Files)

[This document is identical with Doc. 48 except for date and the supersession notice on Doc. 48.]

45. (C) TI-2146, Add. No. 13, 18 Sept. 1947
(File: CF-B)

Proc. Div. was directed (1) to procure one YB-50C prototype airplane with R-4360-VDT engines, (2) to expend $5,590,000 for

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production improvement of R-4360-VDT engines, and (3) to change the production contract for R-4360 engines to procure eight R-4360-VDT engines for the YB-50C airplane.

46. (U) Ltr., 18 Sept. 1947
Fr: Brig. Gen. D. F. Stace, Chief, Proc. & Indust. Plan. Div., Wash.
To: Chief, Current Proc. Br., Proc. Group, WDGS
With: 1st Ind., 1 Oct. 1947
(File: Contr. Files)

USAF requested, and WDGS granted, authority to negotiate procurement of eight R-4360-VDT engines for the YB-50C airplane.

47. (C) Ltr., 19 Sept. 1947
Fr: Republic Aviation Corp., Farmingdale, L. I., N. Y.
To: Chief, Proc. Div.
(File: CF-B)

Republic Aviation presented a contract proposal for production of F-12 airplanes. The production model was designed for installation of VDT engines, and top performance of the airplane was predicated on use of the R-4360-43 type. P&W had promised initial delivery of the engines in May 1949, but admitted that its production schedule might be too optimistic. Rather than wait for the R-4360-43 production engines, Republic preferred to install R-4360-35 engines in the first six production airplanes and to modify these later with the VDT engines. /See also Docs. 36, 50, 55, & 61./

48. (U) Ltr., 25 Sept. 1947
Fr: P&W
To: Power Plant Lab.
(File: Contr. Files)

P&W made its first progress report on Contr. W33-038 ac-18653 and forwarded PWA Rpt. TR-52R on the estimated performance of R-4360-VDT engines with the CHM-2 supercharger. The company recommended that AMC use PWA Rpt. TR-52R instead of PWA Rpt. TR-46 in future airplane design studies because the CHM-2 turbosupercharger was expected to be used with the flight articles.

49. (U) Ltr., 30 Sept. 1947
Fr: P&W
To: Power Plant Br., Proc. Div.
(File: Contr. Files)

P&W asked that AMC allocate six BH-1 turbosuperchargers from Air Force stock to be used in test stand running of the VDT engines until CHM-2 turbosuperchargers became available.

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49A. (U) Ltr., 30 Sept. 1947
Fr: Maj. James L. Murray, AMC Eng. Liaison Office, Ames Aero. Lab., Moffett Fld., Calif.
To: Eng. Div.
With: 1st Ind., 6 Oct. 1947
(File: CF-B)

Eng. Div. held the wind tunnel testing program on the VDT B-36 in abeyance until such time as Hq., USAF, gave a definite go-ahead on the B-36C program.

50. (C) Ltr., 1 Oct. 1947
Fr: Col. G. E. Schaetzel, Chief, Airc. Sect., Proc. Div.
To: Photo Reconnaissance Br., AC/AS-4, Hq., USAF
(File: CF-B)

F-12 airplane performance depended on the availability of a turbosupercharger with an 8:1 pressure ratio for use with the VDT engines. None was available. The Airc. Sect., Proc. Div., suggested three possible courses of action, and, in an attached chart, stated the performance estimates of the F-12 with various engine and turbosupercharger combinations. [See also Docs. 36, 47, 55, & 61.]

51. (U) Ltr., 3 Oct. 1947
Fr: P&W
To: CG, AMC
(File: CF-B & Contr. Files)

In a conference at Wright Field, 18 Sept. 1947, P&W and Airc. Sect. personnel had agreed on VDT engine production schedules. P&W had also presented the information verbally some time prior to the conference. The total composite schedule for all VDT types required by the USAF indicated that the earliest possible delivery would be four engines in May 1949. P&W based its schedule on bringing the R-4360-43 for the B-50 into production first. A breakdown of the composite schedule into R-4360-43's for the B-50 and R-4360-51's for the B-36 indicated initial delivery of engines for the VDT B-36 would begin in July 1949. P&W regarded the production "a most ambitious program" and stated that it would have to have contract authorization not later than 15 Nov. 1947 [18 months in advance of initial delivery] to proceed with the production of the first 14 engines. [See also Docs. 37C, 38, 39, 39A, 40, 47, and 55.]

52. (U) Ltr., 3 Oct. 1947
Fr: P&W
To: CG, AMC
(File: Contr. Files)

P&W presented a new contract proposal for eight prototype R-4360-43 engines for the B-50 airplane. [See also Docs. 19, 65, & 72.]

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53. (S) Ext. fr. ltr., 8 Oct. 1947
Fr: Secy., USAF Airc. & Weapons Bd.
To: Ea. member of the Bd.
(File: CF-A)

Each member of the USAF Airc. and Weapons Bd. was asked to approve or disapprove CVAC's proposal to improve performance of the last 34 B-36 airplanes with VDT engines.

54. (S) Ltr., c. 11 Oct. 1947
Fr: Brig. Gen. F. H. Smith, Jr., Secy., USAF Airc. & Weapons Bd.
To: CG, AMC
With: 1st Ind., 16 Oct. 1947
(File: Hist. Office)

USAF Airc. and Weapons Bd. asked the CG, AMC [a member of the board], to review and approve or disapprove within 24 hours CVAC's proposal to improve the last 34 B-36 airplanes with VDT engines. On 16 Oct. 1947, the CG, AMC, recommended that the proposal be approved. [See also Docs. 37C, 40, and 53.]

55. (U) R&R-1, 13 Oct. 1947
Fr: Lt. Col. D. W. Graham, Chief, Tng. & Trans. Br., Proc. Div.
To: Mr. [R. W.] Kellhofer, Airc. Sect., Proc. Div.
(File: CF-B)

VDT engine production schedule necessary to meet the tentative production schedule for 21 F-12 airplanes was predicated on acceptance of the third, fourth, fifth, sixth, and seventh airplanes with R-4360-35 engines to be replaced later with R-4360-43 [VDT] engines. Four engines plus spare parts for two were required as soon as possible and prior to June 1949. [See also Docs. 36, 47, 50, 51, and 61.]

56. (U) R&R-1, 15 Oct. 1947
Fr: Lt. Col. J. L. Zoeckler, Chief, Aero. Equip. Sect., Proc. Div.
To: Bomb. Br., Proc. Div.
With: R&R-2, 20 Oct. 1947
R&R-3, 22 Oct. 1947
(File: Contr. Files)

P&W and the Proc. Div. had agreed to hold in abeyance the development of the R-4360-51 engine for the B-36 until Hq., USAF, made a decision as to whether the B-36 VDT airplane program was to be continued.

57. (C) Ltr., 16 Oct. 1947
Fr: CVAC, Ft. Worth, Tex.
To: Bomb. Br., Proc. Div.
(File: Contr. Files)

CVAC presented its report, "A Preliminary Report on Power Plant Performance of the VDT Power Plant with R-4360-51 Engines," dated 15 Sept. 1947, and forwarded copies of it to both G. E. and P&W. The company had prepared the report in order to obtain data to be used (1) in determining the kind of cooling that would be used in the B-36C, and (2) in arriving at performance estimates of the VDT airplane.

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58. (R) R&R-1, 17 Oct. 1947
Fr: Lt. Col. J. L. Zoeckler, Chief, Aero. Equip. Sect., Proc. Div.
To: J. B. Black, Airc. Sect., Proc. Div.
(File: CF-B)

Availability of a suitable propeller for the F-12 airplane was uncertain and depended on the outcome of propeller development projects in progress with Hamilton Standard, Curtiss Wright, and Aeroproducts.

59. (U) Ltr., 21 Oct. 1947
Fr: P&W
To: Power Plant Br., Proc. Div.
(File: Contr. Files)

P&W presented supplemental and revised engineering data for instrumentation of a VDT engine for single-nacelle installation in a B-50 and expected to ship the engine to Boeing before the end of October for installation in the airplane.

60. (U) Ltr., 24 Oct. 1947
Fr: P&W
To: Power Plant Br., Proc. Div. & Power Plant Lab., Eng. Div.
(File: Contr. Files)

P&W reported progress on the VDT engine development program. The company had conferred with AMC and G. E. on 22 Sept. 1947 with reference to turbosuperchargers for installation with the R-4360-43 in a B-50, and had conferred with Boeing on 3 Oct. 1947 on details of the installation. P&W expected to ship one engine to Boeing by the end of October for single-nacelle installation in a B-50, but with only mockups of the fuel injection unit and the CH-2 turbosupercharger. Boeing expected to complete the engine installation in time for the Air Force to deliver the airplane to P&W late in January or early in February for flight testing the engine.

61. (U) TT, 28 Oct. 1947
Fr: Brig. Gen. H. A. Shepard, Dir., Proc. & Indust. Mob. Plan.
To: Maj. Gen. E. M. Powers, Asst. DCS/M, Hq., USAF
(File: CF-B)

Hq., USAF, had directed the AMC to hold procurement of F-12 airplanes in abeyance. This action would, however, delay contracting for R-4360-VDT engines and therefore delay the B-50 program. Because P&W's schedules were predicated on receipt of a contract by 15 Nov. 1947 for the first 14 engines, Proc. Div. urged that the $1,680,000 for the engines be applied against funds earmarked for the F-12 and that the engines be allocated as advance procurement for the B-50C airplane if procurement of the F-12 did not take place. [See also Docs. 36, 47, 51, 55, & 62A.]

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62.	(U) R&R-1, 29 Oct. 1947 Fr: Lt. Col. J. L. Zoeckler, Chief, Aero. Equip. Sect., Proc. Div. To: Airc. Sect., Supply Div. (File: Contr. Files)	AMC arranged to loan P&W six BH-1 turbo-superchargers from Air Force stock. [See Docs. 49 and 63.]
62A.	(U) R&R-1, 29 Oct. 1947 Fr: Maj. S. C. Pace, Chief, Power Plant Br., Proc. Div. To: C. C. DeWitt, Aero. Equip. Sect., Proc. Div. (File: Contr. Files)	Power Plant Br. initiated action to procure R-4360 engines for the F-12 airplane. [See also Docs. 61, 67, & 76.]
63.	(U) R&R-1, 3 Nov. 1947 Fr: Lt. Col. J. L. Zoeckler, Chief, Aero. Equip. Sect., Proc. Div. To: Servs. Sect., Proc. Div. (File: Contr. Files)	Aero. Equip. Sect. presented information and substantiation for a change order to Contr. W33-038 ac-18653 to credit the USAF with the cost of the BH-1 turbo-superchargers furnished to P&W from Air Force stock. These were to replace turbo-superchargers that P&W included in its contract price but could not get from G. E. on time.
64.	(S) Excerpt fr. memo., 5 Nov. 1947 Fr: Secy., USAF Airc. and Weapons Bd. To: Vice Chief of Staff, USAF (File: CF-A)	All members of the USAF Airc. and Weapons Bd. except the CG, SAC, approved CVAC's proposal to improve the last 34 B-36's with VDT engines.
65.	(U) Ltr., 7 Nov. 1947 Fr: Brig. Gen. F. M. Hopkins, Jr., Dir., Proc. and Indust. Plan. Div., Wash. To: Chief, Current Proc. Br., GSUSA With: 1st Ind., 4 Dec. 1947 2d Ind., 5 Dec. 1947 (File: Contr. Files)	USAF requested, and U. S. Army General Staff on 4 Dec. 1947 granted, approval of fixed-price Contr. W33-038 ac-19032 in the amount of $1,496,000 with P&W for production of eight prototype R-4360-43 engines for the prototype VDT B-50 airplane.
66.	(U) R&R-1, 14 Nov. 1947 Fr: Col. G. E. Schaetzel, Chief, Airc. Sect., Proc. Div. To: Propeller Lab., Eng. Div. With: R&R-2, 3 Dec. 1947 (File: CF-B)	Prop. Lab. reviewed difficulties in the design and procurement of a suitable propeller for use with the proposed production F-12 airplanes with VDT engines.

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67. (C) TI-2248, 20 Nov. 1947
(File: CF-B)

Proc. Div. was authorized to procure: (1) one B-50C airplane ultimately to be converted to a B-50Z [prototype VDT B-50]; (2) VDT engines and turbosuperchargers from a sum of $37,350,000 allocated for them; (3) 14 R-4360-VDT engines as advance procurement on the F-12 airplanes. [See also Doc. 61.]

68. (U) Ltr., 21 Nov. 1947
Fr: P&W
To: USAF Rep., P&W
(File: Contr. Files)

P&W presented its schedule for conducting a 150-hour qualification test of the R-4360-43 engine to begin about 15 Dec. 1947, and a description of the mounting of the engine and the proposed loading of the accessory drives. [See also Doc. 80A.]

69. (U) Chg. O. 1 to Contr.
W33-038 ac-18653
Issued 26 Nov. 1947
(File: Contr. Files)

$18,120 was deducted from the total amount of the contract and credited to Project 110 funds for the six BH-1 turbosuperchargers loaned to P&W from USAF stocks.

70. (U) Ltr., 28 Nov. 1947
Fr: P&W
To: CG, AMC
(File: Contr. Files)

P&W reported progress on the development of the VDT engines. The first boost control system was expected to be completed in December but could not be used in combination with the engine until the CHM-2 turbosupercharger was delivered in March.

Commencement date of Contr. W33-038 ac-18653 was determined to be 1 July 1947.

70A. (U) 1st Ind., 1 Dec. 1947
Fr: Lt. Col. J. L. Zoeckler,
Chief, Aero. Equip. Sect.,
Proc. Div.
To: Chief, Boston USAF PFO
(File: Contr. Files)

71. (U) Ltr., 1 Dec. 1947
Fr: P&W
To: Power Plant Br., Proc. Div.
(File: Contr. Files)

P&W presented its contract proposal for development of an axial power take-off for driving a remotely mounted gear box and generator from an R-4360-43 engine.

72. (U) Excerpt fr Contr.
W33-038 ac-19032,
4 Dec. 1947, P&W
(File: Contr. Files)

USAF contracted with P&W to build eight prototype R-4360-43 engines. Cost was $1,496,000, for which procurement (Project 110) funds were committed. Initial delivery was to be made within 15 months.

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73. (S) Ltr., 5 Dec. 1947
To: Tech. Exec., AMC
Fr: Lt. Gen. H. A. Craig, Deputy C/S, Mat., Hq., USAF
(File: B-36 Proj., Airc. Sect., Proc. Div.)

Hq., USAF, approved AMC's program for accomplishing production of the B-36C airplanes, authorized cancellation of six or seven B-50C's from the FY 1949 Proc. Program to provide the $15,000,000 for the GFE required, and requested that any change in the proposed delivery schedule be reported to Hq., USAF. [See also Docs. 37C, 40, & 86A.]

74. (U) Messageform, 23 Dec. 1947
Fr: Col. G. E. Schaetzel, Chief, Airc. Sect., Proc. Div.
To: AFPR, CVAC
(File: Hist. Office)

Airc. Sect. authorized the AFPR to issue a CCN, Master Ser. No. M-52683, and stated the articles of work to be included. This change notice implemented the proposal to improve the last 34 B-36 airplanes with VDT engines. No purchase request was to be issued because the modification of the airplanes was to be financed by funds made available by reduction of the number of airplanes on contract. [See also Docs. 37C, 40, & 73.]

75. (U) Ltr., 30 Dec. 1947
Fr: P&W
To: Power Plant Br., Proc. Div.
(File: Contr. Files)

P&W reported progress in development of the VDT engines. The two R-4360-43 engines on the contract had been shipped to Boeing.

76. (U) Cy. of TT, 31 Dec. 1947
Fr: Cmdr. J. W. Antonides, BuAer, USN, Wash.
To: P&W
(File: Contr. Files)

Navy notified P&W that Contr. NOa(s) 9511 would be awarded for production of 14 R-4360-43 engines for the USAF. [See also Docs. 61, 62A, & 67.]

77. (U) Ltr., 5 Jan. 1948
Fr: CVAC, Ft. Worth, Tex.
To: Bomb. Br., Proc. Div.
(File: Contr. Files)

CVAC advised that design work on the B-36C was in danger of being delayed by lack of information from vendors of GFE. The company forwarded two lists of detailed information required. One was for data required from P&W for thermodynamic analysis of the VDT engine installation. Of these data, the company stated that the cooling air flow requirements were the most urgent. The other list was the installation information on GFE CVAC needed in order to proceed with the installation designs and lay-outs. In addition to the two lists of required information, the

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contractor emphasized design features that needed to be decided. One was the configuration of the cooling fan on which the contractor had studies under way that were to be forwarded to AMC by 16 Jan. 1948.

78. (U) Ltr., 7 Jan. 1948
Fr: Capt. Arthur J. Middleton
Chief, Prod. Br., Office of the AFPR, CVAC, Ft. Worth, Tex.
To: Airc. Sect., Proc. Div.
(File: Contr. Files)

AFPR furnished a forecast of an acceptance schedule of B-36 airplanes Nos. 2 through 27, and stated that the schedule differed greatly from the previous one. One reason for the difference was the activation of the VDT program.

79. (U) Ltr., 8 Jan. 1948
Fr: P&W
To: Power Plant Br., Proc. Div.
(File: Contr. Files)

P&W furnished a cost breakdown for development of an axial power take-off drive on the R-4360-43 engine.

80. (U) Cy. TT, 8 Jan. 1948
Fr: BuAer, USN, Wash.
To: P&W
(File: Contr. Files)

Navy amended its notice of award of Contr. NOa(s) 9511 to P&W to include provisions for handling special tooling costs in the event of termination of the contract.

80A. (U) Ltr., 9 Jan. 1948
Fr: USAF Inspr.-in-Charge, P&W
To: Power Plant Lab., Eng. Div.
(File: AMC Contr. & Res. Records Center, W-PAFB)

USAF Inspr.-in-Charge at P&W reported the status of the 150-hour endurance test on an R-4360-43 engine. The inspector furnished lists of parts that had failed. P&W was tearing the engine down and was of the opinion that the model testing could continue after the engine was reassembled. The inspector believed this procedure was contrary to specifications and suggested that the test be started over again. [See also Doc. 82A.]

81. (U) Ltr., 12 Jan. 1948
Fr: Lt. Col. B. H. Warren, AFPR, CVAC, Ft. Worth, Tex.
To: Bomb. Br., Proc. Div.
(File: Contr. Files)

AFPR at CVAC commented on the contractor's request for increase in the estimated cost and fee on the contract. The contractor had recommended that pending change orders be combined with changes to the contract necessary to effect the B-36C program and that a revised over-all estimated cost and fixed fee for the total contemplated program be negotiated.

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82. (U) Ltr., 14 Jan. 1948
Fr: P&W
To: CG, AMC
(File: Contr. Files)

P&W acknowledged receipt of the Navy's advance notice of award of Contr. NOa(s) 9511 [Doc. 76] as amended [Doc. 80]. The company accepted the notice of award but stated that deliveries would begin in July 1949 because the notice of award was received 31 Dec. 1947, whereas in its proposal on 3 Oct. 1947 [Doc. 51] P&W had stipulated that initial deliveries to be made in May 1949 would be contingent on receipt of contractual authorization no later than 15 Nov. 1947 [18 months prior to deliveries]. [See also Doc. 86.]

82A. (U) Ltr., 19 Jan. 1948
Fr: Col. R. J. Minty, Chief, Power Plant Lab., Eng. Div.
To: AF Inspr.-in-Charge, P&W
(File: AMC Contr. & Res. Records Center, W-PAFB)

Power Plant Lab. concurred with the suggestion of the AF Inspr.-in-Charge that the 150-hour model test of the R-4360-43 engine be started over again if the engine had been completely disassembled. The laboratory emphasized that the company must comply with all applicable specifications if the AMC were to accept the test as official. [See also Doc. 80A.]

83. (R) TI-2036, Add. No. 8, 21 Jan. 1948
(File: CF-B)

Proc. Div., with the technical assistance of the Eng. Div., was authorized to procure the last 34 B-36 airplanes with R-4360-VDT engines installed. Six or seven B-50's were to be canceled from the FY 1949 Proc. Program and the savings in funds applied to the $15,000,000 required for GFE for the VDT B-36's. The B-36 program was to be changed to 23 B-36A airplanes; 39 B-36B airplanes; 1 YB-36C airplane; and 33 B-36C airplanes. Wind tunnel programs were to be completed with a minimum of delay. [See also Docs. 370, 73, & 93.]

84. (U) Ltr., 22 Jan. 1948
Fr: Col. V. G. Huston, Chief, Aero. Equip. Sect., Proc. Div.
To: Comdr. J. W. Antonides, BuAer, USN, Wash.
(File: Contr. Files)

Aero. Equip. Sect., Proc. Div., informed the Navy of a change order soon to be made to P. O. (535) 43-22066-P whereby USAF would procure 8 prototype and 213 production R-4360-51 engines and spare parts in lieu of 330 R-4360-41 engines and spare parts at no change in cost on the contract. The first eight R-4360-51 engines were to be delivered in April and

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May 1949 and the first production engine in June 1949. [See Docs. 92, 94, 95, & 101.]

85. (U) R&R-1, 22 Jan. 1948
Fr: Col. S. E. Prudhomme, Chief, Eng. Stds. Sect., Eng. Div.
To: J. W. White, Servs. Sect., Proc. Div., & R. A. Bittner, Aero. Equip. Sect., Proc. Div.
With: R&R-2, 1 Mar. 1948
R&R-3, 19 Mar. 1948
(File: Contr. Files)

Eng. Stds. Sect., Eng. Div., withheld coordination on the purchase request for production R-4360-51 engines for the reason that the engine was classified as experimental. Proc. Div. asked the Director of Res. and Dev. to change the status of the engine to one permitting procurement of production quantities or to grant a deviation from the "Status of Equipment Book." General Craigie, Director of Res. and Dev., Hq., USAF, approved the R-4360-51 as substitute standard on 18 Mar. 1948. [See also Doc. 151A.]

85A. (U) Ltr., 24 Jan. 1948
Fr: Col. G. E. Schaetzel, Chief, Airc. Sect., Proc. Div.
To: Boeing Airc. Co., Seattle, Wash.
(File: Contr. Files)

Airc. Sect., Proc. Div., notified Boeing that the production model of the YB-50C airplane had been designated the B-54A airplane.

86. (U) Ltr., 26 Jan. 1948
Fr: Col. V. G. Huston, Chief, Aero. Equip. Sect., Proc. Div.
To: BuAer Rep., P&W
(File: Contr. Files)

Aero. Equip. Sect., Proc. Div., asked P&W to adhere to its original verbal promise to make initial deliveries of production R-4360 VDT engines in May 1949. This promise had been received prior to the formal schedule dated 3 Oct. 1947 [Doc. 51], and had been used by Aero. Equip. Sect. as a firm commitment for production planning. [See also Docs. 82 & 91.]

86A. (S) Ltr., 26 Jan. 1948
Fr: Gen. J. T. McNarney, CG, AMC
To: Dir., Proc. and Indust. Plan., Wash.
(File: CF-A)

AMC forwarded revised airplane delivery schedules for B-36A, B-36B, and B-36C airplanes necessitated by adoption of the B-36C program. The YB-36C was scheduled for delivery in July 1949 and the first B-36C for delivery in October 1949. The contract was to be completed in July 1950. AMC also furnished revised cost figures for contract change orders for the propellers, engines, and turbosuperchargers required for the B-36C program. These exceeded by approximately

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$3,000,000 the previous estimate of $15,000,000. [See also Docs. 37C, 40, and 73.]

87. (U) Ltr., 27 Jan. 1948
Fr: P&W
To: Power Plant Br., Proc. Div., and Power Plant Lab., Eng. Div.
(File: CF-B)

P&W had furnished installation instructions for the R-4360-43 engine control in the B-50 airplane to both Boeing and AMC personnel, and inclosed supplementary engineering data.

88. (U) Cy. ltr., 28 Jan. 1948
Fr: Col. V. G. Huston, Chief, Aero. Equip. Sect., Proc. Div.
To: P&W
(File: Contr. Files)

Aero. Equip. Sect., Proc. Div., asked P&W to furnish cost and delivery data for a mock-up of an R-4360-51 engine for CVAC's use. [See also Doc. 90.]

89. (U) Ltr., 30 Jan. 1948
Fr: P&W
To: Power Plant Br., Proc. Div.
(File: Contr. Files)

P&W reported progress in the development of the VDT engines. The 150-hour qualification test on an R-4360-43 had been stopped after 16 hours' testing, but was to be resumed when the company had completed redesign and production of the parts that failed. One R-4360-39 engine was in process of conversion to an R-4360-51. The exhaust headers and fuel injection unit for one of the two engines at Boeing had been delivered. The control unit had been completed, but testing of its operation on an engine awaited delivery of the CHM-2 supercharger from G. E. in March.

90. (U) Minutes of Conference, 2 Feb. 1948, Hq., AMC
(File: CF-B)

On 26 Jan. 1948, AMC, CVAC, and P&W personnel conferred on the engine installation problems characteristic of the B-36C. [See Doc. 77.] Engineering of some of the airplane parts awaited engine performance and cooling data that P&W had not yet fully determined. Because the engine was in development status, P&W could not guarantee engine performance and cooling data it had already given CVAC, and recommended that CVAC, G. E., and P&W jointly study the problem and draw up a report on the VDT engine to include the latest performance and cooling requirements. A conference early in February was planned, at which

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the results of the joint study were to be presented. Agreement was reached on details of the cooling fan configuration. P&W was to furnish a two-speed fan drive similar to its R-4360-41 fan drive, and CVAC was to provide P&W with fan drive gear ratios and fan horse power determined from the latest P&W cooling requirements. CVAC presented its requirements for an R-4360-51 mock-up and P&W agreed to furnish cost and delivery data on the mock-up to AMC. [See also Docs. 88, 99, 104, & 110.]

91. (U) Ltr., 3 Feb. 1948
Fr: P&W
To: CG, AMC
(File: Contr. Files)

P&W contended that receipt of the advance notice of award of Contr. NOa(s) 9511 during January 1948 made it necessary that initial delivery of production engines be made in July 1949. The company in its contract proposal on 3 Oct. 1947 [Doc. 51] had stipulated initial delivery 18 months after receipt of contractual authorization and had predicated the initial delivery promised in May 1949 on receipt of the notice of award no later than 15 Nov. 1947. The company promised to do anything possible to better the contract delivery schedule. [See also Docs. 82 & 86.]

92. (U) TWX, 3 Feb. 1948
Fr: Navy Contr. Office, Wash.
To: P&W
(File: Contr. Files)

Navy notified P&W of the change to be made in Contr. NOa(s) 8333 whereby 8 prototype and 213 production R-4360-51 engines would be obtained by cutting back the number of R-4360-41 engines on the contract. The eight prototype engines were to be delivered in April and May 1949 and the first production engines in June 1949. [See also Docs. 84, 94, 95, & 101.]

93. (R) TI-2036, Add. 10, 5 Feb. 1948
(File: CF-B)

AMC raised the work priority of the B-36C program from 1-C to 1-B and corrected the number of B-36A's to be procured to 22 airplanes. [See Doc. 83.]

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94. (U) Ltr., 6 Feb. 1948
Fr: Cmdr. J. W. Antonides, BuAer, USN, Wash.
To: Power Plant Br., Proc. Div.
(File: Contr. Files)

AMC had asked the Navy to finance the procurement of 8 prototype and 213 production R-4360-51 engines by cutting back the number of R-4360-41 engines on P.O. (535) 43-22066-P. [See Doc. 84.] A total amount of $20,748,539.70 was to be credited to the contract by cancellation of 330 R-4360-41 engines and spare parts. The same total was to be expended on the 221 R-4360-51 engines and spare parts, thus causing no change in the funds allocated to the contract. On the basis of the unit costs quoted for the R-4360-51's and allowances for spare parts, an excess credit of $1,982,000 would accrue, which the Navy asked AMC to correct in the allowances to be credited for R-4360-41 spare parts and charged off to R-4360-51 spare parts.

95. (U) Cy. ltr., 9 Feb. 1948
Fr: P&W
To: BuAer, USN, Wash.
(File: CF-B)

P&W acknowledged the contract change notice on Navy Contr. NOa(s) 8333 [Doc. 92] to effect procurement of the R-4360-51 prototype and production engines, but took exception to the delivery schedule for the production engines. P&W maintained that AMC had agreed to the production schedule presented 3 Oct. 1947 [Doc. 51], and that, in accordance with that agreement, initial delivery of R-4360-51 engines would be made in September 1949. [See also Docs. 84, 92, & 101.]

96. (U) Ltr., 12 Feb. 1948
Fr: Col. G. E. Schaetzel, Chief, Airc. Sect., Proc. Div.
To: AFPR, CVAC
(File: Contr. Files)

Airc. Sect., Proc. Div., pointed out that the VDT B-36 program had been set up on the basis of completing it within the funds already allotted to the contract and that the last five airplanes had been eliminated to provide the funds. If this arrangement did not provide sufficient funds, then either the VDT program would have to be canceled or a further reduction in the number of airplanes to be produced would have to be made.

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97. (U) R&R-1, 19 Feb. 1948
Fr: Col. V. G. Huston, Chief, Aero. Equip. Sect., Proc. Div.
To: Brig. Gen. H. A. Shepard, Chief, Proc. Div.
(File: Contr. Files)

Aero. Equip. Sect. requested permission to negotiate a change order to Contr. W33-038 ac-18653 for an axial power take-off drive for the R-4360-43 engine.

97A. (R) Ltr., 19 Feb. 1948
Fr: Brig. Gen. W. M. Morgan, Chief, Eng. Operations, Eng. Div.
To: NACA, Wash.
(File: CF-B)

Eng. Div. requested NACA to conduct wind tunnel testing of the 1/14-scale powered model of the tractor-type VDT B-36 airplane at LMAL.

98. (U) Ltr., 20 Feb. 1948
Fr: G. E. Co., West Lynn, Mass.
To: H. W. McLane, Power Plant Lab., Eng. Div.
(File: CF-B)

G. E., subcontractor for the VDT power control, asked Power Plant Lab. for specified data on the propeller installation in the XB-50-C airplane. [See also Doc. 119.]

99. (U) Ltr., 23 Feb. 1948
Fr: P&W
To: CG, AMC
(File: Contr. Files)

P&W furnished its contract proposal for the 2-speed remotely mounted fan drive for the R-4360-51 engine. Speed ratios were to be 1 and 1.7 times crankshaft speed. In low speed the drive was to be capable of supporting a maximum fan load of 180 h.p., and in high speed, 360 h.p. [See also Docs. 90 & 109.]

100. (U) Ltr., 24 Feb. 1948
Fr: Col. V. G. Huston, Chief, Aero. Equip. Sect., Proc. Div.
To: P&W
(File: Contr. Files)

Aero. Equip. Sect., Proc. Div., asked P&W either to confirm a verbal understanding that P&W would furnish the R-4360-51 mock-up at no cost or else to furnish the cost breakdown for a contract change order for the item.

101. (U) Ltr., 27 Feb. 1948
Fr: Col. V. G. Huston, Chief, Aero. Equip. Sect., Proc. Div.
To: BuAer, USN, Wash.
(File: Contr. Files)

Aero. Equip. Sect. agreed with Navy on adjustment of credits and debits in P. O. (535) 42-22066-P necessary to procure prototype and production R-4360-51 engines and spare parts in lieu of R-4360-41 engines and spare parts. The section also stated that P&W had informed AMC that delivery of prototype engines would take place in April and May 1949, but that initial delivery of production R-4360-51 engines would be made in September 1949. Through

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an oversight, Aero. Equip. had not mentioned in earlier letters that delivery of either prototype or production engines was not to be made unless a satisfactory 150-hour qualification test had been completed. [See also Docs. 25, 84, 92, & 105.]

102. (U) Ltr., 1 Mar. 1948.
Fr: P&W
To: CG, AMC
(File: Contr. Files)

P&W agreed to furnish mock-up of one R-4360-51 engine within five months at no cost to the Government. However, it would be a mock-up of the partially developed engine rather than one of the final configuration. Until the first prototype engine was delivered, P&W proposed to keep the mock-up up-to-date by replacing important parts with the improved parts resulting from progress in the development work. [See also Docs. 88, 90, 100, & 108.]

103. (U) Ltr., 1 Mar. 1948
Fr: Col. G. E. Schaetzel, Chief, Airc. & Missiles Sect., Proc. Div.
To: CVAC, Ft. Worth, Tex.
(File: Hist. Office)

In view of P&W's latest R-4360-51 engine delivery schedule, Airc. Sect. approved a new delivery schedule for B-36C airplanes in which (1) the YB-36C would be delivered in July 1949, (2) the first B-36C would be delivered in December 1949, and (3) the contract would be completed in September 1950. [See Docs. 37C, 40, 86A, and 101.]

104. (U) Ltr., 2 Mar. 1948
Fr: P&W
To: Power Plant Br., Proc. Div.
(File: Contr. Files)

P&W reported progress on the development of VDT engines. The company had nearly completed the parts necessary to convert an R-4360-39 to an R-4360-51 and expected to start test stand operation of the R-4360-51 in two weeks. Preliminary studies of the performance of this engine in a B-36 had been in progress for a month and the results were to be published within two weeks. The B-50 airplane for flight testing of the R-4360-43 was expected at P&W's plant within two weeks.

105. (U) Ltr., 4 Mar. 1948
Fr: P&W
To: CG, AMC
(File: Contr. Files)

P&W took exception to the Aero. Equip. Sect.'s assumption on 27 Feb. 1948 [Doc. 101] that the R-4360-51 prototype engines would be delivered following a 150-hour qualification test. Based on its previous statements on 19 June and 16 July 1947

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[Docs. 19 & 25], the company contended that a 150-hour qualification test of the prototype R-4360-51 would delay delivery of the eight prototype engines until September 1949.

106. (U) Chg. O. 2 to Contr. W33-038 ac-18653, Issued 10 Mar. 1948
(File: Contr. Files)

USAF contracted with P&W for an axial power take-off drive on the R-4360-43 engine being developed under Contr. W33-038 ac-18653. Increase in contract price was $18,000.

107. (U) Ltr., 15 Mar. 1948
Fr: P&W
To: Power Plant Br., Proc. Div.
(File: Contr. Files)

P&W replied to a criticism received from the AMC buyer to the effect that insufficient information on the R-4360-43 turbo-supercharger and power controls was being received. P&W attached a tabulation of the information which, together with approximate dates of delivery, the company had furnished to Boeing. In addition to furnishing technical data, the company had stationed one of its installation engineers at Boeing's plant to handle questions on the spot and had sent other representatives of its engineering staff to Seattle to assist on installation problems. P&W suggested that monthly co-ordination conferences of the contractors with AMC would improve the situation.

108. (U) Ltr., 17 Mar. 1948
Fr: Col. V. G. Huston, Chief, Aero. Equip. Sect., Proc. Div.
To: P&W
(File: Contr. Files)

Aero. Equip. Sect. asked P&W to deliver the R-4360-51 mock-up to CVAC in June rather than in Aug. 1948. Delivery later than June would retard the B-36C delivery schedule. [See also Doc. 102.]

109. (U) Ltr., 19 Mar. 1948
Fr: CVAC, Ft. Worth, Tex.
To: Bomb. Br., Proc. Div.
(File: Contr. Files)

CVAC presented its complete fan drive requirements for the B-36C for P&W's use in developing and fabricating the drive. The low speed ratio of the fan to engine speed was 1.0: 1.0 and the high speed ratio, 1.82:1.0. Fan horsepower loadings were 350 h.p. at low speed, and 550 h.p. at high speed. [See also Docs. 99, 115, 118, & 120.]

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110. (U) Ltr., 22 Mar. 1949
Fr: P&W
To: Power Plant Br., Proc. Div.
(File: Contr. Files)

P&W forwarded PWA Rpt. TR-56, "Preliminary Report of the R-4360-51 VDT Power Plant as Applied to the B-36 Airplane," and PWA Rpt. TR-57, "Estimated R-4360-VDT Engine Performance under Several Critical Airplane Operating Conditions." These reports completed study decided upon at conference at Wright Field on 26 Jan. 1948 [Doc. 90]. Individual performance curves had been forwarded to CVAC prior to completion of the reports. [See also Docs. 128 & 238B.]

111. (U) Ltr., 23 Mar. 1948
Fr: CVAC, Ft. Worth, Tex.
To: Airc. & Missiles Sect., Proc. Div.
(File: Contr. Files)

CVAC expressed its willingness to submit a cost proposal to cover design and manufacture of a complete exhaust system for the R-4360-51 engine installation as an alternate to that designed by P&W. CVAC furnished a program and a schedule of coordination with the engine manufacturer which it asked AMC to sponsor. [See also Doc. 129.]

112. (U) Ltr., 23 Mar. 1948
Fr: P&W
To: Maj. Gen. F. O. Carroll, Dir., R&D, AMC
(File: CF-B)

P&W refuted General Carroll's opinion that the company was behind schedule on the VDT engines. On prototype engines, the company in its proposal on 19 June 1947 [Doc. 19] had promised delivery of four R-4360-43 engines within 15 months after receipt of contract. Contract was awarded 4 Dec. 1947 [Docs. 65 & 72], thereby establishing Mar. 1949 as the effective delivery date for the first engines. However, P&W's manufacturing schedule called for delivery of the first engines in Feb. 1949, and the company believed it might even be possible to better that advanced delivery date by a month or so. On the R-4360-51 prototype engines, the company in its proposal of 19 June 1947 had promised six engines within the same 15 months as proposed for the R-4360-43. However, P&W had not received contractual authorization for the eight engines, later planned, until Feb. 1948, [Doc. 92] so that initial deliveries according to the proposal were due in May 1949. The company had, however, scheduled delivery of the first six in April and the other two in May 1949 [Docs. 84 & 92] even

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though the R-4360-51 engine was more complex than the R-4360-43. P&W justified its output of production engines on the basis of its contract proposal, 3 Oct. 1947 [Doc. 51]. Initial delivery of R-4360-43's in May 1949 and of R-4360-51's in July 1949 had been based on receipt of contract authorization for 14 engines by 15 Nov. 1948 [18 months in advance of first deliveries]. P&W, however, received contractual coverage for the R-4360-43's late in Jan. 1948 [Doc. 76] and for the R-4360-51's in Feb. 1948. Therefore, the company expected to begin delivering R-4360-43's in July 1949 and R-4360-51's in Sept. 1949. On the development contract received in Sept. 1947, the company had already delivered the two R-4360-43's to Boeing in Oct. and Dec. 1947. The R-4360-51 required design and fabrication of special extension shafting, new gearing, and new mounting, but the contractor expected to ship it to CVAC in Apr. 1948. [See also Doc. 132.]

112A. (U) Ltr., 25 Mar. 1948
Fr: F. E. Moan, BuAer, USN, Wash.
To: CG, AMC
(File: Contr. Files)

BuAer stated that the first 14 production R-4360-43's were to be procured under Navy Contr. NOa(s) 9511 and that 4 of the engines were scheduled for delivery in May 1949 and 10 in June 1949. P&W, however, had not yet executed the contract. [See also Docs. 76 & 112.]

113. (U) Ltr., 26 Mar. 1948
Fr: Col. V. G. Huston, Chief, Aero. Equip. Sect., Proc. Div.
To: P&W
(File: Contr. Files)

AMC asked that the H-1 turbosupercharger, variable discharge nozzle, boost control system, and such engine-driven accessories as the starter, propeller, and generator required on the B-50C be used in the official 150-hour model test of the R-4360-43 engine. [See Doc. 130.]

114. (U) Ltr., 26 Mar. 1948
Fr: Col. V. G. Huston, Chief, Aero. Equip. Sect., Proc. Div.
To: BuAer, USN, Wash.
(File: Contr. Files)

Aero. Equip. Sect. withdrew its requirement for a 150-hour qualification test prior to acceptance of the eight prototype R-4360-51 engines, agreed to accept them with the 50-hour test proposed by P&W, and requested the Navy to make the necessary changes on these points in its contract with P&W. [See also Docs. 101 & 105.]

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115. (U) Ltr., 29 Mar. 1948
Fr: Col. V. G. Huston, Chief, Aero. Equip. Sect., Proc. Div.
To: P&W
(File: Contr. Files)

Aero. Equip. Sect. asked P&W to comment on CVAC's revised speed ratios and horsepower for the B-36 cooling fan drive. [See also Doc. 109.]

116. (U) Ltr., 29 Mar. 1948
Fr: P&W
To: Power Plant Br., Proc. Div.
(File: Contr. Files)

P&W reported the status of the development engines. Conversion of an R-4360-39 to an R-4360-51 had been completed, the engine was undergoing initial testing, and, following detailed inspection, would be rebuilt for acceptance testing and shipment. The B-50 airplane for P&W's use in flight-testing the R-4360-43 had arrived, and pilot familiarization and instrumentation work were in progress. Delivery of the first CBM-2 turbosupercharger by G. E. would not take place until 6 Apr. 1948.

117. (C) Ltr., 2 Apr. 1948
Fr: CVAC, Ft. Worth, Tex.
To: Capt. R. J. Walling, Bomb. Br., Proc. Div.
(File: Contr. Files)

According to an agreement reached in the co-ordination conference on 26 Jan. 1948, [Doc. 90] AMC was to conduct performance and whirl tests on the VDT cooling fan designed by CVAC. The company forwarded engineering data necessary for conducting the test.

118. (U) Ltr., 2 Apr. 1948
Fr: Brig. Gen. H. A. Shepard, Chief, Proc. Div.
To: Under Secy. of the AF, Wash.
(File: Contr. Files)

Proc. Div. requested permission to negotiate a change order to Contr. W33-038 ac-18653 for development of a 2-speed cooling fan drive for the R-4360-51 engine.

119. (U) Ltr., 2 Apr. 1948
Fr: Col. R. J. Minty, Chief, Power Plant Lab., Eng. Div.
To: G. E., West Lynn, Mass.
(File: CF-B)

Power Plant Lab. furnished G. E. propeller data the company requested for use in development of the control system for the R-4360-43 engine.

120. (U) Ltr., 6 Apr. 1948
Fr: P&W
To: Power Plant Br., Proc. Div.
(File: Contr. Files)

P&W pointed out that, in order to meet the R-4360-51 engine schedule, it had based its proposal for the fan drive on using the R-4360-41 fan drive which was already in production. The new requirements from CVAC on 19 Mar. 1948 [Doc. 109] necessitated design and development of a completely new fan drive.

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In view of the following delays that would result in the R-4360-51 and B-36C delivery schedules, P&W asked AMC whether or not the company should go ahead with the new development, stating that: (1) it would take 14 months to have a gearbox ready for the wind tunnel tests, provided one were accepted without proof testing; (2) 16 to 18 months would be required to provide the new drive with 50 hours' flight testing for the prototype engines; and (3) over 18 months would be required to provide the drive for the production R-4360-51 engines. [See also Docs. 98, 115, 118, 141, & 189.]

121. (U) Ltr., 7 Apr. 1948
Fr: Col. V. G. Huston, Chief, Aero. Equip. Sect., Proc. Div.
To: P&W
(File: Contr. Files)

Aero. Equip. Sect. asked P&W to conduct the 150-hour qualification test of the R-4360-51 engine with an H-1 turbosupercharger, a variable discharge nozzle, complete boost control system, and with engine-driven accessories such as were used on the B-36C airplane. [See also Docs. 113 & 130.]

122. (C) Ltr., 8 Apr. 1948
Fr: CVAC, Ft. Worth, Tex.
To: Airc. Proj. Sect., Eng. Div.
(File: Contr. Files)

CVAC proposed changes in the flight flutter tests of the B-36 to speeds and altitudes for which the B-36C was designed.

123. (C) Charts and graphs, 12 Apr. 1948 distr. at co-ordination conference at Ft. Worth, 12 & 13 Apr. 1948
(File: B-36 Proj., Bomb. Br., Proc. Div.)

Performance of the B-36B powered with the R-4360-41 engines was compared (1) with Oct. 1947 estimates of the B-36C powered with VDT engines and (2) with latest estimates of the B-36C based on P&W's latest engine performance estimates. [See also Doc. 128.]

124. (U) TT, 13 Apr. 1948
Fr: Col. R. J. Minty, Chief, Power Plant Lab., Eng. Div.
To: P&W
(File: Contr. Files)

Power Plant Lab. requested P&W to present a design report similar to its PWA TR-42R [See Doc. 68], together with a contract proposal for further development of the R-4360-43 engine for operation at altitudes of 40,000 and 45,000 feet in a B-50C airplane. [See also Docs. 126 & 196.]

125. (U) Ltr., 13 Apr. 1948
Fr: P&W
To: Power Plant Br., Proc. Div.
(File: Contr. Files)

P&W was proceeding with the instrumentation of the R-4360-51 engine as requested by AMC, with the exception of the calibration of the torque nose.

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126. (U) TWX, 14 Apr. 1948
Fr: P&W
To: Power Plant Lab., Eng. Div.
(File: Contr. Files)

P&W acknowledged Power Plant Lab.'s request 13 Apr. 1948 [Doc. 124] for a contract proposal on further development of the R-4360-43 engine, but requested that the program not be started until 1 Jan. 1949 immediately following completion of the VDT development program in progress. [See also Docs. 124 & 196.]

127. (U) R&R-1, 16 Apr. 1948
Fr: Maj. S. C. Pace, Chief, Power Plant Br., Proc. Div.
To: Legal Assistants, Aero. Equip. Sect., Proc. Div.
(File: Contr. Files)

Aero. Equip. Sect. arranged to have a CH4-2 turbosupercharger bailed to P&W for test work on the VDT engines and the supercharger.

128. (C) Ltr., 19 Apr. 1948
Fr: J. W. Larsen, Asst. Chief Div. Engr., CVAC, Ft. Worth, Tex.
To: Bomb. Br., Proc. Div.
(File: Contr. Files)

CVAC furnished memoranda setting forth major subjects discussed and conclusions reached in co-ordination conferences at Ft. Worth 12 and 13 Apr. 1948 attended by personnel from AMC Eng. and Proc. Divs., CVAC, P&W, G. E., and Curtiss Propeller. Major purpose of the conferences was to review the estimated performance of the B-36C airplane based on P&W's latest engine performance estimates, PWA Rpts. TR-56 and TR-57. CVAC considered the memorandum on new B-36C performance estimates merely a preliminary summary, and planned to forward to AMC by 3 May 1948 a report containing more detailed performance estimates of the B-36C for conclusive evaluation. [See also Docs. 90, 110, 133, 138, & 238B.]

129. (U) Ltr., 19 Apr. 1948
Fr: P&W
To: Power Plant Br., Proc. Div.
(File: Contr. Files)

At the conferences 12 and 13 Apr. 1948 at Ft. Worth, P&W had discussed with CVAC the latter's proposal of 23 Mar. 1948 [Doc. 111] for an alternate exhaust system to be designed by CVAC. As a result, P&W found it unnecessary to follow the co-ordination procedure first planned by CVAC, and believed the usual change-in-design system required by Spec. AN-9500 could be followed. Manufacturers of CVAC's exhaust manifold were to visit P&W to study the engine. P&W believed it was necessary to release to them only part of the drawings previously stipulated by CVAC. The company was also

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revising drawings for its own collector ring design to correct some defects noted in the Ft. Worth conferences.

130. (U) Ltr., 19 Apr. 1948
Fr: P&W
To: USAF Rep., P&W
(File: Contr. Files)

P&W agreed that it might be desirable to use the airplane installation accessories and equipment in 150-hour qualification tests of the R-4360-43 and R-4360-51 engines. However, the company would not delay the tests if such equipment were not available, nor allow the use of such accessories and equipment to prolong the qualification tests. [See also Docs. 113, 121, & 136.]

131. (U) Ltr., 21 Apr. 1948
Fr: P&W
To: Maj. Stanley Pace, AMC
(File: Contr. Files)

On the VDT engines, P&W was using 12 engines to obtain the development desired and was concentrating on model testing. Installation of an engine in the B-50 received for flight test work was nearly completed. Initial testing of the combination of engine, turbosupercharger, and control system had yet to take place. The company believed it had an engine that was going to exceed original estimates and that the exhaust system under development was many times more reliable than any produced by an airplane company. [See also Docs. 111 & 129.]

132. (U) R&R-1, 21 Apr. 1948
Fr: Col. F. R. Dent, Jr.,
[Chief, Eng. Operations],
Eng. Div.
To: Power Plant Lab., Eng. Div.
(File: Contr. Files)

Chief of Eng. Operations had observed work in progress on VDT engines at P&W and reported: (1) work seemed to be on schedule; (2) initial flight of B-50 with VDT engine installation was expected about 1 May; (3) consistent 50-hour operation was being obtained from the exhaust manifold system; (4) the control mechanism was the item most likely to be problematical; (5) permissible cylinder temperatures would be the limiting factor on the power to be obtained from the engine; and (6) the company had several modifications under way for improving the design but wished to defer the next development program until the completion of the one in progress. [See also Doc. 112.]

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133. (S) Ltr., c. 21 Apr. 1948
Fr: Gen. J. T. McNarney, CG, AMC
To: C/S, USAF, Wash.
With: 1st Ind., 25 June 1948 Cmt. by Maj. Gen. K. B. Wolfe, 13 July 1948
(File: CF-B)

AMC recommended the B-36 program be re-evaluated. Increased engine cooling problems made it impossible to attain performance originally claimed for the B-36C. AMC suggested four courses of action that could be taken. The first was to revert to the original B-36 program for procurement of 22 B-36A airplanes and 78 B-36B airplanes. The other three possibilities were based on termination of the B-36 program at one of the following stages: (1) with the 61st airplane by canceling the 34 B-36C's; (2) with the 41st airplane, thereby providing for the "GEM" program; (3) with the 22nd airplane, the end of the B-36A program. AMC furnished estimated cost and estimated savings for each plan. Expenditure on the VDT program was estimated at $1,500,000. At a conference in the office of the Secy. of the Air Force on 24 June 1948, the USAF decided to cancel the 34 B-36C airplanes and procure B-36B's instead. The B-36 program therefore was to consist of 95 airplanes, of which 22 were B-36A's and 73, B-36B's. [See also Docs. 90, 123, 128, 135, 138, 139, 143, 145, 151A, 152, 154, & 239.]

134. (U) Chg. O. 4 to Contr. W33-038 ac-18653, Issued 23 Apr. 1948
(File: Contr. Files)

AMC loaned a CH4-2 turbosupercharger to P&W at no cost to the contractor.

135. (S) Ext. fr. memo., 26 Apr. 1948
Fr: Lt. Gen. Lauris Norstad, Deputy C/S for Ops., USAF
To: Deputy C/S for Mat., USAF
(File: AAG CF)

General Norstad favored termination of the B-36 program with the 61st airplane. [See also Doc. 133.]

136. (U) Ltr., 28 Apr. 1948
Fr: Col. V. G. Huston, Chief, Aero. Equip. Sect., Proc. Div.
To: P&W
(File: Contr. Files)

AMC reiterated its request that P&W use in the 150-hour qualification tests of the VDT engines the same equipment and accessories that would be used with the engines in flight, and offered to make the equipment available. [See also Docs. 130 & 158.]

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137. (U) Ltr., 1 May 1948
Fr: P&W
To: Power Plant Br., Proc. Div.
(File: Contr. Files)

P&W made its monthly progress report on development of VDT engines. A 150-hour qualification test was to be started in two weeks on an R-4360-43 engine with cylinders designed for improved cooling. The engine was to be tested with a stand installation of the CH-2 turbocompressor and a "breadboard" type of turbo control. The R-4360-51 engine was ready for acceptance testing, and installation of the R-4360-43 in the B-50 flight test plane was completed 30 Apr. 1948.

138. (C) Ltr., 6 May 1948
Fr: CVAC, Ft. Worth, Tex.
To: Chief, Ft. Worth AFPFO
(File: Contr. Files)

As a result of the decreased airplane performance outlined at the Ft. Worth conferences on 12 and 13 Apr. 1948, the future status of the B-36C program became uncertain. Since 15 Apr. 1948, CVAC had been operating under a verbal understanding with AMC that this program was to be canceled within a few days. Accordingly, the company (1) had put its engineering personnel to work on the "GEM" program, (2) had retarded factory work on the VDT program, (3) had held in abeyance any commitments to subcontractors or vendors for materials and parts, and (4) had ceased hiring engineering personnel for the VDT program. However, scheduled work on the 62nd B-36 airplane should have been in progress, but the company could not go ahead until the USAF decided whether the airplane was to be a B-36B or a B-36C. Moreover, the delayed decision would result in retarded manufacturing and delivery schedules for whichever type was decided upon. [See also Docs. 123, 128, & 133.]

139. (C) R&R-1, 7 May 1948
Fr: Col. O. J. Ritland, Chief, Airc. Lab., Eng. Div.
To: R. C. Naugle, Bomb. Br., Proc. Div.
(File: B-36 Proj., Bomb. Br., Proc. Div.)

Airc. Lab. had checked reductions in range and cruising speed of the B-36C in CVAC's latest performance estimates. In general, the laboratory found the estimates reasonable. [See also Docs. 123 and 128.]

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140. (U) Ltr., 7 May 1948
Fr: CVAC, Ft. Worth, Tex.
To: Bomb. Br., Proc. Div.
(File: Contr. Files)

CVAC proposed that a remote type servo tab balance be incorporated in the VDT elevator surface and that ground vibration tests of the installation be made prior to the flight tests. The company believed the installation would result in a reduction of 150 lbs. in the dry weight of the airplane, that the testing could be accomplished in 30 days, and that the cost of the change would be $15,100 less fee.

140A. (U) Ltr., 10 May 1948
Fr: Lt. Col. W. A. Davis, Actg. Chief, Airc. & Missiles Sect., Proc. Div.
To: Boeing Airplane Co., Seattle, Wash.
(File: Contr. Files)

Airc. & Missiles Sect. asked Boeing to comment on the possibility of increasing the power output of the R-4360-43 engine from 4300 to 4600 bhp (Wet). Increased power appeared desirable in view of the take-off run required by the B-54A. [See also Docs. 173A & 197A.]

141. (U) Ltr., 12 May 1948
Fr: P&W
To: CG, AMC
(File: Contr. Files)

P&W withheld execution of Chg. O. 3 to Contr. W33-038 ac-18653 for a 2-speed fan drive. After the change order had been initiated, CVAC had indicated that the drive would not deliver sufficient horsepower and planned to present a comparative study of the drive covered by the change order and one later proposed. [See also Docs. 109, 115, & 120.]

142. (U) Ltr., 12 May 1948
Fr: M. R. Shaw, Contr. Officer, Proc. Div.
To: Recipients of Contr. W33-038 ac-18653
(File: Contr. Files)

The Contr. Officer changed the funds allotment on Chg. O. 3 to Contr. W33-038 ac-18653.

143. (S) Ext. fr. memo., 13 May 1948
Fr: Col. B. S. Kelsey, Chief, Control Group, Office, Deputy C/S, Mat., USAF
To: Deputy C/S, Mat., USAF
(File: CF-A)

Colonel Kelsey criticized AMC's suggested termination of the B-36C program. He believed the reasons for the loss in performance could not be justified in whole or in detail; that there appeared to be lack of co-ordination between airplane and engine manufacturers; and that the whole B-36 situation pointed to "extremely casual if not negligent supervision of the project within the Air Force." [See also Docs. 133 & 239.]

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144. (C) Ltr., 20 May 1948
Fr: Maj. Gen. L. C. Craigie, Dir., R&D, USAF
To: Lt. Col. T. P. Gerrity, Airc. Sect., Proc. Div.
(File: CF-B)

The Dir., R&D, Hq., USAF, asked for an analysis of the effect of the VDT engine on B-50C performance in terms of the factors that affected the B-36C and the F-12 with the VDT installations. [See also Doc. 153.]

145. (S) Ext. fr. IDC, 28 May 1948
Fr: Col. J. S. Holtoner, Chief, Airc. Br., Eng. Div., Hq., USAF
To: [R. R.] Graichen, Eng. Div., Hq., USAF
(File: CF-A)

Colonel Holtoner commented on AMC's proposal to terminate the B-36C program. He noted that the original proposal to install the VDT engines was based on P&W's Phase I [design] engine performance estimates; that the engine contractor later changed the estimates; and that these changed estimates plus the use of a tractor-type, rather than a pusher-type, engine resulted in the conditions that led to the recommendation for canceling the project. [See also Docs. 133 & 239.]

146. (U) Ltr., 1 June 1948
Fr: P&W
To: Power Plant Br., Proc. Div.
(File: Contr. Files)

P&W reported progress on the VDT engines under development. An unofficial qualification test had been completed on an R-4360-43, with essentially all of the parts initially installed in the engine completing the full 150 hours of testing. An official test on another was to be started within a few days. With this one an improved exhaust system and deep-finned cylinder heads were to be used, with a CH4-2 turbosupercharger and "breadboard" type of control to be added upon delivery from G. E. One of the extension shaft couplings on the R-4360-51 had failed prior to the acceptance test and the engine was to be rebuilt. The first flight of the B-50C with a complete VDT single-nacelle installation was made on 26 May 1948.

147. (C) Ltr., 1 June 1948
Fr: Maj. Gen. E. M. Powers, Asst. Deputy C/S, Mat., USAF
To: Chief, Proc. Div., AMC
(File: CF-B)

Hq., USAF, authorized Proc. Div. to purchase 30 B-50C airplanes from supplemental FY 1948 Project 110 funds. [See also Docs. 155, 183, & 201.]

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148. (U) Ltr., 2 June 1948
Fr: Lt. Col. J. L. Zoeckler, Actg. Chief, Aero. Equip. Sect., Proc. Div.
To: K. Sargent, BuAer, USN, Wash.
(File: Contr. Files)

AMC revised total cost figures of R-4360-51 prototype and production engines downward from $20,748,539.70 to $20,554,418.75. Decrease of $194,120.95 was to be covered by an amendment to Chg. 42 to AMC's P. O. (535) 43-22066-P with the Navy.

149. (U) Ltr., 3 June 1948
Fr: P&W
To: USAF Rep., P&W
(File: Contr. Files)

P&W had to delay the 150-hour qualification test on an R-4360-43 with the CHM-2 turbosupercharger until G. E. delivered the turbosupercharger. G. E. made delivery of the unit on 2 June 1948. P&W anticipated that the test would be further delayed by a schedule of inspections G. E. planned to make of the turbosupercharger as the qualification test proceeded.

150. (U) Ltr., 7 June 1948
Fr: P&W
To: Aero. Equip. Sect., Proc. Div.
(File: Contr. Files)

Boeing Aircraft wanted P&W to provide instrumentation on four of the prototype R-4360-43 engines. Contr. W33-038 ac-19032 did not provide coverage for instrumentation of the engines. P&W quoted unit costs for two alternative types of instrumentation less dynamometer calibration, and postponed quoting on the dynamometer calibration until the subject could be discussed at a conference scheduled for 14 June 1948. P&W was purchasing the necessary materials and expected to proceed with the manufacturing, but planned to make no installation on the engines until the company received a change order on the contract. The contractor believed the instrumentation could be provided and the engines delivered, as scheduled, in March 1949 if the change order were received by 1 Oct. 1948. [See also Doc. 157.]

151. (U) Ltr., 11 June 1948
Fr: R. E. Slade, AF Inspr.-in-Charge, P&W
To: Power Plant Lab., Eng. Div.
(File: Contr. Files)

AF Inspr.-in-Charge reported that P&W's first attempt at the official 150-hour model test of the R-4360-43 with the CHM-2 turbosupercharger had failed because of a cracked crankshaft.

151A. (S) R&R-1, 11 June 1948
Fr: Col. R. J. Minty, Chief, Power Plant Lab., Eng. Div.
To: Brig. Gen. D. L. Putt, Deputy Chief, Eng. Div.
(File: CF-A)

Power Plant Lab. had concurred in development of the R-4360-51 engine and procurement of eight prototype engines for the B-36C airplanes, based on original performance estimates submitted by the airplane and engine manufacturers. However, Power Plant

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Lab. had not concurred in the standardization of the engine for procurement in production quantities. The laboratory had stated that it believed development of the engine had not progressed to the point where standardization and procurement of the engine in quantity could be advantageously undertaken. Power Plant Lab. had entered this nonconcurrence on the "Request for Change in Status of Equipment," Form 66, and reiterated it in comments to the Proc. Div. on the FY 1948 production program. After Feb. 1948, CVAC revised the airplane performance estimates downward on the basis of revised engine performance data from P&W. The result was a loss of gains originally expected from the B-36C airplane. [See also Docs. 85, 133, & 238B.]

152. (S) Ltr., 12 June 1948
Fr: Maj. Gen. E. M. Powers
Asst. Deputy C/S, Mat., USAF
To: Dir., Proc. & Indust. Plan.
With: File Note, 15 July 1948
(File: CF-B)

Hq., USAF, directed AMC to cancel immediately the installation of VIT engines in the last 34 B-36 airplanes. No B-36's were to be canceled from the contract. The directive resulted from AMC's recommendation that the B-36C performance did not warrant the increased cost. AMC took no immediate action for the reasons that (1) no airplanes were to be canceled, and (2) the matter was under further consideration at Hq., USAF. [See also Docs. 133 & 239.]

152A. (U) R&R-1, 15 June 1948
Fr: Col. V. G. Huston, Chief, Aero. Equip. Sect., Proc. Div.
To: Servs. Sect., Proc. Div.
(File: Contr. Files)

On 15 June 1948, Aero. Equip. Sect. obligated $16,016,975 and requested that Services Sect. issue a Military Interdepartmental Purchase Request (Requisition) [hereafter MIPR] to the Navy for [R-4360-43 engines. See Doc. 152B.]

152B. (U) MIPR R-49-5N, 17 June 1948
Fr: Proc. Div.
To: BuAer, USN, Wash.
(File: Contr. Files)

Proc. Div. requisitioned 186 P&W R-4360-43 engines and spare parts from the Navy BuAer at an estimated cost of $16,016,975. The first four engines were to be delivered in Sept. 1949, and the last delivery was to be made during Aug. 1950.

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153. (U) Ltr., 22 June 1948
Fr: Col. G. E. Schaetzel, Chief, Airc. & Missiles Sect., Proc. Div.
To: Dir., R&D, Hq., USAF
(File: CF-B)

Airc. & Missiles Sect. furnished the analysis of B-50C performance requested by Hq., USAF, on 20 May 1948. The analysis was based on the latest cooling requirements furnished by Boeing Airc. and P&W, which indicated a recent increase in the cooling requirements of the engine. Airc. & Missiles Sect. compared the resulting revised performance of the B-50C with that of the B-29 and the B-50A, and concluded that the R-4360-43 engine in the B-50C would cool as well as, or better than, the engines in those airplanes under identical conditions. The recent change in cooling requirements would bring about a 2-1/2 per cent loss in range in the estimated performance of the B-50C and would make cruising operation at 2460 bhp less desirable. All other previous performance estimates were not adversely affected. [See also Doc. 144.]

154. (R) TT, 25 June 1948
Fr: Col. G. E. Schaetzel, Chief, Airc. & Missiles Sect., Proc. Div.
To: Chief, Ft. Worth, AFPPO
(File: Contr. Files)

CVAC was to cease immediately all work on the B-36C and to forward to AMC a cost estimate for reinstating B-36B's for the 34 B-36C's canceled. [See also Doc. 133.]

155. (C) Cy TT, 1 July 1948
Fr: Deputy C/S, Mat., Hq., USAF
To: CG, AMC
(File: CF-B)

Hq. USAF, authorized the Airc. & Missiles Sect. to redesignate B-50C airplanes B-54A's. [See also Doc. 147.]

156. (U) Ltr., 2 July 1948
Fr: P&W
To: Power Plant Br., Proc. Div.
(File: Contr. Files)

An unofficial 150-hour qualification test on an R-4360-43 engine had proved the effectiveness of an hydraulically-damped flywheel instead of the crankshaft damper previously used. P&W planned to incorporate this design change in all of the prototype VDT engines. Qualification testing of the R-4360-43 with a CHM-2 turbosupercharger was still being slowed down by frequent development inspections of the turbosupercharger. Another official R-4360-43 qualification test was to be started in about 10 days. The engine was to incorporate the

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deep-finned cylinders, the latest P&W exhaust system, low-tension ignition, and the hydraulically-damped flywheel construction in the crankshaft. The R-4360-51 engine had been installed again on the special extension shaft test stand. Flight testing of the R-4360-43 single-nacelle installation in a B-50 was progressing. The contractor planned to modernize the engine with the deep-finned cylinders, the latest design of exhaust system, and the hydraulic dampers.

157. (U) Inter-Off. Corres., 2 July 1948
Fr: E. C. Grimshaw, P&W
To: E. W. Dickman [Dayton Rep.] P&W
(File: Contr. Files)

P&W revised and completed the data presented on 7 June 1948 for a contract change order covering instrumentation of some of the prototype engines. As a result of conferences with Boeing and AMC on 14 and 15 June 1948, three engines were to be completely instrumented and three partially instrumented. Total cost was to be $8,490. [See also Docs. 150 & 171.]

158. (U) Ltr., 6 July 1948
Fr: P&W
To: USAF Rep., P&W
(File: Contr. Files)

P&W forwarded the schedule for the official 150-hour qualification test of the R-4360-43 engine scheduled to start on or about 14 July 1948. The test was to be conducted at a military and take-off rating of 4300 bhp at 2800 rpm and at a normal rating of 3150 bhp at 2600 rpm. The CBM-2 turbosupercharger was not to be used. G. E. believed the unit should not be used in an official qualification test until the company had completed factory testing of it. P&W believed it was desirable not to use the CBM-2 for the reason that the company was having difficulty in keeping a unit available for replacement of the one in the single-nacelle installation being flight tested. P&W also detailed the accessories to be used during the official qualification test. [See also Docs. 136, 160, 165, & 168.]

159. (U) Ltr., 13 July 1948
Fr: CVAC, Ft. Worth, Tex.
To: Eng. Proj. Sect., Eng. Div.
(File: Contr. Files)

CVAC presented a contract quotation of $11,716.82 for completing wind tunnel testing of a 3/19-scale model of the B-36C center nacelle. The contractor pointed out that an estimated $49,648.07 had already been spent on the design and construction of the model and that it had been ready for shipment at the time the B-36C work was terminated.

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CVAC justified the completion of the tests on the basis of the information that would be gained for use in designing future gas turbine and turbojet engine installations.

160. (U) Ltr., 14 July 1948
Fr: Col. R. J. Minty, Chief, Power Plant Lab., Eng. Div.
To: USAF Inspr.-in-Charge, P&W
(File: Contr. Files)

Power Plant Lab. recommended that the 150-hour qualification test proposed by P&W on 6 July 1948 /Doc. 158/ not be accepted as the official qualification test. While the laboratory believed the proposed test would be worthwhile to check the mechanical durability of the engine, it pointed out four major deviations from the requirements for an official model test: (1) the boost control system could not be tested under the conditions described by P&W; (2) the cylinder head temperatures proposed by P&W were higher than those guaranteed in the engine specification; (3) the test ratings of the engine did not agree with the guaranteed ratings in the engine specification; and (4) all accessory drives were to be loaded either with the exact accessories used on the engines in service or with devices that would load the drives to the torque limits detailed in the engine specification. Power Plant Lab., therefore, recommended that the test be run unofficially and that, based on the results, an official test be run later with the CH4-2 turbosupercharger, the boost control system, the propeller, the governor, and all the engine-driven accessories. /See also Docs. 165 & 168./

161. (U) TWX, 15 July 1948
Fr: Chief, Ft. Worth AFPRO
To: Bomb. Br., Proc. Div.
(File: Contr. Files)

CVAC accounted for the funds raised to finance the B-36C program. At the time the program was canceled an estimated $4,371,727 remained of the $5,496,606 assigned, and the company accounted for the amounts as follows:

Estimated cost of the five airplanes not to be reinstated	$5,496,606.00
Estimated cost of the work on the VDT program	$1,268,625.50

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		Net credit from cost estimates . . . . . $4,227,980.50 Credit from fixed fees . . $ 143,746.71 Total credit . . . . . $4,371,727.21 The credit from fixed fees was determined as the difference between $219,864.24 (a fixed fee of 4% on $5,496,606) and $76,117.53 (a fixed fee of 6% on $1,268,625.50).
162.	(U) Ltr., 16 July 1948 Fr: P&W To: Power Plant Br., Proc. Div. (File: Contr. Files)	P&W had reviewed the Eclipse design of an engine control for the R-4360-43 engine and found it "sound and reasonable."
163.	(U) CCN 341 to Contr. W33-038 ac-7, Issued 20 July 1948 (File: Contr. Files)	CVAC was to manufacture a total of 95 airplanes, of which 22 would be B-36A's and 73, B-36B's.
163A.	(U) Ltr., 21 July 1948 Fr: Col. R. L. Olinger, Chief, Eng. Liaison Sect., Eng. Div. To: NACA, Wash. (File: CF-B)	Eng. Div. advised NACA that USAF had decided not to carry out the VDT tractor nacelle program for the B-36's, and asked NACA to give no further consideration to the scale model tests proposed for LMAL wind tunnel nor to the full scale tests considered for the Ames Aero. Lab. Inasmuch as the model for the LMAL tests had been completed, AMC offered it to NACA for its own use.
164.	(U) Ltr., 21 July 1948 Fr: Col. V. G. Huston, Chief, Aero. Equip. Sect., Proc. Div. To: K. Sargent, BuAer, USN, Wash. (File: Contr. Files)	AMC notified the Navy that an amendment to P. O. 43-22066P was in process to change the 8 prototype and 213 production R-4360-51 engines back to a quantity of 326 R-4360-41 engines plus spare parts. P&W was to be notified to stop all work on the R-4360-51 engines and to plan on an Air Force procurement of 326 R-4360-41 engines (204 installation engines and 122 spares) at $53,885.34 each, and spare parts in the total amount of $2,513,552.38.
165.	(U) Ltr., 22 July 1948 Fr: P&W To: Power Plant Br., Proc. Div. (File: Contr. Files)	P&W replied to the objections raised by Power Plant Lab. on 14 July 1948 [Doc. 160] to the official 150-hour model test scheduled by P&W on the R-4360-43. The contractor was

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under pressure from Washington to conclude the development program and to get the production started. The company was obligated to deliver production engines in July 1949, but the bill of materials for them had not yet been fixed by a qualification test approved by the AMC. Also, the company had expended all the funds on the development contract, and would therefore have to use its own funds for any further development work. For all of these reasons, P&W was anxious to get the work finished, and already had the qualification test running. The contractor believed the company was under no contractual obligation to conduct the qualification test with the CHM-2 turbosupercharger. The boost control system could not be used without the CHM-2. The cylinder temperature limits were those set forth in the contract. Those in the specification cited by the Power Plant Lab. had been agreed to by P&W only as a result of severe criticism from the Air Force when the engine failed to meet estimated cooling performance data given in an earlier P&W report. As to the use of the flight propeller, governor, and engine-driven accessories selected for the B-50, the company was willing to use these if the test were not held up by them. However, in view of all the delay that would be involved, P&W believed that a test conducted as the Power Plant Lab. had proposed should be the subject of another contract. [See Doc. 168.]

166. (U) TWX, 28 July 1948
Fr: Contr. Office, BuAer, USN, Wash.
To: P&W
(File: Contr. Files)

BuAer notified P&W of the contract amendment in process to replace R-4360-51 engines with R-4360-41 engines.

167. (U) R&R-1, 28 July 1948
Fr: Col. G. E. Schaetzel, Chief, Airc. & Missiles Sect., Proc. Div.
To: Airc. Lab., Eng. Div.
(File: B-36 Proj., Bomb. Br., Proc. Div.)

Bomb. Br. notified Eng. Div. that the B-36C program had been canceled.

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168. (U) Ltr., 3 Aug. 1948
Fr: Col. V. G. Huston, Chief, Aero. Equip. Sect., Proc. Div.
To: P&W
(File: Contr. Files)

P&W and AMC had conferred on 29 July 1948 over the terms of the 150-hour qualification test. As a result, AMC superseded and amended the letter of 14 July 1948. AMC conceded that the qualification test would be unduly delayed if P&W had to wait for the CHM-2 turbosupercharger, the flight propeller, and all the engine-driven accessories that would be used with the R-4360-43 installation in the B-50C. Some of these items were still in development status and unavailable, and the exact requirements of others had not yet been determined. AMC believed, however, that P&W should have waited for AMC approval of the higher cylinder temperatures and omission of water injection before starting the test. The engine model specification and the contract would have to be changed on these items to cover the qualification test being run. AMC authorized P&W to proceed with the test without the flight propeller, CHM-2 turbosupercharger, boost control, and engine accessories, but asked that all accessory drives be loaded to the torque limits detailed in the engine specification. Furthermore, AMC asked P&W to submit a proposal for the running of another qualification test at a later date when the CHM-2 turbosupercharger, boost controls, propeller, and engine-driven accessories would be available. [See also Docs. 158, 160, 165, 169, 177, 187, & 192.]

169. (U) Ltr., 5 Aug. 1948
Fr: P&W
To: Power Plant Br., Proc. Div.
(File: Contr. Files)

P&W in its monthly progress report on the development VDT engines announced the completion of the official 150-hour qualification test on 8 Aug. 1948. The only repair required during the test was the replacement of one low-tension ignition condenser. The engine had been equipped with the new cylinders that promised improved cooling. On another of the testing engines, the company had completed the initial phase of a cooling program on the basis of the deep-finned cylinders, and had compiled estimated cooling curves Nos. C-21 and C-23 based on the sea-level

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calibration of the engine. P&W recommended that Curve C-21 be used for performance calculations but that the estimates on C-23 should be regarded as preliminary information, only, until more experience had been gained in the use of the cylinder components at the increased temperature limits. On the single-nacelle flight test program, engine performance had proved satisfactory at an altitude of 38,500 ft. [See also Doc. 238B.]

170. (C) Ltr., 10 Aug. 1948
Fr: CVAC, Ft. Worth, Tex.
To: Bomb. Br., Proc. Div.
(File: Contr. Files)

CVAC presented revised airplane delivery estimates as a result of the cancellation of the VDT program and of critical shortages of GFP for the GEM program. The contractor proposed to resume the 4-per-month schedule in Dec. 1948 and to continue at that rate if GFP were on schedule. At this rate, the 95 B-36's on contract would be completed in Feb. 1950.

171. (U) R&R-1, 11 Aug. 1948
Fr: Col. V. G. Huston, Chief, Aero. Equip. Sect., Proc. Div.
To: Col. W. T. Rison, Deputy Chief, Proc. Div.
With: R&R-2, 31 Aug. 1948
(File: Contr. Files)

PR 56256, obligating funds for instrumentation of six prototype R-4360-43 engines, was being delayed because FY 1949 Project 110-G funds were not yet available. The delay threatened to retard both the B-50C flight test program and the R-4360-43 engine program. Proc. Div. had requested release of the funds for its total requirements plus $11,000,000 for day-to-day operations. Inasmuch as the release was expected within the next few days, Proc. Div. authorized issuance of go-ahead to the contractor. [See also Docs. 157, 180, & 198.]

172. (C) Ltr., 16 Aug. 1948
Fr: Lt. Col. B. H. Warren, Chief, Ft. Worth AFPFO
To: Lt. Col. T. P. Gerrity, Bomb. Br., Proc. Div.
(File: Contr. Files)

Chief of the Ft. Worth AFPFO commented upon CVAC's proposed production schedule of 10 Aug. 1948 [Doc. 170]. He suggested that it would be "entirely possible" for CVAC to complete the B-36 program by Nov. 1949, and offered an alternate schedule whereby the company would accelerate production to five airplanes per month beginning in June 1949, and to six per month beginning in Sept. 1949, thereby completing the

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contract in Nov. 1949. He predicated the accelerated schedule (1) on timely receipt of the required GFP and (2) on Northrop's delivery of B-49 engineering data to CVAC in Jan. 1949. If these conditions were met, then CVAC could complete the B-36 in Nov. 1949 and manufacture the first B-49 by Jan. 1950 as scheduled.

173. (U) Ltr., 18 Aug. 1948
Fr: P&W
To: Power Plant Br., Proc. Div.
(File: Contr. Files)

P&W proposed a no-cost change order to the development contract W33-038 ac-18653 whereby the R-4360-51 engine would be rebuilt as an R-4360-43. The company proposed using the converted engine as a modernized replacement for the R-4360-43 engine then used in the single-nacelle flight test program. No qualification test was considered required, and the engine was to be delivered by 1 Nov. 1948. [See also Docs. 176, 181, & 182.]

173A. (U) Ltr., 18 Aug. 1948
Fr: Boeing Airplane Co., Seattle, Wash.
To: Bomb. Br., Proc. Div.
(File: Contr. Files)

Boeing had information from P&W that the take-off power of the R-4360-43 engine could be increased to 4,800 bhp and the rated power substantially increased. Boeing was preparing a study of the effect of the power increase on the airplane performance and comparing turbosupercharger requirements for the increased power. [See Docs. 140A & 197A.]

174. (R) Ltr., 19 Aug. 1948
Fr: Lt. Gen. H. A. Craig, Deputy C/S, Mat., USAF
To: CG, AMC
(File: Hist. Office)

The B-36 contract was to be completed within the limits of funds then allocated to the project. Eighteen million dollars previously allotted for procurement of the components for the VDT engine installation in the B-36 was excluded from the funds currently allocated.

175. (U) Ltr., 31 Aug. 1948
Fr: Brig. Gen. H. A. Shepard, Chief, Proc. Div.
To: CVAC, Ft. Worth, Tex.
(File: Contr. Files)

Proc. Div. notified CVAC that the contract must be completed within the funds currently allotted to it, and asked for a monthly estimate of the amount of money required to complete the airplanes.

176. (U) Ltr., 31 Aug. 1948
Fr: Col. J. L. Zoeckler, Actg. Chief, Aero. Equip. Sect., Proc. Div.
To: USAF Inspr.-in-Charge, P&W
(File: Contr. Files)

A no-cost change order to the development contract, W33-038 ac-18653, was to be written covering conversion of the R-4360-51 engine to an R-4360-43 to be delivered 1 Nov. 1948. [See Docs. 173, 181, & 182.]

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177. (U) Ltr., 2 Sept. 1948
Fr: B. Jones, Actg. AF Inspr.-in-Charge, P&W
To: Power Plant Lab., Eng. Div.
(File: Contr. Files)

AF Inspr.-in-Charge reported satisfactory conclusion to official 150-hour qualification test of the R-4360-43. The test had not been run in strict accordance with the model specification, but the specification was to be revised to conform to the conditions of the test. Accessory pads had not been loaded in accordance with Power Plant Lab.'s recommendations on 14 July 1948. Complete record of the AF inspection was set forth in PWA Rpt. 745. [See also Docs. 168, 169, 179.]

178. (C) Ltr., 3 Sept. 1948
Fr: Col. J. W. Sessums, Actg. Dir. of R&D, Hq., USAF
To: CG, AMC
With: 1st Ind., 11 Oct. 1948
(File: CF-B)

AMC was to comment on performance data on the VDT engine as shown in Republic Aviation's performance study of the R-12 [also termed F-12] equipped with the C-4 model of the engine. The engine was tentatively rated at 4,800 h.p. for take-off, with an estimated sfc of 0.375#/hp/hr. for cruising at altitudes up to 45,000 ft. and had "reasonable cooling requirements." On 11 Oct. 1948, Eng. Div. reported that the R-12A, the production model, was equipped with a C-3 model of the R-4360-VDT engine and that the performance figures for the airplane in the RAND report were given for an altitude much lower than the limiting one. The division therefore proposed to revise the performance data to show, comparatively, the best possible performance with the C-3 and with the C-4 model of the engine. [See also Doc. 194.]

179. (U) Ltr., 3 Sept. 1948
Fr: P&W
To: Power Plant Br., Proc. Div.
(File: Contr. Files)

P&W reported progress on the engines under development. This included completion of the official 150-hour qualification test on the R-4360-43 and forwarding of the report on it, PWA Rpt. 745, as required by the contract. The flight-testing of the single-nacelle R-4360-43 installation was continuing at altitudes up to 38,500 ft. Improved airplane cowling around the entrance to the compressor had resulted in improved engine operation. The company had also initiated investigation of fuel consumption in connection with possible higher ratings of the engines by use of pistons with higher compression ratios.

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180. (U) TT, 7 Sept. 1948
Fr: P&W
To: Power Plant Br., Proc. Div.
(File: Contr. Files)

In accordance with the contracting officer's authorization, P&W was proceeding with the instrumentation of R-4360-43 engines under Contr. W33-038 ac-19032. [See Doc. 171.]

181. (U) R&R-1, 13 Sept. 1948
Fr: Maj. O. M. Scott, Actg. Chief, Power Plant Br., Proc. Div.
To: Legal Assistants, Aero. Equip. Sect., Proc. Div.
(File: Contr. Files)

Power Plant Branch, Aero. Equip. Sect., initiated a no-cost change order to Contr. W33-038 ac-18653 for the conversion of the R-4360-51 engine to an R-4360-43 engine to be delivered by 1 Nov. 1948 without the 150-hour qualification test. [See also Docs. 173 & 182.]

182. (U) Chg. O. 5, Contr. W33-038 ac-18653, Issued 14 Sept. 1948
(File: Contr. Files)

Conversion of an R-4360-39 engine to an R-4360-43 engine replaced the previous requirement for an R-4360-51 engine in Contr. W33-038 ac-18653. [See also Docs. 173 & 181.]

183. (C) Ltr., 23 Sept. 1948
Fr: Lt. Gen. H. A. Craig, Deputy C/S, Mat., USAF
To: CG, AMC
(File: CF-B)

Hq., USAF, directed AMC to procure 13 B-54A (B-50C) airplanes. [See also Docs. 147, 155, 201, & 227.]

184. (U) Ltr., 24 Sept. 1948
Fr: P&W
To: Power Plant Br., Proc. Div.
(File: Contr. Files)

P&W presented contract proposal for flight testing the propeller used with the VDT engine in the B-50 airplane. Company proposed to start the propeller flight test immediately following completion of the flight testing of the single-nacelle engine installation and expected to complete the propeller testing within a month after the first flight with the propeller. Both the B-50 airplane and the R-4360-VDT engine used for the engine flight testing were to be used for the propeller testing. P&W estimated the cost at $15,000 and asked for a change order to Contr. W33-038 ac-18653. [See also Doc. 197.]

185. (U) Ltr., 1 Oct. 1948
Fr: T. J. Fahnestock, Contr. Officer, Proc. Div.
To: Recipients of W33-038 ac-18653 & W33-038 ac-19032
(File: Contr. Files)

Part of the cost had been covered by only "contract authorization" funds. [See Docs. 37 & 72.] Appropriated funds had been released for payment of these authorizations, and the allotment number, therefore, was assigned each contract.

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186. (U) Ltr., 5 Oct. 1948
Fr: P&W
To: Power Plant Br., Proc. Div.
(File: Contr. Files)

P&W reported progress in development of the VDT engines. The R-4360-51 engine had been rebuilt as an R-4360-43 and had been used as a replacement engine in the single-nacelle installation for the flight-test work. Forty-four hours of the 50-hour flight testing program had been completed. The engine pulled from the test airplane was to be modernized as soon as parts were available. The first engine delivered for installation in the B-50 had been modernized, calibrated, instrumented, and was being prepared for shipment to Rohr Aircraft. [See also Doc. 191.]

187. (U) Progress Rpt. No. 7, 5 Oct. 1948
(File: Contr. Files)

Proc. Div. buyer of R-4360 engines reviewed progress made by P&W from Aug. to Oct. 1948 in the development of the R-4360-43. The 150-hour model test had been completed and the engine found to be in very good condition. However, the test had been run without the flight propeller, boost controls, generator gearboxes, and engine-driven aircraft accessories, although P&W had loaded the accessory drives as closely as possible to the torque values listed in the engine specification. Therefore, another qualification test was planned at a later date when these associated flight components would be available. Thirty-four hours of the 50-hour flight test program had been completed, in which operation at altitudes up to 38,500 ft. had been investigated. Modification of the airplane cowling to improve the compressor entrance had resulted in improved engine operation. P&W was researching the possibility of developing higher ratings for the engine by using pistons with higher compression ratios. The company's preliminary calibrations indicated that it might be possible to achieve an sfc of 0.37 in the rerated engines.

188. (U) TT, 7 Oct. 1948
Fr: Lt. Col. J. L. Zoeckler, Actg. Chief, Aero. Equip. Sect., Proc. Div.
To: P&W
(File: Contr. Files)

Proc. Div. asked P&W to allow Curtiss Propeller to conduct a propeller stress survey on an R-4360-43 mounted in a P&W test stand. P&W had planned to conduct the survey during the next 150-hour qualification test, but it seemed likely

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that the qualification test would be delayed to the extent that it would retard the propeller production program, which, in turn, might seriously delay the airplane program. [See also Doc. 197.]

189. (U) Ltr., 8 Oct. 1948
Fr: P&W
To: CG, AMC
(File: Contr. Files)

On 10 Apr. 1948, AMC had issued Chg. O. 3 to Contr. W33-038 ac-18653 to cover P&W's manufacturing of a cooling fan drive for the R-4360-51 engine. Before P&W executed the change order, USAF canceled the R-4360-51 program [same as the B-36C program]. The company therefore returned all copies of the change order unaccepted. [See also Docs. 141 & 195.]

190. (U) Ltr., 11 Oct. 1948
Fr: Col. R. J. Minty, Chief, Power Plant Lab., Eng. Div.
To: P&W
(File: CF-B)

Power Plant Lab. requested the control system for the R-4360-43 be the subject of a B-50 co-ordination conference at P&W on 18 Oct. 1948. The proposed Eclipse control system was one of the items on the agenda.

191. (U) Progress Rpt. No. 8, 12 Oct. 1948
(File: Contr. Files)

Proc. Div. buyer disseminated the information in P&W's progress report of 5 Oct. 1948 [Doc. 186]. However, the engine that P&W had indicated would be shipped to Rohr Airc. was to be turned over to the AMC Prop. Lab. for propeller test work.

192. (U) Ltr., 13 Oct. 1948
Fr: Lt. Col. J. L. Zoeckler, Actg. Chief, Aero. Equip. Sect., Proc. Div.
To: P&W
(File: Contr. Files)

AMC had reviewed P&W Rpt. PWA-745 on the 150-hour qualification test of the R-4360-43 engine and found the information in agreement with the findings of the AMC personnel who inspected the engine after the test. AMC considered the results of the test generally satisfactory, but listed from the report a number of unsatisfactory items and conditions and asked P&W to demonstrate improvement on these in the next 150-hour qualification test. [See also Docs. 168, 177, & 206.]

193. (U) Chg. O. 1, Contr. W33-038 ac-19032, Issued 14 Oct. 1948
(File: Contr. Files)

Contract for the eight prototype R-4360-43 engines was amended to call for engines in accordance with the latest revision of the P&W modal specification, A-7065-E, except

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that three of them were to be furnished with low-tension ignition systems.

194. (C) Ltr., 21 Oct. 1948
Fr: Col. A. T. Culbertson, Actg. Chief, Airc. Proj. Sect., Eng. Div.
To: Deputy C/S, Mat., USAF
(File: CF-B)

Eng. Div. forwarded performance study of R-12A airplane equipped with the C-4 model of the R-4360-VDT engine that Hq., USAF, requested on 3 Sept. 1948 [Doc. 178]. Previously submitted data on the airplane equipped with the C-3 model of the engine had been corrected to show performance at maximum altitude. Comparison of the revised characteristics of the airplane equipped with the C-3 model with the estimated performance of the airplane equipped with the C-4 model indicated several improvements possible with the C-4 model of the engine. The combat range could be increased about 13.5 per cent and the average speed about 4 per cent. The maximum speed could be attained at an altitude of 40,000 ft. rather than at 36,500 ft.

195. (U) R&R-1, 21 Oct. 1948
Fr: Lt. Col. J. L. Zoeckler, Actg. Chief, Aero. Equip. Sect., Proc. Div.
To: Servs. Sect., Proc. Div.
(File: Contr. Files)

Chg. O. 3 to Contr. W33-038 ac-18653 was canceled.

196. (U) Ltr., 25 Oct. 1948
Fr: P&W
To: Power Plant Br., Proc. Div.
(File: Contr. Files)

P&W presented a contract proposal for development of an advanced R-4360-VDT engine. Company considered development of the first R-4360-VDT engine and control system [under Contr. W33-038 ac-18653] as essentially complete. Ceiling price on that contract was $6,330,612, but the cost already exceeded $6,500,000 and P&W expected that it would exceed $7,500,000 before the end of the year. [P&W was responsible for costs in excess of the ceiling price.] Company pointed out that the official qualification test had been completed approximately five months ahead of schedule and that the first of the eight prototype engines [on Contr. W33-038 ac-19032] would be delivered approximately four months ahead of schedule. On the basis of results of

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this first phase of the development, P&W summarized in its PWA Rpt. TR-61 the performance estimates of the proposed advanced type. These indicated increased power output with decreased fuel consumption. Performance of the advanced type was predicated on the use of a G. E. CH4-6 turbosupercharger. P&W furnished as part of the proposal its model specification, A-7072, for the proposed engine. Quoted cost was $3,942,000. For this sum P&W would convert two Government-owned R-4360-43 engines to the new type within six months of the date of the contract. Within a year following the date of the contract, the company would present a report of a satisfactory 150-hour qualification test of the engine and a report of a 50-hour development bench test of an Eclipse power control. In addition, the company would prepare detailed monthly progress reports on the work. Proposal excluded flight testing. For this work, if added to the contract, P&W quoted $3,000 per hour of flight time. /See also Docs. 124, 126, 203, & 207./

197. (U) R&R-1, 25 Oct. 1948
Fr: Lt. Col. J. R. Martin, Chief, Res. & Mat. Sect., Proc. Div.
To: Proc. Committee, Proc. Div.
(File: Contr. Files)

Res. & Mat. Sect., Proc. Div., requested authority to negotiate a contract for the propeller flight vibration stress survey of a Curtiss propeller on the R-4360-43 (VDT) engine undergoing flight testing at P&W's plant. FY 1949 Project 611 /R&D/ funds were to be obligated for the estimated cost of $15,000. /See Doc. 188./

197A. (U) Ltr., 26 Oct. 1948
Fr: Boeing Airplane Co., Seattle, Wash.
To: Bomb. Br., Proc. Div.
(File: Contr. Files)

Boeing presented results of its studies on the effect the proposed increase in the power output of the VDT engines would have on B-54 performance. Boeing agreed with AMC that increased power for take-off was very desirable. The company, however, believed that other improvements were more important than increasing the altitude for higher powers. Specifically, Boeing believed B-54 operation could be improved by further development of the engine and turbosupercharger combination to obtain

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better engine power response, reduction in the specific fuel consumption, and reduction of the requirements for external heating of the air passing to the carburetors. [See also Docs. 140A & 173A.]

198. (U) Chg. O. 2, Contr. W33-038 ac-19032, Issued 29 Oct. 1948
(File: Contr. Files)

Instrumentation was to be provided for six of the eight engines on contract at a total increase in contract price of $8,490.

199. (U) R&R-1, 1 Nov. 1948
Fr: Lt. Col. J. L. Zoeckler, Actg. Chief, Aero. Equip. Sect., Proc. Div.
To: Power Plant Lab., Eng. Div.
(File: Contr. Files)

Aero. Equip. Sect. forwarded P&W's proposal of 25 Oct. 1948 [Doc. 196] for further development of the R-4360-VDT engines and indicated it had been sent to the Director of Proc. & Indust. Plan. for approval.

200. (U) Ltr., 2 Nov. 1948
Fr: P&W
To: Power Plant Br., Proc. Div.
(File: Contr. Files)

P&W reported progress on development of the VDT engines. Forty-four hours of the 50-hour flight-test program had been completed. Difficulties with the CHM-2 turbosupercharger had delayed the program. Status of the three Government-owned engines on the contract was as follows: one was undergoing flight testing; one, completely modernized, had been shipped to Wright Field on 21 Oct. 1948; and the third was being modernized as a replacement for the engine undergoing flight test. In addition, P&W had performed development testing to obtain estimates of performance forwarded in its proposal for further development of the engine. [Doc. 196]. The company now proposed to deliver four of the prototype R-4360-43 engines by 1 Jan. 1949 and the other four by 31 Mar. 1949, and expected to ship the first of them in about a week. [See also Docs. 112, 209, 215, 218, 225, 226, & 231.]

201. (C) Ltr., 2 Nov. 1948
Fr: Gen. H. A. Craig, Deputy C/S, Mat., USAF
To: CG, AMC
(File: CF-B)

Hq., USAF, directed AMC to procure 6 RB-54A photo reconnaissance airplanes and 7 B-54A bombers in lieu of the 13 B-54A airplanes previously directed. [See also Docs. 183 & 201.]

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202. (U) R&R-1, 3 Nov. 1948
Fr: Lt. Col. J. L. Zoeckler, Actg. Chief, Aero. Equip. Sect., Proc. Div.
To: Servs. Sect., Proc. Div.
(File: Contr. Files)

Aero. Equip. Sect. canceled the purchase request for the 2-speed fan drive for the R-4360-51 engine.

203. (U) R&R-1, 3 Nov. 1948
Fr: Lt. Col. J. L. Zoeckler, Actg. Chief, Aero. Equip. Sect., Proc. Div.
To: Power Plant Lab., Eng. Div.
With: Cmt. 2, 2 Feb. 1949
Cmt. 3, 3 Feb. 1949
(File: Contr. Files)

Aero. Equip. Sect. asked Power Plant Lab. to comment on P&W's proposal for further development of the R-4360-VDT engine. Power Plant Lab. believed further development of the engine should be based on a specific requirement for the improved engine in an airplane, that the engine was best suited to heavy bombers and transports, but that decision regarding further development should come from higher authority at AMC or Hq., USAF. Aero. Equip. Sect. then referred the foregoing to Airc. & Missiles Sect., with inquiry as to what action that section intended to take on P&W's proposal. [See also Docs. 196 & 207.]

204. (U) Ltr., 4 Nov. 1948
Fr: P&W
To: Res. & Mat. Sect., Proc. Div.
(File: Contr. Files)

P&W furnished breakdown of the $15,000 quoted for flight vibration test of a Curtiss C645S-A propeller with the R-4360-VDT engine installation in a B-50 airplane, and proposed a substitute version for the copyright provisions in the contract form.

205. (U) Ltr., 5 Nov. 1948
Fr: P&W
To: Power Plant Br., Proc. Div.
(File: Contr. Files)

P&W reported in its PWA Rpt. 752 the results of a 50-hour qualification test on an Eclipse automatic boost control for the R-4360-43 engine.

206. (U) Ltr., 8 Nov. 1948
Fr: P&W
To: Power Plant Br., Proc. Div.
(File: Contr. Files)

P&W replied to AMC's comments 13 Oct. 1948 [Doc. 192] on the 150-hour qualification test of the R-4360-43 as reported in PWA Rpt. 745. The company indicated that steps had been taken to improve the condition of the parts wherever necessary and listed the engineering changes initiated for each item.

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207. (U) R&R-1, 8 Nov. 1948
Fr: Col. R. J. Minty, Chief
Power Plant Lab., Eng. Div.
To: Maj. Gen. F. O. Carroll,
Dir., R&D
With: Cmt. 2, 26 Nov. 1948
Cmt. 3, 30 Nov. 1948
(File: CF-B)

The Power Plant Lab., Dir., R&D, and Dir., Proc. & Indust. Plan., reviewed P&W's proposal for further development of VDT engines, 25 Oct. 1948 [Doc. 196]. Power Plant Lab. noted the development required for the associated equipment and probable costs of the engine development plus flight testing and development of the supercharger, propeller, cooling fans, and the airplane installation. The Dir., R&D, believed the VDT engine was exceeding expectations and recommended that a general improvement program be initiated out of Project 110 funds because the engine was likely to be the principal power plant for large transports for several years to come. He believed R&D funds should be reserved for development of turbojet engines. The Dir., Proc. & Indust. Plan., concurred, provided the review of the engine program then in progress so indicated.

208. (U) Ext. fr. Supp. Agree. 6,
Contr. W33-038 ac-18653,
awarded 24 Nov. 1948
(File: Contr. Files)

P&W contracted to furnish five hours' flight testing of the R-4360-43 engine to accomplish a flight vibration stress survey of a Curtiss C-645S-A propeller. The cost was $15,000, and the work was to be completed no later than 12 Feb. 1949.

209. (U) Ltr., 1 Dec. 1948
Fr: P&W
To: Power Plant Br., Proc. Div.
(File: Contr. Files)

P&W reported completion of 47 hours of the 50-hour flight test program on the R-4360-43 engine. As a result of the testing, two changes required in the modification of the airplane for the installation had become evident and had been reported to Boeing for incorporation in the prototype and production airplanes: (1) a change from magnesium to aluminum in the compressor housing; (2) opening the exit area of the nacelle to provide better cooling for the turbo. P&W had completed development of the electronic power control called for by the contract and forwarded its report on the development work accomplished by G. E., the subcontractor. P&W noted that both prototype and production designs of the system had been established and that parts had already been released for manufacture. The first two of the eight

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prototype engines had been delivered on 19 and 30 Nov. 1948.

210. (U) Ltr., 6 Dec. 1948
Fr: Col. M. J. Coffield, Chief, Aero. Equip. Sect., Proc. Div.
To: BuAer Rep., P&W
(File: Contr. Files)

Roughness already noted in the B-50 airplane was expected to be worse in the B-54 unless softer vibration isolators could be obtained. Boeing was attempting to solve the problem by changing propellers, a procedure not satisfactory to AMC. P&W had agreed to design new engine parts for a mounting system that would make the use of the softer vibration isolators possible. AMC asked the Navy for information as to what progress P&W had made and when the program would be completed.

211. (U) Ltr., 16 Dec. 1948
Fr: P&W
To: Res. & Mat. Sect., Proc. Div.
(File: Contr. Files)

P&W accepted the notice of award of Supp. Agree. 6 to Contr. W33-038 ac-18653 for the propeller flight vibration test, and requested that the bailment contract be extended to cover both the B-50 airplane and the special propeller for the period of the test work.

212. (U) Ltr., 17 Dec. 1948
Fr: Chief, BuAer, Wash.
To: Chief, Bu. Supplies & Accounts, Wash.
(File: Contr. Files)

BuAer reviewed the contractual history of the prototype and production R-4360-51 engines and accounted for the funds obligated. AMC had requested that 221 R-4360-51 engines replace 330 of the 633 R-4360-41 engines on the Navy's production contract with P&W, a no-cost transaction. The transaction was accomplished by informal correspondence and the Navy's advance notice to P&W of a change to its Contr. NOa(s) 8333, 3 Feb. 1948 [Doc. 92]. AMC confirmed it by Chg. O. 42 to AMC P. O. (535) 43-22066-P with the Navy, 30 Apr. 1948. Revision in unit prices of the engine was covered by Chg. O. 43 to the same purchase order, 24 June 1948. Before BuAer could formalize these into amendments to its Contr. NOa(s) 8333 with P&W, AMC advised that the R-4360-51 program would not be carried through and that the 221 R-4360-51 engines should be changed to 326 R-4360-41's, thus reducing the former total of R-4360-41's on contract from 633 to 629. BuAer accomplished Amend. 32 to Contr. NOa(s) 8333 covering this change. A net credit

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of $474,245.53 resulted, of which $215,541.36 applied to the four spare engines canceled in the change-over from R-4360-51's to -41's. The remainder of $258,704.17 resulted from adjustment of the spare parts required. BuAer expected termination costs to be approximately $200,000, and, therefore, recommended that funds under the AMC purchase order be held until the total amount of these charges had been obtained from P&W.

213. (U) R&R-1, 21 Dec. 1948
Fr: Col. R. J. Minty, Chief, Power Plant Lab., Eng. Div.
To: R. A. Bittner, Power Plant Br., Proc. Div.
With: Cmt. 2, 23 Dec. 1948
Cmt. 3, 5 Jan. 1949
(File: Contr. Files)

Power Plant Lab. needed an R-4360-43 engine control in order to monitor the engineering of the control, to establish testing methods, and to determine requirements for testing equipment. A contract quotation from P&W on 20 Oct. 1948 was unacceptable as to delivery date. The laboratory had therefore contacted G. E., P&W's subcontractor for the control, and had at first received promise of earlier deliveries but later was advised that no VDT power controls could be delivered before August 1949. The laboratory therefore requested Power Plant Br. to allocate one of the prototype controls to the laboratory. Power Plant Br. presented the situation to P&W on 23 Dec. 1948. [See also Doc. 214.]

214. (U) Ltr., 31 Dec. 1948
Fr: P&W
To: Power Plant Br., Proc. Div.
(File: Contr. Files)

P&W took exception to Power Plant Branch's statement of 23 Dec. 1948 that it would be impossible for the company to furnish two boost control systems prior to August 1949, noting that its proposal of 20 Oct. 1948 still obtained, that is, delivery of two within six months after contract date. The company suggested that AMC allocate to Power Plant Lab. one of the eight boost control systems being manufactured and delivered with the prototype engines under Contr. W33-038 ac-19032. [See also Doc. 213.]

215. (R) Ltr., 31 Dec. 1948
Fr: P&W
To: Power Plant Br., Proc. Div.
(File: Contr. Files)

The one month's flight vibration testing of a Curtiss propeller was the only work remaining to be done on Contr. W33-038 ac-18653. P&W therefore summarized its performance under the contract as follows:

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	Contr. Del. Dates	Actual Del. Dates
Conversion of two R-4360-39 engines into R-4360-43's	12/31/47	10/29/47 and 12/23/47
Conversion of one R-4360-39 to an R-4360-51, and, by contr. amend., later to an R-4360-43	11/1/48	9/10/48
PWA Rpt. 745 on a satisfactory 150-hour qualification test of the R-4360-43	12/31/48	9/1/48
Supp. reports:		
PWA-754 on the fuel injection system	None	10/13/48
PWA-752 on the boost control regulator	None	11/5/48
Rpt. PWA-EFT-101 on a minimum of 50 hrs. of flight testing of the R-4360-43 in a B-50 airplane	5/26/49	12/31/48
16 monthly progress reports		

In addition, the company had performed various performance analyses as reported in PWA Rpts. TR-52R, TR-56, TR-57, and TR-61. P&W forwarded at this time flight test report, PWA-EFT-101, and a revision of PWA Rpt. TR-52R showing the estimated performance of the VDT engine with a CH4-2 turbosupercharger. The third of the eight prototype engines had been delivered on 30 Dec. 1948. [See also Doc. 218.]

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216. (U) Ltr., 24 Jan. 1949
Fr: P&W
To: Servs. Sect., Proc. Div.
(File: Contr. Files)

P&W withheld execution of Supp. Agree. 6 to Contr. W33-038 ac-18653 until a number of revisions were made with reference to the nature of the work to be performed, the delivery date, data and equipment to be furnished by Curtiss Propeller, and the termination article. P&W was continuing work on the propeller flight testing under the notice of award. [See also Docs. 208 & 211.]

217. (U) Ltr., 25 Jan. 1949
Fr: P&W
To: Power Plant Br., Proc. Div.
(File: Contr. Files)

At a B-54 coordination conference on 19 and 20 Jan. 1949, Boeing, P&W, G. E., and AMC had agreed on the desirability of continuing P&W's flight test work on the single-nacelle installation of an R-4360-43 engine. In general, they believed continued flight testing would demonstrate and eliminate some of the difficulties that otherwise would not be defined until the over-all flight testing of the YB-50C airplane. Postponing solution of these difficulties until that time would delay the B-54 production program. In accordance with a request made by AMC representatives at the conference, P&W presented a contract proposal for another 150-hour flight test program. The company quoted a contract price of $450,000 as against an accompanying cost breakdown totaling $507,302, including 10 per cent profit. The purpose of the program was to investigate the performance of the R-4360-43 VDT installation, including the engine, turbosupercharger, controls, propeller, and airplane nacelle, with a view to demonstrating the improvements that should be made in the production articles. The test results would benefit AMC, Boeing, G. E., and Curtiss Propeller, as well as P&W. P&W proposed to complete the testing in 12 months from the date of the contract, to present the results in a report within 13 months from the same date, and to prepare monthly progress reports on the work. [See also Docs. 220, 221, & 222.]

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217A. (U) R&R-1, 31 Jan. 1949
Fr: Col. R. J. Minty, Chief, Power Plant Lab., Eng. Div.
To: Power Plant Br., Proc. Div.
(File: Contr. Files)

At the B-54 co-ordination conference on 20 Jan. 1949, Power Plant Lab. representatives had learned that Boeing would not be using the prototype R-4360-43 engine controls until August 1949 and that the controls for the spare engines would not be used until even later. Power Plant Lab., therefore, asked Power Plant Br. to obtain two of them and one amplifier for laboratory test and evaluation work until Boeing needed them. The laboratory further asked for verification of the understanding that funds would be provided for testing only the control system developed by G. E. with the assistance of Eclipse-Pioneer. The laboratory recommended that several of the available control systems be tested and suggested those manufactured by Rochester Products, Simmonds Accessories, and Eclipse-Pioneer. In reply, the Power Plant Br. stated that one prototype R-4360-43 engine would be made available to the Power Plant Lab. for test work and indicated that the other seven would be distributed as follows: four to Boeing for installation in the prototype B-50C airplane, one to Boeing for the ground test rig, and two for installation in a special B-50 for a service life test of the engine. Power Plant Br. suggested a conference for the purpose of planning for the equipment required for AMC laboratory testing.

218. (U) Ltr., 2 Feb. 1949
Fr: P&W
To: Power Plant Br., Proc. Div.
(File: Contr. Files)

P&W made its final progress report on the development work under Contr. W33-038 ac-18653, announcing completion of the propeller flight vibration testing. The fourth of the eight prototype R-4360-43 engines had been delivered on 13 Jan. 1949. [See also Doc. 215.]

218A. (U) Ltr., 3 Feb. 1948 [1949]
Fr: BuAer, Wash.
To: P&W
(File: Contr. Files)

BuAer recited the informal advance notices to P&W and P&W's acceptances of the changes to Contr. NOa(s) 8333 covering the shift from R-4360-41 engines to R-4360-51's and from R-4360-51's back again to R-4360-41's; also, P&W's performance of the work as called

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for and P&W's notification to the Navy that termination charges would be involved in the contract changes outlined. [See also Doc. 212.]

219. (U) Chg. 3 to M.I.P.R. (33-038) R-4360-43, Issued 9 Feb. 1949 (File: Contr. Files)

The unit price of the R-4360-43 engine was increased from $72,475 to $92,325, with corresponding increases in the prices of other articles of work. The total estimated cost of the production engines was increased from $16,016,975 to $20,403,825, a net increase of $4,386,850.

219A. (U) Ltr., 15 Feb. 1949
Fr: Boeing Airplane Co., Seattle, Wash.
To: Bomb. Br., Proc. Div.
(File: Contr. Files)

Boeing, AMC, and P&W had agreed to the elimination of water injection for the engine in the YB-50C. Boeing was going ahead with the removal of the system and quoted a total decrease in the contract price of $253.12, which Boeing requested be covered by a change order to the airplane contract. File note indicated that the contract was terminated before request was complied with.

220. (U) R&R-1, 4 Mar. 1949
Fr: J. E. Martin, Price Analyst, Proc. Div.
To: Power Plant Br., Proc. Div.
(File: Contr. Files)

The price analyst had reviewed P&W's cost breakdown for the additional 150-hour flight test program and asked for more information. Actual comparison of costs with those for similar tests said to have been made in the B-50 and B-36 was impossible, for, the analyst asserted, such tests had not been made. He asked for more detailed breakdown of the material costs and engineering salaries and wages, suggested that the contractor provide that any loss incurred would not be reflected in the engine costs, and recommended that a repricing article be incorporated in the contract. [See also Docs. 217, 221, & 222.]

221. (U) Ltr., 7 Mar. 1949
Fr: P&W
To: Power Plant Br., Proc. Div.
(File: Contr. Files)

In compliance with AMC's request made at a conference 10 Feb. 1949, P&W presented a more detailed contract proposal for the additional 150-hour flight test program. However, the revised proposal did not change any of the terms of the previous proposal, but only added the detailed

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information required for AMC contract writing. It was expected that the contractual instrument would be a supplemental agreement to Contr. W33-038 ac-19032. [See also Docs. 217, 200, & 222.]

222. (U) Ltr., 10 Mar. 1949
Fr: P&W
To: Power Plant Br., Proc. Div.
(File: Contr. Files)

P&W revised again its proposal for additional flight testing of the R-4360-43 engine to call for 95 hours instead of 150 hours of testing. The contract price was still at the same rate, namely $3,000 per hour, or $285,000 for the entire program. [See also Docs. 217, 220, 221, and 223.]

223. (U) Ltr., 18 Mar. 1949
Fr: P&W
To: Power Plant Br., Proc. Div.
(File: Contr. Files)

P&W furnished a more detailed breakdown of the costs quoted in its proposal of 10 Mar. 1949. [See also Docs. 217, 220-222, & 224.]

224. (U) R&R-1, 25 Mar. 1949
Fr: J. E. Martin, Price Analyst, Proc. Div.
To: Power Plant Br., Proc. Div.
(File: Contr. Files)

The price analyst reviewed P&W's bid of 18 Mar. 1949, found the material and engineering costs and overhead reasonable, and approved the quotation. [See also Docs. 217, 220-223, and 228.]

225. (U) Ltr., 25 Mar. 1949
Fr: P&W
To: Power Plant Br., Proc. Div.
(File: Contr. Files)

P&W reported that five of the eight prototype R-4360-43 engines and five of the boost control systems for them had been delivered by 10 Mar. 1949.

225A. (U) Messageform, 28 Mar. 1949
Fr: AFPR, Boeing Airplane Co.
To: Bomb Br., Proc. Div.
(File: Contr. Files)

P&W's change in the cooling requirements for the R-4360-43 engine necessitated modification of the engine cowling in Boeing's YB-50C airplane. The AFPR detailed the work being performed to accomplish the change, outlined the revisions to the contract and model specification that would be required, and requested authority to issue a CCN. Boeing estimated an increase of $8,750 in the price of the airplane. File note indicated that the contract was terminated before the requested action was taken.

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226. (U) Ltr., 1 Apr. 1949
Fr: USAF Inspr.-in-Charge, Hartford Area
To: Power Plant Lab., Eng. Div.
(File: Contr. Files)

USAF Inspr.-in-Charge indicated P&W shipped the sixth of the eight prototype R-4360-43's to Boeing on 31 Mar. 1949.

227. (C) Ltr., 5 Apr. 1949
Fr: Brig. Gen. A. A. Kessler, Dir., Proc. & Indust. Plan., Wash.
To: CG, AMC
(File: CF-B)

Hq., USAF, directed that procurement of B-54 airplanes be terminated. [See also Docs. 147, 155, 183, & 201.]

227A. (U) TTG, 6 Apr. 1949
Fr: Maj. J. E. Newkirk, Chief, Readj. Sect., Proc. Div.
To: BuAer, USN, Wash.
(File: Contr. Files)

Readj. Sect. terminated M.I.P.R. R48-6-N [for procurement of first 14 production R-4360-43 engines] with the Navy. [See also Docs. 61, 62A, 72, 76, 82, 86, 91, 112, 112A, & 227B.]

227B. (U) Message, 8 Apr. 1949
Fr: BuAer, USN, Wash.
To: P&W
(File: Contr. Files)

BuAer terminated its notice of award of Contr. NOa(s) 9511 for the first 14 production R-4360-43 engines with P&W. [See also Doc. 227A.]

228. (U) Message, 11 Apr. 1949
Fr: Col. P. W. Smith Proc. & Indust. Plan., Wash.
To: Power Plant Br., Proc. Div.
(File: Contr. Files)

Hq., USAF, requested more adequate substantiation of the 95-hour flight test program proposed by P&W, particularly as to the nature of the work to be performed. [See also Docs. 217A, 220, & 223.]

229. (U) Message, 12 Apr. 1949
Fr: Col. M. J. Coffield, Chief, Aero. Equip. Sect., Proc. Div.
To: Col. P. W. Smith, Proc. & Indust. Plan., Wash.
(File: Contr. Files)

The additional 95-hour flight test program on the R-4360-43 engine was dropped because the B-54 airplane contract had been terminated. [See also Docs. 217, 220-222, & 228.]

229A. (U) Chg. T-4, M.I.P.R. (33-038) R-49-5-N, Issued 15 Apr. 1949
(File: Contr. Files)

Readj. Sect. terminated M.I.P.R. R-49-5-N [for production R-4360-43 engines] with the Navy. [See also Docs. 152A, 152B, & 219A.]

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230. (C) 1st Ind., 21 Apr. 1949
Fr: Maj. Gen. K. B. Wolfe, Dir., Proc. & Indust. Plan.
To: Dir., Proc. & Indust. Plan., Wash.
(File: CF-B)

The Dir., Proc. and Indust. Plan., AMC, reviewed the estimated termination costs of the B-54 program, exclusive of the YB-50C airplane. The total cost was estimated at $32,000,000. Included in prior years' funds obligated for the YB-50C was the $1,496,000 for the [prototype] engines, and in those for the B-54 the $1,680,000 for [the first 14] production engines. [See also Docs. 61, 62A, & 72.]

231. (U) Ltr., 29 Apr. 1949
Fr: USAF Inspr.-in-Charge, Hartford Area
To: Power Plant Lab., Eng. Div.
(File: Contr. Files)

The Inspr.-in-Charge reported P&W had shipped the seventh of the eight prototype engines to Boeing and that the eighth was in process of inspection. P&W was negotiating with AMC for adoption of R-4360-"C" engines for the B-36 in view of the termination of the B-54 airplane program.

232. (U) Cy ltr., 2 May 1949
Fr: G. W. Martin, Contr. Office, Boston AFPFO
To: Aero. Equip. Sect., Proc. Div.
(File: Contr. Files)

P&W completed Contr. W33-038 ac-18653 at the end of Apr. 1949. Boston AFPFO forwarded the company's cost statement for the work performed. [See also Doc. 234.]

233. (C) Ltr., 6 May 1949
Fr: Brig. Gen. A. A. Kessler, Jr., Dir., Proc. & Indust. Plan., Wash.
To: CG, AMC
(File: CF-B)

Hq., USAF, directed AMC to procure 36 B-36 airplanes with jet pods and K-1 bombing systems. The president had approved the release of $177,021,490 from Supplemental FY 1948 funds for the procurement. [See Doc. 235.]

234. (U) Ltr., 13 May 1949
Fr: Col. M. J. Coffield, Chief, Aero. Equip. Proc. Div.
To: Boston AFPFO
(File: Contr. Files)

Aero. Equip. Sect. took action to have Contr. W33-038 ac-18653 audited.

235. (C) Message, 6 June 1949
Fr: Maj. Gen. K. B. Wolfe, Dir., Proc. & Indust. Plan.
To: Deputy C/S, Mat., USAF
(File: CF-B)

The Dir., Proc. & Indust. Plan., AMC, requested authority to procure engines, propellers, turbosuperchargers, and other GFP for installation of advanced R-4360 engines in the 36 B-36 airplanes authorized by Proc. Directive 49-52, and to modify the

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airframe accordingly. The proposed procurement would stop the mounting termination costs resulting from the cancellations of GFP for the B-54 and had the concurrence of the Under Secretary of the Air Force. [See also Docs. 236, 237, & 238.]

236. (C) Message, 8 June 1949
Fr: Deputy C/S, Mat., USAF
To: Dir., Proc. & Indust. Plan.
(File: CF-B)

Hq., USAF, asked AMC to clarify its proposed procurement of advanced R-4360 engines, particularly as to whether or not installation of them was to be considered only after development showed marked improvement in the engines. [See also Docs. 235, 237, & 238.]

237. (C) Message, 8 June 1949
Fr: Maj. Gen. K. B. Wolfe, Dir., Proc. & Indust. Plan.
To: Deputy C/S, Mat., USAF
(File: CF-B)

AMC reiterated the request for authority to procure R-4360-C engines with 4300 hp rating and the associated turbosuperchargers and propellers. Materials left over from the same items of GFP for the B-54 airplanes would thus be utilized, and approximately 80 per cent of the cancellation charges for these could be salvaged. Development of the engine for later application in the B-36, C-124, C-97, or C-119 airplanes would be assured. [See also Docs. 235 & 236.]

238. (C) Message, 10 June 1949
Fr: Deputy C/S, Mat., USAF.
To: CG, AMC
(File: CF-B)

Hq., USAF, approved in principle AMC's proposed development of the R-4360 engine, but deferred final approval pending AMC's presentation of a detailed plan covering both the engine and the associated components. [See also Docs. 235-237 & 238A.]

238A. (U) Ltr., 16 June 1949
Fr: Maj. Gen. F. H. Griswold Actg. Deputy C/S, Mat., USAF
To: CG, AMC
(File: CF-B)

As a result of review of AMC's plans for development and procurement of R-4360-C engines as presented by Maj. Gen. K. B. Wolfe on 15 June 1949, Hq., USAF, requested AMC to prepare formal recommendations. These were to include statements of the costs to the Government arising from cancellation of contracts for airframes, engines, and components associated with the proposed power plant, and an evaluation of both tractor and pusher versions of the engine. [See also Docs. 238C, 240-244.]

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238B. (S) R&R-1, 24 June 1949
Fr: Col. R. L. Wassell, Actg. Chief, Power Plant Lab., Eng. Div.
To: Maj. G. S. Curtis, Directorate of R&D
(File: CF-A)

Power Plant Lab. reviewed for the AMC Inspector General, P&W's reports on the cooling of the VDT engines as related to the B-36 airplane. The earliest estimate was dated 25 June 1947. Later, in Feb. 1948, after performing some test work on the early engine design, P&W revised the cooling requirements. These affected the performance estimates [of the B-36] adversely, as reported by CVAC on 14 Apr. 1948 [Doc. 128]. Subsequently, P&W developed a better cylinder, with improved cooling characteristics, and on 30 July 1948 reported improved performance estimates possible with it. These were near the original estimates for the engine. [See also Doc. 169.]

238C. (U) Ltr., 30 June 1949
Fr: Maj. Gen. K. B. Wolfe, Dir., Proc. & Indust. Plan.
To: Dir., R&D, USAF
(File: CF-B)

In compliance with the request from Hq., USAF, 16 June 1949, AMC presented a proposed program for development and procurement of prototype engines of the advanced "C" type of R-4360 engine for service testing in two B-36 and two C-124 airplanes. The total estimated cost was $12,286,000, of which $9,056,000 was assigned to the B-36 engines and $3,230,000 to the C-124 engines. AMC proposed that $3,310,000 be spent in the development of R-4360-55 and R-4360-57 engines and the turbosuperchargers to be compounded with them for use in the B-36, and that $5,746,000 be expended in procurement of the prototype R-4360-55's and turbosuperchargers for service testing in two B-36 airplanes. The B-36 engines were to be designed for pusher-propeller installation. Both types had an estimated military and take-off rating of 4300 hp. The R-4360-55 would have low-compression pistons and cylinders, whereas the R-4360-57 would have high-compression pistons and cylinders, thereby providing a lower sfc. Both would be operable at an altitude of 60,000 ft. The model designation for the engine proposed for the C-124 had not been assigned, but the engine would be a tractor type similar to the R-4360-20 used in the C-124 but would have the same power section

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and propeller reduction gearing as the proposed B-36 engines, and would be equipped with a 2-speed internal blower yet to be developed. The advantages to be gained from the proposed program were: (1) improved power ratings; (2) better altitude performance; (3) greater durability; (4) utilization of part of the inventories of components and engine parts accumulated for the terminated B-54 program; and (5) reduction of the termination costs of that program.

239. (S) Excerpt, Ltr., 1 July 1949
Fr: Maj. Gen. C. R. Cook,
Deputy to the CG, for Ops
To: Deputy C/S, Mat., USAF
(File: CF-A)

When AMC recommended re-evaluation of the VDT program for the B-36 on 21 April 1948 [Doc. 133], the Deputy C/S, Mat., asked the IG at Hq., USAF, to make a thorough investigation of the B-36 program. The scope of the investigation was later restricted to (1) the VDT (B-36C) program and (2) activities at Hq., USAF. Results of the investigation pertinent to the activities at Hq., AMC, were referred to that command in September 1948. On 1 July 1949 the IG, AMC, made an analysis of the Report of Inquiry by the IG, USAF, adding to the report additional documentary evidence and information concerning the activities of the Engineering and Procurement Divisions at Hq., AMC. In general, the analysis vindicated the technical and administrative supervision of the B-36C program exercised by these divisions at AMC. [The report is not reproduced in its entirety for the following reasons: (1) it is too voluminous; (2) most of the documentary evidence has been reproduced as documents in the case history; and (3) the completed report is available in the files both at Hq., AMC, and Hq., USAF. Extracts of documents from Hq., USAF, available only through the IG report have been reproduced in appropriate chronological sequence with the rest of the documents in the case history. Case history documents numbered as follows represent the records cited in the IG analysis: 10, 10A, 11, 12, 18, 23, 31, 36, 37C-40, 42, 53, 54, 73, 128, 133, 135, 139, 143, 145, 151A, and 238B.]

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240. (C) Ltr., 18 July 1949
Fr: Maj. Gen. K. B. Wolfe, Dir., Proc. & Indust. Plan.
To: Dir., R&D, USAF
(File: CF-B)

Dir. of Proc. & Indust. Plan. proposed a plan for procurement of R-4360-53 engines for installation in the last 36 B-36 airplanes on the supplemental FY 1948 program. $19,273,320 had already been budgeted for procurement of 285 R-4360-41 engines and spare parts through the BuAer, but no letter of intent had yet been written. AMC therefore proposed that this sum be applied to the procurement of the same number of R-4360-53 engines and spare parts, which would cost $28,265,400. Approximately $5,000,000 in termination costs on the R-4360-43 engines could be salvaged by the procurement of the R-4360-53 engines and the 40 prototype engines proposed on 30 June 1949. [Doc. 238C.] Additional funds required would have to be allocated from 1950 change order funds. The advantages to be gained were (1) improvement in wet take-off rating from 3500 hp. to 3800 hp.; (2) greater dependability and durability; (3) use of low tension ignition and fuel injection, which would eliminate backfiring experienced with the R-4360-41's.

241. (C) Ltr., 18 July 1949
Fr: Maj. Gen. K. B. Wolfe, Dir., Proc. & Indust. Plan.
To: Dir., Proc. & Indust. Plan., USAF
(File: CF-B)

The AMC Dir. of Proc. & Indust. Plan. justified a proposal for installation of R-4360-53 engines in lieu of R-4360-41's in production B-36 airplanes and a program for financing the installation of them in the last 36 B-36's on the supplemental FY 1948 program. The advantages cited were (1) increase in wet take-off power; (2) elimination of backfiring; (3) closer control of specific fuel consumption; (4) low-tension ignition; (5) an improved exhaust system to be furnished by P&W with each engine; (6) a more durable power section with a longer overhaul life. He estimated the over-all cost of the proposal at $31,251,680 inclusive of engine procurement, airframe modification, and procurement of new propeller hubs. Of this amount, $26,458,768 was estimated to be available through funds already allocated for B-36 engine procurement, unallocated funds, and reduction in B-54 termination costs. The

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net increase in cost for the change in production engines was therefore $4,458,768, to be obtained from FY 1950 change order funds. The whole program, however, was contingent on acceptance of the development and prototype program at an estimated cost of $12,268,000 as proposed on 30 June 1949. The total estimated increase in cost, therefore, of the combined development, prototype, and production program would be $17,060,912. [See also Docs. 238C, 240, and 242.]

242. (R) Message, 20 July 1949
Fr: Deputy C/S, Mat., USAF
To: CG, AMC
(File: CF-A)

Hq., USAF, approved the development, prototype, and production programs proposed by AMC 30 June 1949. [See also Docs. 238C, 240, and 241.]

243. (R) Excerpt, Minutes of AMC Conference, Hq., AMC, 27 July 1949
(File: Hist. Office)

The Dir. of Proc. & Indust. Plan. indicated that Hq., USAF, had approved the proposed programs for development and procurement of improved engines for the last 36 B-36 airplanes, but that action on the development and procurement of propellers, the airframe modifications, and installation of engines in two prototype airplanes would be delayed until Senior Officers' Board had reviewed the program. [See also Docs. 238C, 240, 241, & 242.]

244. (U) Ltr., 5 Aug. 1949
Fr: Maj. Gen. K. B. Wolfe, Dir., Proc. & Indust. Plan.
To: Deputy C/S, Mat., USAF
(File: CF-B)

The Proc. Div. buyer of R-4360-C engines recapitulated the proposed program and plans for putting it into effect. Action had been initiated with the Navy to procure 356 R-4360-53 engines and supporting spare parts and special tools at an estimated cost of $34,087,400 in lieu of 281 R-4360-41 engines on order. By agreement with the Navy, USAF would contract directly with P&W for the development and prototype R-4360-C engines. The greater part of the research and engineering work for these had been completed with the development of the R-4360-43 engines. The eight prototype R-4360-43's were to be returned to P&W for conversion to R-4360-55 engines. P&W promised to complete conversion of these engines within 6.5 mos. from date of contract, to deliver the remainder of the new prototype engines within 11.5 mos., and to make initial delivery of production engines within 12 mos. after date of the contract.

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EXHIBIT

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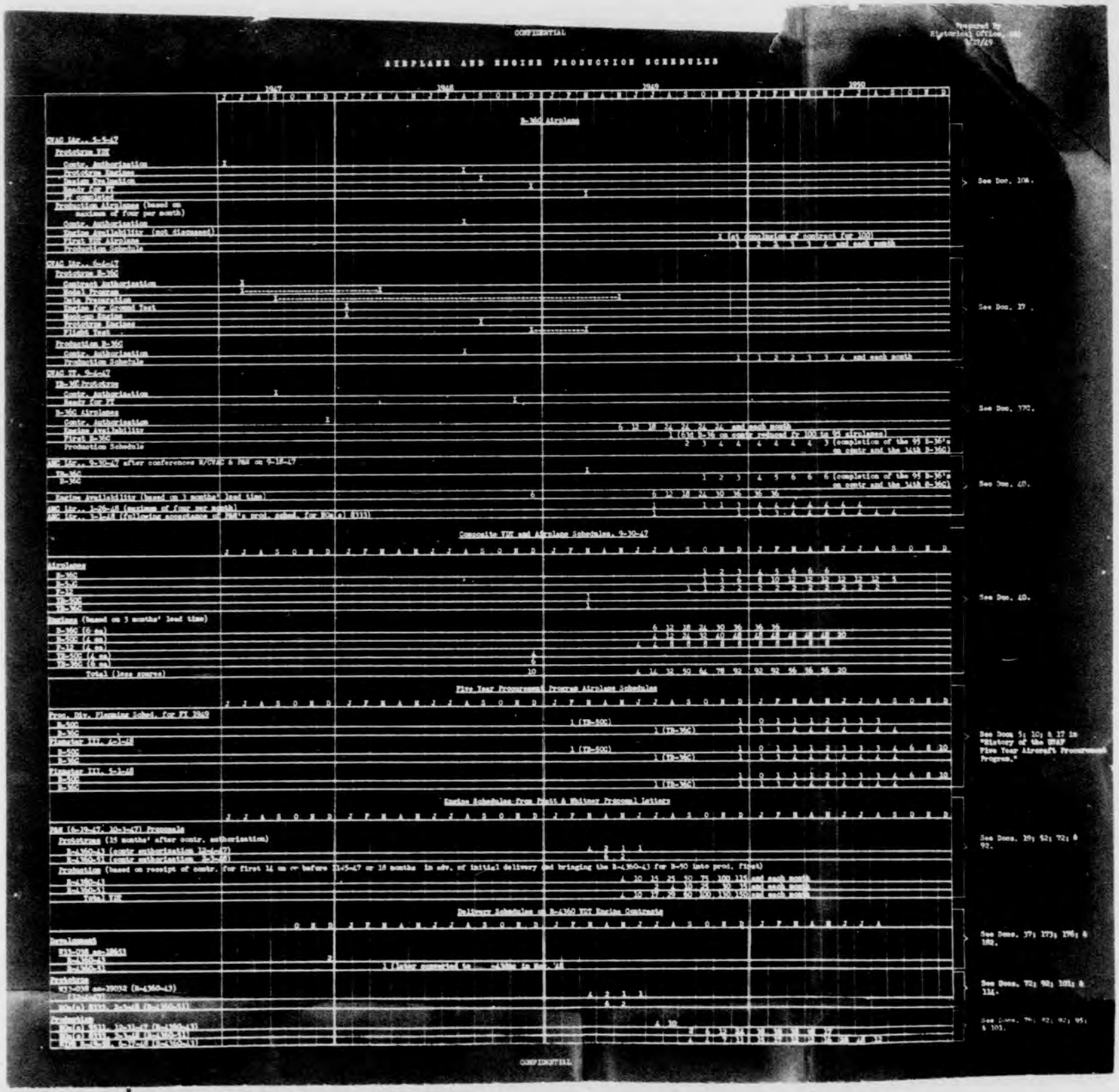

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[redacted]

TO THE ARCHIVES OF THE AAF HISTORICAL OFFICE
JAN 1950
FILE NO. 202.2-61 V-2

[redacted]

Auth: CG, AMC
Initials: MB &
Date: 12-22-49

CASE HISTORY OF THE VDT ENGINE

DOCUMENTS 1 - 100

APPENDIX A

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Classification canceled (changed to _____)
by authority of 7th AFLC (MCKH) 10 Jun 64
by C RY date 29 Jun 64

DOWNGRADED AT 12 YEAR INTERVALS
DECLASSIFIED AFTER 12 YEARS
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CASE HISTORY OF THE VDT ENGINE

SECRET
Auth: CC, AMC
Initials: MRS
Date: 12-22-49

Prepared by
Historical Office
Executive Secretariat
Air Materiel Command
Wright-Patterson Air Force Base
January 1950

By

Ethel M. DeHaven
Historian

Prepared under provisions of AF Regulation No. 210-3 as a part of the USAF Historical Program.

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70-92-V19

In reply refer to WPC:Pr - Eng.

PRATT & WHITNEY AIRCRAFT

DIVISION OF UNITED AIRCRAFT CORPORATION

EAST HARTFORD 8, CONNECTICUT, U.S.A.

CABLE ADDRESS "MIRCRAFT"

February 11, 1946

ac-14294

afo 421218

Commanding General
Air Technical Service Command
Wright Field, Dayton, Ohio

Subject: Development of R-4360-C Engine.

Reference: (a) AAF ATSC Letr. to UAC, TSENG (TSEPP-1), dated 20 December 1945.

Enclosures: (A) Six (6) copies of Pratt & Whitney Aircraft Specification No. A-7055, dated January 15, 1946.

1. In response to reference (a) and in accordance with informal discussions with Army Air Force Representatives, this Division proposes to continue the development of the R-4360 Series "C" single-stage engine with provision for exhaust gas turbo assist either in the form of auxiliary supercharging to obtain high altitude performance or in the form of direct connected auxiliary power units to increase the performance of the engine at all altitudes below the critical, or a combination of both.

2. This is a large undertaking in the field of aircraft engine development and will consume a relatively long period of time. First of all the engine itself must be developed to operate satisfactorily and pass the standard qualification test at the higher ratings proposed for it. Provision must then be made for the attachment of exhaust gas turbines either as components of or as accessories to the engine and development of the combination must be undertaken.

3. Based on past experience and barring unforseen difficulties, we believe we can complete the development of the basic engine and have it in production by December 31, 1948. We have no experience on which to base an estimate of time needed to complete the development of a compounded engine but we believe that it can be accomplished shortly thereafter provided, however, that we have the full cooperation of the General Electric Company in the design, development, and construction of turbo units suitable for the purpose and that fuels sufficiently high in anti-knock to suppress detonation will be available. We estimate that the total development cost of this work will be in the neighborhood of $16,000,000. We have not included the cost of developing turbo units by the General Electric Company for the reason that we are not clear as to how these costs should be handled contractually.

4. While the compound engine development is theoretically sound and while the major components have performed satisfactorily in service as independent units, they have not been tried in combination and we cannot be sure at this date that such a combination will prove to be of practical value. In any event, we are reasonably sure that the development will present for solution some very difficult problems resulting from high back pressures and temperatures and we are inclined to believe that before it proves a success, considerably more energy will be expended on the installation than on the power plant itself.

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5. With the knowledge that the Government cannot commit development funds so far into the future, we propose to divide this activity into time phases and we should like at this time to negotiate an experimental contract for the development activities in 1946. We believe that in the remainder of this year, we can complete the initial design and deliver a mock-up of the basic engine, produce three (3) experimental engines and with the aid of these engines, carry the development to the point of running a 50 hour preliminary flight rating test. We also believe that we can complete the analysis, initial design, and a mock-up of a direct turbo pump-back compounded engine.

6. Accordingly, we propose to supply in the calendar year 1946, and for the total sum of $5,000,000, that portion of the R-4360 Series "C" engine development as itemized below.

1. Full-scale mock-up of basic engine complete with contractor-furnished engine mounts, cooling baffles, fuel injection system, ignition equipment and all other external features of the engine.

2. Three experimentally-built engines substantially in accordance with PWA Specification No. A-7055, dated January 15, 1946. If and as these engines are accepted, they will be made available to the contractor for general development testing.

3. Report of a 50 hour development test conducted in accordance with Specification No. XR-28398A. This test is to be conducted on one of the engines of Item 2.

4. Detailed monthly reports of the progress of the work.

5. Report of analysis and design study of a direct turbo feed-back compounded engine.

6. Preliminary mock-up of engine described in Item 5.

7. The total figure of $5,000,000 for the year 1946 provides for all R-4360 "C" development activities including fuel injection components, power controls and ignition equipment.

UNITED AIRCRAFT CORPORATION

W. P. Gwinn, General Manager
Pratt & Whitney Aircraft Division

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COPY

PRATT & WHITNEY AIRCRAFT
DIVISION OF UNITED AIRCRAFT CORP.
EAST HARTFORD 8, CONN.

In reply please
refer to: WPG:rk

December 26, 1946

Commanding General
Air Materiel Command
Wright Field, Dayton, Ohio

Subject: Development of R-4360-C Engine Second Phase - Proposal for

References:
(a) P&WA let to ATSC, WPG:Pr-Eng., dated Feb. 11, 1946.
(b) P&WA let to AMC, WPG:rk dated November 27, 1946.
(c) P&WA let to AMC, WAP:tlr-Eng., dated Nov. 27, 1946.
(d) AMC let to P&WA, TSEMG (TSEPP-4A), dated 6 Dec. 1946.
(e) P&WA let to AMC, WAP:tlr-Eng., dated 11 December 1946.

Enclosures:
(A) P&WA Specification No. A-7055-A
(B) P&WA Specification No. N-7057
(C) P&WA Report TR-33

1. In accordance with the reference letters and recent discussions with representatives of the Air Materiel Command, this Division submits herewith its proposal covering the second phase of the R-4360 Series "C" engine development program. It proposes to supply on or before June 30, 1948, the following items:

(a) Three experimentally-built engines substantially in accordance with P&WA Specification N-7057 dated September 5, 1946, and employing the parts referred to in item (b) of reference (c). If and as these engines are accepted, they will be made available to the Contractor for general development testing.

(b) Report of a 50 hour development test conducted in accordance with Specification No. YR-28398A. This test to be conducted on one of the engines of item (a).

(c) Report of a 150 hour qualification test as called out in P&WA Specification A-7055-A, dated December 16, 1946. This test to be conducted on an experimentally built engine supplied by the Contractor.

(d) Three sets of parts required to convert engines of the type described in P&WA Specification No. A-7055-A, dated December 16, 1946, for preliminary investigation of the type of engine described in P&WA report No. TR-33 or P&WA report No. TR-42 or a combination of both. If pump-back turbines for this investigation are required, they will be supplied by the General Electric Company under separate contract with the Army.

(e) Detailed monthly reports of the progress of the work.

(f) Analytical report of a speed density fuel feed control as applied to the aircooled engine.

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(g) One complete Bendix fuel injection unit for bench test purposes at the Air Materiel Command.

2. In the first phase of this development the Air Materiel Command required this Division to affirmatively agree to develop at least two sources of supply for fuel injection. Since that time the Chandler-Evans Corporation indicated its intention to withdraw from the development of fuel metering devices. However, as a result of a meeting held at Wright Field on December 16, 1946, between representatives of this Division and the Chandler-Evans Corporation and the Air Materiel Command, the Chandler-Evans Corporation again indicated its willingness to proceed with the development of fuel injection but only on a step by step basis and with the stipulation that if the results obtained during the first phase of the program failed to justify continuation of the work, that corporation will be permitted to withdraw from the second phase program. This Division therefore submits this proposal on the basis that it will be required only to use its best efforts to develop two sources of supply.

3. The total cost to the Government of this second phase program is $5,000,000. Although it is impracticable to segregate that portion of the program in which the Navy is interested or to segregate costs applicable thereto, it is estimated that $900,000 of the total amount can be charged against the first two items.

UNITED AIRCRAFT CORPORATION
Pratt & Whitney Aircraft Division

W. P. Gwinn
Vice President; General Manager.

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Development of R-2800-C engine, Second Phase - Proposal for.

Pratt & Whitney Aircraft Division,
United Aircraft Corporation,
East Hartford 8, Connecticut.

1. This is in reference to Pratt & Whitney Aircraft Division letter of 20 December 1946, [illegible]ark, containing a proposal for the second phase of the development of the subject engine. The contents of this letter have been studied with a great deal of interest. The Air Material Command desires to foster this development. However, the Air Material Command desires to modify the suggested program in certain particulars as described below:

a. The funds for the Navy's participation in the program are not available at the Air Material Command, which automatically eliminates (a) and (b) of paragraph 1 of the above-referenced letter, unless [illegible] necessary arrangements for its continuation.

b. Item (c) of paragraph 1 of the reference letter remains unchanged.

c. Instead of supplying three sets of parts for compounding as described in Pratt & Whitney report No. [illegible], the contractor shall make a dynamometer calibration of an R-2800-C of the [illegible] injection without main stage supercharging but with conditions of back pressures, inlet air pressures and temperatures, which simulate the conditions of operation of the externally supercharged R-2800-C engine described in Pratt & Whitney report No. [illegible]. This changes (d) of reference letter.

d. Items (e), (f), and (g) of paragraph 1 of reference letter will remain unchanged.

2. The Air Material Command would appreciate receiving the contractor's proposal to proceed on the above basis at the earliest oppor-

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Pratt & Whitney Aircraft Division, United Aircraft Corporation.
"Development of R-360-C engine, Second Phase -
Proposal for."

tunity. Please direct reply to the Air Materiel Command, attention of
TSPPP-1A.

FOR THE COMMANDING GENERAL:

[illegible],
Colonel, Air Corps,
Chief, Power Plant Laboratory,
Experimental Division.

cc: Chief, Boston Area, Field Service.

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PRATT & WHITNEY AIRCRAFT

DIVISION OF UNITED AIRCRAFT CORPORATION
EAST HARTFORD 8, CONNECTICUT, U.S.A.

In Reply Please
Refer to WPG:rk

January 21, 1947

Commanding General
Air Materiel Command
Wright Field, Dayton, Ohio

Subject: Development of R-4360-C Engine Second Phase - Proposal for.

References: (a) AMC letr. to P&WA, TSCPP-4A/JMC/awc, dated 14 January, 1947.
(b) P&WA letr. to AMC, WPG:rk, dated 26 December, 1946.

1. In response to reference (a), this Division submits herewith a revised proposal covering the second phase development of the R-4360 Series "C" engine model.

2. On or before June 30, 1948, the following items will be supplied at a total cost to the Government of $3,200,000.

(a) Report of a 150 hour qualification test as called out in PWA Specification A-7055-A, dated December 16, 1946. This test to be conducted on an experimentally-built engine supplied by the Contractor.

(b) Report of dynamometer calibration of an R-4360 Series "C" engine with fuel injection and without main stage supercharging but with conditions of back pressures, inlet air pressures, and temperatures which simulate the conditions of operation of the externally supercharged R-4360-C engine described in Pratt & Whitney Aircraft Report TR-42R.

(c) Detailed monthly reports of the general progress of the development work.

(d) Analytical report of a speed density fuel feed control as applied to the aircooled engine.

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Commanding General
Air Materiel Command

January 21, 1947

(e) One complete Bendix fuel injection unit for investigational purposes at the Air Materiel Command.

2. Because of the proposed reduction of $500,000 in price as compared with our first proposal, reference (b), we cannot expend the development effort we originally contemplated. Therefore, while we will use our best efforts, we cannot guarantee to complete the 150 hour qualification test as set forth under item A, to the high standards of perfection normally expected by the Air Materiel Command, which we originally proposed to meet.

3. In the first phase of development the Air Materiel Command required this division to affirmatively agree to develop at least two sources of supply for fuel injection. Since that time the Chandler-Evans Corporation indicated its intention to withdraw from the development of fuel metering devices. However, as a result of a meeting held at Wright Field on December 16, 1946, between representatives of this division and the Chandler-Evans Corporation and the Air Materiel Command, the Chandler-Evans Corporation again indicated its willingness to proceed with the development of fuel injection but only on a step by step basis and with the stipulation that if the results obtained during the first phase of the program failed to justify continuation of the work, it will be permitted to withdraw from the second phase program. This Division, therefore, submits this proposal on the basis that it will be required only to use its best efforts to develop two sources of supply. If the Air Materiel Command chooses to drop the development of the Chandler-Evans fuel metering unit in the second phase contract, there will be a further reduction in the total cost of the second phase program of $200,000.

4. It will be noted that the first two items of our first proposal, reference (b), have been omitted in accordance with the instructions of reference (a). We have been advised informally by authorities of the Bureau of Aeronautics that the Navy expects to make the arrangements with the Army to support these items. Therefore, we will await further word from the Air Materiel Command relative to the Navy's portion of the development.

UNITED AIRCRAFT CORPORATION
Pratt & Whitney Aircraft Division

W. P. Gwinn
Vice President; General Manager

cc: AAF Representative

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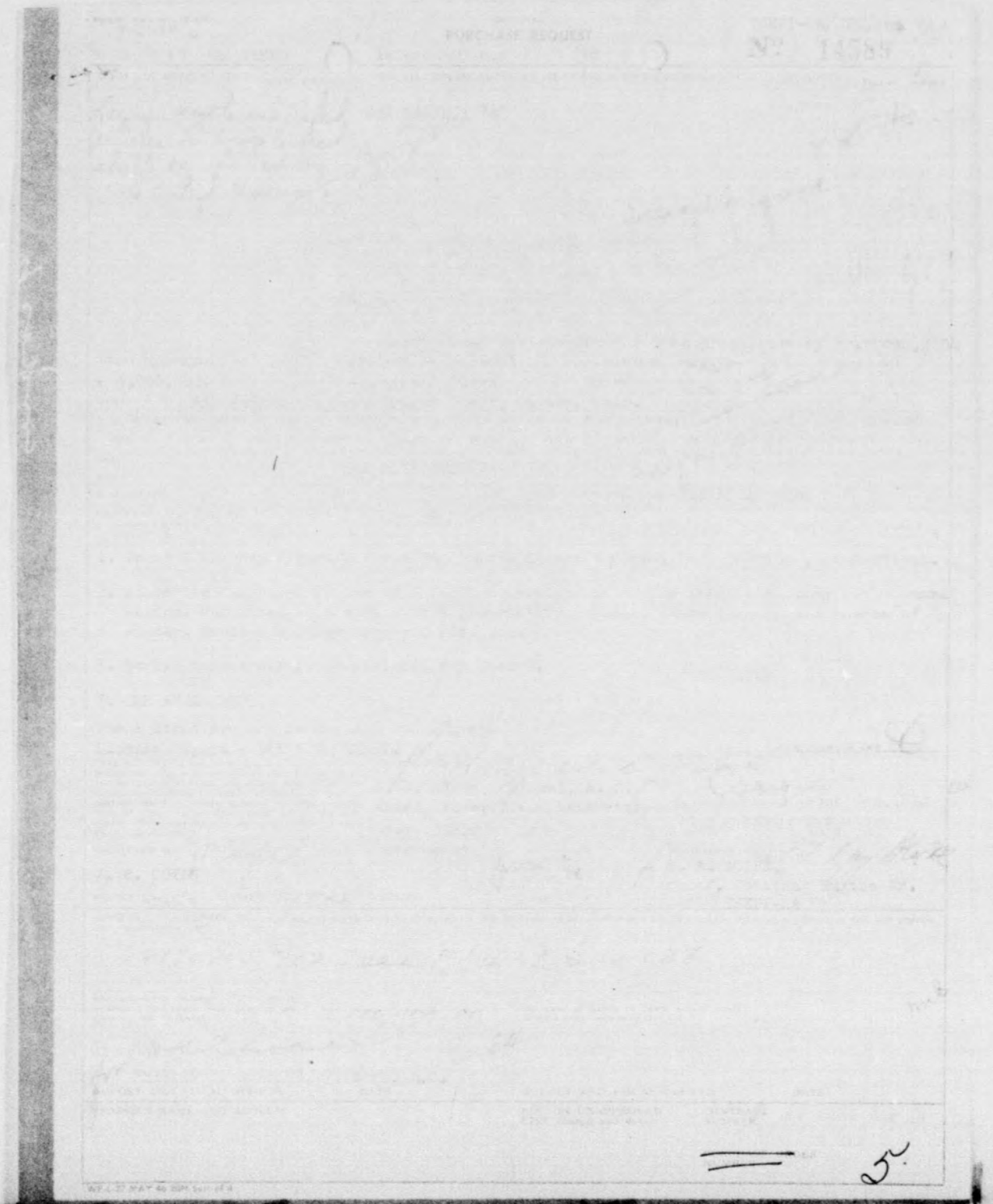

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ATTACHMENT TO

PURCHASE REQUEST NO. 14589

DESIRED DELIVERY SCHEDULE: - All five items on this purchase request will be delivered to the Government on or before 30 June 1948. Monthly progress reports, as covered in Item 3, will be delivered monthly during the life of the contract.

POINT OF INSPECTION: - Item 5 - Option #2. Items 1 thru 4 not considered subject to Inspection per E.D.O.I. 80-41. The reports covered by Items 1 thru 4 will be approved and accepted by Power Plant Laboratory, Engineering Division, Air Materiel Command.

7. GENERAL REMARKS: -

a. The R-4360-C engine, designated as an XR-4360-39 engine by the Air Materiel Command, is a further development of the basic R-4360 type engine. This engine will have higher power ratings, fuel injection, low tension ignition and internal design improvements to obtain the required durability. This power plant when development is completed will be available for installation in future designs of heavy bombardment, cargo, and transport airplanes.

b. There is no specific aircraft yet assigned for this power plant. Consequently, there are no quantities of engines being procured. This is a development contract.

c. The XR-4360-39 model engine is an improved model of the basic engine.

d. The development of this power plant will make available a reciprocating engine of higher horsepower for future designs of heavy bombardment, cargo and transport airplanes requiring low fuel consumption for long range.

LICENSE RIGHTS: - Since this purchase request is for the second phase development of the R-4360-C engine, the same requirements for license rights apply as for letter Contract No. W-33-038-AC-14294.

NOTE: - In regard to Item 1, covering the 150-hour qualification test, coordination of the Specification A-7055-A dated 16 December 1946, by the manufacturer with the Air Materiel Command must be completed before this test is conducted.

In reference to Pratt & Whitney letter dated 21 January 1947, which is attached, the total cost to the Government will be $3,000,000.00 instead of $3,200,000.00. In regard to paragraph 4 of Pratt & Whitney letter, the Air Materiel Command elects to drop the development of the Chandler-Evans fuel metering unit in the second phase of this contract which will result in the reduction of $200,000.00 mentioned above.

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EXHIBIT "A"

TO PURCHASE REQUEST NO. 14589

This Purchase Request is to cover Change Order to Contract No. W-33-038-AC-14294 covering R-4360-C engine, as follows:

ITEM	QUANTITY	UNIT	DESCRIPTION
1	1	ea.	Report, in triplicate, of a satisfactory 150-hour qualification test as called out in Pratt & Whitney Specification A-7085-A dated 16 December 1940. This test to be conducted on an experimentally-built engine supplied by contractor. This test shall be conducted in accordance with requirements of Specification AN-9500c dated 26 October 1944, and Specification AN-9502c dated 26 October 1944.
2	1	ea.	Report, in triplicate, of dynamometer calibration of an R-4360-C engine with fuel injection and without main stage supercharging but with conditions of back pressures, and temperatures which simulate the conditions of operation of the externally supercharged R-4360-C engine described in Pratt & Whitney Report PR-428. This test shall consist of a minimum of 250 hours of testing.
3	12	ea.	Report, in triplicate, submitted monthly on the general progress of the development work.
4	1	ea.	Report, in triplicate, covering analysis of a speed density fuel feed control as applied to the air cooled engine.
5	1	ea.	Unit, Bendix fuel injection, for investigational purposes at the Air Materiel Command, Engineering Division.

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COORDINATION
CG OR DEP CG
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AIR INSPECTOR
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INTELLIGENCE (T-2)
ENGINEERING (T-3)
SUPPLY (T-4)
PLANS (T-5)
BASE C. O.
OTHER

AMC Form No. 10-508
(Rev 12 Aug 46)
(PRINT SYMBOL AND INITIALS IN APPROPRIATE BLOCK)

Tc.92 - 774

TSEPA3B/RJW:ICW/7-8A
Tel: 3-0232

11 March 1947

Contract AC-7, B-36A Airplanes,
Modification of B-36A Airplanes to
Incorporate R-4360-C Engines.

Consolidated Vultee Aircraft Corporation,
Fort Worth Division - Fort Worth, Texas.

Through: AAF Plant Representative.

1. Information has been received from the Power Plant Laboratory, Wright Field, that indicates the R-4360-C engine as manufactured by Pratt and Whitney will be satisfactory for use by the AAF. In view of this, it is requested the Contractor prepare a brief study showing the performance as attained using subject engines and what installations could be made with these engines. It would be preferred to use the -C engines in a tractor configuration. *

2. It is believed the Contractor has data on the -C engine available. If not, it can be obtained from Pratt and Whitney upon request.

FOR THE COMMANDING GENERAL:

Robert W. Walling
GEORGE E. SCHAETZEL,
Colonel, Air Corps,
Chief, Aircraft Section,
Procurement Division.

cc - AAFPR - FW
CVAC - Dayton
TSEOA-2
TSEPP

* Inquiries of both the Bombardment Br., Proc. Div. and Power Plant Laboratory resulted in a conclusion that the information must have been verbal. Captain Walling, the writer, could not be consulted for he was no longer at WPAFB.

E. D[illegible] Hraloman

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In reply please
refer to: WPG:Pr-Eng.

C
O
P
Y

March 13, 1947

Commanding General
Air Materiel Command
Wright Field, Dayton, Ohio

Subject: Development of R-4360-C Engine Third Phase - Proposal for.

References: (a) P&WA ltr to AMC, WPG:Pr-Eng, dtd. February 11, 1946.
(b) P&WA ltr to AMC, WPG:rk, dated January 21, 1947.

1. Representatives of this Division were advised informally that it would be necessary to submit a proposal for the third phase of the subject development on or before March 17, 1947. Accordingly, Pratt & Whitney Aircraft proposes to supply for a total cost to the Government of $6,000,000 the following items on or before June 30, 1949.

A. Report of a 150 hour qualification test as called out in P&WA Specification No. A-7065, dated March 10, 1947. This test to be conducted on an experimentally-built engine supplied by the Contractor.

B. Report of dynamometer calibrations of an R-4360 Series "C" engine substantially as described in P&WA Specification No. A-7065, dated March 10, 1947, but equipped with pistons giving a compression ratio of between 7 and 8:1 and with pistons giving a compression ratio of between 8 and 9:1. The exact compression ratios will be determined at a later date and in consultation with Power Plant Laboratory representatives of the AMC. The calibration data will show the effect of higher than standard compression ratios on detonation and specific fuel consumption and will form the background for possible revisions in engine performance ratings.

C. Detailed monthly reports of the general progress of the development work.

D. Eight prototype engines built without tools and fixtures concurrently with the development of the engine described in P&WA Specification No. A-7065, dated March 10, 1947. These engines

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will be suitable for flight test purposes. However, because their Bill of Material must be released far in advance of the successful completion of a qualification test that provision in the specification cannot apply to their acceptance.

2. The cost of Items A, B, and C which pertain strictly to the development of the subject engine is $5,300,000. The cost of prototype engines as covered in Item D is $1,500,000.

3. When the subject development was first considered, this Division by reference (a) advised the AMC that it would cover a three year period and would cost in the neighborhood of $16,000,000. This figure excluded prototype engines. Due to dropping the internally supercharged, variable speed model for the Navy, we have been able to reduce the over-all estimated cost of the project to the Government to $13,500,000. $5,000,000 was made available in the first phase contract. We expect that $5,800,000 will be made available in the second phase contract. The balance, therefor , of $2, 00,000 as covered by this third phase proposal should complete the work.

4. The unit cost of the prototype engines is $137,500 which includes fuel injection at the vendor estimated cost of $40,000. It also includes the cost of special exhaust headers. In the way of comparison, prototype engines of the earlier R-4360 Series "B" models without these special features cost on the average $140,000 to build in much larger quantities. Prototype engines of the R-3350 Series "B" models excluding special TSO impeller charges cost on the average $120,000 to produce.

UNITED AIRCRAFT CORPORATION
Pratt & Whitney Aircraft Division

W. P. Gwinn
Vice President; General Manager

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In reply please refer to:
RHB:lms Engineering II.

PRATT & WHITNEY AIRCRAFT

DIVISION OF UNITED AIRCRAFT CORPORATION
EAST HARTFORD 8, CONNECTICUT, U.S.A.
CABLE ADDRESS "AIRCRAFT"

15 March 1947

CONFIDENTIAL

ARMY OFFICE
APPROVED
CONCURRED IN
NO COMMENT
18/3/47

VIA: Army Air Forces Representative

To: Director
Air Materiel Command
Wright Field, Dayton, Ohio

Attention: Mr. J. B. Coyle, Power Plant Laboratory, TSEPP-5

Subject: Letter Contract W33-038 ac 14294 R-4360-39 Engine Development
Monthly Progress Report, Exhibit 'A' Item 7

Reference: (a) PWA letr RHB:lms Engineering II dated 10 February 1947 to Director, AMC, Wright Field, Dayton, Ohio

Enclosure: (A) PWA Report No. TR-42R - three (3) copies (2 cys rec'd AAFDSAI)
(B) PWA Report No. TR-46 - three (3) copies (2 cys rec'd " ")

1. The following work has been accomplished on the XR-4360-39 development project during the last month:

(a) The total engine time on the five (5) full scale R-4360-C engines has been increased from 878 to 1151 hours. A preview 50-hour endurance test and dives, run in accordance with AAF Specification No. XR-28398-A, was attempted and completed on Engine No. X-151. This test was conducted using a Bendix fuel injection system, a Scintilla high frequency ignition system, and the latest available design of engine parts including redesigned master rods, engine mounts, valve cams, reduction gear pinions and blower section crankcase. The cylinder assemblies used for this test were, however, of a temporary design and were obtained by using an R-4360-B cylinder head forging machined to accept the 'C' fuel injection nozzle and the lengthened 'C' cylinder barrel. During the 50-hour test two sections of the engine mount support hoop failed, the poppet valve in the fuel injection control unit stuck once, seven ignition system failures were experienced, and one fuel distributor tube failed. The results of the endurance test and inspection of the individual engine parts at the completion of the test indicate that before the 50-hour development test, required by the subject contract, is attempted a strengthened engine mount support hoop, an improved ignition system, redesigned 'C' cylinder assemblies, improved fuel injection distributor transfer tubes, a modified blower case, redesigned torque meter pistons and a number of other changes of somewhat less significance should be included in the official test engine.

Classification cancelled or changed to RESTRICTED
AUTH: CG Ltr Capt AC
By _____ Signature and Grade
Date 27 March 1947

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7C-52-412

& WHITNEY AIRCRAFT

13 March 1947

To: Director, Air Materiel Command, Wright Field, Dayton, Ohio

Subject: Letter Contract W33-038 ac 14294 R-4360-39 Engine Development
Monthly Progress Report, Exhibit 'A' Item 7

(b) Engine No. X-155 was reassembled and 18 hours endurance at 2800 RPM completed when No. C-2 piston burned. This failure is believed to have been caused by overheating of the top land of the piston which, in the temporary combination of parts used to expedite testing on Engine No. X-155, extended beyond the top of the cylinder barrel. Engine No. X-155 was disassembled, inspected and is now being reassembled with the latest type 'C' cylinder assembly which incorporates a redesigned oval shaped exhaust port.

(c) Engine No. X-152 is currently being used in an effort to obtain optimum fuel and air distribution to the various cylinders. A shrouded impeller as well as a shrouded inducer is at present being installed in this engine. Engine No. X-156 has completed 80 hours endurance at 2400 BHP, 2400 RPM with best economy mixture strength with 42" Hg exhaust back pressure. The cylinders, pistons and valve from this engine were inspected at 50 hours endurance time and found to be in reasonably good condition. While attempting to analyze combustion chamber characteristics on Engine No. X-157, a number of high frequency ignition difficulties were experienced and the basic program of studying combustion chamber designs has not, therefore, progressed very rapidly. Considerable effort has, however, been expended in an attempt to analyze and correct the ignition system difficulties.

(d) The total test time accumulated to date on the three (3) Scintilla high frequency ignition systems is now over 400 hours. As pointed out above a number of failures have occurred on these systems during the last month; Scintilla is aware of these failures and have initiated corrective action. Both two and seven unit General Electric high frequency ignition systems have been designed and are being fabricated; we expect delivery of these systems late in May 1947. Only one Bendix fuel injection system is as yet available for engine use and this one unit has been run a total of 215 hours including the 50 hours endurance just completed on Engine No. X-151.

(e) Fifty-two hours of the 150-hour endurance test being run on a special R-2800 engine in order to obtain early information on the R-4360-C variable discharge, externally supercharged type power plant has been completed. Studies of the R-4360-C variable discharge, turbo-supercharged engine have been completed and the results of these studies are summarized in PWA Report No. TR-42R. Three (3) copies of this report are enclosed for the Army's information and use. Also enclosed is a shorter version of Report TR-42R identified as PWA Report No. TR-46. This latter report has been prepared for distribution among authorized airplane companies.

UNITED AIRCRAFT CORPORATION
Pratt & Whitney Aircraft Division

R. H. Begg
Project Engineer

Classification cancelled or changed to R.C.
AUTH: CM Hdq, Cgel Ltr
By Signature and grade

RHB:lms 27 March 47

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FTWH 464 TWX FTWORTH TEX MAR 19 1947 451XXX 391P CST

MSG NO. 678

RUSH

O H SNYDER

DAYTON OHIO

CVAC

1. IT IS REQUESTED THAT THE FOLLOWING MESSAGE BE TRANSMITTED TO COLONEL GERRITY SO THAT HE CAN TAKE THE INFORMATION TO WASHINGTON ON THURSDAY MARCH 20...

RE OUR STUDY OF B-36 POWERED WITH SIX TRACTOR R-4360-C3 ENGINES, ESTIMATED PERFORMANCE IS AS FOLLOWS . .

(1)	HIGH SPEED AT 35,000 FEET.	410 MPH
(2)	SERVICE CEILING	45,000 FEET
(3)	RANGE WITH 10,000 LBS. BOMBS	9,200 MI.
(4)	AVERAGE SPEED FOR RANGE	330 MPH
(5)	TAKE-OFF OVER 50 FT OBSTACLE	6800 FEET

2. FIRST TWO ITEMS ARE AT 246,000 POUNDS COMBAT GROSS WEIGHT. LAST THREE ARE AT 328,000 LBS. TAKE-OFF GROSS WEIGHT. PERFORMANCE IS FOR ENGINES WITHOUT COOLING FANS.

3. ON THE BASIS OF VERY PRELIMINARY STUDIES R-4360-C3 ENGINES WITH NO COOLING FANS INCREASE POWER PLANT INSTALLATION WEIGHT 3550 POUNDS PER AIRPLANE AND INCREASE EXTERNAL NACELLE DRAG TWENTY PERCENT.

4. FOR HIGH SPEED AND CEILING CALCULATIONS, EQUIVALENT BRAKE HORSEPOWER DATA ON PAGE 9 OF P. AND W. REPORT TR-46, 7 MARCH 1947 HAVE BEEN USED. FOR TAKEOFF, WET RATING WAS USED. MILITARY DRY RATING WAS USED FOR HIGH SPEED AND NORMAL RATING FOR CEILING. FOR RANGE CALCULATIONS, EQUIVALENT BRAKE H.P. DATA ON PAGE 10 WHICH INCLUDE P AND W ESTIMATE OF COOLING POWER WERE USED TO DETERMINE CRUISING SPEEDS AND ALTITUDES. DATA ON PAGE SEVEN WERE USED TO DETERMINE FUEL FLOWS. RANGE IS FLOWN AT 2400 RPM AND OPTIMUM ALTITUDE

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UNTIL 40,000 FEET IS REACHED, AFTER WHICH POWER IS GRADUALLY REDUCED TO MAINTAIN 40,000 FT. DISTANCE COVERED AND FUEL USED IN CLIMB TO CRUISING ALTITUDE IS INCLUDED.

5. SINCE THERE WAS NOT TIME FOR A PROPELLER AND GEAR RATIO STUDY, PROPULSIVE EFFICIENCY WAS ASSUMED TO BE 82 PERCENT FOR CRUISE AND 80 PERCENT FOR HIGH SPEED AND CLIMB.

6. INSTALLATION PROPOSAL DRAWINGS WILL BE SENT LATER.

XX

CONVAIR

FTWORTH DIV

R C GEBOLD

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MCAGXF22
452.8/R&W R-4360 - Ve ation Test

TSEPP-8/JBC/awc

ROUTINE

A.M.C. 8 April 1947

R. J. MINTY, Colonel, Air Corps
Chief, Power Plant Laboratory
Engineering Division

PRATT & WHITNEY AIRCRAFT DIVISION
UNITED AIRCRAFT CORPORATION
EAST HARTFORD, CONNECTICUT
ATT: MR. W. A. PARKINS

TSEPP-4-15 . . . . . REQUEST ESTIMATED COST BE SUBMITTED COVERING DEVELOPMENT AND 150-HOUR QUALIFICATION TEST ON XR-4360-43 ENGINE TO BE SUPPLIED BY CONTRACTOR. THIS ENGINE WILL BE IN ACCORDANCE WITH PRATT AND WHITNEY MODEL SPECIFICATION NO. A-7065 DATED 10 MARCH 1947, EXCEPT THAT AUTOMATIC ENGINE REGULATOR SHALL BE DEVELOPED, FURNISHED AND TESTED WITH ENGINE DURING 150-HOUR TEST. DEVELOPMENT COST ESTIMATE FOR REGULATOR SHALL BE INCLUDED IN TOTAL COST ESTIMATE. DIRECT ANY REPLY TO POWER PLANT LABORATORY, ENGINEERING DIVISION, ATTENTION J. B. COYLE, TSEPP-8.

PREPAID

cc: Boston AAF Proc. Field Office

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TC-42-302

AAF Form No. 10-400 (Rev 12 Aug 44)

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ASSISTANT GENERAL

CHIEF OF ARSENAL

AIR INSPECTOR

PUBLIC RELATIONS

ARMS ADVOCATE

PERSONNEL (T-1)

INTELLIGENCE (T-2)

ENGINEERING (T-3)

SUPPLY (T-4)

PLANS (T-4)

BASE C. O.

OTHER

TSEP P15: RWM:wr

Turbosupercharger for R-4360-43 Engine.

General Electric Company,
River Works,
920 Western Avenue,
West Lynn 3, Massachusetts.

ATTN: Mr. W. O. Weekley,
Aircraft Gas Turbine Engineering Division.

1. Consideration is being given to the possibility of using the R-4360-43 engine in a modification of the B-50 airplane. This particular engine is the model which has no internal blower. Boeing Aircraft Company advises that with the 4300 military horsepower available in this engine that their airplane will reach its critical Mach number at 21,000 feet. This altitude is far below the critical altitude which would be available with that engine operating in conjunction with the BH-6 turbosupercharger. Furthermore, according to General Electric Company delivery estimates, BH-6 superchargers would not be available for installation in any airplane in less than eighteen months and probably twenty-four months.

2. Enquiries have been made as to the current availability of suitable turbosuperchargers which would operate with this engine and provide critical altitude performance at 21,000 feet and 4300 horsepower in the R-4360-43 engine. Pratt & Whitney Aircraft Company estimates that at 4300 horsepower, approximately fifty-nine to sixty inches of manifold pressure would be required. In this case the manifold pressure would be slightly less than the required engine induction system inlet pressure and would represent the requirement of approximately a 4.75:1 pressure ratio with 21,000 feet density air conditions with no ram. The rated weight flow for this particular condition would be the same as that planned for the Type BH-6 turbosupercharger or approximately 340 pounds per minute. There are currently available, two superchargers which would almost supply this rated weight flow, one being the Type CH-7 and the other being BH-1's operating in parallel, and in both cases their rated weight flow would be 320 pounds per minute.

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[redacted] Electric Company,
[redacted] Western Ave.,
West Lynn 3, Massachusetts.

Subj: Turbosupercharger for R-1360-43 Engine.

3. It does not appear that the CH-7 would have adequate pressure ratio performance; however, there seems to be a possibility that the BH-1 would meet both the pressure ratio and weight flow requirements.

4. It is requested, therefore, that your organization consider this problem and submit it's comments and advice as to the use of currently available turbosupercharger models to meet the peculiar conditions imposed by the aerodynamic limitations of the Boeing Aircraft Company B-50 airplane with the R-1360-43 engine.

FOR THE COMMANDING GENERAL:

[signature] Capt AC

L.J. MINTY,
Colonel, Air Corps,
Chief, Power Plant Laboratory,
Engineering Division.

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PR TT & WHITNEY AI CRAFT

DIVISION OF UNITED AIRCRAFT CORPORATION

EAST HARTFORD 8, CONNECTICUT, U.S.A.

CABLE ADDRESS AIRCRAFT

TC-92-45

CONFIDENTIAL

14 April 1947

ARMY OFFICE

APPROVED	
CONCURRED IN	
NO COMMENT	17/4/47

VIA: Army Air Forces Representative

To: Director
Air Materiel Command
Wright Field, Dayton, Ohio

Attention: Mr. J. B. Coyle, Power Plant Laboratory, TSEPP-5

Subject: Letter Contract W33-038 ac 14294 R-4360-39 Engine Development Monthly Progress Report, Exhibit 'A', Item 7

Reference: (a) PWA letr RHB:lms Engineering II dated 13 March 1947 to Director, AMC, Wright Field, Dayton, Ohio
(b) Conference at AMC, Wright Field, 1 April 1947 with Mr. J.B.Coyle of the AMC, and Messrs.M.H.Adams and R.H.Begg of Pratt & Whitney Aircraft

Enclosure: (A) Cylinder Temperature and Fuel Consumptions to be used during 50-hour test on R-4360-39 Engine

1. Since the last monthly progress report on the XR-4360-39 development project submitted to the AMC by reference (a), the following work has been accomplished

(a) The total engine time on the five (5) full scale R-4360-C engines has been increased from 1151 to 1333 hours.

(b) Engine No. X-151 was completely reassembled with new and in many cases redesigned engine parts in anticipation of conducting the official 50-hour test on the XR-4360-39 engine. This test is called out in Item 3 of Exhibit 'A' attached to the subject Letter Contract. Engine No. X-151 is now being run in prior to teardown inspection and the 50-hour test. In this connection, Paragraph E-44 of Specification A-7055 dated 15 January 1946 states that the cylinder head temperature limits and the mixture strengths at which the 50-hour Qualification Test is to be run will be supplied the AMC prior to such endurance testing as may be required by contract. The cylinder temperatures and mixture strengths which will be used during the endurance were discussed during conference at Wright Field, reference (b), and are tabulated on Enclosure (A) attached. We expect to have Engine No. X-151 run in, torn down, inspected and rebuilt ready to start the 50-hour Endurance Test shortly after 1 May 1947.

(c) 22-1/2 hours endurance in accordance with AAF Specification XR-28398-A was completed on Engine No. X-155 when a rear crankshaft bifilar bushing, of a now obsolete construction, failed. Engine No. X-155 has been reassembled

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To: Director, Air Material Command, Wright Field, Dayton, Ohio

Subject: Letter Contract W33-038 ac 14294 R-4360-39 Engine Development
Monthly Progress Report, Exhibit 'A', Item 7

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and endurance testing will be continued upon it. The latest design cylinder assemblies are installed on Engine No. X-155 as well as on two single cylinder engines. 200 hours of successful overload endurance has been completed on both of the cylinder assemblies installed on the single cylinder engines.

(d) Cruise endurance with best economy mixture strengths at 2400 BHP, 2400 RPM and 42" Hg exhaust back pressure was continued from 80 to 93 hours total endurance time on R-4360-C Engine No. X-156 when the exhaust collector failed. The test was terminated at this time and the engine has been removed from the test stand for teardown and inspection. Engine No. X-152 continues to be used for general performance work. Engine No. X-157 has been used to analyse the operating characteristics of the Scintilla high frequency ignition system as engine cutting at both high power rich mixtures and low power lean mixtures has recently been observed with this system. At least a portion of this trouble appears to be traceable to the energy level of the system.

(e) A single row seven cylinder test engine, No. X-106, has been assembled and run in using the latest available design pistons, link rods and master rod. This engine will be used to expedite development of the 'C' reciprocating and combustion chamber parts. Engine No. X-109 is currently being assembled as the sixth full scale R-4360-C engine. Many of the parts being assembled in this engine are used parts removed from Engine No. X-151.

(f) The total time on the three (3) Scintilla High Frequency Ignition Systems run on 'C' engines is now 470 hours. In addition to the mechanical deficiencies found in these systems and referred to in our previous reports considerable trouble with engine cutting at both high and low powers has been observed. (See Item (d) above). The cause and necessary corrective action is being investigated both at Scintilla and at Pratt & Whitney. General Electric still indicate they expect to deliver high frequency ignition systems of their design in May 1947.

(g) The total engine time accumulated to date on the first Bendix fuel injection system is 258 hours. The second fuel injection system from Bendix was received on 8 April 1947. Ceco expects to ship the second carburetor suitable for use on 'C' engines in April and the third carburetor late in May, 1947. They also are continuing with the design and detail drawings of a full scale fuel injection system suitable for use on the R-4360-C engine. A single plunger experimental injection pump has been run at the Ceco factory and the experience obtained on this unit is being applied to the full scale design.

(h) Endurance on the special R-2800 engine which is being run to obtain advance information in connection with the R-4360-C V.D.T. type power plant was continued from fifty-two (52) to one hundred and thirty-seven (137) hours endurance time when an exhaust valve failed and a piston was damaged as a result of the failure. At the time of the failure the engine was being run at 2800 BHP, 2800 RPM.

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PRATT & WHITNEY AIRCRAFT

14 April 1947

TC-92-425

To: Director, Air Materiel Command, Wright Field, Dayton, Ohio

Subject: Letter Contract W33-038 ac 14294 R-4360-39 Engine Development Monthly Progress Report, Exhibit 'A', Item 7

.56 B.S.F.C., with 64" Hg exhaust back pressure. (This is equivalent to 4360 BHP on the R-4360). Inspection of the combustion chamber parts following 137 hours endurance indicated the need for improved valves which will not erode and fail at the proposed V.D.T. engine operating conditions. Improved exhaust valves will therefore be procured as rapidly as possible for the R-4360-C engine. The special R-2800 V.D.T. type engine is being reassembled and test work on the V.D.T. power plant will be continued.

UNITED AIRCRAFT CORPORATION
Pratt & Whitney Aircraft Division

R. H. Bogg
Project Engineer

APR 1947
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INFO

1947 APR 23 EPP

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AIR MATERIEL COMMAND ATTN COLONEL R J MINTT

CHIEF POWER PLANT LABORATORY ENGINEERING DIVN

WRIGHTFIELD

P-41 AC 18653

RE R-4360 SERIES G PROGRAM. THIS DIVISION PROPOSES TO COMPLETE THE DEVELOPMENT THROUGH A SATISFACTORY MOD L TEST OF THE VDT TYPE ENGINE DESCRIBED IN PWA SPECIFICATION A-7465 DATED MARCH 19 1947 AND WITH PERFORMANCE AS SHOWN IN REPORT TR-46 FOR THE TOTAL SUM OF $5,598,600. ENGINE DEVELOPMENT TO BE COMPLETED BY DECEMBER 31 1948 WITH PRODUCTION STARTING IN JUNE 1949. THIS PROPOSAL INCLUDES AN ITEM OF 300,000 FOR THE DEVELOPMENT OF AN ELECTRONIC POWER CONTROL IN ACCORDANCE WITH PROPOSAL JUST RECEIVED FROM MINNEAPOLIS HONEYWELL AND TO BE MADE A PART OF OUR DETAILED LETTER PROPOSAL NOW IN PROCESS OF PREPARATION.

PRATT AND WHITNEY AIRCRAFT U P GWINN

12:40 P

RE R-4360 G A-7465 19 1947 TR-46 $5,598,600 31 1948 1949 $300,000.

JAN 1948

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FR /FT WH 445/ AAFPR CVAC FT WH TEX 301639Z

TO CG AMC WRIGHT FIELD DAYTON OHIO

GRNC

ATTN TSBPA-3B PD TSZCV-C-4-161

CVAC QUOTE RE B-36 AIRPLANES CONTRACT AC-7 PD REOUR STUDY OF B-36 POWERED WITH SIX TRACTOR R-4360-C3 VDT ENGINES CMA PRELIMINARY PERFORMANCE ESTIMATE TRANSMITTED IN OUR TELETYPE OF 19 MARCH 1947 HAS BEEN REVISED IN VIEW OF THE FOLLOWING CHANGES CLN

/A/ PRATT & WHITNEY HAS PROVIDED ADDITIONAL FUEL CONSUMPTION DATA WHICH INDICATE CONSIDERABLE IMPROVEMENT IN AVERAGE CRUISING SFC DUE TO INCREASED BMEP AT LOW CRUISING POWERS PD

/B/ COMBINATION OF EXHAUST JET AUGMENTATION CMA OPTIMUM COOLING FAN CMA AND USE OF WING BOUNDARY LAYER AIR FOR ENGINE COOLING IS EXPECTED TO REDUCE PARASITE DRAG COEFFICIENT BY 0.0015.

REVISED PERFORMANCE ESTIMATE IS AS FOLLOWS CLN

/1/	HIGH SPEED AT 35'000 FT	410 MPH
/2/	SERVICE CEILING	45'000 FT
/3/	RANGE WITH 10'000 LBS BOMBS	
	AT 267 MPH AVG SPEED	10'850 MI
	AT 322 MPH AVG SPEED	10'320 MI
	AT 344 MPH AVG SPEED	

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FR /FT WH 445/ AAFPR CVAC FT WH TEX 3Ø1639Z
TO CG AMC WRIGHT FIELD DAYTON OHIO

GRNC

ATTN TSBPA-3B PD TSZCV-C-4-161

CVAC QUOTE RE B-36 AIRPLANES CONTRACT AC-7 PD REQUR STUDY OF B-36 POWERED WITH SIX TRACTOR R-4360-C3 VDT ENGINES CMA PRELIMINARY PERFORMANCE ESTIMATE TRANSMITTED IN OUR TELETYPE OF 19 MARCH 1947 HAS BEEN REVISED IN VIEW OF THE FOLLOWING CHANGES CLN

/A/ PRATT & WHITNEY HAS PROVIDED ADDITIONAL FUEL CONSUMPTION DATA WHICH INDICATE CONSIDERABLE IMPROVEMENT IN AVERAGE CRUISING SFC DUE TO INCREASED BMEP AT LOW CRUISING POWERS PD

/B/ COMBINATION OF EXHAUST JET AUGMENTATION CMA OPTIMUM COOLING FAN CMA AND USE OF WING BOUNDARY LAYER AIR FOR ENGINE COOLING IS EXPECTED TO REDUCE PARASITE DRAG COEFFICIENT BY Ø.ØØ15.

REVISED PERFORMANCE ESTIMATE IS AS FOLLOWS CLN

/1/	HIGH SPEED AT 35'ØØØ FT	41Ø MPH
/2/	SERVICE CEILING	45'ØØØ FT
/3/	RANGE WITH 1Ø'ØØØ LBS BOMBS	
	AT 267 MPH AVG SPEED	1Ø'85Ø MI
	AT 322 MPH AVG SPEED	1Ø'32Ø MI
	AT 344 MPH AVG SPEED	1Ø'ØØØ MI
/4/	TAKE-OFF OVER 5Ø FT OBSTACLE	6'8ØØ FT

FIRST TWO ITEMS ARE AT 246'ØØØ LBS COMBAT GROSS WEIGHT PD LAST TWO ARE AT 328'ØØØ LBS TAKE-OFF GROSS WEIGHT PD

WE ARE CONTINUING OUR STUDIES TO DETERMINE OPTIMUM EJECTOR SIZE CMA FAN POWER CMA AND COOLING AIR INLET AND DUCT DESIGN PD RESULTS WILL BE FORWARDED SOON AS POSSIBLE PD UNQUOTE

END LB 17Ø9Z

H K

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CONSOLIDATED VULTEE AIRCRAFT CORPORATION

TC-92-365

MUTUAL HOME BUILDING
DAYTON, OHIO

GENERAL OFFICES
SAN DIEGO 12, CALIFORNIA

ae-7

5 May 1947

Subject: B-36 Series Airplanes Proposed Carry-on Program

To: Commanding General
Air Materiel Command
Wright Field
Dayton, Ohio

Attention: Lt. Col. H. E. Warden
TSEOA
and

Lt. Col. Tom P. Gerrity
TSEPA

CONTRACT FILES
W33-038-ac-7
chg 13 aug 47

1. This letter is submitted in response to requests from A.M.C. personnel, Lt. Col. H. E. Warden and Mr. Boykin of Engineering Division and Mr. Boettcher of Procurement Division, for information on the following subjects:

(a) Informal quotation for installation and test of Pratt & Whitney R-4360 C-3 engines in a B-36A airplane for evaluation as a prototype for possible future procurement.

(b) A study to determine a practicable program for procurement of a production quantity of such prototype airplanes to follow completion of current B-36 program at the Fort Worth plant.

2. Performance estimates for the R-4360 C-3 installation have been informally presented to AMC personnel and are attached hereto. Based on the availability of six engines in August 1948, the prototype airplane will be ready for flight in December 1948 and flight tests completed in March 1949. To accomplish such schedule, contract authority to initiate design and manufacture should be received in June, 1947. Contractor's quotation for the design, installation and test, using No. 40 production B-36A airplane is attached.

3. The current contract schedule for the 100 Model B-36A airplanes calls for delivery of 6 airplanes per month with final delivery in January, 1949. However, the non-availability of certain critical items of GFE has recently been brought to the attention of AMC and a tentative decision reached to reduce this schedule to 4 airplanes per month with final delivery in November, 1949. Therefore

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[illegible] MUTUAL HOME BLDG.
DAYTON 2, OHIO

For the purpose of this analysis, a delivery rate of 4 airplanes per month has been used for both the current and projected programs.

4. Attached hereto is a chart showing the proposed delivery of B-36 series airplanes with respect to:

(a) Current order for 100 B-36A airplanes

(b) Prototype airplane powered with Pratt & Whitney R-4360 C-3 engines

(c) Additional procurement of prototype airplanes

This chart proposes and shows the relationship, time-wise, of two separate programs, which are the same for the current airplanes and the development of the new prototype airplanes and vary only in the starting point for the additional procurement of the prototype airplanes. Program "A" provides for a continuing flow of B-36 type airplanes whereas Program "B" causes a minimum time lag of eight months in delivery of airplanes, and means practically shutting down the plant.

5. In comparison of Programs A and B, this time lag becomes important from a cost standpoint. The continuing fixed overhead just to keep the plant open is approximately $500,000 per month. The retention of some skilled and experienced labor will equal approximately an additional $500,000 per month. The total of these items for an 8 month period is $8,000,000. The time lag, causing drastic reduction in trained personnel and subsequent rehiring of untrained personnel, will result in additional starting costs estimated to be $10,000,000.

6. The more practical and economical procedure is to follow Program A which provides for award of the production contract as soon as the design for the new power plant is completed. No particular hazard or unknown factor will be encountered since the flight and ground handling qualities as well as the mechanical and tactical efficiencies of the current B-36 A airplanes will have been completely established. The change in performance due to the improved power plants can, from a practicable standpoint, be precisely calculated. Any problems which may arise can be corrected in the years time between the flight of the prototype airplane and the first production article.

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CONSOLIDATED VULTEE AIRCRAFT CORPORATION

1000 MUTUAL HOME BLDG.
DAYTON 2, OHIO

TC-42-867

To: Commanding General
Wright Field

5 May 1947

7. For the purpose of this program analysis, the current estimated cost for the 100 B-36A airplanes and spare parts has been used. No adjustment has been made for anticipated design modifications which, for this purpose, will not affect the overall program. On this basis the estimated costs are as follows:

	Estimated Cost	
Present Program -	100 Model B-36A Airplanes	
100 airplanes and spares	$2,170,000 unit	$217,000,000 Total
Prototype Airplane	see attachment	
Continuing Program "A"		
60 airplanes and spares	$1,450,000 unit	$ 87,000,000 Total
Delayed Program "B"		
60 airplanes and spares	$1,750,000 unit	$105,000,000 Total

8. It is obvious from the above analysis that the Contractor recommends adoption of Program A, which can be accomplished with either reciprocating or turbine power plants. However, if this proposal does not harmonize with AAF planning, the Contractor will be glad to study and furnish detailed data on such plan as AMC desires to be explored.

CONSOLIDATED VULTEE AIRCRAFT CORPORATION

Frank A. Leaman
Frank A. Leaman
General Sales Manager

FAL:ey

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CONSOLIDATED VULTEE AIRCRAFT CORPORATION

TC-42-363

Attachment Convair ltr
dated 5 May 1947

MUTUAL HOME BLDG.
DAYTON 2, OHIO

PROTOTYPE PERFORMANCE ESTIMATES

PRATT & WHITNEY R-4360-C-3(VDT) ENGINES

Certain preliminary estimated performance data with and without boundary layer removal for cooling follow:

(1) High Speed at 35,000..... 410 MPH

(2) Service Ceiling..... 45,000 FEET

(3) Range with 10,000 lb. Bombs

(a) With boundary layer removal for cooling.

At 267 MPH Average Speed..... 10,850 Miles

At 322 MPH Average Speed..... 10,320 Miles

At 344 MPH Average Speed..... 10,000 Miles

(b) With no boundary layer removal for cooling

At 262 MPH Average Speed..... 10,320 Miles

At 315 MPH Average Speed..... 9,790 Miles

At 336 MPH Average Speed..... 9,470 Miles

(4) Take-off over 50 foot obstacle..... 6,800 Feet

NOTE: First two items are at 246,000 pounds combat gross weight.
Last two items are at 328,000 pounds take-off gross weight.

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CONSOLIDATED VULTEE AIRCRAFT CORPORATION TC-92-364

MUTUAL HOME BLDG.
DAYTON 2, OHIO

Attachment Convair ltr
dated 5 May 1947

PROTOTYPE COST ESTIMATE

Preliminary estimated costs for models, engine test stand, prototype installation of 6 C-3 engines in airplane, and flight test program, without boundary layer removal for cooling and with boundary layer removal for cooling, are as follows:

Without Boundary Layer Removal for Cooling

		Estimated Cost
Modify B-36A airplane No. 40	$	2,473,306.25
Modify 1/14 Scale Powered XB-36 Model		26,085.00
Build 1/14 Scale Duct & Nacelle Model		106,882.38
Modify 1/26 Scale Galcit Power-Off Model		14,862.55
Flight Test 45 hours		423,458.10
Ground Test of 4360-C3 Engine		186,395.00
Total Estimated Cost.	$	3,230,989.28

With Boundary Layer Removal for Cooling

Modify B-36A airplane No. 40	$	2,948,431.68
Modify 1/14 Scale Powered B-36 Model		26,085.00
Build 1/14 Scale Duct & Nacelle Model		58,721.88
Modify 1/26 Scale Galcit Power-Off Model		14,862.55
Modify 4/29 Scale B-36 Semi-Span Wing Model		65,517.25
Flight Test - 45 Hours		423,458.10
Ground Test of 4360-C3 Engine		186,395.00
Total Estimated Cost	$	3,723,471.46

Above program is based on performing work on boundary layer removal for cooling parallel with ram air cooling until value of boundary layer removal for cooling is established by 4/29 scale model. At such time, parallel development will be stopped and the satisfactory method continued.

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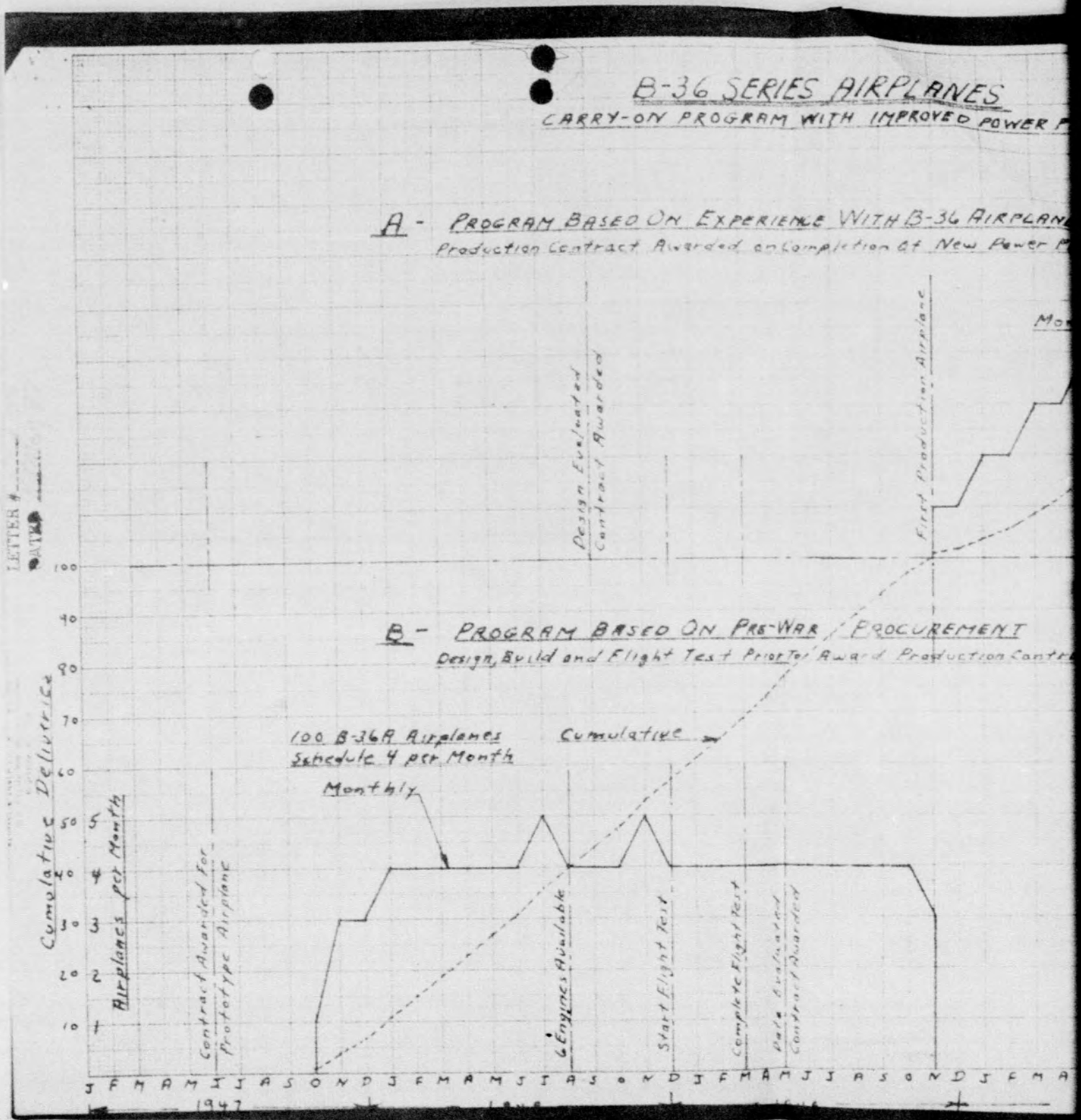

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B-36 SERIES AIRPLANES

ARRY-ON PROGRAM WITH IMPROVED POWER PLANTS

BASED ON EXPERIENCE WITH B-36 AIRPLANES

Contract Awarded on Completion of New Power Plant Design

Design Evaluated
Contract Awarded

First Production Airplane

Monthly

Cumulative

Airplanes per Month

Cumulative Deliveries

0 1 2 3 4

0 10 20 30 40 50 60

M BASED ON PRE-WAR PROCUREMENT

and Flight Test Prior to Award Production Contract

Cumulative

Start Flight Test

Complete Flight Test

Data Evaluated
Contract Awarded

Additional Procurement
Schedule 4 Per Month

Monthly

Cumulative

First Production Airplane

A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D

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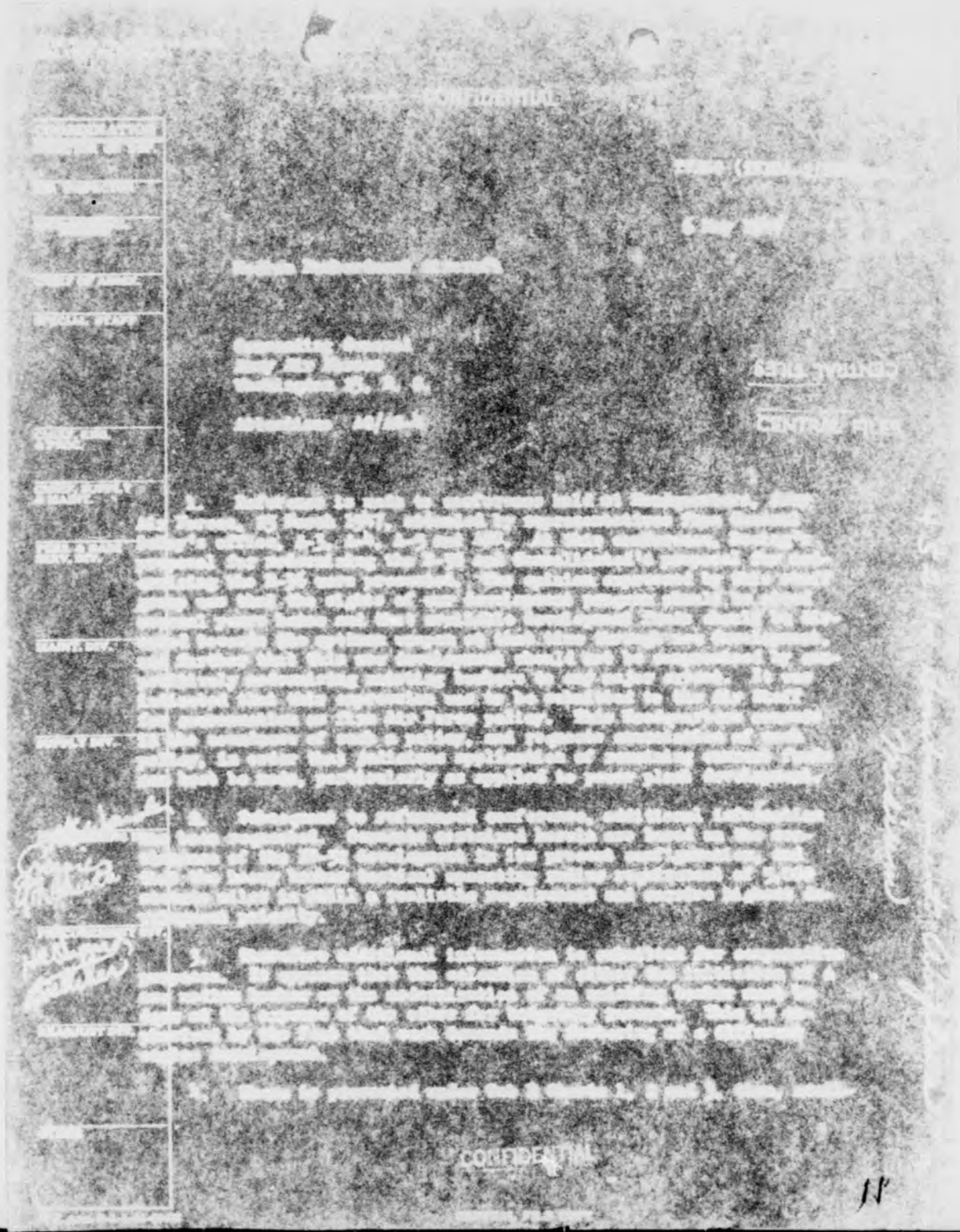

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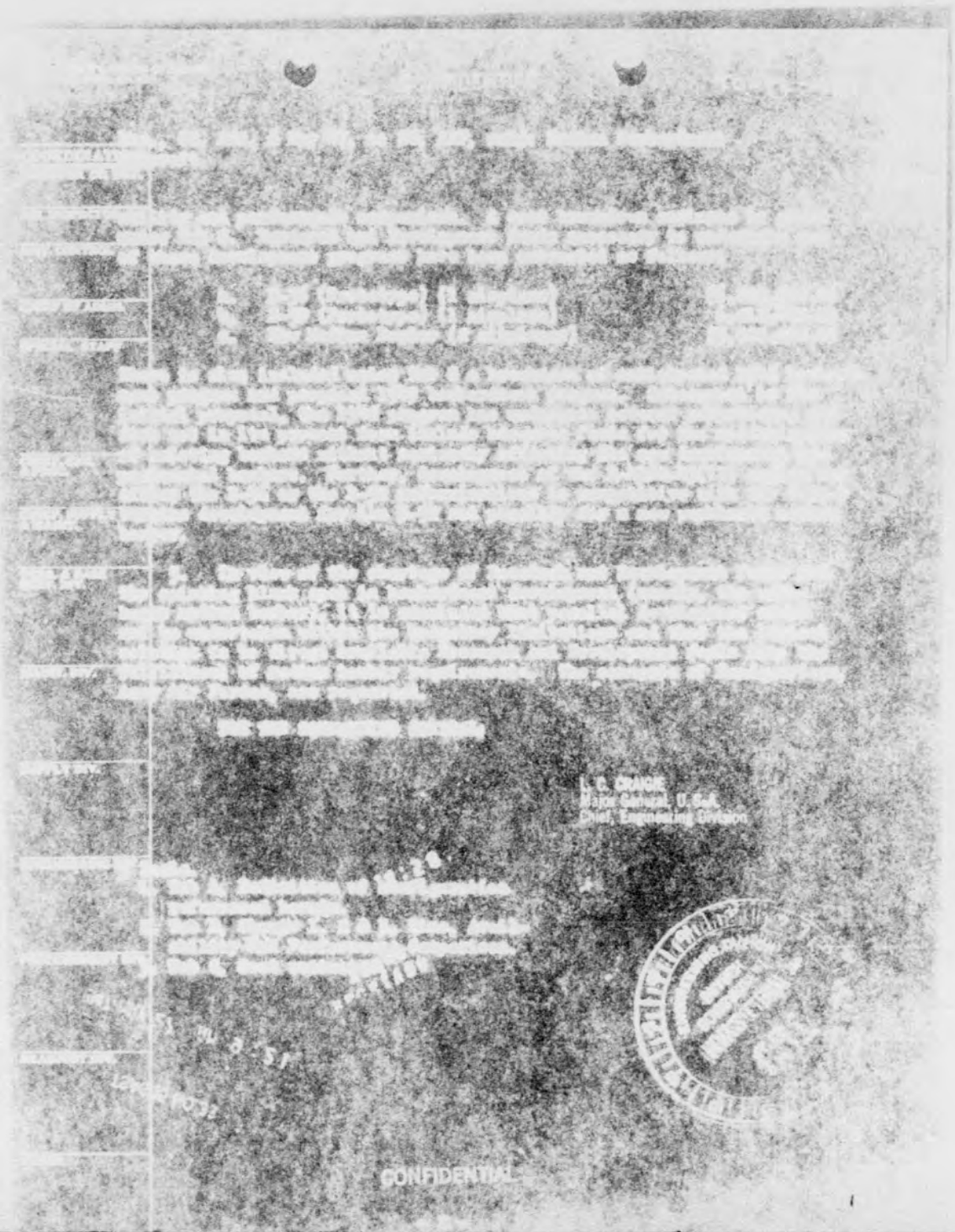

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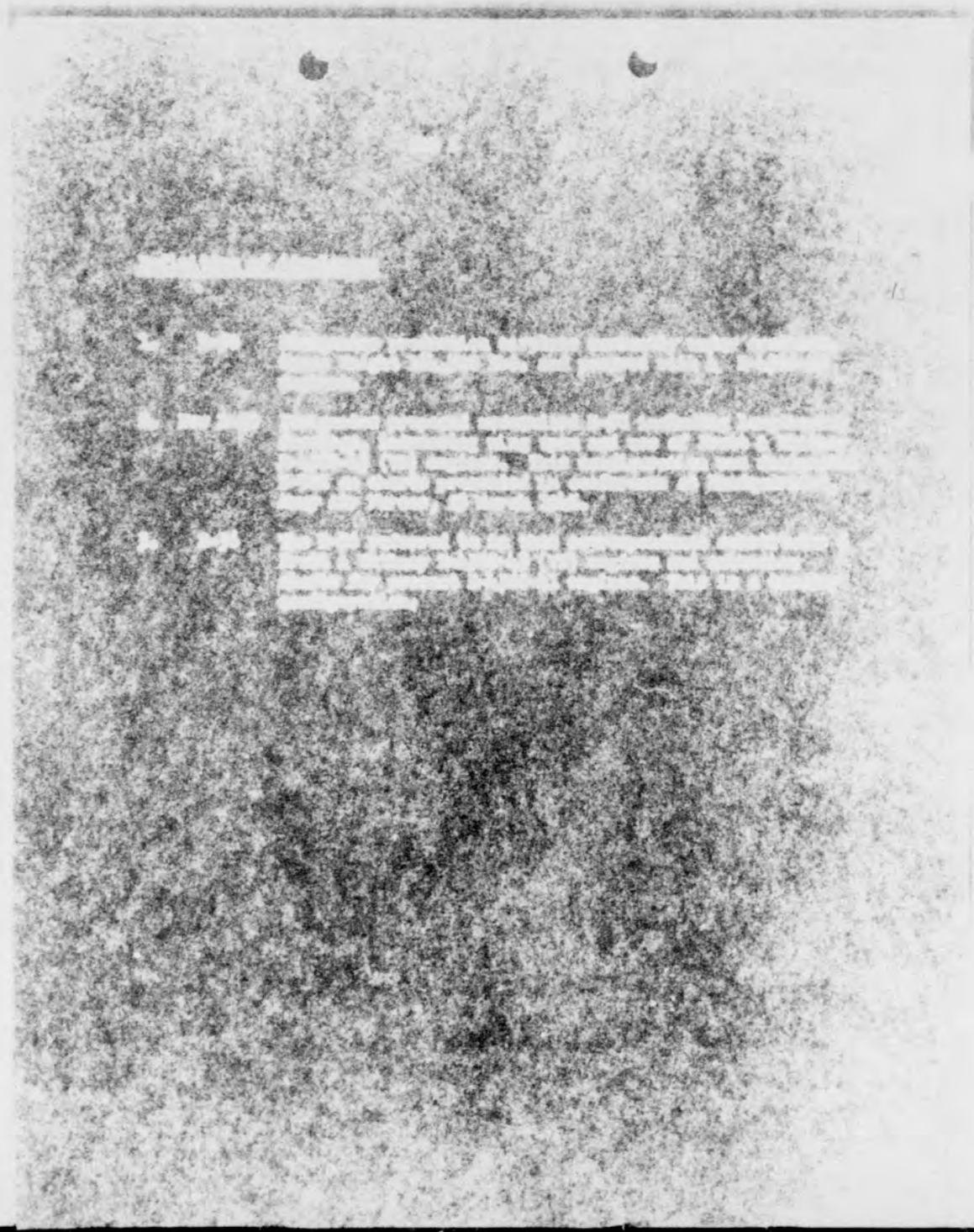

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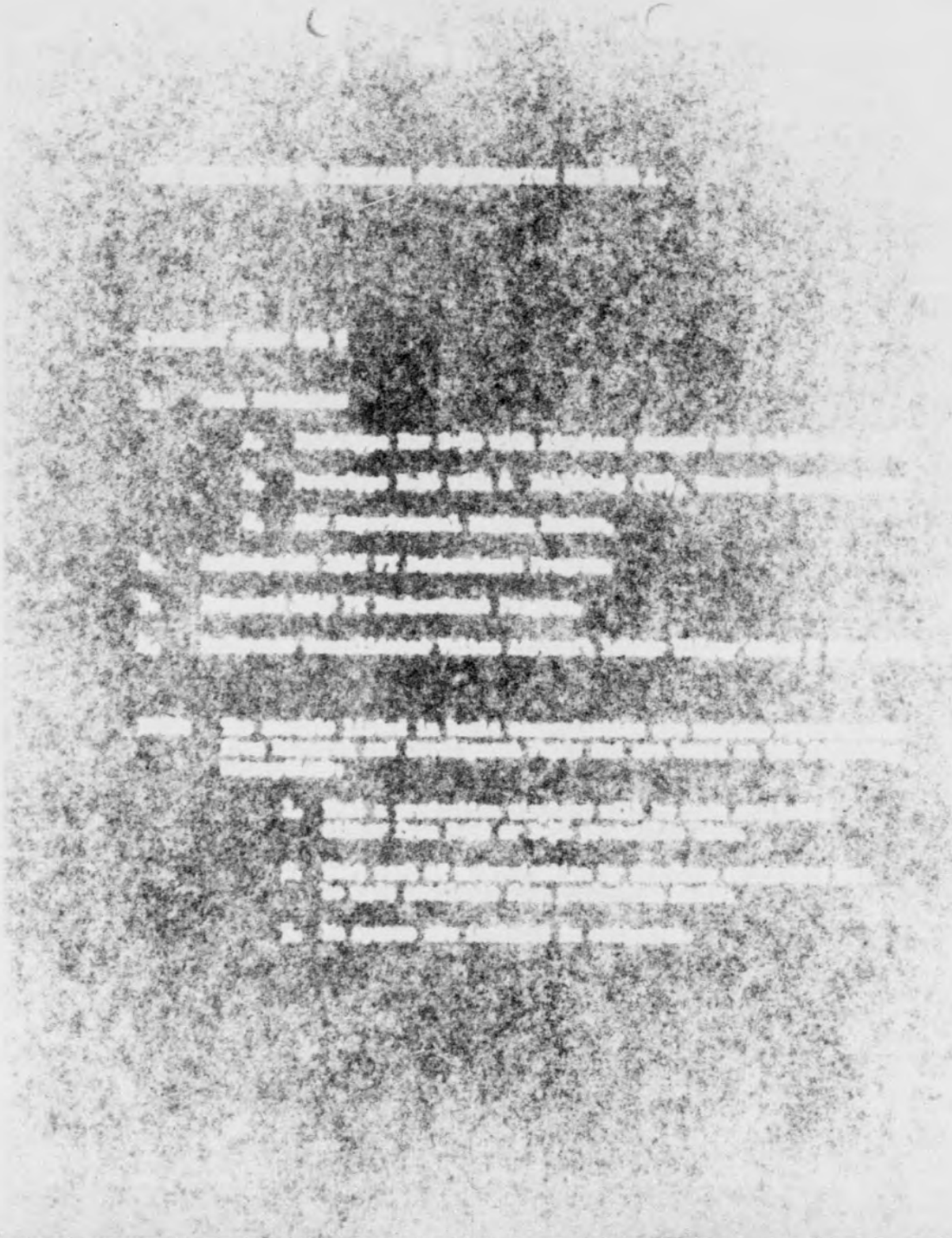

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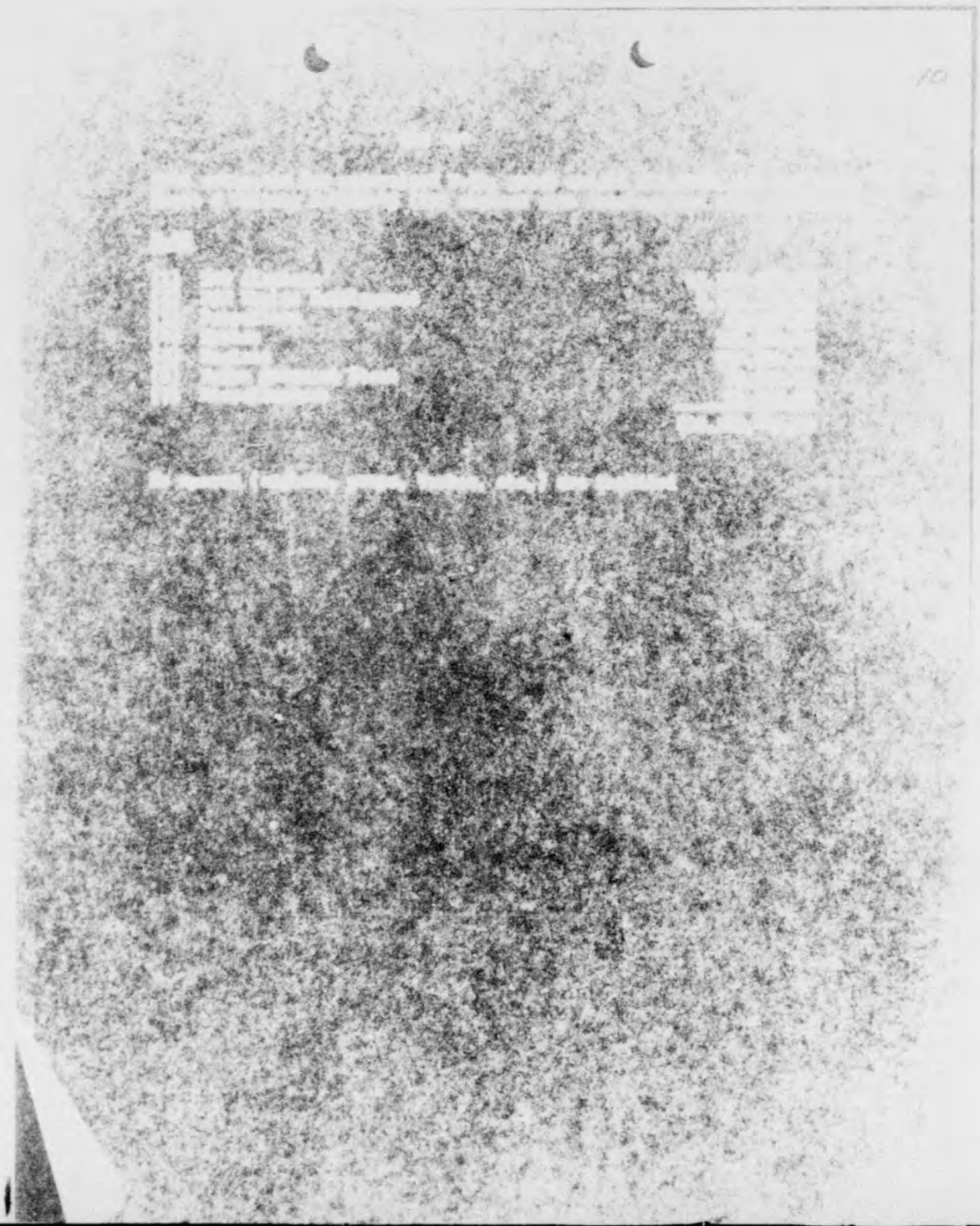

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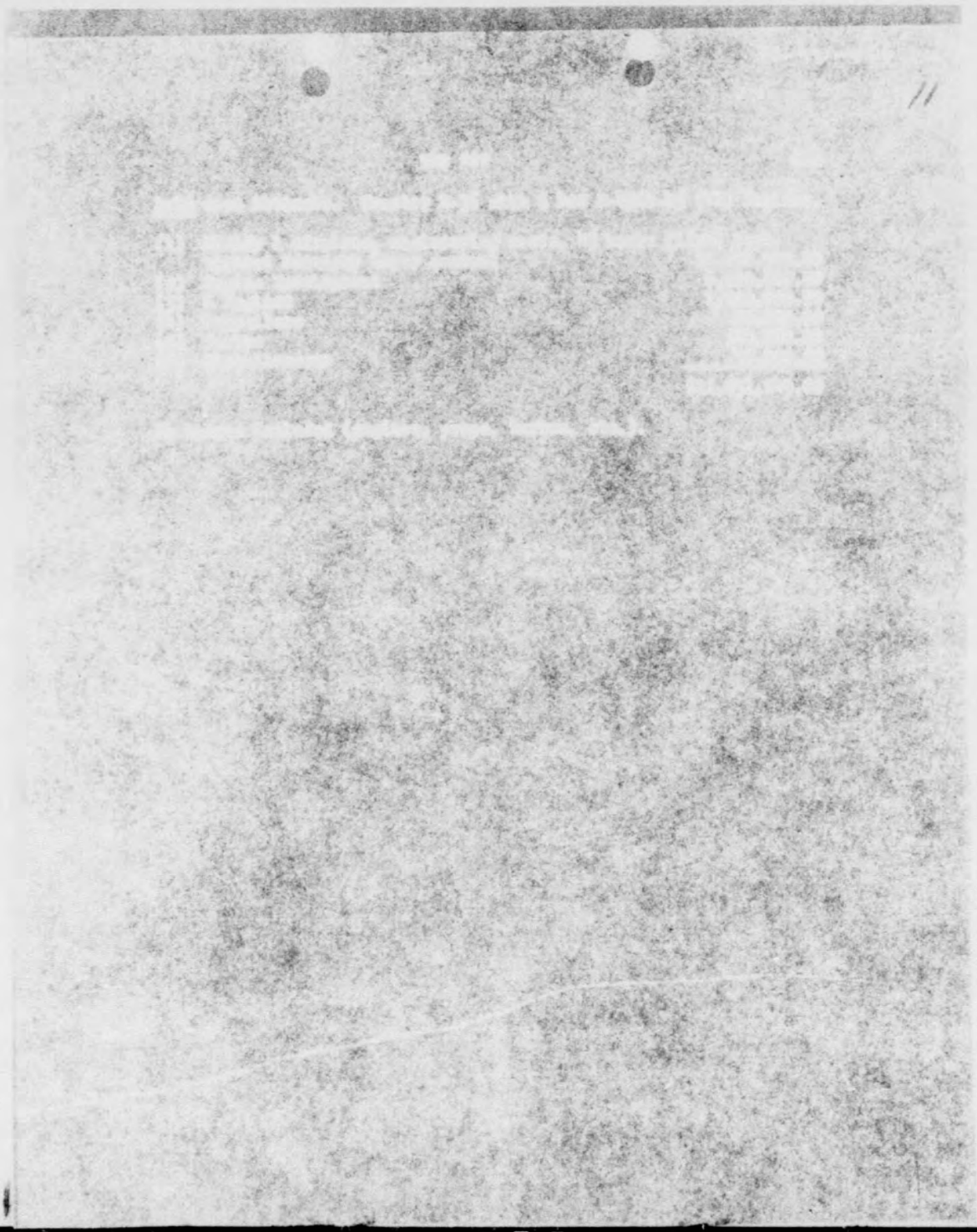

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FISCAL YEAR 1949

RESEARCH AND DEVELOPMENT PROGRAM A

C
O ENGINEERING DIVISION - AIRCRAFT PROJECTS
P
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PROJECT 611-1

Items 426 and 427 - Bombardment Aircraft - - - - - - - - - -	17,300,000.00
1. Continuation of present projects initiated in former years (excluding the XB-52). These funds will be used for necessary changes of a safety nature, engineering improvements, extension of flight test programs, procurement of tactical equipment, and otherwise continuing the XB-45, XB-47, XB-48 and XB-51 - - - - - - - - - -	600,000.00
2. Continuation of the XB-52 Project to fulfill Military Requirements for Heavy Bombardment Airplane -	8,000,000.00
3. Procurement of GFE for XB-52 Heavy Bombardment Project - - - - - - - - - - - - - -	3,100,000.00
4. Initiate procurement of Phase II for new Medium Bomber - - - - - - - - - - - - - - -	3,500,000.00
5. G.F.E. for new Medium Bomber - - - - - - - - -	2,100,000.00

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FISCAL YEAR 1948

RESEARCH AND DEVELOPMENT PROGRAM

ENGINEERING DIVISION - AIRCRAFT PROJECTS

PROJECT 611-1

C O P Y

Items 426 and 427 - Bombardment Aircraft - - - - - - - - - - - - 19,798,200.00

1. Continuation of current bombardment aircraft for which basic procurement was initiated in former years. Funds will be used to make safety changes, engineering improvements, procure tactical equipment, conduct flight testing, and otherwise continue the XB-35, XB-36, XB-45, XB-47, XB-48, XB-51, XB-46, XB-42A and XB-43. - - - - - - - - - - - - - - - - 2,670,200.00

2. Continuation of engineering and initiate construction on the XB-52 Heavy Bombardment Airplane - - - - - - - - - - - - - 14,730,251.00

3. G.F.E. for the XB-52 Project - - - - - - - - - 1,047,749.00

4. Initiate Phase I development for a new Medium Bombardment Airplane to fill the gap between the light and heavy bombardment aircraft in the present development program. - - - - - - - - - - - - - - - - - - - 1,350,000.00

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Cost estimates for new medium bomber:

Estimates based on assumption of an airplane with roughly the following characteristics:

Design Gross Weight	Less than 200,000 lbs.
Bombs	10,000
Tactical Operating Radius	2,500
Average Cruising Speed	500 approx.

Phase I	one source	$1,000,000.00
Phase II	2 airplanes, one source	17,000,000.00
G.F.E.		5,000,000.00
	Total	$23,000,000.00

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HEADQUARTERS, ARMY AIR FORCES
Washington

8 May 1947

SUBJECT: Medium Bombardment Aircraft

TO: Commanding General, Air Materiel Command
Wright Field, Dayton, Ohio

Attn: Engineering Division

Reference: Ltr frm CG, AMC to CG, AAF, subject as above, dated 6 May 1947

1. The reference letter -

a. Concurs in a tentative decision arrived at in Headquarters, AAF, on 25 March 1947, that the AAF bombardment development program should be aimed several years hence with all available development funds being directed towards the optimum weapon at that time, without compromise to such funds by competitively modernizing existing bombers.

b. Emphasizes that the modernization of existing bombers, to obtain the potential increased performance capable of realization through such modification, can only be done at the expense of lesser emphasis on the initiation of a new medium bomber design.

c. Brings out the fact that development of the R-4360 CDT engine is only warranted if current bombers are to be modernized, and that the development of the VDT is competitive with the T-35-3 development.

d. Implies that all research and development funds required for the modernization of current bombers must come from the proposed F. Y. 1948 aircraft funds as currently visualized, and that funds for the development of the proposed 4360-VDT engine can only be undertaken at the expense of other engine developments.

2. The recommendations of the reference letter (as briefly summarized above) were, together with the current tactical and strategic planning for the next 5 to 7 year period, given serious consideration by the Air Staff in a meeting held in the office of the Deputy Chief of Air Staff for Research and Development on 6 May 1947. As a result of this reconsideration of desirable bombardment developments, it was decided (subject to further consideration of additional data to be obtained from A.M.C. as outlined below) that the tentative decision reached in the conference of 25 March 1947 should be reversed. Specifically, it was considered essential that -

a. The continued development of the XB-52 proceed as a first priority project.

b. Initiation of the procurement of a new medium bomber should be instituted immediately upon the availability of F. Y. 1948 funds.

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452.1 - Bombardment Aviation - Policy

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Ltr to OS, AMC, subject: Medium Bombardment Aircraft

c. The R-4360-43(VD) engine be developed.

d. A prototype installation of this engine in a modified B-36 and B-50 (including new wings) should be undertaken.

3. During discussions of the availability of funds for the concurrent developments outlined above, it was brought out that the airframe contractors cost of the airplane modifications referred to in par. 2 d, was a proper charge against production funds. It also appeared probable that a similar financing of installation engines and possible propellers would be in order. This use of Production funds would reduce Research and Development funds from the $15,250,000 estimated as required for modification of a B-36 and a B-50 to approximately $5,000,000, with a resultant lesser prejudicial effect on other categories of AAF development projects.

4. While the plan for development of bombardment airplanes as outlined in par. 2 was considered as highly desirable, it was felt advisable that the issuance of a firm directive implementing such a development program should be held in abeyance pending receipt of the following information from A.M.C.

a. A listing of the specific projects currently scheduled for financing from F.Y. 1948 funds which would have to be cancelled, were the decision outlined above placed into effect.

b. AMC's comments, in such detail as to warrant an intelligent appraisal by this Headquarters, on the prejudicial effect resulting from cancellation or postponement of the projects recommended for exclusion from the scheduled 1948 R&D Program.

5. It is realized that a re-analysis of the R&D Program for 1948, at a time when all Laboratories are engaged in preparation of their F.Y. 1949 budget estimates, is imposing an additional work-load at a time of unusual planning stress. In view of the importance and far-reaching nature of the decision which will hinge upon a consideration of the desirability of fostering improved versions of the B-36 and B-50 as compared with the undesirability of delaying the development of items of other categories, the additional reviewing functions occasioned by preparation of the above data was considered warranted. It is, therefore, directed that the information as outlined in the preceding paragraph be submitted to this Headquarters at the earliest possible date and not later than 23 May.

By command of General SPAATZ:

/s/ E. M. Powers
E. M. POWERS
Major General, U. S. A.
Assistant Chief of Air Staff-4

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COORDINATION
DIRECTOR OF REP.
AIR INSPECTOR
MAT. CONTROL
CHIEF OF ADMIN.
SPECIAL STAFF
CHIEF, ENG. & PROC.
CHIEF, SUPPLY & MAINT.
PERS. & BASE SERV. DIV.
MAINT. DIV.
SUPPLY DIV.
ENGINEERING DIV.
PROCUREMENT DIV.
READJUST DIV.
OTHER

[illegible], Hq AAF, 4th of May 42, to CG, [illegible], subject: "Modification Requirements Aircraft."

1st Ind. [illegible] (TSNAA-2/MAY/mah)

Hq, AAF, Wright Field, Dayton, Ohio. 27 May 1942

To: Commanding General, Army Air Forces, Washington 25, D. C.
Attention: AC/AS-4

1. Data requested in basic communication were presented in conference held in Office of Chief, Engineering Division, Air Material Command, attended by representatives of A-3, A-4 and A-5, Army Air Forces.

2. Additional tabulated data were given to General Crawford at this conference, and it was indicated that no additional data would be required in answer to basic communication.

FOR THE COMMANDING GENERAL:

S. R. BRENTNALL
Brigadier General, U. S. A.
Chief, Engineering Operations
Engineering Division

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HEADQUARTERS, ARMY AIR FORCES
WASHINGTON

IN REPLY REFER TO:

12 MAY 1947

SUBJECT: Medium Bombardment Aircraft

TO: Commanding General, Air Materiel Command
Wright Field, Dayton, Ohio

Att: Engineering Division

Reference: Ltr fm CG,AAF-AC/AS-4 to CG,AMC, subject as above, dated 8 May 1947

1. The reference letter directed the preparation of a list of specific projects which A.M.C. recommends for cancellation from the projects currently scheduled to be undertaken with F.Y. 1948 funds, should the presently visualized bombardment airplane development program be directed.

2. In your review of scheduled projects, consideration should be given to a possible elimination of not only F.Y. 1948 projects, but those F.Y. 1947 projects for which funds have not as yet been definitely contracted for.

3. You are also advised that interested members of the Air Staff are planning to visit AMC on Friday, 23 May, for the purpose of making an on-the-spot review of those projects which your survey indicates most eligible for cancellation, should the bombardment program referred to in the reference letter be instituted. Your listing of projects and comments pertaining thereto should be completed in written form as directed in our previous instructions, but shall be held for action of the reviewing group on their visit to A.M.C., rather than transmitted to this Headquarters as previously directed.

By command of General SPAATZ:

GRANDISON GARDNER
Major General, U. S. A.
Deputy Assistant Chief of Air Staff-4

CENTRAL FILES
7/28/47 emh

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ADDRESS REPLY TO: COMMANDING GENERAL, ARMY AIR FORCES, WASHINGTON 25, D. C.

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In reply please refer to:
RHB:lms Engineering II.

TC-A-A-426

PRATT & WHITNEY AIRCRAFT

DIVISION OF UNITED AIRCRAFT CORPORATION

EAST HARTFORD 8, CONNECTICUT, U.S.A.

CABLE ADDRESS: AIRCRAFT

CONFIDENTIAL

13 May 1947

ARMY OFFICE
APPROVED
CONCURRED IN
NO COMMENT

VIA: Army Air Forces Representative

To: Director
Air Materiel Command
Wright Field, Dayton, Ohio

Attention: Mr. J. B. Coyle, Power Plant Laboratory, TSEPP-8

Subject: Letter Contract W33-038 ac 14294 R-4360-39 Engine Development
Monthly Progress Report, Exhibit 'A', Item 7

Reference: (a) PWA letr RHB:lms Engineering II dated 14 April 1947 to Director, AMC, Wright Field, Dayton, Ohio

1. The following work has been accomplished on the XR-4360-39 Development Project since the last monthly pregress report was submitted by reference (a):

(a) The total engine time on the full scale R-4360-C engines has been increased from 1333 to 1524 hours and the total number of full scale R-4360-C engines has been increased from five (5) to seven (7). R-4360 Experimental Engines Nos. X-101 and X-109 have been assembled and run in as "D" engines. Engine No. X-101 is being used as a stand-by for the Official 50-Hour Test Engine, No. X-151, while Engine No. X-109 will be used for general R-4360-C development work.

(b) Engine No. X-151, which was completely reassembled with new and in many cases redesigned engine parts, has been run in, torn down, inspected and reassembled. The official 50-Hour XR-4360-39 Endurance Test is to be run on this engine.

(c) Engine No. X-155 was reassembled with redesigned bifilar damper parts and 37 hours of endurance completed when a major "D" row power section failure was experienced. Although it has not been possible to establish the exact cause of the failure examination of the damaged master rod, link rods, pistons, cam gears and front crankshaft bifilar damper parts removed from the "D" row power section indicates that the floating counterweight in the front bifilar construction probably failed first. As a result of this failure the crankshaft bifilar construction is being redesigned to strengthen the floating counterweight. Engine No. X-155 is being reassembled with a replacement main crankcase, crankshaft and other parts and endurance testing will be continued on this engine. Engine No. X-156 was inspected following 93 hours best economy endurance at 2400 BHP, 2400 RPM and 42" Hg exhaust back pressure; this inspection definitely indicates the original R-4360-C cylinders and valves will not be satisfactory for extended operation at these conditions. Engine No. X-156 has been reassembled and was used to establish a satisfactory energy level in the latest available Scintilla High Frequency Ignition System and to calibrate the torque nose to be used during

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PRATT & WHITNEY AIRCRAFT

May 1947

To: Director, Air Materiel Command, Wright Field, Dayton, Ohio

Subject: Letter Contract W33-038 ac 14294 R-4360-39 Engine Development
Monthly Progress Report, Exhibit 'A', Item 7

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the 50-Hour Endurance Test scheduled to be run on Engine No. X-151. Engine No. X-157 has been reassembled without internal supercharging and preliminary runs have been satisfactorily completed on this prototype V.D.T. engine. This engine is, of course, being operated with fuel injection. Engine No. X-152 was removed from the test stand and is now undergoing a major overhaul. The seven-cylinder single-row test Engine No. X-106 was run in and the scheduled cylinder, master rod and piston endurance attempted. Because of scavenging difficulties, it has, however been found necessary to remove this special engine from the test stand to modify the scavenging system.

(d) The total engine time on the three (3) Scintilla High Frequency Ignition Systems is now in excess of 540 hours. A revised energy level for this system when operated on the R-4360-C engine has, as indicated above, been established on Engine No. X-156. The first General Electric High Frequency Ignition System is scheduled for delivery late in May 1947.

(e) 304 hours total engine time has been accumulated on the first two (2) Bendix Fuel Injection Systems. It has been found necessary to modify the oil supply passages within the injection units to insure adequate lubrication to the internal parts of these assemblies. The Ceco carburetor continues to be run as an alternate to the Bendix Fuel Injection System. Ceco is also continuing with the design of a full scale fuel injection system suitable for use on the R-4360-C engine.

(f) The special R-2800 engine which was run as a V.D.T. engine has been overhauled following 137 hours of endurance and will be used to obtain additional advance information in connection with the R-4360-C V.D.T. type power plant.

(g) A quarter-scale mock-up of an R-4360-C engine of the type described in Report TR-46 was forwarded to Wright Field on the 1st of April 1947 in accordance with Item No. 4, Exhibit 'A', of the subject letter contract.

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UNITED AIRCRAFT CORPORATION
Pratt & Whitney Aircraft Division

R. H. Begg
Project Engineer

RHB:lms

MAY 1947 RECEIVED ARMY OFFICE PRATT & WHITNEY AIRCRAFT

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In reply please
refer to WPG:Pr-Eng.

PRATT & WHITNEY AIRCRAFT

DIVISION OF UNITED AIRCRAFT CORPORATION

EAST HARTFORD 8, CONNECTICUT, U.S.A.

CABLE ADDRESS: AIRCRAFT

May 15, 1947

AC-18683

Commanding General
Air Materiel Command
Wright Field, Dayton, Ohio

Subject: Development of R-4360 VDT Type Engine -- Proposal for

References: (a) P&WA tel. to AMC, Attn. Col. Minty, dated April 23, 1947.
(b) P&WA let. to AMC, WPG:rk, dated January 21, 1947.
(c) P&WA let. to AMC, WPG:Pr-Eng., dated March 13, 1947.

1. This communication confirms our telegraphic proposal of April 23, 1947, (reference (a)). It supersedes the proposals contained in references (b) and (c). By dropping from the program the second phase development as set forth in reference (b) and for which there seems to be no requirement, the third phase development as set forth in reference (c), can be completed six months sooner than originally contemplated.

2. Accordingly, it is proposed to design and develop an R-4360 variable discharge, turbo-supercharged engine having performance substantially as shown in PWA Report TR-46. The design of the engine will embrace fuel injection, special exhaust manifolding, cylinders, pistons and valve gear to withstand continual high backpressures, crankshaft and torsional vibration dampening mechanism suitable for use without an engine driven impeller (preferably of the split pin type similar to the R-2800 Series "C") and an induction system suitable for use without a built-in supercharger.

3. The contractor will furnish the following items pertaining to this development:

(a) Conversion of the three engines which have been furnished under Item 2 of Exhibit A of Letter Contract W33-038ac 14294 to engines of the type described in PWA Specification No. A-7065, dated May 10, 1947. These engines will be retained by the contractor for development purposes until the contract contemplated by this proposal is completed. They will then be returned to the Government in operating condition.

(b) Report of 150 hour qualification test as called out in PWA Specification No. A-7065, dated March 10, 1947. This test to be conducted on an experimentally-built engine.

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PRATT & WHITNEY AIRCRAFT
Air Materiel Command

To be conducted by P&WA

May 15, 1947

- 2 -

to be conducted by P&WA Div.

(c) Report of flight tests on an experimentally-built engine as described in PWA Specification No. A-7065, dated March 10, 1947, installed in a Government-furnished B-50 airplane. The special nacelle features necessary to make this installation will also be Government furnished. The flight test program will include a general investigation of engine performance and installational problems. To complete this investigation on time, the Government-furnished equipment will be required not later than January 1, 1948. The objective of this investigation is to lessen the time required to perfect the power plant installation in service type airplanes but, obviously, this can be accomplished only with the full cooperation of the airplane, the turbo-compressor and the power control manufacturers.

(d) Detailed monthly reports of the general progress of the development work.

General Electric was

(e) Report of an electronic power control development. This development will be subcontracted to the ~~Minneapolis-Honeywell Regulator~~ Company once a proposal acceptable to both this Division and the Air Materiel Command has been received from that company. In the event an acceptable proposal is not received, ~~$200,000~~ $205,000 will be deducted from the total price. was

4. The total price of this development as itemized above is ~~$5,000,000~~ $5,545,000.00 was

The date of completion is December 31, 1948.

UNITED AIRCRAFT CORPORATION
Pratt & Whitney Aircraft Division

W. P. Gwinn
Vice President; General Manager

Next

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175 TC-92-296

PRATT & WHITNEY AIRCRAFT

WASP MAJOR R-4360-VDT DEVELOPMENT PROJECT

COST BREAKDOWN

Material	
Design	$ 7,500
Construction	1,800,710
Test	421,223
Total	2,229,433
Engineering Salaries and Wages	
Design	401,940
Construction	619,520
Assembly	282,360
Test	407,996
Total	1,711,816
Engineering Overhead at 90%	1,540,634
Total	5,481,883
General Administrative at 3%	164,456
Total Estimated Cost	$ 5,646,339
Price Quoted	~~$ 5,300,000~~ ~~5,505,000~~ $ 5,300,000.00 + 205,000.00 = $ 5,505,000.00

J.E. Gustafson

August 20, 1947

Explanation: The quotation was originally 5,300,000.00 which did not include an estimated price of an electric power control. Price thereof could not be quoted until quotation was received from Akron-Hoyt-Hoyt and GE. GE quotation = 205,000.00 A-N = 240,000.00. GE was known basis 5,300,000.00 plus 205,000 = 5,505,000.00

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23 May 1947

TSB/ASH

B-36 Airplane Delivery Schedule.

Commanding General,
Army Air Forces,
Washington 25, D. C.

Attention: AC/AS-4.

1. In accordance with directive of Headquarters, Army Air Forces contained in 2nd Indorsement to Air Material Command, AFDRE-1, Subject: "B-36 Airplane Program", dated 21 June 1946, the Air Material Command took action to increase production schedule of B-36 Airplane from four airplanes to six airplanes per month. This involved authorizing increase of production tooling in the amount of $3,000,000.00 and an increase in capital facilities which so far has amounted to $1,500,000.00. These moneys are now largely spent in accelerating the airframe program. Air Material Command has been prosecuting a vigorous program to meet commitments made on the B-36 Airplane. However, due to slowdowns caused in research, development, and production in the immediate post-war period, a number of GFE items essential to the B-36 program have become delinquent. A list of these items and their status towards meeting B-36 airplane requirements is attached herewith as EXHIBIT "A".

2. The most critical GFE shortage currently existing is the propellers. The 6-bladed propeller manufactured by Curtiss-Wright Aeronautical Corporation, Caldwell, New Jersey, has recently incurred design failure in the hub, which has aggravated an already critical production schedule to such an extent that a maximum of 14 airplanes will be short propellers in October 1947 based on a minimum flow time of sixty days. Since the B-36 propeller combination is still in the developmental stage, further delay may be incurred in the program due to additional failures.

3. The second most critical GFE item is the fire control system. According to the latest available schedules it will be necessary to deliver approximately five airplanes short this equipment and retrofit them towards the end of the production program. It is to be noted that General Electric has recently experienced difficulties during the firing tests of the first B-36 fire control system (excessive dispersion of the fire pattern), and as a result has stopped their production until the present faults can be corrected.

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4. Attached herewith as Exhibit "B" is the Contractor's proposal with the AAF Plant Representative's comments to set back the airplane schedule and reduce total production per month to four airplanes. With reference to the proposal, it should be pointed out that the Contractor does not reduce flow-time of GFE to the minimum as is done in AMC study (Exhibit "A"). Therefore, the Contractor's study shows a larger accumulation of airplanes short GFE.

5. In addition to the critical GFE situation, an influencing factor in considering a set-back of the B-36 program is the fact that the B-36 is a highly developmental airplane and it is expected there will be numerous engineering changes. These changes will result from the acceptance inspection of the YB-36 and from service testing of the early B-36 Airplanes. By reduction in schedule, more airplanes will be delivered to the AAF incorporating late engineering changes. Also, if the current six airplanes per month schedule is continued, a retrofit program would have to be established, shop completed aircraft will have to be stored at the Contractor's plant, and late GFE will have to be installed out of station. This will increase the cost of the B-36 program by approximately $1,000,000.00. On the other hand, if the B-36 schedule is reduced to a maximum of four airplanes per month, an additional $3,440,000.00 will be required primarily due to increased overhead to continue the B-36 program an extra eight months. (The Contractor's figure of $4,300,000.00 is incorrect in that the Contract would be extended only eight months beyond the present schedule instead of ten months).

6. Another factor that should be considered is the possible continuation of the B-36 program incorporating in B-36 Airplanes either the 43600-3 YET engine or the T-35 gas turbine. If further procurement of the B-36 Airplane incorporating either of the above power plants were to be made, it would be a substantial saving to the Government if said procurement were made while Fort Worth was still in production on the current B-36 Contracts.

7. To recapitulate: The following are the advantages and disadvantages of the six and four airplane per month programs with Current vs. Proposed Reduced Aircraft Schedule:

	1947 J	F	M	A	M	J	J	A	S	O	N	D	1948 J	F	M	A	M	J	J	A	S	O	N	D	1949 J	F	M
Current Schedule	1	2	2	3	5	4	5	0	1	6	7	5	7	6	6	6	6	6	6	6	6	6	6	4			

(With delays for incorporation of major changes on 85rd airplane).

	1947 O	N	D	1948 J	F	M	A	M	J	J	A	S	O	N	D	1949 J	F	M	A	M	J	J
Proposed Reduced Schedule	1	3	3	4	4	5	4	4	4	5	4	4	4	5	4	4	4	4	4	4	4	4

A	S	O	N
4	4	4	2

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	Six Airplanes Per Mo.	Four Airplanes Per Mo.
Advantages:	(a) Carries out accelerated program on which approximately $6,500,000 in tooling and capital facilities have already been spent.	(a) Insures smoother flow of airplanes on production line.
	(b) Closes down the Ft. Worth plant earlier, thereby decreasing cost for production of B-36 airframes.	(b) Keeps Ft. Worth plant open longer, thereby saving facility for possible further production of B-36 airplanes with 4360 VD engines or T-35-1 engines.
	(c) Provides for delivery of the total quantity of B-36 Airplanes to the AAF at an earlier date.	(c) Insures delivery of more complete airplanes to the service.
Disadvantages:	(a) Uneven flow of airplanes during first half of production program.	(a) Additional cost of at least $3,440,000.00.
	(b) Delivery of some aircraft with GFE shortages.	(b) Total quantity of B-36 Airplanes will be delivered to the AAF at a later date.
	(c) Additional cost of approximately $1,000,000.00 for storage of "shop completed" airplanes short propellers.	
	(d) Additional cost might be incurred if developmental GFE causes further trouble during initial test and production.	

5. In view of the facts presented above, it is the recommendation of this Command to retard the B-36 delivery schedule from six airplanes to four airplanes per month. It is requested that Headquarters, Army Air Forces forward decision to Air Materiel Command on this important problem at an early date since Contractor's manpower requirements are continuing to increase on the current six airplane per month schedule, whereas they will be immediately reduced if the four airplane per month schedule is effected.

J. S. STONELL,
Brig. Gen., U.S.A.,
Chief of Administration.

cc - Col. Shepard
Gen. Thomas

Incls: Exhibits "A" & "B".

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40 File — B-36A Ltr SWP

CONFIDENTIAL

Subject: B-36 Airplane Delivery Schedule

AFDRP-7

1st Ind.

Hq Army Air Forces, Washington 25, D. C. 11 June 1947

To: Commanding General, Air Materiel Command, Wright Field, Dayton, Ohio
Attention: Chief of Administration, TSCAD

This headquarters concurs in the recommendation contained in basic correspondence to retard the B-36 delivery schedule from six planes to four planes per month.

BY COMMAND OF GENERAL SPAATZ:

GRANDISON GARDNER
Major General, U.S.A.
Acting Asst. Chief of Air Staff-4

2 Incls.
n/c

(Exhibit "A" not returned to AMC with 1st Ind from CAC/AS-4)

Basic (P.-D.) Ltr
fr Washington
dtd 23 May 47
(B-36 Plan)

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TAB E-2

Bombardment Development Policy Conference

TSEOA TSEOA-2 26 May 47 Comment No. 1

1. Major decisions reached in bombardment development conference held in Office, Chief, Engineering Division, 23 May, included the following bombardment development projects:

a. Modernization of the B-50, including wing and fuselage changes and R-4360-43 power plants.

b. Modernization of the B-36 to include R-4360-43 power plants.

c. Continuance of the B-52 on a high priority basis.

d. Initiation in Fiscal Year 1948 of a new medium bomber.

2. The above decisions impose an immediate additional workload on Bombardment Branch of three extra projects. The attached sheet lists bombardment projects and project personnel now assigned to the projects, indicating that Bombardment Branch is at present saturated. Although on two projects indicated, there are more than one project engineer, it is desired to point out that these personnel were recently assigned to Bombardment Branch and have little project experience. Further, the dual assignment is on the XB-51 and SB-52 projects, both of which are in the early stages and demand priority consideration.

3. If Bombardment Branch is to project these additional projects efficiently and without impairing the efficiency of existing projects, additional professional personnel will be required. It is, therefore, requested that this situation be brought to the attention of Chief, Engineering Division, with a request for a minimum of two additional project engineers of P-4 rating or higher.

H. E. WARDEN
Lt. Colonel, Air Corps
Chief, Bombardment Branch
Aircraft Projects Section

HEW/emh
3-4305

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C O P Y

The following persons were present at the conference held in the office of the Chief, Engineering Division, Wright Field, 23 May 1947.

Lt. General C. E. LeMay	AC/AS, Research & Development, Hq AAF
Lt. General E. W. Rawlings	Comptroller, Hq USAF
Major General L. C. Craigie	Chief, Eng. Div., AMC
Major General A. R. Crawford	Ofc of Chief, Research & Development, Hq AAF
Major General F. O. Carroll	Chief, Research & Development, AMC
Major General E. E. Partridge	Asst Ch of Air Staff-3
Major General Grandison Gardner	Office AC/AS-4, Hq AAF
Major General Clements McMullen	Dep. C/G Strategic Air Command
Brig. General D. L. Putt	Deputy Chief, Engineering Div. AMC
Brig. General S. R. Brentnall	Ch, Engineering Operations, Eng. Div. AMC
Brig. General Arthur Thomas	Deputy CG, Supply & Maintenance, AMC T-4
Brig. General Wm. L. Ritchie	Operations Div, AC/AS-3, Hq AAF
Brig. General A. M. Maxwell	Chief, Requirements Div., AC/AS-3 Hq AAF
Brig. General Thomas S. Power	Deputy AC/AS-3 Hq AAF
Brig. General H. A. Shepard	Chief, Procurement Division, AMC
Colonel C. S. Irvine	Strategic Air Command
Colonel Russell J. Minty	Chief, Power Plant Laboratory AMC
Colonel P. W. Smith	Chief, Air Project Section AMC
Lt. Colonel H. E. Warden	Ch, Bombardment Br, Aircraft Project Sec, Eng. Div. AMC
Lt. Colonel G. E. Schaetzel	Procurement Division AMC
Major Wm. D. Brady	Asst Ch of Staff, R&D Hq AAF
Mr. Co le, J. B.	Project Engineer in Power Plant Lab. AMC
Mr. W. E. Donnelly	Procurement Division AMC
Mr. Arthur Boykin	Bombardment Branch, Eng. Div. AMC
Mr. Wilson (?)	
Colonel Holtoner	Research & Development, Hq AAF

C O P Y

C O P Y

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TC-92-377

ARMY AIR FORCES
AIR MATERIEL COMMAND
OFFICE OF THE AIR FORCES PLANT REPRESENTATIVE
CONSOLIDATED VULTEE AIRCRAFT CORPORATION
FORT WORTH, TEXAS

TSZCV/BHW/mm 7-2181
5251

29 May 1947

SUBJECT: Minutes of Preliminary Conference at CVAC, Ft. Worth, on Installation of Pratt & Whitney VDT Engine in the B-36 Type Airplane

TO: Commanding General
Air Materiel Command
Wright Field
Dayton, Ohio

ae-1 235

Attention: TSBPA, Lt. Col. T. P. Gerrity

1. Inclosed are five (5) copies of Minutes of Preliminary Conference at Consolidated Vultee Aircraft Corporation, Fort Worth, Texas, on installation of Pratt & Whitney VDT engine in the B-36 type airplane.

Beverly H. Warren
BEVERLY H. WARREN
Lt. Colonel, Air Corps
AAF Plant Representative

Incl:
Minutes of Conference (5)

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TC-42-378

28 May 1947

MINUTES OF PRELIMINARY CONFERENCE AT CONSOLIDATED-VULTEE CORPORATION, FORT WORTH, TEXAS, ON INSTALLATION OF PRATT & WHITNEY VDT ENGINE IN THE B-36 TYPE AIRPLANE

Following is a list of those present at the meeting:

Lt. Col. T. P. Gerrity, Air Materiel Command
Captain C. Savage, Air Materiel Command
Lt. Col. B. H. Warren, CVAC AAF Plant Representative
Major S. P. Dillon, CVAC Asst AAF Plant Representative
Mr. E. J. Bridges, CVAC AAF Contracting Officer
Mr. R. N. March, CVAC AAF Inspector-in-Charge

Mr. R. O. Ryan, Assistant Division Manager, CVAC
Mr. R. C. Sebold, Chief, Division Engineer, CVAC
Mr. M. L. Hicks, Chief, Contract Section, CVAC

1. A program for installation of the VDT 4360 Pratt & Whitney engine in the B-36 is definite. AMC finds questions still exist as to how the money will be made available for this program. Therefore, contractor is requested to forward information to Wright Field by Wednesday, June 4th, as to unit cost on last five B-36 airplanes. This information required since proto-type may be bought by cutting back equivalent amount on B-36 contract money-wise.

2. The contractor is to quote on installation of the VDT engine installation, all metal control surfaces, wind tunnel and other flight tests as are conducted with this program. AMC will consider favorably a study for incorporation of boundary layer control in this proto-type airplane. However, cost adjustment to this study should be submitted as a separate proposal. It is understood both these proposals will be available Wednesday, June 4th.

3. Since a number of problems exist regarding propellers, turbos, gear boxes, extension shafts, and turbo oil tanks, which must be solved before contractor can proceed with this program, a meeting will be held at Wright Field between contractor, propeller manufacturers, power plant manufacturers, and AMC at Wright Field between June 4th and June 6th, the exact date to be confirmed by AMC. The Wright Field conference will also establish score of flight flutter tests on YB-36 in order to establish the priority of flight tests currently scheduled. It is tentatively agreed that No. 10 B-36 will be used as the 4360 VDT proto-type. This selection is based on contractual approval by July 1, 1947.

4. Contractor will furnish a complete statement of work on proto-type model airplane which when integrated with the present B-36 specifications will describe the airplane. The contractor will also specify exact number of hours required for wind tunnel test of the various models with dates for these models to be run in NACA tunnels. This information will also be made available to AMC by June 4th, Wednesday.

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TC-42-375

MINUTES OF PRELIMINARY CONFERENCE AT CVAC, FT WORTH, TEXAS, ON INSTALLATION OF PRATT & WHITNEY VDT H HUB IN THE B-36 TYPE AIRPLANE.

5. Contractor will use production philosophy in engineering this proto-type article. Although it is recognized that many short cuts both engineering-wise and production-wise, will be used to keep the cost at a minimum. Contractor will submit a data program in his cost proposal to be submitted at AMC by Wednesday, June 4th. AAF Inspection requirements will be those normally required for an experimental airplane.

6. Contractor will quote for modification drawings on the basis of production standards from the standpoint of legibility. However, this item will be completely clarified by AMC at time proposal is submitted.

7. The proto-type installation will be made with the view in mind that it has production potentialities for the fiscal year 1949. The proto-type need not be evaluated prior to the award of this possible production contract. This production follow-on contracted for by the Government will in all probability be contracted for in July 1948, exact quantity which might be considered is still unknown. Engine and propellor for the proto-type should be available by September 1948. These items should be available production-wise for the follow-on production airplane by July 1949 on the basis that the GFE manufacturers will be authorized to proceed with their production program sufficiently in advance to allow proper time to meet this date, with short cuts on their items where necessary.

8. AMC will endeavor to have answer by June 4th as to whether or not an additional proto-type B-36 can be made available to the contractor at a sufficiently early date to meet his wind tunnel and test stand program. Contractor states he needs this engine by January 1948. AMC will endeavor to have the information available at conference noted above as to the availability of engine, propellor, turbos, gear boxes, extension shafts and turbo controls for this ground test engine which is contemplated to be run in [illegible] wind tunnel at Moffett Field.

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TC-42-375

CONSOLIDATED VULTEE AIRCRAFT CORPORATION

FORT WORTH DIVISION
FORT WORTH 1, TEXAS

MLH:gms
AC-7-~~FW~~-4786

AC-7

4 June 1947

Subject: Prototype Installation of R-4360-C3 (VDT) Engines in one B-36 Type Airplane and related information

To: Commanding General, Air Materiel Command
Wright Field, Dayton, Ohio

Attention: TSBPA3B

Via: Army Air Forces Plant Representative
CVAC-Fort Worth Division, Fort Worth, Texas

Reference:
(a) Minutes of preliminary conference held at CVAC Plant, Fort Worth, on 28 May 1947, between representatives of AMC, AAFPR and CVAC.
(b) CVAC-F.A. Learman Ltr. to AMC, subject: B-36 Series Airplanes proposed Carry-on Program, dated 5 May 1947.

Inclosure:
(A) Statement of work for one modified B-36 Type Airplane powered with six Pratt & Whitney Wasp Major R-4360-VDT engines and equipped with metal-covered control surfaces, dated 2 June 1947
(B) Data requirements for one modified B-36 type airplane powered with six R-4360-VDT engines and equipped with metal covered control surfaces, dated 2 June 1947
(C) Cost quotation on modification installation in one B-36 airplane of R-4360-C3 (VDT) engines with metal-covered control surfaces and without boundary layer removal for cooling, dated 2 June 1947.
(D) Statement of work on boundary layer engine cooling investigation for application to B-36 airplane dated 2 June 1947.
(E) Cost quotation on boundary layer engine cooling investigation for application to B-36 Airplane, dated 2 June 1947.

1. In response to AMC's request in reference (a) for statement of work and cost proposal relating to prototype installation of R-4360-C3 (VDT) engines in a B-36 airplane and other information, Inclosures (A) to (E), inclusive, are herewith submitted.

2. Inclosure (A), which constitutes a statement of work applicable to prototype VDT engine installation, has been prepared essentially in the form of a specification. Although shortness of time has not permitted integration of the statement of work with applicable paragraphs of Specification FZD-36-002B, dated 2 July 1945, and subsequent relevant Master Changes, it is believed that such statement of work describes

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CONSOLIDATED VULTEE AIRCRAFT CORPORATION
FORT WORTH DIVISION FORT WORTH TEXAS

accurately and briefly the nature of the installation to be made and that integration of this statement of work with the basic B-36 specification will be relatively easy to accomplish. It includes installation of metal covered control surfaces but not boundary layer removal for cooling. Attention is invited to the section listing items of equipment, together with quantity, which are considered by Contractor to be GFE. Further, it should be noted that due to forward movement of center of gravity in the neighborhood of 10% M.A.C., it will be impossible to carry the 43,000 pound bomb in the forward bay (the 22,000 pound bomb, however, is satisfactory)unless flight tests demonstrate otherwise.

3. Besides the prototype installation of VDT engines in a B-36 airplane, the following models, data, special tools, engine test stand installation, engine mock-up, and flight test program are needed:

M O D E L S
(Including needed tunnel, tunnel time, and where AMC's assistance is required, tunnel starting date)

	TUNNEL	TUNNEL TIME (Hrs.)	TUNNEL STARTING DATE
1/14 Scale Powered B-36 Model	NACA	200	March 1, 1948
1/14 Scale Duct & Nacelle Model	S. D.	700	
1/26 Scale Power-off Model	Galcit	150	

D A T A

Various drawings, reports and manuals as set forth in Inclosure (B).

SPECIAL TOOLS

Those peculiar to VDT engine installation.

ENGINE TEST STAND INSTALLATION

Engine to be suitable for ground running only, including satisfactory fan, extension shaft, gear box, propeller, turbos, etc. Initial tests of approximately 240 hours to be made at Moffett Field's 40 ft x 80 ft full scale tunnel starting 1 May 1948, with subsequent normal ground tests at Contractor's plant as required.

ENGINE MOCK-UP

For proving installation prior to receipt of flyable engines. To be furnished by Government.

FLIGHT TEST PROGRAM

Forty-five hours of testing to check differences in power plant installation and effects of increased power and tractor propellers on airplane performance.

4. A detailed breakdown in support of Contractor's cost quotation covering the foregoing items of work relating to prototype VDT engine installation is included in Inclosure (C).

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TC-92-387

CONSOLIDATED VULTEE AIRCRAFT CORPORATION
FORT WORTH DIVISION, FORT WORTH, TEXAS

Commanding General
TSBPA3B

4 June 1947
AC-7-Fw#4786

5. Concerning scheduling of this program, Contractor's proposed time cycle to accomplish the prototype installation program and to proceed with a follow-on production program in the event AMC orders an additional quantity of B-36 airplanes equipped with VDT engines, based upon the assumption that a cutback in current B-36 program will be made from six to four airplanes and that the last four airplanes of the current program will be delivered in November 1949, is furnished as follows:

PROTOTYPE SCHEDULE

a. 1 July 1947 - Receipt of contractual coverage on prototype program, including airplane installation, models, data, special tools, engine test-stand, engine mock-up and flight tests.

b. 1 July 1947 through May 1948 - Model Program, consisting of 1/14 scale powered model, 1/14 scale duct and nacelle model and 1/26 scale power-off model. All but 1/14 scale duct and nacelle model are modifications of existing XB-36 models. It is assumed NACA 19 feet tunnel will be made available on date heretofore set forth for 1/14 scale powered model, as this model was built for that tunnel.

c. 1 September 1947 through 1 May 1949 - Preparation and submission of data.

d. 1 October 1947 through 1 June 1948 - Engine test stand installation, with tests as heretofore indicated. Engine suitable for ground running only, together with accessory items such as fan, extension shaft, gear box, propeller, turbos, etc., are needed by 1 January 1948.

e. 1 January 1948 through 1 September 1948 - Engine mock-up for proving installation. Mock-up engine is needed by 1 January 1948.

f. 1 September 1948 through 30 November 1948 - Prototype installation of VDT engines in B-36 airplane. Engines, fans, extension shafts, gear boxes, turbos, etc., will be required by 1 September 1948, and propellers by 1 October 1948. It is planned that B-36 airplane No. 46, which goes into major mating as of 17 June 1948 and is to be shop completed 27 August 1948 will be used for prototype installation.

g. 1 December 1948 to 1 March 1949 - Flight Test Program. It is believed 45 hours of flying will satisfactorily evaluate the airplane.

PRODUCTION SCHEDULE

h. 1 August 1948 - Receipt of contractual coverage for follow-on production of airplanes with VDT engines following present B-36 program. Attention is invited to fact that last lot for current B-36 program is to be completed in March 1949. In order to manufacture and deliver airplanes with VDT engines in an orderly fashion immediately following the completion of current B-36 program and thereby avoid large lay-offs of engineering, tooling and fabrication employees, it will be necessary to commence in August 1948 preparation and release of production engineer-

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FORT WORTH DIVISION FORT WORTH TEXAS

ing to shop, start tool planning, make material commitments, and then proceed early in 1949 with fabrication, assembly, etc., of airplanes with VDT engines. If possible, contractual coverage by 1 July 1948 is highly desirable. In view of the model and engine test stand program heretofore proposed, it is believed that sufficient information and data will have been obtained to warrant decision by AMC to issue by such date at least a letter contract for quantity of airplanes with VDT engines. Delivery of airplanes with VDT engines can be made 1 in December 1949, 1 in January 1950, 2 in February, 2 in March, 3 in April, 3 in May and 4 a month for balance of contract.

6. Attention is called to the fact that from the standpoint of schedule and estimated costs and pursuant to intent of reference (a), it has been assumed that engineering drawings will be of modification type, with production engineering to be accomplished following receipt of contractual coverage for production airplanes; also, that inspection will be of the character normally required for an experimental airplane. Further, Contractor requests that in order to expedite the program as much as possible, authority be furnished to make necessary design development tests without seeking prior approval of the AAF.

7. It is to be noted that in response to AMC's request, the above program on installation of VDT engines in one B-36 airplane omits any provision for boundary layer control for cooling. However, in view of willingness expressed by AMC in reference (a) to consider a study proposal, Contractor strongly recommends that an investigation be made to determine the feasibility of using boundary layer air for engine cooling as applied to B-36 airplane with VDT engines. A statement of work and cost proposal on the subject are provided in Inclosures (D) and (E), respectively. In addition to expected advantages to be gained in range and cruising from use of boundary layer air for engine cooling, it is anticipated that critical mach number of the wing will be improved and that the deicing problem for the fans will be eliminated. It is planned to use the 4/29 semi-span wing in the NACA tunnel, since it was built for that tunnel. Tunnel time is estimated at 240 hours and the desired starting date is 15 January 1948.

8. Concerning unit costs of last five B-36 airplanes on Contract AC-7, requested in reference (a), Contractor submits the following:

AIRPLANE	UNIT COST
96	1,443,000
97	1,438,000
98	1,433,000
99	1,428,000
100	1,423,000

These estimated unit costs have been determined upon the basis of estimated total cost for 100 B-36 airplanes of $210,000,000 ($217,000,000 for airplanes and spares as furnished in reference (b) less allowance of $7,000,000 for spares) projected upon an 80% curve. In view of the fact that the airplanes at the end of the program are the cheapest in price and since the time schedule herein presented is extremely close and designed to avoid large layoffs of personnel who would be needed for a follow-on program of B-36 airplanes with VDT engines, it is recommended that every effort be made to avoid any reduction of B-36 airplanes currently on order.

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FORT WORTH DIVISION FORT WORTH TEXAS

Commanding General
TSBPA3B

4 June 1947
AC-7-FW#4786

9. Prompt receipt of contractual coverage for prototype installation of VDT engines in a B-36 airplane and for study of boundary layer control for cooling is requested. Also, assistance of AMC in expediting procurement of GFE and other items essential to rapid accomplishment of the prototype VDT engine installation and subsequent follow-on production will be appreciated.

CONSOLIDATED VULTEE AIRCRAFT CORPORATION
FORT WORTH DIVISION

R. G. Mayer,
Division Manager.

No comment
Beverly W. Warren
Lt Col AC
AAFPR

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CONSOLIDATED VULTEE AIRCRAFT CORPORATION
FORT WORTH DIVISION FORT WORTH, TEXAS

Date 2 June 1947

DATA REQUIREMENTS

FOR

ONE MODIFIED B-36 TYPE AIRPLANE POWERED WITH SIX (6) R-4360-VDT ENGINES

AND EQUIPPED WITH METAL-COVERED CONTROL SURFACES

A. The following data shall be required for one B-36 Type Airplane powered with six (6) Pratt & Whitney Wasp Major R-4360-VDT engines and equipped with metal-covered control surfaces:

1. Model Specification, prepared in accordance with Air Corps Specification 1801-B and Amendment No. 1 thereto.

2. Triplicate copies of following data, as listed below:

   a. General Arrangement Drawing
   b. Isometric or perspective drawings of the airplane
   c. Aerodynamic Report covering differences between modification type and B-36A Airplanes
   d. Minimum Stress analysis and test reports insofar as modified airplane differs from production-type B-36A Airplane
   e. Detail Weight Statement
   f. Balance Diagrams
   g. Evaluation drawings, consisting of major installation and assembly drawings, and schematic diagrams, to be furnished as they become currently available; on the basis of requirements of manufacture of the airplane
   h. Final construction drawings - All assembly, installation, and detail drawings used for effecting this change. Drawings shall be modification type drawings wherein the drawing requirements of AN-D-12 are not applicable.

3. Triplicate copies of Wind Tunnel Test Reports, Flight Test Reports, and other test reports issued in arriving at the final design.

4. Pilots Handbook of Operating Instruction (90% changed)

5. Revision pages to Erection and Maintenance Manual

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Enclosure C
Sheet 1 of 8
6 - 2 - 47

CONSOLIDATED VULTEE AIRCRAFT CORPORATION
FORT WORTH DIVISION FORT WORTH, TEXAS

RECAPITULATION OF MODIFICATION INSTALLATION
IN ONE B-36A AIRPLANE OF R-4360-C3 (VDT) ENGINES.
WITH METAL COVERED CONTROL SURFACES AND WITHOUT
BOUNDARY LAYER REMOVAL FOR COOLING

	Est. Cost	Est. Cost & Fixed Fee	Total Est. Cost and Fixed Fee
Modify one airplane	2987131.54	3196230.75	
Modify 1/14 scale powered XB-36 Model	26085.00	27910.95	
1/14 Scale Duct and Nacelle Model	106882.38	114364.15	
1/26 Scale Galcit Power-off Model	14862.55	15902.93	
Technical Data	68868.75	73689.56	
Special Tools	4796.25	5131.99	
Ground Test 4360-C3 Engine	186395.00	199442.65	
Flight Test 45 Hours	423458.10	453100.17	
TOTALS	3818479.57		4085773.15

NOTE: For detailed cost breakdowns, see sheets 2 through 8.

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ESTIMATED COST TO MODIFY 1 B-36A AIRPLANE
BY INSTALLATION OF R-4360-C5 ENGINES

	Hours or Pounds	@	Amount	Total Amount
Material	15390#	6.00	92340.00	
Factory Productive Labor 30 MH/#	461700	1.40	646380.00	
Administrative & Factory Overhead		125%	807975.00	
Tooling Labor	184680	1.60	295488.00	
Administrative & Factory Overhead		125%	369360.00	
Tool Planning & Design Labor	27700	1.85	51245.00	
Tool Planning & Design Overhead		85%	43558.25	
Tool Material			99727.20	
Total Tooling			859378.45	
Engineering Labor	188500	2.05	386425.00	
Engineering Overhead		85%	328461.25	
Total Engineering			714886.25	
Est.Cost of Modification - 1 Ap.			3120939.70	
Fixed Fee @ 7%			218467.18	
Total Est. Cost & Fixed Fee				3339426.88
Credit on Final Assembly				
Factory Productive Labor	22498	1.40	31497.20	
Administrative & Factory Overhead		125%	39371.50	
Material			62959.46	
			133828.16	
Fixed Fee @ 7%			9367.97	
Total Credit				143196.13
Net Cost			2987131.54	
Net Est. Cost & Fixed Fee				3196230.75

No Beef-up for high speeds or dives.

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CONSOLIDATED VULTEE AIRCRAFT CORPORATION
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Sheet 3 of
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ESTIMATED COST MODELS FOR R 4360-C3 ENGINES
B-36 MODIFICATION

	Hours	@	Amount	Total Amount
1/14 Scale Powered B-36 Model-Mod. Only				
Engineering Labor	2000	2.05	4100.00	
Engineering Overhead		85%	3485.00	
Tooling Labor (Pattern Shop)	5000	1.60	8000.00	
Administrative & Factory Overhead		125%	10000.00	
Material			500.00	
Total Est. Cost				26085.00
Fixed Fee @ 7%				1825.95
Total Est.Cost & Fixed Fee				27910.95
Test of Model will be done at NACA or Wright Field at no rental expense				
1/14 Scale Duct & Nacelle Model				
Engineering Labor	4000	2.05	8200.00	
Engineering Overhead		85%	6970.00	
Tooling Labor (Pattern Shop)	13000	1.60	20800.00	
Administrative & Factory Overhead		125%	26000.00	
Material			1000.00	
Est.Cost of Model				62970.00
Use of Wind Tunnel	700	50.00		35000.00
Reports of Wind Tunnel Tests				
Engineering Labor	2350	2.05	4817.50	
Engineering Overhead		85%	4094.88	
Est.Cost of Reports				8912.38
Total Est. Cost				106882.38
Fixed Fee @ 7%				7481.77
Total Est. Cost & Fixed Fee				114364.15
1/26 Scale Calcit Power-off Model				
Engineering Labor	300	2.05	615.00	
Engineering Overhead		85%	522.75	
Tooling Labor (Pattern Shop)	1000	1.60	1600.00	
Administrative & Factory Overhead		125%	2000.00	
Material			300.00	
Est. Cost of Model				5037.75
Use of Wind Tunnel	150	50.00		7500.00
Reports of Wind Tunnel Tests				
Engineering Labor	613	2.05	1256.65	
Engineering Overhead		85%	1068.15	
Est.Cost of Reports				2324.80
Total Est. Cost				14862.55
Fixed Fee @ 7%				1040.38
Total Est.Cost & Fixed Fee				15902.93
Total Est.Cost & Fixed Fee all Models				158178.03

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FORT WORTH DIVISION FORT WORTH, TEXAS

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ESTIMATED COST TECHNICAL DATA FOR R 4360-C3 ENGINES

	HOURS	@	COST	TOTAL COST	EST. COST PLUS FIXED FEE
1. Drawings					
Inboard Profile Drwgs.					
(1) Labor (Engineering)	1000	2.05		2050.00	
(2) Overhead (Engineering)		85%		1742.50	
Est. Cost Drwgs.				3792.50	
Fixed Fee @ 7%				265.48	
Est. Cost plus Fixed Fee					4057.98
2. Reports					
A. Aerodynamics Report					
(a) Physical Characteristics					
(1) Labor (Engineering)	1400	2.05	2870.00		
(2) Overhead (Eng.)		85%	2439.50		
(b) Performance Data					
(1) Labor (Engineering)	1200	2.05	2460.00		
(2) Overhead (Eng.)		85%	2091.00		
(c) Stability and Control Data					
(1) Labor (Engineering)	1400	2.05	2870.00		
(2) Overhead (Eng.)		85%	2439.50		
Est. Cost Aerodynamics Report				15170.00	
B. Stress Criteria Report					
(1) Labor (Engineering)	2500	2.05	5125.00		
(2) Overhead (Eng.)		85%	4356.25		
Est. Cost Criteria Report				9481.25	
C. Weight Status Reports					
(1) Labor (Engineering)	1000	2.05	2050.00		
(2) Overhead (Eng.)		85%	1742.50		
Est. Cost Weight Status Report				3792.50	
D. Stress Test Reports					
(1) Labor	4000	2.05	8200.00		
(2) Overhead		85%	6970.00		
Est. Cost Struct. Test Repts.				15170.00	
Total Est. Cost Reports				43613.75	
Fixed Fee @ 7%				3052.96	
Total Est. Cost plus Fixed Fee - Reports					46666.71

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ESTIMATED COST TECHNICAL DATA FOR R-4360-C3 ENGINES
(continued)

	Hours	@	Cost	Total Est.Cost	Total Est. Cost and Fixed Fee
3. Pilot's Operating Handbook					
Labor	3500	2.05	7175.00		
Overhead		85%	6098.75		
Material			750.00		
Est.Cost Flight Opr. Insts.				14023.75	
Fixed Fee @ 7%				981.66	
Total Est.Cost & Fixed Fee					15005.41
4. Erection and Maintenance Handbook					
Labor	1500	2.05	3075.00		
Overhead		85%	2613.75		
Material			1750.00		
Est.Cost Erec. & Main. Handbook				7438.75	
Fixed Fee @ 7%				520.71	
Total Est.Cost & Fixed Fee					7959.46
Total Est.Cost Technical Data				68868.75	
Total Est.Cost and Fixed Fee Technical Data					73689.56

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CONSOLIDATED VULTEE AIRCRAFT CORPORATION
FORT WORTH DIVISION FORT WORTH, TEXAS

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ESTIMATED COST SPECIAL TOOLS FOR
R-4360-C3 ENGINES B-36A MODIFICATION

	Hours	@	Cost	Total Est. Cost	Total Est. Cost and Fixed Fee
Special Tools					
Labor					
Tooling	750	1.60	1200.00		
Engineering	500	2.05	1025.00		
Overhead					
Tooling		125%	1500.00		
Engineering		85%	871.25		
Material			200.00		
Special Tools - Est.Cost				4796.25	
Fixed Fee @ 7%				335.74	
Total Est.Cost & Fixed Fee					5131.99

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CONSOLIDATED VULTEE AIRCRAFT CORPORATION
FORT WORTH DIVISION FORT WORTH, TEXAS

ESTIMATED COST OF GROUND TEST OF R-4360-C3 ENGINES
MODIFICATION PROGRAM B-36A AIRPLANE

	Hours	@	Amount	Total Amount
Labor				
Engineering	14000	2.05	28700.00	
Factory	20000	1.40	28000.00	
Test	12000	1.40	16800.00	
Overhead				
Engineering		85%	24395.00	
Administrative & Factory		125%	35000.00	
Test		125%	21000.00	
Material				
Mfg. (Stand-Parts, etc.)			25000.00	
Testing			7500.00	
Total Est. Cost			186395.00	
Fixed Fee @ 7%			13047.65	
Total Est. Cost & Fixed Fee				199442.65

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CONSOLIDATED VULTEE AIRCRAFT CORPORATION
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ESTIMATED COST FLIGHT TEST B-36A WITH R-4360-03 ENGINES
45 HOURS FLIGHT TEST

	Hours	@	Amount	Total Amount
Labor				
Engineering	6720	2.05	13776.00	
Factory (Instrumentation)	20000	1.40	28000.00	
Test			31980.00	
Overhead				
Engineering		85%	11709.60	
Administrative & Factory		125%	35000.00	
Materials				
Mfg. (Instrumentation)			68700.00	
Testing			10237.50	
Servicing				
Factory Labor	65000	1.40	91000.00	
Administrative & Factory Overhead		125%	113750.00	
Material			19305.00	
Est. Cost Flight Test			423458.10	
Fixed Fee @ 7%			29642.07	
Total Est. Cost & Fixed Fee				453100.17

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CONSOLIDATED VULTEE AIRCRAFT CORPORATION
FORT WORTH DIVISION FORT WORTH, TEXAS

2 June 1947

STATEMENT OF WORK

Boundary Layer Engine Cooling
Investigation for Application
to a B-36 Airplane

I. Contractor will conduct an investigation to determine the feasibility of using boundary layer air for engine cooling as applied to a modified B-36 Airplane. The investigation will proceed concurrent along the following three major lines:

a. Analytical Studies (Weights, Structure and Aerodynamics).

b. General Arrangement Studies.

c. Wind Tunnel Tests of Boundary Layer Cooling Arrangements.

II. Contractor shall furnish and deliver to the government the minimum data specified below:

a. Three (3) copies of summary report and analysis of Boundar Layer Cooling Wind Tunnel Tests as applied to a B-36 Airplane.

b. Three (3) copies of Engine Cooling Layout Drawing showing proposed method for drawing off the Boundary Layer Air and ducting it into the engine.

c. Three (3) copies of a summary report evaluating the result of the Boundary Layer Engine Cooling Investigation and containing a recommendation for the course of design to be followed for cooling the Pratt & Whitney Wasp Major R-4360 VDT Engine as installed in a modified B-36 Airplane.

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Inclosure E
Sheet 1 of 1
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ESTIMATED COST BOUNDARY LAYER COOLING INVESTIGATION
FOR B-36A AIRPLANE

	Hours	@	Amount	Total Amount
Engineering Study Time				
Labor	30000	2.05	61500.00	
Overhead		85%	52275.00	
Est. Cost			113775.00	
Fixed Fee @ 7%			7964.25	
Est. Cost and Fixed Fee				121739.25
Modify 4/29 Scale B-36A Semi-span Wing Model				
Engineering Labor	5000	2.05	10250.00	
Engineering Overhead		85%	8712.50	
Tooling Labor (Pattern Shop)	12000	1.60	19200.00	
Administrative & Factory Overhead		125%	24000.00	
Material			700.00	
Est. Cost of Model				62862.50
Use of Wind Tunnel (NACA Tunnel)				None
Reports of Wind Tunnel Tests				
Engineering Labor	700	2.05	1435.00	
Engineering Overhead		85%	1219.75	
Est. Cost of Reports				2654.75
Total Est. Cost				65517.25
Fixed Fee @ 7%				4586.21
Total Est. Cost & Fixed Fee				70103.46
Total Est. Cost & Fixed Fee - Study with Boundary Layer Control				191842.71

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CONSOLIDATED VULTEE AIRCRAFT CORPORATION

FORT WORTH DIVISION
FORT WORTH 1, TEXAS

RCS;mhp/ac-7-FW#4868
[illegible] June 1947

APPROVED	
CONCURRED IN	
NO COMMENT	

AAF PLANT REPRESENTATIVE

Subject: Contract ac-7, B-36 Airplanes
VDT Engine Installation

To: Commanding General
Air Materiel Command
Wright Field, Dayton, Ohio

Attention: TSBPA3B

Thru: Army Air Forces Plant Representative

Enclosure: (A) Three copies of Engineering Memorandum 19.008, dated 9 June 1947

1. Enclosed herewith are three copies of a report on the trip of Messrs. R. H. Widmer and R. C. Sebold to Wright Field to discuss engines and related equipment for VDT engine installation in the B-36 airplane, June 6, 1947.

CONSOLIDATED VULTEE AIRCRAFT CORPORATION
FORT WORTH DIVISION

R. C. Sebold
Chief Division Engineer

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CONSOLIDATED VULTEE AIRCRAFT CORPORATION
FORT WORTH DIVISION FORT WORTH, TEXAS
ENGINEERING DEPARTMENT

ENGINEERING MEMORANDUM
(Report No. FZM-110)

E. M. No. 19,008

Model: B-36 VDT Prototype

Date: 9 June 1947

Subject: Report on the Trip of Messrs. R. H. Widmer and R. C. Sebold to Wright Field to Discuss Engines and Related Equipment for VDT Engine Installation in the B-36 Airplane, Friday, June 6, 1947

The trip to Wright Field was made with Lt. Col. B. H. Warren who delivered to the Air Materiel Command our proposal for the installation of VDT engines in a prototype airplane.

The purpose of the trip was to discuss VDT engines and related equipment so that as many details as possible could be worked out prior to the letting of the contract to save time. Two meetings were held, one at nine o'clock in the morning with the Power Plant Laboratory and one at one o'clock in the afternoon with the Propeller Laboratory. In addition, discussions were held with representatives of the Flutter and Vibration Branch later in the afternoon.

A. Conference in Power Plant Laboratory

Representatives of the Power Plant Laboratory, Procurement Bombardment Branch headed by Lt. Col. Tom Gerrity, representatives of Pratt and Whitney, General Electric and Consolidated Vultee Aircraft Corporation were present at this meeting. The following were the subjects covered and decisions made.

1. Engine Mounting - The present engine mounting designed for the VDT engine is a normal mount for tractor installation with the mounting ring aft of the engine. With the B-36 engine mounted as a tractor but behind the rear spar, it is necessary for maintenance and simplified structure that the mounting be revised to provide a mounting ring further forward on the engine. It was decided that Pratt & Whitney would send their engine mounting people to Fort Worth during the week of June 9 to work out a mount suitable for the B-36 installation.

2. Gear Box Mounting - The difficulties encountered on other installations where the propeller was mounted on the gear box and away from the engine were stressed. The lack of the large engine mass to resist propeller torque creates this problem. Pratt and Whitney will send a representative along with their engine mounting people to discuss this at

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Fort Worth with representatives of CVAC and the Dynamics Branch of Wright Field. It is intended that this meeting will establish the parameters for the mounting of the gear box.

3. Alternator Drive - Prior to the conference CVAC desired to mount the alternator on the top aft side of the gear box. Pratt & Whitney agreed to look into this and suggested the alternate of mounting the alternator in a more desirable aft location, driving it with a "V" belt off the extension shaft. They have had experience in this type of drive and state that it works satisfactorily. CVAC will check this type of installation.

4. Turbos - In the original studies made by Pratt & Whitney two BM-6 turbos were planned. General Electric, however, advised that they have more information and are further along in the development of a single CHM-2 turbo. This single turbo is also planned for use in the Boeing B-50. CVAC could see no reason why it could not be used on the B-36; therefore, it was decided that the CHM-2 single turbos will be used. It was also decided that as soon as possible a conference would be held at Pratt & Whitney along with representatives of CVAC, General Electric and the AMC on the control problem of the turbo and the tie-in of the exhaust augmenter to the turbo control.

5. Fan and Fan Drive - CVAC investigation up to this point with two BM-6 turbos indicated that it might be possible to cool without the use of a fan. Information was not available relative to cooling with a CHM-2 turbo due to the recent receipt of the information. The decision was made to have Pratt & Whitney provide for a fan drive only, at this time, since a fan is a requirement if boundary layer cooling should be developed, and that CVAC would continue its investigation to determine whether a fan will be required with ram air cooling with CHM-2 turbos.

6. Extension Shafts - Pratt & Whitney will supply extension shafts and only requires information from CVAC as to location of support bearings and angularity required between joints. CVAC is to furnish this information as soon as possible.

7. Deliveries - Delivery of six prototype VDT engines is still quoted as September 1948 by Pratt and Whitney with 100% spares to be delivered at a rate of one a month after September. We have requested an engine and related accessories suitable for ground running to be delivered in January 1948. Pratt & Whitney is to advise AMC on this, and it seems reasonable that this can be done since Boeing is being supplied with an engine for the B-50 in six months. The delivery date of the extension shaft was not given.

B. Conference in Propeller Laboratory

A meeting was held at one o'clock in the afternoon with

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FORT WORTH DIVISION FORT WORTH, TEXAS
ENGINEERING DEPARTMENT

representatives of the Propeller Laboratory, AMC; Bombardment Procurement Branch, AMC, headed by Lt. Col. Gerrity; and representatives of Pratt and Whitney and CVAC. The following were the subjects covered and decisions made.

1 Gear Ratio and Propeller - Representatives of the Propeller Laboratory stated that their investigations had shown that the B-36 should use a 19-foot four-bladed propeller with a gear ratio between .30 and .32. Boeing had already chosen a gear ratio of .375 with a 16-foot, 7-inch four bladed propeller for the B-50, and it was the Propeller Laboratory's opinion that this selection was not suitable for the B-36. CVAC representatives stated that the optimum gear ratio for the B-36 has been investigated and that gear ratio .31 with the 19-foot four-bladed propeller was desired. After considerable discussion it was decided that the B-36 should have the optimum propeller-gear ratio combination as desired by CVAC. Pratt & Whitney stated that they had determined that certain propeller speeds in combination with engine rpm and exhaust create excessive beat and noise, and that they did not know how a .31 gear ratio would react. They will, however, check the .31 gear ratio and advise CVAC and the AMC. A .30 and .32 gear ratio will also be investigated. CVAC could use a .30 or a .32 with .30 preferred.

2. Delivery

(a) Propellers - A four-bladed, 19-foot propeller is now running in Wright Field and Propeller Laboratory representatives believe that propellers could be made available at the proper time; that is, October of 1948. The four-bladed, 19-foot propeller is the same as the present B-36 propeller with the exception that it has tractor blades and a four-blade hub.

(b) Gear Box - It was difficult to establish availability of .31 gear boxes, the only time given being 17 months from date of go-ahead. This was based on troubles Pratt and Whitney anticipated and always had in development of gear boxes. It was agreed that if necessary the ground test stand could be run with the .375 gear ratio, but that the prototype could use nothing but the gear ratio intended for production.

C Conference in Lt. Col. Gerrity's Office on Flight Flutter Tests

The flight flutter test program on the YB-36 was discussed with representatives of the Bombardment Branch and the Dynamics

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CONSOLIDATED VULTEE AIRCRAFT CORPORATION
FORT WORTH DIVISION FORT WORTH, TEXAS
ENGINEERING DEPARTMENT

E.M. No. 19,008
Date: 6-9-47

Engineering Memorandum
(Report No. FZM-110)

Laboratory. It was the belief of the Dynamics Laboratory, Mr. Mykytow, that certain simple aileron shake tests can be run with gas tanks full, which may eliminate the necessity for the flight flutter program using Sontagg vibrators. He felt that this information should be sufficient to raise the flutter limitation high enough for the present airplanes and the VDT airplanes. We are to furnish the AMC with limit dive speed vs. altitude information and engine and propeller weight distribution about the wing axis for the VDT installation. It should be noted that the movement of the propeller and gear box forward of the leading edge improves the flutter characteristics of the airplane.

D. General

Col. Gerrity stated at the beginning of the conference in the Propeller Laboratory and Power Plant Laboratory that the B-36 with VDT engines had production potential, and that it was necessary for each laboratory to be able to substantiate placing orders for production GFE by July of 1948.

R. C. Sebold
Chief Division Engineer

RCS:mhp

cc: H. Woodhead - San Diego
I. M. Laddon - San Diego
W. Blees - San Diego
R. G. Mayer
R. O. Ryan

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19 June 1947

Interdesk memorandum, subject, "Bombardment Airplane and Guided Missile Programs," signed by Brig. General A. R. Crawford, Chief, Research and Engineering Division, DC/S-M, mentioned the following:

(1) General Spaatz's approval at a Staff Meeting on 16 June 1947 for proceeding with a prototype installation of a VDT engine in the B-36 airplane; and

(2) General Putt, AMC, had been informed by General Gardner by telephone of this approval.

(Document not available for reproduction at Hq, AMC.)

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June 19, 1947

Commanding General
Air Materiel Command
Wright Field, Dayton, Ohio

Subject: Prototype R-4360-51 and -43 Engine Models - Proposal for

References: (a) Conference called by AMC on June 6, 1947, to discuss various phases of R-4360 VDT type engine development program.
(b) PWA letr. to AMC, WPG:PR-Eng., dated March 13, 1947.
(c) PWA letr. to AMC, WPG:PR-Eng., dated May 15, 1947.

1. The urgency of submitting a proposal to supply twelve R-4360-51 prototype engines and eight R-4360-43 prototype engines was clearly established at the reference conference. The Pratt & Whitney Aircraft representatives at that conference stated that they would attempt to submit the proposal during the following week. It was pointed out at the reference conference that sufficient prototype engines to power one B-36 airplane and one B-50 airplane would be required in September, 1948. The remaining engines could follow immediately thereafter. The Pratt & Whitney Aircraft representatives indicated that the requirement could be met if work was started immediately. To state it another way, that engines could be supplied to meet the airplane programs within 15 months from date of acceptance of this proposal. It was further pointed out by Pratt & Whitney Aircraft representatives that inasmuch as the reduction gear required for the R-4360-51 engine model was a new requirement, it would have to be released for the semi-production engines off the design board and without any background of development. However, we will have some testing on it before it is supplied with the prototype engines and if at that time it is considered unsuitable for flight operation, it may be necessary to delay the program or to substitute reduction gears of the type employed on the R-4360-43 engine model.

2. Accordingly, we propose to supply for a total cost to the Government of $3,974,000. the following items:

(A) Twelve R-4360-51 prototype engines built without tools and fixtures but substantially in accordance with PWA Specification No. A-7067, dated June 10, 1947. However, because the Bill of Material for these engines must be released far in advance of the successful completion of a qualification test, that provision in the specification cannot apply to their acceptance. Furthermore, inasmuch as they are experimentally-built engines, the regular inspection requirements must be waived. These engines will not be subject to source and detail inspection, but, as is the customary practice, will receive only visual inspection. The price of these engines is $206,500 each.

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(B) Eight prototype R-4360-43 engines built without tools and fixtures but substantially in accordance with PWA Specification No. A-7065-A, dated June 10, 1947. However, because the Bill of Material for these engines must be released far in advance of the successful completion of a qualification test, that provision in the specification cannot apply to their acceptance. Furthermore, inasmuch as they are experimentally-built engines, the regular inspection requirements must be waived. These engines will not be subject to source and detail inspection, but, as is the customary practice, will receive only visual inspection. The price of these engines is $187,000 each.

3. Delivery of engines is predicated on the date of acceptance of this proposal in accordance with the following schedule:

R-4360-51	6 engines	- 15 months
	2 engines	- 16 months
	2 engines	- 17 months
	2 engines	- 18 months
R-4360-43	4 engines	- 15 months
	2 engines	- 16 months
	1 engine	- 17 months
	1 engine	- 18 months

4. This proposal is contingent upon acceptance of the proposal contained in reference (c). As set forth in reference (b), prototype engines of the earlier R-4360 Series "B" models without such special features as fuel injection, turbo supercharging controls and exhaust manifolding cost on the average $140,000 to build in larger quantities and at a time when labor rates and material costs were lower than they are now. Prototype engines of the R-2800 Series "E" models excluding special TEC impeller charges cost on the average $120,000 to produce. The foregoing engine costs are mentioned for comparison with prices quoted herein which are for construction only and do not include any charges for development or for profit to this Division.

UNITED AIRCRAFT CORPORATION
Pratt & Whitney Aircraft Division

W. P. Gwinn
Vice President; General Manager

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AMC Form No. [illegible]

(PRINT SYMBOL AND INITIALS IN APPROPRIATE BLOCK)

[illegible]

20 JUN 1947

TSAGDS-NO.35 1947 JUN 23 14:33

Power Control for Pratt & Whitney [illegible] Engine

Pratt & Whitney Aircraft Division
United Aircraft Corporation
East Hartford 8, Connecticut

1. During conferences on 5 and 6 June 1947 between representatives of General Electric Company, Pratt & Whitney, Minneapolis-Honeywell, and the Air Materiel Command, the methods of approach to the control problem for the subject engine were reviewed. It was stated that Pratt & Whitney would have full responsibility for the successful development and manufacture of the control for this engine. In addition, specification requirements were presented to Pratt & Whitney personnel for review and comments.

2. At the completion of this conference, Pratt & Whitney informally indicated that the most probable choice of a control manufacturer to fulfill Air Materiel Command requirements would be the General Electric Company, due to the necessity for extremely close coordination between the control manufacturer, the turbosupercharger manufacturer, and the engine manufacturer. Very rough cost estimates by the General Electric Company for development of a satisfactory control in accordance with Air Materiel Command requirements was approximately $75,000 to $100,000. The original cost estimate submitted by Pratt & Whitney as required to completely develop a control for the subject engine was $[illegible].

3. The success of this entire program is predicated, to a large extent, on the successful development of a suitable control system. It is absolutely necessary at this time to contractually define a development program which will culminate in a satisfactory flight and model test article. In addition, however, it would be wise to entertain further study of this problem by additional control manufacturers who have had considerable experience in control of turbosuperchargers. This Command recommends that a second source be established for the automatic control. The work to be performed by the second source would consist of a study which would include all analyses and calculations necessary to analyze the potential

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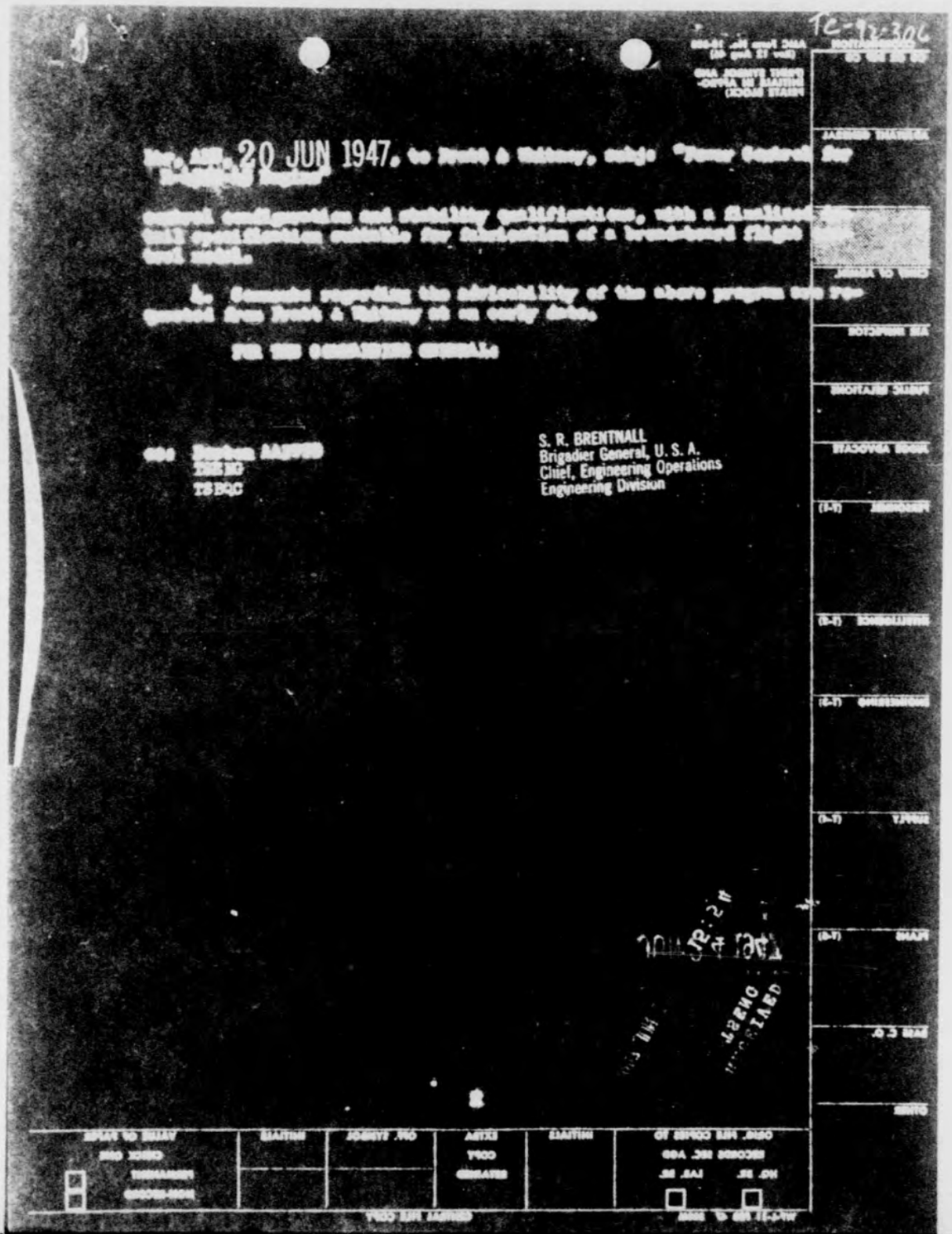

20 JUN 1947

S. R. BRENTNALL
Brigadier General, U. S. A.
Chief, Engineering Operations
Engineering Division

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AMC Form No. 10-508 (Rev 12 Aug 46)

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SUPPLY (T-4)

PLANS (T-5)

BASE C.O.

OTHER

TSEAS

TSEAS/TIO/GP

26 June 1947

Contract AC-7, B-36A Airplanes,
Installation of Tractor Power Plants.

Consolidated Vultee Aircraft Corporation,
Fort Worth Division - Fort Worth 1, Texas.

Through: AAF Plant Representative.

1. Confirming results of conference between representatives of the Air Materiel Command and Consolidated Vultee Aircraft Corporation at Fort Worth on 12 June 1947, the following information is forwarded:

a. Basically, the proposed tractor installation calls for merely turning the engines around at their present nacelle stations on the wing and driving tractor propellers through extension drive shafting, the propeller reduction gear boxes being located at the propeller end of the extension shafting. At present it has not been determined whether cooling fans similar to those used in the present installation will be required for the proposed installation.

b. It was agreed that the engines would be supported from the front (power) end by a ring mount, the loads being taken from the elastic units on the mount ring into the crankcase by means of a spider similar to the present installation. Pratt & Whitney will conduct design studies on both 7 and 4 point elastic suspensions, and will endeavor to meet the requirements for vibration control set forth in the latest edition of the Handbook of Instructions for Aircraft Designers, Section 15.701. The turbo-superchargers will be supported by the wing structure directly behind the engines, independently from them.

c. Consolidated Vultee Aircraft Corporation will conduct a design study on the bearing and coupling locations for the extension shafts so that a minimum number of different shaft lengths will be used, thus contributing to interchangeability. The maximum length of any section of the extension shaft was set at 90 inches by Pratt & Whitney. Pratt & Whitney agreed to supply any practicable mechanical

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angular deflections in the shaft couplings required by the gear box installation if Consolidated Vultee would provide air cooling for the couplings as required. This was agreed to by Consolidated Vultee. As a first estimate it was thought that angular motion of ±2 degrees at each shaft coupling would be sufficient; however, this figure is subject to change pending the results of the design study previously mentioned.

d. The propeller reduction gear ratio was set at .3125:1. Consolidated Vultee had requested .31:1, but Pratt & Whitney suggested .3125:1 to eliminate audible beats between harmonics of propeller and engine vibration. Audible beats had previously been encountered in some R-47 installations and had proved objectionable to operating personnel.

e. The problem of installing the propeller reduction gear box on flexible mounts appears to be quite difficult. Rough calculations indicated that it would be impossible to obtain any vibratory control in rotation about the thrust axis. The inertia of the gear box (and boom structure) is so small that excessibely large torque-wise deflections of the gear box, 17° to 25°, would be encountered due to torque loads imposed by the power plant. It appears that some vibratory control may be obtained in the pitch-vertical and yaw-lateral modes of the gear box-boom structure. The Handbook of Instructions for Aircraft Designers limits the natural frequencies in these modes to a maximum of 220 cpm for this installation. It was estimated that the natural frequency of the structure without rubber mounts would be about 250 cpm. Gyroscopic coupling due to the rotating propeller will tend to displace these static natural frequencies under operating conditions. All these factors were pointed out to CVAC and to Pratt & Whitney. It was finally agreed that Consolidated Vultee would conduct a design study, which would be paralleled by Pratt & Whitney, to determine the most efficacious method of flexibly mounting the propeller-gear box-boom assembly. The design study program will follow the outline presented here:

(1) Computation of the pitch-yaw natural frequencies of the gear box mounted directly on the structure, including all dynamic factors.

(2) Determination of the displacement of the natural frequencies due to gyroscopic effects.

(3) Determination of the effect of mounting the gear box and/or gear box-boom assembly on rubber mounts, and checking the system for stability.

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AMC ltr to CVAC, Subj: "Installation of Tractor Power Plants in B-36 Airplanes" dtd 26 June 1947.

(4) Determination of whether it will be possible to obtain vibration isolation or, if this is not possible, to avoid dynamic magnification of propeller generated vibratory forces by taking advantage of the natural frequency displacements caused by the gyroscopic effect of the propeller under operating conditions.

f. All design studies will be coordinated through the Air Materiel Command, and cooperation of Air Materiel Command personnel was offered in evaluating the designs which will be offered as a result of these studies.

g. It was agreed by all parties that it would be extremely worthwhile to operate a tractor installation on the wing mock up test rig already available, and that an attempt should be made to install springs on this rig so that its pitching natural frequency would approximate that of the actual wing installation.

2. If the Contractor desires further action on the part of the Air Materiel Command not indicated in this letter, it is requested that Air Materiel Command be notified at the earliest possible date.

FOR THE COMMANDING GENERAL:

M C Brennan 1st Lt AC

For GEORGE E. SCHAETZEL
Colonel, Air Corps
Chief, Aircraft Section
Procurement Division

cc - CVAC - Dayton

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AMC Form No. 10-508 (Rev 2 Apr 47)
(PRINT SYMBOL, DATE AND INITIALS IN APPROPRIATE BLOCK)

TC-42-347

TSBPE3B1/R.A.Bittner/ghs
Ext 2-9207

7 July 1947

SUBJECT: Purchase Order 43-22066-P, Pratt & Whitney R-4360-VDT Engines

TO: Chief of the Bureau of Aeronautics
Navy Department
Washington 25, D. C.
Attn: Section Aer-PR-23
Mr. Robert W. Smith

1. The following is forwarded for your information of proposed action by the Air Materiel Command at an early date:

a. The Air Materiel Command proposes to change on subject Purchase Order thirty-six (36) R-4360-41 engines to obtain twelve (12) R-4360-51 engines for the B-36 Airplane, and to also change eight (8) R-4360-35 engines to R-4360-43 engines for the B-50 Airplane.

2. For your additional information, the R-4360-43 and -51 engines are Pratt & Whitney R-4360-VDT engines.

3. It is desired that when official notification is received by the Bureau of Aeronautics that it be processed as rapidly as possible, in order that Pratt & Whitney can receive their notification of this change at the earliest possible date.

4. Since the purpose of this letter is to inform the Bureau of Aeronautics of the forthcoming action of the Air Materiel Command, no official action is to be taken until official notification is received from the Air Materiel Command.

5. To expedite the above change, any comments that the Bureau of Aeronautics proposes as to how this matter should be handled will be complied with.

FOR THE COMMANDING GENERAL:

Charles Kace

R. S. WALKER
Lt. Colonel, Air Corps
Acting Chief, Aero Equipment Section
Procurement Division

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HEADQUARTERS, ARMY AIR FORCES
WASHINGTON

10 Jul 1947

SUBJECT: Bombardment Development Program

TO: Commanding General
Air Materiel Command
Wright Field, Dayton, Ohio

Attention: TSTEX

1. The bombardment development program outlined below is approved.

a. Continue development of the XB-52 under a high priority.

b. Initiate development of a new medium bomber with F. Y. 1948 funds. This new bomber will conform to Military Characteristics for Medium Bombardment Aircraft, dated 23 June 1947 (copy enclosed).

c. Modernize one (1) prototype B-36 aircraft to include installation of the Pratt and Whitney R-4360-VDT engine.

d. Modernize one (1) prototype B-50 to include installation of the Pratt-Whitney R-4360-VDT engine.

2. The airframe modernization outlined in paragraphs 1c and 1d above is to be financed as follows:

a. One (1) B-36 prototype at the expense of three (3) B-36's presently under procurement.

b. One (1) B-50 prototype at the expense of four (4) B-50's presently in the proposed F. Y. 1948 procurement.

3. From previous estimates it is understood that an additional $5,590,000 will be required to cover costs of the R-4360-VDT engine. To finance this amount the following method is to be used.

a. Change the present production contract for the R-4360 engines to include the modernization and production of the R-4360-VDT engine as a normal engine improvement.

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b. Use currently available procurement funds to cover costs indicated in paragraph 3 above. There is a possibility that additional F.Y. 1948 procurement funds may be made available to your command. If so, these funds may be used, should currently available procurement funds be insufficient to cover indicated costs. If sufficient funds from the two (2) aforementioned sources are not available, not to exceed three (3) B-45's may be cancelled from the presently proposed F.Y. 1948 procurement and funds from this cancellation applied to the indicated engine costs.

4. It is directed that your headquarters take immediate action to implement the above program.

BY COMMAND OF GENERAL SPAATZ:

GRANDISON GARDNER
Major General, USA
Actg Asst Chief of Air Staff-4

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PRATT & WHITNEY AIRCRAFT

DIVISION OF UNITED AIRCRAFT CORPORATION

EAST HARTFORD 8, CONNECTICUT, U.S.A.

CABLE ADDRESS "AIRCRAFT"

July 11, 1947

ARMY OFFICE
APPROVED
CONCURRED IN
NO COMMENT
14/7/47

Commanding General
Air Materiel Command
Wright Field, Dayton, Ohio

Attention: TSENG(TSEPP-13B)

Subject: Power Control for Pratt & Whitney R-4360-43 Engine

Reference: (a) AMC let. to P&WA, TSEPP-13B, dated 20 June 1947

1. Pratt & Whitney recognizes the important relation of the automatic control system development to the success of the entire program involving the R-4360-43 engine installation and is desirous that no measure be overlooked that will expedite obtaining a satisfactory control. For the reasons indicated by reference (a), the General Electric Company is the choice of this Division for a manufacturer to undertake immediately the development of the control. It is fully intended to invite other manufacturers, notably Minneapolis-Honeywell, to participate in the study of the control requirements for the purpose of establishing a second source.

2. However, in order that the additional vendors who may be brought into the program can prepare a sound proposal on the basis of realistic control requirements it will be necessary first to conduct initial flight testing of the engine-turbo-supercharger combination to establish stability characteristics. This plan of action, rather than permitting the manufacturers to proceed unguided at this time with inadequate data, appears to be the more logical course to follow and in the opinion of the Contractor one that will effect savings in time with commensurate economy.

3. Noting that reference (a) calls attention to the preliminary rough cost estimate given by the General Electric Company for the development of a control, it might be well to mention that the above vendor, after being afforded an opportunity to make a more complete analysis of the program, has recently submitted to this Division a cost proposal of $205,000 to cover development of the control and furnishing test units.

UNITED AIRCRAFT CORPORATION
Pratt & Whitney Aircraft Division

A. E. Smith
Assistant Chief Engineer

(8-9-47)

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WUA29 SER PD 7-16-49

WUX EASTHA. FORD CONN JUL 16 1110A

COMMANDING GENERAL ATN J C COYLE POWER PLANT LAB

TSEPP-5 AIR MATERIEL COMMAND WRIGHT FIELD

REPHONE OUR R-4360 VDT ENGINE PROPOSALS DO NOT INCLUDE A 150 HOUR MODEL TEST ON -51 ENGINE. ~~HOVER~~ However WE WILL COMPLETE SUCH A TEST AT NO ADDITIONAL COST TO THE GOVERNMENT TO BACK UP ANY ORDER FOR PRODUCTION TYPE ENGINES. THIS TEST WILL BE COMPLETED AT THE EARLIEST PRACTICABLE DATE AND WILL, OF COUSE, BE SUBJECT TO YOUR INSPECTION AND APPROVAL. WE PREFER NOT TO HAVE IT MADE PART OF EITHER THE DEVELOPMENT OR THE SEMI-PRODUCTION CONTRACT FOR THE REASON THAT WE SEE NO CHANCE OF COMPLETING IT DURING THE PERIOD THAT THOSE CONTRACTS WILL BE IN EFFECT -?

PRATT AND WHITNEY AIRCRAFT W A PARKINS.

TSEPP5 R-4360 VDT 150 -51.

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CM TC-12-1-47

ROUTING AND RECORD SHEET

AIR MATERIEL COMMAND

Use authorized office symbols to designate addressees and references.

Number all comments consecutively.

SUBJECT: CHM-2 Superchargers - B-50Z Aircraft

TO: TSEPP-2 FROM: TSEOA-6 DATE: 22 Jul 47 COMMENT NO. 1

ATTN: Mr. Bakanauskas

1. It is requested that at the time procurement is initiated for CHM-2 turbo superchargers for the B-36 aircraft that an additional quantity be procured for installation in the B-50Z being administered by the Aircraft Projects Section of the Engineering Division.

2. A total of ten (10) superchargers will be required. The first for installation in the single engine nacelle project will be required in February of 1948, and one additional as a spare for this installation thirty days thereafter. Four (4) each turbos for installation in the B-50Z aircraft will be required in approximately one year with four spares being made available sixty days after delivery of the four installation machines.

3. According to current directives, the above equipment will be procured from Production funds. Delivery of all turbos will be made to the Boeing Aircraft Corp. at Seattle, Washington, with the exception of the last four machines which should be delivered to:

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Wright, Greene County, Ohio
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H. J. TAYLOR
CHIEF, EQUIPMENT BRANCH
AIRCRAFT PROJECTS SECTION
ENGINEERING DIVISION

FRED B. DENT, JR.
Colonel, Air Corps
Chief, Aircraft Projects Section
Engineering Division

HJT/meh/30213

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AMC Form No. 19-66
(Rev. 2 Apr 47)

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ADJUTANT GENERAL

[redacted]

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1947 JUL 24 12:01

23 July 1947

Wind Tunnel Program for B-36 VDT
Tractor Power Plant Installation

AMC Engineering Liaison Office
NACA, Ames Aeronautical Laboratory
Moffett Field, California

Attn: Major James L. Murray

1. There is attached herewith a summary sheet of proposed wind tunnel program for the B-36 airplane with six (6) tractor VDT nacelles.

2. Item III relates to investigations to be conducted in the 19-foot Pressure Tunnel of the Langley Memorial Aeronautical Laboratory. This Laboratory is being contacted by the Engineering Liaison Section.

3. It will be noted that Item IV involves investigations to be conducted in the 40- x 80-foot Wind Tunnel at the Ames Aeronautical Laboratory of a full scale powered nacelle. It is requested that your office contact the personnel of the Ames Aeronautical Laboratory to determine their attitude towards the conducting of this type investigation. It will be noted that the schedule calls for these investigations to be conducted 10 months from 1 July 1947.

4. Item V of the enclosed summary relates to additional investigations to be conducted in the 19-foot Pressure Wind Tunnel of the Langley Laboratory. This specific portion of the program has not yet been approved by the Air Material Command. If and when approved, it will be handled through the Liaison Section as a separate matter.

JUL 25 1947

RJP

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(Rev 2 Apr 47)

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(PRIME SYMBOL) AMCMAL-MO-AMELO, Moffett Field, Calif. dtd 28 July 1947, subj: "Wind (ADDITIONAL SYMBOL) Tunnel Program for B-36 VDT Tractor Power Plant Installation."
(PROGRAM SYMBOL)

5. The attached wind tunnel program is proposed by the Consolidated Vultee Aircraft Corporation in connection with one (1) prototype B-36 airplane with tractor installations of R-4360 VDT engines. The timing of this wind tunnel program is extremely important since the prototype is being built to meet a potential production requirement of these airplanes in fiscal year 1949.

BY COMMAND OF LIEUTENANT GENERAL TWINING:

/s/ Joe C. Jones

JOE C. JONES
Actg. Chief, Engineering
Liaison Section
Engineering Division

Incl: 1 cy CVAC wind tunnel
program - summary chart

cc: TSEAC-6
TSEAC-2C
TSXMA, H. C. Chandler Jr.
TSEPA-5, Col. Garrity

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1947 JUL 24 12:01

452.1 - Consolidated B36 (tab) VDT Tractor Power Plant Installation

452.1

452.1 - Consolidated B36

25 July 1947

Wind Tunnel Program for B-36 VDT
Tractor Power Plant Installation

ARC Engineering Liaison Office
NACA, Langley Memorial Aeronautical
Laboratory
Langley Field, Virginia

1. There is attached herewith a summary chart of proposed wind tunnel program for the B-36 airplane with six (6) tractor VDT nacelles.

2. It will be noted that Item III involves investigations to be conducted in the 19-foot Pressure Tunnel of the Langley Memorial Aeronautical Laboratory. This will be a 1/14-scale powered model. It is requested that your office contact the personnel of the Langley Laboratory to determine their attitude towards the conducting of this type investigation. It will be noted that the schedule calls for these investigations to be conducted eight (8) months from 1 July 1947.

3. Item IV relates to investigations to be conducted in the 40- x 80-foot Wind Tunnel at the Ames Aeronautical Laboratory. This Laboratory is being contacted by the Engineering Liaison Section.

4. Item V of the enclosed summary relates to additional investigations to be conducted in the 19-foot Pressure Wind Tunnel of the Langley Laboratory. This specific portion of the program has not yet been approved by the Air Material Command. If and when approved, it will be handled through the Liaison Section as a separate matter. It is therefore requested that no action be taken regarding Item V of the attached summary chart.

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CHIEF OF ADMIN.

AIR INSPECTOR

PUBLIC RELATIONS

JUDGE ADVOCATE

PERSONNEL (T-1)

INTELLIGENCE (T-2)

ENGINEERING (T-3)

SUPPLY (T-4)

PLANS (T-5)

BASE C. O.

OTHER

Ltr [redacted] Langley Field, Va., 4th [illegible] July 1947, subj: "Wind Tunnel Program [illegible] VDT Tractor Power Plant Installation."

5. The attached wind tunnel program is proposed by the Consolidated Vultee Aircraft Corporation in connection with one (1) [redacted] prototype B-36 airplane with tractor installation of R-4360 VDT engines. The timing of this wind tunnel program is extremely important since the prototype is being built to meet a potential production requirement of these airplanes in fiscal year 1948.

BY COMMAND OF LIEUTENANT GENERAL TEXINO:

for Virgil Blon

JOE C. JONES
Actg. Chief, Engineering
Liaison Section
Engineering Division

Incls: 1 cy CVAC wind tunnel program - summary chart

RJ

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AC Form No. 19-614 (Rev 19 Sept 46)

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7C-92-289

WT-L-2 OCT 46 200M

SAVE

HEADQUARTERS
AIR MATERIEL COMMAND

IN REPLY ADDRESS BOTH COMMUNICATION AND ENVELOPE TO COMMANDING GENERAL, AIR MATERIEL COMMAND, ATTENTION FOLLOWING OFFICE SYMBOL:

TSRPE3A2
238

GJC:mg
WRIGHT FIELD, DAYTON, OHIO
4 August 1947

SUBJECT: Request for Permission to Negotiate Procurement and Authority to Issue Letter Contract
Pratt and Whitney Authority for Purchase 25277

AC-18653

TO: Commanding General
Army Air Forces
Washington 25, D. C.

Attention: Chief, Procurement and Industrial Planning Division
Office, Assistant Chief of Air Staff - 4

1. Pursuant to Disposition Form dated 15 April 1947 received from War Department General Staff, the Army Air Forces requests authority to negotiate the procurement as set forth herein. In addition, approval is requested to permit the issuance of a Letter Contract for the same procurement.

2. The following information is submitted for authority to negotiate:

a. Contractor: Pratt and Whitney Aircraft Division, United Aircraft Corporation, East Hartford 8, Connecticut.

b. Supplies:

Item 1: Conversion of two (2) XR-4360-39 engines to R-4360-43 engines.

Item 2: Conversion of one (1) SR-4360-39 engine to R-4360-51.

Item 3: Reports - (1) 150-hour qualification test on newly built R-4360-43 engine. (2) Report of 50-hour flight test on R-4360-43 engine. (3) Detailed monthly reports covering the progress of all developmental work. (4) Report covering development of an electric power control.

c. Prices: The amount for the entire procurement is estimated at $5,590,600.00 on a fixed price basis. The definitive contract will contain a suitable Price Adjustment Article.

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TC-92-290

Subj: Request for Permission to Negotiate Procurement and
Authority to Issue Letter Contract
Pratt and Whitney AFP 25277
To: CG, AAF

d. Time of performance: From August 1947 to June 1949.

e. Funds to be obligated: Fiscal Year 1948.

2. Negotiation on this procurement is authorized by sub-paragraphs VIII and XII of Section 1 of the Act (H. R. 1366).

3. Procurement by negotiation from the design contractor is necessary for the following reasons:

a. The engines to be furnished are a further development of the Pratt and Whitney R-4360 model engine and since this engine is a proprietary article, there is only one source of supply.

b. No other manufacturer is equipped to produce this type of engine.

4. The following information is submitted for permission to issue a Letter Contract:

a. The estimated amount of the Letter Contract will be $5,590,600.00 with expenditure of 100% to be authorized.

b. The contemplated procurement will be a fixed price contract with a suitable Price Adjustment Article.

c. The proposed contract will cover the supplies as stated herein above.

4. It is considered necessary to authorize a Letter Contract covering this proposed procurement in order that contractor can plan production and place orders for basic materials at once.

5. If no Letter Contract were issued the entire aircraft and engine program would be delayed by the normal period of time required to negotiate and process a definitive contract. This overall program calls for flight tests of the B-50 airplane in January 1948. In addition, a production contract for twelve (12) R-4360-51 and eight (8) R-4360-43 engines would correspondingly be delayed. A Purchase Request (No. 25279) covering the

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170 TC-42-291

Subj: Request for Permission to Negotiate Procurement and
Authority to Issue Letter Contract
Pratt and Whitney AFP 25277
To: CG, AAF

procurement of these twenty (20) engines has already been initiated and calls for delivery dates starting in September 1948 for use in the B-50 and B-36 aircraft. The production of the B-50Z airplane would also be affected in the same manner, the engines of which are planned for delivery in May 1949.

6. In consequence of reviewing the above, it is evident that the entire program is based upon the closest timing; therefore, the issuance of a Letter Contract is definitely desired to eliminate any and all delays.

FOR THE COMMANDING GENERAL:

W M Knowles Col AC

H. A. SHEPARD
Colonel, Air Corps
Chief, Procurement Division

Dict.

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TC-42-292

171.

Subject: Request for Permission to Negotiate Procurement and Authority to Issue Letter Contract - Pratt and Whitney Aircraft Div., United Aircraft Corp. (AFP 25277)

1st Ind. AFDRP-10

Hq Army Air Forces, Washington 25, D. C. 7 August 1947

To: Chief, Current Procurement Branch, Procurement Group, WDGS

Forwarded, recommending approval of request to negotiate and authority to issue fixed price letter contract, as requested in basic communication.

FOR THE COMMANDING GENERAL, ARMY AIR FORCES:

Ralph J. Hallenbeck
Major AC

for D. F. STACY
Brigadier General, U. S. A.
Chief, Procurement & Industrial Planning Division
Office, Ass't Chief of Air Staff - 4

WDGS
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8653 172 TS-42-273

WDGSS/RI 35515 2d Ind PMS/2648

WD, WDGS, Service, Supply & Procurement Div., Washington 25, D. C., 15 August 1947

TO: The Commanding General, AAF, Office, AC/AS-4
Attn: Chief, Proc. & Industrial Planning Div.

1. Authority is hereby granted to negotiate with Pratt and Whitney Aircraft Division, United Aircraft Corporation, a contract for the conversion of 2 XR-4360-39 engines to R-4360-43 engines, and the conversion of 1 XR-4360-39 engine to R-4360-51, and reports set forth as Item 3.

2. Request for authority to issue a letter contract covering this procurement is not approved, as it is not deemed necessary to do so at this time.

FOR THE DIRECTOR OF SERVICE, SUPPLY & PROCUREMENT:

PHILLIPS W. SMITH
Colonel, GSC
Chief, Current Procurement Branch
Service, Supply & Procurement Division

Subject: Request for Permission to Negotiate Procurement, and Authority to Issue Letter Contract - Pratt and Whitney Aircraft Div., United Aircraft Corp. (AFF 25277)

3d Ind

Hq Army Air Forces, Washington 25, D. C. AFDRP-10D 27 August 1947

To: Commanding General, Air Materiel Command, Wright Field, Dayton, Ohio (Att'n: Chief, Procurement Div. - MCPE3A2)

1. Your attention is invited to (i) recommendation contained in preceding 1st Indorsement, and to (ii) authority granted to negotiate, as set forth in preceding 2d Indorsement from the Chief, Current Procurement Branch, WDGS.

2. Your attention is particularly invited to paragraph 2 of preceding 2d Indorsement from the Chief, Current Procurement Branch, WDGS.

BY COMMAND OF GENERAL SPAATZ:

D. ESTAGE
Brigadier General, U. S. A.
Chief, Procurement & Industrial Planning Division
Inspector General's Office, Ass't Chief of Air Staff-4

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CONFIDENTIAL

AFDRD-P

WAR DEPARTMENT
HEADQUARTERS OF THE ARMY AIR FORCES
WASHINGTON, D. C.

6 August 1947

SUBJECT: Fiscal Year 1948 Aircraft Procurement Program

TO: Commanding General
Air Material Command
Wright Field, Dayton, Ohio

Attn: Procurement Division, [redacted]

1. With reference to letter from your headquarters dated 28 July 1947 to General Spaatz signed by General Twining, subject: "1948 Aircraft Production Program", recommendation contained in paragraph 6 with respect to the procurement of P-87's is concurred in by this headquarters.

2. With reference to telephone conversations between Major General K. M. Powers and Colonel H. A. Shepard and Mr. E. C. Barber and Mr. W. E. Donnally on 5 August 1947, authority is granted to procure immediately the following airplanes:

MODEL	QUANTITY
B-50Z	1
B-50	82
B-45	43
F-84 (P-84)	154
F-86 (P-86)	190
C-82A	20
F-5[redacted] (P-51)	39
A-X (PBM-5A)	21

3. In placing the F.Y. 1948 contract for the F-86 (North American fighter) a clause will be included in the contract enabling the Government to cancel the contract without cost should the initial flight tests of the XF-86 indicate that this airplane is undesirable.

4. The Bureau of Aeronautics should be requested to negotiate for the procurement of the 21 A-X (Martin PBM-5A).

[redacted]

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TC-92-315

Ltr to Hq AMC, dtd 6 Aug '47, subject: Fiscal Year 1948 Aircraft Procurement Program

5. It is the understanding of this office that the Bureau of Aeronautics desire the Army Air Forces to procure 20 H-5F (Sikorsky S-51 helicopter) for their account. The Bureau of Aeronautics have been advised to release this procurement to the Air Materiel Command so that the entire quantity may be negotiated for at this time.

6. In negotiating these contracts with the manufacturers, should any of their costs materially exceed those previously estimated by the AMC, these contracts should be cleared with this headquarters before final approval is given to the contractor as this program must be kept within the funds available.

7. Procurement of spares will be in accordance with Case 218 as approved by the Aeronautical Board on 30 July 1947.

8. In order to compensate for overcommitments in the Fiscal Year 1947, Project 110 funds, certain Fiscal Year 1947 contracts will have to be reduced and Fiscal Year 1948 contracts will have to be increased to compensate for this reduction in the Fiscal Year 1947 program. It is requested that this headquarters be furnished with a list of those contracts upon which these overcommitments have occurred showing the original commitment and the present status, together with AMC's plan for adjusting same. If in the opinion of AMC, there are any contracts that may be terminated in all or part to help correct this situation in Fiscal Year 1947 or prior programs, such recommendations should be forwarded to this office for approval. Further instructions relative to these overcommitments will be forwarded from the Air Comptroller to the Budget and Fiscal Office, AMC.

9. It is desired that AMC conduct an evaluation test at the earliest practicable date of the Northrop, Burnelli and Beech transport aircraft to determine their suitability for emergency artic rescue operations. The 10th Emergency Rescue Squadron at Elmendorf Field, Alaska, will be invited to send a representative to participate in these evaluation tests.

10. Procurement releases for the balance of the program will be made as expeditiously as possible.

11. The Army Ground Forces procurement releases for their portion of the program should be forthcoming within the next two weeks.

BY COMMAND OF GENERAL SPAATZ:

for E. M. POWERS
Major General, U. S. A.
Asst Chief of Air Staff-4

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TC-92-302

MEPP-13B/RTH/mb

7 AUG 1947

Power Control for Pratt & Whitney R-4360-13 Engine

'47 AUG 6 15:19

Pratt & Whitney Aircraft Division
United Aircraft Corporation
East Hartford 8, Connecticut

1. Reference is made to Air Material Command letter dated 20 June 1947, MEPP-13B/RTH/mb, and Pratt & Whitney reply dated 11 July 1947, AMSIR-dmg, on the above subject.

2. The intent expressed in the referenced Air Material Command letter regarding establishment of a second source for the subject control has apparently been slightly misinterpreted.

3. In order to insure that a satisfactory control will be available for the R-4360-13 engine, it is considered advisable to carry the program from initiation with more than one contractor. Thus, if the control initially constructed for the initial tests should prove to be unsatisfactory, a second control would be available without undue delay. At the same time, a second source with a planned solution to the control problem would be established for control procurement as indicated in referenced Pratt & Whitney letter.

4. It is recognized, as was pointed out in the referenced Pratt & Whitney letter, that realistic control requirements for the engine cannot successfully be specified until initial flight testing of the engine-turbo combination has been accomplished. However, it is believed that the time presently indicated on the additional vendors in waiting for these specifications may prove to be serious if it should be found necessary to develop a second control.

5. It is therefore recommended that both the primary and secondary contractors be licensed on the control program at the same time and that data be provided to both contractors for use in the program.

AUG 1 1947

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Ltr, AMC, 7 AUG 1947, to P&W, subj: "Power Control for Pratt & Whitney R-4360-43 Engine"

6. It is recommended that some point in the program be established which will adequately serve the intent of second source establishment. At this point, work by the secondary contractor should be terminated.

FOR THE COMMANDING GENERAL:

R. J. O'KEEFE
Colonel, Air Corps
Acting Chief, Power Plant Laboratory
Engineering Division

cc: Boston AAFPPO
TSEQC

AUG 7 1947

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TC-92-425

In reply ease refer to:
RHB:lms ngineering II.

PRATT & WHITNEY AIRCRAFT

DIVISION OF UNITED AIRCRAFT CORPORATION
EAST HARTFORD 8, CONNECTICUT, U.S.A.
CABLE ADDRESS "AIRCRAFT"

7 August 1947

ARMY OFFICE
APPROVED
CONCURRED IN 8-7-47
NO COMMENT

VIA: Army Air Forces Representative

To: Director
Air Materiel Command
Wright Field, Dayton, Ohio

Attention: Mr. J. B. Coyle, Power Plant Laboratory, TSEPP-5

Subject: Letter Contract W33-038 ac 14294 XR-4360-39 Engine Development

Reference: (a) PWA letr RHB:lms Engineering II dated 21 July 1947 to AMC, Dayton, Ohio

Enclosure: (A) PWA Report No. 697 - three (3) copies each
(B) PWA Report No. 690 - three (3) copies each

1. The official 50-hour Qualification Test on the XR-4360-39 engine was successfully completed on engine No. X-101. A report, No. PWA-697, summarizing this test has been prepared and three (3) copies are transmitted herewith for the Air Materiel Command's information and use. As this report is the last item to be delivered under the subject letter contract, it is our understanding that the requirements of the subject contract have now been fulfilled. Confirmation of this understanding is requested.

2. Also enclosed for the Air Materiel Command's information and use are three (3) copies of Report No. PWA-690 which summarizes the supplementary 50-hour test run earlier in the year on XR-4360-39 engine No. X-151 as part of the development program conducted under the subject letter contract. It will be noted that those few design deficiencies found in the first test have been corrected as demonstrated by the second test completed on engine No. X-101. Both engines were subjected to the same maximum take-off and military power running, 3800 BHP at 2800 RPM with water, and to the same maximum cruise power running, 2000 BHP at 2300 RPM. For the remaining portions of the 50-hour test, which are run at an intermediate rating, engine No. X-151 was run using a 3500 BHP, 2800 RPM dry take-off rating while engine No. X-101 was run, in accordance with agreements reached with the Air Materiel Command, at a 3300 BHP, 2800 RPM rating.

3. Since this letter transmits the final material required under the subject letter contract, it is desired to summarize the items furnished the Government under Letter Contract W33-038 ac 14294. The material and services furnished the Government in accordance with Exhibit 'A' to the subject letter contract follows. (The item numbers referred to below agree with those listed on the referenced Exhibit 'A'):

EPP-8 9
29A

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PRATT & WHITNEY AIRCRAFT

To: Director, Air Materiel Command, Wright Field, Dayton, Ohio

Subject: Letter Contract W33-038 ac 14294 XR-4360-39 Engine Development

---

Item 1 A full scale mock-up of the AAF type XR-4360-39 engine with contractor furnished mounts, cooling baffles, fuel injection, ignition equipment and all other external features of the engine, was delivered 11 November 1946.

Item 2 Three (3) experimental engines, AAF Type XR-4360-39, were delivered as follows:

Engine No.	
X-151	14 June 1946
X-152	26 July 1946
X-155	8 October 1946

These engines were also maintained throughout the year by the Contractor in operating condition as governed by the progress of development. (For further details of the development see Report No. PWA-677, Item 4).

Item 3 Three (3) copies each of PWA Report Nos. 690 and 697 covering 50-hour development tests run on XR-4360-39 engines in accordance with AAF Specification No. XR-28398-A are transmitted herewith.

Item 4 A final report, No. PWA-677, covering the progress of development including testing, fuel injection, ignition, power control and basic engine development was prepared and transmitted to the Government on 20 June 1947.

Item 5 A total of 17 reports of analysis and design study of compounding the engine were prepared and transmitted during the last year. These reports, Nos. TR-22, TR-23R, TR-25, TR-26, TR-27, TR-28, TR-29, TR-33, TR-34, TR-35R, TR-36, TR-37, TR-28, TR-29, TR-40, TR-43, and TR-46, were also reproduced and included for easy reference in Report No. PWA-677, reference Item 4.

Item 6 A preliminary one-quarter mock-up of the XR-4360-39 compounded engine was prepared and displayed at Wright Field on 26 July 1946, and a final one-quarter scale mock-up shipped to Wright Field 1 April 1947.

Item 7 Thirteen (13) monthly progress reports covering the progress of development of the XR-4360-39 engine and its components have been prepared and furnished each month starting on 8 July 1946. The first eleven (11) of these reports are also included in Report No. PWA-677, reference Item 4.

Item 8 Both Bendix and Chandler-Evans undertook the development of fuel injection systems suitable for use on the XR-4360-39 engine and both Scintilla and General Electric undertook the development of low tension, high frequency ignition systems for the R-4360-C engine. The results of these developments are summarized in Report PWA-677. A report covering bench tests on a single plunger four cylinder test unit and drawings of a proposed Ceco 28 cylinder fuel injection unit were also forwarded to the Air Materiel Command by letter dated 30 June 1947.

UNITED AIRCRAFT CORPORATION
Pratt & Whitney Aircraft Division

AUG 1947 RECEIVED ARMY OFFICE PRATT & WHITNEY AIRCRAFT

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TC-42-370

COORDINATION
CG OR DEP CG

AMC Form No. 10-508
(Rev 2 Apr 47)
(PRINT SYMBOL, DATE AND INITIALS IN APPROPRIATE BLOCK)

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CHIEF OF ADMIN.

AIR INSPECTOR

PUBLIC RELATIONS

JUDGE ADVOCATE

PERSONNEL

INTELLIGENCE

ENGINEERING (T-3)

SUPPLY (T-4)

PLANS (T-5)

BASE C. O.

OTHER

TSBPA3B/RJW:ICW/F-735
Tel: 3-0232

TSBPA3B

14 August 1947

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Contract AC-22352, YB-36 Airplane,
Contract AC-7, B-36A Airplanes,
Heat Requirements for Anti-Icing of Wing of
YB-36C. Master Change Record No. 735.

Consolidated Vultee Aircraft Corporation,
Fort Worth Division - Fort Worth, Texas.

Through: AAF Plant Representative.

1. The Contractor is hereby notified that the Model Designation for the B-36 Airplane incorporating the R-4360-51 engines is the YB-36C.

2. It is not known whether the Contractor has considered the increase in heat requirements for adequate anti-icing of the YB-36C wing due to the increase in the average speed of this airplane. It is requested the Contractor inform this Command if any consideration has been given this problem and what is proposed to be done to meet the increased heat requirements.

FOR THE COMMANDING GENERAL:

/s/ Robert J. Walbing

GEORGE E. SCHAETZEL,
Colonel, Air Corps,
Chief, Aircraft Section,
Procurement Division.

cc - AAFPR - FW
CVAC - Dayton

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E X T R A C T

SUMMARY MINUTES OF THE FIRST MEETING

OF THE

USAF AIRCRAFT AND WEAPONS BOARD

HEADQUARTERS, ARMY AIR FORCES

Pentagon, Washington, D. C., 19, 20, 21, and 22 August 1947

1. Pursuant to the call of the Chairman and in accordance with provisions of tentative AAF Regulation No. 20-____, "Organization, USAF Aircraft and Weapons Board," the Board convened in the Air Room, the Pentagon, at 0900 hours, 19 August 1947, and met in continuous session, recessing from time to time as required, until adjournment at 1945 hours, 22 August 1947.

2. ATTENDANCE * * * * *

3. ACTION TAKEN BY THE BOARD.

a. Heavy Bombardment Aircraft. There was considerable discussion of this program. It was brought out that the B-50Z and B-36Z were being developed for eventual evaluation to determine the type aircraft to succeed the B-50 as an interim "work horse" bomber. To build the B-36Z, the B-36 production line would have to be slowed down to a very large extent. The desirability for an immediate decision on continuing the B-50Z and/or the B-36Z development was pointed out in the discussion. In general, the decisions of the Board were based on the following points: The B-52 is under development to replace the B-36 as a special-purpose bombardment aircraft; the B-50Z, now under development is considered more desirable as a "work horse" bombardment aircraft than the B-36Z because of airframe weight penalties and airfield engineering requirements; the quantity of one hundred (100) B-36's, supplemented by B-50Z's, will be sufficient to meet our "special-purpose" requirements until the B-52 is available.

The Board made the following decisions:

(1) Continue the B-52 development program, contingent on results of a RAND study to determine the optimum method of delivering the atom bomb.

(2) The quantity of one hundred (100) B-36's currently on order will fill AAF requirements, and the development of the B-36Z with the R-4360 VDT engines will be canceled.

* * * * * * *

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PRATT & WHITNEY AIRCRAFT

DIVISION OF UNITED AIRCRAFT CORPORATION
EAST HARTFORD 8, CONNECTICUT, U.S.A.
CABLE ADDRESS: AIRCRAFT

AF 1853

August 22, 1947

Army Air Forces
Headquarters, Air Materiel Command
Wright Field
Dayton, Ohio

Attention: George J. Callaghan, Negotiator TSSPE-3A2

Subject: Proposal for No. RFP-48-93/25277
Reference: Conferences at Wright Field August 21-22, 1947

Gentlemen:

1. We are returning herewith the subject proposal executed in triplicate on behalf of this Corporation by Wright A. Parkins, Engineering Manager, Pratt & Whitney Aircraft Division.

2. As agreed at the reference conferences, we request the following modifications and additions:

(a) On page 3, under Title II - (A) Scope of Proposal, Item 1, Delivery Required, delete "By June 1949" and substitute "By December 31, 1947."

(b) On page 3, under Title II - (A) Scope of Proposal, Item 2, Delivery Required, delete "By June 1949" and substitute "By December 31, 1948."

(c) On page 3, under Title II - (A) Scope of Proposal, Item 3, delete the second sentence and substitute the following: "One R-4360-43 engine covered in Item 1, will be shipped by the Contractor on Government bill of lading to Boeing Aircraft Company." Under Delivery Required, Item 3, delete "By June 1949" and substitute the following: "One year from date of delivery of B-50 airplane by Boeing to Pratt & Whitney Aircraft Division with R-4360-43 engine installed."

(d) On page 4, under Title II - (A) Scope of Proposal, Item 4, Delivery Required, delete "By June 1949" and substitute "By March 31, 1948."

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Army Air Forces
Headquarters, Air Materiel Command
(TSBPE-3A2)

August 22, 1947

(e) On page 4, under Title II - (A) Scope of Proposal, Item 6, Delivery Required, add "By December 31, 1948."

(f) On page 4, under Title II - (A) Scope of Proposal, in statement near bottom of page referring to the Contractor making shipments, assuming all costs of transportation to the consignee, revise "(Applicable to Items 2, 3, 5 and 6)" to include the words "as to reports only" after Item 3.

3. It is understood that the Special Provision Relating to Delivery, which modifies Article 5 Delays and Damages of Standard Form 32 and which has been approved by the Office of the Judge Advocate General, will be incorporated in the definitive contract.

4. We request the statement of work included in Article 15 in the definitive contract provide for the fact that the period of work under the contract runs from July 1, 1947, to the time of completion.

5. It is understood that the definitive contract will include Form V Price Revision Article. It is further understood that the contract price of Five Million Five Hundred Five Thousand Dollars ($5,505,000) is agreed upon and will be subject to upward revision of Fifteen Per Cent (15%) to a maximum amount of Six Million Three Hundred Thirty Thousand Seven Hundred Fifty Dollars ($6,330,750), with re-determination downward in the event that the costs ~~do not equal~~ are less than the contract price.

6. It is understood this project is extremely urgent and the Contractor will continue to proceed with the work on the understanding that a letter of award will be issued immediately, with a definitive contract to follow as soon as possible.

Very truly yours,

UNITED AIRCRAFT CORPORATION

W. A. Parkins
Engineering Manager
Pratt & Whitney Aircraft Division

WAP:pw
Enc. (in trip.)

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TC-92-253

IN REPLY REFER TO:

HEADQUARTERS, ARMY AIR FORCES
WASHINGTON

FOR VICTORY BUY UNITED STATES WAR BONDS AND STAMPS

SUBJECT: Approval of Award
(Contract W 33-038 ac-18653)

15 1947

TO: Chief, Current Procurement Branch,
Procurement Group, WDGS.

1. Herewith is letter dated 15 May 1947 containing the proposal of the United Aircraft Corporation, (Pratt & Whitney Aircraft Division), East Hartford 8, Connecticut, submitted under the provisions of PR 305.2 and recommending approval of award. The procurement has been negotiated pursuant to Public Law 703, 76th Congress, as amended by Section 13 of Public Law 580, 77th Congress; Title II of the First War Powers Act of 1941 and Executive Order No. 9001 dated 27 December 1941.

2. The following information is submitted in conformity with PR 305.4:

a. Contractor: United Aircraft Corporation, (Pratt & Whitney Aircraft Division), East Hartford 8, Connecticut.

b. Location where work will be performed: Contractor's plant at East Hartford, Connecticut.

c. Statement of Work:

Item 1 - Conversion of two (2) XR-4360-39 engines to R-4360-43 engines, in accordance with Pratt & Whitney engine model Specification No. A-7065B dated 24 June 1947. These engines are to be furnished by the Government for conversion.

Item 2 - Report, in triplicate, of a satisfactory 150-hour qualification test as called out in Pratt & Whitney engine model Specification No. A-7065B dated 24 June 1947. This test is to be conducted on a new experimentally built R-4360-43 engine in accordance with Specification A-7065B dated 24 June 1947 and supplied by the contractor. Complete coordination of the above Specification must be completed before test is conducted.

Item 3 - Report, in triplicate, of a minimum of 50 hours of flight testing on an experimentally built R-4360-43 engine, as described in Pratt & Whitney Aircraft Specification No. A-7065B dated 24 June 1947. One R-4360-43 engine covered in Item 1, will be shipped by the contractor on Government Bill of Lading to Boeing Aircraft Company. The engine will be con-

ADDRESS REPLY TO: COMMANDING GENERAL, ARMY AIR FORCES, WASHINGTON 25, D. C.

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TC.92.284

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pletely installed by Boeing in a B-50 airplane. After installation, the B-50 airplane will be flown to the contractor's plant for flight testing, which will include a general investigation of engine performance and installation problems.

Item 4 - Conversion of one (1) XR-4360-39 engine to an R-4360-51 engine in accordance with Pratt & Whitney engine model Specification No. A-7067A dated 24 June 1947, with the following amendment: The 150-hour qualification test as called for under Paragraph E-4a is not required. This engine will be furnished by the Government for conversion.

Item 5 - Detailed monthly reports in triplicate covering the progress of the development work.

Item 6 - Report, in triplicate, covering development of an electronic power control.

d. Prices:

Target Price - $5,505,000.00 at no profit.
Ceiling Price at 15% above the target price - $6,330,750.00

e. Deliveries:

Item 1 - To be completed 31 December 1947.
Item 2 - To be completed 31 December 1948.
Item 3 - To be completed one year from date of delivery of the B-50 airplane by Boeing to the contractor with engine installed.
Item 4 - To be completed by 31 March 1948.
Item 5 - To be furnished monthly.
Item 6 - To be furnished 31 December 1948.

f. The contractor is an established manufacturer of aircraft engines and has been a contractor to the Army Air Forces over a period of many years. It is the designer of the R-4360 engine and has the necessary personnel and experience and is believed capable of performing the work. Past performance has been satisfactory.

g. Performance is not conditional upon additional facilities being provided.

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TC.92.285

AFDRP-10

(Contract W 33-038 ac-18653)

h. Contract placement policies were considered and applied. The procurement has been placed as a "sole source" procurement for the reasons set forth in paragraph f above. It has been determined that the work could not be placed elsewhere with adequate assurance of obtaining satisfactory performance and timely deliveries.

i. The contract will be placed on the standard Form No. 32 on a fixed price basis. There is no letter contract involved.

Patent protection will be provided in the type of form now being determined by the Office of the Judge Advocate, Air Materiel Command.

The provisions of the Vinson-Trammell Act are not applicable to this procurement since it is not for the construction or manufacture of any complete aircraft or portions thereof.

The contract will provide for Partial Payments in accordance with PR 330.

A Form V - Price Revision Article - will be provided for in the contract with a ceiling price of not to exceed 15% of the target price.

j. Contractor's cost breakdown is contained in its letter dated 15 May 1947 mentioned hereinabove. Conferences were held at Wright Field, Dayton, Ohio between representatives of the contractor and the procuring agency on 21 and 22 August 1947 with reference to the prices. The prices are considered fair and reasonable by the Price Control Branch, Air Materiel Command.

k. A small percentage of subcontracting is contemplated.

l. No royalties are involved.

m. The procurement is being made in the furtherance of the National Defense and is listed under Project No. 110-A, Item No. A2-N10, chargeable to Fiscal Year 1948 funds, which have been allotted by the Budget and Fiscal Office, Air Materiel Command. The contractor is considered financially capable of performing the contract.

FOR THE COMMANDING GENERAL, ARMY AIR FORCES

D. F. STACE
Brigadier General, U.S.A.
Chief, Procurement & Industrial
Planning Division
Office, Ass't Chief of Air Staff

1 Incl:
Contr's ltr dtd 15 May 47

APPROVED: AUG 28 1947
By direction of The Secretary of War

PHILIPS W SMITH
Colonel, GSC
Chief, Current Procurement Branch
Procurement Group, WDGS

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165 TC-42-286

MBM/74175

WDGSP/El 38180 1st Ind

WD, WDGS, Service, Supply & Procurement Div., Washington 25, D. C.

TO: The Commanding General, AAF, Office, AC/AS-4 29 AUG 1947
Attn: Chief, Proc. & Industrial Planning Div.

Attention is invited to the approval by direction of the Secretary of War of the request contained in basic communication to place an award with United Aircraft Corporation (Pratt & Whitney Aircraft Division), East Hartford, Conn., with a ceiling price of $6,330,750.00.

FOR THE DIRECTOR OF SERVICE, SUPPLY & PROCUREMENT:

Incl, n/c

PHILLIPS W. SMITH
Colonel, GSC
Chief, Current Procurement Branch
Service, Supply & Procurement Division

Subject: Approval of Award (Contract W 33-038 ac-18653), United Aircraft Corp., Pratt & Whitney Aircraft Div.

2d Ind AFDRP-10D

Hq Army Air Forces, Washington 25, D. C. 2 September 1947

To: Commanding General, Air Materiel Command, Wright Field, Dayton, Ohio (Att'n: Chief, Procurement Div. - TSBUY1C)

Your attention is invited to (i) recommendation contained in basic communication, and to (ii) approval of the Chief, Current Procurement Branch, WDGS, endorsed upon basic communication, dated 28 August 1947. Your attention is also invited to preceding 1st Indorsement, from the Chief, Current Procurement Branch, WDGS.

BY COMMAND OF GENERAL SPAATZ:

Incl
n/c

D. C. STRONG
Brigadier General, U. S. A.
Chief, Procurement & Industrial
Planning Division
Office, Ass't Chief of Air Staff-4

RECORDS BRANCH

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TC-72-282

AMC Form No. 10-3
(Rev 19 Mar 47)

ROUTING AND RECORD SHEET

161

A... MATERIEL COMMAND

Use this form for inter-office correspondence within headquarters. Use authorized office symbols to designate addressees and references (DO NOT ROUTE FROM ANSE TIME) Place initials of dictator and typist, telephone number and location to right of signature.

Use entire width of sheet, both sides. Number all comments consecutively. Separate comments by horizontal lines across page.

SUBJECT Pratt and Whitney - Case No. 11826 - AFP No. 25277

TO	FROM	DATE	COMMENT NO.
TSBPE3A2	TSBPS9B 20-18633	8/26/47	1.

1. Subject quotation covers conversion of 2 XR-4360-39 engines, engineering reports, and so forth. Quotation does not make provision for profit.

2. Details of this quotation, together with quotation covered by PAB Case No. 11827, were discussed at a recent meeting at this Headquarters between Contractor's Representatives and AMC personnel. Major Freeman of the Office of the Under Secretary of War was present. Contractor submitted detailed support of all elements of costs included in the quotation, which were acceptable to AMC personnel. All overhead and hourly rates are currently in effect under CPFF Navy contracts.

3. Contractor estimated it would require 15 complete sets of raw material to cover modification of 3 engines and fabrication of the 3 additional engines for test purposes, and spare parts. Cost and requirements of material were based on actual experience of the contractor on similar projects.

4. Since work to be performed is of an entirely experimental and developmental nature and the limited basis for checking the reasonableness of the contractor's estimate, members of Price Control had insisted on some pricing clause being included in the definitive contract that would afford AMC personnel another look at contract costs after completion of the work. However, it did not appear that a pricing clause suitable for developmental work could be used, as PR Form 5 was limited to $1,000,000. Major Freeman later joined the meeting and advised he had received authority from Colonel Smith to use PR Form 5 in this particular case even though quotation was in excess of $5,000,000.00. Contractor readily agreed to Form 5 clause with a 15% ceiling.

5. Contractor estimated total cost of the work to be performed at $5,646,339.00, which exceeds the estimate by approximately $141,000.00.

6. As mentioned in previous paragraph, quotation is submitted on a total cost basis and profit will not be involved.

7. Quotation appears reasonable and is approved for $5,505,000.00.

8. Detailed cost information is attached which should be included in Contract File when forwarded to the Under Secretary's Office for final approval.

Concurred

JOHN R. MARTIN
Lt. Colonel, Air Corps
Chief, Services Section
Procurement Division

CRH:rfb
23147

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WAC-17 JAN 47 (CONTINUE ON OTHER SIDE)

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B-36 Cancel. 38 B-36 Canc.

Subject: Cancellation of B-36 Z Project

To: TSEEG From: TSDEE (Gen. Chidlaw) 26 Aug 47 1
ATTN: Gen. Crawford

1. Following receipt of telephone call from Major General Craigie of General LeMay's office, it is desired that any work currently being done on the B-36 Z Project (B-36 with VDT engine application) be cancelled without delay.

2. This decision is in line with decision reached last Friday, 22 August at the meeting of the USAF Aircraft and Weapons Board which convened in Headquarters, USAF.

3. General Craigie advised by phone that a confirming TWX would be forwarded this Headquarters at once.

B. W. CHIDLAW
Major General, U.S.A.,
Deputy Commanding General,
T-3

BWC:ims
TSDEG

To: TSEPA-3
Attn: Lt. Col. Gerrity

From: TSEEA-2 29 Aug 47 2

1. Forwarded.

GEORGE F. SMITH
Colonel, Air Corps
Chief, Aircraft Projects Section
Engineering Division

GFS/mh
1-4305
Bldg. 12B

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AFDRP-7

WAR DEPARTMENT
HEADQUARTERS OF THE ARMY AIR FORCES
WASHINGTON 26 AUG 1947

SUBJECT: Fiscal Year 1948 Aircraft Procurement Program

TO: Commanding General,
Air Material Command,
Wright Field, Dayton, Ohio

Attn: Procurement Division, TSBUY

1. Reference is made to letter from this headquarters dated 6 August 1947, subject as above. On 22 August 1947, the U.S.A.F. Aircraft and Weapons Board reviewed the Fiscal Year 1948 Aircraft Procurement Program and the following agreements have been approved by the Chief of Air Staff.

a. It was agreed that the following amount of money will be reserved as indicated below:

Total Amount Available		$550,000,000
Change Orders, F. Y. 1947 and 1946 . .	$12,050,000	
Procurement of VDT Engines	10,300,000	
Reserve for F.Y. 1948 Change Orders . .	10,000,000	
Reserve for F.Y. 1948 Price Increases .	5,000,000	
Allocated to Army Ground Forces . . .	5,978,000	
		43,328,000
Balance F.Y. 1948 funds for procurement of aircraft		$506,672,000

b. The following types and models of aircraft will be procured in the quantities indicated:

MODEL	QUANTITY
*B-50Z	1
*B-50	82
*B-45C	43
F-[illegible]	25
*F-84	154
*F-86	199
C-97	27
C-119	37
*R-5F	39
*PBM-5A	21
TF-80	20
Utility Rescue	10-20 (Maximum number for $2,500,000)

* Procurement released on 6 August 1947.

FOR VICTORY BUY UNITED STATES WAR SAVINGS BONDS AND STAMPS

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TC-92.513

Ltr to AMC, Wright Fld, Dayton, Ohio, subject: F. Y. 1948 Aircraft Procurement Program

c. If, after the procurement of the quantities of aircraft listed in paragraph b above and the limitation of $2,500,000 for utility rescue, additional funds remain available, those funds will be applied to the procurement of additional B-50 aircraft, estimated between 9 and 10.

d. With reference to letter from this headquarters dated 10 July 1947, subject: "Bombardment Development Program", the development of the B-36Z with the R-4360 VDT engine will be dropped. The quantity of B-36's currently on order will fulfill our requirements.

e. Procurement of 20 C-82's previously released will be cancelled in lieu of C-119's.

2. It is requested that the Air Material Command initiate action to implement the above, and this headquarters be furnished a cost backup sheet covering this procurement.

BY COMMAND OF GENERAL SPAATZ:

E. M. POWERS
Major General, U. S. A.
Asst Chief of Air Staff-4

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ATSC Form No. 32

CONTRACT

(SUPPLIES)

Contract No. W 33-038 ac-18653 (18565)

Preference Rating.....

AAC: jba

WAR DEPARTMENT

UNITED AIRCRAFT CORPORATION
(PRATT & WHITNEY AIRCRAFT DIVISION)
(Contractor)

ac 18653

Contract for Conversion of Three (3) Engines, Tests and Reports. *Amount, $* 6,330,750.00

Place, Air Materiel Command, Wright Field, Dayton, Ohio.

The Finance Officer, U. S. Army, Army Base, Brooklyn, New York, is designated as the officer to make payments in accordance with this contract. The supplies and services to be obtained by this instrument are authorized by, are for the purposes set forth in, and are chargeable to allotments below enumerated, the available balances of which are sufficient to cover the cost thereof.

2180705, 802-7004 P 110-09 S 33-038 . . . . . $2,752,500.00 Appropriated Funds
(2180705).825 802-7024 P 110-09 S 33-038. . . . $3,578,250.00 Contract Authorization

PR: 25277 Initiator: R. A. Bittner (TSNPE3B1)

Contractor's invoices, or VSD's used as invoices, shall be made out to the Finance Officer designated to make payment hereunder, and shall be sent by the Contractor, for recording, to Chief, Boston AAF Procurement Field Office, 18 Tremont Street, Boston 8, Massachusetts, which has been designated as the place of AAF administration for this contract.

Award approved by Chief, Current Procurement Branch, Procurement Group, WDSS, on 28 August 1947 and award made 28 August 1947.

This Contract has been negotiated pursuant to Public Law 703, 76th Congress, as amended by Section 13 of Public Law 580, 77th Congress; Title II of the First War Powers Act, 1941, and Executive Order No. 9001, 27 December 1941.

(1-g)

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Encl 1-2

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as the case may be. If a majority of the members of a division are unable to agree on a decision or if within 30 days after a decision by a division, the board or the president thereof directs that the decision of the division be reviewed by the board, the decision will be so reviewed, otherwise the decision of a majority of the members of a division shall become the decision of the board. If a majority of the members of the board is unable to agree upon a decision, the president will promptly submit the appeal to the Under Secretary of War for his decision upon the record. A vacancy in the board or in any division thereof shall not impair the powers nor affect the duties of the board or division nor of the remaining members of the board or division, respectively. Any member of the board, or any examiner designated by the president of the board for that purpose, may hold hearings, examine witnesses, receive evidence and report the evidence to the board or to the appropriate division, if the case is pending before a division. Pending decision of a dispute hereunder the Contractor shall diligently proceed with the performance of this contract. Any sum or sums allowed to the Contractor under the provisions of this Article shall be paid by the United States as part of the cost of the articles or work herein contracted for and shall be deemed to be within the contemplation of this contract.

ARTICLE 13. **Domestic Articles.**—Unless the Secretary of War shall determine it to be inconsistent with the public interest, or the cost to be unreasonable, only such unmanufactured articles, materials, and supplies as have been mined or produced in the United States, and only such manufactured articles, materials, and supplies as have been manufactured in the United States substantially all from articles, materials, or supplies mined, produced, or manufactured, as the case may be, in the United States shall be delivered pursuant to this contract, except as noted in the specifications and/or other papers hereto attached. The provisions of this article shall not apply with respect to articles, materials, or supplies for use outside the United States, or if articles, materials, or supplies of the class or kind to be used, or the articles, materials, or supplies from which they are manufactured are not mined, produced, or manufactured, as the case may be, in the United States in sufficient and reasonably available commercial quantities and of a satisfactory quality.

Article 5 - Cont'd.

The foregoing provisions of this Article are subject to the provisions of Article 43 - Fiscal Limitation. Invoices or vendor's shipping documents used as invoices, shall be forwarded by the Contractor to the AAF office having administrative responsibility for this contract, for recording and forwarding to the Finance Officer.

W 33-038 ac 12653

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TC-9-2-49

ARTICLE 15 - Products, Materials and Services to be Furnished - (a) The Contractor shall furnish and deliver to the Government, and render the following services at the total price set forth below:

Item 1 - Conversion of two (2) Government-owned XR-4360-39 engines to R-4360-43 engines, in accordance with Contractor's engine model Specification No. A-7065B, dated 24 June 1947; total price $5,505,000.00

Item 2 - Report, in triplicate, of a satisfactory 150 hour qualification test as specified in Contractor's engine model Specification No. A-7065B, dated 24 June 1947. This test is to be conducted on a new experimentally built R-4360-43 engine in accordance with Contractor's Specification No. A-7065B, dated 24 June 1947, and supplied by the Contractor. Complete coordination of Contractor's Specification must be approved by the Contracting Officer before test is conducted. Price included in the total price of Item 1 above.

Item 3 - Report, in triplicate, of a minimum of fifty (50) hours of flight testing on an experimentally built R-4360-43 engine, as described in Contractor's Aircraft Specification No. A-7065B, dated 24 June 1947. One (1) R-4360-43 engine covered in Item 1 above, will be shipped by the Contractor on Government bills of lading to Boeing Aircraft Company, Seattle, Washington. The engine will be completely installed by Boeing in a B-50 airplane by separate contract between Boeing and the Government. After installation, the B-50 airplane will be flown to the Contractor's plant for flight testing, which will include a general investigation of engine performance and installation problems. Price included in the total price of Item 1 above.

Item 4 - Conversion of one (1) Government-owned XR-4360-39 engine to an R-4360-51 engine in accordance with Contractor's engine model Specification No. A-7067A, dated 24 June 1947, with the following amendment: The 150-hour qualification test as called for under Paragraph B-4a is not required. Price included in the total price of Item 1 above.

Item 5 - Detailed monthly reports, in triplicate, covering the progress of the development work. Price included in the total price of Item 1 above.

Item 6 - Report, in triplicate, covering development of an electronic power control. Price included in the total price of Item 1 above.

W 33-038 ac-18653

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(g) The work called for under paragraph (a) of Article 15 hereof shall commence 1 July 1947 and shall be completed, and the reports called for therein shall be delivered to the Government in accordance with the following schedule:

Item No.	Delivery Dates
1	On or before 31 December 1947
2	On or before 31 December 1948.
3	One (1) year after date of delivery of Government-owned B-50 airplane by Boeing Aircraft Company to Contractor with R-4360-43 Engine installed therein.
4	On or before 31 March 1948
5	The first monthly report shall be delivered to the Government within thirty (30) days from and after date of this contract and each subsequent monthly report shall be delivered every thirty (30) days thereafter.
6	On or before 31 December 1948.

(h) Shipping instructions for the engines called for in Items 1 and 4 of paragraph (a) of Article 15 hereof, shall be furnished in writing to the Contractor by the Contracting Officer at a later date.

(i) The reports called for under Items 2, 3, 5 and 6 of paragraph (a) of Article 15 hereof, shall be delivered to the Government by mail addressed to Commanding General, Air Material Command, Wright Field, Dayton, Ohio, Attention: TSEPP-8.

W 33-038 ac-18653

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ARTICLE 46 .—Approval—[redacted]

In witness whereof, the parties hereto have executed this contract as of the day and year first above written.

THE UNITED STATES OF AMERICA

By Stanley C. Pace
STANLEY C. PACE, Major, Air Corps
Contracting Officer
(Official title)

Type or print under their respective signatures the names of the witnesses and Contractor's representative.

Two witnesses:

E. S. McLELLAN

E. W. DICHMAN

UNITED AIRCRAFT CORPORATION
(PRATT & WHITNEY AIRCRAFT DIVISION)
Contractor.

By W. P. Gwinn
W. P. GWINN, General Manager
Pratt & Whitney Aircraft Division
Title

East Hartford, Connecticut
(Business address)

I, ALLEN DEWING, certify that I am the an Assistant Secretary of the corporation named as contractor herein; that W. P. Gwinn who signed this contract on behalf of the contractor, was then General Manager * of said corporation; that said contract was duly signed for and in behalf of said corporation by authority of its governing body, and is within the scope of its corporate powers.

[CORPORATE SEAL]

ALLEN DEWING

I hereby certify that, to the best of my knowledge and belief, based upon observation and inquiry,

, who signed this contract for
UNITED AIRCRAFT CORPORATION (PRATT & WHITNEY AIRCRAFT DIVISION)
, had authority to execute the same, and is the individual who signs similar contracts on behalf of this corporation with the public generally.

Contracting Officer.

Pratt & Whitney Aircraft Division

(44-b)

W 33-038 ac-18653

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TC-92.430.

AMC Form No. 10-000
(Rev 12 Aug 46)

(PRINT SYMBOL AND INITIALS IN APPROPRIATE BLOCK)

ADJUTANT GENERAL

[redacted]-SG)

CHIEF OF ADMIN.

AIR INSPECTOR

PUBLIC RELATIONS

JUDGE ADVOCATE

PERSONNEL (T-1)

INTELLIGENCE (T-2)

ENGINEERING (T-3)

SUPPLY (T-4)

PLANS (T-5)

BASE C. O.

OTHER

TSEPP-SG/JBC/jds

Letter Contract W33-038-AC-14294 -
XR-4360-39 Engine Development

Pratt & Whitney Aircraft
Division of United Aircraft Corporation
East Hartford 8, Connecticut
Attn: Mr. R. M. Dogg

1. This is in reference to your letter on the above subject, RMD:lms, Engineering II, dated 7 August 1947.

2. The Power Plant Laboratory considers that the requirements of the subject contract for a 50-hour test report on the XR-4360-39 engine has been met by the contractor in Pratt & Whitney Reports Nos. PWA-697 and PWA-690. These reports are accepted by the Air Material Command provided the contractor will assure that in the development of the R-4360-43 and -51 engines that

a) An investigation will be conducted by the contractor to determine the cause of detonation encountered at dry military and take-off ratings of 3500 BHP on the XR-4360-39 engine, and that any necessary design correction will be accomplished on the R-4360-43 and -51 engines to maintain the dry military rating of 4000 HP.

b) Elimination of screens from the entrance of the crankcase scavenge pumps be accomplished on the -43 and -51 engine design to preclude possible clogging of these screens.

c) Action be taken to eliminate cracking of the non-intersected knuckle pins through the oil hole, cracking of the inner body of the oil scavenge pump, and cracking of scavenge pipe Part No. 111867.

d) During future qualification tests on R-4360-43 and -51 engines, the specific fuel consumption should be maintained within guaranteed limits. The carburetor air temperature also should be maintained within required test limits.

32A

ORIG. FILE COPIES TO RECORDS SEC. AGD HQ. BR. ☐ LAB. BR. ☐	INITIALS	EXTRA COPY RETAINED	OFF. SYMBOL EPP-SG	INITIALS JBC	VALUE OF PAPER CHECK ONE PERMANENT ☐ NON-RECORD ☐

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TC-92-431

Ltr, AMC, AUG 24 [illegible], to Pratt & Whitney Aircraft, subj: "Letter Contract W33-038-AC-14294 XR-4360-39 Engine Development"

3. It is requested that complete weight and complete calibration data be furnished on the XR-4360-39 engine.

FOR THE COMMANDING GENERAL:

for R. J. KIRBY
Colonel, Air Corps
Chief, Power Plant Laboratory
Engineering Division

cc: TSBPE-3B1 -
Mr. R. A. Bittner

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In repl[illegible]lease refer to:
RHP:lms Engineering II

PRATT & WHITNEY AIRCRAFT

DIVISION OF UNITED AIRCRAFT CORPORATION
EAST HARTFORD 8, CONNECTICUT, U.S.A.
CABLE ADDRESS AIRCRAFT

3 September 1947

ARMY OFFICE
APPROVED
CONCURRED IN
NO COMMENT 9/2/47

VIA: Army Air Forces Representative

To: Director
Air Materiel Command
Wright Field, Dayton, Ohio

Attention: Mr. J. B. Coyle, Power Plant Laboratory, TSEPP-8

Subject: Letter Contract W33-038 ac 14294 XR-4360-39 Engine Development

Reference: (a) AMC letr TSEPP(TSEPP-8G)JBC/jds dated 29 August 1947 to Pratt & Whitney Aircraft, East Hartford 8, Connecticut
(b) PWA letr RHB:lms Engineering II dated 7 August 1947 to Director, AMC, Wright Field, Dayton, Ohio

1. This is further to reference (a) which advises that the requirements of the subject letter contract have been completed.

2. In response to Paragraph (2) of reference (a), please be advised that the R-4360-43 and R-4360-51 engines will be developed to include a 4000 BHP dry military rating and future qualification tests on these engines will be conducted with the specific fuel consumption and the carburetor air temperature maintained within the required test limits. Likewise, this Division will also include as parts of the R-4360-43 and R-4360-51 engine development program such changes as may be indicated as desirable to prevent clogging of the crankcase scavenge pump inlets, cracking of the nose section oil scavenge pump and cracking of the non-intersected knuckle pins.

3. The weight and calibration data requested on the XR-4360-39 engine by reference (a) will be summarized and forwarded under separate cover.

UNITED AIRCRAFT CORPORATION
Pratt & Whitney Aircraft Division

R. H. Bagg
R. H. Bagg
Project Engineer

RHB:lms

SEP 1947 RECEIVED ARMY OFFICE PRATT & WHITNEY AIRCRAFT

TSEPP

CHECK ONE
PERMANENT TRANSITORY

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THE NUMBER OF AIRPLANES TO BE DELIVERED IS PROPOSED AS FOLLOWS .....

22 B-36A R 4360-25 ENGINES
39 B-36B R 4360-41 ENGINES
1 YB-36C VDT R4360-51 ENGINES
33 B-36C VDT R4360-51 ENGINES

95 TOTAL AIRPLANES

Date: c. 4 Sep 1947.
See Doc. 39A.
E. Bertram, Historian

THE TOTAL COST OF THE PROGRAM IS ESTIMATED TO BE $216,350,000, NOT INCLUDING FIXED FEE. THIS INCLUDES ESTIMATED COSTS OF $6,000,000 FOR SPARES AND $750,000 FOR SPECIAL TOOLS AND GROUND HANDLING EQUIPMENT.

NEED FOR REINSTATING VDT INSTALLATION ON ONE B-36 IS IMMEDIATE. ALSO AUTHORIZATION FOR THE CHANGE TO VDT INSTALLATION ON AIRPLANES 63 AND SUBSEQUENT MUST BE RECEIVED NOT LATER THAN DECEMBER 1947.

IT IS TO BE NOTED THAT A CUTBACK OF TWO ADDITIONAL AIRPLANES IN ADDITION TO THE THREE HERETOFORE CANCELLED TO PROVIDE FUNDS FOR VDT INSTALLATION IN ONE B-36B AIRPLANE IS CONTEMPLATED UNDER THIS PROPOSED B-36 PROGRAM.

FOLLOWING IS THE DELIVERY SCHEDULE FOR THE PROPOSED PROGRAM COMPARED TO THE ORIGINAL PROGRAM:

	PROPOSED SCHEDULE VDT PROGRAM								ORIGINAL PROGRAM			
	B-36A		B-36B		YB-36C		B-36C		TOTAL PLANES		TOTAL PLANES	
MONTH	NO.	CUM.	NO.	CUM.	NO.	CUM.	NO.	CUM.	NO.	CUM.	NO.	CUM.
1947												
JUNE	1	1							1	1	1	1
SEPT.	0	1							0	0	0	0
OCT.	1	2							1	2	1	2
NOV.	2	4							2	4	2	4
DEC.	3	7							3	7	3	7
1948												
JAN.	4	11							4	11	4	11
FEB.	4	15							4	15	4	15
MARCH	4	19							4	19	4	19
APRIL	3	22	1	1					4	23	4	23
MAY			3	4					3	26	4	27
JUNE			3	7					3	29	4	31
JULY			3	10					3	32	4	35
AUG.			3	13					3	35	4	39
SEPT.			3	16					3	38	4	43
OCT.			3	19					3	41	4	47
NOV.			3	22	1	1			4	45	4	51
DEC.			2	25					3	48	4	55
1949												
JAN.			3	28					3	51	4	59
FEB.			3	31					3	54	4	63
MARCH			3	34					3	57	4	67

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MONTH	B-36A NO.	B-36A CUM	B-36B NO.	B-36B CUM	YB-36C NO.	B-36C CUM	B-36C NO.	TOTAL PLANES CUM.	TOTAL PLANES NO.	TOTAL PLANES CUM
APRIL			3	34				3	60	4 71
MAY			2	39				2	62	4 75
JUNE								0	62	4 79
JULY								0	62	4 83
AUGUST						1	1	1	63	4 87
SEPT.						2	3	2	65	4 91
OCT.						3	6	3	68	4 95
NOV.						4	10	4	72	5 100
DEC.						4	14	4	76	
1950										
JAN.						4	18	4	80	
FEB.						4	22	4	84	
MARCH						4	26	4	88	
APRIL						4	30	4	92	
MAY						3	33	3	95	
JUNE										

THE ABOVE SCH DULE IS PROMISED ON THE FOLLOWING VDT ENGINE AVAILABLE SCHEDULE FURNISHED BY COL. GERRITY...

MAY 1949..... 1 SHIP SET
JUNE 1949..... 2 SHIP SETS
JULY 1949..... 3 SHIP SETS AND
FOUR SHIP SETS PER MONTH THEREAFTER.

WE ARE ALSO PLANNING TO PREPARE A PROPOSAL RELATING TO MODERNIZATION OF B-36A AND B AIRPLANES TO MEET TACTICAL REQUIREMENTS. THIS WILL BE ESSENTIALLY AS OUTLINED ABOVE WITH THE EXCEPTION THAT IT WILL CONTAIN, IN RESPONSE TO LT. COL GERRITY'S REQUEST, A FIXED PRICE PROPOSAL FOR MODIFYING ALL B-36A AND B-36B AIRPLANES INTO B-36C AIRPLANES.

A COPY OF THIS WIRE IS BEING SENT TO O. H. SNYDER FOR DELIVERY TO AMC, SUBJECT TO YOUR NOTIFICATION OF CONCURRENCE. ALSO COPIES ARE BEING SENT TO I. M. LADDON AT NASHVILLE AND TO H. C. TAFE.
UNQUOTE.

CONVAIR
FTWORTH DIV
R G MAYER
226P VS END
END ET
M

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5 September 1947

Interdesk Memorandum, Research and Engineering Division, AC/AS-4, Hq USAF, signed by Lt. Col. N. C. Appold, to Colonel Demler, subject, "Proposed Reinstatement of B-36 P&W VDT," included a statement that Colonel Minty, Chief of the Power Plant Laboratory, AMC, had been advised of the Contractor's proposal and asked to comment on it. Colonel Minty had concurred with the opinion of members of the Propulsion Branch, Hq, USAF, that delays could be expected of at least six months between B-36 VDT prototype schedules and actual deliveries.

(The document is not available at Hq, AMC for reproduction.)

DOCUMENT NO. 38

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5 September 1947

Interdesk memorandum, AC/AS-4, from Major Brady to Colonel Holtoner Res. & Engr. Div., subject, "Convair's Proposal for Reinstating B-36 VDT Aircraft into Planned USAF Programming," indicated the opinion of the writer that

(1) CVAC's proposal stemmed from the recent decision of the Weapons B card to cancel the prototype VDT B-36 project.

(2) The Weapons Board decision precluded any further B-36 procurement, thereby ending Consolidated's "goldmine."

(3) The production schedule was quite optimistic in view of the engine requirements for the B-50Z and the F-13

(4) P&W would not at the time guarantee the control features of the variable discharge outlet for the VDT engine.

(5) Development of the turbo-supercharger by General Electric was doubtful.

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C O N F I D E N T I A L

E X T R A C T

R&R-1, 8 Sep. 1947, from Req. Div., AC/AS-3 to Res. & Eng. Div., AC/AS-4:

"Attached . . . is a proposed production schedule for B-36's which was submitted by Consolidated-Vultee to this Headquarters, 4 Sept. 1947. This schedule has the attractive feature of producing 34 B-36 airplanes with VDT engines by slightly slowing up the production schedule. However, preliminary investigation indicates that Consolidated's program is based on optimistic estimates of availability of the R-4360 VDT engine both for the YB-36C and for the B-36C. It is requested that Air Materiel Command comment on the Consolidated-Vultee plan and submit a plan which they feel is capable of accomplishment, and at the same time, giving us a reasonable number of B-36C's. It is also requested that they comment on Consolidated-Vultee's proposal for modernization of B-36A and B airplanes into B-36C airplanes."

/The foregoing was copied from the complete text of the comment in File No. 452.1/Very Heavy Bombers, 1946-1947, Vol. I, in the Air Adjutant General's Central Records Branch./

C O N F I D E N T I A L

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B-36 Nam. 35 CONFIDENTIAL B-36 Nam.

HEADQUARTERS, ARMY AIR FORCES

WASHINGTON

10 September 1947

SUBJECT: Proposed B-36 VDT Production Schedule Submitted by Consolidated-Vultee

See AME ltr Dtd dtd 30 Sep 47

TO: Commanding General
Air Material Command
Wright Field, Dayton, Ohio

Attention: TSEPA

40

1. Consolidated-Vultee Company has submitted the attached proposal whereby the Air Force may obtain thirty-four (34) B-36 aircraft with VDT engines by slightly slowing up the present proposed production schedule. This would be accomplished at the cost of five (5) B-36 type aircraft reducing the over-all total to ninety-five (95) production airplanes.

2. Consolidated's program is based on the following estimate of securing VDT engines for installation in the B-36:

One (1) ship in May 1949
Two (2) ship sets in June 1949
Three (3) ship sets in July 1949
Four (4) ship sets per month thereafter

Preliminary investigation indicates that the delivery schedule of VDT engines for this project might be overly optimistic. It is requested that Air Material Command comment on subject Consolidated proposal and if subject plan appears to be unrealistic due to VDT engine production, submit a plan which is believed to be capable of realization. It should be borne in mind that VDT commitments will have to be shared with the B-50 and F-12 programs. It is further desired to have your comment on the producer's proposal to modernize the B-36A and B-36B airplanes by retrofitting for VDT installation.

3. Time is of the essence in this situation. It is therefore requested that your reply be expedited and forwarded to this headquarters not later than 18 September 1947.

BY COMMAND OF GENERAL SPAATZ:

/s/ T. C. Doubleday, Col.A.C.
for L. C. CRAIGIE
Major General, U.S.A.
Chief, Research & Eng'g Div.
AC/AS-4

1 Incl.
As above

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CONFIDENTIAL 31 B-36 Ken.

MAAF, Subj: Proposed B-36 VDT Production Schedule Submitted by Consolidated-Vultee, dated 10 September 1947.

1st Indorsement 30 September 1947

Headquarters, Air Materiel Command, Wright Field, Dayton, Ohio.

TO: Commanding General, Army Air Forces, Washington 25, D. C.
Attention: AC/AS-4, Research and Engineering Division.

In accordance with the request in basic communication, the following comments are forwarded:

1. It appears feasible to change the B-36 program to procure twenty-two (22) B-36A Airplanes, thirty-nine (39) B-36B Airplanes and thirty-four (34) B-36C Airplanes for a total of ninety-five (95) airplanes in lieu of the 100 B-36A and B-36B Airplanes currently on the program. The advantage of the B-36C Airplane is the increased cruising speed. The average cruising speed of the B-36B is 220 m.p.h. for a maximum range of 10,150 miles at 328,000 pounds gross weight. The average cruising speed of the B-36C is 336 m.p.h. for a maximum range of 9,470 miles, or 262 m.p.h. average cruising speed for a maximum range of 10,320 miles at 328,000 pounds gross weight.

2. Attention is invited to the fact that CVAC's proposal is based on the structural configuration of the B-36C Airplane remaining the same as the present B-36 Airplane except that all control surfaces will be metal instead of fabric covered. The structural limitations of the B-36C Airplane remain the same as the present B-36, however, the high speed of the B-36C is materially increased. Without increasing the strength of the airplane, it will be necessary in certain cases to restrict the speed of the airplane below high speed in level flight in order not to exceed the structural limitations. At altitudes greater than 17,000 ft. and gross weights of 278,000 pounds or less, the structural limits will permit full performance of the airplane in level flight with dry military power. All combat missions as contemplated for B-36C Airplanes will probably not be affected by limiting high speeds of the airplane.

3. Government furnished property including engines, turbos, and propellers will support the attached B-36 schedule with three months flow-time, as well as the F-12 and B-50C schedules. The F-12 schedule is governed by initial engine availability. The B-50C schedule is the best obtainable considering flow-time to fabricate such a large aircraft.

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4. The attached B-36C schedule is the airplane delivery schedule based on availability of engines. The B-36C airframe completion schedule is as follows:

1949					1950					
A	S	O	N	D	J	F	M	A	M	Total
1	2	3	4	4	4	4	4	4	3	33

5. Modification of B-36 airframe can be completed within funds existing on current B-36 Contract, with reduction of airplane numbers from 100 to 95. Modification of engines to obtain R-4360-51 in lieu of R-4360-41 will cost $7,529,700.00 over and above funds existing on current engine Contract. Modification of turbos from two (2) BH-1 turbos per engine installation to a single CH4-2 turbo will cost $1,340,970.00 over and above funds available on current turbosupercharger Contract. Modification of propellers to obtain four-way hubs and right-handed blades for tractor installation will cost $3,500,000.00 over and above funds existing on current propeller contract. The total cost of this additional Government furnished property is presently figured at $12,369,670.00. Based on continually increasing prices, however, it is believed that at least $15,000,000.00 should be allocated to cover the procurement of this additional GFP.

6. Upon approval of this program Air Material Command could immediately procure as much modified Government furnished property as is obtainable within the funds on current contracts and procure the remainder of Government furnished property required to support the B-36 WDT program in July 1948 with 1949 Fiscal Year funds. This would require a readjustment of the 1949 Fiscal Year program.

7. The above program contemplates re-appropriation of the funds presently obligated on B-36 Airplane, engine, propeller, and turbosupercharger contracts that will not be spent by 30 June 1948. This matter has been made the subject of separate correspondence to Headquarters, Army Air Forces by letter to the Office of the Air Comptroller, Subject: "Re-appropriation of Air Corps Army Fiscal Year 1942 - Fiscal Year 1946 Funds", dated 5 August 1947, and supplemental letter dated 11 August 1947.

8. Accomplishment of attached schedules is dependent upon immediate approval by Headquarters, Army Air Forces of this program and expedited contractual coverage to airframe and Government furnished property manufacturers. Any delay in approval will result in a corresponding delay in schedules submitted.

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9. Air Materiel Command believes Contractor's proposal to modernize B-36A and B-36B Airplanes by retrofitting with VDT installation is feasible. However, a firm recommendation on this program cannot be made until complete engineering and cost proposal is submitted by the Contractor. This proposal has been promised in approximately 30 days.

N. F. TWINING,
Lieutenant General, U.S.A.,
Commanding.

Att:
Airc.Schedules.

cc - TSFPP TSEMG
TSEPL TSEPA
TSFAC TSSUI
TSECA TSYKI
TSDEG Gen.Childlaw

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	1947					1948										1949												1950											TOTAL
	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	
B-36A	1	0	1	2	3	4	4	4	3																													22
B-36B										1	3	3	3	3	3	3	3	3	3	2	2	2	2	1															39
YB-36C																			1																				1
B-36C																													1	2	3	4	5	6	6	6			33
																																				Total B-36			95
YB-50C																			1																				1
B-50C																													*1	*3	*6	*8	*10	*12	*12	*12	*12	*12	*12	*5	105
C-12																													1	1	2	2	2	2	2	2	2	*2	*2		

* 1949 F.Y. Program

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6-27-1

UNITED AIRCRAFT SERVICE CORPORATION
PRATT & WHITNEY AIRCRAFT ENGINES
EAST HARTFORD, CONN.

CONFIRMATION OF TELEGRAM

TO: HD5 DATE 9-10-47

MESSRS D E GARRETT AND E W DICHMAN

RE QUESTION OF INCREASING PROPELLER SHAFT SIZE ON R-4360-VDT ENGINE TO NO. 80. IT HAS NOT IN THE PAST BEEN EITHER THE SERVICES OR PRATT AND WHITNEYS POLICY TO KNOWINGLY SPECIFY OR DESIGN ENGINE OR ASSOCIATED PARTS FOR A PARTICULAR APPLICATION WITH EXCESSIVE WEIGHT IN THE DESIGN AND WE DO NOT BELIEVE IT IS DESIRABLE TO CHANGE THIS POLICY. OBVIOUSLY WE ALL WANT TO SPECIFY A PROPELLER SHAFT SIZE THAT WILL WORK BUT WE ALSO BELIEVE THAT THE SIZE AND WEIGHT OF PARTS SHOULD NOT BE UNNECESSARILY EXCESSIVE. WE BELIEVE THAT AN INTELLIGENT ANSWER TO THIS PROBLEM CAN BEST BE ARRIVED BY CAREFULLY ANALYZING AND USING THE PROPELLER SHAFT STRESS DATA CURRENTLY BEING OBTAINED ON THE B-36 AIRPLANE AND DATA TO BE OBTAINED ON BOEING 377 AIRPLANE. UNTIL THIS INFORMATION IS RECEIVED WE RECOMMEND THAT A NO. 60 SHAFT END CONTINUE TO BE SPECIFIED FOR THE B-50 V.D.T. INSTALLATION AND A NO. 70 SHAFT END FOR THE B-36 V.D.T. INSTALLATION. OBVIOUSLY ANY IMPROVEMENTS WHICH APPEAR DESIRABLE AS A RESULT OF THE TESTS CURRENTLY IN PROGRESS ON THE R-4360-25 PROPELLER SHAFTS WILL BE APPLIED TO THE V.D.T. ENGINES

R. H. BEGG

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12 September 1947
8 October 1947

Memorandum from the acting chairman of the Aircraft and Weapons Board transmitting "Summary of Minutes of Aircraft and Weapons Board Convened on 19 August 1947" to the Commanding General, Army Air Forces and first indorsement from General Spaatz approving the minutes with exceptions.

One exception was the decision to discontinue the B-36Z project.

Submission to the members of the Board of CVAC's proposal for installation of the VDT engines in the last thirty-four B-36 airplanes was directed and evaluation of the proposal by the board members called for.

(The document is not available at Hq, AMC for reproduction.)

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7C.92-250

AMC Form No. 10-3
(Rev 19 Mar 45)

ROUTING AND RE ORD SHEET

. MATERIEL COMMAND

Use this form for inter-office correspondence within headquarters.

Use authorized office symbols to designate addressee and addressee.
(DO NOT WRITE FROM LEFT TO RIGHT)

Place initials of dictator and typist, telephone number and location to right of signature.

Use entire width of sheet, both sides.

Number all comments consecutively.

Separate comments by horizontal lines across page.

SUBJECT Prop Shafts for R-4360-VDT Engines. CONTRACT FILES 10/16 DATE 12 Sep 47 COMMENT NO. 1

TO TSEPP-8
Attn: Mr. J. B.Coyle

FROM TSBPE3B1

AC-18653

1. Inclosed for your information, action and comments is a copy of Pratt & Whitney Aircraft wire dated 10 September 1947, signed R. H. Begg, which is self-explanatory.

2. It is desired that comments be forwarded to this office as soon as possible.

C. M. Scott Maj. A.C.

1 Incl.
Cy PWA wire 9-10-47

J. L. ZOECKLER
Lt. Colonel, Air Corps
Chief, Aeronautical
Equipment Section
Procurement Division

RAB/em
29207
Bldg 15
Rm 135

To: TSBPE3B1 From: TSEPP-8C Date: 22SEPT 47 Comment No. 2

1. Inasmuch as the B-36Z project has been cancelled, no action should be taken at the present time regarding selection of the most desirable shaft size for the R-4360-51 engines. The teletype received from Pratt & Whitney, dated 10 September 1947, was in answer to verbal request from this office to the local Pratt & Whitney office for comments from Pratt & Whitney regarding selection of shaft size, namely, No. 70 versus No. 80 shaft size. Pratt & Whitney letter, dated 13 August 1947, recommended No. 70 shaft size. Propeller Laboratory R.&R., Comment No. 2, to Power Plant Laboratory recommended No. 80 shaft size.

2. It is recommended that no further action be taken on this subject unless and until such time as the B-36Z project is reactivated. If this project is reactivated, then a conference should be held between engine and propeller manufacturers and Air Materiel Command personnel regarding final selection of shaft size.

for R.J. MINTY
Colonel, Air Corps
Chief, Power Plant Laboratory
Engineering Division

JBC/wrj
2-4232
Bldg.18A

Incl: n/c

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(CONTINUE ON OTHER SIDE) COMMENT NO

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In reply please refer to:
WHB:lms Engineering II.

PRATT & WHITNEY AIRCRAFT

DIVISION OF UNITED AIRCRAFT CORPORATION
EAST HARTFORD 8, CONNECTICUT, U.S.A.
CABLE ADDRESS: AIRCRAFT

15 September 1947

VIA: Army Air Forces Representative, East Hartford 8, Connecticut

ARMY OFFICE
APPROVED
CONCURRED IN
NO COMMENT

Commanding General
Air Materiel Command
Wright Field
Dayton, Ohio

Attention: TSEPP-8

Subject: Contract W33-038 ac-18663 - R-4360-43, -51 Engine Development

Enclosure: (A) PWA Report TR-52R - three (3) copies

1. Article 15, Item 5 of Contract W33-038 ac-18663 covering the development of the R-4360-43 and -51 V.D.T. engines states that Pratt & Whitney Aircraft will submit monthly progress reports covering the progress of development work under this contract. This letter is the first progress report submitted under the subject contract.

2. The development of the R-4360-43 and -51 engine models is a continuation of the work completed on the XR-4360-39 engine under Letter Contract W33-038 ac-14294 and the combined running time on eight (8) full scale R-4360-C engines run under these contracts is now 2680 hours. Sufficient running has already been obtained on prototype V.D.T. engines X-109 and X-156 to demonstrate that the studies of this type power plant presented in PWA Report No. TR-46 are logical and reasonable. For example, operation on the V.D.T. type engine at 2600 BHP, 2400 RPM, 40"Hg. exhaust back pressure at a specific fuel consumption of only .412 pounds per BHP per hour has been successfully demonstrated.

3. Sufficient parts have now been manufactured to be able to convert Prototype R-4360-VBT engine No. X-109 to the proposed final design V.D.T. construction and this engine is now being installed on a test stand. Engine No. X-151 is being reassembled with new parts including the proposed final design V.D.T. rear section; this engine is scheduled to be shipped to Boeing for installation in a special flight test nacelle in a B-50 airplane. Many of the used parts removed from engine No. X-151 have been used to reassemble a ninth R-4360-C engine, No. X-114, which will be ready for test within the next few days. Engines No. X-101 and X-157 are currently being used to evaluate the relative merits of the top intake and top exhaust type cylinders while engine No. X-105 has successfully completed 43-1/2 hours of a 50-hour Qualification Schedule which includes engine operation with internal supercharging at a 3500 BHP dry take-off rating. Engine No. X-105 is fitted with special high overlap valve cams which probably explains, at least in part, the reason for the successful operation observed to date on this engine at 3500 BHP with 100°F. carburetor air temperature. Engine Nos. X-152 and X-155 are currently being modernized to include the latest design crankshaft counterweights and other features.

4. Since the studies of various types of engine and turbo combinations were completed and forwarded to the Air Materiel Command under Contract W33-038 ac-14294, additional information has been received on the characteristics of the General Electric CHM-2 turbo-

TSEPP

11:50

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Subject: Contract W33-038 ac-18653 - R-4360-43, -51 Engine Development

supercharger. This information has been included in PWA Report No. TR-52R which presents the estimated performance of the R-4360-C3 (V.D.T) engine when used in combination with this new turbo-supercharger. Three (3) copies of this report are enclosed for the Air Materiel Command's information and use. Since it is understood that CHM-2 rather than HM-6 turbo-superchargers are proposed for use in flight airplanes, it is recommended that report TR-52R rather than Report TR-46 be used for future studies around the R-4360-43 and -51 engines.

UNITED AIRCRAFT CORPORATION
Pratt & Whitney Aircraft Division

R. H. Bogg
Project Engineer

SEP 1947 RECEIVED ARMY OFFICE PRATT & WHITNEY AIRCRAFT

RHB:lms

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Archives TC-92-3/8

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Mr. H. B. Lamers
mjm/TSTEX/5-6126

HEADQUARTERS
AIR MATERIEL COMMAND

Wright Field, Ohio
18 September 1947

TECHNICAL INSTRUCTIONS

File R-4360-VDT

SERIAL NO: TI-2146, Addendum No. 13

SUBJECT: "L" Program - 1946 FY Funds - Bombardment Development Program

TO: Procurement Division

1. Problem Presented:

a. To amend TI-2146, Addendum No. 3 dated 8 October 1945, subject: "L" Program - 1946 Fiscal Year Funds".

b. To procure one (1) YB-50C prototype aircraft to include installation of the Pratt-Whitney R-4360-VDT engine.

2. Factual Data:

a. The above mentioned YB-50C airplane will be obtained from the sixty (60) B-50A airplanes on Contract ac-13013 authorized by TI-2146, Addendum No. 3 and will not constitute an addition to the procurement program.

b. Funds will be made available for the production improvement of the R-4360 engines to make them into the R-4360-VDT engines at a cost of $5,590,000 which will be obtained from FY 1948 Funds.

c. FY 1948 Program will provide funds for a change in the production contract for the R-4360 engines under the provision of which eight (8) R-4360-43 engines (VDT) will be procured for the one (1) YB-50C airplane.

3. Authority:

a. CG, AAF by letter dated 10 July 1947, subject as above from AC/AS-4.

4. Action Desired:

a. The Procurement Division will take necessary action to accomplish that which is stated in Problem Presented and Factual Data above.

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CONFIDENTIAL TC-42-219

SERIAL NO: TI-2146, Addendum No. 13

SUBJECT: "L" Program - 1946 FY Funds - Bombardment Development Program

b. A 1-B priority is assigned this project.

BY COMMAND OF LIEUTENANT GENERAL TWINING:

J. F. McCLENDON
Colonel, Air Corps
Adjutant General

OFFICIAL:

J. F. McCLENDON
Colonel, Air Corps
Adjutant General

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SAVE

IN REPLY REFER TO:

HEADQUARTERS, ARMY AIR FORCES
WASHINGTON

SEP 18 1947

FOR VICTORY BUY UNITED STATES WAR BONDS AND STAMPS

SUBJECT: Request for Permission to Negotiate Procurement
Purchase Request 25295

TO: Chief, Current Procurement Branch
Procurement Group, WDGS

1. Pursuant to Disposition Form dated 15 April 1947 received from War Department General Staff, the Army Air Forces requests authority to negotiate the following procurement:

a. Contractor: Pratt and Whitney Aircraft Division, United Aircraft Corporation, East Hartford 8, Connecticut.

b. Supplies: Type R-4360-43 engine built in accordance with Pratt and Whitney Specification A-7065-B and for use on B-50 airplanes, each engine to be given at least a 50-hour qualification test.

c. Prices: $127,000.00 per engine, eight (8) each, a total estimated cost of $1,016,000.00. Four (4) engines will be used for installations, four (4) engines will be used for spares.

d. Time of performance: September 1948, 4 each; October 1948, 2 each; November 1948, 1 each; December 1948, 1 each.

e. Funds to be obligated: Fiscal Year 1948.

2. Negotiation of this procurement is authorized by sub-paragraphs VIII and XII of Section 1 of the Act (P. L. 1366).

3. Procurement by negotiation is necessary because the above contractor is sole source. No other commercial manufacturer is equipped to build this type of engine which is contractor designed.

For the Commanding General, Army Air Forces:

[illegible]
Brigadier General, U. S. A.
Chief, Procurement and Industrial
Planning Division
Office Assistant Chief of Air Staff-4

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ADDRESS REPLY TO: COMMANDING GENERAL, ARMY AIR FORCES, WASHINGTON 25, D. C.

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TC-91-44

DRP

CSGSP/E1 41529 1st Ind AGR/74175 (7)

DA, GSUSA, Service, Supply & Procurement Div., Washington 25, D.C., 1 Oct 1947

TO: CG, AF, Office, AC/AS-4, Attn: Chief, Proc. & Industrial Planning Div.

Authority is hereby granted to negotiate for the procurement requested in basic letter.

FOR THE DIRECTOR OF SERVICE, SUPPLY AND PROCUREMENT:

DPK orkins, Major, GSC

for PHILLIPS W. SMITH
Colonel, GSC
Chief, Current Procurement Branch
Service, Supply & Procurement Division

Collection Page 3

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CABLE CODE
REPUBAV FARMINGDALE, N.Y.

TELEPHONE
FARMINGDALE 1100

REPUBLIC AVIATION CORPORATION

FARMINGDALE • LONG ISLAND • NEW YORK

September 19, 1947
Ref: 47-1323
HL/rll

SUBJECT: Proposal for Procurement of F-12 Airplanes

CABLE COPIES TO:	INITIALS

TO: Commanding General
Air Materiel Command
Wright Field
Dayton, Ohio

Attn: Chief, Procurement Division

Encls.: (a) "F-12 Airplane", Exhibit "A"
(b) Exhibits "B", "C", and "D"

45.21-Proposal

1. Since 1944 this Contractor in cooperation with the Army Air Forces has been working on the design and development of two XF-12 airplanes under Contract W33-038 ac-2135. The flight testing of the XF-12 airplanes has now reached a point where the Air Forces has advised this Contractor that they are desirous of procuring a production quantity of F-12 airplanes and that these airplanes are to be delivered as rapidly as possible. The Contractor has reviewed the military characteristics and design requirements of the two XF-12 airplanes and has compared them with what he believes to be the present-day military characteristics and design requirements for the F-12 airplanes and has determined that a production quantity of F-12 airplanes can be built and delivery to the Air Forces started in April of 1949, provided the Air Forces' concurrence to the Contractor's proposal, as stated herein, is received by October 1, 1947. The F-12 airplane, which the Contractor proposes to deliver as a production article to the Air Forces, is generally described in Encl. (a) entitled "F-12 Airplane" dated September 18, 1947.

2. It can be seen from this description that the production F-12 airplane is designed for the installation of the R4360-C-3 engines; however, the Contractor proposes that the initial delivery of the first six F-12 airplanes be permitted with the R4360-35 engines. This proposal is made for the following reasons. The R4360-C-3 engine is a new development of the basic Pratt & Whitney Wasp Major engine and includes a new cylinder design and fuel injection, in addition to incorporating a turbo supercharger in place of an internal supercharger. The first production R4360-C-3 engines are promised to be available in May of 1949 which date is admitted to be optimistic by the engine manufacturer. The Contractor therefore feels that, since the R4360-35 engine is available and very little airplane modification is required to install this engine in an airplane designed for the R4360-C-3 engine, and since the resulting airplane per-

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formance is attractive and exceeds by a wide margin that presently obtainable in the XF-12 airplane, in addition to permitting a thorough shakedown of the airplane in general exclusive of the final R4360-C-3 installation prior to delivery of the F-12 airplanes in large quantities to the Air Forces, it is believed desirable for the Air Forces to accept delivery of the initial F-12 airplanes with R4360-35 engines.

3. The delivery schedule for F-12 airplanes is presented in the proposals below: Delivery Proposal "A" based on commencing production with the R4360-35 engine and installing R4360-C-3 engines when available; and Delivery Proposal "B" based on waiting for R4360-C-3 engines before commencing production.

		Delivery Proposal "A"		Delivery Proposal "B"	
		Shop Completion	Acceptance	Shop Completion	Acceptance
1948	December	1			
1949	January				
	February			1	
	March				
	April	1(R4360-C-3 Prototype)	1		
	May				
	June	1	1		1
	July	1	1		
	August	2	1	1	
	September	1	2	1	1
	October	2(R4360-C-3	1	1	1
	November	2 Prod.)	2	2	1
	December	2	2	1	2
1950	January	3	2	2	1
	February	3	3	2	2
	March	3	3	2	2
	April	3	3	3	2
	May		3	3	3
	June			3	3
	July			3	3
	August				3

From the above schedules it can be seen that by commencing production with the R4360-35 engines the Air Forces would obtain nine airplanes earlier than if delivery of the F-12 airplanes were held up until R4360-C-3 engines were available.

4. The following table gives comparative performance of the F-12 airplane using the R4360-35 engine and using the R4360-C-3 engine. It is the Contractor's opinion that obtaining the use of nine additional airplanes is sufficient justification for the Air Forces to authorize the initial production of F-12 airplanes using R4360-35 engines, as it will insure the Air Forces' being able to fulfill their strategic need for the airplanes even though there is a small sacrifice in performance by starting production bef

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the R4360-C-3 engines are available.

F-12 Performance Summary

	R4360-35	R4360-C-3
Maximum Speed with 1/2 fuel @ Altitude	470 MPH 35,000 ft.	506 MPH 38,000 ft.
Maximum Range with average level speed @ Altitude	5,900 M. 350 MPH 35,000 ft.	6,500 M. 350 MPH 35,000 ft.
Range @ 35,000 ft. @ average level flight speed	3,600 M. 430 MPH 5,480 M. 400 MPH	5,200 M. 430 MPH 6,000 M. 400 MPH
Range @ 40,000 ft. @ V average = 400 MPH = 425 MPH	------ ------	5,630 M. 4,950 M.
Service Ceiling with 1/2 Fuel (Military "Dry" Power)	40,000 ft.	49,000 ft.
T.O. H.P. Military "Wet" Normal Rated	3,500 2,650	4,300 3,130
Take-Off Gross Weight with 8,000 gals. fuel	130,000 lbs.	132,000 lbs.

By comparing the performances of both airplanes, as given in the above table, it is seen that the only difference in performance in the use of the R4360-35 engine is the slight difference in top speed, maximum range, and altitude performance of the airplane. This additional performance can be obtained when the R4360-C-3 engines are available because, as stated before, the modifications necessary to install this engine in airplanes already delivered to the Air Forces are not great.

5. From the above schedules it can be concluded that the Air Forces could have twenty-five airplanes in active service prior to May 31, 1950 provided the Contractor's Delivery Proposal "A" is accepted. However, only sixteen airplanes would be available to the Air Forces if Delivery Proposal "B" were accepted. Therefore, to assist the Air Forces in arriving at the quantity of airplanes to be procured at this time, the enclosed exhibits "B", "C", and "D" have been prepared showing the unit prices and total prices for procurement of twenty-five, twenty, and fifteen F-12 airplanes. All the exhibits make the same allowances for production type engineering and production tooling necessary to produce a quantity of three airplanes per month. The Contractor has tried to estimate the labor rates and the burden rates, used in the attached exhibits, as close as possible to expected conditions, and allowance has been made in the burdens used for normal disallowances encountered in previous dealings with the Army Audit Section. The sales prices on the enclosed exhibits are predicated on all items normally furnished as

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September 19, 1947
Ref: 47-1323
HL/rll

G.F.E. being furnished as G.F.E. for this procurement, and also upon the acceptance of the airplanes after flight testing by the Government at the Contractor's flying field at Farmingdale, Long Island, New York. All fuel necessary for flight testing of the air planes will be furnished as G.F.E.

6. The Contractor therefore requests that the contract awarded because of this proposal be of a fixed price type providing for redetermination of the airplane price, both retroactively and perspectively, after 40% of the airplanes have been delivered to the Air Forces, in addition to contract clauses to protect this Contractor in case of general labor rate increases. Due to the present financial condition of this Contractor and the aircraft industry in general, the Contractor also requests that the resulting contract provide for progress payments of 75% of the Contractor's expenditures for materials, labor, and overhead as the expenses are incurred. These progress payments will in no case exceed 80% of the sales price of the contracted airplanes.

7. The Contractor requests that he be advised of the Air Materiel Command's decision concerning the quantity of airplanes to be procured from this Contractor and the decision as to whether these airplanes will be procured in accordance with Delivery Proposal "A" or "B". If any additional information is necessary for the Air Materiel Command to make this decision, this information can be furnished immediately upon its request.

REPUBLIC AVIATION CORPORATION

H. Lehne

H. Lehne
Sales Manager

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TC-42-354

September 18, 1947

F-12 Airplane

1. General Requirements

The airplane herein described shall be designed in accordance with the latest Air Corps requirements for aircraft whose tactical mission is long range, high altitude photoreconnaisance. It shall also be designed to operate satisfactorily under temperature ranges of -65°F to 160°F.

2. Description

(a) The general appearance shall conform to that shown in the attached figure 1 - "Three View".

(b) Engines -

(1) Four Pratt and Whitney 4360-C3 engines including four turbo-superchargers, variable tail pipe exits, the controls to actuate the engines and tail pipe exits, four cooling fans and four propellers shall be installed in each airplane.

(2) Provisions shall be made to install Pratt and Whitney R4360-B3 Engines with the appropriate turbo-supercharger and controls in the event the C3 Engines are not available in time to meet the airplane delivery.

(3) The horsepower ratings of the Pratt and Whitney R4360-C3 Engines are:

Normal 3130 HP at 2600 RPM from sea level to 43000' at 450 MPH.
Military Wet 4300 HP at 2800 RPM from sea level to 39000' at 500 MPH.

(c) (1) The airplane shall be of all metal construction and in general shall use aluminum alloy 75 ST, R-301, 24 ST, both clad and unclad, magnesium alloy, chrome molybdenum steel and the stainless steels.

(2) Wing Group - The wings shall be of two spar, stressed skin construction and shall contain collapsible cell type fuel tanks. The ailerons shall be statically balanced. Aerodynamic balance shall be supplied by pressure seals. Trim tabs and spring loaded control tabs shall be used. The balanced split flaps shall be capable of being lowered to 25°at an indicated airspeed of 250 m.p.h. Automatic protection against excessive overloads shall be provided. Hydraulically powered dive flaps shall be incorporated.

(3) Tail Group - The tail group shall be of all metal construction. Moveable surfaces shall be statically balanced and aerodynamic balance supplied by pressure seals. Trim and spring loaded control tabs shall be used.

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156

TC-92-276

In reply please refer to:
HB:lms Engineering II.

PRATT & WHITNEY AIRCRAFT

DIVISION OF UNITED AIRCRAFT CORPORATION
EAST HARTFORD 8, CONNECTICUT, U.S.A.
CABLE ADDRESS AIRCRAFT

25 September 1947

VIA: Army Air Forces Representative, East Hartford 8, Connecticut

TSEPP-1

ARMY OFFICE
APPROVED
CONCURRED IN
NO COMMENT
26/9/47

Commanding General
Air Materiel Command
Wright Field
Dayton, Ohio

Attention: TSEPP-8

Subject: Contract W33-038 ac-18653 - R-4360 V.D.T. Engine

Reference: (a) PWA letter HB:lms Engineering II dated 15 September 1947 to CG, AMC, Wright Field, Dayton, Ohio

Enclosure: (A) PWA Report TR-52R - three (3) copies

1. This letter supersedes reference (a). It is requested that all copies of reference (a) be destroyed.

2. Article 15, Item 5 of Contract W33-038 ac-18653 covering the development of the R-4360-43 V.D.T. engine states that Pratt & Whitney Aircraft will submit monthly progress reports covering the progress of development work under this contract. This letter is the first progress report submitted under the subject contract.

3. The development of the R-4360-43 V.D.T. engine is a continuation of the work completed on the XR-4360-39 engine under Letter Contract W33-038 ac-14294 and the combined running time on eight (8) full scale R-4360-C engines run under these contracts is now 2680 hours. Sufficient running has already been obtained on prototype V.D.T.engines X-109 and X-156 to demonstrate that the studies of this type power plant presented in PWA Report No. TR-46 are logical and reasonable. For example, operation on the V.D.T.type engine at 2600 BHP, 2400 RPM, 40"Hg. exhaust back pressure at a specific fuel consumption of only .412 pounds per BHP per hour has been successfully demonstrated.

4. Sufficient parts have now been manufactured to be able to convert Prototype R-4360-VDT engine No. X-109 to the proposed final design V.D.T. construction and this engine is now being installed on a test stand. Engine No. X-151 is being reassembled with new parts including the proposed final design V.D.T. rear section; this engine is scheduled to be shipped to Boeing for installation in a special flight test nacelle in a B-50 airplane. Many of the used parts removed from engine No. X-151 have been used to reassemble a ninth R-4360-C engine, No. X-114, which will be ready for test within the next few days. Engines No. X-101 and X-157 are currently being used to evaluate the relative merits of the top intake and top exhaust type cylinders while engine No. X-105 has successfully completed 43-1/2 hours of a 50-hour Qualification Schedule which includes engine operation with internal supercharging at a 3500 BHP dry take-off rating. Engine No. X-105 is fitted with special high overlap valve cams which probably explains, at

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25 September 1947

Subject: Contract W33-038 ac-18853 - R-4360 V.D.T.Engine

least in part, the reason for the successful operation observed to date on this engine at 3500 BHP with 100°F. carburetor air temperature. Engine Nos. X-152 and X-155 are currently being modernized to include the latest design crankshaft counterweights and other features.

5. Since the studies of various types of engine and turbo combinations were completed and forwarded to the Air Materiel Command under Contract W33-038 ac-14294, additional information has been received on the characteristics of the General Electric CHM-2 turbo-supercharger. This information has been included in PWA Report No. TR-52R which presents the estimated performance of the R-4360-C3 (V.D.T.) engine when used in combination with this new turbo-supercharger. Three (3) copies of this report are enclosed for the Air Material Command's information and use. Since it is understood that CHM-2 rather than BM-6 turbo-superchargers are proposed for use in flight airplanes, it is recommended that report TR-52R rather than Report TR-46 be used for future studies around the R-4360-43 and -51 engines.

UNITED AIRCRAFT CORPORATION
Pratt & Whitney Aircraft Division

R. H. Begg
Project Engineer

RHB:lms

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TC-92-275

PRATT & WHITNEY AIRCRAFT

DIVISION OF UNITED AIRCRAFT CORPORATION

EAST HARTFORD 8, CONNECTICUT, U.S.A.

CABLE ADDRESS "AIRCRAFT"

ARMY OFFICE	
APPROVED	
CONCURRED IN	
NO COMMENT	Stark 9/10/47

In reply please refer to: BAS:oh Exp. Test

September 30, 1947

C-18653

VIA: Army Air Forces Representative, East Hartford 8, Connecticut

To: Commanding General
Air Materiel Command
Wright Field
Dayton, Ohio

Attention: TSEPE3B1 P-W

Subject: Contract W33-038-ac 18653 - R-4360 V.D.T. Engine Program - BH1 Turbo Superchargers for

1. As discussed during conference at Wright Field on 22 September 1947 with Representatives of the Air Materiel Command, General Electric, and Pratt and Whitney Aircraft present, it is evident that the development of the R-4360 V.D.T. engine under Contract W33-038 ac 18653 can be expedited by using rammed air supplied from exhaust driven turbo superchargers. Since CHM-2 turbo superchargers designed for use with the R-4360 V.D.T. engine in the B-50 and B-36 airplanes will not be available for some months, it appears desirable to use BH-1 turbos, which are currently available, for test stand running until CHM-2 turbos become available.

2. Confirming the agreement reached during conference on 22 September 1947, it is requested that six (6) BH-1 turbo superchargers be allocated from Army stock to Pratt and Whitney Aircraft for experimental testing purposes.

UNITED AIRCRAFT CORPORATION
Pratt & Whitney Aircraft Division

B. A. Schmickrath
Chief, Experimental Test Laboratories

BAS:oh

OCT 1947 RECEIVED ARMY OFFICE PRATT & WHITNEY AIRCRAFT

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AIR MATERIEL COMMAND ENGINEERING LIAISON OFFICE
AT THE AMES AERONAUTICAL LABORATORY
MOFFETT FIELD, CALIFORNIA

VIA AIRMAIL

30 September 1947

SUBJECT: Wind Tunnel Program for B-36 VDT Tractor Power Plant Installation

TO: Commanding General
Air Materiel Command
Wright Field, Dayton, Ohio

ATTN: TSEEG (TSEOL)

1. Reference is made to Headquarters AMC letter, TSEOL:TB:bkm, dated 23 July 1947, subject as above. The letter contained a summary chart of proposed wind tunnel program for the B-36 airplane with six (6) tractor VDT nacelles and requested that the comments of the Laboratory be obtained on the proposed tests in Ames 40x80-foot wind tunnel.

2. The Laboratory has advised this Office, based on information received from its Washington Office, that the Air Force has canceled the development of tractor power plant installation on the B-36 airplane, utilizing the R-4360 VDT engine.

3. 1st Indorsement dated 23 September 1947 to Liaison Office letter to Wright Field dated 18 August 1947, subject "Status of Full-Scale XB-36 Nacelle Model Now at NACA Moffett Field, California", states:

> "Present plans contemplate that the VDT Nacelle program of the B-36 airplane will go ahead as originally intended, with the exception that the tests planned for the 19-Foot Pressure Tunnel at Langley Field will be conducted in the 20-Foot Wind Tunnel at Wright Field."

4. It is requested that current status of B-36 VDT project be clarified.

JAMES L. MURRAY, Major, Air Corps
A.M.C. Engineering Liaison Officer

cc:
TSEAC

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AMC Form No. 10-949

[illegible] AMCELO, Ames Aero. Lab., Mft. Fld., Calif., dated 30 Sept[illegible] Subject: "Wind Tunnel Program for B-36 VDT Tractor Power Plant Installation."

ADJUTANT GENERAL

1st Ind. TSEOL:TS:bks

Hqs., Air Materiel Command, Wright Field, Dayton, Ohio. 6 October 1947

TO: AMC Engineering Liaison Office, Ames Aeronautical Laboratory, Moffett Field, California. Attn: Major James L. Murray

CHIEF OF ADMIN.

AIR INSPECTOR

1. It is not possible at this time to definitely state whether or not the VDT nacelle program contemplated for the B-36 airplane will go ahead as scheduled. The entire question is being discussed now in Washington.

PUBLIC RELATIONS

2. Your office will be informed of any decision that is made with regard to this program.

BY COMMAND OF LIEUTENANT GENERAL TWINING:

JUDGE ADVOCATE

PERSONNEL (T-1)

for Joseph Ross
JOSEPH D. JONES
Act'g. Chief, Engineering
Liaison Section
Engineering Division

INTELLIGENCE (T-2)

ENGINEERING (T-3)

SUPPLY (T-4)

cc: TSEAC
TSEPA, Capt. Walling

PLANS (T-5)

BASE C. O.

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C ORDINATION
CG OC DEP CG
ADJUTANT GENERAL
[redacted]
CHIEF OF ADMIN.
AIR INSPECTOR
PUBLIC RELATIONS
JUDGE ADVOCATE
PERSONNEL (T-1)
INTELLIGENCE (T-2)
ENGINEERING (T-3)
SUPPLY (T-4)
PLANS (T-5)
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AMC Form No. 10-508
(Rev 2 Apr 47)
(PRINT SYMBOL, DATE AND INITIALS IN APPROPRIATE BLOCK)

CONFIDENTIAL

TSBPA5/COQ/ebh

1 October 1947

Configuration of F-12 Airplane

Commanding General
Army Air Forces
Washington 25, D. C.

Attn: AC/AS-4
Photo Reconnaissance Branch

50

452.1- Reconnaissance 7-12-47

1. During the conference of 22 and 23 September between representatives of Air Material Command and Republic Aircraft Corporation, definite requirements could not be reached on the following items:

a. The use of non-self-sealing fuel and oil tanks versus self-sealing tanks is to be further studied by Republic Aircraft, and performance figures on the F-12 will be submitted for both cases. Republic Aircraft believes that approximately 20% of the fuel is lost by altitude boiling if tanks are not pressurized. However, according to NACA figures used by Air Material Command Fuel Laboratory, this 20% would apply to extreme take-off fuel temperatures of 140° Fahrenheit and a flight altitude of approximately 40,000 feet with considerably less loss at normal operating conditions. However, any such loss would cut the range considerably. Since pressurization nullifies self-sealing characteristics and, also, self-sealing reduces the fuel load by approximately 1000 gallons, both Republic Aircraft and this Hq question the advisability of using self-sealing tanks. This Hq suggested that Republic Aircraft explore the possibility of using external droppable fuel tanks to supplement the regular fuel load. It is further felt that protective armor for engine and crew exacts too high a weight penalty on the F-12; therefore, subject to approval of HQ, AAF, tentative authority has been extended to Republic Aircraft to proceed on the F-12 with the bladder type tanks and no armor for crew and engines, using only structure to protect the engines from flak wherever possible.

b. Regarding the possible installation of RCM equipment, Major Winters of AC/AS-3 was to inspect the XP-12 at the Republic Plant at Farmingdale about 29 September to ascertain the feasibility of such installation. It is requested that your office issue firm requirements as to future installation or space and weight provisions for both RCM and weather reconnaissance equipment.

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(Rev 2 Apr 47)

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ADJUTANT GENERAL

CHIEF OF ADMIN.

AIR INSPECTOR

PUBLIC RELATIONS

JUDGE ADVOCATE

PERSONNEL (T-1)

INTELLIGENCE (T-2)

ENGINEERING (T-3)

SUPPLY

PLANS (T-5)

BASE C. O.

OTHER

AMC Letter [illegible] 47, to CG, AAF, Washington, subj: "Configuration of F-12 Airplane"

c. Colonel Cullen, Commanding Officer of the 311th Reconnaissance Wing, the using agency for the F-12, feels that present installations for camera equipment are not sufficiently flexible in view of the expected future photo equipment and requirements. However, since no definite requirements are known, he has requested that your office coordinate the views of Colonel Cullen, the AMC Photo Laboratory, and other interested agencies and issue firm requirements as to provisions for future installations.

d. Top performance figures as desired in the F-12 and as submitted by Republic Aircraft are predicated on the availability of an 8:1 pressure ratio turbosupercharger for the VDT engine. At present, no such turbosupercharger is available. However, the General Electric Corporation is now developing a CH4-2 turbo with a 6.5:1 ratio and within three months can ascertain the possibility of rerating this turbo up to an 8:1 pressure ratio, which could be done probably within twelve months from the completion of the CH4-2 development. If this is not possible, a new 8:1 pressure ratio turbosupercharger could probably be developed within eighteen months after starting the project. A possible third alternative is a 12:1 pressure ratio compressor incorporating both axial and centrifugal compression which General Electric is now developing. However, this compressor is far behind its development schedule, hence would probably be considerably behind the F-12 production schedule. Furthermore, it would probably require considerable redesign of both compressor and/or F-12 nacelle to be suitable for the for the F-12 Airplane. It is practically certain that a 6.5:1 ratio will be available, and it is further felt that an 8:1 ratio turbo will be available for the F-12 by the time it is ready for production. The attached chart represents Republic Aircraft performance figures for the F-12 for various engine and turbosupercharger combinations.

FOR THE COMMANDING GENERAL:

George E. Schaetzel

GEORGE E. SCHAETZEL
Colonel, Air Corps
Chief, Aircraft Section
Procurement Division

Incl:
Chart

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CHIEF OF ADMIN.

AIR INSPECTOR

PUBLIC RELATIONS

JUDGE ADVOCATE

PERSONNEL (T-1)

INTELLIGENCE (T-2)

ENGINEERING (T-3)

SUPPLY (T-4)

PLANS (T-5)

PLANS (T-5)

BASE C. O.

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OTHER

OTHER

F-12 AIRPLANE

Engine P&W 4360	R-4360-43 (C-3)	R-4360-43 (C-3)	R-4360-35 (B-3)	R-4360-35 (B-3)
Turbo	8:1	CHM-2 6.5:1	CHM-2	CH-7
Mili. Pr. (Wet)	4,300	4,300	3,500	3,500
Crit.Alt. at at MPH	40,000' 500	32,000' 500	33,000' 470	35,000' 470
Mili. Pr. at 35,000'	4,300	3,700	3,200	3,500
Mili. Pr. at 40,000'	4,300	2,750	2,500	2,600
VMax (1/2 Fuel) At Alt.	508 38,000'	500 32,000'	468 33,000'	470 35,000'
VMax 40,000'	503	445	430	437
Max. Range	6,500	6,500	5,900	5,900
V. Aver.	350	350	350	350
Altitude	35,000	35,000	35,000	35,000
Altitude	35,000	35,000	35,000	35,000
Range	5,200	5,200	3,600	3,600
V. Aver.	430	430	430	430
Altitude	35,000	35,000	35,000	35,000
Range	5,200	5,200	3,600	3,600
V. Aver.	430	430	430	430

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In reply please
refer to WPG:lm

October 3, 1947

Commanding General
Air Materiel Command
Wright Field
Dayton, Ohio

Subject: Production of R-4360 VDT Engines

Reference: (a) Conference at AMC September 18, 1947 between Mr. W.P.Gwinn P&WA and Col. G.E.Schaetzel and Lt.Col.T. P.Gerrity, AMC

1. Submitted hereunder are delivery schedules of production type R-4360 VDT engines. These schedules are as agreed to in conference, Reference (a) at which time information on this subject which had previously been submitted verbally was reviewed with the AMC.

2. Initial deliveries of production R-4360 VDT type engines cannot be made before May 1949. Deliveries in subsequent months and the most optimistic rate of acceleration will be as follows:

1st month	4
2nd "	10
3rd "	17
4th "	29
5th "	60
6th "	100
7th "	130
8th "	150 and forward

3. Attention is invited to the fact that although the above schedule is a composite schedule of all Army variable discharge turbo supercharged engines, it applies primarily to the R-4360 VDT type engines for B-50 installation (R-4360-43) and is based on bringing that type into production first. Should procurement be initiated for a variable discharge turbo supercharged engine for the B-36 installation (R-4360-51) the following schedule will apply. This schedule reflects B-36 engine deliveries not before July 1949.

	B-50	B-36	Total
1st month	4		4
2nd "	10		10
3rd "	15	2	17
4th "	25	4	29
5th "	50	10	60
6th "	75	25	100
7th "	100	30	130
8th "	115	35	150 and forward

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7C-92-90

October 3, 1947

Commanding General, Air Materiel Command

4. As pointed out in the conference, Reference (a), starting production deliveries of the R-4360-43 and R-4360-51 engines in May and July respectively of 1949 is a most ambitious program but this Division is willing to undertake this task and will do its utmost to meet the needs of the Air Materiel Command. To enable us to accomplish this, however, it is imperative that an immediate go ahead be received not later than November 15, 1947 authorizing us to proceed at once with the production of the first two months' requirements or fourteen (14) engines at a selling price of $120,000 each or an aggregate amount of $1,680,000 with the provision that in the event of termination, the cost of special tools, jigs, fixtures, dies and patterns be allowable as a direct termination cost together with other properly chargeable termination costs. Only in this way will we be able to proceed with the necessary work to prepare for production deliveries commencing in 1949 as outlined above.

UNITED AIRCRAFT CORPORATION
Pratt & Whitney Aircraft Division

W. P. Gwinn
General Manager

cc: Bureau of Aeronautics Representative
East Hartford, Conn.

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TC-42-39

PRATT & WHITNEY AIRCRAFT

DIVISION OF UNITED AIRCRAFT CORPORATION

EAST HARTFORD 8, CONNECTICUT, U.S.A.

CABLE ADDRESS: AIRCRAFT

October 3, 1947

40-42-52

Commanding General
Air Materiel Command
Wright Field, Dayton, Ohio

Subject: Prototype R-4360-43 Engines - Proposal for

References: (a) Conference called by AMC on June 6, 1947, to discuss various phases of R-4360 VDT type engine development.
(b) PWA ltr to AMC, WPG:Pr-Eng., dated March 13, 1947.
(c) PWA ltr to AMC, WPG:Pr-Eng., dated May 15, 1947.
(d) PWA ltr to AMC, WPG:Pr-Eng., dated June 19, 1947 (original proposal).
(e) Conference at Wright Field on subject matter, September 24 and 25, 1947..

1. This will consolidate and supersede all previous communications and discussions on the subject matter. We propose to furnish to the Government eight R-4360-43 engines as follows:

Eight aircraft engines, AAF designation R-4360-43, at $187,000 each, built in accordance with Pratt & Whitney Aircraft Specification Number A-7066-B dated 24 June 1947 except that in the event the 150-hour qualification test requirement called for in the specification, which is to be conducted under the requirements of Contract W33-038 ac-18653, has not been satisfactorily completed at the time these engines are ready for delivery, engines may be delivered based on the satisfactory completion of a 50-hour pre-flight qualification test, to be conducted on one of the engines to be supplied under this contract, in accordance with AAF Specification XR-28398-A dated 27 January 1944, Amendment No. 1 dated 18 March 1944. All subsequent engines will be built substantially in accordance with the Parts List of the pre-flight qualification test engine. In the event that it is necessary for the Contractor to conduct the 50-hour pre-flight qualification test (AAF Specification XR-28398-A dated 27 January 1944, Amendment No. 1 dated 18 March 1944) on an engine to be delivered under this contract there will be no increase in price.

2. We propose that delivery of these engines is predicated on the date of contract in accordance with the following schedule:

4 engines	-	15 months after date of contract
2 engines	-	16 months after date of contract
1 engine	-	17 months after date of contract
1 engine	-	18 months after date of contract.

Incl 2

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TC-92-40

It is understood that the Air Materiel Command is extremely anxious to have earlier delivery but in view of the fact that work on this proposed contract has not been started and cannot be started until the contract is firm, the schedule quoted in our original proposal of June 19, 1947 (reference (d)) must remain in effect. However, the Contractor agrees to use its utmost efforts to better the quoted delivery dates.

3. Acceptance and inspection will be accomplished as follows: Government inspection of these engines shall consist only of visual inspection during green test, during teardown after green test, during final assembly, final testing, packing and shipping. Whenever, in the best interests of the Government, additional inspection is considered necessary by the Government Inspector, and with concurrence of the contractor, other established forms of inspection should be accomplished at any time during manufacture, assembly or testing of these engines to assure satisfactory service engines. Routine inspection of raw material, source and detail inspection of parts shall be waived on these engines since they will not be manufactured with production tooling. Strict interchangeability shall not be required on detail parts nor will the parts be strictly interchangeable with similar parts which may be purchased in production quantities at a later date.

4. Drawings - The Contractor will furnish as part of this contract and at no additional cost, reproducible copies of the following material concurrently with or prior to delivery of the first engine:

(a) Numerical parts list of the engine which completes the 150-hour qualification test under the requirements of Contract W33-038 ac-18653 or a numerical parts list of the engine which completes the 50-hour pre-flight substantiation test if this latter test is run in accordance with the procedure outlined above.

(b) An assembly specification with an index arranged in alphabetical order of the parts provided in the list in item (a) above.

(c) One set of direct reading paper Vandyke negatives of all drawings of the engine including detail, sub-assembly, assembly and installation drawings not previously furnished to the Air Materiel Command. In the event that the original experimental drawings used to produce the eight engines called for in this contract are not suitable for obtaining Vandyke negatives, two sets of blueprints will be furnished in lieu thereof.

The Contractor will also furnish copies of Engineering Changes in Design affecting the R-4360-43 engine model released subsequent to completing the applicable 150-hour qualification test or 50-hour test, whichever test is used as a basis for accepting engines.

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TC-92-41

5. It is understood that it is customary for the Air Materiel Command to require additional engine data and drawings in accordance with Table II dated 1 October 1946 and Table X dated 1 November 1946. The Contractor has given serious consideration to the requirements of these two tables and wishes to advise that while in the main its established practices as approved by the operating personnel of the Air Materiel Command do comply basically with the requirements of these tables, there are details which it does not seem practical in view of the semi-experimental nature of this proposed contract for eight R-4360-43 engines to take the time to negotiate detailed deviations to these two tables. Accordingly, in view of the fact that the Air Materiel Command will receive, under the data which we have agreed we will supply above, all the really practicable data requirements for the purposes of semi-experimental engines, we cannot see our way clear to agree contractually to conform in detail to the requirements of Table II and Table X.

UNITED AIRCRAFT CORPORATION

W. A. Parkins, Engineering Manager
Pratt & Whitney Aircraft Division

WAP:sm

~~Table X is much appreciated.~~

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TC-92-42

UNIT COST BREAKDOWN - ENGINE SELLING # CE

Re: Quantity of Eight (8) R-4360-43 Prototype Engines

MATERIAL		
Raw Material, Forgings and Castings		$ 6,424.00
Production Parts at Standard Cost		5,400.00
Turbo Supercharger Control		17,500.00
Fuel Injection		35,000.00
Ignition System		14,828.20
Exhaust System		3,120.00
Valve Mechanisms		2,060.00
Intake Pipes		1,600.00
Oil Pipe Assemblies		1,266.00
Special Bearings and Bushings		2,185.00
Engine Mounts		1,120.00
Miscellaneous Sub-contracted Parts		2,700.00
Gasoline and Oil		1,042.18
Total		$ 92,144.38
LABOR		
Manufacturing	9,039 Hrs. at $1.60	14,462.40
Engineering - Construction	350 Hrs. at $1.60	560.00
- Assembly	2,460 Hrs. at $1.56	3,822.00
- Test	250 Hrs. at $1.57	392.50
Total		$ 19,236.90
OVERHEAD		
Manufacturing - 222.7% *		$ 32,207.76
Engineering - 90.0%		4,297.05
Total		$ 36,504.81
TOTAL MANUFACTURING COST		$ 147,886.09
General Overhead - 14.1% *		20,851.94
Total Estimated Unit Cost		168,738.03
Profit - 10% of Selling Price		18,748.67
Estimated Unit Selling Price		$ 187,486.70
Price Quoted		$ 187,000.00

Note: *. Overhead Rates used on current Navy procurement.

September 22, 1947

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8 October 1947

Letter from the USAF Aircraft and Weapons Board Secretary to each member, subject, "Proposal to Improve Performance of the Last Thirty-four (34) B-36-Type Aircraft,"

(1) requested approval or disapproval of the proposal submitted by CVAC on 5 May 1947.

(2) inclosed Document No. 40, this Case History.

(This document is not available at Hq, AMC for reproduction.)

DOCUMENT NO. 53

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SECRET

[10-11-47]

SUBJECT: Proposal to Improve Performance of the Last Thirty-Four (34) B-36 Type Aircraft.

[10-15-47 par I 6. See Item 239.]

TO: Commanding General,
Air Materiel Command
Wright Field
Dayton, Ohio.

PERSONAL ATTENTION OF THE COMMANDING GENERAL,

1. At the last meeting of the USAF Aircraft and Weapons Board, the decision was made to cancel the one (1) B-36 prototype having the VDT engine installation, as further production beyond the one hundred (100) now on contract, was deemed inadvisable. Since that date Consolidated-Vultee Aircraft Company has submitted the proposal for improving the last thirty-four (34) B-36's at the expense of five (5) aircraft of the total of one hundred (100) now on contract. The performance increase obtained by installing VDT engines is essentially in improved speed, i.e., 336 miles per hour cruising speed instead of the 232 miles per hour cruising speed obtained with the R-4360-41 engine and 410 miles per hour high speed over 343 miles per hour. At the indicated cruising speeds the range is decreased from 9950 statute miles to 9200 statute miles. The details of Consolidated's proposal are contained in Inclosure 1 to Tab A, attached hereto.

2. It is to be noted that the reduction of five (5) aircraft of the total to be obtained in this proposal covers only the expense of the B-36-VDT airframe production. In addition, it is estimated (as outlined in paragraph 5 of 1st Indorsement to basic letter in Tab A) that the sum of $15,000,000 will be necessary to finance the development and procurement of the necessary additional Government Furnished Equipment. It is proposed to finance this amount by cancelling six (6) or seven (7) B-50C's from contemplated FY 1949 B-50 procurement.

3. This proposal is being circulated to all members of the USAF Aircraft and Weapons Board in an effort to obtain a decision at the earliest possible date. It is essential that a decision be rendered on this matter in the immediate future if Consolidated is to meet the proposed production schedule.

U-43118

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Ltr Hq USAF to CG AMC, subj: Proposal to Improve Performance of the Last Thirty-Four (34) B-36 Type Aircraft

4. This proposal has been concurred in by AC/S-3, AC/S-4, and Air Comptroller's Office of this headquarters. It is felt that the proposed improvement will make the B-36 a more realistic combat vehicle for delivery of the "A" Bomb.

5. Your attention is invited to paragraph 1.c of 1st Indorsement, Tab B, attached. Therein, General Spaatz has directed the evaluation of subject proposal and its submission to Members of the Board for interim consideration and decision.

6. It is requested that you return this correspondence to the Secretary, USAF Aircraft and Weapons Board within twenty-four (24) hours, indicating your approval or disapproval of subject proposal.

BY ORDER OF THE SECRETARY OF THE AIR FORCE:

2 Incls
1. Tab A-B/Ltr HqAAF 10 Sept 47 w/1st Ind fr AMC dtd 30 Sep 47 w/2 Incls
2. Tab B - B/Memo to CG AAF 12 Sep 47 w/1st Ind fr C/S USAF dtd 7 Oct 47 (Incl w/d)

s/ F. H. Smith, Jr.,
F. H. SMITH, JR.,
Brigadier General, USAF
Secretary, USAF Aircraft and Weapons Board.

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Basic Ltr fr USAF to CG, AMC, undated, "Proposal to Improve Performance of the Last Thirty-Four (34) B-36 Type Aircraft."

1st Ind.

TSDEG:SRB

Written 16 October.

Hdqs., Air Materiel Command, Wright Field, Dayton, Ohio. 16 October 1947

TO: Chief of Staff, United States Air Force, Washington 25, D. C.
ATTN: Secretary, USAF Aircraft and Weapons Board.

1. In reference to basic communication, the performance figures, production costs and airplane delivery schedule were examined and found entirely feasible.

2. It is the recommendation of the undersigned that this program be approved.

JOSEPH T. McNARNEY,
General, USAF,
Commanding.

Incl.
Not Available

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AMC Form No. 18-3
(Rev 29 Jul 47)

TC-42-361

ROUTING AND RECORD SHEET

AIR MATERIEL COMMAND

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Note warning signal at lower left of form. Remaining space is sufficient only for proper spacing of typewritten signature.

Place initials of dictator and typist, telephone number and location to right of signature.

Separate comments by horizontal lines across page.

SUBJECT: Scheduling R-4360-43 Engines for F-12 Aircraft.

TO: TSEPA Mr Kellhofer FROM: TSBPA-5 DATE: 13 Oct. '47 COMMENT NO. 1.

1. Present tentative F-12 Schedules will require the following R4360-43 engine deliveries:

Engines	Engine Delivery
4 + 2 Spares	As soon as possible with spares to follow
4	June 1949
4	July 1949
8	August 1949
8 + 2 Spares	September 1949
8 + 2 Spares	October 1949
8 + 4 Spares	November 1949
8 + 4 Spares	December 1949
8 + 4 Spares	January 1950
8 + 4 Spares	February 1950
8 + 4 Spares	March 1950
8 + 4 Spares	April 1950
4 Spares	May 1950
4 Spares	June 1950
4 Spares	July 1950
TOTAL 80 + 40 Spares	

2. Subject schedule will satisfy the tentative 21 plane contract (1-F-12 for static test to be furnished with R-4360-35 engines.

3. Subject schedule is predicated upon the 3rd, 4th, 5th, 6th, and 7th airplanes being accepted with R-4360-35 engines and being replaced with R-4360-43 engines subsequent to the completion of the 21st airplane.

4. The above is submitted for consideration in future allocations and scheduling.

C. B. Barclow
D. W. GRAHAM
Lt. Colonel, Air Corps
Chief, Training and Transport Branch
Aircraft Section
Procurement Division

JBB/lff
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Rm. 212
Bldg. 15

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AMC Form No. 10-5
(Rev 19 Mar 46)

ROUTING AND RECORD SHEET

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SUBJECT: Pratt & Whitney Contract for Conversion of Two VDT Engines for the B-50 and One VDT Engine for the B-36 - W33-038 ac-18653.

TO: TSBPA3 FROM: TSBPE1 Mr.R.E.Denning:emb Tel. 2-6108 DATE: 15 Oct 47 COMMENT NO. 1.

1. The attached Office Memorandum, same subject as above, is forwarded for your comments and recommendations.

CONTRACT FILES Ray 2/10/48 ac-18653

J. L. ZOECKLER
Lt. Colonel, Air Corps
Chief, Aeronautical Equipment Section
Procurement Division.

1 Incl: Office Memo dtd 8 Oct 47 fr TSBPE3 to TSBPE

To: TSBPE From: TSBPA3 Date: 20 Oct 47 Comment #2.

1. It is understood, reference contract covers costs for engine development for the B-36 program, that there is a "gentleman's agreement" between AMC and Pratt & Whitney to hold off on this work until a decision is submitted on the B-36 program. This decision is expected within a week from Hq AAF. It is therefore requested that the arrangement between AMC and Pratt & Whitney remain in effect during this period. This Office will be advised immediately that decision is received from Hq AAF.

GEORGE E. SCHAETZEL
Colonel, Air Corps
Chief, Aircraft Section
Procurement Division

TPG/gp
3-4314

Incl Removed

To: TSBPE3 From: TSBPE1 Mr.R.E.Denning:emb Tel. 2-6108 Date 22 Oct 47 Comment No. 3

1. Comment No. 2 is in reply to your R&R dated 8 October 1947, same subject as above, and is forwarded for your information.

2. In view of the above, this office concurs in the decision of TSBPE3 in not cancelling the VDT engine for the B-36 aircraft.

ac 18653

J. L. ZOECKLER
Lt. Colonel, Air Corps
Chief, Aeronautical Equipment Section
Procurement Division.

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WDC-17 JAN 47 1000M (CONTINUE ON OTHER SIDE) COMMENT NO

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file VDT

TC-42-375

CONSOLIDATED VULTEE AIRCRAFT CORPORATION

FORT WORTH DIVISION
FORT WORTH 1, TEXAS

RCS:mb/AC-7-FW#6369
16 October 1947

APPROVED	
CONCURRED IN	✓
NO COMMENT	10/20/47
AAF PLANT REPRESENTATIVE	

Subject: Contract AC-7 - B-36A Airplanes
VDT Power Plant

To: Commanding General
Air Materiel Command
Wright Field
Dayton, Ohio

Attention: TSBPA-3B

Via: Army Air Forces Plant Representative

Enclosure: (A) Three (3) Copies of A Preliminary Report on Power Plant Performance of the VDT Power Plant with R 4360-51 Engine, dated 15 September 1947.

correct to general

Available in the file of the Bomb. Br., Prod. Div., W-PAFB.
Ethel DeHaven, Historian

1. In order to design the Power Plant Installation and to determine whether fan or exhaust agument cooling was desirable and to calculate performance on the VDT Airplane, it was necessary that certain engine performance characteristics, which are being transmitted as Enclosure (A) of this letter, be obtained.

2. Page nine of this Report summarizes the Contractor's conclusions. The most important being the handling of high exhaust gas temperatures, engine power control and the effect of exhaust gas leakage on engine performance.

3. It is the Contractor's opinion that these problems must be expeditiously worked on, if they are to be solved without delay to the Program.

4. Copies of this Report are being sent to Pratt & Whitney Aircraft Corporation and General Electric with a request for their comments. The Contractor would also appreciate receiving the Air Materiel Command's comments on this Report.

CONSOLIDATED VULTEE AIRCRAFT CORPORATION
FORT WORTH DIVISION

R. C. Sebold
Chief Division Engineer

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TC-92-360

AMC Form No. 10-3
(Rev 29 Jul 47)

ROUTING AND RECORD SHEET

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Place initials of dictator and typist, telephone number and location to right of signature.

Separate comments by horizontal lines across page.

SUBJECT: Memorandum Report dated 1 October 1947.

TO: TSBPA-5
Attn: Mr. J. B. Black

FROM: TSBPE

DATE: 17 Oct. 47 COMMENT NO 1

THRU: TSBPE

1. B 4j(1), Page 12 of attached Memorandum Report should be amended to read as follows:

> It was determined that the type of propeller desired by the contractor will be available for the production airplane, provided the development contract contemplated by the Propeller Lab with Curtiss-Wright Corporation produces satisfactory results within the average time required for similar past developments. This propeller is the Co4-S-C Type 16' 2" diameter, 4-blade reversible pitch, full feathering, constant speed, and No. 1056 blades with an activity factor of 145".

2. In this connection it should be noted that the development was a contemplated contract at the time of the conference and has not materialized into the Purchase Request stage to date because of a lack of funds. It now appears unlikely that funds will be available for this development during fiscal year 1948. It is understood, however, that Curtiss-Wright is initiating development at their own expense in order to be in a position to be considered as a source for this and other airplanes.

3. Since three companies, Hamilton Standard, Curtiss-Wright, and Aeroproducts are developing a propeller that may meet the needs of the F-12 airplane, it is reasonable to assume that one of them will prove satisfactory for the F-12 Airplane. This office cannot give assurance, however, that the product of any given company will be satisfactory or available.

4. When Inclosure 1 is removed this R & R is to be declassified.

J. L. ZOECKLER
Lt. Colonel, Air Corps
Chief, Aeronautical Equipment Section, Procurement Division

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Bldg. 15
Rm 112

1 Incl.
Incl. 1 - Memo. Rpt. dtd 1 Oct. 47

Orig cancelled

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150 PSH:bc Engineering II

PRATT & WHITNEY AIRCRAFT

DIVISION OF UNITED AIRCRAFT CORPORATION
EAST HARTFORD 8, CONNECTICUT, U.S.A.
CABLE ADDRESS: AIRCRAFT

CONTRACT FILES
Rak 10/31/47

October 21, 1947

ARMY OFFICE
APPROVED
CONCURRED IN
NO COMMENT
10/22/47

VIA: Army Air Forces Representative, East Hartford 8, Connecticut

Commanding General
Air Material Command
Wright Field
Dayton, Ohio

AE-18653

Attention: TSBPE3B1

Subject: Flight Test of an R-4360-43 Variable Discharged Turbo-Supercharged Engine
Contract W33-038 ac-18653, Article 15, Item 3

References: (a) Visit of Mr. A. Boykin of Air Material Command to Pratt and Whitney Aircraft on 10 July 1947
(b) PWA letr. PSH:lms Engineering II dated 8 August 1947 to Army Air Forces Representative, East Hartford, Connecticut

Enclosure: (A) General Electric Drawings - three (3) copies each
SK-62642-581
SK-62641-582
SK-62642-583
SK-62642-584
SK-62867-888
W.C. Meckley 9-15-47

(B) PWA Preliminary Installation Drawing No. 121001 dated 10-1-47 - three (3) copies

1. Since the original request for instrumentation on the single nacelle B-50 R-4360-3 VLT engine installation, see reference (b), further information has been received and coordinated with the various groups concerned with the VLT power plant. We are therefore supplementing our request in reference (b) accordingly.

2. The following instructions and recommendations are submitted as a guide to the proper installation of the engine boost control system: (See General Electric Drawing SK-62867-888):

(a) Amplifier - This unit should be mounted on a shelf at least 2 ft. deep and 3 ft. wide on built-in shock mounts in a position such that a flight test observer may make adjustments and have a clear view of regulated carburetor inlet pressure. A clear view of other induction air pressure instruments is desirable but not necessary.

(b) Pilots Control - A conventional control lever connected mechanically to the boost control unit mounted on the engine accessory case is required.

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(c) Main Boost Control Electrical Junction Box-Mounted rigidly in the fuselage and accessible during flight should voltage checks be necessary.

(d) Nozzle Actuator - Detailed installation information is not available and will be furnished at a later date. (Approx. November 1st).

(e) Turbo-Supercharger Tachometer Assembly - Mounted rigidly near turbo-supercharger with arrangement for a flexible drive shaft from the oilpump drive. Must be driven at oilpump speed. Must be protected from high temperatures. See General Electric Drawing SK-62642-581.

(f) Turbo Back Pressure Sensing Element - Must be shock mounted as near the nozzle as possible. It must be above the level of the pressure sensed and connected so that no moisture can collect in connecting plumbing. See General Electric Drawing SK-62641-582. This element must be protected from high temperatures and should be shock mounted.

(g) Carburetor Entrance Pressure Sensing Element - This unit must be shock mounted as near the regulated pressure measurement point as possible and the plumbing should be arranged to prevent accumulation of moisture. The shock mount is to be supplied by airplane manufacturer. See General Electric Drawing SK-62641-582.

(h) Boost Selector Unit - It is recommended this unit be mounted rigidly in the nacelle behind the firewall where it should be protected from high temperatures. This unit will be driven mechanically by Teleflex cable or other means by the boost control pilots lever so as to keep back-lash between boost control unit and boost selector to a minimum. See General Electric Drawing SK-62642-583.

(i) Nacelle Junction Box - Mounted rigidly in nacelle behind firewall and protected from high temperatures. See General Electric Drawing SK-62642-584.

(j) Automatic Boost Control - Modified Eclipse type 839100 unit is to be mounted on the engine power control pad and will be furnished with the first VDT engine, X-151, intended for installation in the single test nacelle in a B-50 airplane.

3. To provide complete instrumentation of the CHM-2 turbo compressor and exhaust nozzle unit to be used in the single nacelle R-4360-VDT installation it is desired that the following additional instrumentation be provided:

1. Instrumentation Included on Turbo-supercharger. See General Electric Drawing W.O. Meckley 9-15-47.

A. Pressures

	Designation	Quantity
1.	Nozzlebox shroud air discharge, Static	1

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	Designation	Quantity
2.	Exhaust cone discharge, Total	4*
3.	" " " , Static	4
	B. Temperatures	
1.	Front bearing	1
2.	Rear bearing	1
3.	Nozzlebox shroud air discharge	2
4.	Sealing plate behind turbine wheel	2
5.	Space between turbine wheel and cap	2
6.	Exhaust cone discharge	4*
7.	Variable discharge nozzle surface	2

2. Instrumentation required at Installation

	A. Pressures	
1.	Compressor inlet, Total	2*
2.	Compressor discharge, Total	2*
3.	Cooling shroud inlet, Static	1
4.	Cooling cap inlet, Static	1
5.	Nozzlebox inlet, Static	1
6.	" " , Total	1*
	B. Temperatures	
1.	Compressor inlet	2*
2.	Compressor discharge	2*
3.	Cooling air shroud inlet	1
4.	Cooling cap inlet	1
5.	Inlet oil line	1
6.	Discharge oil line	1
7.	Oil in tank	1
8.	Nozzlebox inlet	2*
	C. General	
1.	Turbo speed	1*
2.	Variable area nozzle position	1
3.	Jet nozzle discharge, Static	1

Points noted with asterisk are included in part under previous request, Reference (b).

4. To summarize the request made above and in reference (b) the following list has been compiled to indicate the wiring and pressure tubing requirements between the instrumented nacelle and the airplane cabin. The thermocouple and instrument wire as well as tubing should be terminated in the pressure cabin convenient to the flight engineers position and at the engine firewall or at a point convenient to the engine turbo compressor and control. It is preferable that thermocouples be in cable groups of (9) where possible. The following list includes a small percentage of spares.

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Subject: Flight Test of an R-4360-43 Variable Discharged Turbo-Supercharged Engine
Contract W33-038 ac-18653, Article 15, Item 3.

Conductor Cable

Quantity	Type
36	#18 gage unshielded
4	#14 gage unshielded
23	#18 gage shielded

Thermocouple Cable

Quantity	Type
85	Iron-Constantan (Nat. Bureau of Std's. Spec.)
15	Chromel-Alumel (Nat. Bureau of Std's. Spec.)

Pressure Tubing

Quantity	Type
3	1/8" dia. Stainless Steel
74 (50 to nacelle firewall, 24 to nacelle junction box convenient to Turbo units.)	3/16"dia. Dural tubing

5. In addition to the enclosures noted above we are also enclosing three revised copies of PWA Preliminary Installation Drawing No. 121001 dated October 1, 1947. Again if we can be of further assistance in preparing the instrumentation in the special B-50 test nacelle it would be appreciated if this Division is advised.

6. The R-4360-43 engine No. X-151 intended for shipment to Boeing and installation in a B-50 airplane has completed green test and barring unforeseen difficulties we expect to ship the engine before the end of October 1947.

UNITED AIRCRAFT CORPORATION
Pratt and Whitney Aircraft Division

P. S. Hopper
Assistant Project Engineer

PSH:bc
Enc. 7

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In reply please refer to: TC-92-267
lms Engineering II.

MY OFFICE
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PRATT & WHITNEY AIRCRAFT

DIVISION OF UNITED AIRCRAFT CORPORATION
EAST HARTFORD 8, CONNECTICUT, U.S.A.
CABLE ADDRESS: AIRCRAFT

24 October 1947

VIA: Army Air Forces Representative, East Hartford 8, Connecticut

To: Commanding General
Air Materiel Command
Wright Field
Dayton, Ohio

Attention: TSEPE3B1 and TSEPP-6

Subject: Contract W33-038 ac-16653 - R-4360 V.I.T. Engine - Article 15, Item 5
Monthly Progress Report

60

Reference: (a) PWA letr RHR:lms Engineering II dated 25 September 1947 to the CG, AMC, Wright Field, Dayton, Ohio
(b) PWA letr PSH:bc Engineering II dated 21 October 1947 to the CG, AMC, Wright Field, Dayton, Ohio

1. Since the original progress report covering work accomplished under the subject contract was submitted by reference (a), the following has been accomplished:

(a) The total running time on the nine (9) active R-4360-C engines including both 'C2' and 'V.D.T.' versions has been increased from 2680 to 3000 hours and the total number of R-4360-C engines increased from eight (8) to nine (9).

(b) Army owned XR-4360-39 engine No. X-151 was completely rebuilt and converted to an R-4360-43 engine. The engine has been "Green Tested", torn down, inspected, reassembled and is now being checked out on the test stand prior to shipment to Boeing where it is scheduled to be installed in a single nacelle B-50 test installation. After the installation has been completed, this engine and airplane are scheduled to be returned to Pratt & Whitney Aircraft for flight test work.

(c) Altitude performance and ignition checks were run on XR-4360-39 engine No. X-152 after it had been overhauled. This engine is now being torn down prior to converting it to an R-4360-43 engine in accordance with the requirements of Article 15, Item 1 of the subject contract. Shipping instructions on this engine are requested.

(d) The 50-hour endurance on XR-4360-39 engine No. X-105 run in accordance with the 50-hour pre-flight qualification test schedule was successfully completed at a 3800 BHP Wet and a 3500 BHP Dry take-off ratings. The engine was found to be in generally good condition following the completion of the 50-hour test and was immediately reassembled with a new design, built-up five-piece crankshaft and

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PRATT & WHITNEY AIRCRAFT 24 October 1947

To: Commanding General, Air Materiel Command, Wright Field, Dayton, Ohio

Subject: Contract W33-038 ac-18655 - R-4360 V.D.T.Engine - Article 15, Item 6
Monthly Progress Report

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one-piece master rods with full floating knuckle pins and a one-piece master rod bearing. (All previous R-4360 engines whether 'B' or 'C' engines have used a one-piece crankshaft and two-piece master rods. The five-piece crankshaft permits using a much stronger and simpler master rod construction than currently used in any R-4360 engine.) After being run-in for 10-hours, the five-piece crankshaft and associated parts were removed from the engine for inspection. The all important master rods, bearing journals, knuckle pins, link rods and associated parts were found to be in good condition. It was found, however, that it would be necessary to remove a stress concentration in the crankshaft adjacent to the bolts which hold the crankshaft sections together. The five-piece crankshaft construction is being modified accordingly and a revised shaft is being prepared for test.

(e) The evaluation tests run on R-4360-C engines X-101 and X-157 to determine the relative merits of the top exhaust and top intake cylinders have been completed. The data from these runs are now being analyzed and compared.

(f) 2-3/4 hours endurance at 4000 BHP, 2800 RPM has been completed on engine No. X-114 equipped with Pratt & Whitney designed exhaust headers and 1-1/2 hours endurance at 4300 BHP, 2800 RPM was completed on Engine X-109 when an intermediate cam drive gear failed. This gear is being redesigned. Engine No. X-155 was overhauled and converted to an R-4360-V.D.T. engine, and has been mounted on an endurance stand. 4300 BHP endurance will be attempted on this engine. Engine No. X-156 is currently being modernized.

2. During conference at Wright Field on 22 September 1947 attended by Representatives of the Air Materiel Command, General Electric, and Pratt & Whitney Aircraft, the R-4360 V.D.T. engine and General Electric CHM-2 turbo programs insofar as they affected the single nacelle R-4360 V.D.T. test installation in a B-50 Airplane were discussed in detail. Pratt & Whitney Aircraft stated they expected to be able to send an Experimental R-4360-43 engine to Boeing by the end of October (and barring unforeseen difficulties, we still expect to deliver engine No. X-151 by the end of October). It was understood this engine will be shipped short the fuel injection unit which will be retained at East Hartford for development work until just before the engine is flown. Engine No. X-151 will, however, be shipped with a mock-up fuel injection unit so that the installation in the nacelle at Boeing may proceed unhampered. It was understood the seven exhaust headers and the boost control system will also not be shipped with engine No. X-151; in this connection, Pratt & Whitney stated they desired to incorporate further improvements in the exhaust headers before flight. (Pratt & Whitney expects to deliver the seven exhaust headers to Boeing approximately 15 December 1947). During conference it was also learned that General Electric CHM-2 turbo-superchargers would not be available until March 1948. General Electric agreed to immediately supply a CHM-2 mock-up to Boeing so that they could complete all other details of the single nacelle installation. After the single nacelle installation less turbo and control has been completed by Boeing, the Army stated they would fly the B-50 Airplane to East Hartford, and this delivery would probably be made late in January or early in February 1948. The CHM-2 turbo supercharger and the related boost control system would

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WHITNEY AIRCRAFT

24 October 1947

Commanding General, Air Materiel Command, Wright Field, Dayton, Ohio

Subject: Contract W33-038 ac-18653 - R-4360 V.D.T.Engine - Article 15, Item 5
Monthly Progress Report

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then be installed in the airplane by Pratt & Whitney at East Hartford. General Electric stated that the first CHM-2 turbo supercharger would be shipped in March 1948 and the next two in April 1948. It was agreed that at least the first two of these three special turbo units would be shipped to Pratt & Whitney; one for installation in the B-50 Airplane and one for test stand checks. It was also stated that if the third unit was not required in connection with the proposed B-36 R-4360-51 installation, it would be sent to East Hartford as a spare for the B-50 and test stand installations.

5. Details of the single nacelle R-4360-43 installation in a B-50 Airplane were also discussed with Boeing at Seattle when our Mr. A. E. Smith was there on the 2nd and 3rd of October 1947. The question of the top exhaust engine configuration indicated on our No. 121001 Installation Drawing came up at that time and it was pointed out to Boeing that details of the top exhaust system were not available and the best available information concerning the space it might occupy was shown on the installation drawing. It was also pointed out that at least the first engine delivered for the test nacelle would include side exhaust port outlets in accordance with the details shown on Drawing No. 121001. In accordance with the agreements reached at Boeing, Pratt & Whitney is checking Boeing's proposed ring cowl support for possible interferences with engine parts. The results of these checks will be supplied the Air Materiel Command as well as to Boeing through our Representatives in Seattle. Pratt & Whitney's installation recommendations and request for certain additional instrumentation to be included in the original build up of the special R-4360-43 test nacelle has already been forwarded directly to the Air Materiel Command by reference (b). All installation recommendations have also been forwarded to Boeing as fast as they have been determined so that they may take advantage of our experience at the earliest possible date. Pratt & Whitney Aircraft will continue to keep Boeing and the Air Materiel Command advised of any additional information or changes which affect the installation of the R-4360-43 engine in the B-50 test airplane.

UNITED AIRCRAFT CORPORATION
Pratt & Whitney Aircraft Division

R. H. Begg
Project Engineer

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OCT 1947
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6-27-2

28 October 1947

AMC

CHIEF OF STAFF
U. S. AIR FORCE
WASHINGTON 25, D. C.

ATTN: ASST DEPUTY CHIEF OF STAFF FOR MATERIEL
MAJOR GENERAL E. M. POWERS

H. A. SHEPARD, BRIGADIER GENERAL USAF
Director, PROCUREMENT AND INDUSTRIAL
MOBILIZATION PLANNING

2-2218 WED:haw

TSBUYLA-10-1 LETTER, 13 OCTOBER, SUBJECT: FY-1948 PROCUREMENT PROGRAM, DIRECTS THE PROCUREMENT OF F-12 AIRPLANES BE HELD IN ABEYANCE.

2. THIS ACTION PREVENTS EXECUTING CONTRACTS FOR R-4360-VDT ENGINES AND MAKES IT IMPOSSIBLE TO OBTAIN ENGINES ON THE ANTICIPATED SCHEDULE FOR F-12 AIRPLANES WITH A RESULTANT DELAY IN DELIVERY OF VDT ENGINES TO MEET THE 1949 PROGRAM FOR B-50C AIRCRAFT. IT HAS BEEN DETERMINED FROM A CONFERENCE WITH PRATT & WHITNEY AIRCRAFT DIVISION THAT AN AWARD TO BE FOLLOWED LATER BY DEFINITIVE CONTRACT FOR 14 ENGINES WILL BE NECESSARY BY 15 NOVEMBER 1947, IF THE REQUIRED SCHEDULE OF DELIVERIES IS TO BE MET. THESE ENGINES WOULD CONSTITUTE A PILOT LINE ORDER AND ENABLE THE CONTRACTOR TO MAKE SPECIAL TOOLS, JIGS, FIXTURES, PATTERNS, ETC. THE COST INVOLVED FOR THE 14 ENGINES IS $1,680,000.

3. THIS COMMAND URGENTLY RECOMMENDS IMMEDIATE AUTHORIZATION TO PROCEED WITH CONTRACT IN AMOUNT OF $1,680,000 AND TO APPLY PROCUREMENT AGAINST FUNDS PRESENTLY EARMARKED FOR F-12 AIRPLANES. IF F-12 PROCUREMENT DOES NOT DEVELOP, THESE ENGINES WOULD BE ALLOCATED AS ADVANCE PROCUREMENT FOR B-50C AIRPLANES.

4. THIS PROCEDURE IS IDENTICAL TO AUTHORITY GRANTED ON FY-1946 PROGRAM AUTHORIZING ADVANCE PROCUREMENT OF J-47 ENGINES FOR FY-1947 PROGRAM IN ORDER TO GET PRODUCTION STARTED AND THUS MEET REQUIRED DELIVERY DATE. SIGNED, DIRECTOR, PROCUREMENT AND INDUSTRIAL MOBILIZATION PLANNING.

cc:
TSBPE
TSBPE3
TSBFO
TSBUY

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AMC Form No. 10-3
(Rev 29 Jul 47)

ROUTING AND RECORD SHEET

[redacted] MATERIEL COMMAND

Use this form for inter-office correspondence within headquarters.

Use authorized office symbols to designate addressee and addresser.

Place initials of dictator and typist, telephone number and location to right of signature.

Number all comments consecutively.

Note warning signal at lower left of form. Remaining space is sufficient only for proper spacing of typewritten signature.

Use entire width of sheet, both sides.

Separate comments by horizontal lines across page.

SUBJECT: Request for Shipment of Six (6) Each Type BH-1 Turbosuperchargers to Pratt and Whitney Aircraft Division

TO: TSSAC-50 / FROM: TSRPE3a2 DATE: 28 Oct 47 COMMENT NO. 1

1. It is requested that arrangements be made to ship six (6) each Type BH-1 superchargers to Pratt and Whitney Aircraft Division, United Aircraft Corporation, East Hartford 8, Connecticut. The following information for shipment thereof is as follows:

a. Accountability: Boston USAF Procurement Field Office Accountable Property Officer, USAF 1058 APO

b. Markings: Shipping ticket to be marked "GFP in accordance with terms of other loaned property on P-W Contract AC-18653, Article 15".

2. The six (6) Type BH-1 turbosuperchargers are required by the contractor to perform and complete work called for under Contract W33-038 ac-18653 and are to be furnished as Government loaned property pursuant to the terms of other loaned property (3 each model R-4360-43 engines) as set forth in Article 15 thereof. The loaned property shall be maintained by the contractor in operating condition as governed by progress of development and shall be returned F.O.B. cars and/or freight station, East Hartford 8, Connecticut, at the completion of the contract, to Oklahoma City AMA Depot.

3. It is requested that a copy of the Supply Division shipping instructions be forwarded to TSRPE3a2, Procurement Division.

for M. L. ZOECKLER
Lt. Colonel, Air Corps
Chief, Aeronautical Equipment Section, Procurement Division

GJC:mg
28175

31 Oct 47

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ROUTING AND RECORD SHEET

AIR MATERIEL COMMAND

SUBJECT: AFP 35052 - Bureau of Aeronautics, Navy Department, Washington, D. C.

TO: [illegible] DATE: 21 Oct 47 COMMENT NO. 1

Mr. C. C. DeWitt

1. Attached herein is subject AFP in the estimated amount of $1,000,000.00 covering fixation (A), Item B-4/B-5 strut fittings for the P-51A airplane.

2. It is requested that a Purchase Order be written to the Bureau of Aeronautics covering transfer of funds to your Navy Department for the Air Force.

[illegible]
Chief, Power Plant Branch

GJC:mg
28175

Attn:
AFP 35052

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AMC Form 18-3 (Rev 29 Jul 47)

ROUTING AND RECORD SHEET

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TC-92-765

R MATERIEL COMMAND

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Use entire width of sheet, both sides.

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Note warning signal at lower left of form. Remaining space is sufficient only for proper spacing of typewritten signature.

Place initials of dictator and typist, telephone number and location to right of signature.

Separate comments by horizontal lines across page.

SUBJECT: Request for Change Order to Pratt and Whitney Contract AC-18653

TO: TSBPS3B FROM: TSBPE3A2 34875 DATE: 3 Nov 47 COMMENT NO. 1

1. It is requested that a change order be written crediting Pratt and Whitney Contract AC-18653 in the amount of $18,120.00. The reason for this credit amount is due to contractor's inability to secure satisfactory delivery dates on six (6) each Type BH-1 Turbosuperchargers from its sub-contractor - General Electric - to meet the scope of work to be performed on the contract. Contractor's quotation includes the purchase price of the six (6) units contemplated for purchase from the sub-contractor.

2. The six BH-1 Turbosuperchargers required by the contractor are to be furnished from Supply Division stock. Arrangements for shipment thereof have been completed.

3. The Turbosuperchargers shall be classified as "loaned property", and shall be furnished to the contractor by the Government subject to the terms governing the loan of three (3) experimental engines, Type R-4360-43, as provided in Article 15 of the contract except paragraph (g) on Page 7A. In lieu thereof, the following shall be applicable only to the six (6) BH-1 Superchargers: "The loaned property consisting of the six (6) BH-1 Turbosuperchargers mentioned above shall not necessarily be maintained in operating condition by the contractor but shall be returned to the Government F.O.B. cars and/or freight station, East Hartford, Connecticut, at the completion of the contract."

4. The following assistance is offered to process the above proposed change order:

a. There will be no increase in contract consideration in consequence of contractor's failure to secure Turbosuperchargers from General Electric.

b. The Vinson Trammell Act is not applicable (not for the construction or manufacture of complete aircraft or portion thereof).

c. Contractor gains no advantage from this change.

d. No other provisions of the contract are affected by the foregoing.

e. AFP 33633 in the credit amount of $18,120.00 is attached hereto. The Appropriated Funds set forth on Page 1 in the contract ($2,752,500.00) should be credited and not Contract Authorization ($3,578,250.00).

f. 1948 fiscal year funds only are involved.

g. Contractor will not necessarily be obliged to maintain the loaned Turbosuperchargers in operating condition as governed by the progress of development for the reason that the contractor has no Turbosupercharger spare parts that may be required,

RECORDS SECT, HQ AC [illegible] PPRS FCR

EXTRA COPY RETURNED

VALUE OF PAPER--CHECK ONE ☐ PERMANENT ☐ NON RECORD 6-3

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TO TSBPS3B FROM TSBPE3A2 DATE 3 Nov 47 COMMENT NO 1 (Cont.)

nor the ability to repair them (General Electric product).

h. [redacted] Turbosuperchargers are an integral part of the engine. The engine cannot be tested separately without the corresponding function of the Turbosuperchargers.

i. The total amount of $6,330,750.00 (ceiling price) indicated on Page 1 of the contract and also indicated in Article 44 - Revision of Prices - paragraph (c), should be changed to $6,312,630.00 ($6,330,750.00 - $18,120.00).

j. Coordination is requested by the negotiator.

k. Attached hereto is contractor's wire dated 28 October 1947 concurring in the reduction of the contract by $18,120.00 for reason that the Turbosuperchargers are being supplied by the Government. The amount of $18,120.00 ($3,020.00 per unit) is the price that Supply Division reimbursed General Electric for the Turbosuperchargers on Contract AC-38306.

George J. Callaghan
GEORGE J. CALLAGHAN
Negotiator MRJ

J. L. ZOECKLER
Lt. Colonel, Air Corps
Chief, Aeronautical Equipment
Section, Procurement Division

GJC:mg
28175

Att:
AFP 33633
Contr's wire 10/28/47

(DO NOT WRITE BELOW THIS LINE)

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5 November 1947

Memorandum from the secretary of the Weapons Board to the Vice Chief of Staff, USAF, subject, "Proposal to Improve Performance of the Last Thirty-four (34) Type Aircraft," indicated that all board members except General Kenney of the Strategic Air Command approved the proposal.

(The document is not available for reproduction at Hq, AMC.)

Document No. 64

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TC-92-33

SAVE

IN REPLY REFER TO:

HEADQUARTERS, ARMY AIR FORCES
WASHINGTON

7
8 NOV 1947

SUBJECT: Contract W 33-038 ac-19032
United Aircraft Corporation
(Pratt & Whitney Aircraft Division)

TO: Chief, Current Procurement Branch,
Service, Supply & Procurement Division, GSUSA.

1. Herewith is one number and two cover sheets of Contract W 33-038 ac-19032, submitted under the provisions of PR 305.3 and recommending approval. The contract has been negotiated pursuant to Public Law 703, 76th Congress, as amended by Section 13 of Public Law 580, 77th Congress; Title II of the First War Powers Act of 1941 and Executive Order No. 9001 dated 27 December 1941.

2. The following information is submitted in conformity with PR 305.4, as modified by Procurement Circular No. 41 dated 22 August 1947:

a. Contract W 33-038 ac-19032.

b. Contractor: United Aircraft Corporation, (Pratt & Whitney Aircraft Division), East Hartford, Connecticut.

c. Materials:

Item No.	Description	Unit Price	Total Price
1	Eight (8) aircraft engines, USAF designation R-4360-43, built in accordance with P&W Specification A-7065-B dated 24 June 1947, except that in the event the 150-hour qualification test requirement called for in the specification has not been satisfactorily completed at the time these engines are ready for delivery, engines may be delivered based on the satisfactory completion of a 50-hour preflight qualification test to be conducted on one of the engines to be supplied under the contract in accordance with USAF Specification XR-28398-A dated 27 January 1944, Amendment No. 1 dated 18 March 1944.	$187,000.00	$1,496,000.00
2	(1) Drawings on numerical parts lists. (2) Direct reading paper Vandyke negatives of all drawings of the engine. (3) Engineering Design Changes.	Price included in price of Item 1.	
	TOTAL CONTRACT CONSIDERATION		$1,496,000.00

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ADDRESS REPLY TO: COMMANDING GENERAL, ARMY AIR FORCES, WASHINGTON 25, D. C.

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d. Amount of estimated profit: $149,600.00.
Percent of cost: 11.1% or 10% on sales.

e. Deliveries:

Item No.	Quantity	Delivery Date
1	4 each	15 months after date of contract
	2 each	16 months after date of contract
	1 each	17 months after date of contract
	1 each	18 months after date of contract
2	(1) and (2)	Concurrently with, or prior to delivery of first engine.
	(3)	Subsequent to completing the applicable 150-hour qualification test or 50-hour test, whichever test is used as a basis for accepting the engines.

f. Contract placement policies were considered and applied. The contractor is the designer of the R-4360 engine and is therefore considered "sole source" for this procurement. It has the necessary personnel and experience to perform the work. It has been determined that the work could not be placed elsewhere with adequate assurance of obtaining satisfactory performance and timely deliveries.

g. Authority, granting permission to negotiate this procurement, was approved 1 October 1947.

h. The contract will be placed on a fixed price basis.

i. The form of contract used will be the standard AMC Form No. 32.

j. A special provision for inspection is defined in Article 41 of the contract, namely, that the inspection shall consist of visual inspection only during green test run, disassembly, assembly and packing. If additional inspection is determined by the Government Inspector, the established methods of Government inspection shall be employed.

The contract will provide for Partial Payments in accordance with PR 330, to be identical with Article 42 of Contract W 33-038 ac-18653 with the contractor, approved 28 August 1947.

k. There is no price revision article involved.

l. On a quantity of sixty-seven (67) experimental engines, contractor's costs, much of which were incurred during the period of hostilities when volume was high, amounted to $140,000.00 each against

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the current quotation of $187,000.00. The review of contractor's costs indicated that the current experimental work was estimated to apply less direct labor hours, but that material (including packaging) as outlined in the estimate and new to the engine on this procurement will account for a $40,000.00 to $45,000.00 increase. The present labor rates used by the contractor are currently experienced rates. Overhead rates are slightly lower than contractor's forecasts for the period during which the work is to be accomplished. The overhead rates are based on estimated sales of approximately $115,000,000.00 for 1948 against a probable $140,000,000.00 for 1947. Contractor's letter dated 3 October 1947, containing its quotation and cost breakdown, is forwarded herewith for ready reference.

m. The prices have been reviewed and approved by the Price Control Branch, Air Material Command.

n. The amount of subcontracting is contemplated to be approximately $300,000.00 for the purchase of ignition harnesses, spark plugs, magnetos and carburetors.

o. No royalty payments are involved.

p. The contract will contain Patent Rights and Authorization and Assistance in accordance with PARO Forms Nos. 4 and 10C, modified for the Hamilton Standard Propellers Division of the United Aircraft Corporation, and approved by the Office of the Judge Advocate, Air Material Command.

q. No Government-owned equipment, material or facilities are to be utilized by the contractor in the performance of the contract.

r. This procurement is not covered by a letter contract.

s. This contract is chargeable to Fiscal Year 1948 funds, 60% ($897,600.00) appropriated funds and 40% ($598,400.00) contract authorization.

t. The provisions of the Vinson-Trammell Act shall be applicable to four (4) of the engines which are for installation on B-50 aircraft, but shall not be applicable to the remaining four (4) which are to be used as spares.

u. The financial condition of the contractor is satisfactory.

v. The contractor is believed to be capable of performing the work called for under the contract.

w. The furnishing of a performance bond is not required.

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x. The contract contains Article 43A - Special Provision Relating to Delivery - which provides that so long as the contractor acts with reasonable diligence in performance of the work called for, the Government will terminate performance under the contract pursuant to Article 30 only ("Termination at the Option of the Government") and not under Article 5 ("Delays-Damages"). This Article was previously approved by Chief, Current Procurement Branch for inclusion in Contract W 33-038 ac-18653 with this contractor.

y. Contractor is registered under the Neutrality Act of 1939, Registration No. 39, Category III, expiration date 18 November 1950.

z. The contract has been cleared by the Budget and Fiscal Office, Air Materiel Command.

3. Additional information to be used in conjunction with sub-paragraphs k and l of preceding paragraph as to prices is as follows:

(a) Contractor since the latter years of the war produced R-4360 experimental engines of the "A" and "B" series under contracts with the Navy, the cost of these engines to the contractor averaging $140,000.00 which represented an actual loss to the contractor. Under Statutory Re-Negotiation this loss was adjusted.

(b) The abovementioned contracts were all fixed price without any form of price adjustment article.

(c) The eight (8) engines on this contract (variable discharge turbosupercharger) are much more complicated than either the "A" or "B" series or the latest model of R-4360 production engines. Taking all factors into consideration; the small quantity not built in production, the increase in costs of labor, the VDT type which is very new and requires a much higher material cost, it is believed that the prices are fair and reasonable.

(d) On Contract W 33-038 ac-14294 for $5,000,000.00 covering development of the R-4360-39 engine a price adjustment article was recommended, but was not used because a statement of actual costs under the letter contract, submitted through Boston USAF Procurement Field Office showed an actual loss to the contractor which turned out to be $518,355.00 or slightly over 10%. Ninety-five (95) percent of the work on this contract had been accomplished under the letter contract before the definitive contract was finally approved.

(e) It is known that the only Price Adjustment provision that the contractor would even consider would be a Form V with a ceiling of at least 15% above the present price and that, it is believed, would be of no ultimate advantage to the Government.

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Contract W 33-038 ac-19032

4. An extra copy of the contract marked "Advance Copy" is forwarded and may be retained.

FOR THE SECRETARY OF THE AIR FORCE:

for FREDERICK M. HOPKINS, JR.
Brigadier General, USAF
Director, Procurement and
Industrial Planning
Office, Deputy Chief of Staff, Materiel

3 Incls:
1 - Contract W 33-038 ac-19032
(1 number & 2 cover sheets)
2 - Contr's ltr dtd 3 Oct. 47
3 - "Adv. Cy" of same contract

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CSGSP/EI 49038 1st Ind. GID/73283

DA, GSUSA, Service, Supply & Procurement Div., Washington 25, D. C., 4 December 1947.

To: The Chief of Staff, USAF, Office, Deputy Chief of Staff, Materiel, Attn: Director, Procurement & Industrial Planning.

Attention is invited to the attached one number and two cover sheets of Contract W 33-038 ac-19032 with United Aircraft Corporation, (Pratt & Whitney Aircraft Division), East Hartford, Connecticut.

FOR THE DIRECTOR OF SERVICE, SUPPLY AND PROCUREMENT:

3 Incls. n/c

PHILLIPS W. SMITH
Colonel, GSC
Chief, Current Procurement Branch
Service, Supply & Procurement Division

Subject: Contract W 33-038 ac-19032 - United Aircraft Corp., Pratt & Whitney Aircraft Div.

2d Ind AFMPC-10D

Hq, USAF, Washington 25, D. C. 5 December 1947

To: Commanding General, Air Materiel Command, Wright Field, Dayton, Ohio (Att'n: Chief, Procurement Div. - TSBUYIC)

Returned herewith, as approved 4 December 1947 by the Chief, Current Procurement Branch, GSUSA, are one (1) number and two (2) approval sheets of subject contract with United Aircraft Corp., Pratt & Whitney Aircraft Division, East Hartford, Connecticut.

BY COMMAND OF THE CHIEF OF STAFF:

Incls
n/c

ALFRED A. HOSLER, JR.
Brigadier General, USAF
Director, Procurement & Industrial Planning
Office, Deputy Chief of Staff, Materiel

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AMC Form No. 10-3
(Rev 29 Jul 47)

ROUTING AND RECORD SHEET

AIR MATERIEL COMMAND

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Use authorized office symbols to designate addressee and addressee.

Place initials of dictator and typist, telephone number and location to right of signature.

Number all comments consecutively.

Note warning signal at lower left of form. Remaining space is sufficient only for proper spacing of typewritten signature.

Use entire width of sheet, both sides.

Separate comments by horizontal lines across page.

SUBJECT: Propeller Installation for F-12A

TO: TSEPR FROM: TSEPA5 DATE: 14 Nov. 1947 COMMENT NO: 1

1. In view of the proposed procurement of the F-12A airplane for high speed, long range reconnaissance, studies are being made by the contractor and various AMC laboratories to obtain best possible configuration and performance.

2. It was the contractor's original intention to equip the F-12A with Curtiss Electric Model C-6445-X (variant of Curtiss Specification D 345) propellers using No. 1056-LC4-36 blades. However, recently they have received a proposal from Hamilton Standard outlining some very high efficiencies for their new reversible pitch propellers. Specifically, they proposed the use of their 24260/2H17-12 propeller.

3. The Republic Aviation Corp. and this office are very desirous of obtaining the opinion and recommendations of the Propeller Laboratory on the more preferable of the two installations with view of the mission of the F-12A, namely high altitude, high speed, long range, and artic operation. Performance and airplane data can be obtained from Contractor's Model Specification, a copy of which was forwarded to your office 20 Oct.'47 for review.

Charles F. Barclay
GEORGE E. SCHANTZEL
Colonel, USAF
Chief, Aircraft Section
Procurement Division

pjbrk
JRB/bb
Ext. 22206

To: TSEPA-5 From: TSEPR-4 Date: 5 Dec 1947 Comment No. 2

1. Reference is made to D&DTR No. T-6151 dated 20 October 1947. The Propeller Laboratory has requested both the Hamilton Standard and Curtiss Propeller Companies to submit detailed information concerning the propellers proposed in the reference D&DTR. To date neither Company has submitted a final proposal for such propellers, and as a result the Propeller Laboratory is unable at this time to adequately comment on the proposed equipment.

2. Both Companies have had preliminary discussions with this laboratory during which the problems associated with F-12 propeller equipment were brought out. The principal problems of such an installation are:

a. Obtaining adequate propeller performance with available airplane clearances and engine reduction gears.

b. Designing, fabricating, and type testing a structurally suitable propeller within the time allotted.

c. Providing a propeller mounted and driven two speed fan drive mechanism.

CENTRAL

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TC-92-363

TO	FROM	DATE	COMMENT NO.

To: TSBPA-5 From: TSEPR-4 Date: 3 Dec 1947 Comment No. 2.

3. The XP-12 airplane-propeller clearances were laid out for dual rotation propellers adequate for 3000 BHP engines. It is now necessary that single rotation propellers, adequate for 4300 BHP, be placed within the same diameter limits. Obviously this situation will not permit optimum propeller performance. What is required is a propeller of greater diameter coupled to a lower gear reduction. A factor which further complicates the aerodynamic problem on the F-12 propellers is that, because of time and monetary limitations, the F-12 and B-50 propellers will probably have to use the same basic blade. This means essentially that the blade design arrived at will be a reasonable compromise but will unavoidably penalize somewhat the performance of each aircraft. Studies are currently underway to minimize these performance penalties.

4. It is understood that the first F-12 airplane will be ready for flight in December 1948 and will have 3500 BHP (-35) engines. It is further understood that the second airplane, ready in the early spring of 1949, will be the first to be equipped with 4300 BHP (-43) engines. Ignoring for the time being the fan drive equipment, it is uncertain at present that such a schedule can be met with the basic propeller equipment. The Hamilton 2H17 blade will be modified somewhat, particularly in the shank region, to obtain improved aerodynamic performance and greater structural integrity. While the modified blade can be built and probably tested within the time limit, it would probably not be possible to make any further modifications which might be required as a result of the type test. The Curtiss Propeller Company's recent experience on the C-97 and B-50 propellers has indicated that the C6[illegible]S-C-1056-1C4-30 propeller, as originally proposed, will probably not be structurally suitable for the F-12 and B-50 installation. If so, it will be necessary to develop a larger shank blade and therefore a new hub to accommodate the blade. Thus the Curtiss project should require at least as much time as that of Hamilton Standard, as it is of greater magnitude. Both require that the testing program indicate no serious trouble if the time limit is to be met.

5. In connection with the F-12 propeller structural problems, it is requested that the Republic Company be asked to give the propeller companies and TSEPR-4 any available information regarding the angularity of airflow into the propeller disc of the F-12 at the various conditions of flight. This information is necessary in order that the optimum thrust line to chord line angle may be determined. The optimum angle being defined as that angle which will give the minimum peak value of propeller order vibratory stress in the propeller.

6. With regard to the requirement for the propeller driven fan, the Hamilton Company has done virtually nothing to date, being under the impression that the fan was to be engine mounted (rear). The Curtiss Propeller Division has built such a drive and it is now undergoing development testing.

7. In addition to the Curtiss and Hamilton propellers, the Aeroproducts propeller will be considered in recommending an installation.

(DO NOT WRITE BELOW THIS LINE)

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TC-92-364

AAFC Form No. 10-3
(Rev 19 Mar 45)

ROUTING AND RECORD SHEET

AIR MATERIEL COMMAND

Use this form for inter-office correspondence within headquarters.

Use authorized office symbols to designate addressor and addressee.

Place initials of dictator and typist, telephone number and location to right of signature.

Use entire width of sheet, both sides.

Number all comments consecutively.

Separate comments by horizontal lines across page.

SUBJECT Propeller Installation for F-12A

TO TSBPA-5 FROM TSEPR-4 DATE 3 Dec 1947 COMMENT NO. 2.

8. Arrangements have been made with the Propeller Companies to finalize the designs of the F-12-B-50 propellers within the next month. It is requested that the Propeller Laboratory be permitted to delay the answer to the reference D&DTR until the final designs are arrived at.

D. A. Dickey

D. A. DICKEY
Chief, Propeller Laboratory
Engineering Division

W.T. Grady

W.T. Grady:met
20113, Bldg. 20

TSBPS-CO

CENTRAL FILES

WF-4-17 JAN 47 1500M

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CONFIDENTIAL

MCIXEX/5-6126

HEADQUARTERS
AIR MATERIEL COMMAND

Wright Field, Ohio
20 November 1947

TECHNICAL INSTRUCTIONS

SERIAL NO: TI-2248

SUBJECT: "N" Program - 1948 Fiscal Year Funds - Procurement of Aircraft and Equipment

TO: Procurement Division

1. Problem Presented:

a. To procure aircraft, models and quantities as indicated below:

Model	Quantity	Remarks
B-50B	82	
B-45C	43	
F-84B	154	
F-86B	190	
C-97A	27	
C-119B	37	
R-5F	39	
TP-80	20	
Utility Rescue	10 - 20	Maximum quantity for $2,500,000
B-50C	1	TI-2146, Add #13 dtd 18 Sept 47 provides for the procurement of a B-50C airplane which ultimately is to be converted to a B-54
Procurement of VDT & Engines for FY-48 Change Orders and Price Increase		$37,350,000 has been allocated, however no specific model can be designated at this time.

b. To procure fourteen (14) Pratt Whitney R-4360-VDT engines with funds in the amount of $1,680,000 as advance procurement against procurement of B-12 aircraft, procurement of which will be released at a later date.

c. Allocation of $5,978,000 has been made for the procurement of airplanes, helicopters, miscellaneous equipment, etc., by the Army Ground Forces.

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SERIAL NO: TI-2248

SUBJECT: "M" Program - 1948 Fiscal Year Funds - Procurement of Aircraft and Equipment

2. Factual Data:

a. None.

3. Authority:

a. CS, USAF by letters dated 6 August 1947, 26 August 1947 and 13 October 1947, subject: "Fiscal Year 1948 Aircraft Procurement Program" and T#X dated 29 October 1947 from Deputy Chief of Staff, Materiel.

4. Action Desired:

a. The Procurement Division will take necessary action to accomplish that which is stated in Problem Presented above.

BY COMMAND OF GENERAL McNARNEY:

OFFICIAL:

J. F. McCLENDON
Colonel, USAF
Adjutant General

OFFICIAL

J. F. McCLENDON
Colonel, USAF
Adjutnt General

DISTRIBUTION:

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TSFLT	(1)	TSMCO1A4	(4)
TS6CO6A	(2)	TSMAD2B	(1)
TSAGD4	(1)	TSAGD6B	(1)
AC/AS-4	(3)	AFDRS-2	(4)

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- 2 -

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In reply please refer to ... TC-12-261

ABS:bc Engineering II

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PRATT & WHITNEY AIRCRAFT

DIVISION OF UNITED AIRCRAFT CORPORATION

EAST HARTFORD 8, CONNECTICUT, U.S.A.

CABLE ADDRESS AIRCRAFT

mckeefl

November 21, 1947

United States Air Forces Representative
United Aircraft Corporation
Pratt and Whitney Aircraft Division
East Hartford 8, Connecticut

Subject: Qualification Test - R-4360-43 Engine - Contract W33-038-ac 18653

Enclosure: (A) 150 Hour Qualification Test Schedule

1. This contractor wishes to advise that a 150-hour Qualification Test is to be conducted upon an R-4360-43 engine, No. X-113. This engine is expected to be ready for green test about December 1st, and the Qualification Test is scheduled to begin about December 15th. It is requested this test be officially witnessed.

2. It is intended to conduct the subject test at the following ratings:

Military and Take-off - 4300 BHP at 2800 RPM (wet)

- 4000 BHP at 2800 RPM (dry)

Normal Rated - 3150 BHP at 2600 RPM

This test is to be run in accordance with the requirements of specification A-7065B dated 6-24-47 (Reference Paragraph E-4a). Attached hereto is a detailed schedule to which this engine will be operated showing the sequence, duration, power, speed and other pertinent information of each test period.

3. The engine will be mounted in a cable suspended torque stand and power will be absorbed with a constant speed Hamilton Standard three-bladed propeller operated with a constant speed governor. In so far as is practical the accessory drives are to be loaded as shown in the following table:

Accessory	Accessory Pad Location
Generator (300 Amp)	1
Starter	2
Vacuum Pump	4
Generator (300 Amp)	5

Note: The vacuum pump will be mounted on a single-way adapter.

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Subject: Qualification Test - R-4360-43 Engine - Contract W33-038 ac 18653

The fuel to be used during the subject test will be in accordance with specification AN-F-48, Grade 115/145. An anti-detonant will be used where indicated on the enclosed schedule. The oil with which the engine is to be operated will conform to AN-O-8, Grade 1100.

UNITED AIRCRAFT CORPORATION
Pratt and Whitney Aircraft Division

A B Swenson

A. B. Swenson
Assistant Project Engineer

ABS:bc
Enc.

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RUN NO.	FOCAL TYPE	POINTS	DURATION	No. of					OAT +10° -10°	ALT (MSL)	TEMP. +0 -30 LEAD	TEMP. +0 -30 TRAIL	REMARKS
1	0-25	1 12	4 hrs. 10 hrs.				.[illegible] .[illegible]	-- --					
2a	25-32½	5	5 hrs.	30			.[illegible]	.[illegible]					
2b	32½-40	5	10 hrs.	30			--	--	-	-	-	-	Note1
3b	40-45	2½	2½ hrs.	5			.[illegible]	--					
3a	40-45	2½	5 hrs.	5			.[illegible]	--					
4	50-75	1 10	2 hrs. 20 hrs.				.[illegible] .[illegible]	-- --			525	325	
5	75-100	1 10	2 hrs. 20 hrs.				.[illegible] .[illegible]	-- --					
6	100-125	1 10	2 hrs. 20 hrs.				.[illegible] .[illegible]	-- --			525	325	
7	125-150	1	2 hrs.				.[illegible]	--			525	325	
8	150-175	1	2 hrs.				.[illegible]	--					
9	175-200	1	2 hrs.				.[illegible]	--					

* Best Economy / Nature Strength

Note 1: MAP varied, several mixtures tested to be obtained with minimum change of propeller pitch.

Note 2: Maintain 90 pounds oil out pressure on all runs at 60% Normal Rated Speed and above.

ENGINE RATINGS

Military and Take-off - 4300 BHP at 2800 RPM (wet)
- 4000 BHP at 2800 RPM (dry)

Normal - 3150 BHP at 2600 RPM

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File

TSECONT Form No. 30
(Rev' 16 June 46)

UNITED STATES AIR FORCE
AIR [redacted] COMMAND
WRIGHT FIELD, DAYTON, OHIO

TC-92-56

CHANGE ORDER

Date: 26 November 1947
Serial No.: 34875
Change Order No.: 1
Contract No.: W 33-038 ac-18653 [redacted]
AFF(s): 33633 Exp.Ord. FY 1948
Class: -

TO:
United Aircraft Corporation
(Pratt & Whitney Aircraft Division)
East Hartford, Connecticut

SIM		
	Fixed-Price	$18,120.00
[redacted]	[redacted]	
DECREASE	[redacted]	
	[redacted]	
	TOTAL	

SUBJECT: Government-Furnished Property

1. Pursuant to Article 21 of Contract W 33-038 ac-18653, the Government shall furnish to the Contractor, six (6) BH-1 Turbosuperchargers subject to the terms governing the loan to the Contractor of three (3) Government-owned experimental engines, Type R-4360-43, as provided in Article 15 of the contract, except that said six BH-1 Turbosuperchargers shall not necessarily be maintained in operating condition by the Contractor as required under the provisions of Paragraph (g) of said Article 15, but shall be returned to the Government f.o.b. cars and/or freight station, East Hartford, Connecticut, at the completion of said contract.

As a result of the above change the total contract price is hereby reduced in the sum of - $18,120.00

REASON: Contractor was unable to secure satisfactory delivery on six Turbosuperchargers from its Sub-Contractor the General Electric Company.

2. As a result of the above, the amount set forth in Paragraph (c) of Article 44 is reduced by $18,120.00.

This Change Order has been negotiated pursuant to Public Law 703, 76th Congress, as amended, by Public Law 580, 77th Congress, Section 13, Title II of the [redacted] First War Powers Act, 1941, and Executive Order No. 9001, 27 December, 1941. Except as hereby amended, all terms and conditions of the contract affected, as heretofore amended or modified, shall remain unmodified and in full force and effect and shall also apply in carrying out the provisions of this Change Order.

1st Indorsement

TO: Contracting Officer

1. Contractor hereby accepts the above Change Order.

East Hartford, Connecticut (Place) December 30, 1947 (Date)

UNITED AIRCRAFT CORPORATION (AFFIX CORPORATE SEAL)

W. P. Gwinn

Signature of Official with office held

W. P. Gwinn, General Manager
Pratt & Whitney Aircraft Division

THE UNITED STATES OF AMERICA

By Marvin R. Shaw

MARVIN R. SHAW
Contracting Officer

Date: 5 January 1948

17 DEC 1947

The supplies and services to be obtained by this instrument are authorized by, are for the purpose set forth in, and are chargeable to allotments below enumerated, the available balances of which are sufficient to cover the cost thereof.

Credit: 2180705, 802-7004 P 110-09 S 33-038

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In reply please refer to:
RHB:lms Engineering II.

PRATT & WHITNEY AIRCRAFT

DIVISION OF UNITED AIRCRAFT CORPORATION
EAST HARTFORD 8, CONNECTICUT, U.S.A.
CABLE ADDRESS "AIRCRAFT"

28 November 1947

VIA: United States Air Force Representative, East Hartford 8, Connecticut

To: Commanding General
Air Materiel Command
Wright Field
Dayton, Ohio

ARMY OFFICE
APPROVED
CONCURRED IN
NO COMMENT
12/3/47

Attention: TSBPE3B1

Subject: Contract W33-038 ac-18653 - R-4360 V.D.T. Engine - Article 15, Item 5
Monthly Progress Report

Reference: (a) PWA letr RHB:lms Engineering II dated 24 October 1947 to CG, AMC Wright Field, Dayton, Ohio, via USAF Representative, East Hartford, Conn.
(b) PWA letr ABS:bc Engineering II dated 21 November 1947 to USAF Representative, East Hartford, Conn.

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1. The following is a summary of the work accomplished under Contract W33-038 ac-18653 since the last monthly progress report was submitted by reference (a):

(a) The total running time on R-4360-C engines has been increased from 3000 to 3180 hours. A tenth R-4360-C Engine, No. X-113, is being assembled and will be used to conduct the 150-Hour Qualification Test outlined in reference (b).

(b) Army owned Engine No. X-152 has been completely torn down, inspected and converted from an XR-4360-39 engine to an R-4360-43 engine. The engine is now being assembled prior to "green test", tear down, inspection, final assembly, and shipment in accordance with Article 15, Item 1, of the subject contract. R-4360-43 Engine No. X-151 which is scheduled to be installed in a single nacelle B-50 installation has been received at Boeing.

(c) R-4360-43 Engine No. X-105 was reassembled with a single piece crankshaft and a total of 11 hours overload endurance at the V.D.T. wet take off conditions (4300 BHP at 2800 RPM) has been completed to date.

(d) 12-1/2 hours overload endurance at 4000 BHP, 2800 RPM has been completed on R-4360-VDT Engine No. X-114 equipped with Pratt & Whitney designed exhaust header pipes. The exhaust system, which has completed 76 hours of running, and the engine were subject to a back pressure of 55" Hg during the 12-1/2 hours of endurance at 4000 BHP.

(e) An analysis of the comparative data taken on R-4360-C Engines X-101 and X-157 equipped with top intake and top exhaust type cylinders respectively shows the top intake construction is optimum and airplane installations no longer need provide for the extra engine diameter required with the top exhaust configuration. The airplane manufacturers have already been advised of this decision.

see memo 12-4-47

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TC-92-260

PRATT & WHITNEY AIRCRAFT

Commanding General, Air Materiel Command, Wright Field, Dayton, Ohio

Subject: Contract W33-038 ac-18653 - R-4360 V.D.T.Engine - Article 15, Item 5
Monthly Progress Report

(f) R-4360-43 Engine No. X-109 was reassembled and calibration work to determine optimum V.D.T. operating conditions is now in progress. 12-1/2 hours endurance at 3800 BHP has been completed and is being continued on R-4360-C2 Engine No. X-101. A revised 5-piece crankshaft is being prepared for test and will be installed in Engine No. X-157. The modernization of Engine No. X-156 continues. Engine No. X-155 was mounted on an endurance stand and the run-in completed when a link rod was damaged; the engine has been removed from the test stand for repairs.

(g) The construction of the first V.D.T.Boost Control System is proceeding satisfactorily and is expected to be completed sometime in December 1947. This unit will be used for bench checks as it cannot be checked in combination with the engine until CHM-2 turbo-superchargers become available. It is understood the CHM-2 superchargers will be available sometime in March 1948.

UNITED AIRCRAFT CORPORATION
Pratt & Whitney Aircraft Division

R. H. Bogg
Project Engineer

Bilms

RECEIVED DEC 1947 ARMY DEPOT PRATT & WHITNEY AIRCRAFT

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COORDINATION
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CHIEF OF ADMIN.
AIR INSPECTOR
PUBLIC RELATIONS
JUDGE ADVOCATE
PERSONNEL (T-1)
INTELLIGENCE (T-2)
ENGINEERING (T-3)
Geo Gaugler
K. A. Rhoads
SUPPLY (T-4)
PLANS (T-5)
BASE C. O.
OTHER

ATSC Form No. 10-508
(Rev. 22 Oct 45)
(PRINT SYMBOL AND INITIALS IN APPROPRIATE BLOCK)

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Basic ltr fm Boston USAF Procurement Field Office dtd 17 Nov 47, subj: Pratt & Whitney Aircraft Division, UAC, Contract W33-038 ac-18653

1st Ind. T3BPE3A2:GJC:mg

Headquarters, Air Materiel Command, Wright Field, Dayton, Ohio
1 December 1947

To: Chief, Boston USAF Procurement Field Office, 18 Tremont Street, Boston 8, Massachusetts. Attn: TSZBO4

1. Relative to the Boston USAF Procurement Field Office inquiry in basic communication dated 17 November 1947 as to the commencement date of subject contract, please be informed that the date thereof is 1 July 1947 as stated in Article 15, paragraph (g), of the contract. Any costs reflected in contractor's records prior to 1 July 1947 against subject contract should be considered as "not allowable" inasmuch as no Article in the contract stipulates that costs preceding 1 July 1947 would be permitted.

BY COMMAND OF GENERAL McNARNEY:

/s/ M. L. Zoschke

J. L. ZOSCHKE
Lt. Colonel, USAF
Chief, Aeronautical Equipment Section, Procurement Division

WP-L-8 NOV 45 3000M

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FC-92-258

In reply please refer to: WAP:Bs Engineering III.

PRATT & WHITNEY AIRCRAFT

DIVISION OF UNITED AIRCRAFT CORPORATION
EAST HARTFORD 8, CONNECTICUT, U.S.A.
CABLE ADDRESS AIRCRAFT

1 December 1947

VIA: United States Air Force Representative

To: Commanding General
Air Materiel Command
Wright Field
Dayton, Ohio

ARMY OFFICE
APPROVED
CONCURRED IN
NO COMMENT 12/9/47

Attention: TSBPE3B1

Subject: Contract W33-038 ac-18653 - Additions to

References: (a) PWA letr WPG:ik dated 21 November 1947 to A.M.C., Boston USAF Procurement Field Office, via USAF Repr. E.Htfd., Connecticut
(b) Conference at Wright Field on 25 November 1947 between Mr. R.A.Bittner of the Air Materiel Command, and Mr. R.H.Begg of Pratt & Whitney Aircraft

1. This letter is further to reference (a).

2. During conference at Wright Field on the 25th of November 1947, the Air Materiel Command stated that they desired the development of an axial power take off suitable for driving a remotely mounted gear box and generators from the R-4360-43 engine be completed concurrently with the development of the R-4360-43 engine and not subsequent to completion of Contract W33-038 ac-18653. Pratt & Whitney Aircraft proposes to complete development of an axial power take off drive as part of the R-4360-43 engine under Contract 18653 at a contract price increase of $18,000.00. This additional drive will result in an engine weight increase of 22 pounds and an engine oil flow increase of 5 pounds per minute at normal rated and military rated engine speeds. The axial power take off drive can be supplied with a flanged drive and torque ratings in accordance with Drawing No. AND-10,008. If this proposal is accepted the R-4360-43 engine model specification No. A-7065 will be revised accordingly.

PR-33659

UNITED AIRCRAFT CORPORATION
Pratt & Whitney Aircraft Division

W. A. Parkins
Engineering Manager

RECEIVED DEC 1947 ARMY OFFICE PRATT & WHITNEY AIRCRAFT

WAP:Brs

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TC-92-55 2

File

United Aircraft Corporation
(Pratt & Whitney Aircraft Division)
East Hartford, Connecticut

Contract W 33-038 ac-19032

ac 19032

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x
x
x
x
x
x
x
x

Approval recommended:

[illegible] 1947

RALPH T. BUNN
Deputy Chief, Procurement Division.
Office, Deputy Chief of Staff, Materiel:

DEC 4 1947

APPROVED:
By direction of The Secretary of Army under the provisions of Public Law 703, 76th Congress (as amended by Section 13 of Public Law 580, 77th Congress); Title II of the First War Powers Act, 1941 and Executive Order No. 9001, 27 December 1941.

PHILLIPS W. SMITH
Colonel, GSC
Chief, Current Procurement Branch
Procurement Group, GSUSA

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TSC Form No. 32

CONTRACT
(SUPPLIES)

Contract No. W 33-038 ac-19032 (18860)

Preference Rating.....

AAC/em

WAR DEPARTMENT

UNITED AIRCRAFT CORPORATION
(PRATT & WHITNEY AIRCRAFT DIVISION)
(Contractor)

Contract for Eight R-4360-43 Engines and Data ..... *Amount,* $ 1,496,000.00

Place, Air Materiel Command, Wright Field, Dayton, Ohio.

The Finance Officer, U. S. Army, Army Base, Brooklyn, New York, is designated as the officer to make payments in accordance with this contract. The supplies and services to be obtained by this instrument are authorized by, are for the purposes set forth in, and are chargeable to allotments below enumerated, the available balances of which are sufficient to cover the cost thereof.

2188705 802-7004 P 110-09 S 33-038.....$ 897,600.00...Appropriated Funds
(2188705).825 802-7004 P 110-09 S 33-038.. 598,400.00...Contract Authorization
$1,496,000.00

PR: 25295 Class: 02-A

Initiator: Raymond A. Bittner, TSHPE3E1

Contractor's invoices, or WSD's used as invoices, shall be made out to the Finance Officer designated to make payment hereunder, and shall be sent by the Contractor, for recording, to Chief, Boston AAF Procurement Field Office, 15 Tremont Street, Boston 8, Massachusetts, which has been designated as the place of AAF administration for this contract.

This Contract has been negotiated pursuant to Public Law 703, 76th Congress, as amended by Section 13 of Public Law 580, 77th Congress; Title II of the First War Powers Act, 1941, and Executive Order No. 9001, 27 December 1941.

(1-g) —1—

Encl 1-a

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ARTICLE 15 - Products and Materials to be Furnished - (a) The Contractor shall furnish and deliver to the Government the following articles in the quantities and at the unit and total prices set forth below:

Item 1 - Eight (8) Aircraft Engines, AAF designation R-4360-43, in accordance with Contractor's Specification No. A-7065-B dated 24 June 1947 except that in the event the 150-hour qualification test requirement called for in the specification, which is to be conducted under the requirements of Contract No. W 33-038 ac-18653, has not been satisfactorily completed at the time such engines are ready for delivery, such engines may be delivered based on the satisfactory completion of a 50-hour pre-flight qualification test, to be conducted on one of the engines to be supplied under this contract, in accordance with AAF Specification NB-28396-A dated 27 January 1944, Amendment No. 1 dated 18 March 1944. All subsequent engines shall be built substantially in accordance with the Parts List of the pre-flight qualification test engine. In the event that it is necessary for the Contractor to conduct the 50-hour pre-flight qualification test (AAF Specification NB-28396-A dated 27 January 1944, Amendment No. 1 dated 18 March 1944) on an engine to be delivered under this contract, there shall be no increase in price. The unit price for Item 1 is $157,000.00; total price . . $1,496,000.00

Item 2 - The Contractor shall furnish the following data for the engines called for in Item 1 above. The price of such data is included in the price of Item 1 above.

Drawings - reproducible copies of the following material:

a. Numerical parts list of the engine which completes the 150-hour qualification test under the requirements of Contract No. W 33-038 ac-18653 or a numerical parts list of the engine which completes the 50-hour pre-flight substantiation test if this latter test is run in accordance with the procedure outlined above.

b. An assembly specification with an index arranged in alphabetical order of the parts provided in the list in paragraph a. of this Item.

c. One (1) set of direct reading paper Vandyke negatives of all drawings of the engine including detail, sub-assembly, assembly and installation drawings not previously furnished to the Air Material Command. In the event that the original experimental drawings used to produce the eight

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engines called for in this contract are not suitable for obtaining Vandyke negatives, two (2) sets of blueprints shall be furnished in lieu thereof.

d. Copies of Engineering Changes in Design affecting the R-4360-43 engine model released subsequent to completing the applicable 150-hour qualification test or 50-hour test, whichever test is used as a basis for accepting engines.

(b) Unless provided herein, the Government will furnish no facilities to the Contractor in connection with the performance of this contract.

(c) For the purposes of Article 1 (c) hereof, the only Government specifications applicable to this contract are those listed and dated in Contractor's Specification No. A-7065-B dated 24 June 1947 and AAF Specification No. [illegible] dated 27 January 1944, and Amendment No. 1 thereto dated 18 March 1944. If any supplementary specifications are mentioned in said Specifications, the Contractor will use its best efforts to comply with all details of such supplementary specifications.

(d) The Contractor shall assign serial numbers for the engines called for in Item 1 above in accordance with past methods and such serial numbers shall appear on the invoices submitted to the Government by the Contractor.

(e) The cost of packing the articles called for in paragraph (a) above in accordance with Article 19 hereof, is included in the unit and total prices specified in paragraph (a) above.

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(g) All of the articles called for in paragraph (a) of Article 15 hereof shall be delivered to the Government in accordance with the following schedule:

Item	Quantity	Within months from and after date of approval of this contract
1	4	15
	2 additional	16
	1 additional	17
	1 remaining	18
2	All the data called for under Item 2 shall be delivered to the Government concurrently with or prior to delivery of the first engine called for under Item 1 of paragraph (a) of Article 15 hereof.	

(h) No shipment of the engines called for under Item 1 of paragraph (a) of Article 15 hereof will be made until the Contractor receives shipping instructions. The Contractor shall make written request to Commanding General, Air Material Command, Wright Field, Dayton, Ohio, Attention: TSRPK3R1, for shipping instructions not later than fifteen (15) days prior to the date on which any of the engines called for under said Item are ready for shipment.

(i) The data called for under Item 2 of paragraph (a) of Article 15 hereof shall be delivered to the Government by mail addressed to Commanding General, Air Material Command, Wright Field, Dayton, Ohio, Attention: TSRPK3R1.

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ARTICLE 44 .pproval—This contract shall be subject to the written approval of the Secretary of War or such individual as he may designate and shall not be binding until so approved. The date of such approval shall be deemed to be the true date for the purpose of determining all times of performance.

In witness whereof, the parties hereto have executed this contract as of the day and year first above written.

THE UNITED STATES OF AMERICA

Type or print under their respective signatures the names of the witnesses and Contractor's representative.

By Marvin R. Shan
MARVIN R. SHAN
Contracting Officer
(Official title)

Two witnesses:

Gertrude R. Sparks
Gertrude R. Sparks

Helen C. Burke
Helen C. Burke

UNITED AIRCRAFT CORPORATION
(PRATT & WHITNEY AIRCRAFT DIVISION)

By A. F. Gwinn
W. P. Gwinn, General Manager
Pratt & Whitney Aircraft Division
Title

Contractor.

East Hartford, Connecticut
(Business address)

I, H. E. Carlson, certify that I am the Assistant Secretary of the corporation named as contractor herein; that W. P. Gwinn who signed this contract on behalf of the contractor, was then General Manager of said corporation; that said contract was duly signed for and in behalf of said corporation by authority of its governing body, and is within the scope of its corporate powers.

*Pratt & Whitney Aircraft Division

H. E. Carlson
H. E. Carlson, Assistant Secretary

[CORPORATE SEAL]

I hereby certify that, to the best of my knowledge and belief, based upon observation and inquiry, , who signed this contract for UNITED AIRCRAFT CORPORATION (PRATT & WHITNEY AIRCRAFT DIVISION), had authority to execute the same, and is the individual who signs similar contracts on behalf of this corporation with the public generally.

Contracting Officer.

(44-c)

W 33-038 ac-19032

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Secret

Orig ltr hand carried BPA 12-9-47

5 Dec 1947

SUBJECT: Proposal to Improve Performance of the Last Thirty-Four (34) B-36 Type Aircraft

TO: Commanding General
Air Materiel Command
Wright Field, Dayton, Ohio

Attention: TSTEX (TSRPA)

1. The attached proposal submitted by Consolidated-Vultee for improving the last thirty-four (34) B-36 type aircraft by installation of the R-4360-VDT engine is approved. It is requested that your Command take necessary action to implement this proposal as expeditiously as possible.

2. With reference to the estimated additional cost of approximately $15,000,000.00 for Government Furnished Equipment, it has been agreed that six (6) or seven (7) B-50C's from Fiscal Year 1949 procurement will be cancelled and this saving in funds applied to cover the required $15,000,000.00.

3. It is requested that this Headquarters be informed of any change in delivery schedule of B-36F and B-36G aircraft from that indicated on the attached proposal.

BY COMMAND OF THE CHIEF OF STAFF:

2 Incls
1. Teletype fr Consolidated-Vultee
2. Ltr fr Hq AAF, dtd 10 Sep 47 w/1st Ind fr AMC, dtd 30 Sep 47

H. A. CRAIG
Lieutenant General, USAF
Deputy Chief of Staff, Materiel

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B-36 Jan
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HQS. AMC WRIGHT FIELD, DAYTON, OHIO

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USAF PLANT REPRESENTATIVE,
CONSOLIDATED VULTEE AIRCRAFT CORPORATION,
FORT WORTH DIVISION - FORT WORTH, TEXAS. AIR MAIL
XX

TSHPA3B-12-42 . . . CONTRACT AC-7, B-36C AIRPLANE. SUBJECT: MCR #735. MODERNIZATION OF ONE B-36 AIRPLANE. REF: (A) CVAC LETTER FW#4786 DATED 4 JUNE 1947, (B) TELEPHONE CONVERSATION BETWEEN LT.COL.T.P.GERRITY AND R.O.RIAN, 26 NOV. 1947, IN REGARD TO VDT PROGRAM. AUTHORIZATION IS HEREBY GRANTED TO ISSUE CCN WITH MASTER SERIAL NO. B-52683 TO READ AS FOLLOWS:

"IN LIEU OF THE CONTRACTOR FURNISHING THE LAST FIVE B-36 AIRPLANES, SERIAL NUMBERS 44-92099, 44-92100, 44-92101, 44-92102, AND 44-92103 CALLED FOR ON CONTRACT AC-7, THE CONTRACTOR IS HEREBY AUTHORIZED TO COMPLY WITH THE REQUIREMENTS OF MCR #735 (MODERNIZATION OF B-36 AIRPLANE) AS FOLLOWS: THE MODIFICATION OF 34 B-36 AIRPLANES IN ACCORDANCE WITH CVAC STATEMENT OF WORK, FZD-36-003B DATED 18 JULY 1947. THE FIRST AIRPLANE OF SAID 34 AIRPLANES WILL BE DESIGNATED AS THE "PROTOTYPE B-36C" AND THE REMAINING 33 AIRPLANES AS B-36C AIRPLANES. THE PROTOTYPE AIRPLANE WILL UTILIZE PROTOTYPE ENGINES, TURBOSUPERCHARGERS, PROPELLERS AND ASSOCIATED CONTROLS. THE 33 B-36C AIRPLANES WILL INCORPORATE PRODUCTION EQUIPMENT.

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TSHPA3B/RJW:ICH/3-0232/F-735 12/23/47

GEORGE E. SCHAETZEL, COLONEL, USAF,
CHIEF, AIRCRAFT SECTION,
PROCUREMENT DIVISION.

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IN CONJUNCTION WITH THIS MODERNIZATION PROGRAM THE CONTRACTOR WILL PERFORM THE FOLLOWING ADDITIONAL WORK:

(A) MODIFY THE PRESENT 1/14 SCALE COMPLETE POWERED MODEL FOR R-4360-51 NACELLES AND TEST TO DETERMINE POWER EFFECTS ON STABILITY AND CONTROL WITH TRACTOR PROPELLERS.

(B) FABRICATE 1/14 SCALE DUCT AND R-4360-51 NACELLE MODEL MOUNTED ON TWO-DIMENSIONAL WING SECTION AND TEST TO DETERMINE OPTIMUM INLET DUCTS AND LIP DESIGN AND TO MEASURE COOLING AIR RAM AVAILABLE BEHIND RUNNING PROPELLERS.

(C) MODIFY THE PRESENT 1/26 SCALE MODEL, POWER OFF FOR R-4360-51 NACELLES AND TEST TO DETERMINE THE EFFECTS OF TRACTOR NACELLES ON DRAG AND STALL CHARACTERISTICS AND STABILITY POWER OFF.

(D) FURNISH THE NECESSARY REVISIONS TO THE PILOT'S HANDBOOK, ERECTION AND MAINTENANCE HANDBOOK, AND OTHER AFFECTED TECHNICAL DATA.

(E) FABRICATE A FULL SCALE NACELLE MOUNTED ON STUB WING AND TEST TO DETERMINE OPERATION, COOLING CHARACTERISTICS, PROPELLER AND EXTENSION SHAFT VIBRATION.

(F) PROVIDE THE NECESSARY SPECIAL TOOLS AND GROUND HANDLING EQUIPMENT IN ACCORDANCE WITH 5-AIR PROVISIONS.

(G) COMPLETE A 60 HOUR FLIGHT TEST PROGRAM ON THE "PROTOTYPE B-36C" AIRPLANE THE DETAILS OF WHICH WILL BE ESTABLISHED IN COORDINATION WITH AND APPROVED BY THE AMC PROJECT OFFICE, AND SET FORTH IN A DOCUMENT TO BE MADE A PART OF THE SUPPLEMENT WHICH REFERENCES THIS CCN.

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(H) INSTRUMENTATION WILL BE INCORPORATED BY THE CONTRACTOR IN THE "PROTOTYPE B-36C" FOR PHASES I, II, AND III, FLIGHT TESTING.

(I) INSTRUMENTATION WILL BE INCORPORATED BY THE CONTRACTOR IN ONE B-36C AIRPLANE FOR PHASE IV FLIGHT TESTING.

AS RESULT OF FURTHER INVESTIGATION OF THE LONGITUDINAL STABILITY OF THE B-36C AIRPLANE, IT HAS BEEN DETERMINED THE LONGITUDINAL STABILITY OF THE PRESENT B-36C CONFIGURATION IS APPARENTLY SATISFACTORY. THEREFORE, THE CONDITION IMPOSED ON THE CONTRACTOR IN THE CCN WHICH THIS CCN SUPERSEDES IS REMOVED. HOWEVER, IT IS REQUIRED THAT THE CONTRACTOR INSTITUTE A CONTINUING ANALYSIS OF THE LONGITUDINAL STABILITY OF THE B-36C AIRPLANE, AND ALSO INITIATE A STUDY TO DETERMINE WHAT CHANGES CAN BE MADE TO THE AIRPLANE TO INSURE A POSITIVE STATIC MARGIN OF 5% IN THE MOST CRITICAL CONDITIONS SHOULD THE LONGITUDINAL STABILITY NOT PROVE OUT TO BE AS SATISFACTORY AS PRESENTLY BELIEVED.

WITH REGARD TO THE POOR DIRECTIONAL STABILITY OF THE PRESENT B-36C CONFIGURATION, IT IS REQUESTED THAT THE DIRECTIONAL STABILITY OF THE B-36C AIRPLANES BE INCREASED TO A VALUE SUBSTANTIALLY THE SAME AS THE PRESENT B-36 AIRPLANES. BEFORE RELEASING ENGINEERING ON THE REDESIGNED TAIL, IT IS REQUESTED THAT QUANTITATIVE DATA ON DIRECTIONAL STABILITY BE OBTAINED FROM FLIGHT TESTS OF THE YB-36 AND THE 1/14 POWERED-SCALE MODEL TESTS BE COMPLETED. THE CONTRACTOR WILL ESTABLISH A HIGH PRIORITY FOR ABOVE FLIGHT TEST AND WIND TUNNEL PROGRAM. THE POWERED MODEL TESTS SHOULD INCLUDE TESTS OF THE CONTRACTOR'S PROPOSED TAIL REDESIGN SO AS TO INSURE THE OPTIMUM TAIL CONFIGURATION FOR B-36C AIRPLANES.

THIS CCN CANCELS AND SUPERSEDES CCN WITH MASTER SERIAL NO. B-52610 RELATIVE TO THE MODIFICATION AND TESTING OF THE 1/26 SCALE MODEL POWER OFF, AND CCN WITH MASTER SERIAL NO. B-52603 RELATIVE TO THE INSTRUMENTATION PROGRAM IN GENERAL."

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NOTE TO AAFPR: NO PURCHASE REQUEST HAS BEEN PROCESSED TO COVER THIS WORK. THIS CHANGE WILL BE FINANCED BY THE FUNDS MADE AVAILABLE BY THE REMOVAL OF THE FIVE AIRPLANES FROM THE END OF THE CONTRACT. THE CONTRACTOR SHALL BE ENTITLED TO REIMBURSEMENTS OF CANCELLATION COSTS INCURRED IN THE REMOVAL OF THE FIVE AIRPLANES, AND SHALL BE REIMBURSED FOR COSTS INCURRED IN CONNECTION WITH THE MODIFICATION OF THE B-36 AIRPLANES, BOTH TO THE EXTENT APPROVED BY THE LOCAL CONTRACTING OFFICER. IN ADDITION THE CONTRACTOR WILL BE PAID A DOLLAR AMOUNT OF FEE WHICH IS UNKNOWN AT THIS TIME. THE AMENDMENT TO CONTRACT AC-7 WHICH FORMALIZES THIS CHANGE WILL PROVIDE THAT ANY FEE EARNED BY THE CONTRACTOR AS A RESULT OF THIS CHANGE, WILL BE PAID OUT OF FUNDS ALREADY ON THE CONTRACT.

cc - CVAC - Dayton
TSEQM-2

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In reply please refer to: lms · Engineering II.

PRATT & WHITNEY AIRCRAFT

DIVISION OF UNITED AIRCRAFT CORPORATION
EAST HARTFORD 8, CONNECTICUT, U.S.A.
CABLE ADDRESS "AIRCRAFT"

30 December 1947

ARMY OFFICE
APPROVED
CONCURRED IN
NO COMMENT 30/12/47

TA: United States Air Force Representative, East Hartford 8, Connecticut

O: Commanding General
Air Materiel Command
Wright Field
Dayton, Ohio

CONTRACT FILES
RaB 1/13/49

ttention: TSBPE3B1

ubject: Contract W33-038 ac-18653 - R-4360 V.D.T. Engine - Article 16, Item 5
Monthly Progress Report

eference: (a) PWA letr RHB:lms Engineering II dated 28 November 1947 to CG, AMC, Wright Field, Dayton, Ohio, via: USAF Representative, East Hartford, Connecticut
(b) PWA letr ABS:bc Engineering II dated 21 November 1947 to USAF Representative, East Hartford, Connecticut

The following is a summary of the work accomplished under Contract W33-038 ac-18653 since the last monthly progress report was submitted by reference (a):

(a) The total running time on R-4360-C engines has been increased from 3180 to 3370 hours. It is significant to note that although the V.D.T. Program has been underway for only a few months, 830 hours of engine operation with V.D.T. type rear sections have already been accumulated.

(b) Army owned Engine No. X-152 was converted from an XR-4360-39 engine to an R-4360-43 engine and then "Green Tested", torn down, inspected and re-assembled. Following a final acceptance test, Engine No. X-152 was shipped to Boeing Aircraft on the 23rd of December 1947 as the second and last engine to be delivered under Item 1, Article 16, of the subject contract. Engine No. X-151 was previously shipped against this contract, also to Boeing, on the 29th of October 1947.

(c) The tenth R-4360-C engine, No. X-113, was assembled "Green Tested", torn down, inspected and re-assembled during the last month. The engine which is equipped with a Pratt & Whitney designed exhaust system has been reinstalled on the test stand and is now ready to run the 150 Hour R-4360-43 Qualification Test outlined in reference (b

(d) The endurance time at 4300 BHP, 2800 RPM on R-4360-43 Engine No. X-105 has been increased from 11 to 27-1/2 hours. No major difficulties have been encountered during this test.

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Commanding General, Air Materiel Command, Wright Field, Dayton, Ohio

Subject: Contract W33-038 ac-19653 - R-4360 V.D.T.Engine - Article 15, Item 5
Monthly Progress Report

(e) R-4360-43 Engine No. X-114, which also incorporated a Pratt & Whitney designed exhaust system, was transferred to a test stand equipped with temporary BH-1 exhaust driven superchargers and the endurance time at 4000 BHP, 2800 RPM on this engine increased from 12-1/2 to 19 hours. The BH-1 turbos in this special test stand set up are to be replaced with a CHM-2 turbo supercharger when these units are made available for use with Experimental R-4360-43 engines.

(f) Engine No. X-167 has been reassembled with a revised five-piece crankshaft and a 10 hour run-in completed on it. The engine is now being removed from the test stand prior to disassembling the engine and examining the crankshaft.

(g) Cruise endurance will be run on R-4360-43 Engine No. X-156 as soon as the modernization work now in progress has been completed. The engine is now being assembled with the latest available V.D.T. rear section and cylinder assemblies. Engine No. X-155 is being overhauled and a modern set of cylinders is also being installed on this engine.

(h) R-4360-C2 Engine No. X-101 completed 13-1/2 hours endurance at 3800 BHP, 2800 RPM when a knuckle pin failed through a rough machined oil hole. The engine has been torn down, inspected and is now being overhauled. Engine No. X-109, which is being used for V.D.T. calibration work, has been removed from the test stand for repairs after 159 hours engine time since overhaul.

(i) The first prototype V.D.T. Boost Control is expected to be completed within the next few days. This unit will be used for bench checks until CHM-2 superchargers become available for Pratt & Whitney test stand and flight test work.

UNITED AIRCRAFT CORPORATION
Pratt & Whitney Aircraft Division

R. H. Begg
Project Engineer

RHB:lms

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Mr. Fox

/s/ J. W. Antonides
Commander, U.S.N.

NOa(s) 9511 2W23 3193
Aer-CO 31 December 1947

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BUAER SEC CO WASH D C

PRATT & WHITNEY
AIRCRAFT DIVISION
EAST HARTFORD, CONNECTICUT

CONTRACT NOA(S) 9511 FOR PROCUREMENT OF FOURTEEN R-4360-43 ENGINES FOR AIR FORCES AT UNIT PRICE OF $120,000 TOTAL CONTRACT PRICE $1,620,000 IS IN PREPARATION AND WILL BE MAILED TO YOU SHORTLY FOR EXECUTION X CONTRACT WILL CONTAIN PROVISIONS CURRENTLY USED IN CONTRACTS BETWEEN BUAER AND PRATT AND WHITNEY EXCEPT NO PRICE REOPENING WILL BE PROVIDED FOR THESE FOURTEEN ENGINES X ON THIS UNDERSTANDING IT IS REQUESTED THAT YOU PROCEED WITH WORK PRIOR TO THE RECEIPT OF FORMAL CONTRACT X CONTRACTING OFFICER BUREAU OF AERONAUTICS XX

CC: BAR EAST HARTFORD, CONN
CMDG GENERAL - AIR MATERIAL COMMAND, WRIGHT FIELD, DAYTON, OHIO
R & C SEC BUAER

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CONSOLIDATED VULTEE AIRCRAFT CORPORATION

FORT WORTH DIVISION
FORT WORTH 1, TEXAS

ae-18653 CONTRACT FILE Lab 1/7/48

LHM:djh/AC-7-FW#575 (F-21)
5 January 1948

Subject: Contract AC-7, YB-36C and B-36C Airplanes
Information on AMC Requirements and G.F.P.
Needed to Proceed with Design on the VDT
Power Plant Change
Master Change Record No. 735

To: Commanding General
Air Materiel Command
Wright Field, Dayton, Ohio

Attention: TSBPA-3B

Thru: U. S. Air Forces Plant Representative

Enclosures: (A) Three copies of Summary of Data Required For Thermodynamic Analysis - R-4360-51 (VDT) Installation - B-36-C Airplane
(B) Three copies of Summary Of Installation Information Required by CVAC To Proceed With V.D.T. Design

1. In accordance with the requirements of the delivery schedule for subject airplanes, the Contractor is proceeding with the design of subject change as rapidly as possible, based on information now in the hands of the Contractor. However, the Contractor wishes to emphasize that all information received to date has been of an informal nature received piecemeal from the G.F.P. vendors without firm commitments either from the vendor or from the Air Materiel Command. To date, the layout of the basic power plant arrangement has proceeded to a sufficiently advanced stage to determine cutout areas and shapes in the front and rear spars and detail design of the spars which is underway with scheduled shop release date of February 2. It is therefore obvious that the information upon which this work has proceeded should be confirmed as quickly as possible by the Air Materiel Command if a large waste of Engineering time and consequent schedule delay is to be avoided. It is further obvious that it would be unsound to proceed much further with the design of the power plant installation, which is by far the largest part of the job, without complete and firm information as to the requirements and installation details of the G.F.P. equipment involved. To assist the Air Materiel Command in expediting this information, the Contractor submits herewith lists of detail information most urgently required at this time

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as Enclosures (A) and (B). Enclosure (A) lists the information required on the basic requirements of the power plant such as cooling air flow requirements which determine the basic arrangement of the power plant installation and therefore are of the most urgent nature since all design work is founded on this information. Enclosure (B) lists information required on installation details of the G.F.P. equipment necessary to proceed with installation layouts and design. Both enclosures give the dates upon which each item of information will be required to maintain the present engineering schedule commitments. It will be noted that certain items of information which vitally affect the basic arrangement of the power plant installation are already past due and it is therefore of the greatest urgency that information be forwarded immediately to minimize the effect of this lateness on the overall schedule. The Contractor realizes that it will probably not be possible for the Air Materiel Command to furnish all of the information on the dates required by the present schedule. This schedule has been adapted as far as possible to the expected availability of information and if the Air Materiel Command will furnish the Contractor a schedule of dates when information will be available on all the items listed in Enclosures (A) and (B), the Contractor will further review his engineering schedule to coordinate with these dates in order to minimize the overall delay to the program as much as possible.

2. In addition to the lists of detail information contained in Enclosures (A) and (B), the Contractor wishes to emphasize that the following major design features need to be decided at the earliest possible date:

a. Cooling Fan Configuration

The Contractor understands that the Air Materiel Command desires the fan to be located aft of the engine to eliminate icing problems and the Contractor concurs in this decision and is proceeding on this basis. The Contractor also understands that Pratt & Whitney is willing to furnish a drive for this fan at the aft end of the engine but is unwilling to provide mounting of the fan from the engine, de-clutching provisions, or speed control of the fan. The Contractor now has cooling studies underway to establish the fan configuration and requirements and will forward the conclusions of these studies by 16 January 1948 to the Air Materiel Command. This Contractor believes that it is impractical to mount the fan separate from the engine due to the large relative movement between the engine and the structure and studies to date have proved that it is not possible to design a single speed fan which will give satisfactory cooling during climb at altitude without absorbing a prohibitive amount of power in the take-off condition. It is therefore mandatory that a

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CONSOLIDATED VULTEE AIRCRAFT CORPORATION
FORT WORTH DIVISION FORT WORTH, TEXAS

a. Cooling Fan Configuration (Cont'd)

de-clutching mechanism or speed control be provided to permit de-clutching or fan speed reduction during take-off and conditions where the fan is not required to cool the engine. This Contractor believes the design of this clutch or speed control should be the responsibility of the engine manufacturer. This Contractor further believes that it should be possible for Pratt & Whitney to adapt the present type fan drives and clutch used on the -25 engines for XB-36 and B-36A airplanes to the requirements of this installation.

b. Turbo Clamshell Control

Due to the non-positive nature of this new means of power control which involves more than one manifold pressure for a given position of the clamshells, the Contractor believes that this control is going to require exceptionally intensive development by the control vendor and close coordination between the vendor, the Air Materiel Command, and this Contractor. The Contractor therefore requests full information as to the present status of development of this control and that arrangements be made so that the vendor keeps this Contractor continuously informed as the development progresses.

c. Engine Shock Mounts

The Contractor understands that the Air Materiel Command desires this equipment to be furnished by this Contractor as a result of current Air Materiel Command procurement policy. The Contractor does not concur in this policy due to the fact that the design requirements of these mounts are determined as they have been in the past by the engine manufacturer. However, if this equipment is to be Contractor furnished, it will be necessary for the engine manufacturer to forward this Contractor a complete Air Materiel Command approved specification of detail requirements including the necessary outline drawings for these shock mounts.

The Contractor feels that the following are the major problems involved in the development of the VDT power plant installation in subject airplanes which will therefore require a maximum of cooperation between the Air Materiel Command, this Contractor, and the G.E.P. vendors concerned to reach practical conclusions.

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CONSOLIDATED VULTEE AIRCRAFT CORPORATION
FORT WORTH DIVISION FORT WORTH, TEXAS

a. G.F.P. Responsible

1. Fan Drive and Clutch
2. Clamshell Engine Power Control
3. Propeller Gear Box and Extension Shafts
4. Engine - Turbo-Supercharger Combination
5. Engine Cooling Requirements

b. Contractor Responsible

1. Nose Boom Propeller Mounting
2. Engine Cooling Duct Capacity
3. Cooling Fan Development
4. Heat Anti-Icing by either Heat Exchanger or Supercharger Recirculation bleed.

It is requested that every effort be made by the Air Materiel Command to keep the Contractor currently informed as to the status of development of the G.F.P. responsible items listed above. The Contractor will make every effort to keep the Air Materiel Command fully informed as to development of Contractor responsible items. Although the Contractor is currently proceeding on the basis of taking heat for anti-icing from heat exchangers, a study is being prosecuted to investigate elimination of the heat exchanger and substitution of a turbo bleed recirculation system similar to the carburetor preheat system on B-36A and B-36B airplanes. The results of this study will be forwarded to the Air Materiel Command at an early date. The following items of Contractor responsible information required by G.F.P. vendors are confirmed as follows:

a. Extension shaft lengths as shown on Pratt & Whitney drawing No. 126001 marked preliminary and dated 11-18-47 are those required by CVAC.

b. Engine mount ring dimensions (54" diam.) and location as shown on Pratt & Whitney drawing No. 126001 marked preliminary and dated 11-18-47 are those required by CVAC.

c. Alternator drive take-off location as shown on Pratt & Whitney drawing No. 126001 marked preliminary and dated 11-18-47 are satisfactory to CVAC. However, drive should be AND20008 in place of AND10002-3A.

Further Contractor responsible information will be submitted as follows:

a. Cooling fan drive requirements will be submitted by 16 January 1948.

4. The Contractor cannot emphasize too strongly the vital necessity of obtaining all of the above information at the earliest possible date on a firm basis approved by the Air Materiel Command in

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FORT WORTH DIVISION FORT WORTH, TEXAS

order to avoid costly re-design and schedule delays. It is particularly important that Air Materiel Command approved specifications for the major items of G.F.P. such as the engine turbo supercharger, engine power control, propellers and propeller gear box and drive shaft be transmitted at the earliest possible date. It is therefore requested that the Air Materiel Command expedite as much as possible the above requested information and confirmations of informal information, and inform the contractor when they will be available so that design work may be scheduled accordingly.

CONSOLIDATED VULTEE AIRCRAFT CORPORATION
FORT WORTH DIVISION

R. C. Sebold
Chief Division Engineer

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CONSOLIDATED VULTEE AIRCRAFT CORPORATION
FORT WORTH DIVISION .. FORT WORTH, TEXAS
ENGINEERING DEPARTMENT

Enclosure (B) to CVAC letter AC-7-FW6575, dated 2 January 1948.

SUMMARY OF INSTALLATION INFORMATION REQUIRED BY CVAC
TO PROCEED WITH V.D.T. DESIGN

(A) POWER PLANT

1. Engine Exhaust Bank Manifold and Shroud Design

Reason: To complete the exhaust system design layout to be furnished to the vendor. (Information required by 1-16-48)

2. Engine Shock Mount Design Requirements(Dwgs. & Specification)

Reason: Necessary to complete the engine mount design. (Required by 2-27-48)

3. Alternator Drive Pad — not on test stand but on Prod a/p.

The engine manufacturer to provide a power take-off drive. (Type AND10008) in place of the generator drive (Type AND10002-3A) on the propeller reduction gear housing. (Required by 2-27-48)

18A — prod. type.

Reason: Necessary to permit the use of the Sundstrand constant speed alternator drive on the subject installation.

4. Propeller Drive Shaft

Detail information on shaft coupling disconnects and method of uncoupling. Preliminary print 126001 (dated 11-18-47) received informally from Pratt & Whitney gave lengths but no coupling details. (Required 2-13-48)

Reason: To determine design for shaft supports which will lend itself to ease of shaft installation and removal.

5. Limits of Engine Movement on Shock Mounts

Reason: Required for design of exhaust system and induction system flex couplings. (Required 1-16-48)

6. Complete Information on VDT Power Control

Including physical dimensions, displacements of operating points, and interconnection between various units. (Required 3-5-48)

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7. Data on Mixture Control Location and Angular Displacement (Required 2-27-48)

8. Fan Mounting Details and Controls

Drawings showing the fan drive (including clutch for neutral position) and control. (Required by 2-16-48)

Contractor is proceeding with nacelle layouts based on a fan mounting location approximately 35" aft of Engine Reference line (Rear Face of Rear Main Case) shown on Pratt & Whitney Drawing 126001 marked preliminary and dated 11-18-47. ANC confirmation of this location is required as soon as possible.

(B) ELECTRICAL

1. Turbine Control System

Drawings showing overall size, mounting dimensions, and clearances for all components of the system. Complete wiring diagrams showing not only all external connections but sufficient internal wiring of components to allow circuit understanding. Information on operating power, voltage, and frequency, including limits which can be allowed without affecting operation. (Required 3-5-48)

2. Considering that present design calls for Curtiss propellers similar to the present B-368 type, we desire either confirmation that the control elements and control circuit will be identical to that now in use or specific information on the points wherein differences occur. (Required 3-12-48)

(C) INSTRUMENTS

1. Nose Reduction Gear Oil Temperature Gages

Will these gages be required? If so, G.F.P. description, specification, and installation information will be required.

2. The following instruments will have to be replaced by a type having an increased range. Description, installation and specification information is requested as above. (Required by 5-1-48)

Present No.	Req.	Description	Replace With Inst. Having Range Of
41-2367	1	Fuel Press. Gage	0-45 PSI
41-2368	1	Fuel Press. Gage	0-45 PSI
41-2369	1	Fuel Press. Gage	0-45 PSI
41-2011	1	Carb. Air Temp.	0° - 200° F
41-2008	1	Water Press. Gage	0-45 PSI (Required if
41-2004	1	Water Press. Gage	0-45 PSI (Water Injection
[illegible]	1	[illegible] Press. Gage	0-[illegible] PSI (is to be installed

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CONSOLIDATED VULTEE AIRCRAFT CORPORATION
FORT WORTH DIVISION .. FORT WORTH, TEXAS

(C) [redacted] (CONTINUED)

2.

Present No.	Qua.	Description	Replace With Inst. Having Range Of
61-2754	1	Manifold Press. Gage	10" to 75" Hg
61-2755	1	Manifold Press. Gage	10" to 75" Hg
61-2756	1	Manifold Press. Gage	10" to 75" Hg

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UNITED STATES AIR FORCE
AIR MATERIEL COMMAND
OFFICE OF THE USAF PLANT REPRESENTATIVE
CONSOLIDATED VULTEE AIRCRAFT CORPORATION
FORT WORTH, TEXAS

TSZCV/AJM/CAH/mw
7 January 1948

SUBJECT: Contract W33-038-ac-7[illegible] B-36A Airplanes
Production Schedules

TO: Commanding General
Air Materiel Command
Wright Field, Dayton, Ohio

Attn: MCPPXA

REF: (a) AMC Letter TSEPA3B/WMJ:ICW:P5A
Same Subject dated 12 June 1947

1. In accordance with request made in reference letter, the following is the schedule for 31 December 1947, reflecting anticipated dates that airplanes will be shop assembled and acceptance flight completed. In order to be consistent with terminology used in Regulation No. 15-151-14, the words "Shop Assembled" and "Acceptance Flight Completed" are being used in this report in lieu of the words "Shop Completion" and "Flight Test Completion" which have been used previously in subject report. "Shop Assembled" is defined as meaning that the airplane has progressed to the manufacturing stage that it is ready for the first green engine run. "Acceptance Flight Completed" is defined as meaning that the airplane has passed CWAC flight tests, 262 inspection, USAF flight tests, and is physically ready for acceptance by the USAF at this facility. Acceptance will normally take place the same or following day.

B-36A No.	Shop Assembled	Acceptance Flight Completed
2	COMPLETE	2-15-[illegible]
3	COMPLETE	1-15-48
4	1-9-48	1-23-[illegible]
5	1-20-48	2-27-48
6	2-6-48	3-8-48
7	2-20-48	4-8-48
8	2-27-48	4-15-48
9	COMPLETE	1-21-48
10	1-9-48	1-28-48
11	1-16-48	2-7-48
12	1-23-48	2-14-48
13	2-6-48	3-15-48
14	2[illegible]-48	3-22-48
15	3-1-48	3-29-48
16	3-10-48	4-23-48
17	3-19-48	4-30-48
18	3-26-48	5-7-48
19	4-7-48	5-14-48

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TO: CG, AMC, Wright Field, Dayton, Ohio
SUBJ: Contract W33-038-ac-7, B-36A Airplanes Production Schedules
DATE: 7 January 1948

	Shop Assembled	Acceptance Flight Completed
B-36A No. 20	4-16-48	5-21-48
21	4-27-48	5-28-48
22	5-6-48	6-4-48
B-36B No. 23	5-17-48	6-11-48
24	5-26-48	6-18-48
25	6-7-48	6-25-48
26	6-16-48	7-9-48
27	6-25-48	7-16-48

2. Attention is invited to the fact that above forecast differs largely from the last forecast. This difference can be attributed largely to two factors. First, the activation of the VDT program has revised the overall delivery schedule. Secondly, Contractor is still experiencing difficulty with the Constant Speed Drive, minor equipment items and gas tightening the wing, which has delayed delivery of early airplanes. The above forecast is predicated upon satisfactory solution to the constant speed drive problem, the satisfactory operation of other equipment and improvement in gas tightening the wing.

3. It should also be noted that the radio noise level check, which is required before delivery of production airplanes, has not been completed. The above forecast is made providing Contractor does not experience difficulty in correcting noise level discrepancies.

4. Attention is also invited to the fact that the initial flight of the No. 3 B-36A airplane was made 6 January 1948, the airplane being airborne approximately 2:27 p.m.

FOR THE USAF PLANT REPRESENTATIVE:

Arthur J. Middleton
ARTHUR J. MIDDLETON
Captain, USAF
Chief, Production Branch

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In reply please refer to: WAP:tlr-Eng.

PRATT & WHITNEY AIRCRAFT

DIVISION OF UNITED AIRCRAFT CORPORATION
EAST HARTFORD 8, CONNECTICUT, U.S.A.
CABLE ADDRESS "AIRCRAFT"

January 8, 1948

ARMY OFFICE
APPROVED
CONCURRED IN
NO COMMENT

To: Commanding General
Air Materiel Command
Wright Field, Dayton, Ohio

VIA: USAF Representative

Attention: TSBPE3B1

Subject: Contract W33-038 ac-18653 - Axial Power Take-Off Drive on R-4360-43 Engine.

References: (a) P&WA let. WAP:BS Engineering III, dtd 1 December 1947.
(b) AMC let. TSBPE3B1/R.A.Bittner/ghs, dtd 30 December 1947.

Enclosure: (A) Three (3) Copies Cost Breakdown - Axial Power Take-Off Drive for R-4360-43 Engine.

1. Receipt of Reference (b) is acknowledged herewith.

2. The Contractor recommends that the subject work of the Development of Axial Power Take-Off Drive for R-4360-43 engine be added to the present contract W33-038 ac-18653 by contract amendment (Change Order).

3. In substantiation of the price of $18,000.00 quoted under Reference (a) the Contractor submits herewith cost breakdown Enclosure (A). Present estimates of the cost of this work as shown by Enclosure (A) are in excess of the price quoted of $18,000.00. However, the Contractor proposes to proceed with this development on the basis of a fixed price of $18,000.00 as quoted originally under Reference (a).

4. In order that the Contractor be authorized to proceed with the work at an early date, it is requested that a contract amendment covering the subject work be forwarded to the Contractor, as soon as practicable.

UNITED AIRCRAFT CORPORATION
Pratt & Whitney Aircraft Division

W. A. Parkins
Engineering Manager

1948 JAN 15 PM 3:25

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JAN 1948
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UNITED AIRCRAFT CORPORATION

PRATT & WHITNEY AIRCRAFT DIVISION

DEVELOPMENT OF AXIAL POWER TAKE-OFF DRIVE FOR R-4360-43 ENGINE

COST BREAKDOWN

MATERIAL			
Raw Material, Forgings and castings			$ 629.00
Covers, Accessory Case and Thrust Bearing			200.00
Drive Shafts - Accessory and flanged			1,040.00
Couplings - Shear			344.00
Gears, Fixed and Power Take-off			1,220.00
Bearings and Bushings			368.00
Studs, Nuts, Gaskets and Seals			128.00
Drive loading and rig parts			550.00
Gasoline and Oil			3,814.00
Total			8,293.00
LABOR			
Engineering - Design	960 hrs.	at $1.70	1,632.00
Construction	480 hrs.	at $1.60	768.00
Assembly	350 hrs.	at $1.56	546.00
Test	1875 hrs.	at $1.57	2,944.00
Total			5,890.00
OVERHEAD			
Engineering - 90.0%			5,301.00
Total Engineering Cost			19,484.00
General and Administrative Overhead - 3.0%			585.00
Total Estimated Cost			$ 20,069.00
Price Quoted			$ 18,000.00

January 7, 1948

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LYTTLETON FOX NOA(S) 2423 3193

AER-CO 8 JANUARY 1948

BUAER AER-CO

PRATT & WHITNEY AIRCRAFT DIVISION
UNITED AIRCRAFT CORP.
EAST HARTFORD CONN.

9511

BUAER TWX 312111 DECEMBER CONTRACT NOA(S)/HEREBY AMENDED BY ADDITION OF FOLLOWING CLAUSE: QUOTE IN THE EVENT OF TERMINATION OF CONTRACT NOA(S) 9511 PRIOR TO DELIVERY OF ANY ENGINES SPECIAL TOOLING COSTS WILL BE ALLOWED BY GOVERNMENT AS DIRECT CHARGE ON TERMINATION CLAIM X PROPORTIONAL PART OF TOTAL SPECIAL TOOLING COSTS WILL BE THUS ALLOWED IN THE EVENT OF PARTIAL TERMINATION X IN VIEW OF FOREGOING CONTRACT SHALL PROVIDE THAT GOVERNMENT WILL RECEIVE TITLE TO ALL TOOLING FOR WHICH IT DIRECTLY REIMBURSES CONTRACTOR UNQUOTE X SIGNED CONTRACTING OFFICER BUAER X

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TC-42-433

UNITED STATES AIR FORCE
~~WAR DEPARTMENT~~
ARMY AIR FORCES
MATERIEL COMMAND
OFFICE OF THE ARMY AIR FORCES REPRESENTATIVE
Pratt & Whitney Aircraft Div., E.Hartford, Conn.

TSZBO3/RES/hgm
9 January 1948

Subject: Report of Test on R-4360 Engines
Contract W33-038-AC-14294

To: Commanding General
Air Materiel Command
Wright Field
Dayton, Ohio

Attn: TSEPP5, Power Plant Laboratory

1. X-101 Engine 5 on test stand, running test. Total time 235.84
2. X-105 Engine in shop for repair. Total time 313.41 hours.
3. X-109 Engine in shop for repair. Total time 368.76.
4. X-110 Stand by engine. Total time 0.
5. X-113 Report attached. Total time 43.02
6. X-114 Engine in shop for repair. Total time 121.29.
7. X-123 Stand by engine. Total time 0.
8. X-155 Engine in shop for repair. Total time 470.48.
9. X-156 Engine in shop for repair. Total time 334.81.
10. X-157 Engine had approximately 10 hours running. It was then torn down and inspected. Shaft showed good condition and is being assembled for additional running. Total time 283.76.

R. E. Slade
R. E. SLADE
USAF Inspector
in-Charge

Att-Report-X113 eng.

See letter 1-19-48

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TC-42-434

9 January 1947

T OF 150 HOUR INDURANCE TEST ON R-4360-43 ENGINE, X-113

1. 150 hour model test on R-4360-43 engine started on 30 December 1947.
2. The engine was built to Pratt & Whitney Specification A-7065B as of 24 June 1947.
3. The test is being run on Pratt & Whitney schedule per letter dated 21 November 1947.
4. No Bill of Material for this engine has been submitted by Pratt & Whitney as of this date.

5. The R-4360-VDT model test engine, No. X-113, possesses the following characteristics:

Designation	R-4360-43
Engine Type	Air-cooled radial, intended for use with exhaust gas driven, external, turbine powered supercharging.
No. Cylinder	28
Compression Ratio	6.7:1
Bore	5 3/4
Stroke	6
Propeller Gear Ratio	.375:1
Propeller Shaft Rotation (viewed from antipropeller end)	Clockwise
Propeller Shaft Spline SAE No.	60A
Engine Weight (Actual Dry)	3566.13
Exhaust Header System Weight	175.42
Fuel	AN-F-48, Grade 115/145
Oil	AN-O-8, Grade 1100
Fuel Injection Spray System	Bendix Products Division, Model 100-28-A2
Anti-detonant Injection System	Variable Water Regulator, Prototype J-1
Ignition System	Seven Magneto, High Tension

6. After 5½ hours of running the following parts failed on the engine.

A. Exhuast header bracket assembly, part #128787.
B. Single bellows assembly, part #128167
C. Rocker drain fitting, part #123491.

Suggest the design of top lubrication scavenging system be discussed with Contractor as old system has been installed after these failures and test restarted.

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TC-92-435

7. After 11½ hours of running the following parts failed:

A. Exhaust pipe broken on No. C cylinder.
B. No. 4 intake rocker cap cracked.
C. Engine developed internal failure. The engine is now at tear down and so far, the three gerotor pumps have failed.
It is suggested that the design of these pumps be discussed with the Contractor.
The pumps are subject to distortion. The design of the pump is weak and is subject to distortion when being bolted to case. It is possible to bind the pump in tightening the mounting bolts.

8. The Contractor is of the opinion that they do not have to follow model test as required in 9500 specification and that they can start the next period of the test after the engine has been removed from the test stand and torn down.

9. It is suggested that the test be started over.

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ARMY AIR FORCES
AIR TECHNICAL SERVICE COMMAND
OFFICE OF THE AIR FORCES RESIDENT REPRESENTATIVE
CONSOLIDATED VULTEE AIRCRAFT CORPORATION
FORT WORTH, TEXAS

TSZCV/HBM/mfm

12 January 1948

SUBJECT: Contract W33-038-ac-7[illegible]36 Aircraft
Request for Increased Estimated Cost
and Fixed Fee

TO: Commanding General
Air Material Command
Wright Field
Dayton, Ohio

4C

Attn: TSEPA3

REF: (a) CVAC ltr., GO-7-9, San Diego, Calif., dtd 18 Sep 47
(b) AMC Messageform, TSEPA3-10-1, dtd 1 Oct 47

1. In accordance with the request contained in reference (b), this office has reviewed the Consolidated Vultee Aircraft Corporation letter, reference (a), and the following comments are submitted. The second paragraph of the Contractor's letter states: "It is the purpose of this letter to request an upward revision of estimated cost and fixed fee based upon the increase in the amount and character of the work to be done under subject contract and upon changes therein which have resulted in extensions in time required for its performance".

2. There are a number of elements to be considered:

a. The increase in the amount and character of the work resulting from changes in the airplane is attested by the two hundred and ten (210) Contract Change Notifications issued under this contract as of 18 September 1947. From the correspondence which justified the issuance of these Contract Change Notifications, it is evident that a material amount of additional work has been required. However, in each instance the Contractor has submitted a cost quotation adjusting the cost and the fixed fee or has stated the change would be accomplished at no change in estimated cost or fixed fee. It is assumed that the Contractor considered the time extension resulting from these changes from the standpoint of affect on cost and fee since the files indicate that such time extension was known by the Contractor.

b. It is agreed that some time extension is attributable to the Government, particularly that pertaining to the schedule change in July 1947 from six (6) to four (4) airplanes per month. This schedule change was based primarily on the consideration that certain Government Furnished Property would not be available to support the six (6) airplane schedule. However, subsequent to that time a great number of

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minor design changes, which were the contractor's responsibility, have been found necessary and additional delays have been experienced.

c. This office does not agree with the Contractor's statement that an extension of thirty (30) months is for reasons beyond the control of the Contractor. It is true that Air Materiel Command in a letter dated 1 July 1944 directed Contractor to get the B-32 contract on schedule at the expense of delaying the B-36. However, the fact that the B-32 was behind schedule was attributable to the Contractor. As late as 9 September 1946 Contractor requested a revision in B-36 delivery schedule and was advised by Air Materiel Command's letter, dated 14 October 1946, that the six (6) month delay in production was not satisfactorily explained. The extension was granted. It is true that work on Contract W33-038-ac-7 was dependent on the status of work under Contract W535-ac-22352 but here again in August 1945, two years from the date of the letter contract, August 1943, Contractor had only expended $5,401,172.42 indicating that in the first twenty-four (24) months Contractor was authorized to proceed with the work, only a very small amount of work had been accomplished so that this twenty-four (24) month period should be accorded much weight when considering the thirty (30) month extension in the contract. Again admitting that progress on the AC-7 contract was dependent on the status of completion of the XB-36, General Craigie in his letter, dated 29 August 1945, to Mr. Harry Woodhead, Consolidated Vultee Aircraft Corporation, San Diego stated, in connection with the poor workmanship on the XB-36, "This situation is one which has definitely delayed and marred the first XB-36 airplane and threatens the successful continuation of the B-36 program". This delay was caused by factors within the control of the Contractor. The poor workmanship was within the control of the Contractor. The contractor points out that he was operating in a relatively un-industrialized area where skilled workmen were not available and that a continual heavy loss of partially trained personnel was incurred through Selective Service action. However, at this stage in the program the delivery date of the first B-36 had been set back thirteen (13) months.

3. The comments that follow in this paragraph refer directly to Consolidated Vultee Aircraft Corporation's comments and are designated by paragraph headings as they appear in the attached Contractor's letter.

Para. 4(b) Final cost quotations are now being received from Contractor on a number of MCRs included in the $15,000,000 which remains to be negotiated and which Contractor has estimated to approximate $12,000,000, not including the recent VDT engine change. In this matter, reference to records will reveal that Contractor when submitting its Final Cost Quotations includes the following statement in its letter: "The Contractor will not request any further adjustment to its estimated cost or fixed fee by reason of the MCR covered by the Cost Quotation submitted herewith....".

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TO: CG, AMC, W[illegible]ht Field, Dayton, Ohio. Attn: [illegible]BPA3
SUBJ: Contract [illegible]-7, B-36 Aircraft, Request for [illegible]creased Estimated Cost and Fixed Fee
DATE: 12 January 1948

However, the Contractor has prefaced the submission of the MCRs approximately $12,000,000 by letter AC-7-FW#868 of 24 December 1947 recommending that negotiation of these MCRs be combined with the other material changes discussed in Exhibit A to reference (a) and with the change to VDT engines on thirty-four (34) B-36 airplanes and that a revised overall estimated cost and fixed fee for the B-36 program as now contemplated be negotiated.

Para. 4(c). It is agreed that at the time Contract W33-038-ac-7 was placed Contractors were being encouraged to subcontract whenever possible. The percentage was not fixed. However, by the terms of the prime contract, Contractor is obligated to procure materials at the best prices obtainable and at this time where an item can be more economically procured by subcontracting it is subcontracted. The present low percentage of subcontract work is only true since the closing of Vultee Field Division 1 July 1947. Prior to that date, the outer wing panel, nacelles and other items were subcontracted to Vultee Field Division.

Page 3(a). This Contractor, by virtue of its long experience with Government contracts under which TD 5000 governs reimbursable costs, is familiar with Government regulations determining what costs are reimbursable. There appears to be little question in Contractor's mind as to allowable items of cost since only three (3) disallowances have been appealed to the Board of Contract Appeals. While the Contractor's statements in this connection merit some consideration, it is felt that any material disallowances are controllable by the Contractor.

Page 3(b). Prior to the date Contractor's letter was written, the costs incurred by the Contractor and unsubmitted for reimbursement together with the normal time required to submit costs for Army Audit Agency audit and ultimate reimbursement accounted for the $7,000,000 mentioned by the Contractor. However, this condition no longer exists and the Contractor's investment as represented by unpaid valid claims to cover an approximate thirty (30) day period is nearer to $4,000,000.

Page 3(d). The fixed assets of Consolidated Vultee Aircraft Corporation in this facility total $58,773.26 of which $45,569.08 covers facility items for which the Contractor has a valid claim against the Government leaving a capital investment of $13,204.18. This amount added to $4,000,000 is estimated to be the maximum investment of the Contractor during the life of the contract. On this basis alone an estimated fixed fee of approximately $6,000,000 is considered to be an excellent return. Other factors enter into the fee consideration and of course must be weighted on their merit.

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TO: OC, AMC, W ht Field, Dayton, Ohio, Attn: PA3
SUBJ: Contract -7, B-36 Aircraft, Request for Increased Estimated Cost and Fixed Fee
DATE: 12 January 1948

The rate of profit allowed under price adjustment proceeding is foreign to the fee on this contract. The fixed fee under a CPFF contract represents profit without risk.

Para. 5. Contractor's proposal herein presented should be considered most critcally because of the element of cost-plus-a-percentage-of-cost insofar as it pertains to that portion of the work which has been completed.

4. In considering the Contractor's proposal from an equitable point of view consideration must rightfully be given to all the elements involved such as the pioneering into the field of magnesium to the extent used in the B-36, the advancement of a six engine installation of the pusher type, the use of K truss construction, the use of 208 V, 400 cycle A.C. Electrical system, constant speed drives, truck type land gear, light weight thermal anti-icing system. Some of the aforementioned items are innovations in aircraft design and unanticipated problems arose which contributed to the delays resulting in extended delivery schedules. However, it is not believed that the program was efficiently pursued until late in 1946, by which time the delivery date of the first B-36 airplane had been moved back from August 1945 to June 1947, a total of twenty-two (22) months.

5. One other element which might be considered in relation to this question is the fact that the Air Force must, in effect, hire a corporation to accomplish such a volume of work and it is suggested that some consideration should be given to the general overall increase in cost since the close of the war, in that a corporation is dependent upon its stockholders to remain in business. It is suggested that profits, whether pertaining to cost-plus-a-fixed-fee or fixed-price contracts, should be in line with general practices prevailing throughout the country. Since it is beyond the scope of this office to determine the possibility of future work to be contracted for with Consolidated Vultee Aircraft Corporation, this last comment is offered only as a suggestion pertinent to the overall picture.

Beverly H. Warren

BEVERLY H. WARREN
Lt. Colonel, USAF
USAF Plant Representative

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PRATT & WHITNEY AIRCRAFT

DIVISION OF UNITED AIRCRAFT CORPORATION

EAST HARTFORD 8, CONNECTICUT, U.S.A.

January 14, 1948

Commanding General
Air Material Command
Wright Field
Dayton, Ohio

Subject: Production R-4360 VDT Engines

References: (a) Advance Notice of Award of Contract NOa(s) 9811 (BuAer Dispatch 31811 dated 12 December 1947).

(b) BuAer Dispatch 0922182 dated 9 January 1948.

(c) PWA Letter WPG:ab to BuAer, Subject: Acceptance of Advance Notice for Contract NOa(s) 9811, dated 13 January 1948.

(d) PWA Letter WPG:lm to Commanding General AMC, Subject: Production of R-4360 VDT Engines, dated 3 October 1947.

1. Advance Notice of Award of Navy Contract NOa(s) 9811 for fourteen (14) R-4360-42 engines, as set forth in references (a) and (b), has been received from the Bureau of Aeronautics.

2. We have accepted this Advance Notice of Award and are making the commitments necessary for the manufacture of these engines on a production basis.

3. In order to avoid any misunderstandings we wish to invite your attention to the fact that the deliveries of these engines will commence in July 1949. Our proposal, reference (d), indicated deliveries starting in May 1949, provided we received contractual authority to proceed no later than November 15, 1947.

4. The scheduling of deliveries starting in July 1949 is based upon receipt of authority to proceed later than November 15, 1947, but we wish to assure you that every effort will be made to advance the starting date.

Per letter 1-26-48

Very truly yours,

UNITED AIRCRAFT CORPORATION

W. P. Gwinn, General Manager
Pratt & Whitney Aircraft Division

WPG:ab
CC: Bureau of Aeronautics, Contracting Officer via BAR, East Hartford, Ct.
BAR, East Hartford, Ct.

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TC-92-436

AMC Form No. 10-508
(Rev 2 Apr 47)
(PRINT SYMBOL, DATE AND INITIALS IN APPROPRIATE BLOCK)

ADJUTANT GENERAL

CHIEF OF ADMIN.

AIR INSPECTOR

PUBLIC RELATIONS

JUDGE ADVOCATE

PERSONNEL (T-1)

INTELLIGENCE (T-2)

ENGINEERING (T-3)

SUPPLY (T-4)

PLANS (T-5)

BASE C. O.

OTHER

MCHKP-74/JBG/rhk

19 January 1948

R-4360-43 Qualification Test

AC-14294
452.8-Engines

USAF Inspector-in-Charge
Pratt & Whitney Aircraft Division
United Aircraft Corporation
East Hartford, Connecticut
ATTN: Mr. R. E. Slade

1. This is in reference to your weekly report of 9 January 1948. Regarding the test of R-4360-43 engine No. E-113, the Engineering Division of the Air Material Command concurs with your suggestion that the test of this engine be started over if the engine has been completely disassembled. Attention of the contractor should be called to Paragraph F-4d (last sentence) of AN 9508C. If the contractor desires that this test be considered by the Air Material Command as an official 150-hour qualification test and if it is intended that Air Material Command approval of the test will be requested after completion of the test, then all phases of this test, including bill of material, accessory loading, disassembly, etc., should be executed in accordance with requirements of Specification No. A-7065C, dated 15 December 1947, and the applicable Government specifications listed on Page 27 of A-7065C.

JBG Ea Ltr

2. A bill of material for the engine must be submitted by the contractor to your office for use during inspection of the engine. It is requested that a duplicate copy of the bill of material be furnished to the Air Material Command. Reference Paragraph F6 of AN 9508C.

3. It is noted that high tension seven magneto ignition is used on the engine. If high frequency ignition is not submitted to an official 150-hour qualification test, it should not be furnished on any R-4360-43 and -51 engines delivered to the Government unless specifically authorized by the Air Material Command.

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TC-92-437

AMC Form No. 10-000
(Rev 2 Apr 47)

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ASSISTANT GENERAL

CHIEF OF ADMIN.

AIR INSPECTOR

PUBLIC RELATIONS

JUDGE ADVOCATE

PERSONNEL (T-1)

INTELLIGENCE (T-2)

ENGINEERING (T-3)

SUPPLY (T-4)

PLANS (T-5)

BASE C. O.

OTHER

Ltr, AMC, 19 January 1948, to USAF Insp.-in-Chg., Pratt and Whitney Aircraft Division, subj: "R-4360-43 Qualification Test."

4. In regard to the subject of the top lubrication scavenging system mentioned in your report in Paragraph 6, attention of the contractor should be called to the contents of Paragraph F7 of Specification No. AN 9502C.

5. Unless the contractor adheres rigidly to all requirements for conducting an official 150-hour qualification test, the Air Material Command may not be in a position to accept this as an official 150-hour qualification test.

BY COMMAND OF GENERAL McNARNEY:

R. J. MINTY
Colonel, USAF
Chief, Power Plant Laboratory
Engineering Division

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TSCAG Form No. 6 (4 APR 47)

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MCCPXT/5-4102

HEADQUARTERS
AIR MATERIEL COMMAND

Wright Field, Ohio
21 January 1948

TECHNICAL INSTRUCTIONS

RECORDS BR. NO. DEB
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SERIAL NO: TI 2036, Addendum No. 8

SUBJECT: Installation of R-4360-VDT Engines in B-36 Type Aircraft

TO: Procurement Division
Engineering Division

1. Problem Presented:

a. To install R-4360-VDT engines in the last thirty-four (34) B-36 (B-36C) type aircraft.

2. Factual Data:

a. Six (6) or seven (7) B-50's from FY 49 procurement will be cancelled and this saving in funds applied to cover the additional cost of $15,000,000.00 required for GFE.

b. The present B-36 contract will be changed to call for supply of twenty-three (23) B-36A airplanes, thirty-nine (39) B-36B airplanes, one YB-36C and thirty-three (33) B-36C aircraft in lieu of the twenty-three (23) B-36A and seventy-eight (78) B-36B airplanes now on contract.

c. In order to meet the delivery schedule of B-36C airplanes on which this program was approved, it will be necessary that the required wind tunnel programs be completed with the minimum of delay.

3. Authority:

a. C/S, USAF, by letter dated 5 Dec 47, subject: "Proposal to Improve Performance of the Last Thirty-Four (34) B-36 Type Aircraft" from DCS/M.

4. Action Desired:

a. Procurement Division will accomplish that which is required in "Problem Presented" and further amplified in "Factual Data."

b. Engineering Division will provide technical data and assistance as required.

(13, m)

X-4521.1-Consolidated B-36-Cont. 82

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TI 2036, Add No. 8 21 Jan 48

c. A priority of 1-C is assigned this project.

BY COMMAND OF GENERAL McNARNEY:

J. F. McCLENDON
Colonel, USAF
Adjutant General

OFFICIAL:

J. F. McCLENDON
Colonel, USAF
Adjutant General

DISTRIBUTION:

MCPP	(15)
MCGE	(1)
MCR	(1)
MCI	(1)
MCC	(1)
MCM	(1)
MCCA	(2)
MCREA2	(25)
MCRF	(1)
MCAH	(1)
MCMCXC	(4)
MCMSXC	(5)
MCIA	(1)
MCAAGP	(1)
MCAAGR	(1)
DCS/M (Wash)	(3)
AFMSS (Wash)	(4)

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AMC Form No. 10-7
(18 Nov 47)
(Old AMC Form No. 10-30a)

AIR INSPECTOR

MCPFE43

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PROC. & IND. MOB. PLNG.*

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TC-92-144

MCPFE43/R.A.Pittner/gh
Ext 2-9207

22 January 1948

SUBJECT: Change No. 28 to P.O. (535) 43-22066-P

TO: Chief of the Bureau of Aeronautics
Navy Department
Washington 25, D. C.
Attn: Section Aer-PP-31
Comdr Antonides.

1. The Air Material Command is taking steps to issue a Change Order to P.O. (535) 43-22066-P, changing over 234 installation, and 96 spare R-4360-41 engines at $54,312.09, to a quantity of 6 installation and 2 spare prototype R-4360-51 engines at $206,500.00 each, plus 198 installation and 15 spare production R-4360-51 engines at $80,000.00 each.

2. Spare parts equal to 25% of the money value of 234 installation R-4360-41 engines, minus accessories, at $4,825,550.00, will be changed to spare parts equal to approximately 15% of the money value of 213 R-4360-51 engines, minus accessories, at a cost of $2,074,539.70. The difference in money allocated originally for spare parts was applied to procuring R-4360-51 engines. The above R-4360-51 engines are to be built in accordance with Pratt & Whitney engine model Specification No. A-7067-A dated 24 June 1947. This Specification will cover both the prototype and production engines.

3. Total credit for the contractual change of 330 R-4360-41 engines and spare parts is $20,748,539.70. The total cost of 8 prototype, plus 213 production R-4360-51 engines and spare parts is $20,748,539.70. No additional funds are involved in this change. For the B-36C Airplane Program, a total of 326 engines are required. The additional 105 spare engines and spare parts will be procured later with Fiscal Year 1949 funds.

4. The delivery schedule of the R-4360-51 engines is as follows:

1949	April	6	1950	Jan.	38
	May	2		Feb.	17
	June	6			
	July	6			
	Aug.	12			
	Sept.	20			
	Oct.	38			
	Nov.	38			

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Ltr, AMC, 22 Jan '48, to Chief, Buaer, Washington 25, D.C., Subj: "Change No. 28 to P.O. (535) 43-22066-P"

5. In the above schedule, the first 8 engines are prototype R-4360-51 engines.

6. It is anticipated that the Change Order to subject Purchase Order will be issued within 10 days.

7. The Air Materiel Command desires that action be taken immediately to process necessary changes on the applicable Navy contract, in order that Pratt & Whitney will have contractual coverage at the earliest possible date to proceed with the above change.

8. It is desired that the Air Materiel Command be informed whether or not Pratt & Whitney can be authorized immediately to proceed with this Change. Address reply to Commanding General, Air Materiel Command, Wright Field, Dayton, Ohio, Attn: MCPPXE43.

FOR THE COMMANDING GENERAL:

Stanley Chace
for V. G. HOSTAN
Major USAF
Colonel, USAF
Chief, Aeronautical
Equipment Section
Procurement Division

cc: P&W, Mr. H. Gosselin
BAR P&W (2)
USAFIIC R.E.Slade P&W
MCPPXA3, Col.Gerrity
MCREXP74, Mr. J.B.Coyle
MCPPXI6, Mr. Sumpter

2

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TC-42-333

...RD SHEET ... MATERIEL COMMAND

Use authorized office symbols to designate addressee and addresses.

Place initials of dictator and typist, telephone number and location to right of signature.

Note warning against use of [illegible] forms. Remaining space is sufficient only for proper spacing of typewritten signature.

Separate comments by horizontal lines across page

PURCHASE Request No. 33663 43-22066

TO MCPPXE43 FROM MCREXU62 DATE 22 Jan 48 COMMENT NO. 1
Attn: Mr. R. Bittner
Thru: MCPPX33
Attn: Mr. J. White

1. Subject Purchase Request is returned herewith for the following reason:

a. The type R4360-51 engine status classification is experimental and cannot be procured in production quantity as requested in subject Purchase Request.

Incl:
PR #33663

S. E. PRUDHOMME
Colonel, USAF
Chief, Engineering Standards Section
Engineering Division

AJR:ds
2-3163
Bldg 16

To: MCR From: MCP 1 Mar 1948 Comment No. 2

1. The B-36C program which requires the installation of R-4360-51 engines in the last 34 B-36 airplanes was approved by Hq. USAF by letter dated 5 December 1947, signed by Lt. Gen. H. A. Craig (copy attached). This requires a change on the Pratt & Whitney contract of a quantity of R-4360-41 engines to R-4360-51 engines. In order to accomplish this, Purchase Request 33663, attached hereto, was written by the Procurement Division, but it was returned from the Engineering Division with Comment No. 1 above stating that the status classification of the R-4360-51 engine was experimental and therefore this engine could not be procured in a production quantity.

2. In view of the above authority to procure these R-4360-51 engines for the B-36C airplanes, it is requested that your office either (1) have the status classification of this engine changed from "experimental" to "standard" or to a classification which allows procurement of a production quantity; or (2) grant a deviation to the Status of Equipment book and procedure so that this procurement may be consummated.

Incl. n/c
Added. Cy ltr 12-5-47

for K. B. WOLFE
Major General, USAF
Director, Procurement and
Industrial Mobilization Planning.

SCP/em
2-3109

Classification cancelled
changed to
AUTH: CG AMC - Removal of classified inclosure
By Chief Mumma USCO
Signature and Grade
2 April 1948

~~SECRET~~

U-51245-A

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TC-92-334

AMC Form No. 10-3
(Rev 29 Jul 47)

ROUTING AND RECORD SHEET SECRET

A MATERIEL COMMAND

Use this form for inter-office correspondence, within headquarters.

Use authorized office symbols to designate addressee and addressee.

Place initials of dictator and typist, telephone number and location to right of signature.

Number all comments consecutively.

Use entire width of sheet, both sides.

Note writing [illegible] for enclosure only for proper spacing of typewritten signature.

Separate comments by horizontal lines across page.

SUBJECT Purchase Request No. 33663. 43-22066

TO MCP FROM MCR DATE 19 Mar 48 COMMENT NO. 3

1. It has been learned through telephone conversation that General Craigie, Director of Research and Development, Hqs USAF, approved classification of the R-4360-51 VDT engines as substitute standard, on 18 March 1948. This will eliminate the Engineering Division's objection to the attached purchase request. Confirmation of the information received by telephone will be forthcoming from Hqs USAF in the next few days.

S. R. BRENTNALL
Brigadier General, USAF
Deputy Director, Research and Development

Incl
n/c

RCB/tmc/5-3119

MAR 25 1948

Classification cancelled
~~changed to~~
AUTH: C.G. AMC - Removal of classified inclosure
By Ethel Mumma Ltcol
Signature and Grade
2 April 1948

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T D-5125-A

AF-LSH OCT 47 1500M

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TC-42-436

WSR/km/ 7-16/7-16

24 January 1948

Contracts AC-19707, AC-19762, Model B-50D and B-54A Airplane Designations.

Boeing Aircraft Company
Seattle 14, Washington

Thru: USAF Plant Representative

1. The contractor is advised that the 116th B-50 series airplane, (effective point of MDR 171) has been designated a B-50D-0 airplane. MDR 58, Item 12, covered by C/N, Master Serial No. 46-6791, has been set up for the purpose of directing the above change in series designation.

2. The production version of the YB-54A airplane has been designated as a model B-54A airplane. Letter contract AC-19762 is being amended accordingly.

3. The above designations should be used in all future documents and correspondence relating to subject airplane.

FOR THE COMMANDING GENERAL:

GEORGE E. SCHAIBERGER
Colonel, USAF
Chief, Aircraft Section
Procurement Division

cc: Boeing Dayton Rep.

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OTHER

AMC Form No. 16-7 (18 Nov 47) (Old AMC Form No. 10-508)

AGO 3 — ASTRO STAR TRANSMISSION

'48 JAN 27 5:20

MCPPXE43/R.A.Wittner/ph
Ext 2-9207
26 January 1948

SUBJECT: Production R-4360 VDT Engines

TO: Bureau of Aeronautics Representative
Pratt & Whitney Aircraft Division
United Aircraft Corporation
East Hartford 8, Connecticut

REF: a. BuAer ltr dtd 14 Jan '48, WPG:sb
b. BuAer ltr dtd 3 Oct '47, WPG:lm

1. It is desired that the following be transmitted to Pratt & Whitney Aircraft for their information and necessary action:

"Verbal information received from responsible Pratt & Whitney visitors at the Air Materiel Command prior to receipt of reference letter indicated that production R-4360 VDT Engines would be delivered starting in May 1949. Prior to receipt of reference letter a., this was considered by the Air Materiel Command to be a date to be used for production planning purposes.

"The Air Materiel Command informed Pratt & Whitney that fourteen (14) R-4360-43 engines were being procured under the terms of reference letter b. Pratt & Whitney was also forwarded a copy of Air Materiel Command wire TSPPP3R1-11-39 dated 6 November 1947, which was self-explanatory.

"The present aircraft programs were planned on a starting date of production R-4360 VDT engines in May. At this date a delay in starting deliveries of R-4360-VDT engines will require a drastic revision of the aircraft programs involved, which is undesirable at this time.

"The Air Materiel Command desires that Pratt & Whitney Aircraft again review the R-4360 VDT programs in their entirety, and inform the Air Materiel Command as to whether or not the original schedule of production of engines beginning in May 1949 can be met. If the production schedule of R-4360 VDT engines as originally planned cannot be met in May 1949, the Air Materiel Command desires that a

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PROC. & IND. MOB. PLNG.*

OTHER

Ltr, AMC, 26 Jan '48, to Chief, Buaer, Washington 25, D. C., Subj: "Production R-4360 VDT Engines"

firm date be forwarded in order that necessary revisions in production planning can be made."

FOR THE COMMANDING GENERAL:

O. M. Scott Maj USAF

O. C. HUSTON
Colonel, USAF
Chief, Aeronautical
Equipment Section
Procurement Division

FEB 5 1948

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26 JAN 1948

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Modernization of Last Thirty Four (34)
B-36 Type Aircraft to Improve Performance.

Chief of Staff,
United States Air Force,
Washington 25, D. C.

Attention: Director of Procurement and
Industrial Planning, AFMPI.

References: (a) Hqs. USAF letter dated 5 Dec. 1947,
(b) Hqs. AMC 1st Ind. dated 30 Sept. 1947,
(c) Hqs. AAF letter dated 10 Sept. 1947.

1. Upon receipt of Hqs. USAF authorization, Reference (a), to proceed with modernization of 34 B-36 airplanes as proposed in Reference (b), the necessary changes to both airplane and CFF Contracts were instituted to insure immediate implementation of subject program.

2. As requested in Reference (a), the following is the revised delivery schedule for B-36 Airplanes to include B-36C Airplanes:

B-36A Airplanes:

1947 Aug.	Sept.	Oct.	Nov.	Dec.	1948 Jan.	Feb.	Mar.	Apr.	May	June
1	0	0	0	0	4	4	4	4	4	1

B-36B Airplanes:

1948 June	July	Aug.	Sept.	Oct.	Nov.	Dec.	1949 Jan.	Feb.	Mar.	Apr.	May	June
3	3	3	3	3	3	3	3	3	3	3	3	3

B-36C Airplanes:

1949 July	Aug.	Sept.	Oct.	Nov.	Dec.	1950 Jan.	Feb.	Mar.	Apr.	May	June	July

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15 FEB 1949

3. Hqs. USAF was informed in Air Material Command 1st Indorsement, Reference (b), that approximately $15,000,000.00 should be made available to cover the increased costs of the GFP required to implement the proposed YDT B-36 program. Subsequent to the submittal of above costs in Reference (b), firm quotations have been submitted to the Air Material Command by the Contractors for the GFP concerned, which were higher than originally estimated. Spare requirements have been revised in accordance with latest revision of "Aircraft Maintenance Requirements Guide of the Aeronautical Board", Case 218, which increased the quantities of GFP spares over and above that which was originally figured in the GFP Cost Estimate. As result of the above, the cost of GFP over and above that presently on Contract is now approximately $18,000,000.00. Listed below is a cost breakdown of the GFP including reasons for increased cost on each item:

ITEM	ORIGINAL EST. COST	PRESENT COST	REMARKS
CHM-2 Turbos	$1,340,970.00	$ 3, 492,000.00	At the time the Modernization proposal was forwarded Hqs.USAF a substantial credit could have been realized by change ordering the BH-1 turbo contract. However, no cancellation credit on BH-1 turbos presently on contract can be realized now as contract is nearly completed. Therefore, present cost reflects total cost of CHM-2 turbos for B-36C program.
R-4360-51 & R-4360-41 Engines.	$7,529,700.00	$10,027,192.00	Spares requirements have been revised to agree with Case 218. Original cost estimate based on 50% spares. New figure based on 58% spares.
C7468 Propellers	$3,500,000.00	$ 4,300,000.00	Cost increase due to submittal of firm quotes by propeller contractor, and additional procurement of two prototype propellers on production funds.

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To: Chief of Staff, USAF,
Washington 25, D. C.

4. Because of the increased cost of the GFP, $3,000,000.00 additional will be required from 1949 Fiscal Year funds to procure the required GFP for this program. It is requested Hqs. USAF approve this additional expenditure.

JOSEPH T. McNARNEY
General, USAF
Commanding

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PSH:bc Engineering II

TC-92-101

PRATT & WHITNEY AIRCRAFT

DIVISION OF UNITED AIRCRAFT CORPORATION
EAST HARTFORD 8, CONNECTICUT, U.S.A.
CABLE ADDRESS AIRCRAFT

MCRAE P11

January 27, 1948

VIA: United States Air Forces Representative, East Hartford 8, Connecticut

Commanding General
Air Materiel Command
Wright Field
Dayton, Ohio

ARMY OFFICE
APPROVED
CONCURRED IN
NO COMMENT
30 Jan 48

Attention: TSSPE3B1 and TSEPP-13B

Subject: R-4360-43 Engine for B-50 Airplane - Engine Controls

Reference: (a) PWA letr. RHB:lms Engineering II dated 4 December 1947 to BAR, East Hartford 8, Connecticut
(b) AMC Wright Field, Dayton, Ohio letr. TSEPP-13B/RTD/mb dated 22 December 1947 to Pratt and Whitney Aircraft, East Hartford, Conn.

Enclosure: (A) Nozzle Actuator T-9172507 (Breadboard)
(B) Nozzle Actuator T-9624301 (Prototype)
(C) C.E.P. Sensing Element P-9144632
(D) Turbo Differential Pressure Sensing Element P-9144631
(E) Turbo Tachometer Assembly P-9144635
(F) Nacelle Junction Box SK-62674-202
(G) Boost Selector SK-62674-248 (Supersedes SK-62674-204)
(H) Servo Amplifier SK-62674-242

1. Installation instructions for the R-4360-43 engine control in the B-50 airplane as shown in reference (a) have been transmitted to Boeing Aircraft. A copy of this letter and its enclosures was also supplied informally to interested Air Materiel Command personnel on January 16, 1948.

2. Dimensional information was shown in drawings as follows:

(a) Nozzle Actuator T-9172507
(b) C.E.P. Sensing Element P-9144632
(c) Turbo Differential Pressure Sensing Element P-9144631
(d) Turbo Tachometer Assembly P-9144635
(e) Nacelle Junction Box SK-62674-202
(f) Boost Selector SK-62674-204

Additional information on the Servo-Amplifier was transmitted to Boeing Aircraft January 12th. Drawing SK-62674-242 is also enclosed for the Air Materiel Command's information.

JAN 30 1948
From: Bureau of Aeronautics Representative
To: CG-AMC, Wright Field
Attn: TSEPE3B1 — TSEPP-13B
Ref: USAF, PWA
Encl: Forwarded
L. E. Klein
By dir

UNITED AIRCRAFT CORPORATION
Pratt and Whitney Aircraft Division

P. S. Hopper
Assistant Project Engineer

PSH:bc
Enc. 8

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6-27-3

MCPPXE43/R.A.Bittner/ghs
Ext 2-9207

MCPPXE4

28 January 1948

SUBJECT: Contract W33-038 AC-18693 - Mock-up R-4360-51 Engine

THRU: USAF Inspector in Charge

TO: Pratt & Whitney Aircraft Division
United Aircraft Corporation
East Hartford 8, Connecticut.

1. Reference is made to a recent conference at the Air Materiel Command between Pratt & Whitney, CVAC, and the Air Materiel Command personnel, in which CVAC personnel desired to secure an R-4360-51 mock-up engine.

2. Information is desired as to when a mock-up R-4360-51 engine could be made available to CVAC, and it is also desired that the cost of this engine be forwarded.

3. This letter is not to be construed as authority to proceed on the building up of a mock-up engine. Formal authority, if and when the Air Materiel Command desires to secure a mock-up R-4360-51 engine, will be given by a contractual change to the subject contract.

4. It is desired that a reply be forwarded at an early date.

FOR THE COMMANDING GENERAL:

/s/ O. M. Scott Maj. USAF
for V. G. HUSTON
Colonel, USAF
Chief, Aeronautical
Equipment Section
Procurement Division

cc: USAFIIC, Mr. R. E. Slade

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In reply please refer to:
RHB:bc Engineering II

PRATT & WHITNEY AIRCRAFT

DIVISION OF UNITED AIRCRAFT CORPORATION
EAST HARTFORD 8, CONNECTICUT, U.S.A.
CABLE ADDRESS AIRCRAFT

ARMY OFFICE
APPROVED
CONCURRED IN
NO COMMENT 30/1/48

January 30, 1948

VIA: United States Air Force Representative, East Hartford 8, Connecticut

To: Commanding General
Air Materiel Command
Wright Field
Dayton, Ohio

Attention: TSEPE3B1

Subject: Contract W33-038 ac-18653 - R-4360 V.D.T. Engine - Article 15, Item 5 Monthly Progress Report

Reference: (a) PWA letr. RHB:lms Engineering II dated 30 December 1947 to CG, AMC Wright Field, Dayton, Ohio, via: USAF Representative, East Hartford, Connecticut

1. The following is a summary of the work accomplished under Contract W33-038 ac-18653 since the last monthly progress report was submitted by reference (a):

(a) The total running time on ten R-4360-C engines has been increased from 3370 to 3537 hours and includes 962 hours of V.D.T. type engine operation.

(b) A 150 hour Qualification Test was started on R-4360-43 engine No. X-113 but the test was discontinued at 16 hours endurance when two screws holding the bifilar second order damper construction to the rear end of the crankshaft failed and cracks developed in the three power section oil scavenge pump bodies. Redesigned parts are now being produced prior to reinstating the 150 hour endurance test.

(c) Endurance on R-4360-43 engine No. X-105 was continued from 27 1/2 to 31 1/2 hours when the second order bifilar damper failed through the web section. This engine part has been redesigned as a result of this failure and revised parts are now being manufactured.

(d) R-4360-43 engine No. X-101 was reassembled and is now being used to check the cooling and distribution characteristics of the V.D.T. engine and engine No. X-109 has been overhauled and is being installed on the test stand prior to continuing calibration of the V.D.T. engine.

(e) 10 hours endurance at 3800 BHP, 2800 RPM was completed on the five piece crankshaft installed in R-4360-C2 engine No. X-157. The crankshaft was then removed from the engine, inspected and found to

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To: Commanding General, Air Materiel Command, Wright Field, Dayton, Ohio

Subject: Contract W33-038 ac-18653 - R-4360 V.D.T. Engine - Article 15, Item 6
Monthly Progress Report

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be in good condition. Endurance was then continued from 10 to 23 hours when the crankshaft failed in the "C" row crank throw indicating the need for modification of the design.

(f) R-4360-43 engine No. X-114 is being overhauled after completing 121 hours total time including 19 hours endurance at 4000 BHP, 2800 RPM. This engine was equipped with Pratt and Whitney Aircraft design headers. Engine No. X-156 was overhauled and has been installed on the test stand and engine No. X-155 is being converted to an R-4360-51 engine.

(g) R-4360-43 Engines Nos. X-151 and X-152 are both at Boeing; the exhaust headers and fuel injection unit for engine No. X-151 were also delivered during the last month.

(h) The first R-4360-VDT control unit has been completed but it will not be possible to check its operation on an engine until CHM-2 turbo supercharger units become available. It is understood the first CHM-2 unit will be available late in March 1948.

UNITED AIRCRAFT CORPORATION
Pratt and Whitney Aircraft Division

R. H. Begg
Project Engineer

RHB:bc

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2 February 1948

MCPPXE32
Minutes of Conference at Headquarters, AMC,
26 January 1948 Concerning Problems Relative
to VDT Engines for B-36C Airplanes.

Personnel Attending Conference:

Lt. Col. T. P. Gerrity	Chief, Bombardment Branch
Capt. R. J. Walling	Project Office, Bomb. Br.
Major S. P. Dillon	USAFPR Office, CVAC FW
Capt. A. J. Middleton	USAFPR Office, CVAC FW
Major O. M. Scott	MCPPXE-4
Mr. J. B. Coyle	MCREXP
Mr. W. A. Parkins	Pratt & Whitney
Mr. H. Gosselin	" "
Mr. R. H. Begg	" "
Mr. A. S. Smith	" "
Mr. F. W. Dichman	" "
Mr. R. C. Sebold	CVAC FW
Mr. J. W. Larson	CVAC FW
Mr. D. H. Levin	CVAC FW
Mr. C. G. Martin	CVAC FW

1. At the beginning of the conference, Col. T. P. Gerrity outlined the situation that is presently confronting the airplane Contractor. In order to meet the airplane delivery schedule, it is necessary for CVAC to release engineering to their shops very soon. The engineering of certain airplane component parts is dependent on engine performance and engine cooling requirements which have not yet been finally determined by Pratt & Whitney. Mr. Parkins stated that the VDT Program was still in the development stage and he hoped that the engine performance and cooling requirements recently given to CVAC would remain unchanged and possibly improve. However, Pratt & Whitney was not in a position at the present time to guarantee the performance and cooling requirements. It was the recommendation of Mr. Parkins that CVAC, General Electric and Pratt & Whitney meet at Hartford, Conn. to work up a Pratt & Whitney report which will include engine performance and cooling requirements for the VDT engine. This suggestion was concurred in by all concerned. CVAC and General Electric will proceed to Pratt & Whitney, Hartford, as soon as possible to begin work on the performance report. It was tentatively agreed that a meeting would be scheduled at Pratt & Whitney the week of 9 February to discuss results obtained by CVAC, General Electric and Pratt & Whitney engineers. Pratt & Whitney is to notify the AMC of the exact date the conference can be held. It was also agreed that a meeting will be called every month to discuss problems pertaining to the B-36C Program.

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2. To date, the problem of mounting and driving of the power plant fan had not been resolved. It was determined by CVAC that as result of the recent increase in cooling requirements for the VDT engine that it would be mandatory to provide a two speed fan drive. As for provision of the two-speed fan drive and location of fan, it was agreed that in order for Pratt & Whitney and CVAC to accomplish preliminary engineering designs, a fan configuration had to be determined. It was agreed that the fan would be mounted within a few inches from the rear case of the engine. Pratt & Whitney is to furnish a two-speed drive similar to the present R-4360-41 engine fan drive and a flange for mounting the fan on the engine. Mr. Parkins did not recommend mounting the fan on the engine as dynamic unbalance and gyroscopic affect might well cause engine case failures, however, Pratt & Whitney would make every effort to provide a satisfactory fan mounting. As a hedge against failures encountered by an engine mounted fan, CVAC is to make provisions for the fan mounting as an integral part of the nacelle structure. CVAC stated that mounting the fan from nacelle structure would entail some difficulty due to anticipated relative motion between nacelle structure and engine. CVAC is to provide Pratt & Whitney with fan drive gear ratios and fan h.p. as determined from latest Pratt & Whitney cooling requirements.

3. Pratt & Whitney will furnish as part of the engine the exhaust headers. Pratt & Whitney stated they were working on design of the exhaust collector ring which they would require to be furnished by the airplane Contractor to their Specification. As to exhaust shrouding required it was determined to be the responsibility of the airframe Contractor to provide necessary shrouding. It was pointed out by CVAC that shrouding should be provided for the exhaust header in addition to the exhaust collector. Pratt & Whitney was quite concerned about having shrouding around the headers as they said it would be a serious problem due to limitation of space around the header. Further discussion of this problem was postponed until the next scheduled conference.

4. CVAC presented the requirement for a mock-up engine. Mr. Gosselin stated that Pratt & Whitney would furnish such an engine and would forward cost and delivery date to the AMC for further consideration.

5. It was pointed out by Col. Gerrity that the present status of the B-36C program is such that it could still be cancelled if it is determined that airplane performance is seriously compromised. It will be one objective of the next scheduled conference to determine how airplane performance is affected by decreased engine performance.

/s/ Robert J. Walling, Capt., USAF
ROBERT J. WALLING,
Captain, USAF,
MCPPXA32.

cc - CVAC FW
Gen. Shepard MCPP
Col. Schaezel MCPPXA
Col. Gerrity MCPPXA3
Mr. Bittner MCPPXE
Mr. Coyle MCPEXP

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TC-92-242

PRATT & WHITNEY AIRCRAFT

DIVISION OF UNITED AIRCRAFT CORPORATION

EAST HARTFORD 8, CONNECTICUT, U.S.A.

CABLE ADDRESS "AIRCRAFT"

In Reply Please Refer To WPG:rk

OF THE GENERAL MANAGER

February 3, 1948

AC-18653

To: Commanding General
Air Materiel Command
Wright Field, Dayton, Ohio

Via: Bureau of Aeronautics Representative
East Hartford 8, Connecticut

Subject: Production of R-4360 VDT Engines

References: (a) P&WA letter dated 14 January, 1948, WPG:sb
(b) P&WA letter dated 3 October, 1947, WPG:lm
(c) Conference at AMC on 18 September, 1947
(d) AMC letter to BAR dated 26 January, 1948, MCPPIE43/R.A.Bittner/ghs, with BAR Endorsement F21/QA/121, JEO:ccs (764)

1. The receipt of Reference (d) is acknowledged in which the Contractor is requested to review delivery promises for the VDT engine (R-4360-43).

2. Reference (b) confirmed the delivery promises furnished at the Reference (c) conference at which time the Contractor agreed that deliveries would start eighteen (18) months after the receipt of an official authorization from the Government. Deliveries starting in May, 1949 were predicated on the official authorization being received by us not later than November 15, 1947. The eighteen month period was considered reasonable in light of the fact that this engine model was still in the development stage and would require complete new tooling in addition to new patterns and dies. It was generally understood that deliveries starting in May, 1949 were predicated on a go-ahead being received not later than November 15, 1947.

3. The Advance Notice of Award was finalized during January, 1948 which will result in deliveries starting eighteen months later, or July, 1949. We recognize the urgency and the importance of this program to the Air Force, and we assure you that we will do everything within our power to expedite deliveries.

Re: letter 2-4-48

UNITED AIRCRAFT CORPORATION
Pratt & Whitney Aircraft Division

W. P. Gwinn
General Manager

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43-22066-P

CONTRACT FILES

Rec 2/16/48

FM TH 72/ DUALN CG 3522152

TO BLGLC/PRATT AND WHITNEY AIRCRAFT DIV PRIME AIRCRAFT CORP
EAST HARTFORD CONN

INFO DEGL/DAN E HARTFORD CONN

UEDC/CG AMC WRIGHT FLD DAY. FWA WPAFB43

NAVY DEPT

CONTRACT NOAC 3333 WILL BE AMENDED TO PROVIDE FOR THE DELIVERIES SET FORTH IN AMENDMENT EIGHT AS FOLLOWS. PROVIDE LOT NINE ONE HUNDRED AND SIX (106) MODEL R-4360-41 ENGINES TO BE IN QUANTITY OF 106 R-4360-41 ENGINES AND 1 PROTOTYPE R-4360-51 ENGINE. PLUS 213 PRODUCTION R-4360-51 ENGINES. THE ABOVE R-4360-51 ENGINES ARE TO BE BUILT IN ACCORDANCE WITH PRATT AND WHITNEY ENGINE MODEL SPECIFICATION NO A-7867-[illegible] DATED 24 JUNE 1947 A THIS SPECIFICATION WILL COVER BOTH THE PROTOTYPE AND PRODUCTION ENGINES A THE DELIVERY SCHEDULE OF THE R-4360-51 ENGINES IS AS FOLLOWS 1949 - APRIL 6 JUNE 6 AUG 12 OCT 38 1950 - JAN 38

MAY 2 JULY 6 SEPT 20 NOV 38 17

IN THE ABOVE SCHEDULE ONE (1) THE FIRST 6 ENGINES ARE PROTOTYPE R-4360-51 ENGINES A ON THIS UNDERSTANDING BE IT IS SPECIFICALLY THAT YOU PROCEED WITH THE WORK . CONTRACTING OFFICER

CFN 3333 633 R-4360-41 303 R-4360-41 6 R-4360-51 213 R-4360-51 R-4360-51 A-7867-A 24 1947 R-4360-51 1949 6 6 12 38 1950 38 2 6 20 38 17 R-4360-51

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TSCAD Form No. 6 (4 APR 47)

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XCPXT/5-4108

HEADQUARTERS
AIR MATERIEL COMMAND

Wright Field, Ohio
5 February 1948

TECHNICAL INSTRUCTIONS

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SERIAL NO: TI-2036, Addendum No. 10

SUBJECT: Installation of R-4360-VDT Engines in B-36 Type Aircraft

TO: Procurement Division
Engineering Division

NOTE: This T.I. rescinds and replaces T.I. 2036, Addendum No. 8 to correct the number of aircraft to be procured and to raise the priority to 1-B.

1. Problem Presented:

a. To install R-4360-VDT engines in the last thirty-four (34) B-36 (B-36C) type aircraft.

2. Factual Data:

a. Six (6) or seven (7) B-50's from FY 48 procurement will be cancelled and this saving in funds applied to cover the additional cost of $15,000,000 required for GTL.

b. The present -36 contract will be changed to call for supply of twenty-two (22) B-36A airplanes, thirty-nine (39) B-36B airplanes, one YB-36C and thirty-three (33) B-36C aircraft in lieu of the twenty-two (22) -36A and seventy-eight (78) B-36B airplanes now on contract.

c. In order to meet the delivery schedule of -36C airplanes on which this program was approved, it will be necessary that the required wind tunnel programs be completed with the minimum of delay.

3. Authority:

a. C/S, USAF, by letter dated 5 Dec 47, subject: "Proposal to Improve Performance of the Last Thirty-Four (34) B-36 Type Aircraft" from ICS/ .

4. Action Desired:

a. Procurement Division will accomplish that which is required in "Problem Presented" and further amplified in "Factual Data."

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SERIAL NO: TI-20_ , Addendum No. 10 February 1948

SUBJECT: Installation of R-4360-VDT Engines in B-36 Type Aircraft

b. Engineering Division will provide technical data and assistance as required.

c. A priority of 1-E is assigned this project.

BY COMMAND OF GENERAL McNARNEY:

OFFICIAL:

BRYAN L. DAVIS
Colonel, USAF
Adjutant General

BRYAN L. DAVIS
Colonel, USAF
Adjutant General

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TC-92-3V1

ADDRESS REPLY TO

AND REFER TO

Aer-PR-3#

AIRMAIL

NAVY DEPARTMENT
BUREAU OF AERONAUTICS
WASHINGTON 25, D.C.

for PEACE BUY SAVINGS BONDS

9149

6 FEB 1948

From: Chief, Bureau of Aeronautics
To: Commanding General, Air Materiel Command,
Wright Field, Dayton, Ohio
Attn: MCPPXE43

Subject: Change #28 to P.O.(535) 43-22066-P

Reference: (a)AMC ltr. MXPPXE43/RA Bittner, dated 22 Jan.47

1. In an attempt to reconcile figures presented by referenced letter, two apparent errors have been discovered. It is desired to call same to the attention of the Air Materiel Command so that the formal purchase order change notice may be correct.

2. Paragraph 2 of reference (a) states that spare parts for 234 R-4360 -41 engines at $4,825,550.00 is to be changed to spare parts for 213 R-4360-51 engines at $2,074,539.70. Paragraph 3 further states that total credit for R-4360-41 and total cost for R-4360-51 engines will be $20,748,539.70, thus causing no change in funds presently allocated.

3. Since, however, the total engine credit for R-4360-41 engines is $17,922,989.70 (330 x $54,319.20) and total cost of R-4360-51 engines is estimated to be $18,692,000.00 (8 x $206,500.00) + (213 x $80,000.00), the value of spare parts to be changed must be $2,825,550.00 worth of -41 parts converted to $2,056,539.70 worth of -51 parts in order to develop the total figure of $20,748,539.70 set forth in paragraph 3 of reference (a).

4. The following tabulations illustrate the situation:

A. Total credit and cost developed from figures presented in reference (a)

	Credit for R-4360-41	Cost of R-4360-51
Engines	$17,922,989.70	$18,692,000.00
Spares	4,825,550.00	2,074,539.70
Total	$22,748,539.70	$20,766,539.70

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Aer-PR-32-

Subject: Change #28 to P.O.(535) 43-22066-P

9143 -

Result: 1. Excess credit of $1,982,000.00
2. Total credit and cost do not agree with paragraph 3 of reference (a).

B. Correcting spare parts value to agree with totals shown by reference (a)

	Credit for R-4360-41	Cost of R-4360-51 (Est)
Engines	$17,922,989.70	$18,692,000.00
Spares (Rev.)	2,825,550.00	2,056,539.70
Total	$20,748,539.70	$20,748,539.70

Result: 1. Spares credit on -41 reduced $2,000,000.00.
Spare cost on -51 reduced $18,000.00.
2. Total credit and cost in agreement with paragraph 3 of reference (a).

5. It is requested that the Air Materiel Command review the above figures and advise this bureau regarding the corrections in spare parts value that appear proper.

J W Antonides

J. W. Antonides
By Direction

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C
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In reply please
refer to:WPG:lm

February 9, 1948

Via: Bureau of Aeronautics Representative
East Hartford 8, Connecticut

To: Bureau of Aeronautics
Navy Department
Washington 25, D. C.

Subject: Contract NOa(s) 8333 - Amendment to Change 633 Model R-4360-41 Engines to 303 R-4360-41 Engines and 8 Prototype R-4360-51 Engines plus 213 Production R-4360-51 Engines

Reference: (a) BuAer TWX 032219 February

Enclosure: (A) P&WA ltr. WPG:lm dtd October 3, 1947 to AMC

1. We acknowledge receipt of Reference (a) stating that subject contract amendment will be issued to this Contractor.

2. In accordance with the request of the Contracting Officer contained in Reference (a), we are immediately making the necessary commitments to proceed with the work requested in Reference (a).

3. Inasmuch as Reference (a) is advance notice of an amendment to the subject contract, it is assumed that the applicable terms and conditions of the basic contract will apply to the articles to be furnished under the proposed amendment.

4. The BuAer's attention is invited to agreements reached with the Air Materiel Command on the delivery of production type -51 engines. A copy of our confirmation of these agreements is forwarded herewith as Enclosure (A). As set forth therein, delivery of production type -51 engines would start in the third month after inception of the -43 production program. Therefore, based on delivering -43 production engines under Contract NOa(s)-9511 four (4) July and ten (10) August, 1949, delivery of -51 production engines would start September, 1949.

In an effort to more nearly meet the requirements of the Air Materiel Command, we have reviewed the acceleration of deliveries of -51 engines as set forth in Enclosure (A) and scheduled below the increased rate of deliveries as indicative of our best efforts.

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2	September, 1949
6	October
12	November
24	December
38	January, 1950
38	February
38	March
38	April
17	May

While the delivery schedule set forth in Reference (a) differs from the above schedule and does not account for all of the -51 engines to be procured under contract amendment, we will proceed with the work in the expectation that these differences will be resolved to the mutual satisfaction of the Government and ourselves.

5. In addition to the change in price resulting from the substitution of the -51 engines for the -41 engines, there may be additional charges in the nature of termination costs for long term procurement items resulting from this change. If there are any such charges, we will advise you of their extent as soon as they can be determined.

UNITED AIRCRAFT CORPORATION
Pratt & Whitney Aircraft Division

W. P. Gwinn
General Manager

cc: Air Materiel Command
Wright Field, Dayton, Ohio

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AMC Form No. 10-7
(18 Nov 47)
(Old AMC Form No. 10-58a)

MCPPIA3/TPG/gp

Wright-Patterson Air Force Base

xxxxxxxx

12 February 1948

Contract AC-7, Cost Estimates for Completion of B-36 Contract.

AF Plant Representative,
Consolidated Vultee Aircraft Corporation,
Fort Worth 1, Texas.

Reference: Ltr MCPPXN/RJB/kj dated 2 Feb 1948.

1. Cost estimates computed in reference letter for completion of the B-36 program are in error inasmuch as they fail to reserve the proper amount of money for procurement of spare parts and special tools. Change Order No. 15 to Contract AC-7 allocates $17,716,000.00 for spare parts and $750,000.00 for special tools. These moneys have been set aside for spare parts and special tools because it is estimated that spares and special tools to these dollar values will be required before completion of this contract.

2. It is, therefore, requested that a re-examination of future costs on Contract AC-7 be made, reserving the proper amount of money for spares and special tools and including costs of only those changes which are now contemplated for installation in the airplane. It is suggested that upon re-submittal of this cost estimate, the Contractor include a list of these contemplated changes with estimated costs for each individual change.

48 FEB 12 14:08 TSACDS NO 35

3. The B-36 VDT program was entered into on the premise that the airplane program could be completed within the funds existing on the contract through a reduction of five airplanes. If a re-examination of costs reveals that this is no longer true, a decision must be made either to cancel the B-36 VDT program or to further reduce the quantities of airplanes required. This course of action is necessary since no additional funds are available beyond those currently allocated Contract AC-7.

4. It is requested that new cost estimates be submitted at an early date since a decision on any change in this program should be made on a timely basis.

BY COMMAND OF GENERAL McNARNEY:

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GEORGE E. SCHAETZEL
Colonel, USAF RETAINED
Chief, Aircraft & Miss. Procurement Division

WP-O-10 DEC 47 950M

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AMC Form No. 16-3
(Rev 29 Jul 47)

ROUTING AND RECORD SHEET

173

7C-92-24

MATERIEL COMMAND

Use this form for inter-office correspondence within headquarters.

Number all comments consecutively.

Use one entire width of sheet, both sides.

Use authorized office symbols to designate addressee and addresser.

Note warning signal at lower left of form. Remaining [illegible] with the proper spacing of typewritten signatures.

Place initials of dictator and typist, telephone number and location to right of signature.

Separate comments by horizontal lines across page.

SUBJECT: Request for Permission to Negotiate - Purchase Request No. 33659

TO: MCPP
ATTN: Brig.Gen.Shepard

FROM: MCPPXE42

DATE: 19 Feb. 48 COMMENT NO. 1

(ac-18653

1. Pursuant to Joint Procurement Regulation 4-202, there is forwarded a proposed statement of the required Findings and Determination prepared for the signature of the Chief, Procurement Division, requesting authority to negotiate the following procurement as a Change Order to Contract W33-038 ac-18653 with Pratt & Whitney Aircraft Division, United Aircraft Corporation, East Hartford, Connecticut:

a. Contractor: Pratt & Whitney Aircraft Division, United Aircraft Corporation, East Hartford, Connecticut.

b. Services: The development of an axial power take-off drive for the R-4360-43 engine.

c. Price: The cost to the Government of the above services will be $18,000.00.

d. Funds: The procurement will be chargeable to 1948 Fiscal Year (110-09) Funds.

2. The services to be furnished are of a developmental nature and are within the scope of JPR 4-112.

1 Incl.
Statement of Findings
and Determination.

for W. L. Zuebler, Lt Col

W. G. HUSTON
Colonel, USAF
Chief, Aeronautical
Equipment Section
Procurement Division

MRS/em
2-5119
Bldg 15
Rm 104

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AMC FORM OCT 47 13480M (SUPERSEDES AMC FORM 16-3, 29 JUL 47, WHICH IS OBSOLETE) (CONTINUE ON OTHER SIDE) COMMENT NO

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AMC Form No. 30-600
(Rev 2 Apr 47)
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ADJUTANT GENERAL

[redacted] (Technical)

CHIEF OF ADMIN.

AIR INSPECTOR

PUBLIC RELATIONS

JUDGE ADVOCATE

PERSONNEL (T-1)

INTELLIGENCE (T-2)

ENGINEERING (T-3)

SUPPLY (T-4)

PLANS (T-5)

BASE C. O.

OTHER

TC-92-411

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19 February 1948

National Advisory Committee for Aeronautics
1724 F Street, N.W.
Washington 25, D.C.

Attn: Director of Aeronautical Research

Gentlemen:

It is requested that the National Advisory Committee for Aeronautics conduct research investigations in the 19-Foot Pressure Tunnel at the Langley Memorial Aeronautical Laboratory of a 1/14-Scale, powered tractor model of the B-36C, VDT, airplane. These investigations are required in order to determine the longitudinal and directional stability and control characteristics of the B-36C airplane, employing tractor power plants.

The use of the 19-Foot Pressure Wind Tunnel at the Langley Memorial Aeronautical Laboratory is desired in the conducting of these investigations since previous B-36 studies of the pusher configuration were conducted in this facility. Considerable loss of time will be prevented by using the same wind tunnel model and the same wind tunnel facility.

Personnel of the Langley Laboratory have been contacted by representatives of this Headquarters and Consolidated-Vultee Aircraft Corporation, in reference to these investigations, and favorable comments were received. The program was discussed and it is anticipated that further discussions will be had to insure maximum utilization of the model and the tunnel time required to carry out the investigations.

The Contractor, Consolidated-Vultee Aircraft Corporation, Fort Worth Division, will make the model available for testing at the Langley Laboratory on or before 1 June 1948. Model motors, which deliver enough power to correspond to the low-speed high-power condition at which decreased stability may be expected, will be provided by the Langley Laboratory.

Necessary engineers, technicians and mechanics will be furnished by the Contractor to assist in the maintenance and testing of the model.

FEB 19 TSAGDS NO 35

322.1 Eng. N.G.C.A. - Convair/Ft Worth 13.36 VDT Tractor Power Plant Installation

2-21-48

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AMC Form No. [illegible]
(Rev. 2 Nov 47)

(ROUTE SYMBOL) AMC
(ORGANIZATION) NACA, Washington, D.C. Request for Test AF-40 - B-36C Airplane.

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ADJUTANT GENERAL

CHIEF OF ADMIN.

AIR INSPECTOR

PUBLIC RELATIONS

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PERSONNEL (T-1)

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SUPPLY (T-4)

PLANS (T-5)

BASE C.E.

OTHER

The investigations herein requested will be conducted at the expense of the Government, and the data derived therefrom should be classified as Restricted.

It is requested that the information obtained as a result of these investigations be made available to the Consolidated-Vultee Aircraft Corporation, Fort Worth, Texas, through the AMC Engineering Liaison Officer at the Langley Memorial Aeronautical Laboratory, by means of reports in the most expeditious manner commensurate with the desires of the National Advisory Committee for Aeronautics regarding the means to be used in the immediate dissemination of research information.

Final approval by the National Advisory Committee for Aeronautics should be withheld until receipt from the Navy of the accomplished Air Force Clearance Form No. AF-40.

Very truly yours,

WILLIAM M. MORGAN
Brigadier General, USAF
Chief Engineering Operations
Engineering Division

Encl: cy AF-40

cc: AMCMLO at AAL, Mft. Fld. Calif
PPEL, Cleveland, O.
LMAL, Langley Fld. Va.
Capt. W. S. Diehl, U.S.N. Wash.D.C.
AFDIN, Hqs. USAF, Wash. D.C.
NCPPEL-32, R. C. Mangle
NCMMA-3, M. L. Anderson, thru
NCMMA-[illegible]
[illegible]MA, H.C. Chandler, Jr.

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TC-92-95

APPARATUS DEPARTMENT

GENERAL ELECTRIC COMPANY

MAIN OFFICE SCHENECTADY, N. Y.

Please Address Reply
and Envelope to
General Electric Co.
920 Western Avenue
West Lynn, Mass.
Attn: Aircraft Gas
Turbine Div., 2-29
and refer to 16-473

River Works
920 Western Avenue
West Lynn 3, Mass.

February 20, 1948

TO: Commanding General
Headquarters, AMC
Wright Field
Dayton, Ohio

2/24/48
Lt. Stuart

ATTENTION: R. W. McLane, MCREXT-6

COMMUNICATION: [illegible] Inspector in Charge, West Lynn, Mass.

1. Failure in obtaining an overall analysis of the control of T-31[illegible] Aftercooled Engine [illegible] and in order to include the effect of change of engine speed, the following propeller data is required as soon as possible:

a. Propeller torque as a function of propeller-blade pitch angle β and engine speed. This information was usually been in the form of curves of torque versus pitch angle for various engine speeds. These data should be at 20,000 feet altitude and at a YB-49 airplane speed appropriate to military wet rating of [illegible] engine. If time permits, sea level and 35,000 feet data would also be desired.

b. If the propeller pitch controller on say the YB-49 is of the usual governored type, we would like a curve of rate of change of pitch angle versus engine speed, [illegible]. The simplest representation of these data would be to have an estimate of an overall time lag to be used with the curve requested in item a above. It would be desirable to know how the governor works so that we might properly judge the best representation.

2. We appreciate your cooperation in obtaining these propeller data for us and any immediate action you can give this specific request.

WCM/dev

W. C. MEANLEY
AIRCRAFT GAS TURBINE DIVISION

cc: USAFIC

24 FEB 1948
Inspector in Charge
West Lynn, Mass.

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TC-42-239

In reply please refer to WAP:rij-Eng.

PRATT & WHITNEY AIRCRAFT

DIVISION OF UNITED AIRCRAFT CORPORATION

EAST HARTFORD 8, CONNECTICUT, U.S.A.

CABLE ADDRESS "AIRCRAFT"

ARMY OF
ACTION
CONCURRED IN
NO COMMENT

February 23, 1948

VIA: United States Army Air Force Representative

To: Commanding General
Air Materiel Command
Wright Field
Dayton, Ohio

Subject: Contract W33 038 ac-18653 - Fan Drive for R-4360-51 Engines
P.R. 62281 - Cancelled

Reference: (a) Conference at Pratt and Whitney Aircraft February 16, 1948 with AMC, Consolidated-Vultee and P&WA personnel present.

Enclosure: (A) Three (3) copies of Cost Estimate - Remotely Mounted Fan Drive for R-4360-51 Engine.

1. In accordance with the decisions reached at the reference conference we are submitting herewith a proposal covering the labor and material involved in providing a remotely mounted two-speed cooling fan for use with the R-4360-51 engine which is supplied as a part of the subject contract. The mechanism will be substantially in accordance with Pratt & Whitney Aircraft Drawing LR-13215, Sheet 2. The speed ratios will be approximately 1 and 1.7 times crankshaft speed. In low speed the drive will support a maximum fan load of 180 HP and in high speed, a maximum fan load of 360 HP.

2. The work can be accomplished and one complete fan drive unit can be supplied within seven months from the date of go-ahead.

3. The cost to the government will be $37,952.00. Our Cost Breakdown is attached.

4. We request that if acceptable this additional work be included as a separate item to the subject contract so as not to confuse or delay the progress of the work now scheduled.

UNITED AIRCRAFT CORPORATION
Pratt & Whitney Aircraft Division

W. A. Parkins
Engineering Manager

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TC-92-240

UNITED AIRCRAFT CORPORATION

PRATT & WHITNEY AIRCRAFT DIVISION

REMOTELY MOUNTED FAN DRIVE FOR R-4360-51 ENGINE

COST BREAKDOWN

MATERIAL			
Raw Material, Forgings and Castings			$ 3,200.00
Fan Drive Coupling Assemblies			3,246.00
Gears (Fan drive and power take-off drive)			6,075.00
Accessory Shafts			500.00
Bearings and Bushings			525.00
Production Parts at Standard Cost			870.00
Miscellaneous Sub-contracted Parts (seals, rings, springs, spacers, slingers, gaskets)			495.00
Fan Drive loading and Supporting Parts			875.00
Gasoline and Oil			4,100.00
Total			19,886.00
LABOR			
Engineering - Design	1600 hrs. at $1.70		2,720.00
Construction	1330 hrs. at $1.60		2,128.00
Assembly	350 hrs. at $1.56		546.00
Test	2250 hrs. at $1.57		3,533.00
Total			8,927.00
OVERHEAD			
Engineering - 90.0%			8,034.00
Total Engineering Cost			36,847.00
General and Administrative Overhead - 3.0%			1,105.00
Total Estimated Cost			$ 37,952.00
Price Quoted			$ 37,952.00

February 23, 1948

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MCPPXR43

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RESEARCH & DEV.*

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PROC. & IND. MOB PLNG.*

OTHER

AMC Form No. 10-7
(18 Nov 47)
(Old AMC Form No. 10-508)

TSAGDS NO 35

DNR FEB 24

WRIGHT-PATTERSON AIR FORCE BASE
Dayton, Ohio

MCPPXR43/R.A.Rittner/ghs
Ext 2-9207
24 February 1948

SUBJECT: Contract W33-038 AC-18653
Mock-up R-4360-51 Engine

THRU: USAF Inspector in Charge

TO: Pratt & Whitney Aircraft Division
United Aircraft Corporation
East Hartford 8, Connecticut

REF: a. AMC ltr dtd 28 Jan '48, MCPPXR43/R.A.Rittner/ghs
b. P&WA ltr dtd 12 Feb '48 signed H. Gosselin

1. Receipt of referenced letter (b) is hereby acknowledged.

2. During a discussion between Mr. Hugh Gosselin and Major O.M. Scott, Mr. Gosselin stated that Pratt & Whitney would probably furnish the mock-up R-4360-51 engine at no cost to the Government. It is desired that this be confirmed, or a price breakdown be furnished in order that any necessary procurement action may be initiated as soon as possible.

3. An early reply is desired by the Air Materiel Command.

FOR THE COMMANDING GENERAL:

100

cc: USAFIIC

for O.M. Scott Maj USAF
V. G. HUSTON
Colonel, USAF
Chief, Aeronautical
Equipment Section
Procurement Division

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CASE HISTORY OF THE VDT ENGINE

DOCUMENTS 101 - 244

APPENDIX B

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Jan 1950
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143

[redacted]

Auth: CG, AMC
Initials: MRS
Date: 12-22-49

CASE HISTORY OF THE VDT ENGINE

DOCUMENTS 101 - 244

APPENDIX B

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by authority of Ltr AFLC (MCKH) 10 Jun 64
by GRY date 29 Jun 64

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DECLASSIFIED AFTER 12 YEARS.
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CASE HISTORY OF THE VDT ENGINE

SECRET
Auth: CG, AMC
Initials: MRS
Date: 12-22-49

Prepared by
Historical Office
Executive Secretariat
Air Materiel Command
Wright-Patterson Air Force Base
January 1950

By

Ethel M. DeHaven
Historian

Prepared under provisions of AF Regulation No. 210-5 as a part of the USAF Historical Program.

This document contains information affecting the national defense of the United States within the meaning of the Espionage Laws, Title 18 U.S.C., Sections 793 and 794. Its transmission or the revelation of its contents in any manner to an unauthorized person is prohibited by law.

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AMC Form No. 10-7
(18 Nov 47)
(Old AMC Form No. 10-506)

SAGDS-NO.37

27

16:09

Wright-Patterson Air Force Base, Dayton, Ohio

MCPPXE43/RAB/mg

27 February 1948

SUBJECT: Change No. 28 to Purchase Order (535) 43-22066-P

TO: Bureau of Aeronautics
Navy Department
Washington 25, D. C.
ATTN: Section Aer-PR-32

References: (a) Air Materiel Command Change Letter No. 28 dated 22 January 1948, MCPPXE43/R.A.Bittner/ghs
(b) Bureau of Aeronautics Letter dated 6 February 1948, Aer-PR-32

1. Referenced letter (b) has been carefully reviewed and the errors as indicated in referenced letter do exist and, as requested, necessary corrective action has been taken. The breakdown in cost involved in the changeover from three hundred thirty (330) R-4360-41 engines plus spare parts to -51 engines and spare parts is as follows:

6 installation prototype R-4360-51 engines for 1 B-36C airplane at $206,500.00 each	$1,239,000.00
2 spare prototype R-4360-51 engines at $206,500.00 each	413,000.00
198 installation R-4360-51 engines for 34 B-36C airplanes at $80,000.00 each	15,840,000.00
15 spare R-4360-51 engines at $80,000.00 each	1,200,000.00
Spare parts equal to approximately 15% of the money value of 213 engines minus accessories	2,056,539.70
Grand Total	$20,748,539.70

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(18 Nov 47)
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OTHER

AMC

Subject: Change No. 26 to Purchase Order (535) 43-22066-P 27 Feb 48

The credit for the contractual change from:

234 installation R-4360-41 engines at $54,312.09 each	$12,709,029.06
96 spare R-4360-41 engines at $54,312.09 each	5,213,960.64
Spare parts equal to 25% of the money value of 234 installation engines minus accessories	2,825,550.00
Grand Total	$20,748,539.70

2. The above resume will now agree with the outline in reference (b), and it is desired that the Bureau of Aeronautics change its records accordingly.

3. Pratt and Whitney has informed the Air Materiel Command that the delivery schedule of R-4360-51 engines will be as follows:

Prototype R-4360-51 engines:

1949 - April	6
May	2

Production R-4360-51 engines:

1949 - September	2
October	6
November	12
December	24
1950 - January	38
February	36
March	38
April	38
May	17

4. The above schedule will cancel and supersede the schedule as given in referenced letter (a).

5. The Air Materiel Command desires that Pratt and Whitney be informed that delivery of either prototype or production R-4360-51 engines will not be made unless a satisfactory 150-hour qualification

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AMC Form No. 10-7
(18 Nov 47)
(Old AMC Form No. 10-588)

TC-72-340

AMC

27 Feb 48

Subject: Change No. 25 to Purchase Order (535) 43-22066-P

test has been completed. This was not included in referenced letter (a) through an oversight.

FOR THE COMMANDING GENERAL:

for R. G. HUSTON
Colonel, USAF
Chief, Aeronautical Equipment Section, Procurement Division

R. M. Scott Maj USAR

Cys to:
USAF IIC
P&W
MCPPXA3 - Lt Col Gerrity
MCMSXP76 - Mr. Hanshaw
MCMSXB9 - Mr. Cruger
MCREXP74 - Mr. Coyle
MCPPXI6 - Mr. Sumpter

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ARMY OFFICE
APPROVED
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NO COMMENT
Stader 2/3/48

PRATT & WHITNEY AIRCRAFT
DIVISION OF UNITED AIRCRAFT CORPORATION
EAST HARTFORD 8, CONNECTICUT, U.S.A.
CABLE ADDRESS: AIRCRAFT

CONTRACT FILES
RAS 3/19/48

March 1, 1948

Via: United States Air Force Representative

To: Commanding General
Headquarters Air Materiel Command
Wright Field, Dayton, Ohio

Attention: Chief, Aeronautical Equipment Section-Procurement Division MCPPIE43

Reference: (a) AMC Ltr. MCPPIE43/R.A.Bittner/ghs dated 28 January 1948
(b) AMC Ltr. MCPPIE43/R.A.Bittner/ghs dated 24 February 1948

Subject: Contract W33-038 AC-18653 Mock-up R-4360-51 Engine

1. This will acknowledge receipt of letters references (a) and (b) requesting a quotation to cover a 4360-51 mock-up engine. As covered in the discussion between Major O. M. Scott and Mr. H. Gosselin, this Division has decided to furnish at no cost to the Government in this particular instance one (1) 4360-51 mock-up engine. We are now starting to bring through this mock-up engine and it is expected that delivery can be accomplished in approximately five (5) months from date of this letter. We wish to point out at this time that this mock-up will in general conform to our present conception of the 4360-51 engine, but because the development of this engine has not been completed, the mock-up will of necessity not necessarily represent the final configuration of this engine. From time to time we will advise the USAF of changes as development progresses and furnish revised installation drawings covering these changes. Revised mock-up parts covering the more important changes may in some cases be furnished as development of the engine progresses, but it is not planned to continue this practice beyond delivery of the first prototype engine, except as deemed desirable by the contractor.

UNITED AIRCRAFT CORPORATION

Pratt & Whitney Aircraft Division

H. Gosselin

H. Gosselin

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MCPPXA32/RJW:ICW/F-4C
Tel: 3-0232

Wright-Patterson Air Force Base
xxxxxxx

MCPPXA32

1 March 1948

Contract AC-7, B-36 Airplanes,
Administrative approval of B-36C
Production Schedules.

Consolidated Vultee Aircraft Corporation,
Fort Worth Division - Fort Worth, Texas.

Through: USAF Plant Representative.

Reference: (a) CVAC Message No. 777 dated 22 Dec. 1947,
(b) USAFPR letter Lt.Col.B.H.Warren dated 26 Dec. 1947,
(c) USAFPR letter TSZCV/EJB/kj dated 30 Dec. 1947,
(d) CVAC wire TSZCV-A-1-9 dated 2 Jan. 1948.

1. Not until this time has it been possible to give approval of a B-36C airplane schedule that is considered realistic. The following schedule is changed from that submitted by the Contractor in light of an R-4360-51 engine schedule which calls for delivery of two prototype engines in April, six in May of 1949 and production engines as follows: 2 - Sept.; 12 - October; 24 - November; 38 - December; 38 - January; 50 - February; - on out.

Approved B-36C Production Delivery Schedule

1949 July	Aug.	Sept.	Oct.	Nov.	Dec.	1950 Jan.	Feb.	Mar.	Apr.	May	June	July
1	0	0	0	0	1	1	3	4	4	4	4	4

Aug.	Sept.
4	4

2. In view of the fact that production engines will be delivered to the Contractor with only three months lead time for the first airplanes the Contractor is authorized to use the two spare prototype engines for engine production line build-up for the first production B-36C.

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3. It is anticipated the R-4360-51 engine for the nacelle test stand will be delivered to CVAC in April 1948. The two speed fan drive will not be delivered before September of this year.

4. It is requested the Contractor's concurrence or non-concurrence of above B-36C production schedule, be forwarded the Air Materiel Command.

FOR THE COMMANDING GENERAL:

Robert L. Walling
for GEORGE E. SCHAFFEL,
Colonel, USAF,
Chief, Airc. & Missiles Sec.,
Procurement Division.

cc - USAFFR - FW
CVAC - Dayton

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In reply please refer to: GF [illegible] Engineering II.

PRATT & WHITNEY AIRCRAFT

DIVISION OF UNITED AIRCRAFT CORPORATION
EAST HARTFORD 8, CONNECTICUT, U.S.A.
CABLE ADDRESS: AIRCRAFT

2 March 1948

VIA: United States Air Force Representative, East Hartford 8, Connecticut

To: Commanding General
Air Materiel Command
Wright Field
Dayton, Ohio

CONTRACT FILE 3/19/48

Attention: TSEPE3B1

Subject: Contract W33-038 ac-18653 - R-4360 V.D.T.Engine - Article 15, Item 5
Monthly Progress Report (February)

Reference: (a) PWA letr RHP:bc Engineering II dated 30 January 1948 to CG, AMC, Wright Field, Dayton, Ohio, via: USAF Representative, E.Htfd., Conn.

1. The following is a summary of the work accomplished under Contract W33-038 ac-18653 since the last monthly progress report was submitted by reference (a):

(a) Total running time on ten (10) R-4360-C engines has been increased from 3537 hours to 3811 hours which includes 1224 hours of V.D.T. type engine operation.

(b) Revised crankshaft bifilar second order damper parts and modified power section oil scavenge pump bodies were installed in R-4360-43 engine No. X-113 for a 150-Hour Qualification Test. Because similar damper parts being tested concurrently were found to be defective, it was decided at 23 hours of endurance to remove engine No. X-113 for inspection of the 2X damper parts. One of the bifilar dampers and the damper supporting web were cracked. Redesigned parts are now being fabricated for continuation of the Qualification Test. R-4360-43 engine No. X-123, allocated as a standby engine for the Qualification Test, is ready for green test.

(c) Endurance on R-4360-43 engine No. X-105 was continued from 31-1/2 hours to 54-1/4 hours when a failure of the 2X damper occurred. Redesigned parts, as indicated in Item (b), will also be provided for a continuation of this test.

(d) R-4360-43 engine No. X-101 is continuing with the program on distribution, volumetric efficiency and cooling. The V.D.T. calibration program on X-109 is also in progress.

(e) Testing on a modified design of the five-piece crankshaft will be resumed in approximately eight (8) weeks when new parts are expected to be available. In the interim period, R-4360-43 engine No. X-157 is scheduled for an investigation of fuel and water distribution.

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TC-92-233

PRATT & WHITNEY AIRCRAFT

2 March 1948

To: Commanding General, Air Materiel Command, Wright Field, Dayton, Ohio

Subject: Contract W33-038 ac-18653 - R-4360 V.D.T.Engine - Article 15, Item 5
Monthly Progress Report (February)

(f) R-4360-43 engine No. X-114, now overhauled and equipped with revised Pratt & Whitney Aircraft design headers is ready to run at 4300 BHP, 2800 RPM endurance. After completing 15-3/4 hours of 4300 BHP endurance, R-4360-43 engine No. X-156 was removed from the stand when trouble developed with early design exhaust system parts. The engine has been modernized to accommodate the latest design exhaust headers.

(g) The parts necessary to convert R-4360 engine No. X-155 to an R-4360-51 engine are nearing completion. The test stand installation of this engine is scheduled for initial operation in approximately two weeks. Preliminary powerplant performance studies for the V.D.T. installation in the Consolidated B-36 Airplane have been in progress during the past month. It is expected that the results in report form will be ready for the airplane manufacturer's use in approximately two weeks.

(h) R-4360-43 engine No. X-151 has been removed from the B-50 Airplane at Boeing and will be shipped separately to this contractor. The airplane is scheduled to be flown to East Hartford in approximately two weeks. R-4360-43 engine No. X-152 at Boeing is scheduled for ground testing when facilities become available.

(i) The first CHM-2 turbo-supercharger unit is expected to be available to the contractor late in March.

UNITED AIRCRAFT CORPORATION
Pratt & Whitney Aircraft Division

G. E. Meloy
Project Engineer

GEM:lms

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In reply please refer to WAP-Mr-Eng

PRATT & WHITNEY AIRCRAFT

DIVISION OF UNITED AIRCRAFT CORPORATION
EAST HARTFORD 8, CONNECTICUT, U.S.A.
CABLE ADDRESS "AIRCRAFT"

"BUREAU OF AERONAUTICS
EAST ...
MAR ... 1948 ...

March 4, 1948

VIA: Bureau of Aeronautics Representative

TO: Commanding General
Air Materiel Command
Wright Field, Dayton, Ohio

Subject: Change No. 28 to Purchase Order (535) 43-22066-P

References: (a) Wright-Patterson Air Force Base let to BuAero, MCPPXE43/RAB/mg, dated 27 February 1948.
(b) PWA tel to AMC, signed W.A.Parkins, dated 16 July 1947.
(c) PWA let to AMC, WPG:Pr-Eng., dated 19 June 1947.

Enclosures: (A) Three (3) copies of Reference (b).
(B) Three (3) copies of Reference (c).

1. The Contractor has received an advanced copy of reference (a) and notes that a serious misunderstanding exists relevant to the delivery of prototype R-4360-51 engines being contingent upon the satisfactory completion of a 150-hour qualification test. It has never been proposed by this Division that 150-hour qualification test be completed prior to delivering prototype R-4360-51 engines. This understanding is supported by references (b) and (c), copies of which are enclosed.

2. On the other hand, the Contractor has proposed clearing the prototype engines by a 50-hour pre-flight qualification test (following the example set forth in Item 1 under Article 15 of Contract W-33-038 ac-13032 for eight R-4360-43 engines), and in the event production engines were ordered, substantiating such engines by a 150-hour qualification test. These test commitments permit earlier delivery of a limited quantity of engines which logically are considered "prototype" or "pre-production" models and, as such, are suitable for expediting the initial installation and flight phases of the airplane program.

3. The R-4360-51 prototype engine delivery schedule as presented by the Contractor and outlined in reference (a) is realistic only on the basis of completing a 50-hour pre-flight qualification test. If the completion of

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a satisfactory 150-hour qualification test is required for the prototype engine, this Division will be compelled, owing to the limited time available, to push back the delivery dates of these engines to coincide with the production engine delivery schedule.

4. It is requested that the Air Materiel Command review this important question in the light of the information presented here.

UNITED AIRCRAFT CORPORATION
Pratt & Whitney Aircraft Division

W. A. Parkins
Engineering Manager

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AMCPP Form No. 71-36A
(Rev 21 June 48)

Execute in triplicate

C— 55398

Class—02-H

CHANGE ORDER

UNITED STATES AIR FORCE
Air Materiel Command
Wright Field, Dayton, Ohio

BG

Date 10 March 1948
Change Order No. 2 to
Contract No. W 33-038 ac-
as amended 18653

To: United Aircraft Corporation, (Pratt & Whitney Aircraft Division), East Hartford 8, Connecticut

SUBJECT: Contract Change Notification

CONTRACT FILE

1. In the performance of Contract W 33-038 ac-18653, as amended, the Contractor shall comply with the following in accordance with the changes directed by Contract Change Notification No. 4 (N-52824) at a total increase in contract price of - - - - - - - - - - - - - - - - - $18,000.00

(a) An Axial Power Take-off Drive on R-4360-43 engines shall be furnished substantially in accordance with AND-20008, except:

1. The continuous torque rating should be 2500 inch pounds instead of 1500 inch pounds.

2. The overload torque rating should be 3750 inch pounds instead of 2250 inch pounds.

3. The shear section should be set for 10000 + 1000 inch pounds instead of 5400-6600 inch pounds.

4. The AND-20008 bolt circle should be retained, but the bolt diameter may be increased as indicated by design studies (this assumes that the increased torques indicated above can be satisfactorily transmitted thru the AND-20008 bolt circle).

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BY

2. Contractor warrants that no amendment heretofore made to the contract has established the effect upon the contract price of any of the changes for which the effect upon the contract price is established herein.

3. Nothing herein contained shall be deemed to require the Contractor to manufacture, furnish or deliver any articles or supplies, or to perform any work, as to which a Notice of Termination is in effect at the effective date hereof, nor to require the Government to accept any such articles, supplies or work; and any such Notice of Termination shall be applicable, to the extent stated therein, to any articles, supplies or work called for hereby or otherwise referred to herein.

This change order has been (negotiated pursuant to) Public Law 703, 76th Congress, as amended by Public Law 580, 77th Congress, Section 18, Title II of the First War Powers Act, 1941, and Executive Order No. 9001, 27 December 1941.

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NCPF Form No. 71-348
(21 Jun 48)

TC-92-514

Total increase in fixed price $1,100.00

$

$

Except as hereby amended, all terms and conditions of the Contract affected, as heretofore amended or modified, shall remain unmodified and in full force and effect and shall also apply in carrying out the provisions of this Change Order.

THE UNITED STATES OF AMERICA

13 APR 1948
(Date)

BY: Marvin R. Shaw
(Contracting Officer)

MARVIN R. SHAW

1ST INDORSEMENT

TO: CONTRACTING OFFICER:

East Hartford, Conn. April 1, 1948
(Place) (Date)

1. Contractor hereby accepts the above Change Order.

UNITED AIRCRAFT CORPORATION
(SEAL)
(Contractor)

BY: W. P. Gwinn
(Signature of Official with Office held)

W. P. Gwinn, General Manager
Pratt & Whitney Aircraft Division

AFP No.: 33659

The supplies and services to be obtained by this instrument are authorized by, are for the purpose set forth in and are chargeable to allotments below enumerated, the available balances of which are sufficient to cover cost thereof:

Debit: 2180705 802-7004 P 110-09 S 33-038

Change Order No. 2 to Contract No. W 33-038 ac-18653

2-c

Sheet 2

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TC-92-228

PRATT & WHITNEY AIRCRAFT

DIVISION OF UNITED AIRCRAFT CORPORATION
EAST HARTFORD 8, CONNECTICUT, U.S.A.
CABLE ADDRESS AIRCRAFT

March 15, 1948

VIA: Bureau of Aeronautics Representative

To: Commanding General
Air Materiel Command
Wright Field
Dayton, Ohio

Reference: MCPPXE43/R.A. Bittner/ghs

Attention: MCPPXE43

We are puzzled by the statement in the reference letter that "The flow of information from Pratt & Whitney for the -43 engine turbo and power controls has been very small." This catches us by surprise in that we have endeavored to keep Boeing and the Air Materiel Command completely advised on detail information as soon as it becomes available as well as indications of the general status of the development of this engine. The attached tabulation shows a brief listing of information that has been supplied to Boeing, and at the present time, we have only one specific request from Boeing which has not been answered at least in preliminary form. This was a question from Boeing asking us to provide a control pulley bracket support boss on the accessory case. Our Engineering Department is working on this design and we have so informed Boeing.

Undoubtedly, at any one time in the development of an airplane-engine combination where the development of the engine is going on concurrently with that of the airplane it is possible to prepare a list of questions on details that are not crystallized at that moment. For instance, it was decided only this last week by the Air Materiel Command that Pratt and Whitney should proceed with the design and development of an intergrated collector header assembly but without shrouding over the collector which the airplane manufacturer could utilize if he so chooses, or he can proceed with a parallel development of his own collector ring. Since the time of this decision our design people have been busy setting down the preliminary lines of such a proposed design which we will supply to the airplane manufacturers as soon as it can be made available. Also, as is indicated on the attached lists, we have endeavored to supply the most essential information on power plant control requirements but more specific

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PRATT & WHITNEY AIRCRAFT

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questions on detailed operation can only be made available as these details are crystallized.

Throughout this entire -43 program, we have been maintaining at least one Installation Engineer at Boeing Aircraft to handle their specific questions, and, in addition, we have arranged numerous trips for our Engineering Department representatives to Seattle in order to work directly with them on any installation problems and thus hasten decisions and expedite information for them. We must all realize, of course, as the engine's installation progresses there will, undoubtedly, be questions raised by the airplane manufacturer pertaining to possible revisions or accomodations in order to more readily adapt the engine to his airplane as well as minor modifications in engine details resulting from development testing.

Because of these circumstances and the extreme importance of the whole undertaking, we believe that monthly coordinating conferences similar to the recent conferences called in connection with the B-36 project would be beneficial to all.

Very truly yours,

PRATT & WHITNEY AIRCRAFT

W. P. Gwinn
General Manager

WPG:RLC:mep

Enc.

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INFORMATIVE MATERIAL SENT TO BOEING

ON THE -43 ENGINE

I. Performance

1. Original estimated Engineering Report TR-46 With Dual BM-6 Turbos was given to Boeing about April, 1947.

2. Report TR-52R With A Single CHM-2 was given to Boeing June, 1947. (Preliminary Estimates)

3. Original cooling curve was given to Boeing in Spring of 1947. (Estimated for study purposes)

4. Boeing received copies of curves showing BHP vs. CEP for various RPM and airflow for various RPM approximately 8-9 months ago. (Estimated for study purposes)

5. A preliminary unreleased Military Specification A 7065-B was transmitted Boeing in October, 1947.

6. Revised cooling curve estimates were sent to Boeing in February, 1948.

7. A copy of estimated carburetor setting propeller load curves of fuel-air ratio vs. RPM was submitted with the revised cooling curves also in February, 1948.

8. Oil Flow and heat rejection at T.O. and NRP were supplied by October, 1947. (Estimated)

II. Installation Drawings

1. The preliminary engine Installation Drawing 121001 was sent to Boeing July, 1947.

2. The Injection Pump and Mixture Control Drawing 125419 was sent to Boeing in December, 1947, and previous to this a Bendix drawing had been available as early as July, 1947.

3. Fireseal Installation Drawing 128201 was sent to Boeing on December 16, 1947.

4. Boeing have outline drawings and schematic block diagrams of the power control system which were sent out over a period of time starting October, 1947. The drawings show clearance, maintaining regulation cg, weight, connections, etc.

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II. Installation Drawings (continued)

5. We have sent about six mock-ups of component parts of the control system and the carburetor.

6. We have sent description of the operation of the control system.

7. A description of the fuel system and its requirements was made available to Boeing in December, 1947. However, the exact boost pump requirements are still unsettled on this point.

8. The ignition system is still unsettled in detail but we show on our drawing a composite magneto design envelope which will not be exceeded.

9. The vibration isolator housings are shown on the Installation Drawings.

10. The exhaust headers with dimensions are shown on the Installation Drawing. The latest proposals as indicated in the letter are now being worked up.

III. Engines - Mock-up

1. Our experimental engine, X-151, for installation in B-50 #008 was sent to Boeing in October, 1947 and the Carburetor was forwarded in January, 1948.

2. Experimental engine, X-152, was sent to Boeing in December, 1947.

3. We are actively pursuing the project of building a specific -43 mock-up. Unfortunately, this mock-up has been delayed somewhat due to our efforts to build it in accordance with the latest design changes and it is not expected that this will be available until next month.

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AMC Form No. 10-7 (18 Nov 47) (Old AMC Form No. 10-505)

CG, CO OR DEPUTY

AIR INSPECTOR

~~MDP-XRA3~~

PUBLIC INF. OFFICE

COMPTROLLER

PERSONNEL & ADM.

RESEARCH & DEV.

NTELLIGENCE

UPPLY AND MAINT.

OC. & IND. MOB. PLNG.

THER

TSA 305 NO.37

15:13

Wright-Patterson Air Force Base, Dayton, Ohio

MDP-XRA3/RAB/ms
17 March 1948

SUBJECT: Contract W33-038 ac-12693
Mockup R-4360-51 Engine

THRU: USAF Inspector in Charge

TO: Pratt and Whitney Aircraft Division
United Aircraft Corporation
East Hartford, Connecticut

Reference: Pratt and Whitney Aircraft letter dated 1 March 1948, HG-a

1. Receipt of referenced letter is hereby acknowledged.

2. Consolidated Vultee Aircraft Corporation has informed the Air Materiel Command that they desire the mockup R-4360-51 engine in June 1948. Referenced letter indicated that the mockup R-4360-51 engine would be available in August 1948. Since Consolidated Vultee Aircraft Corporation has indicated that delivery of the mockup engine in August would delay their aircraft program, it is desired that all possible action be taken to expedite delivery of this engine. Consolidated has indicated that the mockup engine is necessary in the build up of the engine nacelle and unless an engine is available this will delay their program until such time as an engine can be made available to them.

3. It is desired that Pratt and Whitney Aircraft take all possible action to deliver the mockup R-4360-51 engine in June if possible.

4. It is desired that a reply be forwarded indicating whether or not this can be done.

FOR THE COMMANDING GENERAL:

W. O. HUSTON
Colonel, USAF
Chief, Aeronautical Equipment Section
Procurement Division

cy to
MDP-XRA32

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CONSOLIDATED VULTEE AIRCRAFT CORPORATION

FORT WORTH DIVISION
FORT WORTH 1, TEXAS

AC-18653

LHM:djh/AC-7-FW#2071 (F-21)
19 March 1948

Subject: Contract AC-7, YB-36C and B-36C Airplanes
Engine Cooling Fan Drive Requirements

To: Commanding General
Air Materiel Command
Wright-Patterson Air Force Base
Dayton, Ohio

Attention: MCPPXA32

Thru: A.F. Plant Representative

APPROVED
CONCURRED IN
NO COMMENT
USAF PLANT REPRESENTATIVE

Reference: (a) CVAC letter AC-7-FW#1300 (F-21) dated 5 March 1948

1. It was agreed in conference, reference (a), that the engine cooling fan drive would be furnished as Government Furnished Property (G.F.E.) by Pratt & Whitney and that this Contractor would specify the drive requirements for a high and a low drive ratio. In accordance with this agreement, the Contractor herewith presents the complete fan drive requirements.

Low Drive Ratio (Fan Speed to Engine Speed)	1.0:1.0	
High Drive Ratio (Fan Speed to Engine Speed)	1.82:1.0 1.7	
O.D.	44"	
Hub Diam.	30.8"	
Airfoil Section (Rotor)	Root 65-1210	Tip 65-0610
Airfoil Section (Stator)	Root 65-1206	Tip 65-1206

Blade Angle	Rotor		Stator	
	Root	Tip	Root	Tip
	49.4°	33.5°	76.5°	81°

Estimated Max. Fan B.H.P.	Low Drive	High Drive
	350	550

Direction of Fan Rotation - Clockwise Looking Forward

3-29-48 Ltr ame Ltr in AC-18653

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CONSOL[illegible]D VULTEE AIRCRAFT CORPORA[illegible]ON
FORT WORTH DIVISION FORT WORTH TEXAS

TC-92-226

Commanding General
Air Materiel Command

AC-7-FW#2071 (F-21)
19 March 1948

2. It is requested that the Air Materiel Command take all necessary action to expedite development of the fan drive on the basis of the above information so as to make a fan drive available for the Moffett Field Test Nacelle at the earliest possible date.

CONSOLIDATED VULTEE AIRCRAFT CORPORATION
FORT WORTH DIVISION

J. W. Larson
Ass't. Chief Division Engineer

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7C-92-97

In reply please refer to:
PSH:bc Engineering II

PRATT & WHITNEY AIRCRAFT

DIVISION OF UNITED AIRCRAFT CORPORATION
EAST HARTFORD 8, CONNECTICUT, U.S.A.
CABLE ADDRESS: AIRCRAFT

March 22, 1948

VIA: United States Air Forces Representative, East Hartford 8, Connecticut

Commanding General
Air Materiel Command
Wright Field
Dayton, Ohio

Attention: MCPPXE43

Subject: Performance Characteristics of the R-4360-VDT Power Plant

Reference: (a) AMC Wright Field, Dayton, Ohio letr. MCPPXE43/MAB:mg dated 3 February 1948 to BAR, East Hartford, Connecticut

Enclosure: (a) PWA Report TR-56 and TR-57 (6 copies each)

1. On January 26, 1948 at Wright Field it was decided that a detailed R-4360-VDT power plant analysis would be made by Pratt and Whitney Aircraft in cooperation with Consolidated Vultee Aircraft and General Electric according to reference (a).

2. The first report TR-56, "Preliminary Report of the R-4360-51 VDT Power Plant as Applied to the B-36 Airplane" was distributed at the February 16th meeting of the Air Materiel Command, Consolidated Vultee Aircraft Corporation, General Electric and Pratt and Whitney at East Hartford.

3. The final report TR-57, "Estimated R-4360-VDT Engine Performance Under Several Critical Airplane Operating Conditions" has now been completed. Six copies of each report TR-56 and TR-57 are enclosed.

4. Individual performance curves have been furnished previously to Consolidated Vultee Aircraft to enable them to prepare airplane performance calculations without delaying for the formal report.

UNITED AIRCRAFT CORPORATION
Pratt and Whitney Aircraft Division

P. S. Hopper
Assistant Project Engineer

PSH:bc

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CONSOLIDATED VULTEE AIRCRAFT CORPORATION

FORT WORTH DIVISION
FORT WORTH, TEXAS

AC-18653

LHM:djh:iz/AC-7-FW#1945 (F-21)
23 March 1948

Subject: Contract AC-7, YB-36C and B-36C Airplanes
Alternate Design of Engine Exhaust System

To: Commanding General
Air Materiel Command
Wright-Patterson Air Force Base
Dayton, Ohio

RECEIVED
CONCURRED IN 3-25-48
NO COMMENT
AAF PLANT REPRESENTATIVE

Attention: MCPPXA32

Thru: A. F. Plant Representative

Reference: (a) CVAC letter to AMC, AC-7-FW#1300 (F-21), dated 5 March 1948

Enclosure: (A) Three copies of "Coordination Procedure - V.D.T. Exhaust System Development"

1. In accordance with the decision of the Air Materiel Command reached at Wright-Patterson Air Force Base conference, reference (a), Pratt & Whitney is furnishing the engine bank manifolds, (which are to be unshrouded) and the collector ring as Government Furnished Property (G.F.P.) and the Contractor is furnishing collector ring shrouding and exhaust tail pipe and shrouding between the collector ring and the turbine. In reference (a) the Contractor informed the Air Materiel Command that it did not propose to design an alternate exhaust system to that being furnished with the engine by Pratt & Whitney because of the difficult design coordination problems and the fact that the Contractor could see no advantage in designing such a system without also building it and installing it on the engine. The Contractor has since reconsidered this conclusion and has decided to submit a cost proposal to cover the design and manufacture of a complete alternate exhaust system for the evaluation of the Air Materiel Command. This is in line with the suggestion of Lt. Col. T. P. Gerrity made in conference (reference (a)) and this proposal is being submitted because the Contractor believes that shrouding of the engine bank manifolds will provide a more satisfactory power plant installation which will be in accordance with Handbook requirements for exhaust system shrouding. The Contractor will obtain bids from exhaust system vendors for this proposed system at the same time as bids are obtained on the present partially Contractor Furnished system, and it is estimated that this cost proposal will be forwarded to the Air Materiel Command approximately May 1, 1948.

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CONSOLIDATED VULTEE AIRCRAFT CORPORATION
FORT WORTH DIVISION FORT WORTH, TEXAS

2. In order to obtain firm quotations as to price and delivery dates for the present Contractor Furnished portion of the exhaust system and shrouding, together with bids on the proposed complete alternate system by May 1, 1948, it will be necessary for Pratt & Whitney to furnish this Contractor's vendor with drawings of the Pratt & Whitney furnished bank manifolds, exhaust collector ring and collector ring supports by April 1, 1948. In order to obtain firm delivery dates for the present Contractor Furnished exhaust system from the vendors, it will also be necessary for Pratt & Whitney to furnish the successful bidder with either accurate plaster tooling forms or tooling patterns (male or female respectively) of the Pratt & Whitney furnished collector ring by May 1, 1948, for manufacturing coordination of the collector ring shrouding and the exhaust tail pipe with the collector ring. It will further be necessary for Pratt & Whitney to keep these tooling master forms up-to-date with any design changes as rapidly as they occur and notify the Air Materiel Command, the exhaust system vendor, and this Contractor promptly of such changes.

3. Due to the fact that the Contractor's vendor will be required to design shrouding to fit closely at many points to the G.F.P. collector ring which is being developed in parallel with the shrouding, it will be necessary for the vendor to maintain close coordination with Pratt & Whitney to keep the shrouding continuously up-to-date with changes which may occur in the course of development of the collector ring. The Contractor has outlined in Enclosure (A) what it considers the best practical procedure for handling direct coordination between the vendor and Pratt & Whitney and the concurrence of the Air Materiel Command with this procedure is requested.

4. It is requested that Pratt & Whitney make every effort to provide this Contractor's vendors with the necessary design and tooling information on the collector ring and bank manifolds by the dates given above so as to minimize as much as possible the anticipated lateness in procurement of the Contractor's exhaust system and shrouding.

CONSOLIDATED VULTEE AIRCRAFT CORPORATION
FORT WORTH DIVISION

E. W. Larson
Ass't. Chief Division Engineer

CC: Pratt & Whitney

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CONSO) ED VULTEE AIRCRAFT CORI . ION
FORT W.RH DIVISION FORT WORTH, TEXAS

23 March 1948

COORDINATION PROCEDURE - V.D.T. EXHAUST SYSTEM DEVELOPMENT

The purpose of this procedure is to provide a practical system of coordinating design, tooling, and manufacturing of the Contractor furnished collector ring shrouding and tail pipe attachment details with the Government Furnished Property (G.F.E.) collector ring which is under parallel development by Pratt & Whitney and to expedite as much as possible the coordination of design changes occurring during this development. In order to accomplish this coordination with the least possible loss of time the following procedure is proposed.

1. Authorization of Changes During Development Phase of Exhaust System

It will be the responsibility of Pratt & Whitney to notify the Air Materiel Command, CVAC, and CVAC's exhaust system vendor directly of all changes in the collector ring and furnish complete engineering information defining the change as rapidly as it is determined. Immediately upon notification by Pratt & Whitney, the vendor will then proceed to accomplish all changes required in the collector shrouding for tail pipe attachments which may be required as a result of the changes in the collector ring. Authorization by CVAC prior to vendor proceeding with such changes will not be required unless the change be of such magnitude as to involve a major delay in deliveries or a major increase in cost. However, the vendor will be required to notify CVAC promptly of all changes generated by collector changes and forward cost data as quickly as possible for inclusion in Purchase Order changes.

2. Engineering Liaison

In order to expedite coordination of design information and engineering changes, the vendor will be requested to station a representative at Pratt & Whitney. It will be this representative's function to advise Pratt & Whitney of the effect which collector changes may have on the vendor's design and to recommend modifications in proposed changes which will tend to minimize changes required to the vendor's parts. He will also expedite advance information on changes to the vendor's engineering department and make sure that all change information is transmitted as rapidly as possible.

3. Tooling Information

It will be necessary for Pratt & Whitney to furnish CVAC's vendor with the following tooling masters and it will be their responsibility to maintain these up-to-date with all changes in the collector ring and its supports.

a. Plaster or suitable accurate models of collector segments.

b. Necessary mastering points of attachment.

c. Other coordination tools which may be required by CVAC's vendor.

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CONSOLIDATED VULTEE AIRCRAFT CORPORATION
FORT WORTH DIVISION FORT WORTH, TEXAS

COORDINATION PROCEDURE 23 March 1948
.D.T. EXHAUST SYSTEM DEVELOPMENT

Changes Subsequent to Initial Development

All of the above change coordination procedure is to be in effect up until the delivery of the first airplane set of production collector rings and proofing of the first production shrouds and tail pipe to these collectors. All subsequent changes to the shrouding or tail pipe caused by further changes to the Government Furnished Property (G.F.E.) collector rings will be handled by standard Master Change Record procedure and will only be accomplished after C.C.N. authorization has been received from the Air Materiel Command and effectivity established.

W. D. Holman
Chief of Material

cc: R. G. Mayer
R. O. Ryan
R. C. Sebold
J. W. Larson
O. W. Moerschel
Engr. File
Proj. Office

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March 23, 1948

Major General F. O. Carroll
Director Research & Development
Air Materiel Command
Wright-Patterson Air Forces Base
Dayton, Ohio

Dear Frank:-

When I was in Dayton the other day you and Al were just leaving for Washington so that I did not have an opportunity to bring you up to date. One thing, however, that did concern me greatly was your opinion we were behind schedule on the 4360 VAT. I have followed this program carefully and would like to take issue as thus far we have been able to maintain our schedule and further, the program as laid down is absolutely in accordance with our original promises.

Back on June 19, 1947 we wrote you, copy attached, and at that time advised that we hoped to furnish four prototype 4360-43 engines for installation in the Boeing B-50 airplane within fifteen months after Government approval of the contract, with additional engines two in the following month and one each in succeeding months. The contract for these engines was approved December 4, 1947, which establishes March 1949 as the initial delivery date. Our manufacturing schedule calls for delivery of these four engines in February 1949 and barring unforeseen contingencies indications are this date will not only be met, but may be bettered by a month or more. It is believed the Power Plant Laboratory will bear out the correctness of the above statements.

Our letter June 19, 1947 further agreed we could supply six 4360-51 prototype engines for installation in Consolidated's B-36 in the same fifteen months after Government approval of the contract, with additional engines at the rate of two per month thereafter. Contractual authority for eight engines was received in February 1948, which establishes May 1949 as the delivery date for the first six engines. We have scheduled the first six engines for April 1949, with two additional in May. While these 4360-51s are basically the same as the 4360-43 engines for the B-50 they differ in many important respects, such as extension shaft, reduction gear ratio, mounting and a special two-speed fan drive. All of these changes added major engineering developments to the basic program and will require us to exert ourselves to the utmost to meet the April 1949 date and I would like to point out that if it becomes necessary to undertake additional developments to those already agreed upon, it is certain we shall not be able to meet our April date.

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March 23, 1948

Major General F. O. C[illegible]l

Regarding the delivery of production type 4360 VDT engines, our letter of October 3, 1947, copy attached, sets forth what we hope to accomplish on the delivery of -43 and -51 engines. You will note our proposal to commence delivery of production engines in May 1949 for the -43s and July 1949 for the -51s was predicated on receiving contractual approval not later than November 15, 1947, or in other words we anticipated production could be started eighteen months after contractual coverage. The contract for fourteen -43 engines was not approved until late January 1948 and contractual coverage for the 4360-51 engines was received February 1948, and based on this the production program was automatically set back two months, that is, July 1949 for the start of -43 engines and September 1949 for the -51 engines. From this you can see that the program as set up is fully in accord with our original estimates.

I am sure that you and Al appreciate the unexpected difficulties in connection with any development program. It is possible for the best of plans to be disrupted by unforeseen difficulties. The point I want to get over to you is that at least to this date we have made excellent progress and that unless we encounter some unusual setbacks we fully anticipate meeting the program as laid down, even though admittedly it is going to be nip and tuck. As an indication of our accomplishments thus far on the VDT program, we received contractual coverage on September 2, 1947 to convert three experimentally-built VDT engines - two 4360-43s for Boeing and one 4360-51 for Consolidated. The two 4360-43 engines were shipped to Boeing one in October and one in December, the first of which has been run in the nacelle of the airplane we are going to use here in Hartford for our flight test work. The 4360-51 for the B-36 required the design and fabrication of an extension shaft, new gearing, new mounting, etc. It is now being run and we expect to ship this to Consolidated sometime in April. These three experimentally-built engines are the only ones which will be available until such time as the prototype engines noted above become available.

Everyone here in Engineering from Wright Parkins on down fully appreciate the importance of the VDT program and I can assure you no effort is being spared to do our utmost to try and meet the program as laid down. The project is ambitious in the extreme and while we have had our share of troubles, Wright Parkins has made some real progress. We have accumulated well over one thousand hours' running on a full-scale engine under simulated VDT conditions at powers up to 4300 h.p. for take-off, the rating proposed for this configuration. In addition to the extensive development already done on the basic engine, we anticipated considerable difficulty with controls and the exhaust collector and thus far we have had some real problems on the collector but to date the anticipated control difficulty has not materialized. However, we are most anxious to get the B-50 airplane we have here with one nacelle fitted for the VDT into the air and provided G.E. deliver to us the turbo supercharger by April 1, we expect to have our flight tests under way early in May.

Our development contract, incidentally, proposes we be by a 150-Hour Model Test on the 4360-43 configuration by December 1948, and as an indication of the progress we have made, we already have something over twenty-five hours completed on our own unofficial Model Test. Russ Minty and your Power Plant Laboratory have been kept advised of the situation through the medium of regular reports and will, I am sure, confirm the above progress.

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Major General F. O. Carroll

March 23, 1948

I hope that on my next trip to Dayton I will have the opportunity of answering any questions which you and Al may have as to where we stand on the progress of the VDT.

Sincerely yours,

H. Gosselin

HG-A

CC: Major General A. R. Crawford
Chief, Engineering Division
Air Materiel Command
Wright-Patterson Air Forces Base
Dayton, Ohio

Attachments -

W.	P.	Gwinn	ltr.	to	AMC 6-19-47
"	"	"	"	"	" 10-3-47
"	"	"	"	"	" 1-14-48
"	"	"	"	"	" 2-3-48
"	"	"	"	"	" 2-9-48

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NAVY DEPARTMENT
BUREAU OF AERONAUTICS
WASHINGTON 25, D. C.

for PEACE SAVINGS BONDS

Aer-C-14
(A(43-1089-F)
NDa(s)9511

25 March 1948

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25 MAR 19

From: Chief, Bureau of Aeronautics.
To: Commanding General, Air Materiel Command, Wright Field, Dayton, Ohio.

Via: Bureau of Aeronautics General Representative, Central District, Wright Field, Dayton, Ohio.

Subject: AAC Purchase Order (53-053)43-1089-F - Model R-4360-43 Engines - Information Concerning Procurement of.

Reference: (a) AMC, Wright Field ltr. MCPTAD-44/JEW dated 27 Feb. 1948 to BuAer.

1. Reference (a) requested information as to the manner in which the material specified under the subject purchase order would be furnished.

2. The Model R-4360-43 Engines will be procured under Contract NOa(s)9511 with the Pratt & Whitney Aircraft Division, United Aircraft Corporation, East Hartford, Connecticut, delivery scheduled as indicated below:

Quantity	Time of Delivery
4	May 1949
10	June 1949

3. Contract NOa(s)9511 has not been executed as of this date.

[signature]
[illegible] Mead
By direction

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AMC Form No. 10-7 (18 Nov 47) (Old AMC Form No. 10-508)

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AIR INSPECTOR

MCPPX-4

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INTELLIGENCE

SUPPLY AND MAINT.

PROC. & IND. MOB PLNG.

OTHER

Wright-Patterson Air Force Base, Dayton, Ohio

TSAGD-5-No. 37

MCPPX-4/RAB/mg
26 March 1948

SUBJECT: Contract W33-038 ac-18653
Official 150-Hour Qualification Test on R-4360-43 Engines

THRU: USAF Inspector in Charge

TO: Pratt and Whitney Aircraft Division
United Aircraft Corporation
East Hartford, Connecticut

1. The Air Materiel Command strongly recommends that the H-1 Turbosupercharger, Variable Discharge Nozzle and the Boost Control System be made a requirement for the official qualification test.

2. It is also desired that accessories such as Starter, Remotely Mounted Generator, Propeller, etc., as required for the B-50C airplane, be used during the test insofar as is practicable.

FOR THE COMMANDING GENERAL:

Cy to
USAFIIC

for V. O. HUSTON
Colonel, USAF
Chief, Aeronautical
Equipment Section
Procurement Division

1st Lt Maj. USAF

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PERSONNEL & ADM.

RESEARCH & DEV.*

INTELLIGENCE

SUPPLY AND MAINT.

PROC. & IND. MOB PLNG.*

OTHER

1948 MAR 29 14 29

Wright-Patterson Air Force Base, Dayton, Ohio

MCPFXE4/RAB/mg
26 March 1948

SUBJECT: Change No. 28 to Purchase Order (535) 43-22066-P

TO: Bureau of Aeronautics
Navy Department
Washington 25, D. C.
ATTN: Section Aer-PR-32

References: (a) Air Materiel Command Change Letter No. 28 dated 22 January 1948, MCPFXE43/R.A.Bittner/gns
(b) Bureau of Aeronautics Letter dated 6 February 1948, Aer-PR-32
(c) Air Materiel Command Change Letter No. 28 dated 27 February 1948, MCPFXE43/RAB/mg
(d) Pratt and Whitney Aircraft Letter dated 4 March 1948, WAP-Mr-Eng., with BAR End-1 dated 9 March 1948, P21/15-2(1A), NOa(s)-9511, GWB(1955)ccs

1. To preclude a delay in delivery of prototype R-4360-51 engines, Pratt and Whitney has informed the Air Materiel Command by referenced letter (d) that including the eight (8) prototype engines with production engines to complete a satisfactory 150-hour qualification test will delay delivery of prototype engines since Pratt and Whitney's delivery schedule, as previously submitted to the Air Materiel Command, was realistic only on the basis that prototype engines would complete a 50-hour qualification test and the production engines a 150-hour qualification test.

2. In view of the above and since the Air Materiel Command desires delivery of prototype R-4360-51's in April and May of 1949, it is desired that these eight (8) prototype engines not be subjected to a 150-hour qualification test prior to delivery but only delivered on the basis of completing a 50-hour qualification test satisfactorily.

3. It is desired that the contract with Pratt and Whitney for the above engines be revised to include the above as outlined.

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PROC. & IND. MOB. PLNG.*

OTHER

AMC

Subject: Change No. 28 to Purchase Order (535) 43-22066-F

MCP FILE

4. It is further desired that Pratt and Whitney be informed of the above change in qualification test requirements for the eight (8) prototype R-4360-51 engines.

FOR THE COMMANDING GENERAL:

A. M. Scott Maj USAF

for W. G. HESTON
Colonel, USAF
Chief, Aeronautical
Equipment Section
Procurement Division

Cys to
BAR - P&W
USAFIIC - P&W
P&W - Mr. H. Gosselin

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OTHER

Wright-Patterson Air Force Base, Dayton, Ohio

[illegible]
CPFSL/TAP/mg
2[illegible] March 194[illegible]

SUBJECT: Contract 33-038 ac-17053
[illegible]-50-51 engine cooling fan drive requirements

TO: CAF Inspector in Charge

Pratt and Whitney Aircraft Division
United Aircraft Corporation
East Hartford, Connecticut

Reference: Pratt and Whitney Aircraft letter dated 25 [illegible]ber 1947,
Serial - [illegible].

1. Inclosed for your information and comments is a copy of Consolidated Vultee Aircraft Corporation letter dated 19 March 1948, [illegible]:djh/AC-7-[illegible]2071 (5-21).

2. It will be noted that Consolidated's letter differs from the proposed drive in referenced letter in that Consolidated desires a fan high drive speed ratio of 1.02:1.0 in lieu of 1.11:1.0 and a maximum fan r. p. m. of [illegible] in lieu of [illegible] in low drive and [illegible] limit of [illegible] in high drive.

3. For your additional information, the Air Materiel Command has taken action to initiate a change order in accordance with referenced letter.

4. In view of Consolidated's letter it is desired that immediate action be taken to review this letter and comments forwarded as soon as possible indicating the action that Pratt and Whitney will take to comply with the requirements of Consolidated Vultee Aircraft Corporation.

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OTHER

AMC

Subject: Contract W33-038 ac-15053, R-1340-51 Engine Cooling Fan Drive Requirements

AEPPX-4

5. Comments are desired as soon as possible in order that appropriate action can be taken to revise the change order now being initiated at the earliest possible date.

FOR THE COMMANDING GENERAL:

C. M. Scott May USAF

V. D. BURTON
Colonel, USAF
Chief, Aeronautical Equipment Section
Procurement Division

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To:

Subj:

In reply please refer to:
GEM:bc Engineering II

PRATT & WHITNEY AIRCRAFT

DIVISION OF UNITED AIRCRAFT CORPORATION
EAST HARTFORD 8, CONNECTICUT, U.S.A.
CABLE ADDRESS AIRCRAFT

ARMY OFFICE
APPROVED
CONCURRED IN
NO COMMENT

29 March 1948

VIA: United States Air Force Representative, East Hartford 8, Connecticut

To: Commanding General
Air Materiel Command
Wright Field
Dayton, Ohio

Attention: TSBPE3B1

Subject: Contract W33-038 ac-18653 - R-4360 V.D.T. Engine - Article 15, Item 5
Monthly Progress Report

Reference: (a) PWA letr. GEM:lms Engineering II dated 2 March 1948 to CG, AMC, Wright Field, Dayton, Ohio, via: USAF Representative, E. Htfd., Conn.
(b) PWA letr. PSH:bc Engineering II dated 22 March 1948 to CG, AMC, Wright Field, Dayton, Ohio, via: USAF Representative, E. Htfd., Conn.

1. The following is a summary of the work accomplished under Contract W33-038 ac-18653 since the last monthly progress report was submitted by reference (a).

(a) Total running time on ten (10) R-4360-C engines has been increased from 3011 hours to 4026 hours which includes 1439 hours of V.D.T. type engine operation.

(b) Qualification test endurance on R-4360-43 Engine No. X-113 was continued from 23 hours after installation of revised 2X bifilar damper parts. The engine is now being disassembled after 67½ hours of endurance testing to ascertain the reason for metal chips in the strainer. R-4360-43 Engine No. X-105 is currently starting a 150 hour Qualification Test. Cylinders with increased cooling fin area and revised main cases will be subjected to qualification testing on Engine No. X-123 in approximately one month.

(c) The distribution program on X-101 will be resumed after a short test to establish a fuel metering setting for the B-50 R-4360-43 flight Engine No. X-151. R-4360-43 Engine No. X-109 is being rebuilt for continuation of a calibration program to investigate engine performance with various injection pump timings and spark advance settings.

(d) In approximately four weeks, a five-piece, face-splined crankshaft will be available for overload testing in R-4360-43 Engine No. X-157.

(e) Since the last report R-4360-43 Engine No. X-114 has run 5½ hours at take-off power and 54 hours at lean mixture maximum cruise power on revised Pratt and Whitney Aircraft type exhaust headers. Modifications were made during this period of testing, but in general, the durability of the system shows considerable improvement.

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TC 92 217

March 1948

Commanding General, A Materiel Command, Wright Field, ayton, Ohio

ect: Contract W33-038 ac-18653 - R-4360 V.D.T. Engine - Article 15, Item 5
Monthly Progress Report

(f) The conversion of Engine No. X-155 to an R-4360-51 model has been completed. The engine, complete with gear box and extension shafting, is now being green tested. Following detailed inspection, the engine will be rebuilt for acceptance testing and shipment. An analysis of the performance characteristics of the R-4360-V.D.T. powerplant in conjunction with the Consolidated B-36 Airplane was completed and has been forwarded to the A.M.C. as Reports TR-56 and TR-57 by reference (b).

(g) The B-50 Airplane allocated on bailment for flight testing the V.D.T. engine arrived at East Hartford March 20, 1948. Pilot familiarization and instrumentation work is in progress. R-4360-43 Engine No. X-151, scheduled for installation in the airplane in approximately three (3) weeks, was received at the Contractor's plant 22 March 1948, and is now being modernized. The first CHE-? turbo-supercharger unit for the airplane is promised 6 April 1948 by the General Electric Company.

UNITED AIRCRAFT CORPORATION
Pratt and Whitney Aircraft Division

G. E. Meloy
G. E. Meloy
Project Engineer

GEM:bc

MAR 1948

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CONSOLIDATED VULTEE AIRCRAFT CORPORATION

CONFIDENTIAL

FORT WORTH DIVISION
FORT WORTH 1, TEXAS

DHL:bjs/AC-7-FW#2114(F-21)(F-8.4)
2 April 1948

APPROVED	
CONCURRED IN	
NO COMMENT	✓

7 April 48
A. J. Middleton Capt USAF
for AAF
PLANT REPRESENTATIVE

Subject: Contract AC-7, B-36C Airplane
AMC Tests of Engine Cooling Fan

To: Commanding General
Air Materiel Command
Wright-Patterson Air Force Base
Dayton, Ohio

Attention: MCPPXA32 - Capt. R. J. Walling

Thru: Chief, Fort Worth AF Procurement Field Office

Enclosures: (A) Three copies of Consolidated Vultee Drawing No. PP-SK-086, entitled, "Proposed V.D.T. Cooling Fan Test Installation"
(B) Three copies of Curve of Calculated Fan Pressure Coefficient vs. Flow Coefficient

Copies to general

1. At the Wright Field conference held 26 January 1948, between representatives of Consolidated Vultee, the Air Materiel Command and Pratt & Whitney, it was decided that Consolidated Vultee would design the engine cooling fan, and that performance and whirl tests on the fan would be undertaken by the Air Materiel Command at Wright Field.

2. The fan design has been completed by this Contractor, the fan having the following characteristics:

Type: Rotor-Stator (Rotor upstream of stator)
Outside Diam: 44 inches. Inside Diam: 30.8 inches
Blade Sections: Rotor Root: NACA 65-1210
Rotor Tip: NACA 65-610
Stator Root & Tip (constant section): NACA 65-1206

Blade Angles (to Nacelle ℄) for Test:

Rotor Root:	40.8°
Rotor Tip:	56.5°
Stator Root:	13.5°
Stator Tip:	9.0°

No. of Blades: Rotor: 36
Stator: 50

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CONSOLIDATED VULTEE AIRCRAFT CORPORATION
WORTH DIVISION FORT WORTH, TEXAS

Air Materiel Command
Dayton, Ohio

AC-7-FW#2114(F-21)(F-8.4)
2 April 1948

Blade Chord:	Rotor:	3.25 inches (constant from root to tip
	Stator	3 inches for both rotor and stator)
High Drive Ratio:		1.82x engine rpm
Low Drive Ratio:		1.00x engine rpm
Maximum Fan B.H.P.:		550 (high drive)
		350 (low drive)
Fan Blade Material:		Rotor: Dural Forging
		Stator: Magnesium Die-casting

3. The attached sketch, Enclosure (A), presents schematically the proposed method of testing fan performance. It is believed essential that the flow conditions forward and aft of the fan be simulated accurately for the fan tests, due to the possible large interference effects from the engine charge air duct aft of the fan and from the carburetor inlet ducting and collector ring forward of the fan. It is also considered advisable that an R-4360 or mock-up facsimile of the R-4360 baffling be installed as shown on the sketch. Particular importance is attached to simulating the flow conditions due to the marginal nature of the engine cooling characteristics at altitude. This opinion was concurred in by the personnel of the National Advisory Committee of Aeronautics, Cleveland Laboratories, during a conference held at Cleveland on 8 March 1948, relative to fan blade design.

4. It is proposed to test three fan blade angle settings and three contravane settings over the range of flow coefficients shown on the attached curve, Enclosure (B). (Fabrication of the fan blades, hub, and contravanes has already been initiated by the Contractor. Duplicate hubs are under construction, with three sets of fan blades, in order to save time in changing fan blade angle.)

5. The test set-up as shown on the attached sketch is schematic, and is forwarded in order that the Air Materiel Command laboratories may readily determine the extent to which available facilities are adaptable to the purposes of the tests. Collector ring (A), the carburetor inlet ducts (B), the ducting aft of the fan (C), the ducts passing through the engine cooling air duct downstream of the fan (D and E).

6. In addition the facsimile ducting, it is believed desirable to mount an R-4360 engine to simulate accurately the flow ahead of the collector ring (A) and the carburetor inlet (B). It is requested that the Air Materiel Command inform this Contractor at the earliest possible opportunity whether such an engine can be furnished by the Air Materiel Command. If such an engine is not available, this Contractor will endeavor to construct facsimile engine cylinders for the last row of the engine. In addition to the above regarding the engine, the following information is re-

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CONSOLIDATED VULTEE AIRCRAFT CORPORATION
FORT WORTH DIVISION FORT WORTH, TEXAS

Air Materiel Command
Dayton, Ohio

AO-7-2,#6114(F-61)(F-8.4)
2 April 1948

quested:

(a) Confirmation is requested that the Air Materiel Command will furnish the following instrumentation:

(1) Flow instrumentation ahead of engine.
(2) Total head and static tubes ahead of and aft of the fan.
(3) Fan tachometer.
(4) Fan power measurement instrumentation.
(5) Manometer boards and leads.

(b) Information is requested concerning the variation of dynamometer drive power limitations with fan RPM, and also the range of flows which are obtainable. A curve of estimated fan pressure coefficient vs. flow coefficient is attached, Enclosure (B).

(c) Drawings of the fan test rig are requested.

(d) Information is desired relative to the fan whirl test requirements, both as to test program and test fan construction.

(e) Details and drawings are desired which indicate the location of the fan drive motor (dynamometer) relative to the test set-up, the shafting support and connections to fan, the blower location and ducting connections from blower to test rig.

(f) Information as to the earliest date on which the fan test rig will be available for these tests.

CONSOLIDATED VULTEE AIRCRAFT CORPORATION
FORT WORTH DIVISION

A. C. Seboldi
Chief Engineer

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1/27-4

Wright-Patterson Air Force Base, Dayton, Ohio

MCPPXE4/RAB/mc

MCPC

2 April 1948

SUBJECT: Request for Permission to Negotiate
Purchase Request No. 62280

THRU: Chief of Staff
United States Air Force
Washington 25, D. C.
ATTN: Director, Procurement & Industrial Planning
Office, Deputy Chief of Staff, Materiel

TO: Under Secretary of the Air Force
Washington 25, D. C.

1. Pursuant to Joint Procurement Regulation 4-201, there is forwarded a proposed statement of the required findings and determination, prepared for signature of the Under Secretary of the Air Force, requesting authority to negotiate the following procurement:

a. Contractor: Pratt and Whitney Aircraft Division, United Aircraft Corporation, East Hartford, Connecticut.

b. Services: Change order to Contract W33-038 ac-18653 is to be initiated for the following: The contractor shall furnish a remotely mounted two-speed cooling fan drive unit for use with the XR-4360-51 engine. The mechanism will be substantially in accordance with Pratt and Whitney Aircraft Drawing LF-13215, Sheet 2. The speed ratios will be approximately 1 and 1.7 times crankshaft speed. In low speed the drive will support a maximum fan load of 180 H. P. and in high speed a maximum fan load of 360 H. P.

c. Prices: The actual price for this service is $37,952.00.

d. Funds: Fiscal Year 1948 funds.

e. Additional information:

(1) Basic Contract W33-038 ac-18653 is for the development of the XR-4360-43 and -51 engines for, respectively, the B-50 and B-36 airplanes.

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AMC Form No. 10-7
(18 Nov 47)
(Old AMC Form No. 10-508)

AMC

Subject: Request for Permission to Negotiate MCPPR-4
Purchase Request No. 62280

(2) Of a total of $6,312,630.00, the amount paid to the contractor is $792,296.56.

(3) The amount of $37,952.00 will be sufficient to complete the program for the two-speed cooling fan drive unit.

(4) The contractor has not started work on the above amendment to the basic contract.

f. Selection of source: Since Pratt and Whitney Aircraft is the designer and manufacturer of the R-4360 engine, there is no other source who could develop and build a two-speed cooling fan drive unit for use with this engine.

2. The services to be furnished are of a research and development nature which pertain to Item 4 of basic contract, are covered by Project No. 1108 on the approved Research and Development Program, and are within the scope of Joint Procurement Regulation 4-112.

FOR THE COMMANDING GENERAL:

[redacted]
Brigadier General, USAF
Chief, Procurement Division

APPROVAL RECOMMENDED:

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OTHER

MCREXP-6/RWMcL/rhk
April 2, 1948

Propeller Data for R-4360 VDT Engine

General Electric Company
920 Western Avenue
West Lynn 3, Massachusetts
ATTN: W.O.Meckley, Aircraft Gas Turbine Div.

1. There are inclosed herewith propeller performance data as requested by the General Electric Company letter 16-673, dated 20 February 1948.

2. The requested data may be obtained using the inclosed curve sheets, Figure 1 and Figure 1-A. Torque values for any desired combination of altitude, velocity, propeller RPM, and propeller blade angle may be computed using the relationships as listed:

Power Coefficient = $Cp = \frac{P}{\rho n^3 D^5}$

Torque Coefficient = $Cq = \frac{Q}{\rho n^2 D^5}$

$Cp = 2\pi Cq$

Advance Ratio = $J = \frac{V}{nD}$

P = Power, ft-lb/sec.

Q = Torque, ft-lb.

ρ = Density, slugs/ft.^{3}

n = Propeller Revolutions per Second

V = Velocity, ft/sec.

D = Propeller Diameter, ft.

3. Figure 2 gives the rate of pitch change versus engine speed for the C-6443-B116 installation.

4. This information is substantially similar to that which was provided by Air Material Command letter MCREXP-6/RWMcL/rhk,

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Ltr, AMC, , to General Electric Co., West Lynn, Mass.
subj: "Propeller Data for R-4360 VDT Engine."

dated 8 January 1948, on the above subject. This represents all of the propeller information that is available for this power plant.

FOR THE COMMANDING GENERAL:

F. J. MINTY
Colonel, USAF
Chief, Power Plant Laboratory
Engineering Division

4 Incls.
1. Sample Calculation
2. Figure 1
3. Figure 1-A
4. Figure 2

Copy to:
AF Insp.-in-Chg.

MCRSXB-2, Mr. James

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In reply please refer to AES:rij-Eng.

PRATT & WHITNEY AIRCRAFT

DIVISION OF UNITED AIRCRAFT CORPORATION
EAST HARTFORD 8, CONNECTICUT, U.S.A.
CABLE ADDRESS "AIRCRAFT"

April 6, 1948

120

ARMY OFFICE
APPROVED
CONCURRED IN
NO COMMENT 8/2/48

VIA: Army Air Forces Representative

To: Commanding General
Air Materiel Command
Wright-Patterson Air Force Base
Dayton, Ohio

Attention: MCPPXE4

Subject: Contract W33-038 ac-18653
R-4360-51 Engine Cooling Fan Drive Requirements

Reference: (a) AMC letter MCPPXE4/RAB/mg to P&WA dated 29 March 1948.
(b) PWA letter WAP:rij-Eng. to AMC dated February 23, 1948.

1. Receipt of reference (a) is acknowledged. The proposal outlined in reference (b) was based on utilizing for the 4360-51 engine the fan drive that had previously been developed and was in production on the 4360-41 engine. It was only by utilizing this drive that it was possible to meet the schedule required for the -51 project. As was pointed out in reference (b) this design limited the permissible fan load in low gear to 180 HP and in high gear to 360 HP. In view of reference (a) indicating that this is not sufficient horsepower for the 4360-51 application, it becomes impossible to utilize an existing design drive and it is therefore necessary that we start from scratch to design a new fan drive.

2. This will not permit shipment of the fan drive gear box in time for the wind tunnel tests which, we understand, are scheduled for late this year and will also prevent shipment of fan drive gear boxes with the eight prototype engines now scheduled for delivery in April of 1949. It is our opinion that the best we could possibly hope to do would be to deliver a gear box designed for the loads indicated in reference (a) in approximately 14 months providing the gear box for wind tunnel tests was shipped without any proof testing to support it, and that it would take 16 to 18 months to provide gear boxes for the eight prototype engines supported by a 50-hour preflight test. It is impossible at this time to state how soon fan drive gear boxes to meet these requirements would be available in production as it will first be necessary to make a complete new design before we can determine the time

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required for procurement of the couplings. It would undoubtedly be something over 18 months. In view of the serious delay this will cause in the -51 schedule, we request confirmation of the desire to increase the capacity of the fan drive gear box before proceeding with the design.

UNITED AIRCRAFT CORPORATION
Pratt & Whitney Aircraft Division

A. E. Smith
Assistant Chief Engineer

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AMC Form No. 10-7
(18 Nov 47)
(Old AMC Form No. 10-508)

Wright-Patterson Air Force Base, Dayton, Ohio

MCPTX-4/RAB/mg
7 April 1948

SUBJECT: Contract W33-038 ac-13653
R-4360-51 Qualification Test

THRU: USAF Inspector in Charge

TO: Pratt and Whitney Aircraft Division
United Aircraft Corporation
East Hartford, Connecticut

1. The Air Materiel Command desires that the 150-hour qualification test on the R-4360-51 engine, the B-1 turbosupercharger, variable discharge nozzle and complete boost control system be made a requirement for the official qualification test. The above recommendation has previously been made for the R-4360-43 engine qualification test.

2. It is also recommended that the starter, fan, propeller, alternator extension shafting, etc., as required on B-36 airplanes, be used during this test insofar as practicable.

3. As in the past, it is recommended that Pratt and Whitney submit the "test instructions" to the Air Materiel Command for approval prior to the starting of the test for both the R-4360-43 and -51 engines.

FOR THE COMMANDING GENERAL:

O. M. Scott Maj USAF

for O. M. [illegible]
Colonel, USAF
Chief, Aeronautical
Equipment Section
Procurement Division

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CONSOLIDATED VULTEE AIRCRAFT CORPORATION

FORT WORTH DIVISION
FORT WORTH 1, TEXAS

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NBR:ar:db/22352-FW#6941 (F-8.1)
AC-7-FW#2095
8 April 1948

Subject: Contract 22352, XB-36 and YB-36 Airplanes
Contract AC-7, B-36A, B and C Airplanes
Flight Flutter Speed Restrictions

To: Commanding General
Air Materiel Command
Wright-Patterson Air Force Base
Dayton, Ohio

Attention: MCREOA-2

Thru: Chief, FWAF Procurement Field Office

References: (a) AMC letter MCPPXA82/CS:ICW/F-11D, dated 17 February 1948
(b) CVAC letter FW#6632-FW#551 dated 30 December 1947

1. Reference (a) transmitted comments on the Contractor's flight flutter data submitted with reference (b) and requested additional flight flutter tests at 15,000 feet with both symmetrical and unsymmetrical excitation to completely remove the flutter limitations on the XB-36, YB-36, and B-36A and B airplanes up to the existing limit diving speeds. Reference (a) also requested specific calculations to be made relative to the flutter characteristics of the B-36C airplane.

2. The Contractor is in agreement that additional flight flutter tests on the YB-36 should be run at 15,000 feet, as requested. However, it is felt that instead of limiting the speeds for this test to 270 miles per hour indicated, it is desirable to extend the range to 284 miles per hour indicated, providing this appears safe from a flutter standpoint, as the latter speed represents the proposed structural limit for the B-36C airplane. It is proposed that this speed should then be further extended at 25,000 feet altitude to an indicated speed of [illegible] miles per hour (true speed 400 miles per hour) provided this appears safe from a flutter standpoint, as this is the proposed limit diving speed for the V.D.T. airplane at this altitude. It will be noted that the limit diving speeds which have been established for the B-36C airplane range only from 5 to 8% above the limit diving speeds currently in effect on the earlier models.

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FORT WORTH DIVISION FORT WORTH TEXAS

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The structure of the two airplanes actually is of equivalent strength. The apparent difference is due only to a revision of the structural specification to allow a greater utilization of the structural strength of the airplane, made possible by the greater power available. Thus, it is felt that if, as the speeds are increased, the test results warrant further speed increases in the present configuration without undue risk to the airplane, a much firmer substantiation of the flutter characteristics of the B-36C airplane can be made by means of comparative calculations showing the relative flutter possibilities. The actual schedule for performance of the above noted tests cannot be given at this time as this must be integrated with the rest of the YB-36 flight test program which contains several items of higher priority. Certain phases of this program are currently under negotiation between Chief, FWAFPFO and Contractor. The Contractor is agreeable to performing the above mentioned tests as part of the flight flutter program heretofore authorized under change orders No. 39 and 40 to Contract 22352.

3. The Contractor is proceeding on the calculations suggested by the Air Materiel Command in reference (a). Every effort will be made to expedite these calculations so that an early decision can be made as to the flutter possibilities on this airplane.

4. Reference (a) requested provision for a flutter check on the B-36C airplane in the flight test program pending decision as to whether this will be required. This will be added to the program and submitted when the entire YB-36C program is determined.

5. Air Materiel Command comments are requested on the proposed changes to the flight test program on the YB-36 given in Paragraph 2 above inasmuch as it is desired by the Contractor to settle the flutter question for the B-36C airplane as soon as possible.

CONSOLIDATED VULTEE AIRCRAFT CORPORATION
FORT WORTH DIVISION

M. L. Hicks

M. L. Hicks
Chief of Contract

APPROVED
CONCURRED IN
NO COMMENT

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"D" oct 24, 1947 April 12 1948

B-36 COMPARISONS Original Present

ITEM	B-36 (-41)		B-36 (VDT) 10-24-47		B-36 (VDT) 4-12-48	
T.O. Gr. Wt.	278,000	328,000	278,000	328,000	278,000	328,000
G.W. @ End of Flight		151,281		156,855		165,087
Wt. Empty		134,964		140,705		148,964
Combat G.W. (T.O. G.W. less 1/2 Fuel)	220,250	247,459		250,152	226,916	254,129
All out R_{MAX}	8,430	10,311		10,634	6,600	8,775
V_{Cruise} @ All Out R_{MAX} (True Airspeed)	203	207		322	267	262
Altitude @ Bomb Drop	15,000'	13,000'		35,000'	28,000'	25,000'
V_{Cruise} @ Bomb Drop	207	210		296	260	260
V_{MAX} (NRP) @ Combat G.W. @ 30,000 Ft.	335	325.5		385	383.5	377.5
Parasite Drag (C_{D_p}) @ C_L = 0.4	.0188		.0183		.0200	

NOTE: (At 328,000 Lb. T.O. G.W.)

Total ΔR_{MAX} (Orig. VDT and Present VDT) = 1859 miles and $\Delta V_{R_{MAX}}$ = 60 MPH

ΔR due to increase Final Wt. = 692 Miles
ΔR due to increase Nacelle Drag = 680 Miles
ΔR due to increase Eng. SFC = 200 Miles
ΔR due to increase Eng. Cooling Pwr. = 287 Miles

8000 lb CFE —

used in comparison to B-36 at April 1948 Division Briefing

10 211
2 113

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AW-444 B-46 UTILITY REPORT SHEET

ANALYSIS PREPARED BY CHECKED BY REVISED BY

Consolidated Vultee Aircraft Corporation FORT WORTH DIVISION FORT WORTH, TEXAS

PAGE REPORT NO. MODEL DATE

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(C) FINAL

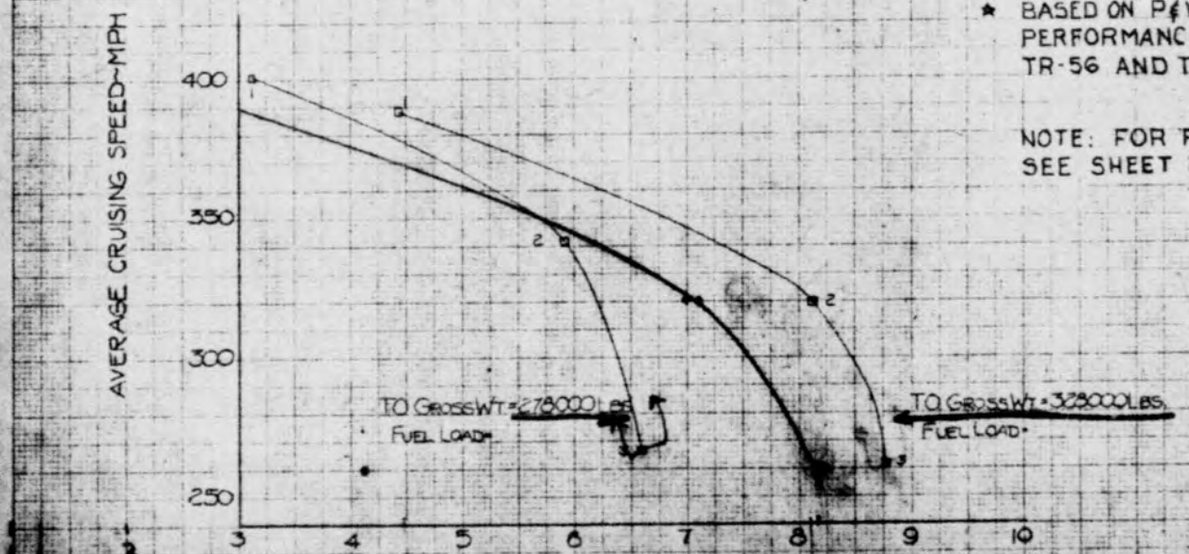
B-36C AIRPLANE

RANGE VS AVG CRUISING SPEED ★
AT OPTIMUM ALTITUDES

NOTE: BOMB LOAD = 10000 LBS.

★ BASED ON P&W ENGINE PERFORMANCE REPORTS TR-56 AND TR-57

NOTE: FOR FLIGHT PATHS SEE SHEET 2.



4/12/48
FZA-36-076
CVAC FORT WORTH DIVISION
SHEET 1

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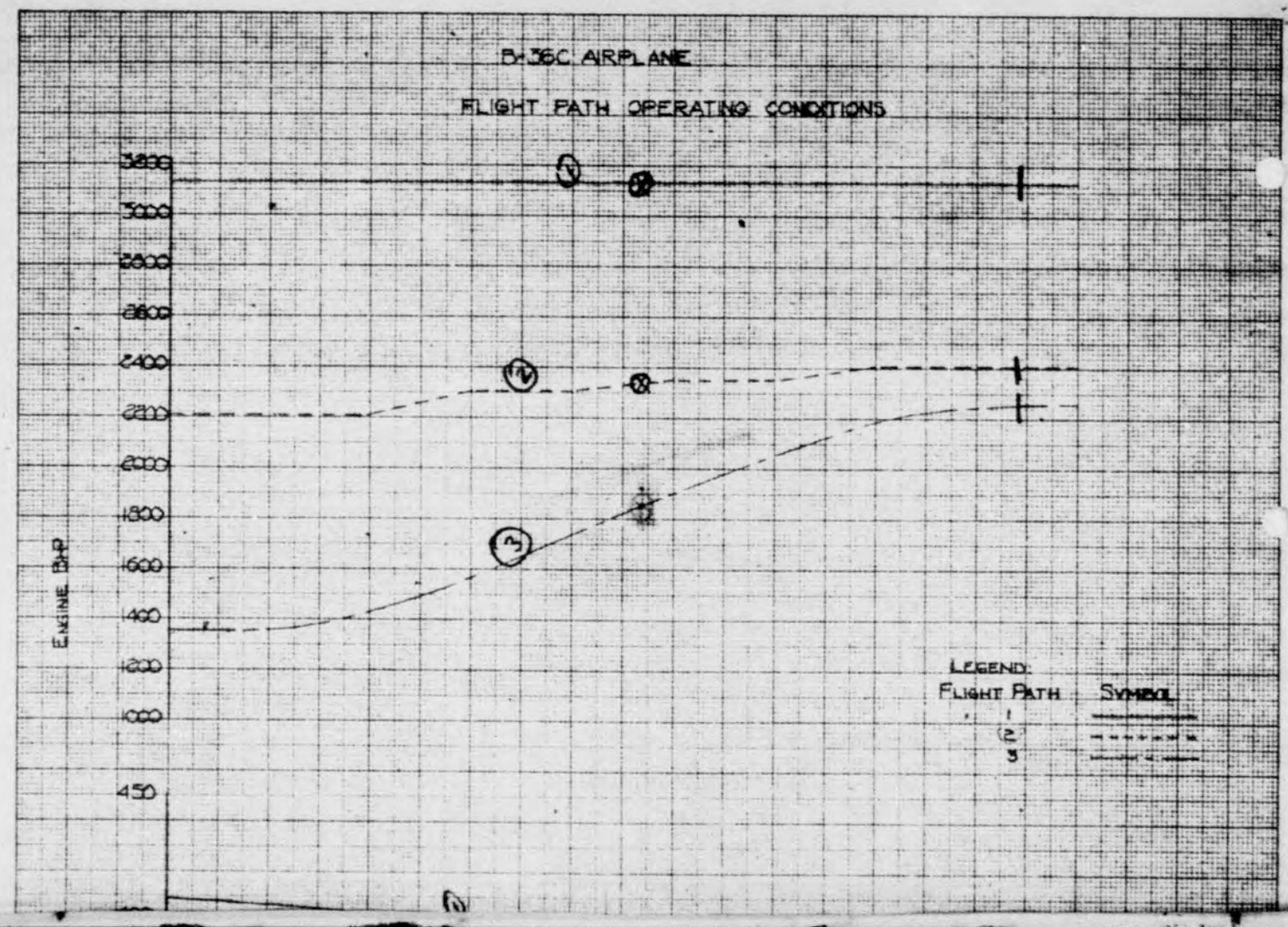
B-36C AIRPLANE

FLIGHT PATH OPERATING CONDITIONS



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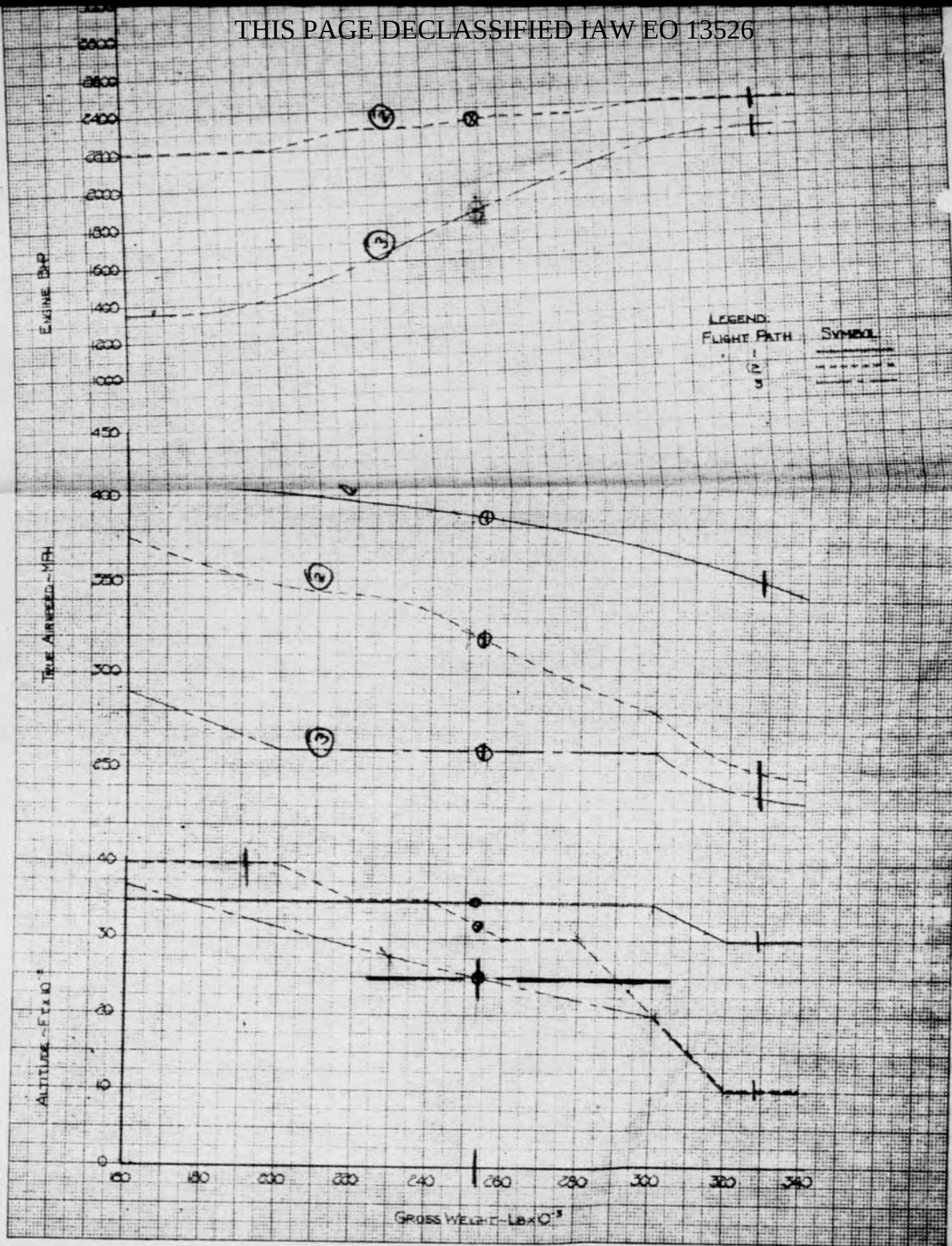

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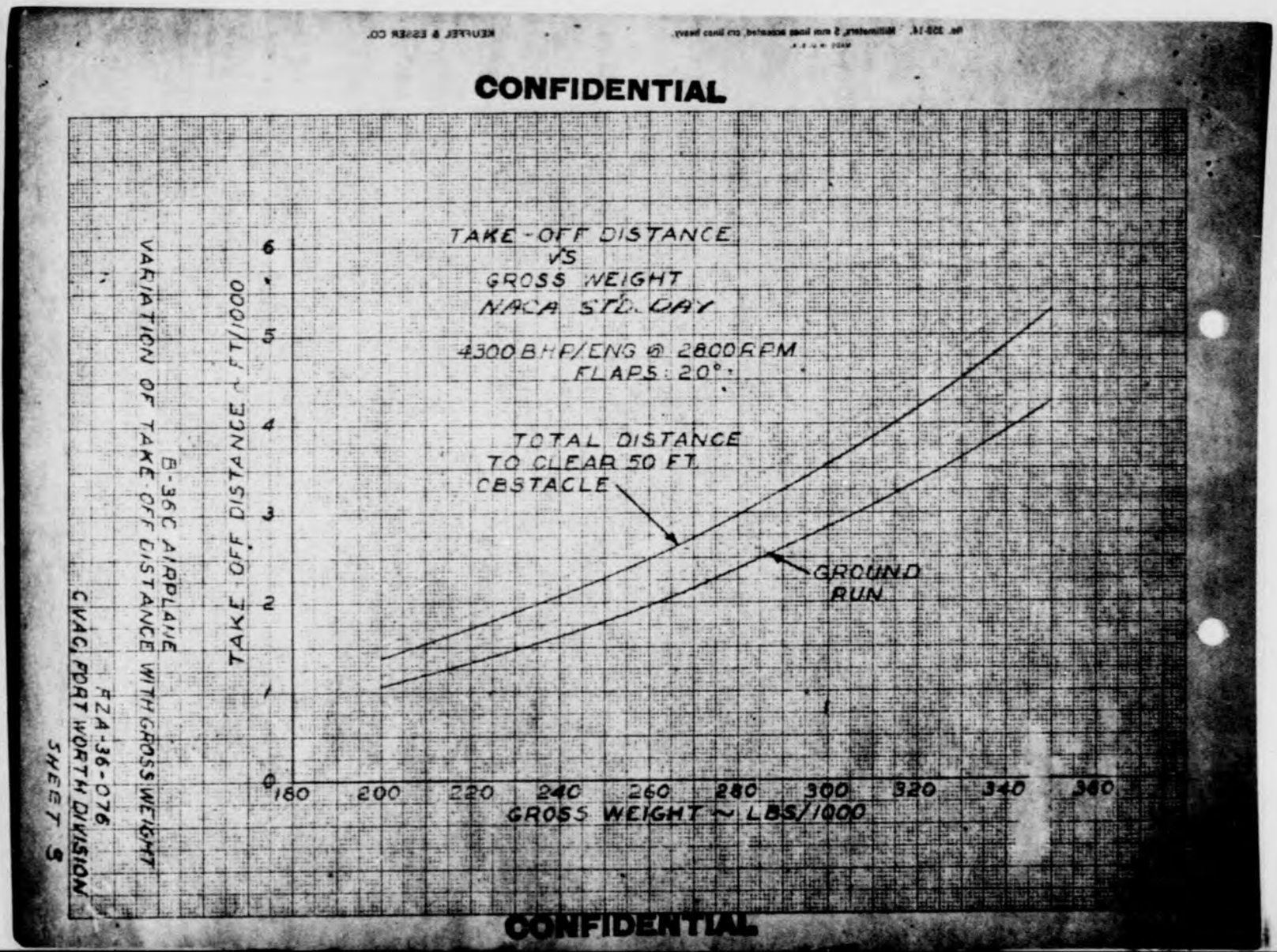

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6-27-5

T E L E T Y P E M E S S A G E
AIR SERVICE COMMAND TELETYPE NETWORK

MCREXP-74/JBC/rhk

13 April 1948

FROM: AMC — R. J. MINTY, Colonel, USAF, Chief, Power Plant Laboratory, Engineering Division

TO: PRATT AND WHITNEY AIRCRAFT DIVISION
UNITED AIRCRAFT CORPORATION
EAST HARTFORD, CONNECTICUT

(C-18655)

TELETYPE NO: MCREXP-4-45....REQUEST STUDY BE MADE AND PROPOSAL SUBMITTED COVERING FURTHER DEVELOPMENT OF R-4360-43 ENGINE FOR 40,000 and 45,000 FEET ALTITUDE OPERATION IN B-36C AIRPLANE. STUDY SHOULD INCLUDE CHANGES WHICH WILL BE REQUIRED ON THE ENGINE, INCLUDING TURBOSUPERCHARGER, BOOST CONTROL SYSTEM, FAN DRIVE, IGNITION SYSTEM, OIL SYSTEM, ETC. REQUEST DESIGN REPORT BE SUBMITTED WITH LETTER OF PROPOSAL SHOWING PERFORMANCE CHARACTERISTICS OF COMPLETE POWER PLANT INSTALLATION SIMILAR IN PRESENTATION TO PRATT & WHITNEY REPORT NO. TR-42R. DIRECT REPLY TO POWER PLANT LABORATORY, ENGINEERING DIVISION, MCREXP-74.

PREPAID

MCAF-D-R-20

C-18653

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In reply please refer to:
ARM:bc Engineering II

PRATT & WHITNEY AIRCRAFT

DIVISION OF UNITED AIRCRAFT CORPORATION
EAST HARTFORD 8, CONNECTICUT, U.S.A.
CABLE ADDRESS: AIRCRAFT

ARMY OFFICE
APPROVED
CONCURRED IN
NO COMMENT
13/4/48

13 April 1948

VIA: United States Air Forces Representative, East Hartford 8, Connecticut

Commanding General
Air Materiel Command
Wright Field
Dayton, Ohio

Attention: MCPPXE47-4-85

Subject: Instrumentation of R-4360-51 Engine X-155 (Contract W33-038 ac-18653).

Reference: (a) AMC wire MCPPXE47-8-85 dated 8 April 1948 to PWA via USAF Inspector in Charge, United Aircraft Corporation, East Hartford, Connecticut

1. Receipt of reference (a) is hereby acknowledged. Steps are currently being taken to provide the instrumentation requested in Items 1, 2, 4, 5 and 6 of reference (a) on prototype R-4360-51 engine X-155 which is being furnished under Contract W33-038 ac-18653. However, calibration of the torque nose as requested under Item 3 of reference (a) is not feasible at this time due to lack of the special test facilities which would be required to operate the R-4360-51 remote reduction gearbox on a dynamometer test stand. It may be possible at a later date to operate a .3125:1 ratio -51 reduction gear directly mounted on an R-4360-43 engine in which case a dynamometer calibration of this style torque nose could be made. If such a calibration were made however, it should be understood that the fixed gear splines and torque balance pistons would be contained in the magneto section housing and that the reduction gear, when operating on the -51 remote gearbox housing, would not be using the torquemeter parts with which it was calibrated. In order to operate a .3125 ratio nose directly mounted on a -43 engine, it would be necessary to provide special parts which are not now available.

UNITED AIRCRAFT CORPORATION
Pratt and Whitney Aircraft Division

Allen R. Marsh

A. R. Marsh
Assistant Project Engineer

ARM:bc

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ACTION INFOR

WUAJAY SER PD

WUX EASTHARTFORD CONN APR 14 425P

AIR MAERIEL COMMAND ATTN POWER PLANT LABORATORY ENGINEERING DIVISION WRIGHT PATTERSON AIR FORCE BASE DAYTON OHIO

RETEL MCREXP-4-45. PRATT & WHITNEY AIRCRAFT PARTICULARLY EAGER TO UNDERTAKE THE DEVELOPMENT OF AN IMPROVED R-4360-43 ENGINE AS A SECOND PHASE PROGRAM TO START ON JANUARY 1, 1949. AND DIRECTLY FOLLOWING THE COMPLETION OF THE PRESENT VDT PROGRAM. THE PRESENT ENGINEERING LOAD IS SO HEAVY THA IT IS IMPOSSIBLE TO ATTEND ANYMORE TO IT AND WE BELIEVE IT IMPRACTICAL TO UNDERTAKE THE DEVELOPMENT OF THE IMPROVED ENGINE BEFORE COMPLETING DEVELOPMENT OF THE PRESENT ONE. ANALYTICAL REPORT AND PROPOSAL WILL FOLLOW AT EARLIEST OPPORTUNITY

W A PARKINS PRATT AND WHITNEY AIRCRAFT.

524P

MCREXP-4-45 R-4360-43 1 1949 VDT.

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(Mr. 10-3 (M 47))

86

TC-92-185

..OUTING AND RE ORD SHEET

AIR MATERIEL COMMAND

Use this form for inter-office correspondence within headquarters.
Number all comments consecutively.
Use entire width of sheet, both sides.
Use authorized office symbols to designate addressee and addressee.
Note example MCR-CAT-1 for MCR-CAT-2 (MR)
Remaining space is sufficient only for proper spacing of typewritten signature.
Place initials of dictator and typist, telephone number and location to right of signature.
Separate comments by horizontal lines across page.

SUBJECT Contract W33-038 ac-18653 - R-4360-43 and -51 Engines

TO MCPPXE85 FROM MCPPXE4 36086 DATE 16 Apr 48 COMMENT NO. 1
THRU: MCPPXE - Mr. Roush

1.- It is desired that Contract W33-038 ac-18653 with Pratt and Whitney Aircraft, East Hartford, Connecticut, be amended to call for the loan and use of one (1) CHM-2 Turbosupercharger to be used for tests to be conducted under subject contract. This turbosupercharger will be bailed to the contractor on his bailment Contract W33-038 ac-10371.

2. The above amendment to subject contract will result in no change in contract consideration since the test work to be performed as desired by the Air Materiel Command will be for the benefit of the Government since it will expedite the R-4360 VDT Program.

The bailment of the turbosupercharger will allow checking & testing of this unit along with the ~~remainder~~ engine set.

O. M. Scott Maj USAF

STANLEY C. PACE
Major, USAF
Chief, Power Plant Branch

RAB/mg
29207
Bldg 15
Rm 104

TO FROM DATE COMMENT NO. 127

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FORT WORTH DIVISION
FORT WORTH 1, TEXAS

7C-92-309

LHM:djh/AC-7-FW#2258 (F-2)
19 April 1948

Subject: Contract AC-7 YB-36C and B-36C Airplanes
V.D.T. Conference Held at Fort Worth
April 12 and 13, 1948

To: Commanding General
Air Materiel Command
Wright-Patterson Air Force Base
Dayton, Ohio

Attention: MCPPXA32

Thru: Chief, W.W. A.F. Procurement Field Office

Reference: (a) CVAC Wire, Msg. No. 696, to Dayton Office dated 24 October 1947

Enclosures:
(A) Three copies of Engineering Memorandum No. 1.086 "Summary of Decisions Reached at V.D.T. Conference at Fort Worth 12 April 1948", dated 14 April 1948
(B) Three copies of Engineering Memorandum No. 1.084, "Meeting with AMC on Model Specification for B-36C Airplanes," dated 14 April 1948
(C) Three copies of Engineering Memorandum No. 7.011, "Meeting on Fan Test Program Between AMC, Pratt & Whitney, Curtiss Propeller, and CVAC", dated 13 April 1948
(D) Three copies of Engineering Memorandum No. 7.010, "Moffett Field Test Nacelle", dated 13 April 1948
(E) Three copies of Engineering Memorandum No. 19,027, "Proposed Agenda for the April 12, 1948, V.D.T. Conference at Fort Worth", dated 12 April 1948

1. Enclosures (A) through (E) submitted herewith summarize discussions and decisions reached at subject conference attended by A.M.C., Pratt & Whitney, Curtiss-Wright, General Electric, and Contractor's representatives. The major purpose of this conference was to review the performance of the B-36C type airplanes based on engine performance data recently submitted by Pratt & Whitney in power plant performance Report TR-56 and TR-57. The preliminary summary of the airplane performance as reported in Enclosure (A) was presented and discussed at this conference. Basically, the most important differences in performance from the figures presented in reference (a) were

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reduced range and cruising speed but greatly improved take-off performance. However, it was noted that high cruising speeds are obtainable at reduced ranges and that the high take-off performance would permit increasing the range by increasing the take-off gross weight and using auxiliary fuel tanks.

2. The detail performance information required for conclusive evaluation of the subject airplanes will be submitted to the Air Materiel Command in a detail performance report by May 3, 1948.

CONSOLIDATED VULTEE AIRCRAFT CORPORATION
FORT WORTH DIVISION

J. W. Larson
Ass't. Chief Division Engineer

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7C-92-3#

CONSOLIDATED VULTEE AIRCRAFT CORPORATION
FORT WORTH DIVISION FORT WORTH, TEXAS
ENGINEERING DEPARTMENT

ENGINEERING MEMORANDUM
(REPORT NO. FZM-110)

E.M. No. 1.086

Model: YB-36C, B-36C

Date: 14 April 1948

Subject: Summary of Decisions Reached at V.D.T. Conference at Fort Worth, 12 April 1948

References:
(a) Engineering Memorandum No. 19.029 dated 12 April 1948
(b) Engineering Memorandum No. 7.010 dated 13 April 1948
(c) Engineering Memorandum No. 1.084 dated 14 April 1948
(d) E.M. No. 7.011 dated 13 April 1948

Present Were:

Lt. Col. S. W. Parks	A.M.C.
Maj. L. F. Ayres	A.M.C. (Power Plant Lab.)
Maj. S. Yarchin	A.M.C.
Maj. O. M. Scott	A.M.C. (Power Plant Br.)
Capt. R. J. Walling	A.M.C.
W. T. Grady	A.M.C. (Propeller Lab.)
J. Clark	A.M.C. (Engr. Plans)
W. Schwartz	A.M.C. (Airc. Lab.)
E. G. Johnson	A.M.C. (Engr. Plans)
H. W. Tejan	A.M.C. (Propeller Unit)
R. G. Naugle	A.M.C. (B-36 Procurement Offic
R. A. Bettner	A.M.C. (Power Plant Br.)
R. R. Romanowich	A.M.C. (Power Plant Lab.)
Lt. Col. B. H. Warren	Chief, F.W. A.F. Procurement Field Office
Maj. C. P. Dillon	Ass't. Chief, F.W. A.F. Procurement Field Office
J. W. Hardin	A.F. Inspector
A. E. Smith	Pratt & Whitney
P. S. Hopper	Pratt & Whitney
C. H. Rawls	Pratt & Whitney
R. T. Krieghoff	Pratt & Whitney
H. A. MacDonald	Pratt & Whitney
J. M. Mergen	Curtiss-Wright
L. Enos	Curtiss-Wright
K. E. Persch	Curtiss-Wright
J. S. Lancaster	Curtiss-Wright
D. D. Dunklin	General Electric
W. V. Meckley	General Electric
M. L. Hicks	C.V.A.C.
R. C. Sebold	C.V.A.C.
J. W. Larson	C.V.A.C.
R. H. Widmer	C.V.A.C.
D. H. Levin	C.V.A.C.

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Present Were: (Cont'd)	E. B. Mask	C.V.A.C.
	C. G. Martin	C.V.A.C.
	J. E. Goode	C.V.A.C.
	H. K. Growald	C.V.A.C.
	L. H. Moffatt	C.V.A.C.
	A. P. Higgins	C.V.A.C.
	E. C. Carman	C.V.A.C.

The subject conference discussed the items listed in agenda, reference (a) and the following decisions were reached. The numbering of these items corresponds exactly with those used in reference (a).

A. AIRPLANE AND ENGINE PERFORMANCE AND MISCELLANEOUS PROBLEMS

1. Airplane Performance

Contractor's representatives outlined results of performance studies just completed which indicate the following performance figures.

	Optimum Alt. Flt. Path	Optimum Altitude Flt. Path With High Cruising Speed Over Target
	VDT Cal. Perform. 12 April 1948	VDT Cal. Perform. 12 April 1948
Max. range not including take-off, warm-up, climb and descent 328,000 # G.W.	8,775	8,130
Average cruising speed	262	320
Cruising speed over target	260	318
Altitude over target	25,000 ft.	31,500 ft.

Take-off distance over 50 foot obstacle at 328,000 lbs. on NACA day is 4,450 feet and maximum speed over the target at normal rated power is 388 miles per hour at 35,000 feet. It was pointed out that the maximum range has decreased 1,859 miles and the average cruising speed has decreased 60 MPH over the preliminary estimates contained in CVAC teletype of 24 October 1947. It was pointed out that these decreases in performance were due to the following factors.

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A. AIRPLANE AND ENGINE PERFORMANCE AND MISCELLANEOUS PROBLEMS (Cont'd)

1. Airplane Performance (Cont'd)

	RANGE	SPEED
I. WEIGHT EMPTY INCREASES		
*(a) GFP (+ 3130#)	- 266 mi.	
(b) Contractor responsible (+ 935)	- 79	
(c) Errors in original weight bases (+ 4079#) 1179 #23 vs #3 2900 BB tanks	- 347	
Total + 8,144#	- 692 mi.	App. -2 MPH
II. AIRPLANE DRAG INCREASES		
(a) 12 counts due to nacelles (from wind tunnel)	- 480	
(b) 5 counts due to errors in original drag basis	- 200	
Total	- 680	App. -9 MPH
III. POWER PLANT SFC AND COOLING DRAG		
(a) Increased sfc	- 200	
(b) Increased Cooling Drag	- 287 mi	
Total	- 487	App. -49 MPH
Grand Total	-1859 mi.	-60 MPH

*

BREAKDOWN OF G.F.P. WEIGHT INCREASES

ITEM	SPEC. WEIGHT	PRATT & WHITNEY PRESENT ESTIMATE	WEIGHT DIFFERENCE
Engines	19,920	21,420	+ 1,500
Exhaust Headers	600	750	+ 150
Dynafocal Mounts	510	612	+ 102
Reduction Gear Box	2,400	2,700	+ 300
Extension Shafting & Couplings	1,808	1,826	+ 18
Boost Controls	250	300	+ 50
Addition of Fan Drives	- -	1,110	+ 1,110
TOTAL	25,488	28,718	+ 3,230

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TC-92-314

CONSOLIDATED VULTEE AIRCRAFT CORPORATION
FORT WORTH DIVISION FORT WORTH, TEXAS
ENGINEERING DEPARTMENT

A. AIRPLANE AND ENGINE PERFORMANCE AND MISCELLANEOUS PROBLEMS (Cont'd)

1. Airplane Performance (Cont'd)

Since it is obviously impractical to evaluate the performance of the airplane on the basis of the few isolated points on the performance curves which could be outlined at this conference, it was agreed that CVAC would submit a complete performance report on the V.D.T. airplane at the earliest possible date for the evaluation and comments of the A.M.C. (Widmer, Menefee)

2. Airplane Weight Increases

G.F.P. weight has gone up a total of 3,230 lbs. and the Contractor responsible weight has increased 935 lbs. over the original estimates of preliminary Specification FZD-003P dated 18 July 1947. The performance penalties resulting from these weight increases is outlined in Item 1. and there appears to be no prospect of eliminating these weight increases at this time. However, the seriousness of the weight picture is obvious and every effort should be made to reduce these weights as much as possible and prevent further weight increases. (Ray)

3. Wing Tip Fuel Tanks

It was pointed out that due to the superior take-off characteristics of the V.D.T. airplane that it could probably take-off with 380,000 lbs. gross weight in a shorter distance than the B-36B can at 328,000 lbs. However, preliminary studies by CVAC indicate that the structural limit to maintain minimum landing and maneuver factors with auxiliary outer panel tanks is around 350,000 lbs. Preliminary range studies indicate a possible range increase of 700 miles at this gross weight. Further consideration of auxiliary fuel tanks depend on A.M.C. evaluation of the over-all airplane performance. (Widmer)

4. Approval of Pratt & Whitney Power Plant Performance Reports

Reports TR-56 and TR-57 have been submitted by Pratt & Whitney to the A.M.C. and they will be reviewed for A.M.C. approval. Pending A.M.C. approval the Contractor will proceed with all performance calculations for specification performance based on these reports. (Widmer, Levin)

5. Review of Engine Cooling Requirements

Pratt & Whitney confirms the present cooling data contained in curves C15 and C2 (See also Item A.16.) as being the most reliable information available. (Levin)

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CONSO. TED VULTEE AIRCRAFT CORP. TION
FORT WORTH DIVISION FORT WORTH, TEXAS
ENGINEERING DEPARTMENT

A. AIRPLANE AND ENGINE PERFORMANCE AND MISCELLANEOUS PROBLEMS (Cont'd)

6. Review of Engine Performance Data

Pratt & Whitney confirms that the present data contained in reports TR-56 and TR-57 are reliable and that there is no prospect at this time of change in these data. Mr. Smith of Pratt & Whitney stated that flight testing of a V.D.T. power plant on a B-50 airplane would start some time in May, 1948, and that further data would be obtained from these flight tests. (Levin)

7. Variation of Exhaust Gas Temperature with Engine Power

Reports TR-56 and TR-57 currently give exhaust temperatures for several isolated points which do not cover the entire range required by CVAC. CVAC will furnish Pratt & Whitney the power schedule for which this information is required and Pratt & Whitney will furnish the exhaust temperatures for these specific conditions. (Levin, Menefee)

8. Review of Engine Oil Heat Rejections

Pratt & Whitney reaffirmed that the engine specification heat rejections are not excessively conservative and that no reduction in these requirements can be considered at this time. (Levin)

9. Minimum Cruising Power for Long Range Operation

Reports TR-56 and TR-57 and engine cooling requirement curves C15 and C2 do not show performance and cooling data below 1400 BHP, but Pratt & Whitney stated that there was no reason why lower powers could not be used and they agreed to extend the required curves as soon as possible if CVAC informs them as to how low powers are desired. (Levin, Menefee)

10. Carburetor Enrichment

Pratt & Whitney will incorporate enrichment as closely as possible in accordance with CVAC requirements. CVAC will forward enrichment requirements by April 27, 1948, and Pratt & Whitney will inform CVAC how closely they can meet these requirements. (Levin, Menefee)

11. Propulsive Efficiency

a. Cuffs

CVAC peformance calculations show propulsive efficiency increase due to cuffs of 2% in cruising and 4% at maximum speed while Curtiss-Wright calculations indicate 1.2% at cruise and 2% at high speed. CVAC and Curtiss-Wright are

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A. AIRPLANE AND ENGINE PERFORMANCE AND MISCELLANEOUS PROBLEMS (Cont'd)

11. Propulsive Efficiency (Cont'd)

a. Cuffs (Cont'd)

in agreement that a figure of 1.5% in cruise seems reasonable, which would increase the maximum range of the V.D.T. airplane approximately 150 miles. It was further pointed out by Pratt & Whitney and CVAC that cuffs would probably be required for engine cooling to provide maximum ram pressure at the leading edge air inlets. Curtiss-Wright stated that cuffs would add 240 lbs. to the weight empty of the airplane and that they would require special provisions for de-icing. Due to the substantial range increment of 150 miles, it is CVAC's recommendation that cuffs be provided for all airplanes. It was agreed that cuffs would be provided for the Moffett Field test nacelle for the determination of their effect on engine cooling and that Captain Walling would review the use of cuffs with the AMC laboratories and the Maintenance Division for a decision as to whether or not they will be furnished for the YB-36C and B-36C airplanes. Pending this decision, cuffs will be removed from the Model Specification. (Widmer, Moerschel, Reuther, Menefee)

b. In-Flow

Curtiss-Wright has proposed the addition of in-flow tests to the 1/14 scale powered model program to determine effects on propeller vibration. It was agreed that CVAC would send a proposal for the addition of these tests to the A.M.C. for coordination with the NACA. (Widmer, Levin, Menefee)

c. Spinner

An agreement was reached between Curtiss-Wright and CVAC on the spinner lines as outlined in Item A.14. (Widmer, Moerschel)

d. Blade Camber

It was agreed that Curtiss-Wright would take CVAC's schedule of operating conditions and analyze the effect of blade camber on airplane performance under these specific conditions. They will forward a proposal for final blade camber configuration based on these studies to the A.M.C. and CVAC by April 27, 1948. (Widmer, Menefee)

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TC-92-37

CONSOL. VULTEE AIRCRAFT CORP.
FORT WORTH DIVISION
ENGINEERING DEPARTMENT

A. AIRPLANE AND ENGINE PERFORMANCE AND MISCELLANEOUS PROBLEMS (Cont'd)

12. Cooling of Propeller Pitch Control Mechanism

Curtiss-Wright confirmed that no cooling provisions would be required for this configuration but it was agreed that this would be checked on the Moffett Field test nacelle. (Moerschel, Green)

13. Characteristics of Overboost Control

Pratt & Whitney agreed to forward preliminary installation information and operation characteristics to the A.M.C. and CVAC within two to three weeks from this date. CVAC strongly recommends against the use of a pressure relief valve in the engine induction system to perform this function due to the leakage problems involved in such a system. (Moerschel, Levin, Menefee)

14. Reduce Length of Propeller Spinner

It was confirmed that the new spinner ordinates given in CVAC letter AC-7-PW/2183 dated 7 April 1948 are satisfactory to Curtiss-Wright, CVAC, and the A.M.C. and Curtiss-Wright will proceed to design the spinner to those lines. (Wilmer, Moerschel)

15. Propeller Anti-Icing

It was agreed that Curtiss-Wright and CVAC would proceed on the basis of combustion heaters to be furnished as part of the C.F.P. propeller assembly. It was pointed out that the airplane fuel system booster pumps furnish a minimum fuel pressure of 10 lbs. per sq. inch and Curtiss-Wright stated that their present development required 15 lbs. per sq. inch but that they would investigate possibilities of reducing this requirement to 10 lbs. per sq. inch. CVAC will also investigate possible means of providing 15 lbs. per sq. inch fuel pressure to the propeller. Curtiss-Wright will forward preliminary installation information to CVAC by May 13, 1948. (Moerschel, Levin, Menefee)

16. Fan Drive

Mr. Smith of Pratt & Whitney stated that the present fan drive commitments are based on the limitation of 360 HP maximum in high drive and 180 HP maximum in low drive which would permit the use of production tools now available for -4l fan drive. He quoted a 14 to 15 month delivery date for a prototype drive for the present CVAC requirements. He stated that Pratt & Whitney could not furnish a special drive shaft for the test nacelle but that the engine would be furnished with a female ball spline power take-off at the aft end of the engine with a 1:1 drive ratio. CVAC will investigate manufacture of a test shaft to fit this spline. It was decided that Pratt & Whitney would proceed on the design of a fan drive to meet the present CVAC requirements and submit the necessary cost quotations to the A.M.C. CVAC will

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A. AIRPLANE AND ENGINE PERFORMANCE AND MISCELLANEOUS PROBLEMS (Cont'd)

16. Fan Drive (Cont'd)

study the possibility of reducing fan power requirements by improving duct losses and evaluate the airplane performance penalties which would be incurred by the limitations of the presently available fan drive powers. These studies will be completed as soon as possible and be forwarded to the A.M.C. In order to assist in these studies Pratt & Whitney agreed to clarify the engine cooling requirements at reduced engine power above critical altitude, to include all corrections for enriched fuel/air ratio, carburetor air temperature, and RPM. On April 15th, Mr. Smith of Pratt & Whitney will wire CVAC stating when the complete cooling requirements will be forwarded. It was agreed by Pratt & Whitney that cooling curve C-16 will be used in computing military power cooling. (Moerschel, Levin, Menefee)

17. Carburetor Pre-Heat Requirements

CVAC has questioned the necessity for carburetor pre-heat in view of the temperature rise through the turbine and the use of fuel injection in the V.D.T. engine. Mr. Smith of Pratt & Whitney stated that tests had not been run at carburetor air temperatures lower than 50° F. due to laboratory temperature limitations and due to the fact that specific fuel consumption shows rising tendencies below 60° F. However, Mr. Smith agreed to check available test facilities for testing a single cylinder engine in the altitude chamber down to -20° F., and he agreed to inform CVAC and the AMC as to when results of this test would be available. (Levin, Menefee)

18. Engine Shock Mount Requirements

CVAC outlined the problem of obtaining A.M.C. approval of the C.F.P. rubber cores for the C.F.P. engine suspension mounts and Pratt & Whitney agreed to send the necessary specifications and drawings for these cores together with a cost quotation to CVAC by 19 April 1948. (Moerschel, Menefee)

19. Wiring Information and Power Requirements for G.E. Power Control

Pratt & Whitney agreed to furnish complete wiring information, power requirements and all other electrical information required to install this control system by 26 April 1948. (Sylvester, Menefee)

20. Propeller Control Element and Circuits

Curtiss-Wright confirmed that the electrical installation requirements for the propeller control system are identical to those for the B-36B airplanes. However, there will be internal changes in the C.F.P. elements of the system which necessitate

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A. AIRPLANE AND ENGINE PERFORMANCE AND MISCELLANEOUS PROBLEMS (Cont'd)

20. Propeller Control Element and Circuits (Cont'd)

new part numbers for identification and Curtiss-Wright will furnish this information at an early date. (Sylvester, Menefee)

21. Revised Bolt Hole Pattern at Carburetor Top Deck

Pratt & Whitney agreed to furnish revised carburetor installation drawings to CVAC at the earliest possible date. (Moerschel, Menefee)

22. Power Take-Off Adapter for Alternator Drive

It was agreed that the AND20008-XVIIIA power take-off adapter would be furnished by CVAC as part of the alternator installation for all airplanes and that the engines would be furnished with a pad to take this adapter. It was suggested that CVAC might procure the adapter from Pratt & Whitney. This appears desirable in view of the discovery subsequent to this discussion that the Bendix adapter had failed to pass the required power tests. (Moerschel, Reuther)

23. Exhaust System Coordination

Mr. Smith of Pratt & Whitney stated that the final production collector ring would be through type test by the end of the year and proposed that CVAC's shroud vendor wait until this time, when an actual production collector would be available, to proceed with tooling and manufacture of the collector shroud. He further pointed out that the collector ring for the Moffett Field test nacelle would be built by experimental methods and would not be dimensionally identical to the production article. He stated that the drawings and plaster forms used in making the detail parts of the experimental collector ring would be made available to CVAC as soon as they are completed. He also stated that the tail pipe flange on the collector ring would be identical to the production flange and that Pratt & Whitney would furnish all necessary tooling coordination information on this attachment to CVAC's vendor as soon as available. He stated that it would be satisfactory to Pratt & Whitney to have a vendor's representative come to Pratt & Whitney to obtain directly all necessary information required to coordinate the tail pipe attachment and the fabrication of an experimental shroud for the test nacelle collector ring which can be trimmed to fit at installation. CVAC will proceed with the procurement of the Contractor responsible components of the exhaust system on the basis of these agreements. (Moerschel, Carman, Menefee)

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A. AIRPLANE AND ENGINE PERFORMANCE AND MISCELLANEOUS PROBLEMS (Cont'd)

24. Turbo Mounts

General Electric representative, Mr. Meckley, commented that CVAC's proposed method of mounting the turbine appeared undesirably flexible under side and torque load conditions. He was concerned with this due to the detrimental effects of large deflections on flexible joints in the connecting ducting and the resulting increase loads on the duct flanges on the turbine. He stated that the present design of rigid attachment to the supporting tubes at all three attachment points is satisfactory for thermal expansion. Further discussion of this item with Major Ayers, Mr. Meckley and Mr. Moffatt resulted in agreement that the present arrangement would provide the desired rigidity if the bottom turbo fitting is rigidly attached in a manner similar to the side attachments. CVAC will send General Electric and A.M.C. installation layouts and loads on the turbine fittings for approval. (Moerschel, Robbins, Menefee)

25. Propeller Gear Box Installation

It was agreed that oil pressure gauges only would be required for the gear boxes on B-36C airplanes due to the fact that the oil for the gear boxes comes from the same hopper as the engine oil and therefore will be at the same temperature. It was confirmed that oil in and out temperature guages would be required on the YB-36C only. (Moerschel, Wells, Reuther)

B. A.M.C. REQUIREMENTS AND SPECIFICATION ITEMS

1. Low Temperature Requirements for Nose Boom Shock Mounts

The effect of extreme low temperatures on the elastic properties of rubber was pointed out together with the fact that there is no heat source in the nose boom as there is in the engine compartment. It was agreed that CVAC would submit their proposed deviation from winterization requirements to the A.M.C. for approval. (Dietz, Robbins, Menefee)

2. Single Point Refueling Requirements

Captain Walling stated that this is a definite requirement for V.D.T. airplanes and that the full flow requirements would have to be met. (Moerschel)

3. Remote Balancing of Metal Servo-Tabs

It was agreed that the A.M.C. would expedite approval of CVAC's proposal for testing this system on the metal covered elevators for the YB-36 airplane. (Mathis, Robbins, Clement)

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B. A.M.C. REQUIREMENTS AND SPECIFICATION ITEMS (Cont'd)

4. Model Shop Progress and Wind Tunnel Program

It was decided that a conference would be held at Langley Field to set the firm wind tunnel program for the 1/14 scale powered model some time next week and CVAC agreed to give the A.M.C. four days notice before the time when they will be ready to present this program.

5. Model Specification

Reported separately in Engineering Memorandum No. 1.084 dated 14 April 1948

C. TEST NACELLE PROGRAM

1. Wind Tunnel Test Program

Reported separately in Engineering Memorandum No. 7.010 dated 13 April 1948.

2. Exhaust Collector for the Test Nacelle

It was agreed that Pratt & Whitney would furnish the bank manifolds and exhaust collector ring for the test nacelle. (Moerschel, Reuther)

3. Instrumentation Requirements

It was agreed that Pratt & Whitney would furnish instrumentation for the test nacelle engine, shaft, and gear box in accordance with the requirements of CVAC but that some of the instrumentation might have to be installed after delivery of the engine to this plant. (Moerschel, Green)

D. FAN TEST PROGRAM

1. It was decided that CVAC would send a designer to Wright-Patterson Air Force Base to establish in coordination with the A.M.C. laboratory the requirements for the test rig so as to expedite as much as possible the fabrication of components and setting up of the test. This item is reported in detail in Engineering Memorandum No. 7.011. (Levin, Bryan)

E. STABILITY AND CONTROL OF THE B-36C AIRPLANE

1. Review of CVAC Stability and Control Analyses of B-36C Airplane

The results of the B-36 stability and control analysis recently completed were discussed and CVAC pointed out that they indicated the desirability of increasing the vertical tail area approximately

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E. STABILITY AND CONTROL OF THE B-36C AIRPLANE (Cont'd)

1. Review of CVAC Stability and Control Analyses of B-36C Airplane (Cont'd)

50 sq. feet as previously proposed by M.C.R. No. 735A. The general method and presentation of the report appeared satisfactory to Mr. Naugle and the results appeared satisfactory except for the directional stability with the present tail configuration. (Widmer, Menefee)

2. Increase in Vertical Tail Area

CVAC will send a revised cost proposal covering the addition of the required vertical tail area to the A.M.C. together with the reason for recommending this increase. Captain Walling also requested that the design proposal be altered to swing the detachable portion of the tail down as close to vertical as possible instead of horizontal as shown on CVAC's original proposal so that the upper portion of the tail will not be more than six feet wide. (Mathis, Widmer, Clement)

3. Metal Covered Control Surfaces

It was agreed that the A.M.C. would expedite approval of the proposal submitted by CVAC for Aerodynamic testing of metal covered control surfaces on the YB-36 airplane. (Mathis, Widmer, Clement)

F. -41 ENGINE TAKE-OFF POWER RATINGS

The A.M.C. will forward to CVAC at an early date a new -41 engine specification which will contain the 3,500 HP take-off rating. (Widmer, Menefee)

L. H. Moffatt
L. H. Moffatt
Project Engineer

LHM:djh

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CONSOLIDATED VULTEE AIRCRAFT CORPORATION
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E.M. No. 1.086 - 13 - 14 April 1948

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ENGINEERING DEPARTMENT

ENGINEERING MEMORANDUM
(REPORT NO. FZM-115)

E.M. No. 7.011

Date: 12 April 1948

Model: B-36C

Subject: Meeting on Fan Test Program between AMC, Pratt and Whitney, Curtis Propeller, and CVAC

Present:
R. R. Romanowich, AMC, MCREXP-44 (Power Plant)
E. G. Johnson, AMC, MCREPX-13 (Engineering Plans)
J. Clark, AMC, MCREPX-13, (Engineering Plans)
H. R. McDonald, Pratt and Whitney
J. M. Mergen, Curtiss Propeller
R. F. Bryan, CVAC
O. W. Moerschel, CVAC
W. H. T. Loh, CVAC
P. H. Levin, CVAC
H. K. Growald, CVAC

After thorough discussion of the subject problem and after inspection of the mock up of the nacelles, the following was tentatively arrived at: Mr. Johnson stated for AMC that he and Mr. Clark were not now directly connected with Fan Testing, that they had only been sent here in the spirit of helping out. It became also apparent that the old fan rig, even as existing, could not be used due to the large horsepower in RPM requirements for the Fan Test for the VDT.

It was believed that the best plan would be to attempt to run the Fan Test on one of the dynamic stands in the Engine Test Laboratory. Due to the fact that Mr. Johnson and Mr. Clark are not directly connected with Fan at this time, and due to the fact that Mr. Johnson has to leave next week for Washington, it was tentatively agreed by Mr. Levin and Mr. Growald of Consolidated to send a man up there as soon as possible to formulate with AMC a concrete program including where to run test at Wright Field and to draw an exact line of demarkation as to what we could build here and what would be more practical to build at AMC. In connection with this, the possibility of hiring labor in Dayton was discussed. It was also agreed upon that the morning of Tuesday, April 13, 1948 Mr. Clark was to discuss dynamic stresses and vibration problems in connection with Fan designs with Mr. Robbins. Mr. Johnson, the same morning, is to check calculations upon which Fan horsepower has been arrived at by CVAC. (This is a request of the main conference where it was apparently not believed by some that considerable horsepower is required to cool the R4360-51 Engine). At the same time, the Aerodynamic Group will prepare curves and nomograms for the use of AMC to determine the test runs necessary for the Fan.

Approved:
/s/R. J. Walling
Capt., USAF
B-36 Proj. Office

/s/ H. K. Growald

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CONSOLIDATED VULTEE AIRCRAFT CORPORATION
FORT WORTH DIVISION, FORT WORTH, TEXAS
ENGINEERING DEPARTMENT

ENGINEERING MEMORANDUM
(REPORT NO. FEM-110)

E. M. No. 7,010

MODEL: V. D. T.

DATE: 13 April 1948

Subject: Moffett Field Test Nacelle

Present Were:		
	Maj. L. F. Ayres	Air Materiel Command, MCREXP-6
	R. R. Rammowich	Air Materiel Command, MCREXP-44
	R. T. Krieghoff	Pratt & Whitney
	H. MacDonald	Pratt & Whitney
	J. M. Mergen	Curtiss-Wright
	W. O. Mockley	General Electric (Lynn)
	D. D. Dunklin	General Electric
	O. W. Moerschel	C.V.A.C.
	C. G. Martin	C.V.A.C.
	I. Polhamus	C.V.A.C.
	H. A. Coppedge	C.V.A.C.
	P. T. Mahaffey	C.V.A.C.
	H. K. Growald	C.V.A.C.

The test nacelle program and instrumentation were discussed at considerable length and the following conclusions were reached.

1. The preliminary test program for the nacelle, Report PZT-36-030 of 4-5-48, was approved by all present

2. The detail instrumentation program was presented by Mr. Polhamus and copies given to all concerned for additional future comments.

3. Mr. Mergen of Curtiss, Mr. Krieghoff of Pratt & Whitney, and Mr. Martin and Mahaffey of C.V.A.C. were designated to work together so that the individual runs for the test nacelle program could be determined in order that the final program can be written up.

4. Additional items discussed were:

   It may be necessary to heat the boom shock mounts in order to retain the natural rubber absorption at low temperatures. It may be necessary to block the springs which will be inserted between the stub wing of the test nacelle and the up-rights at Moffett Field for certain runs where

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the flexibility of the springs may be undesirable. Curtiss-Wright has no order for the slip rings and housing necessary for the propeller vibration survey. While it is possible to provide slip rings at the forward end of the propeller (the so-called pineapple arrangement). This was not considered a good idea for the over-all program since a propeller slip ring a arrangement on the aft portion of the propeller could later on be used for flight test whereas the pineapple arrangement could not. General Electric said that they would rather deliver the turbos in June rather than in May, thereby being able to give us a more accomplished product.

5. a. Determination of 2XP flapping and edgewise resonant frequencies from static condition to maximum expected blade angles to determine the change in resonant frequencies caused by varying hub and blade stiffness as the load distribution is changed from the torque plane toward the thrust axis.

b. Rough approximation of the magnitudes of 1XP and 2XP hub and blade stresses from the static condition to the maximum blade angle. This information will be valuable in evaluating later flight test results in that it will provide both hub and blade stress distributions.

c. Static testing of boom stiffness under the influence of a force and a couple in both pitch and yaw directions.

d. Inter-action of boom and propeller frequencies as influenced by propeller static unbalance and aerodynamic unbalance.

APPROVED:

/s/ L.F. Ayres,
L. F. Ayres, Maj. A. C.

/s/ R. R. Ramanowich,
R. R. Ramanowich, A.M.C.

/s/ R. T. Krieghoff,
R. T. Krieghoff, P & W

/s/ J. M. Mergen
J. M. Mergen, Curtiss-Wright

/s/ W. O. Meckley,
W. O. Meckley, G. E. (Lynn)

/s/ H. K. Growald
H. K. Growald
Ass't. Project Engineer

APPROVED: /s/ R. J. Walling, Capt. USAF
R. J. Walling
Captain, U. S. A. F.
B-36 Project Office

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FORT WORTH DIVISION FORT WORTH, TEXAS
ENGINEERING DEPARTMENT

ENGINEERING MEMORANDUM
(REPORT NO. FZM-110)

E.M. No. 19,027

Model: XB-36C, B-36C

Date: 12 April 1948

Subject: Proposed Agenda for the April 12, 1948, V.D.T. Conference at Fort Worth

Supersedes: Engineering Memorandum No. 19.027 dated 8 April 1948, Same Subject

---

A. Airplane and Engine Performance and Miscellaneous Problems

1. Review of airplane performance as a result of recent power plant studies.
2. Airplane weight increases - G.F.P. and Contractor responsible - Effect on airplane performance.
3. Wing tip fuel tanks for Overload Gross Weight. (350,000#).
4. Approval of P & W power plant performance reports. TR-56 and TR-57
5. Review of engine cooling requirements.
6. Review of engine performance data.
7. Variation of exhaust gas temperature with engine power at constant fuel air ratio.
8. Review of engine oil heat rejections.
9. Establish minimum cruising power for long range operation and sfc and cooling requirements for powers below 1400 BHP.
10. Provision of carburetor enrichment to allow cooling at altitude should be decided definitely.
11. Propulsive efficiency -- effects of cuffs, in flow (climb and high altitude operation), spinner on non-uniform velocity distribution in plane of prop, and applicability of C1800 method of calculating efficiency. Possible changes in efficiency due to blade camber changes.
12. Cooling of propeller pitch control mech.
13. Characteristics of G.F.P. overboost control. Inc E to 128
14. Reduced length of propeller spinner to simplify design problems.

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ENGINEERING DEPARTMENT

A. Airplane and Engine Performance and Miscellaneous Problems (Cont'd)

15. Propeller anti-icing - combustion heaters in airplane model specification -- heaters not shown in propeller specification. Control system and fuel system requirements.

16. Method of mounting the fan drive and fan flange configuration.

17. Is the temperature rise through the supercharger sufficient to make pre-heat unnecessary?

18. Engine shock mount requirements for procurement of rubber cores.

19. Wiring information and power requirements for G.E. power control.

20. Propeller control elements and circuits. Confirmation is required that these are identical to B-36B.

21. Revised bolt hole pattern at carburetor top deck.

22. Confirmation that AND20008-XV111A power take-off adapter will be furnished as G.F.E. for only those production engines which have alternators. None to be furnished for prototype.

23. Exhaust system coordination. Drawings required of P & W bank manifolds and collector ring.

24. Method of turbo mounting without slip joints.

25. Confirmation that oil-in temperature and pressure gauges are required for gear box for all ships and that oil out temperature will also be required on YB-36C only.

B. A.M.C. Requirements and Specification Items

1. Low temperature requirements for nose boom shock mounts.

2. Single point refueling requirements.

3. Method of balancing metal servo-tabs.

4. Review of Model Shop progress and Wind Tunnel program.

5. Review of airplane Model Specification.

C. Test Nacelle Program

1. Tentative Wind Tunnel Test Program should be established at this time by representatives of A.M.C., Pratt & Whitney, and Curtiss. There are certain data that the Pratt & Whitney and the Curtiss Propeller Division have indicated they would like to obtain in this test, and it is therefore desirable at an early date to establish these requirements and the instrumentation necessary. The AMC and General Electric may have requirements for control system tests.

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CONSOLIDATED VULTEE AIRCRAFT CORPORATION
FORT WORTH DIVISION FORT WORTH, TEXAS
ENGINEERING DEPARTMENT

E.N. No. 19.027 - 3 - 12 April 1948

C. Test Nacelle Program (Cont'd)

2. Exhaust collector for the test nacelle. (It is understood Pratt & Whitney have no order for this item).

3. Instrumentation requirements for the test nacelle engine, propeller, shaft, and turbine.

D. Fan Test Program

This conference is of importance to only AMC and CVAC in establishing fan test program. It should be determined at this time exactly what portions of the test rig CVAC should build for the fan test, and the design of these parts should be coordinated with what the AMC Wing Tunnel Group will build. If the AMC is unable to furnish a 4360 type engine to simulate the fan blocking effect of an engine, then it will be necessary for CVAC to construct the simulated after portion of an engine. Duct configurations, powers, RPM's, and air flows should be established for this program.

E. Stability and Control of the B-36C Airplane

This conference is of importance to AMC and CVAC Performance Aerodynamicists and their Project Office representatives.

1. Review of CVAC stability and control analyses of B-36C airplane.

2. Increase in vertical tail area.

3. Metal covered control surfaces.

F. -41 Engine Take-Off Power Ratings

1. Engine specification calls for 3000 BHP limit but 3500 BHP is required for B-36B performance.

L. H. Moffatt
Project Engineer

LHM:iz:djh

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TC-92-196
In reply please refer to AES:rij-Eng.

PRATT & WHITNEY AIRCRAFT

DIVISION OF UNITED AIRCRAFT CORPORATION
EAST HARTFORD 8, CONNECTICUT, U.S.A.
CABLE ADDRESS "AIRCRAFT"

April 19, 1948

ARMY OFFICE
APPROVED
CONCURRED IN
NO COMMENT
19/4/48

VIA: USAF Inspector in Charge

To: Commanding General
Air Materiel Command
Wright-Patterson Air Force Base
Dayton, Ohio

Attention: MCPPXE4

Subject: Contract W33-038 ac-18653
(Contract AC-7, YB-36C and B-36C Airplanes
Alternate Design of Engine Exhaust System)

Reference: (a) AMC letter MCPPXE4/RAB/mg dated 7 April 1948 forwarding CVAC letter LHM:djh:iz/AC-7-FW# 1945 (F-21) dated 23 March 1948.

1. The recommendations for coordination of the exhaust system outlined in reference (a) were discussed during the conference held at Fort Worth on April 12 and 13. As a result of this discussion it was agreed that Consolidated would not have to release for production the shrouding for the exhaust collector until the end of this year and that before this date Pratt & Whitney would have completed its 150-hour model test. Following completion of this test the collector design, like other Pratt & Whitney engine parts, will be controlled by the change in design system provided for in AN-9500. This means that any changes to the design will be submitted to the Air Corps for approval. In view of that, it will not be necessary to follow the procedure outlined in the Amendment attached to Consolidated's letter of March 23.

2. During the conference at Fort Worth a study of the Pratt & Whitney designed collector showed two points of interference with the present airplane installation. In order to correct these, this Contractor is now studying the effect of modifying his collector design and it is expected that within the next ten days a revised collector drawing showing the final outlet from the collector and the support points for the collector shroud will be available and will be forwarded to Consolidated Aircraft. It is understood that this drawing will be used for the manufacture of shrouding for the first ground test nacelle and that production tooling for the shrouding will not be started until the collector has passed its 150-hour model test.

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3. Since the agreement reached in the conference at Wright Field on March 1 called for design study only of the shrouding for the bank manifolds and as Consolidated has requested their exhaust manifold manufacturers to visit Pratt & Whitney to determine their requirements for providing this shrouding, it is this Contractor's opinion that drawings of the bank manifold should be unnecessary until the exhaust manufacturers have obtained a good idea of their application to the engine. For that reason, at the present time the only drawings being prepared are for the collector and for a complete installation drawing of the engine with the collector and headers installed.

UNITED AIRCRAFT CORPORATION
Pratt & Whitney Aircraft Division

A. E. Smith

A. E. Smith
Assistant Chief Engineer

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In r y please refer to:
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PRATT & WHITNEY AIRCRAFT

DIVISION OF UNITED AIRCRAFT CORPORATION
EAST HARTFORD 8, CONNECTICUT, U.S.A.
CABLE ADDRESS: AIRCRAFT

19 April 1948

United States Air Force Representative
United Aircraft Corporation
Pratt & Whitney Aircraft Division
East Hartford 8, Connecticut

Subject: Contract W33-038 ac-18653 - Official 150-Hour Qualification Test on R-4360-43 Engines and R-4360-51 Engines

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References:
(a) AMC Wright-Patterson Air Force Base, Dayton, letr MCPPXE4/RAB/mg dated 7 April 1948 to PWA, East Htfd., Conn.
(b) AMC Wright-Patterson Air Force Base, Dayton, letr MCPPXE4/RAB/mg dated 26 March 1948 to PWA, East Htfd., Conn.
(c) USAF Inspector in Charge, East Htfd., letr RES/mfl dated 29 March 1948 to PWA, East Htfd., Conn.
(d) PWA letr ABS:bc Engineering II dated 21 November 1947 to USAF Representative, East Htfd., Conn.

1. In conducting an engine qualification test we also believe it is desirable to use, when practicable, accessories and related equipment intended for the airplane installation. At the same time, it is generally recognized that the test stand installation introduces inherently different operating conditions than those experienced in flight and hence evaluation of test stand results may be misleading if this factor is not considered carefully.

2. We will, of course, continue to use any accessory equipment that is made available in order to gain overall experience. On the other hand, we do not plan to delay the test in the event such equipment is not available. If unreasonable delays during the test are experienced because of special accessories and equipment, we would remove the parts involved and continue the qualification test program.

3. Following past practice, we will continue to furnish "test instructions" for the Air Materiel Command's information prior to starting the qualification test. In this connection, reference (d) was forwarded for the R-4360-43 Qualification Test.

UNITED AIRCRAFT CORPORATION
Pratt & Whitney Aircraft Division

G. E. Meloy
G. E. Meloy
Project Engineer

GEM:lms

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DIVISION OF UNITED AIRCRAFT CORPORATION
EAST HARTFORD 8, CONNECTICUT, U.S.A.
CABLE ADDRESS AIRCRAFT

April 21, 1948

ac-18653

Major Stanley Pace
Air Materiel Command
Wright-Patterson Air Force Base
Dayton, Ohio

Dear Stan:

Bill Gwinn sent me a note the other day about keeping you informed of the progress on the R-4360-43 and the JT-7A developments. I will attempt to do this by personal letters, as we already submit official reports each month on the R-4360, and as soon as we get something on the dotted line with respect to the jet engine, no doubt official reports will be submitted on it also.

The installation of the VDT powerplant in the B-50 is nearing completion and we have our sights set to run the engine up on the ground before the end of the month. I don't know when we will fly it for the obvious reason that the combination of engine, turbosupercharger, and control has never been checked out before and no doubt we will encounter many difficulties. I wish we had a test stand set-up ready to run but that will have to wait until the second turbosupercharger is received from General Electric. I understand, however, that it is about ready now and should be delivered in the course of a few days.

I honestly think that we are on schedule and will complete the model test of this engine before the end of the year. We are particularly enthusiastic about the exhaust system which we have under development and it is beginning to look like the engine will do more for us than we originally counted on. I am not sure that we can put an exhaust system through a full 150 hour endurance test without minor repairs, but in comparison to exhaust systems as supplied by the airplane manufacturers, we all feel that we have one that is many, many times more reliable and if our results mean anything to date, one that does not leak. Those, of course, are the important elements of satisfactory collector design.

We have 12 VDT engines on the active list right now and we are concentrating on model testing. What we want to do is to pass some kind of a model test just as quickly as possible merely to assure all those who have an interest in this project that we have an engine.

We have experienced a lot of minor troubles to date but they are things that are comparatively easy to fix. Right now we are making new knuckle pins to correct a manufacturing weakness which we ran into during some of our late model testing and we expect to have engines running with the new pins before

ac-18653

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PRATT & WHITNEY AIRCRAF.
Major Stanley Pace

April 21, 1948

the week is out. I don't know of anything else that is holding us up but no doubt something else will crop up with further running. That, of course, is the way progress is made in the normal course of development.

The engine has the unusual characteristic of not wanting to detonate on the grade of fuel specified. We find that we run into overheating as we lean out the mixture long before detonation sets in which in some ways is a good thing as it gives us a chance to do something about the thing that limits performance. Heretofore detonation was the stopping place and it was something we could do little about. Cooling, on the other hand, is a problem that is basically ours and we think that we can do something about it. As a matter of fact, we are doing things to improve the cooling right now such as an improved cylinder head, improved valve construction and a more durable piston. Because of the time element, I don't know how many of these will get into the initial Bill of Material which incidentally must be released next month in order to meet the production schedule. However, if as I expect, the Air Force will want to carry the development beyond the present program, they are features which we should be able to capitalize on next year.

The specific fuel consumption at best economy in the cruise range is close to .39 lbs. brake horsepower per hour. According to our measurements back pressure does not affect fuel consumption. It merely raises the temperature level of the parts forming the combustion chamber. Therefore, in the high cruise power range, it probably will be necessary to run with better than best economy mixture strengths to obtain adequate cylinder cooling.

So much for the R-4360-VDT engine. Manchester who is our representative at Rolls-Royce promised to send me a report of progress on the development of the basic engine in England and I am expecting it daily. We are due to receive three experimental engines from Rolls-Royce in the fall of this year and we are planning to have our own wheelcase and accessory units ready to install on them when they arrive. Bill and I plan to leave for England the latter part of next month primarily to coordinate our activities. We have two accessory manufacturers in this country engaged in the development of pumps. One is Sundstrand who has promised the first pump in June of this year, and the other is Bendix at South Bend who does not expect to have a pump ready until sometime in September. Both are working on variable-displacement swash plate pumps.

In view of your late decision to require a 400 HP take-off drive, we are busily engaged in completely redesigning the wheelcase for this engine. We have the design roughed out and are now getting it in shape for detailing. Much larger gears and bearings will be required and the weight is expected to go up approximately 25 lbs.

I think I told you that we have Solar and Rolls-Royce working on afterburners for the JT-7A engine. We also are working on the problem and we think we have hit on something that may prove really worthwhile. We cobbled up an afterburner patterned after some ram jet experiments conducted by our UAC Research organization and we have obtained some rather interesting results. While we have run

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87 TC-72-193

PRATT & WHITNEY AIRCRAFT

Mr. Stanley Pace April 21, 1948

the unit with 50% thrust augmentation, we have made measurements of fuel consumption and temperatures at only 25% thrust augmentation. The specific fuel consumption was in the neighborhood of 2.2 lb. per lb. thrust and we expect that it will come down as the thrust is increased. The temperature of the burner skin near the exhaust nozzle was about 1200°F after 1/2 minute of running and about 1400°F after 3 minutes of operation. The only cooling over the skin when these temperatures were measured was the slight amount of air flow induced in the test house by the jet. It is our understanding that these temperatures are comparable to those obtained with the Solar afterburner installed in one of the Navy airplanes. This unit employs pilot burners spaced equally around the outside of the afterburner itself. Fuel and air is fed to them in the right proportion from the engine, and the mixture is ignited by means of spark plugs. The main fuel supply is fed into the afterburner by means of a spinner attached to the down-stream side of the turbine disc. This has the advantage of thoroughly mixing the fuel with the hot gases before it is ignited.

Our work so far has been with a fixed nozzle and only with manual control. We expect to have an experimental two-position nozzle ready for test this week. We plan to supply our own control and hope to have the first bread-board unit ready for test in July.

It is interesting to note that the thrust loss without the afterburner was not measurable. However, there was an increase in fuel consumption of approximately 2%.

Best personal regards,

PRATT & WHITNEY AIRCRAFT

Wright

W. A. Perkins
Engineering Manager

WAP:tlr
Encl.

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AMC Form 14
(Rev 15 Jul 47)

ROUTING AND RECORD SHEET

MATERIEL COMMAND

Use this form for inter-office correspondence within headquarters.
Number all comments consecutively.
Use entire width of sheet, both sides.
Use authorized office symbols to designate addressee and addressee.
Remaining space is sufficient only for proper spacing of typewritten signature.
Place initials of dictator and typist, telephone number and location to right of signature.
Separate comments by horizontal lines across page.

SUBJECT: Extract from Report on East Coast Trip, 13 to 17 April, Inclusive

TO: MCREXP FROM: MCREO DATE: 21 Apr 48 COMMENT NO. 1.

1. The following extract from the subject report is forwarded to you at the suggestion of General Crawford:

"Pratt Whitney Division, United Aircraft, Hartford, Connecticut: The VDT engine appears to be coming along on schedule, and Pratt Whitney do not foresee any major difficulties that would prevent their making their planned schedule. At the present time one VDT engine is installed in a B-50 airplane. The supercharger was being installed during my visit, and it is expected that the control mechanism will be installed within the next week. Initial flights should take place approximately 1 May. The control mechanism still has not been used or tested on an engine, and this unit probably constitutes the big "if". The exhaust manifold system has developed to the point where they feel that consistent 50-hour operation has been obtained. Relations with the General Electric Corporation are excellent, and Pratt Whitney are most definite in their endorsement of the work General Electric is doing. Tests conducted on the VDT engine to date indicate that it is practically free of detonation. They feel that the limiting power that may be drawn from the engine will be governed by permissable cylinder temperatures rather than by detonation.

"A number of modifications are planned for the future. These include steel pistons, one-piece connecting rods with split crankshafts, as used in the R2800 engines, and increased fin area. These developments are not essential to the construction of the first engines, but Pratt Whitney is convinced that these changes will make a more satisfactory engine.

"Teletype MCREXP-4-45 requesting Pratt Whitney to consider the development of 40,000 to 45,000 feet altitude operation engine was discussed. It appears that P & W cannot undertake this additional program at the present time without interferring with the VDT program on the B-50 and B-36 airplanes. They are giving a definite reply to the teletype in the near future.

"Inspected progress on the Navy turbine. While this turbine has not operated under its own power, it has been run up to high speed under existing heat conditions. Certain choking has been experienced in the compressor section. A mock-up of the twin turbines common gear box arrangement was inspected. P & W are very enthusiastic about the Nieme engine and have made numerous changes in the form of simplifications. These were made possible due to the existence of larger capacity presses and equipment available in this country. The Air Force turbine development looks a long way in the future."

FRED. R. DENT, JR.
Colonel, USAF

FRD/dr
26124

8:21

AO
WCL-18 MAR 48 2 MU 600M

FROM

DATE

COMMENT NO

(CONTINUE ON OTHER SIDE)

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Hq AMC ... Ltr No. 10-514 (Reg 20 Feb 48)

24 SECRET Dec. 7 to Deputy to Deputy 452.1 Consol. WP-L-25 MAR 48 1948 B-36

IN REPLY ADDRESS BOTH COMMUNICATION AND ENVELOPE TO COMMANDING GENERAL, AIR MATERIEL COMMAND, ATTENTION FOLLOWING OFFICE SYMBOL:

MCPPA3/TPG:ICW/3-1314

HEADQUARTERS
AIR MATERIEL COMMAND
WRIGHT-PATTERSON AIR FORCE BASE
DAYTON, OHIO

[21 April 1948 per hand receipt]

(Undated)
(Filed date)
25 June 1948

SUBJECT: B-36 Program.

TO: Chief of Staff,
United States Air Force,
Washington 25, D. C.

Attention: Deputy Chief of Staff, Materiel.

Ltr to Hq USAF dtd 2036 dtd 8 Dec

1. Reference is made to Hqs. USAF directive dated 5 December 1947 which approved the B-36 VDT production program. The Air Materiel Command has reexamined this program because increased engine cooling requirements preclude meeting the original estimated performance. The B-36 engine installation is critically affected by increased cooling requirements due to location of the engines in the rear portion of the wing and the high altitude at which the airplane is designed to operate.

2. The basic causes of airplane performance loss are:

a. Additional horsepower required to drive higher capacity cooling fan with resultant loss of 49 MPH cruising speed.

b. Additional airplane weight empty increases caused by the latest power plant installation requirements.

c. Increased drag estimates based on wind tunnel tests amounting to 9 MPH cruising speed penalty.

3. In accordance with the Contractor's latest performance estimates, which are concurred in by the Air Materiel Command, the VDT airplane has a maximum range of 7,250 nautical miles at an average cruising speed of 228 knots. The B-36B Airplane has a cruise speed of 248 knots for the same range, and its maximum range is 8,620 nautical miles at 180 knots. Therefore, the Air Materiel Command recommends cancellation of the VDT program. (Comparative performance curves are contained in Attachment "A").

452.1 Consolidated B-36

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4. In view of the foregoing, it appears advisable to again evaluate the B-36 program based on operational requirements. One of the four following courses of action can be taken:

a. Revert to the original B-36 program; 22 B-36A and 78 B-36B Airplanes. This program can be completed by February 1950. At the present time, it appears that the 100 B-36A and B-36B Airplanes can be completed within funds available on the airframe contract. An additional cost of approximately $1,500,000 will be required to reinstate Government Furnished Property procurements and cover costs incurred to date on B-36 WDT GFP development and production.

b. Terminate at 61 airplanes, thereby cancelling the airplanes scheduled for WDT engine installation. If termination of a quantity of B-36 Airplanes is contemplated, the 61st airplane is the most economical point at which to terminate, since a large amount of the airframe and GFP components has already been stopped at 61st airplane pending release of engineering information for the WDT program. Termination at this point will allow recovery of approximately $92,000,000.

c. Terminate all but 41 B-36 aircraft. This program would obtain for the Air Force the 18 B-36B Airplanes which are currently included in the "GEM" program, one test B-36B, and 22 B-36A Airplanes. (A tentative requirement has been established by Hqs. USAF for modification of 12 B-36A aircraft as tankers to refuel the B-36B aircraft included in the "GEM" program.) Termination at this point will allow recovery of approximately $133,000,000.

d. Terminate the B-36 program delivering only the 22 airplanes which are essentially shop completed. One of these airplanes has already been delivered for static test. The additional 21 airplanes require incorporation of late change requirements and flight test prior to delivery. Termination at this point will allow recovery of approximately $167,000,000.

Note: A breakdown of estimated costs and funds recoverable in support of the above alternate plans is set forth in Attachment "B".

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5. Early decision of Headquarters, USAF is required in order that a revised program may be instituted at a minimum cost.

JOSEPH T. McNARNEY,
GENERAL, USAF,
COMMANDING.

Incl: Attachments
"A" & "B".

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SHEET 34 452.1 Contract B-36

Basic Com. fr Hq AMC, Wright-Patterson AFB, Dayton, Ohio, undated, subject: B-36 Program.

1st Ind.

HQ UNITED STATES AIR FORCE, Washington 25, D. C. 25 June 1948

TO: Commanding General, Air Materiel Command, Wright-Patterson AFB, Dayton, Ohio

1. It is directed that such action be taken on this program as was decided upon at the conference in the Office of the Secretary of the Air Force on 24 June 1948. General Wolfe represented your Command at this conference.

BY COMMAND OF THE CHIEF OF STAFF:

H. A. CRAIG
Lt. General, U.S.A.F.
Deputy Chief of Staff, Materiel

2 Incls.
n/c

7-13-48 - The decision made by higher authority in the conference referenced above, is to the effect that the 34 B-36 type airplanes, comprising one YB-36C and 33 B-36C airplanes, be cancelled, and that in lieu thereof there be procured 34 additional B-36B airplanes. This will make the program for B-36 airplanes, which is covered by contract W33-038 AC-7 read as follows:

22	B-36A airplanes
73	B-36B airplanes
95	Total

The previous cancellation of 5 airplanes from this program under authority of TI-2036, Addendum #10, which action was taken at the time it was contemplated procuring 34 B-36 series airplanes, will remain the same.

A. E. WOLFE
Major General USAF
Director, Procurement and
Industrial Planning

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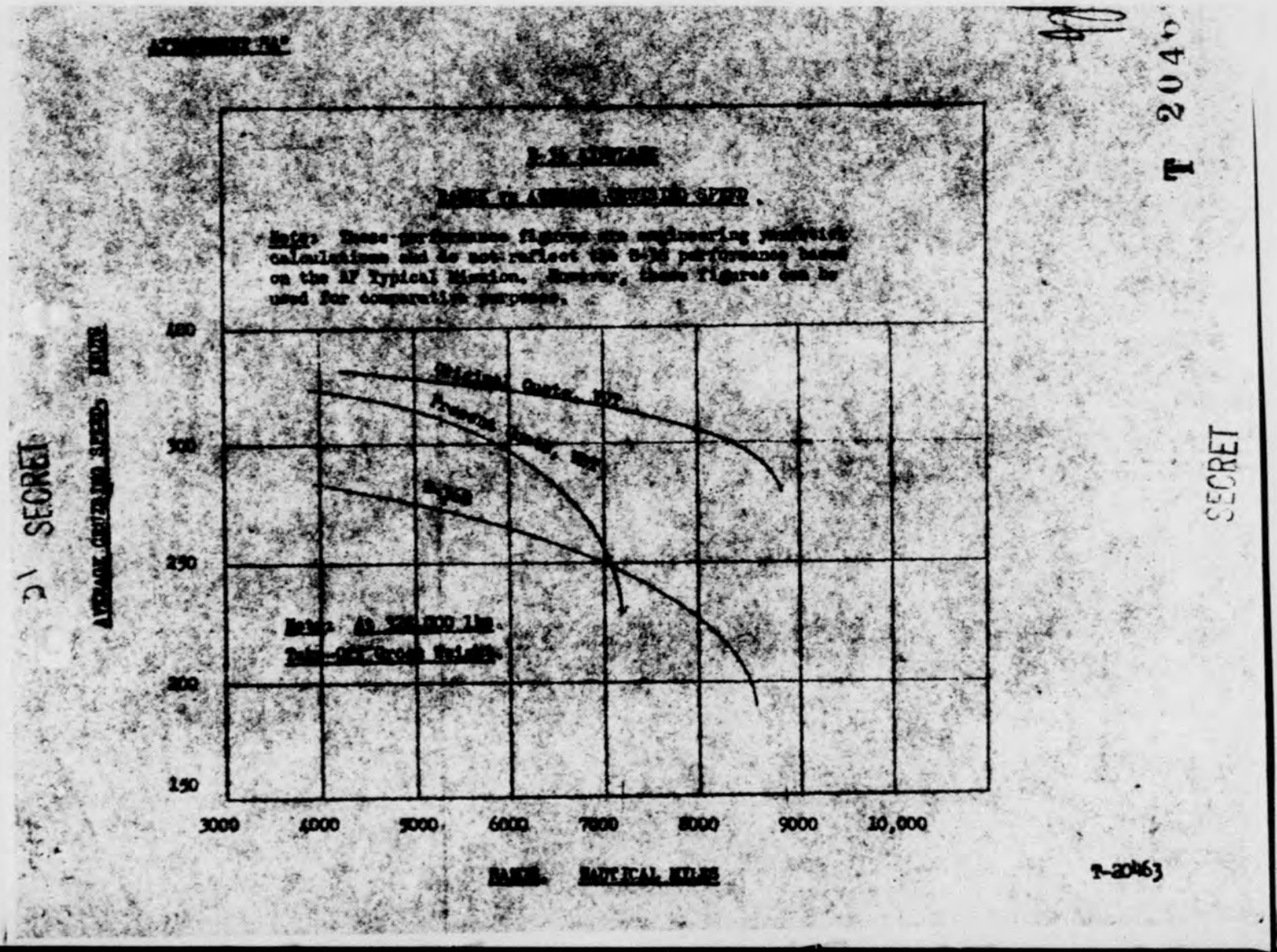

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ATTACHMENT "B"

APPROXIMATE COST ESTIMATE B-36 ALTERNATE PROGRAMS

AS OF 1 MAY 1948

ALTERNATE 4A

Revert to 100 B-36A and -B Airplanes

	Airframe	GFP	Total
One XB- & One YB-36 Ap	$37,998,648.00	$ 2,803,470.00	$ 40,802,118.00
100 Production B-36 Aps	$224,985,638.00	$156,362,591.00	$381,348,229.00
Total Funds on Dev. & Prod. Program			$422,150,347.00
Additional 1949 FY Funds Required Because of Costs Incurred on VDT Program			1,500,000.00
Total Cost of 100 Aps - B-36 Program			$423,650,347.00

ALTERNATE 4B

Terminate Program at 61 Airplanes

Total Funds on Development & Production Program		$422,150,347.00
Funds Expended to 1 May 1948 (Includes $1,500,000. VDT Expenses)		$236,401,678.00
Funds Remaining		$185,248,669.00
Cost of Completion Thru 61st Ap	$ 85,748,669.00	
Cost of Termination at completion	$ 15,000,000.00	
Total Cost, 61 Aps		$100,748,669.00
Funds Recoverable (Reverting to Treasury)		$ 85,000,000.00
Funds Recoverable By Using GFP on Other Programs.		$ 7,000,000.00
Total Funds Recoverable		$ 92,000,000.00

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ATTACHMENT "B"

(Continued)

ALTERNATE 4C

Terminate at 41 Airplanes

Total Funds on Development & Production Program		$422,150,347.00
Funds Expended to 1 May 1948 (Includes $1,500,000.00 VDT Expenses)		$236,401,678.00
Funds Remaining		$185,748,669.00
Cost of Completion Thru 41st Ap	$ 40,748,669.00	
Cost of Termination at 41 Aps	$ 27,000,000.00	
Total Cost, 41 Aps at completion		$ 67,748,669.00
Funds Recoverable (Reverting to Treasury)		$118,000,000.00
Funds Recoverable By Using GFP on Other Programs		$ 15,000,000.00
Total Funds Recoverable		$133,000,000.00

ALTERNATE 4D

Terminate at 22 Airplanes

Total Funds on Development & Production Program		$422,150,347.00
Funds Expended to 1 May 1948 (Includes $1,500,000.00 VDT Expenses)		$236,401,678.00
Funds Remaining		$185,748,669.00
Cost of Completion Thru 22 Aps	$ 5,748,669.00	
Cost of Termination at 22 Aps	$ 35,000,000.00	
Total Cost, 22 Aps at completion		$ 40,748,669.00
Funds Recoverable (Reverting to Treasury)		$145,000,000.00
Funds Recoverable By Using GFP on Other Programs		$ 22,000,000.00
Total Funds Recoverable		$167,000,000.00

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AGPC Form No. 71-56A
(Apr 31 June 45)

Execute in triplicate
C— 36086
Class— -

CHANGE ORDER

UNITED STATES AIR FORCE
Air Materiel Command
Wright-Patterson Air Force Base
Dayton, Ohio

MC
Date 23 April 1948
Change Order No. 4 to
Contract NOW 33-038 ac-
as amended 18653

To: United Aircraft Corporation, (Pratt & Whitney Aircraft Division), East Hartford, Connecticut

SUBJECT: Government Furnished Property

1. In the performance of Contract W 33-038 ac-18653, as amended, in addition to present requirements the Contractor shall make such tests and checkings of the engines called for thereunder using a CHM-2 Turbosupercharger as it deems necessary. In order to perform said tests and checking it is anticipated that the Government will loan to the Contractor one (1) CHM-2 Turbosupercharger, pursuant to Bailment Contract W 33-038 ac-10371, however, this Change Order shall not be construed as affecting the bailment of such property nor as a commitment that such loan shall be made. The above shall be accomplished at no change in contract price.

2. Nothing herein contained shall be deemed to require the Contractor to manufacture, furnish or deliver any articles or supplies, or to perform any work, as to which a Notice of Termination is in effect, at the effective date hereof, nor to require the Government to accept any such articles, supplies or work; and any such Notice of Termination shall be applicable, to the extent stated therein, to any articles, supplies or work called for hereby or otherwise referred to herein.

This change order has been (~~[illegible]~~ negotiated pursuant to) Public Law 703, 76th Congress, as amended by Public Law 580, 77th Congress, Section 18, Title II of the First War Powers Act, 1941, and Executive Order No. 9001, 27 December 1941.

1-b

Sheet 1

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ATSC Form No. 71-501B

Total increase / decrease in fixed price: nothing

Total increase / decrease in [redacted]: $

Total increase / decrease in [redacted]: $

This Change Order has been negotiated pursuant to Public Law 703, 76th Congress, as amended by Public Law 880, 77th Congress, Section 18, Title II of [redacted] First War Powers Act, 1941, and Executive Order No. 9001, 27 December, 1941.

Except as hereby amended, all terms and conditions of the Contract affected, as heretofore amended or modified, shall remain unmodified and in full force and effect and shall also apply in carrying out the provisions of this Change Order.

THE UNITED STATES OF AMERICA

22 JUL 1948
(Date)

BY: Marvin R. Shaw
Contracting Officer.

MARVIN R. SHAW

1ST INDORSEMENT

TO: CONTRACTING OFFICER:

East Hartford, Conn. (Place) July 8, 1948 (Date)

1. Contractor hereby accepts the above Change Order.

UNITED AIRCRAFT CORPORATION
[redacted] (Contractor) (SEAL)

BY: W. P. Gwinn
(Signature of Official with Office Held)

W. P. Gwinn, General Manager
Pratt & Whitney Aircraft Division

APP No.: none

The supplies and services to be obtained by this instrument are authorized by, are for the purpose set forth in and are chargeable to allotments below enumerated, the available balances of which are sufficient to cover cost thereof:

none

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26 April 1948

Memorandum, to General Craig, DC/S-M, signed by Lt. Gen. Lauris Norstad, DC/S-O, subject, "B-36 Program," concurred with the recommendation for re-evaluation of the program in the AMC letter of 21 April 1948 and indicated the action suggested in paragraph 4b of the letter as the most desirable from a purely operational point of view.

(Document not available for reproduction in Hq, AMC.)

Document No. 135

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S E C R E T

E X T R A C T

Memorandum, 26 Apr. 1948, from Lt. Gen. Lauris Norstad, DCS/O, to Lt. Gen. H. A. Craig, DCS/M:

"Due to the new performance estimates of the B-36C equipped with VDT engines, this office is in accord with the suggestion of General McNarney that the B-36 program be re-evaluated.

"From purely an operational point of view, the action suggested in Paragraph 4b appears to be the most desirable. This solution terminates B-36 construction at 61 airplanes (22 B-36A, 39B-36B). Thirty-eight (38) B-36B types would be used to equip one (1) Heavy Bomber Group plus approximately 100% spares. One B-36B could go to test and the 22 B-36A's would be used for transition and training and later conversion to tankers if deemed necessary.

"It is fully realized that other than operational considerations may preclude the adoption of the solution suggested above. If such is the case, may we be so informed."

[The foregoing extract was copied from the complete text of the memorandum filed in File 452.1/Very Heavy Bombers, 1948, Vol. 1 in the Air Adjutant General's Central Records Branch.]

E X T R A C T

S E C R E T

S-56338

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MCPPXE4

PUBLIC INF. OFFICE

COMPTROLLER

PERSONNEL & ADM.

RESEARCH & DEV.*

INTELLIGENCE

SUPPLY AND MAINT.

PROC. & IND. MOB PLNG.*

OTHER

AMC Form No. (18 Nov 47) (Old AMC Form No. 10-508)

Wright-Patterson Air Force Base, Dayton, Ohio

MCPPXE4/RAB/mg
28 April 1948

SUBJECT: Contract W33-038 ac-18653 - Official Qualification Test of R-4360-43 and -51 Engines

TO: USAF Inspector in Charge

TO: Pratt and Whitney Aircraft Division
United Aircraft Corporation
East Hartford, Connecticut

References: (a) Pratt and Whitney Aircraft letter dated 19 April 1948, GSM:lms, Engineering II
(b) Air Materiel Command letter dated 7 April 1948, MCPPXE4/RAB/mg
(c) Air Materiel Command letter dated 26 March 1948, MCPPXE4/RAB/mg

1. With respect to phone conversation between Mr. Allyn Marsh and Mr. R. A. Bittner of the Air Materiel Command 28 April 1948, the Air Materiel Command desires that, insofar as practicable, accessories as outlined in referenced letters be used during qualification test.

2. It is further desired that if the required accessories are not available at Pratt and Whitney that the Air Materiel Command be so informed and immediate action will be taken to supply the required items.

FOR THE COMMANDING GENERAL:

O. M. Scott Maj USAF

V. G. HUSTON
Colonel, USAF
Chief, Aeronautical
Equipment Section
Procurement Division

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15

GEM:lms Engineering II.

TC-92-182

PRATT & WHITNEY AIRCRAFT

DIVISION OF UNITED AIRCRAFT CORPORATION

EAST HARTFORD 8, CONNECTICUT, U.S.A.

CABLE ADDRESS "AIRCRAFT"

1 May 1948

VIA: United States Air Force Representative, East Hartford 8, Connecticut

To: Commanding General
Air Materiel Command
Wright Field
Dayton, Ohio

Attention: TSBPE3B1

Subject: Contract W33-038 ac-18653 - R-4360 V.D.T. Engine - Article 15, Item 5
Monthly Progress Report

Reference: (a) PWA letr GEM:bo Engineering II dated 29 March 1948 to CG, AMC, Wright Field, Dayton, Ohio, via: USAF Representative, E.Htfd., Conn.

1. The following summarizes the work accomplished under Contract W33-038 ac-18653 since the last monthly progress report was submitted by reference (a).

(a) Total running time on ten R-4360-C engines has been increased from 4026 hours to 4329 hours which includes 1735 hours of V.D.T. type engine operation.

(b) After installing a fuel pump drive gear with additional end bearing clearance in its support, R-4360-43 Engine No. X-113 was reassembled for continuation of the qualification test endurance from 67-1/2 hours. At 71-3/4 hours, disassembly of the engine was necessitated as a result of a failed tappet roller assembly. Analysis of this failure indicated an assembly error. Reassembly of the engine has been completed and the engine is ready to resume endurance testing.

(c) R-4360-43 Engine No. X-105 completed 23 hours of qualification test endurance when a failure of a non-intersected type link pin occurred. A similar-type failure was experienced almost concurrently in two other V.D.T. endurance engines. All linkpins had completed in excess of 150 hours of testing and in two instances had failed in fatigue originating at a sharp intersection of an oil hole with the center pin bore and in the other instance the pin had failed in fatigue originating in the internal threads. In the redesigned pins which have been installed in qualification test engines, the center hole is no longer blind but bored straight through, the inside surface has been hardened and honed, the internal threads have been eliminated and oil holes have been enlarged to facilitate improved blending at the intersection with the center hole.

(d) After completing 47 hours of qualification test endurance R-4360-43 Engine No. X-109 experienced a failure of a single-piece crankshaft. An investigation of the failure thus far indicates that fatigue originated in one of the D-row crankpin oil holes. Steps have been taken to investigate the effect of relocating these linkpin lubrication holes in the crankpin or possibly eliminating them if testing shows adequate oil supply from the large bearing feed hole at the midpoint of the

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PRATT & WHITNEY AIRCRAFT 1 May 1948 TC-11-187

: Commanding General, Air Materiel Command, Wright Field, Dayton, Ohio

Subject: Contract W33-038 ac-18653 - R-4360 V.D.T. Engine - Article 15, Item 5
Monthly Progress Report

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crankpin. Further analysis of crankshaft torsional vibration will be conducted on this engine. It is of interest to note that the Pratt & Whitney designed exhaust system operated satisfactorily throughout the 47-hour endurance period without once being touched.

(e) A 150-hour qualification test will be started on R-4360-43 Engine No. X-123 in approximately two weeks. This engine will be equipped with "high altitude" cylinders which incorporate additional fin area for improved cooling. It is planned to test this engine in conjunction with a stand installation of a CHM-2 turbo-compressor and a "breadboard" type turbo control.

(f) A revised version of the five-piece, face-spline crankshaft will be available for overload testing in R-4360-43 Engine No. X-157 in two weeks.

(g) Lean mixture cruise endurance has been in progress on R-4360-43 engine No. X-156. The primary emphasis of this testing is on exhaust system development and as a result definite advances in exhaust component designs have been made. R-4360-43 Engine No. X-114 is also assigned to this program.

(h) The R-4360-51 conversion Engine No. X-155 has been reinstalled on the stand for acceptance testing prior to shipment.

(i) Installation of R-4360-43 Engine No. X-151 in Boeing Airplane No. 008 was completed 30 April 1948. A preliminary ground run-up of the installation to 2000 RPM with the automatic regulator operative indicated generally satisfactory functioning of the control system components. Additional ground testing with more complete instrumentation is currently in progress.

UNITED AIRCRAFT CORPORATION
Pratt & Whitney Aircraft Division

G. E. Meloy
G. E. Meloy
Project Engineer

M:lms

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23

CONFIDENTIAL

6 May 1948

MEK:gms
AC-7-MW3046

Subject: Contract AC-7, B-36 Airplanes -
Need of immediate Air Force decision concerning whether the VHF Program for B-36D airplanes is to be continued or terminated.

To: Chief, Fort Worth A. F. Procurement Field Office
Government Aircraft Plant
Fort Worth, Texas

Reference: (a) Telephone conversation between Lt. Col. Warren and R. O. Ryan on or about 15 April 1948

1. An immediate decision is needed from AMC concerning whether the VHF Program for B-36D airplanes is to be continued or terminated. Likewise, in event of termination, it is essential that AMC advise the extent to which the order for B-36D airplanes is to be reinstated.

2. It will be recalled that representatives of the Air Force, Pratt & Whitney, Curtiss-Wright, General Electric and Contractor attended a conference at Fort Worth on 12 and 13 April 1948 to review the performance of B-36D type airplanes based upon latest power plant performance data from Pratt & Whitney and to consider various problems related to VHF Program. It was found that take-off performance of B-36D type airplanes would be greatly improved by the VHF installation but that [illegible] and cruising speed would be reduced from that previously forecast. The status of B-36D program promptly became uncertain. In endeavor by AMC to expedite an immediate Air Force decision, the Chief, [illegible], was called to AMC for a conference on the subject. While there he advised in reference (a) that in all probability VHF installation in B-36D airplanes would be terminated and requested that work on VHF Program be slowed down as much as possible. A verbal understanding was reached that in view of the likelihood of termination of VHF Program, together with greatly enlarged demands upon engineering and shop manpower created by the Gun Program, it was appropriate to divert engineering manpower to the Gun Program, to retard all factory operations peculiar to VHF program, and to hold further VHF commitments to vendors and subcontractors in abeyance. Contractor has acted upon such understanding. Also, pursuant to later agreement, it opened an engineering hiring program which has been under way.

3. At the time the above understanding was reached, it was believed that a decision would be forthcoming from AMC in a few days. However, several weeks have passed without any indication of a decision. Attention is invited to the fact that work should be proceeding on B-36 Program effective for airplane No. 62 and subsequent, but that the program to be pursued is unknown to Contractor. Each day's delay in receipt of the Air Force's decision places Contractor in an increasingly untenable position. If the VHF Program remains firm, the slow-down of the past several weeks plus such additional period that elapses before receipt of AMC's decision [illegible] result in an equivalent delay in delivery of B-36D airplanes.

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CONSOLIDATED VULTEE AIRCRAFT CORPORATION
FORT WORTH DIVISION FORT WORTH, TEXAS

CONFIDENTIAL

Chief, AWAFMPO
Fort Worth

-2-

AC-7-[illegible]3046
6 May 1948

Such a delay will be particularly harmful, since it is presently anticipated that a three-a-month B-36B production schedule following the Gem Program will create a large flat spot in the factory under the present VBR schedule with sizeable layoffs of factory personnel.

4. On the other hand, if the VBR Program is terminated and AMC's order for B-36B airplanes is reinstated, each day's delay in receipt of Air Force decision likewise will be harmful, although effect on B-36B production will be far less critical than on B-36C production. There are approximately 30,000 parts not common to B-36B and B-36C airplanes. An immediate shortage would exist in wing structure subassembly. Also, it is expected that some vendors and subcontractors will be unabl to meet schedule requirements on reinstated purchase orders for B-36B parts not common to B-36C.

5. Since Contractor is pursuing upon a verbal understanding a course of action not in keeping with present contractual requirements, an immediate reply to t questions presented in paragraph 1 is requested.

CONSOLIDATED VULTEE AIRCRAFT CORPORATION
FORT WORTH DIVISION

M. L. Hicks,
Chief of Contracts.

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AMC Form No. 10-3
(Rev 19 Mar 48)

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TC-92-331

ROUTING AND RECORD SHEET

AIR MATERIEL COMMAND

Use this form for inter-office correspondence within headquarters. | Use authorized office symbols to designate addressee and originator (DO NOT ROUTE FROM THIS FIRST) | Place initials of dictator and typist, telephone number and location to right of signature.

Use entire width of sheet, both sides. | Number all comments consecutively. | Separate comments by horizontal lines across page.

SUBJECT: Revised performance of the B-36 "VDT" Airplane

TO: MCPPXA-32
Attention: Mr. Naugle

FROM: MCREXA3

DATE: MAY 7 1948

COMMENT NO. 1

1. As requested verbally by Mr. Naugle, a brief check has been made of the range and cruising speed reductions quoted by the contractor in his latest estimate of the performance of the B-36 "VDT" airplane.

2. a. The loss of 692 miles in range and 2 mph in cruising speed is reasonable for the 8144 pound increase in weight empty and corresponding loss in fuel.

b. The range loss occasioned by the additional 17 counts of parasite drag would appear to be roughly 400 miles rather than 680 miles. The loss of 9 mph in cruising speed is reasonable.

c. The 200 mile loss due to increased specific fuel consumption is reasonable. The 287 mile loss due to increased cooling drag cannot be checked. The 49 mph loss in cruising speed can be attributed mostly to the reduction in cruising altitude and appears reasonable.

E. U. Argalright
for O. J. RITLAND
Colonel, USAF
Chief, Aircraft Laboratory
Engineering Division

JWA/wlc
25264
Bldg 50

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AF-4-17 JAN 47 10000A (CONTINUE ON OTHER SIDE)

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CONSOLIDATED VULTEE AIRCRAFT CORPORATION

FORT WORTH DIVISION
FORT WORTH 1, TEXAS

FC:EDM:mjf:emb/22352-FW#7006(P-32)
AC-7-FW#2858
7 May 1948

Subject: Contract 22352, YB-36 Airplane
Contract AC-7, YB-36C & B-36C Airplanes
Control Surfaces: Provide Remote Servo
Tab Balance for Elevator & Rudder
Master Change Record No. 735C

To: Commanding General
Air Material Command
Wright-Patterson Air Force Base
Dayton, Ohio

Attention: MCPPEA-32

Thru: Chief, Fort Worth AF Procurement Field Office

References: (a) Fort Worth wire to Dayton Office, dated 9 April 1948 on MCR's 735C & 735E
(b) CVAC letter to AMC FW#7069-2309(P-32) dated 12 April 1948

Enclosure: (A) Four copies of CVAC Drawing 36R8241 - Proposal - Remote Type Servo Tab Balance

1. The Contractor proposes to initiate a test program on the YB-36 Airplane to validate the proposed remote type servo tab balance for incorporation into the VDT metal covered elevator and rudder. This test program would be performed in conjunction with testing of metal covered surfaces as proposed by MCR No. 735C in references (a) and (b), and requires installation of the remote type balance into the metal covered elevator surface only, and the conduction of ground vibration tests prior to flight tests.

2. This remote type servo tab balance system was discussed with the Dynamics Laboratory during the week April 5 - 10 by Contractor's representative, Mr. Mathis. The system removes balance weights from the servo tab and accomplishes the dynamic balance of the servo tab about the main surface hinge line and the static balance of the tab about the tab hinge line by a balance linkage arrange-

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CONSOLIDATED VULTEE AIRCRAFT CORPORATION
FORT WORTH DIVISION FORT WORTH TEXAS

Air Materiel Command - 2 - 22352-FW#7006(F-32)
Dayton, Ohio AC-7-FW#2858
7 May 1948

ment in the nose of the main surface, as shown in Enclosure (A). The forces which balance the tab are applied through the control cables, which normally function to move the servo tab. The forces that are applied to the tab originate from a rocker arm type of balance, as shown on Enclosure (A). The weights "A" located forward, and the weights "B" located aft of the supporting control torque tube, are so designed in regard to length of supporting arm and magnitude of weight that for angular accelerations of the main surface about its hinge line, the weight "A" creates a moment about the center of rotation of these weights (balance hinge line) larger than the opposite moment created by weight "B". This moment is of such magnitude and direction that thru the linkage, a force supplied to the servo tab by the control cables will oppose and balance the tab hinge moment caused by the angular accelerations of the main surface about its hinge line. For vertical linear accelerations of the main surface, the weight "B" creates a moment about the balance hinge line larger than the opposing moment caused by weight "A", such that through the linkage, a force is supplied to the servo tab by the control cables that will balance the tab hinge moment caused by the static unbalance of the tab.

3. It is estimated that this remote type of balance will save approximately 150 lbs. per airplane weight empty if incorporated into the VDT elevator and rudder. The Government Furnished Property (GFE) list will not be affected as a result of this change.

4. The test program will consist of ground vibration tests which will be correlated with flutter calculations now being prepared and flight tests in conjunction with tests as outlined in 735C. A breakdown of the work to be accomplished for the ground vibration test is as follows: The predominant modes and frequencies of the system under the following conditions will be obtained:

(a) Free System.

(b) Elevator blocked to stabilizer and control cable disconnected.

(c) Tabs blocked to elevators and control columns blocked.

(d) Tabs blocked to elevator and elevators blocked to stabilizer.

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CONSOLIDATED VULTEE AIRCRAFT CORPORATION
FORT WORTH DIVISION FORT WORTH TEXAS

Air Materiel Command
Dayton, Ohio

22352-FW#7006(F-3
AC-7-FW#2858
7 May 1948

5. The mode information desired includes the following:

(a) Tab rotation and torsion.

(b) Elevator rotation and torsion.

(c) Stabilizer bending and torsion.

(d) Balance system rotation.

(e) Fuselage vertical bending.

(f) Fuselage torsion.

(g) Control column fore and aft movement.

6. The Contractor is of the opinion the performance of the ground vibration program will involve a 30 day period and the flight testing will be a part of the flight testing program as outlined in reference (b).

7. Preliminary cost estimate indicates that this change can be accomplished at a total increase in estimated cost, not including fixed fee, of $15,100.00 under Contract 22352. This cost includes ground vibration tests and installation of the remote balance for the elevator servo tab on YB-36. The change to use remote balance for the servo tab on the elevator and rudder can be accomplished at no change in estimated cost or fixed fee, since the Contractor is merely requesting design approval of this type balance.

8. This proposal supersedes the advance proposal contained in teletype message, reference (a), and early authorization is requested to accomplish this change.

CONSOLIDATED VULTEE AIRCRAFT CORPORATION
FORT WORTH DIVISION

M. L. Hicks

M. L. Hicks
Chief of Contracts

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TC-92-439

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AMC Form No. 10-7 (15 Nov 47) (Old AMC Form No. 10-30)

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MCPPIA31

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RESEARCH & DEV.

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UPPLY AND MAINT.

NOC. & IND. MOB PLNG.

THER

MCPPIA31/WTK/3b/P-B3A
10 May 1948

AIR MAIL

Contract AC-19562, Model B-36A Airplanes, Increase in Horsepower for R-4360-43 (VDT) Engines.

Boeing Airplane Company
Seattle 14, Washington

Through: AF Plant Representative

1. The Air Materiel Command has been informed of the possibility of increasing the power output of subject engine from 4300 to 4600 BHP (Wet). In view of the present take-off run necessary with a gross weight of 210,000 pounds, it appears desirable to have the military power available for take-off increased.

2. The Air Materiel Command will appreciate the Contractor's comments relative to the foregoing at the earliest practicable date.

FOR THE COMMANDING GENERAL:

James A. Lewis

W. A. DAVIS,
Lt. Colonel, USAF
Actg. Ch., Aircraft and Missiles Section,
Procurement Division

cc - Boeing, Dayton

140A

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PRATT & WHITNEY AIRCRAFT

DIVISION OF UNITED AIRCRAFT CORPORATION
EAST HARTFORD 8, CONNECTICUT, U.S.A.
CABLE ADDRESS: AIRCRAFT

May 12, 1948

ARMY OFFICE
APPROVED
CONCURRED IN
NO COMMENT
12/5/48

VIA: USAF Inspector in Charge

To: Commanding General
Air Materiel Command
Wright-Patterson Air Force Base
Dayton, Ohio

Subject: Change Order No. 3 to Contract W 33-038 ac-18653

Reference: (a) Conference at Consolidated Plant in Fort Worth on April 12, 1948, between Air Forces, Consolidated Vultee and Pratt & Whitney Aircraft.

(b) Change Order No. 3 to Contract W 33-038 ac-18653 dated 10 April 1948.

1. Change Order No. 3 to Contract W 33-038 ac-18653 has been received.

2. At reference (a) conference conducted by Captain Walling of Wright Field, it was decided to examine the performance obtainable with the fan drive described in reference (b) Change Order. Information submitted by Consolidated has indicated the fan drive described in the Change Order does not supply the desired horsepower for fan cooling. Before deciding whether or not to accept the performance loss with this fan drive or to start a new fan drive development, a performance study of the two combinations was to be submitted by Consolidated to the Air Force. In view of the fact the fan drive described in the Change Order may not be acceptable, we are withholding execution of the Change Order. If the decision is reached to use the fan drive specified, the Change Order will be executed but if it is decided a higher capacity fan drive will be required, a new proposal will be submitted by this Division.

UNITED AIRCRAFT CORPORATION

Lee S. Johnson

Lee S. Johnson, Executive Assistant
Pratt & Whitney Aircraft Division

LSJ:bm

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TC-91-58

HEADQUARTERS
AIR MATERIAL COMMAND

MCPPXEX3 - FEK/fhc
Wright-Patterson AF Base
12 May 1948

SUBJECT: Change Order No. 3 to Contract
W 33-038 ac-18653
United Aircraft Corporation

TO: Distributees.

1. The following revision is hereby made on Sheet 2 of subject Change Order:

Change the allotment to read:-

(2130705).825 802-7024 P 110-09 S 33-038	$ 7,590.40
2130705 802-7004 P 110-09 S 33-038	30,361.60

In lieu of:

(2130705).825 802-7024 P 110-09 S 33-038	7,590.40
2130705 802-7004 P 110 S 33-038	30,361.60

2. This document shall be considered as an amendment to the administrative recitals concerning subject Change Order and should be filed with the document to which it pertains.

Marvin R. Shaw
MARVIN R. SHAW
Contracting Officer

Authorization: R&R dated 11 May 1948
R. A. Bittner, Buyer, MCPPXE4

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13 May 1948

Memorandum for General Craig, DC/S-M, subj, "B-36," signed by Col. B. S. Kelsey, Chief, Control Group, quoted in part as follows:

"d. The claims made for loss in performance due to later revisions in cooling and installation difficulties cannot be justified either in detail or in whole. * * It is not understood how it was possible to accept estimates with so little justification and so little element of conservation in the first place.

"e. A technical solution appears feasible. It is believed that a rough and firm policy at a meeting of representatives of the contractors and the AMC would provide a satisfactory solution in short order.

"2a. It is inconceivable that the estimated figures could have been accepted and used for planning purposes without question." * * *

"2c. Considering the overall performance, the figures quoted are ridiculous.

* * *

"2e. * * The present situation involves several parties accepting blame for errors but doing nothing to correct those errors. * * Furthermore, there appears to be a lack of coordination between engine and aircraft manufacturers.

"2f. * * It all points to extremely casual, if not negligent, supervision of the project within the Air Force."

(Complete document not available for reproduction in Hq, AMC.)

Document No. 143

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE
WASHINGTON

20 May 1948

SUBJECT: Re-Evaluation of B-50C VDT Engine Installation

TO: Commanding General
Air Materiel Command
Wright-Patterson Air Force Base
Dayton, Ohio

Attention: MCPPXA, Lt. Colonel T. P. Gerrity

1. In view of the skepticism of the performance of the B-36 aircraft with the VDT engine installation, and the concern indicated by your command at a recent conference on the possibility of providing a successful propeller for the proposed F-12 with the VDT engine installation, it is requested that an analysis of the B-50C installation be conducted, applying the same factors that have affected the B-36 and the F-12.

2. In order that future planning may be done on a realistic and firm basis, it is desired that this headquarters be provided with your comments and the above-mentioned analysis of the VDT engine installation in the B-50C aircraft, at the earliest possible date.

BY COMMAND OF THE CHIEF OF STAFF:

L. C. CRAIGIE
Major General, U. S. Air Force
Director of Research & Development
Office, Deputy Chief of Staff, Material

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26 May 1948

Interoffice memorandum, subject, "Unsatisfactory Technical Information," to M. Graichen, signed by Colonel J. S. Holtoner, Chief, Aircraft Branch, refers to an R&R from the Requirements Division, DC/S-O and states that the AMC recommendation on the proposal for installation of VDT engines in 34 B-36 aircraft was based on an evaluation of the engine contractor's power plant data; that the aircraft contractor submitted a seemingly realistic proposal based on this initial engine data; that it was understood that the engine contractor changed the data greatly at a later date; that because of this change the VDT engine installation became doubtful; that this fact together with the installation of tractor-type in lieu of pusher-type engines resulted in AMC's reconsideration of the VDT installation in B-36's; that AMC was not entirely at fault in their original evaluation of B-36 VDT proposals as it was based on the Phase I engine of the engine contractor; and that closer working agreement and coordination between the Engineering Division [components?] in their recommendations to Hq USAF would be a possible solution to the problem posed by the referenced routing and record sheet.

(Document not available for reproducing in Hq, AMC.)

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GEM:lms Engineering II.

TC-92-172

PRATT & WHITNEY AIRCRAFT

DIVISION OF UNITED AIRCRAFT CORPORATION

EAST HARTFORD 8, CONNECTICUT, U.S.A.

CABLE ADDRESS "AIRCRAFT"

1 June 1948

VIA: United States Air Force Representative, East Hartford 8, Connecticut

To: Commanding General
Air Materiel Command
Wright Field
Dayton, Ohio

Attention: TSBPE3B1

Subject: Contract W33-038 ac-18663 - R-4360 V.D.T. Engine - Article 15, Item 5
Monthly Progress Report

Reference: (a) PWA letr GEM:lms Engineering II dated 1 May 1948 to CG, AMC, Wright Field, Dayton, Ohio, via: USAF Representative, East Hartford, Connecticut

1. The following summarizes the work accomplished under Contract W33-038 ac-18663 since the last monthly progress report was submitted by reference (a).

(a) Total running time on eleven R-4360-C engines has been increased from 4329 hours to 4716 hours. This total includes 2120 hours of V.D.T. type engine operation.

(b) R-4360-43 engine No. X-113 completed a preview 150 hour qualification test at R-4360-43 ratings, i.e., 4300 HP take-off (with water), 4000 HP (dry) and 3150 HP normal. The inspection results noted at the conclusion of the test indicated that the engine was in generally satisfactory condition. A master rod cap was found to be cracked in a region of the bearing bore where galling had occurred. It is expected that shot peening the bore of the rod will eliminate this trouble. Magnaflux indications were noted in the oil transfer bearing location of the propeller shaft. These defects are currently being analyzed. Performance of the Pratt & Whitney designed exhaust system during the test was definitely encouraging. Except for repairs on the exhaust headers at the "D" row cylinder attachment point, operation was virtually trouble-free. Modifications which are expected to correct the difficulties experienced have been made in the header design. Essentially all of the parts initially installed in the engine completed the full 150 hours of this qualification test. As noted in previous progress reports the 2X bifilar damper assembly and link pins were replaced by parts of an improved design as a precautionary measure during the test.

(c) R-4360-43 Engine No. X-105 was disassembled following 36-1/2 hours of qualification test operation as a result of piston oil jet breakage in the "A" row main case. The design of these parts has been revised to reduce the unsupported portion of the jet. This engine is currently being rebuilt for additional qualification testing.

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PRATT & WHITNEY AIRCRAFT

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1 June 1948

To: Commanding General, Air Materiel Command, Wright Field, Dayton, Ohio

Subject: Contract W33-038 ac-18653 - R-4360 V.D.T. Engine - Article 15, Item 5
Monthly Progress Report

(d) An official 150 hour qualification test on R-4360-43 engine No. X-123 will be start within the next few days. This engine is equipped with deep-finned cylinder heads an improved Pratt & Whitney designed exhaust system. As soon as a General Electric CHM-2 turbo-compressor for the test stand becomes available the test will be interr in order to install this unit and a "breadboard" type turbo control.

(e) R-4360-43 engine No. X-109 has been assigned to vibration tests. Although torsional vibration amplitudes of the crankshaft system are within acceptable limits this test has served to indicate that a further reduction in the general vibration stress leve is possible by incorporating a hydraulically-damped, spring-loaded flywheel construc at the rear of the crankshaft. This configuration eliminates the 2X torsional vibra damper used in the present crankshaft. It is planned to rebuild this engine with th hydraulically-damped drive and evaluate its effectiveness by running a qualification test.

(f) The revised version of the five-piece, face-splined crankshaft has been green tested, inspected, found to be in good condition and is now being assembled for overload endurance testing in R-4360-43 engine No. X-157.

(g) A 100-hour lean mixture cruise endurance test was run on R-4360-43 engine No. X-114 during the past month. The test was conducted under the most severe high power lean cruise conditions that could be selected for thermal stressing of the exhaust system, that is, 2630 HP at 2400 RPM. This type of testing has proved to be of great value in developing more durable exhaust system components. R-4360-43 engine No. X-156 will continue cruise endurance operation within the next few days.

(h) A calibration program to evaluate engine cooling is planned for R-4360-43 engine No. X-101 which is being reassembled with deep-finned cylinders.

(i) During run-in prior to acceptance testing of R-4360-51 engine No. X-155, one of the extension shaft couplings failed. Overspeeding of the engine resulted, necessitating its removal from the stand. The cause of the failure has not yet been ascertained. Rebuild of the engine is planned for the purpose of obtaining more complete vibration data on the test stand installation of the extension shaft and remote gear box arrangement.

(j) The first flight of the B-50C Airplane with the complete single nacelle V.D.T. installation was made 26 May 1948. Additional flights on the following two days brought the aggregate time in the air to over 5 hours. Engine, turbo supercharger and control operation have been satisfactory during this initial phase of testing. The difficulties experienced with the first two turbo superchargers during ground test have apparently been corrected in the third unit which has operated satisfactorily during flight.

UNITED AIRCRAFT CORPORATION
Pratt & Whitney Aircraft Division

G. E. Meloy

G. E. Meloy
Project Engineer

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE
WASHINGTON, D. C.

1 JUN 1948

SUBJECT: Procurement Directive 49-2 - (B-50C Aircraft)

TO: Commanding General, Air Material Command
Wright-Patterson Air Force Base
Dayton, Ohio

ATTN: Procurement Division - MCPP

1. Authority is granted to proceed with immediate negotiations leading to the procurement of the following airplanes, including initial spares and spare parts, from Supplemental Fiscal Year 1948, Project 110 Funds.

Quantity	Model
30	B-50C

2. Upon completion of the airframe negotiations, the following data will be reported by indorsement hereon:

a. Face amount of airframe contract, and the amounts apportioned to airframes, spare parts, technical data and other items.

b. A detailed breakdown of the negotiated unit airframe price, showing the usual elements of price (materials, labor, burden, general and administrative expense, engineering and tooling, profit, etc.) and the labor and overhead rates.

c. Estimated total cost of this procurement including cost of government-furnished property, and related spares and spare parts, based on the negotiated airframe contract.

d. The contract delivery schedule.

3. This directive does not dispense with the necessity for conformance with applicable procurement regulations and directives.

BY COMMAND OF THE CHIEF OF STAFF:

L. M. POWERS
Major General, USAF
Asst. Deputy Chief of Staff, Material

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COMPTROLLER

PERSONNEL & ADM.

RESEARCH & DEV.*

INTELLIGENCE

SUPPLY AND MAINT.

PROC. & IND. MOB PLNG.*

OTHER

AMC Form No. 10- (18 Nov 47) (Old AMC Form No. 10-3xx)

SPECIAL DELIVERY
AIRMAIL

MCPFXS4/RAB/mg
2 June 1948

SUBJECT: Change No. 42, Amendment No. (48)2379 to Purchase Order (535)43-22066-P

TO: Bureau of Aeronautics
Navy Department
Washington 25, D. C.
ATTN: Section Aer-C-23, Mr. K. Sargent

Reference: Bureau of Aeronautics letter dated 21 May 1948, Aer-C-23-NOa(s) 8333

1. With respect to referenced letter the Air Material Command has taken steps to revise subject amendment as follows:

CHARGE:

Eight (8) prototype R-4360-51 engines at $206,500.00 each	$1,652,000.00
Two hundred thirteen (213) installation and spare R-4360-51 engines at $79,125.00 each	16,853,625.00
Spare parts equal to approximately 15% of the money value of two hundred thirteen (213) engines minus accessories	2,048,793.75
Total Charge	$20,554,418.75

CREDIT:

Three hundred thirty (330) installation and spare R-4360-41 engines at $53,885.34 each	$17,782,162.20
Spare parts equal to approximately 24% of the money value of two hundred thirty-four (234) installation engines minus accessories	2,772,256.55
Total Credit	$20,554,418.75

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AIR INSPECTOR

PUBLIC INF. OFFICE

COMPTROLLER

PERSONNEL & ADM.

RESEARCH & DEV.*

INTELLIGENCE

SUPPLY AND MAINT.

PROC. & IND. MOB PLNG.*

OTHER

AMC Form No. 10-7 (18 Nov 47) (Old AMC Form No. 10-3

AMC

2 June 1948

Subject: Change No. 42, Amendment No. (48)2379 to Purchase Order (535)43-22066-P

2. The above revision decreases the total money value for R-4360-51 engines from $20,748,539.70 to $20,554,418.75 or a total decrease of $194,120.95.

3. The Air Material Command is taking all possible action to forward a revised amendment at the earliest possible date reflecting the changes indicated above.

4. For your additional information, it will be noted that the above change is in accordance with Plan II of referenced letter.

FOR THE COMMANDING GENERAL:

O. M. Scott Maj USAF

for J. L. ZOECKLER
Lt. Colonel, USAF
Acting Chief, Aeronautical
Equipment Section
Procurement Division

*AREA COMMANDS WILL LINE OUT ORGANIZATIONAL TITLE NOT APPLICABLE WHEN ADDITIONAL SPACE IS NEEDED IN COORDINATION BLOCK

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GJA:l Engineering II.

PRATT & WHITNEY AIRCRAFT

DIVISION OF UNITED AIRCRAFT CORPORATION
EAST HARTFORD 8, CONNECTICUT, U.S.A.
CABLE ADDRESS "AIRCRAFT"

3 June 1948

United States Air Force Representative
United Aircraft Corporation
Pratt & Whitney Aircraft Division
East Hartford 8, Connecticut

Subject: Qualification Test - R-4360-43 Engine - Contract W33-038 ac 18653

Reference: (a) PWA letr GJA:lms dated 10 May 1948 to USAF Repr., East Htfd., Conn.

1. Reference (a) advised the United States Air Force Representative that this contractor planned to conduct a 150-Hour Qualification Test on R-4360-43 engine, X-123. It further advised that a General Electric CHM-2 turbo-compressor would be used, if possible, during the Qualification Test. The start of the subject test has been delayed considerably due to lack of the CHM-2 turbo unit but the unit was received 2 June 1948 and is being installed in the test stand.

2. It is expected that the Qualification Test of the engine will be further delayed by frequent inspections of the turbo-compressor unit as requested by the General Electric Company. The inspection schedule is listed below for your information:

After 5 hours of operation - partial disassembly and inspection

After 15 hours of operation - partial disassembly and inspection

After 25 hours of operation - return to General Electric Company for complete disassembly and inspection

3. It is expected that a second turbo-compressor will be available after the 35 hour period and this unit will be used to continue the Qualification Test of the engine. The above schedule of inspections will apply to the second unit until the inspection of the first unit at General Electric is completed. The inspection schedule may be revised as additional experience is obtained on the turbo-compressor unit.

GJA:lms

UNITED AIRCRAFT CORPORATION
Pratt & Whitney Aircraft Division

G. J. Andreini

G. J. Andreini, Assistant
Project Engineer

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PRATT & WHITNEY AIRCRAFT
DIVISION OF UNITED AIRCRAFT CORPORATION
EAST HARTFORD 8, CONNECTICUT, U.S.A.
CABLE ADDRESS: AIRCRAFT

June 7, 1948

ARMY OFFICE
AFMO
CONCURRED IN
NO COMMENT
9/6/48

VIA: Army Air Forces Representative

To: Commanding General
Air Materiel Command
Wright-Patterson Air Force Base
Dayton, Ohio

Attention of: MCPPXE

Subject: Instrumentation for R-4360-43 Prototype Engines

References: (a) Boeing Aircraft Company Telegram to AMC, MCPPXk 6-5-1084, E5-496 dated 14 May 1948
(b) Boeing Aircraft Company Telegram to AMC, MCPPXk 6-5-1119, F5-526 dated 21 May 1948

1. It is our understanding from References (a) and (b) that Boeing Aircraft Company's instrumentation requirements for R-4360-43 prototype engines are as follows:

(a) One engine to be placed into operation in Boeing's ground test rig.
(b) Three engines for installation in prototype YB50-C airplane.
(c) One engine without instrumentation.

It is further understood from Reference (b) that the engine being returned to Pratt & Whitney Aircraft from Boeing for modernization will, upon return to Boeing, be satisfactory for use in Boeing's ground test rig, thus filling the requirement (a) above.

2. The remaining three instrumented engines to fill the requirements of (b) and (c) in Paragraph 1 above are being procured on Contract W33-038, AC19032. The contract delivery date for the first four of these engines is March 1949. However, in view of the high priority being given this project, we are making strenuous efforts to anticipate this delivery date. This contract does not provide for instrumentation on these engines and a Change Order for this contract will be required to accomplish this work. Pratt & Whitney Aircraft will furnish the necessary material and instrument the engines for the following amounts:

(a) The unit price for completely instrumenting an R-4360-43 engine

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PRATT & WHITNEY AIRCRAFT

Ltr to CG, AMC, Wright-Patterson Air Force Base, Dayton, Ohio, dated 6/7/48

with complete head and base thermocouples, head and base thermocouple harnesses and baffle pressure drop measuring tubes is $1466.00.

(b) The unit price for instrumenting an R-4360-43 engine the same as above except without the baffle pressure drop measuring tube is $1365.00.

3. The above described instrumentation will not comply with the requirements of Specification AN-T-62 as amended. This contractor cannot accept an order for instrumentation meeting the requirements of this specification at this time. However, the instrumentation to be furnished will be the same as that previously furnished the Air Force on other R-4360 engines and which has, to the best of our knowledge, been entirely satisfactory. Also, the proposed instrumentation meets the requirements of the Boeing Aircraft Company as given in References (a) and (b) with the exception of the dynamometer calibration. A quotation for the calibration of the engines cannot be made until information concerning the exact calibration desired is known. It is proposed that this question be discussed and decided upon at the proposed conference between representatives of the Boeing Aircraft Company, the Air Force and Pratt & Whitney Aircraft scheduled to be held at Pratt & Whitney Aircraft on 14 June 1948.

4. In order to be in a position to furnish and install the above instrumentation prior to the delivery of the engines, we are purchasing the necessary materials and will proceed with the manufacturing at once. The instrumentation will not be installed on the engines, however, until after the receipt of the Change Order to the contract. The Change Order will have to be received by this contractor by October 1, 1948, if the instrumentation is to be accomplished without delaying the delivery of the engines.

UNITED AIRCRAFT CORPORATION
Pratt & Whitney Aircraft Division

L. C. Mallet

L. C. Mallet, Assistant General Manager

LCM:emg

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ARMY AIR FORCES
AIR MATERIEL COMMAND
BOSTON AAF PROCUREMENT FIELD OFFICE
18 TREMONT STREET, BOSTON 8, MASSACHUSETTS

MCPPIB3/HSR/dgm
11 June 1948

Pratt & Whitney Aircraft Division — East Hartford, Conn.

IN REPLY REFER TO:

Subject: First attemp of the official 150 hour modle test of Pratt & Whitney R-4360-43 VDT Engine, Mfrs. S/N-X-123.

To: Commanding General
Air Materiel Command
Wright Patterson AF Base
Dayton, Ohio

Attn: MCREXP

1. The subject engine which was mounted on X-16 torque stand completed 8.74 hours of miscellaneous running including a shakedown run up to 2800 RPM and 4000 BHP and exhaust gas temperature checks. At this time, the engine was shut down to dismantle the BH-1 turbo set up and install the CHM-2 Turbo set up and controls.

2. With the new Turbo set up, the engine completed 5½ hours running of turbo vibration checks up to 2800 RPM, 4000 BHP, 13000 RPM Turbine speed. Model Test was started 9 June and 1½ hours was completed at 2600 RPM, 3150 BHP, .675 BSFC, when silver chips were found in the stand strainer and the engine was shut down and removed from the stand for partial disassembly to locate failure.

3. 10th of June, one bank of cylinders was removed and inspection revealed the crankshaft was cracked on the forward side in the A Throw position. Engine being disassembled for further investigation.

4. A failure similar to the above was experienced on engine X-109 last April.

5. The Contractor is making studies of strength and design on both single and the 5 piece crankshaft. Also making studies to determine if vibration is the cause of failures of present design.

FOR THE CHIEF, BOSTON AF PROCUREMENT FIELD OFFICE:

R. E. SLADE
AF INSPECTOR-
IN CHARGE

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TABE-14
4 Sheets

Development and Production of R-4360-51 Engines for B-36 Airplanes

MCREP-74 June 11-48

Attn: Brigadier Gen. D. L. Putt

1. The Power Plant Laboratory, Engineering Division, has concurred in the development of the R-4360-51 engine and procurement of eight prototype engines based on engineering data presented by both the engine and aircraft manufacturers. Procurement of engines and aircraft on the prototypes has been made from production funds and by the Procurement Division. Based on original performance estimates, this project appeared to be well founded and justifiable.

2. In February 1946, the Power Plant Laboratory was requested to fill out a form 66 to establish the -51 engine as a standard. The Power Plant Laboratory did not concur with establishing the standard status and filled out a form 66 with the following note in item 18. "This item is in the development stage and development has not progressed to the point that the Engineering Division can recommend standardization." Also, the space for approval was not filled out and signed. A copy of this form 66 is attached. It is understood that the R-4360-51 engine has been standardized by Headquarters, United States Air Force, Washington, D. C.

3. The following is also quoted from an MER dated 24 February 1946, from MCREP to MCPP, subject, "Fiscal Year 1946 Production Program."

> "In the case of the R-4360 engines, both models under consideration have, in addition to the high percentage increase in ratings, other wide technical differences from the approved model, such as fuel injection, geared superchargers removed from the engine and a turbosupercharger supplying all induction system pressure and low tension ignition system. In addition, the -51 incorporates three different lengths of extension shafts for the airplane installation and a remote reduction gear box having a new gear ratio. In addition, for the R-4360-43 and -51 engines, the qualification test is to be on a "VDT" type engine because of the wide technical difference between this and other R-4360 engines, and the same engine qualification test is to be on an American built engine.
>
> "It should be clear that it is not the objective of the Engineering Division to reduce experimentation on these advanced models, but rather to urge that large quantities not be procured before development has been completed. Excessive procurements before engines have completed necessary qualification tests results in hazards in service, undue maintenance and modification costs, and general criticism of the quality of our aircraft from the using personnel and higher authority."

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MCMR-1
Att: Brig. Gen. D. L. Put

MCREXP-74

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1.

4. Since February, 1948, Consolidated-Vultee Aircraft Corporation has revised aircraft performance estimates based on revised engine data from Pratt and Whitney Aircraft Division and from other revisions in aircraft GFE and CFE, weight, nacelle drag, altitude performance, etc. It is understood that these revisions have resulted in loss of the original gains predicted for B-36 performance.

1 Incl.
Form 66 dtd 12 Feb 48

R. J. MINTY
Colonel, USAF
Chief, Power Plant Laboratory
Engineering Division

JBC/rbk
2-4232
Bldg. 18-A.

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REQUEST FOR [redacted] CHANGE OF STATUS EQUIPMENT

DATE: 12 Feb. 1948

1. NAME OF ARTICLE APPROVED: [redacted]: (Pratt & Whitney Model Wasp Major C3) AAF Type R-4360-51

2. PROCUREMENT SPECIFICATION AND/OR DRAWING NUMBER: A-7067-B, Dec. 18, 1947

3. PERTINENT INFORMATION

A. ITEM [redacted] (IS NOT) A NEW ITEM.

B. ITEM [redacted] (IS NOT) AN IMPROVEMENT OVER AN EXISTING ITEM NOW KNOWN AS:

C. ITEM WILL [redacted] SUPPLEMENT THE PRESENTLY ADOPTED ITEM: AN-4360-43

D. ESTIMATED UNIT COST IN QUANTITY PROCUREMENT IS:

4. RECOMMENDATIONS

A. ITEM TO BE CLASSIFIED AS: Standard Status

B. ITEM TO [redacted] SUPPLEMENT:

C. RECLASSIFICATION OF THE REPLACED OR SUPPLEMENTED ITEM TO BE:

D. SPECIAL PROVISIONS (TO BE) (NOT TO BE) PROVIDED FOR THE TRAINING OF AAF PERSONNEL IN ITS OPERATIONS AND MAINTENANCE.

E. USING ARMS, SERVICE TEST BOARDS AND TECHNICAL COMMITTEES CONCUR IN THE PROPOSED ACTION AS FOLLOWS: This item is in the development stage and development has not progressed to the point that the Engineering Division can recommend standardization.

F. ITEM HAS BEEN DEVELOPED TO MEET: (AAF REG. 65-74)

- ☐ MILITARY CHARACTERISTICS — (Number and Date)
- ☐ DEVELOPMENT DIRECTIVE — (Number and Date)
- ☐ OTHER REQUIREMENTS — (Reference) Hq. USAF T.I. 2036 Add. 5 1/21/48

G. ITEM DOES NOT MEET THESE REQUIREMENTS IN THE FOLLOWING RESPECT:

H. RELATED EQUIPMENT INCLUDES EXISTING ITEMS WHICH MUST BE MODIFIED AND NEW ITEMS MUST BE STANDARDIZED AND ARE:

I. ITEM IS INTENDED FOR:

- ☐ IMMEDIATE PROCUREMENT AND ISSUE.
- ☐ PROCUREMENT AND ISSUE WHEN EXISTING STOCKS OF ITEMS HAVE BEEN SUPERSEDED OR DEPLETED.
- ☐ FUTURE PROCUREMENT AND ISSUE IN CASE OF EXPANSION.

J. PHOTOGRAPHS ILLUSTRATING THIS ITEM ARE

K. GIVE A RESUME OF REASONS FOR ENTRY, REMOVAL, OR CHANGE OF CLASSIFICATION AND A PERTINENT DESCRIPTION OF THE CHARACTERISTICS OR CHANGE IN CHARACTERISTICS OF THE ITEM:

Characteristics of the R-4360-51 engines are as follows: T.O. rating 4000 HP at 2800 RPM or 4300 HP at 2800 RPM with water; S.L. rating 3100 HP at 2600 RPM; Alt. 3150 HP at 2600 RPM. Military 4000 HP at 2800 RPM or 4300 HP at 2800 RPM with water, Comp. Ratio 6.70:1, Prop.Red.Gear Ratio .3125:1, Prop.Shaft No. 60A. The above engine is the same as the -43 engine except it will have extension shaft, remote reduction gear box and different propeller red.gear ratio and cooling fan drive. Recommended for Standard Status.

APPROVED:

INITIATED BY ..... PHONE .....

BRANCH CHIEF ..... LABORATORY OR SECTION CHIEF .....

Type Designation ..... has been assigned and an Authority for Change of Status of Equipment in accordance with AR 850-25 is being initiated

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SPECIFICATIONS & STANDARDS BRANCH
ENGINEERING STANDARDS SECTION

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APPENDIX "A"

Attachment to Form 66 dated Feb. 12, 1948. (R-4360-51 Engines.)

Note 1: The XR-4360-43 and -51 engines are similar to the XR-4360-39 engine, all of which are R-4360-"C" series engines. None of them have passed the 150-hour qualification test. The -39 engine has passed a 50-hr preliminary flight rating test at a maximum rating of 3500 HP. The R-4360-"C" series engines are similar to the R-4360 "B" series engines now in production except for a large number of design changes necessary to improve performance durability and maintenance. In addition to the description of the -51 engine given in Paragraph K of this Form No. 66, the R-4360-51 and -43 engines incorporate the following major new features: fuel injection directly into cylinders, new high frequency ignition system, supercharger completely removed from engine and supercharging is accomplished by new C4 turbosupercharger type H-1 with two-stage compressor; new boost control which regulates variable discharge nozzle on the turbine exit, coil type spark plugs, redesigned engine mounts, new cylinders, crankcases, crankshaft, exhaust system, No. 70 propeller shaft size (-51) new power take-off drives.

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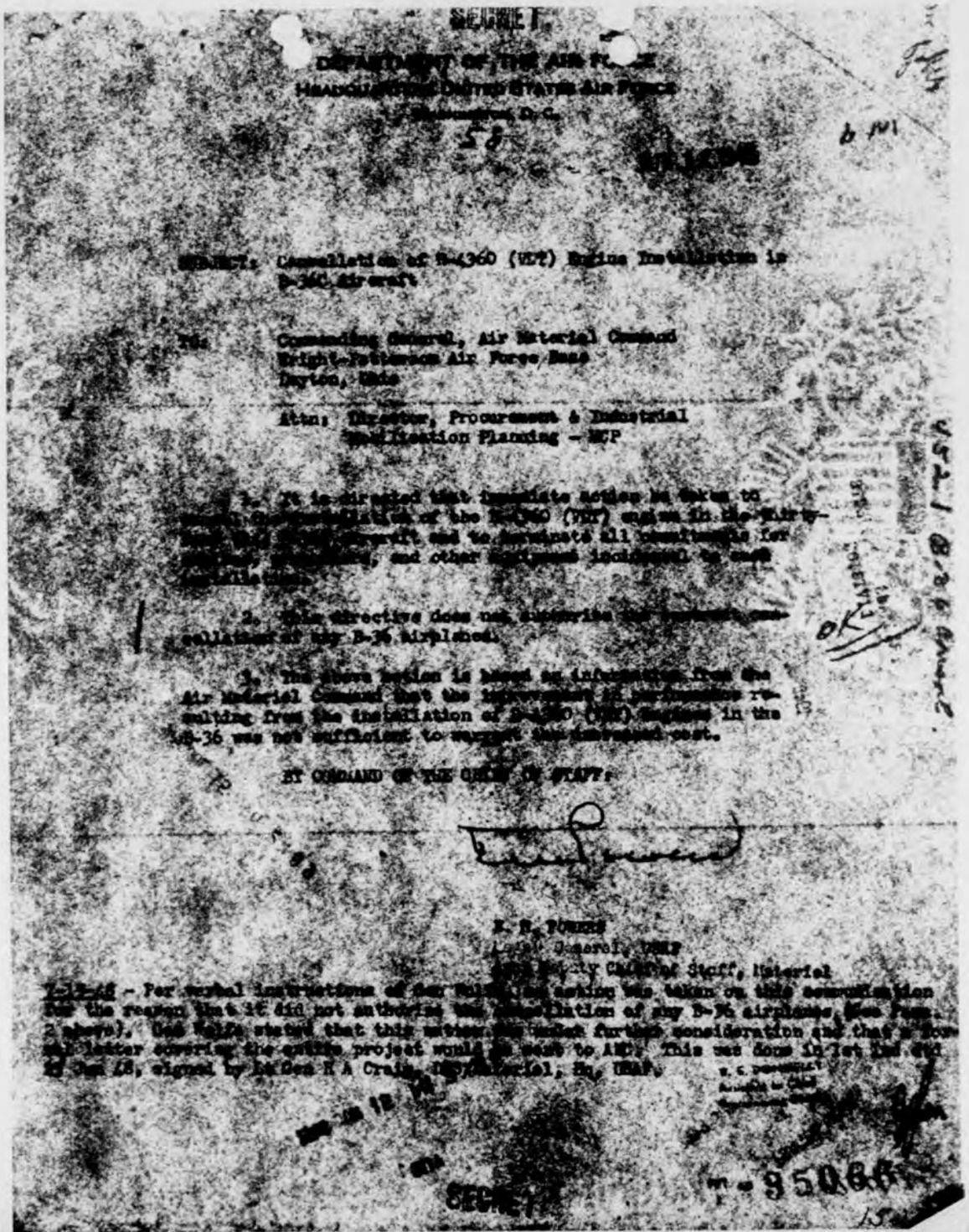

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE
Washington, D. C.

SUBJECT: Cancellation of R-4360 (VDT) Engine Installation in B-36 Aircraft

TO: Commanding General, Air Material Command
Wright-Patterson Air Force Base
Dayton, Ohio

Attn: Director, Procurement & Industrial Mobilization Planning - MCP

1. It is directed that immediate action be taken to cancel the installation of the R-4360 (VDT) engine in the thirty-four (34) aircraft and to terminate all commitments for engines, spare parts, and other equipment incidental to such installation.

2. This directive does not authorize the removal and cancellation of any B-36 airplanes.

3. The above action is based on information from the Air Material Command that the improvement in performance resulting from the installation of R-4360 (VDT) engines in the B-36 was not sufficient to warrant the increased cost.

BY COMMAND OF THE CHIEF OF STAFF:

K. B. WOLFE
Lieut. General, USAF
Deputy Chief of Staff, Material

7-12-48 - Per verbal instructions of Gen Wolfe, no action was taken on this communication for the reason that it did not authorize the cancellation of any B-36 airplanes, (See Para. 2 above). Gen Wolfe stated that this matter was subject further consideration and that a follow-up letter covering the entire project would be sent to AMC. This was done in Ltr Hq AMC dtd 15 Jan 48, signed by Lt/Gen H A Craig, DCS/Material, Hq, USAF.

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Recommendation for Navy for Army Procurement

REQN. NO. R 47-3 N
AMOUNT $16,016,975.00
DATE 15 June 1948

TO: NCPPXS22 FROM: NCPPXD,

1. Attached hereto is Purchase Request No. 14202. It is recommended that a Military Interdepartmental Purchase Request (Requisition) be issued with The Navy Department, Bureau of Aeronautics, Washington 25, D. C. for shipment to (Shipping instructions to be furnished later), to be accomplished in accordance with the following delivery schedule: See Exhibit A of PR 14202. Shipment shall be made via Gov't B/L, F.O.B. point to be determined later by the Navy Department; inspection shall be performed by Navy Department personnel at a point to be determined by them.

2. A statement should be incorporated into the MIPR to the effect that transportation accomplished during the Fiscal Year 1948 shall be chargeable to Allotment 2150709, 502-201 4448-03 579-947. Citation of funds chargeable for transportation accomplished during subsequent fiscal years will be furnished on request.

3. This procurement is placed pursuant to the terms of the Joint Directive relating to Single Department Procurement, dated 3 September 1947.

V. G. HUSTON
Colonel, USAF
Chief, Aeronautical
Equipment Section
Procurement Division

Incl
PR No. 14202
w/attachments

RAB/mg
29207
Bldg 15
Rm 104

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MILITARY INTERDEPARTMENTAL
PURCHASE REQUEST

WF-(B-O-26 MAY 46 1500

PREPARED BY:
FNW: MCPPIS2@jb

FROM: PROCUREMENT DIVISION
WRIGHT-PATTERSON AIR FORCE BASE
DAYTON, OHIO

TO: THE NAVY DEPARTMENT
Bureau of Aeronautics
Washington 25, D. C.

SERIAL # (33-058) R-[illegible]
DA[illegible]
P[illegible]
[illegible]

R-49-54

SHIP TO: See "Shipping Instructions"

SHIP VIA:
DELIVERY WITHIN [illegible] days from date of receipt of this request.
TERMS:
ALL ARTICLES MUST BE DELIVERED F.O.B. [illegible]

ITEM NO.	QUANTITY	UNIT	DESCRIPTION	UNIT PRICE	TOTAL PRICE

Continued on Page 2

*The information identified by * above shall appear in the resulting Contract or Purchase Order issued by the Navy Department for the purpose of identification.

FINAL INSPECTION AND ACCEPTANCE:

CITATION OF FUNDS FOR SUPPLIES PROCURED HEREUNDER:

CITATION OF FUNDS FOR TRANSPORTATION COSTS HEREUNDER:

FINANCE OFFICER SHALL BE: THE FINANCE OFFICER, U.S. ARMY, WRIGHT-PATTERSON AIR FORCE BASE, DAYTON, OHIO, BIDG. #[illegible]

AUTHORIZATION: Joint Directive relating to Single Department Procurement dated 8 Sept., 1947.

CONTRACTING OFFICER APPROVING THIS PURCHASE REQUEST

CLAUDE W. COLLINS

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Item No.	Qty.	Unit	Article	Unit Price	Total Price
					ESTIMATED
1.	186	ea.	AIRCRAFT ENGINE, USAF designation R-[illegible]-43, built in accordance with Pratt and Whitney Specification No. A-7065-C dated 18 December 1947 with the following exception: Complete coordination of the above specification must be completed before engines are shipped. (120 each shall be designated as installations) (66 each shall be designated as spares)	$72,475.00	$13,420,350.00
2.	---	---	Spare parts in an amount not to exceed 2% of the money value of one hundred twenty (120) installation engines.		2,174,250.00
3.	---	---	Special tools and/or equipment to overhaul and maintain engines in accordance with AFSC Regulation 80-6 and the A-Engine Provisioning Appendix will be a part of the contract in accordance with Headquarters Office Instruction No. 70-15. The special tools and/or equipment to overhaul and maintain engines shall be in an amount not to exceed 2 1/2% of the money value of two hundred (200) engines. In accordance with Appendix No. 1, Special Tools, attached hereto.		362,375.00
					ESTIMATED TOTAL $16,016,975.00

Any Navy Contract resulting from this Requisition shall contain an article therein substantially as follows:

All references in any Government specification incorporated herein to other Government specifications shall be deemed to include all specifications supplementary to or superseding the specifications so referred to, to the extent that such supplementary or superseding specifications are in effect at the date of Contractor's latest quotation, if the Contractor was furnished or otherwise notified of the existence of such supplementary or superseding specification at the time of said quotation.

Cont'd on page 3

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2. DELIVERY SCHEDULE:

Item 1 - 4 each during September 1949.
4 each additional during October 1949.
7 each additional during November 1949.
11 each additional during December 1949.
15 each additional during January 1950.
17 each additional during February 1950.
12 each additional during March 1950.
12 each additional during April 1950.
16 each additional during May 1950.
26 each additional during June 1950.
48 each additional during July 1950.
12 each remaining during August 1950.

Item 2 - See "Delivery of Spare Parts"

Item 3 - Concurrently with and in proportion to the engines called for under Item 1 hereof.

3. SHIPPING INSTRUCTIONS:

Shipping instructions will be furnished later. The Contractor shall make written request to OTT Branch, Traffic Section, MCREXD22, AMC, Wright-Patterson Air Force Base, Dayton, Ohio, for shipping instructions not later than 15 days prior to the date on which any articles called for hereunder are ready for shipment.

4. ALLOTMENT:

Contract Authorization (57X/00210).97[illegible]-700. P 110-79 S 33-036 ($13,611,426.75)
Appropriated Funds 57X0210 97[illegible]-700. P 110-69 S 33-036 ($ 2,402,346.25)

5. CONTRACT AUTHORIZATION:

Notwithstanding any other provisions of this contract, no payments shall be made hereunder except from appropriated funds now allotted to this contract or hereafter allotted to this contract by amendment thereto or by notice in writing from the Contracting Officer or otherwise. Funds designated as "Contract Authorization" are not available for expenditure and will not be until appropriated by Congress for this purpose, and duly allotted to this contract.

6. TRANSPORTATION COSTS:

Government bills of lading shall reference Navy Contract Number.

Citation of funds chargeable for transportation will be furnished upon request.

Continued on Page 5

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MCPPXA-1

MCPPXA-1/JHS/jb/P-P&A/13
22 June 1948

Re-Evaluation of B-50C R-4360-43 Engine Installation.

Chief of Staff
United States Air Force
Washington 25, D. C.

Attn: DC/S-4, AFMID

1. Reference is made to a classified letter which originated in Headquarters, USAF on 20 May 1948, subject as above. An analysis of the B-50C R-4360-43 installation was made based on revised cooling requirement data furnished Headquarters, AMC and Boeing Aircraft Company by Pratt and Whitney Aircraft Company. An examination of the data indicates that an appreciable increase in cooling power requirements has occurred recently on the -43 engine. However, the pressure drop requirements for the -43 engine are similar to and normally somewhat lower than those on the -35 engine. The cooling requirements of the R-4360-35 engine are similar to those of the R-3350 engines installed in the B-29 airplanes. The variation of pressure requirement with percent power, with altitude, and with fuel-air ratio are nearly the same for all three engine installations. The cowlings supplied with these three installations are roughly equivalent with somewhat better performance anticipated for the B-50C than for the B-50, which is nearly identical to the B-29. All three airplanes climb at approximately the same speed and will have essentially the same available pressure drops to provide cooling. In this connection it is important to point out that a 100° change in pressure drop will only change the cylinder temperatures 4.0° C.

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7. From the foregoing, it is concluded that the R-4360-43 engine installation in the B- 0C airplane will cool as well or better than the standard B-29A and B-29 power plant installations under identical altitude, temperature, percent of power and fuel-air ratio conditions.

8. It is hoped that some significant improvement in cooling has been made in the -43 engine. It does not appear probable that such changes will materially increase the altitudes at which proper cooling can reliably be obtained as compared to other bomber installations, such as the B- 0 and the B-29. This condition has been anticipated in all performance quotations on the B- 0C airplane where cruise performance at 30,000 feet has not been obtained. The change in cooling requirments which has occurred recently on the engine is equivalent to approximately a 2-1/2% loss in range but does not represent any large change in altitude at which limited cooling is obtained.

9. It was noted that cooling requirements for the R-4360-43 engine "PEAKED" at 2460 horsepower. The increase in cooling requirements is greater than the increase in power at this point, with the result that operation at 2460 horsepower is very disadvantageous. When operating on the normal mixture curve this will not occur as soon because the mixtures have been enriched at this point. Any performance quoted at this horsepower will be adversely affected by the change in fuel requirements; however, by operating at somewhat lower powers, no loss in range and only small losses in speed will occur as compared to previous estimates. It is believed that this will not adversely affect the evaluation of the airplane.

10. It is concluded that the B- 0C airplane will cool as well as existing heavy bombers and that the recent revision to cooling requirements will result in approximately 2-1/2% loss in range and will make cruising operation near 2460 BHP less desirable. All other previous performance estimates are not adversely compromised.

FOR THE COMMANDING GENERAL:

GEORGE E. [illegible]ZEL,
Colonel, USAF
Chief, Aircraft and
Missiles Section,
Procurement Division

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ASC-251-B (15-10-43)

A. S. P.	
PRIORITY	XXX
ROUTINE	
MULTIPLE ADDRESS	

~~CONFIDENTIAL~~ Restricted

TELETYPE MESSAGE

AIR SERVICE COMMAND TELETYPE NETWORK

FROM: HQ.,AMC,WPAFB,DAYTON,OHIO DATE: 25 JUNE 1948

TO: CHIEF, FT.WORTH AF PROCUREMENT FIELD OFFICE, GOVERNMENT AIRCRAFT PLANT NO. 4, FORT WORTH, TEXAS.

GEORGE E. MCMANUS, COLONEL, USAF, CHIEF, AIR.MATERIEL HQ.,PROC.DIV.
NAME, RANK AND TITLE OF AUTHENTICATING OFFICER

CLASS:

REF: MCPPIA32/RJH:ICH/3-6252/23 ~ 4c

TELETYPE NO: MCPPIA32-6-46 . . . . CONTRACT AS-7, SUBJECT: B-36C PROGRAM. REF: (A) CGM NO. 206 DATED 2 SEPT. 1947, (B) AMC MESSAGEFORM TSMPA32-32-42 DATED 23 DECEMBER 1947. THE CONTRACTOR IS HEREBY DIRECTED TO IMMEDIATELY CEASE ALL WORK ON THE B-36C PROGRAM AS AUTHORIZED BY REFERENCE (B). THE 34 B-36C AIRPLANES ARE CANCELLED AND 34 B-36D AIRPLANES WILL BE REINSTATED IN PLACE OF THE "C" AIRPLANES. THE CONTRACTOR WILL FORWARD TO THE AIR MATERIEL COMMAND AS SOON AS POSSIBLE A COST ESTIMATE OF THE ABOVE CHANGED PROGRAM IN ORDER THAT A CONTRACT CHANGE NOTIFICATION CAN BE ISSUED. SIGNED, PROCUREMENT DIVISION.

COORDINATION	C. & OR C. O.	CONTROL OFFICE	MAINTENANCE	P & T	SUPPLY	BUDGET & FISCAL	OTHERS

Restricted

~~CONFIDENTIAL~~

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EQA/6

PP JEQAB

FM CEBQC/HQ USAF WASH D C ∅1154ØZ July 1-45 -
TO COMGENAMC WRIGHT PATTERSON AFB DAYTON OHIO
AF GRNC

/ C O N F I D E N T I A L /
PASS TO MCPPXA FROM AFMDC 1111 SIGNED AFOCS MCPPXA THREE ONE DASH
FIVE DASH SIX NINE
AUTHORITY GRANTED TO REDESIGNATE BAKER DASH FIVE ZERO CHARLIE
AIRPLANES AS BAKER DASH FIVE FOUR APLE PD/C O N F I D E N T I A L /

∅1154ØZ

D-54-4

1. MCPP - Dayton
3. [illegible]
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MY OFFICE
WD
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GEM:bo Engineering II

PRATT & WHITNEY AIRCRAFT

DIVISION OF UNITED AIRCRAFT CORPORATION
EAST HARTFORD 8, CONNECTICUT, U.S.A.
CABLE ADDRESS "AIRCRAFT"

2 July 1948

VIA: United States Air Force Representative, East Hartford 8, Connecticut

To: Commanding General
Air Materiel Command
Wright Field
Dayton, Ohio

Attention: ~~TSRPE381~~

Subject: Contract W33-038 ac-18653 - R-4360 V.D.T. Engine - Article 15, Item 5
Monthly Progress Report

Reference: (a) PWA letr. GEM:lms Engineering II dated 1 June 1948 to CG, AMC, Wright Field, Dayton, Ohio, via: USAF Representative, East Hartford, Conn.

Enclosure: (A) Three (3) copies of R-4360-VDT Engine Installation Photographs, Boeing B-50 Airplane 6008.

1. The following summarizes the work accomplished under Contract W33-038 ac-18653 since the last monthly progress report was submitted by reference (a):

(a) Total running time on eleven R-4360-C engines has been increased from 4716 hours to 5179 hours. This total includes 2583 hours of V.D.T. type engine operation.

(b) R-4360-43 Engine No. X-109 has just successfully completed a 150-hour qualification test and is now being disassembled for inspection. This engine incorporated a hydraulically-damped flywheel design which replaces the 2X crankshaft bifilar damper and reduces the general vibration stress level of all frequencies. The hydraulically damped flywheel construction was not incorporated in R-4360-43 Engine No. X-123 which sustained a crankshaft failure through the "A" row crankpin after 1½ hours of qualification testing. In the light of test experience, hydraulic flywheel dampers will be incorporated in prototype V.D.T. series engines.

(c) R-4360-43 Engine X-105 has been mounted on the test stand with a CHM-2 turbo-supercharger for qualification test endurance. Principally because of delays involved in development inspection of the turbo and waiting for replacement turbo parts, only 4½ hours of endurance have been completed during the last two weeks on this installation.

(d) It is expected that an official R-4360-43 qualification test will be started in approximately ten days. R-4360-43 Engine No. X-123, with deep-finned cylinders, latest Pratt & Whitney exhaust system, low tension ignition and hydraulically-damped flywheel construction, will be assigned to this test. R-4360-43 Engine No. X-110, which is the twelth V.D.T. development engine, will be green tested in approximately one week and used as a standby for Engine No. X-123.

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PRATT & WHITNEY AIRCRAFT

2 July 1948 TC-42-170

To: Commanding General, Air [illegible]riel Command, Wright Field, [illegible]n, Ohio - TSEPE3R1

Subject: Contract W33-038 ac-18653 - R-4360 V.D.T. Engine - Article 16, Item 5
Monthly Progress Report

(e) Following ten hours of overload endurance on the 5-piece face-splined crankshaft in R-4360-43 Engine No. X-157, cracked splines were noted. The cracks appeared to originate in a sharp undercut near the spline root. Steps are now being taken to eliminate the undercut.

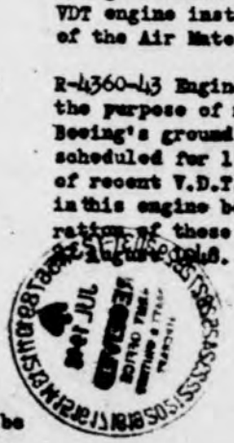
(f) The latest Pratt & Whitney exhaust system completed 120 hours of cruise endurance operation without incident on R-4360-43 Engine No. X-156. A Scintilla low tension ignition system has operated satisfactorily on this engine for a total time of 196 hours.

(g) R-4360-43 Engine No. X-101 has started a cooling program on deep-finned cylinders. Preliminary results of this calibration at the lower powers are encouraging. The calibration is continuing and will include runs through military power.

(h) Another installation of R-4360-51 Engine No. X-155 on the special extension shaft test stand has been completed. The immediate program on this engine will be confined to vibration measurements to determine the reason for the extension shaft coupling failure experienced during a previous run.

(i) Flight testing of the single nacelle V.D.T. installation (R-4360-43 Engine No. X-151) has been progressing satisfactorily. To date, ten flights have been made, accounting for an aggregate time of 16 hours, 25 minutes in the air. The current flight program on the basis of a turbo-supercharger restriction of 15,000 RPM and 15,000 ft. altitude is concerned primarily with evaluating powerplant acceleration and deceleration characteristics, measuring turbine inlet temperatures at lean mixtures and investigating a powerplant roughness phenomenum which has been defined within known operating conditions and which appears related to cowl configuration at the entrance to the turbo-supercharger compressor inlet. For the present, the range of roughness will be avoided in order to permit obtaining additional experience with tentative boost control settings. This contractor plans at the first opportunity to remove Engine X-151 from the airplane in order to include additional modernization features comprising deep-finned cylinders, latest design exhaust system and hydraulic dampers. Enclosure (A) photographs of the VDT engine installation in the B-50C airplane are forwarded for the information of the Air Materiel Command.

(j) R-4360-43 Engine X-152 has been returned to this Division by the Air Forces for the purpose of modernization, calibration and instrumentation preparatory to Boeing's ground test program. The return of this engine to Boeing was tentatively scheduled for 1 August 1948. However, the contractor recommends on the strength of recent V.D.T. testing that hydraulic type flywheel damper parts be installed in this engine before it is returned to Boeing. It is estimated that the incorporation of these parts in X-152 would not delay engine delivery beyond [illegible] August 1948.



UNITED AIRCRAFT CORPORATION
Pratt & Whitney Aircraft Division

G. E. Meloy
G. E. Meloy
Project Engineer

GEM:be
Enc.

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TC-92-30

PWA. F-31.

INTER-OFFICE CORRESPONDENCE
PERMANENT MEMORANDUM FOR FILE

PRATT & WHITNEY AIRCRAFT ENGINES

To Mr. E. W. Diehman — Date July 2, 1948

From E. C. Grimshaw — cc: Messrs.: R. T. Horner, R. H. Begg, W. W. Smith, R. L. Caleem, N. F. Larson

Subject Instrumentation of the -43 Engines Being Furnished under Contract W33-038 ac-19032.

Stated below are the words which we believe you can give Bittner to put in a Change Order covering this instrumentation. The prices are in accordance with the prices stated in Mr. Mallet's letter of June 7th to AMC on this matter. However, in accordance with the report of the conference here on June 14th and 15th on the B-50, three engines will be completely instrumented and three will be partially instrumented. This is set forth in Item 18 on page 10 of the report of the conference dated June 21, 1948, of which I believe you have a copy. In this respect the situation has changed since Mr. Mallet's letter of June 7th which indicated that only three of the engines being furnished under Contract W33-038 ac-19032 would be instrumented.

The words which we would like to see in the Change Order are as follows:

"Contract W33-038 ac-19032 is hereby amended to incorporate the following as additional requirements under Article 15 of said contract at a total increase in the contract price of . . . . . $8,490.00.

1 - Three (3) of the eight (8) R-4360-43 engines being furnished under Item 1 of Article 15 shall, in addition to being as described in said Item 1, be supplied with complete head and base iron and constantan thermocouples on all cylinders, base and head thermocouple harnesses, and with complete baffle pressure drop instrumentation. The cylinder head and base temperature measuring instrumentation shall be as described in P&WA drawing Inst. R-7875. The baffle pressure drop instrumentation shall be as described in P&WA drawings Inst. 13197, 13198 and 13199. The increase in the unit price for each engine completely instrumented is $1,465.00.

2 - Three (3) of the eight (8) R-4360-43 engines being furnished under Item 1 of Article 15 shall, in addition to being as described in said Item 1, be supplied with complete head and base iron and constantan thermocouples on all cylinders and with base and head thermocouple harnesses. The cylinder head and base temperature measuring instrumentation shall be as described in P&WA drawing Inst. R-7875. The increase in the unit price for each engine partially instrumented is $1,365.00."

I understand that Larson and W. W. Smith are forwarding to you memos which will give you additional information on this subject.

E. C. Grimshaw

ECG:GRS

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6-27-11

In reply please refer to:
GJA:bc Engineering II

July 6, 1948

United States Air Forces Representative
United Aircraft Corporation
Pratt and Whitney Aircraft Division
East Hartford 8, Connecticut

Subject: Qualification Test - R-4360-43 Engine - Contract W33-038 ac-13053

Reference: (a) PWA Ltr. CJA:lms dated 4 June 1948 to USAF Repr., E. Hartford, Conn.
(b) PWA letr. CJA"lms dated 10 May 1948 to USAF Repr., E. Hartford, Conn

Enclosure: (A) 150-Hour Qualification Test Schedule

1. Supplementing references (a) and (b) this contractor wishes to advise that R-4360-43 engine, X-123 is to be reinstated in the Qualification Test program. It is expected that this engine will be ready to start a 150-Hour Qualification test on or about 14 July 1948. It is requested that this test be officially witnessed.

2. The subject test will be conducted at the following ratings:

Military and Take-off	-4300 BHP a 2800 RPM
Normal	-3150 BHP a 2600 RPM

This test will be run in accordance with Specification No. A-7066-D dated 20 April 1948 except the alternate rating of 4000 BHP for Military and Take-off will be eliminated and no anti-detonant will be used. (Reference Paragraph B-4a).

3. The test will be conducted in a cable-suspended torque stand using a Hamilton Standard three-bladed propeller and a constant speed governor. Test stand compressor equipment will be used to supply induction air; exhaust back pressure will be manually controlled.

4. The CHM-2 turbo supercharger will not be used as a compressor supply inasmuch as the General Electric Company has recommended against its use at this time in connection with an official qualification test on the VDT engine. As General Electric point out, their unit has not been subjected to accelerated service life endurance at the factory, and until the results of this testing are evaluated, sustained operation of the type called for in the engine qualification test schedule is not recommended. Apart from this consideration, there is a rather serious problem involved in maintaining an adequate turnover of replacement CHM-2 turbo superchargers for the important B-50C flight installation of the single nacelle VDT engine. It is felt that this program should not be jeopardized by diverting the few available development turbo superchargers for use in connection with an official qualification

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6-27-12

Subject: Qualification Test - R-4360-43 Engine - Contract W33-038 ac-18693

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150-HOUR QUALIFICATION TEST SCHEDULE
R-4360-43 ENGINE

Run No.	Total Time	Hours	Duration of Periods	No. of Periods	BHP	RPM	BSFC	CAT	AMAP	Temp. Cyl. Head	Temp. Oil. Flange	Remarks
1	0-25	12½ 12½	2½ Hours 2½ Hours	5 5	3150 2830	2600 2520	.675 .670	140°F. 140	47" HG. 43	500°F. 500	300°F. 300	
2	25-40	5 10	5 Min. 10 Min.	60 60	4300 Idle	2800 400	.720 --	140 -	59 30	525 -	325 -	
3	40-50	5 5	30 Min. 30 Min.	10 10	4300 865	2800 1680	.720 B.E.*	140 140	59 30	525 -	325 -	Propeller Load
4	50-75	12½ 12½	2½ Hours 2½ Hours	5 5	3150 2520	2600 2420	.675 B.E.*	140 140	47 40	500 500	300 300	
5	75-100	12½ 12½	2½ Hours 2½ Hours	5 5	3150 2210	2600 2310	.675 B.E.*	140 140	47 30	500 500	300 300	
6	100-125	12½ 12½	2½ Hours 2½ Hours	5 5	3150 2630	2600 2430	.675 B.E.*	140 140	47 42	500 500	300 300	
7	125-130	5	5 Hours	1	2630	2400	B.E.*	140	42	500	300	
8	130-145	15	15 Hours	1	1320	1400	B.E.*	140	30	500	300	
9	145-150	5	5 Hours	1	3150	2600	.690	140	47	500	300	

* Best Economy Mixture Strength

Note 1: Maintain 40 PSI oil out pressure on all runs at 60% Normal Rated Power and above.

Engine Ratings: Military and Take-off -4300BHP a 2800 RPM
Normal Rating -3150 a 2600 RPM

C-7-C

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CONSOLIDATED VULTEE AIRCRAFT CORPORATION

FORT WORTH DIVISION
FORT WORTH 1, TEXAS

MLH:GDC:gms:mb/AC-7-FW#4006
13 July 1948

Subject: Contract AC-7 - Engineering Proposal and Cost Estimate of Wind Tunnel Tests of 3/19th Scale Model of the B-36C Center Nacelle

To: Commanding General, Air Materiel Command
Wright-Patterson AF Base, Dayton, Ohio

Attention: MCREOA-2

Via: Chief, Fort Worth AF Procurement Field Office
Government Aircraft Plant #4, Fort Worth, Texas

Reference: (a) Conference between Capt. Walling and R.C. Sebold on or about 28 June 1948

Enclosures: (A) Proposal - Wind Tunnel Tests of a .1565-Scale Model of the B-36C Center Nacelle - FZT-36-033, dated 7 July 1948
(B) Est. Cost Proposal on Wind Tunnel Test .1565-Scale Model of B-36C Center Nacelle, dated 9 July 1948

1. As a part of the development program on the B-36C (VDT) Airplane, Contractor has constructed a 3/19th scale wind tunnel model of the B-36C center nacelle. This model was awaiting shipment to the Wind Tunnel at the time that all work was stopped on the B-36C. At this point, it is estimated that $49,648.07 has been spent on the design and construction thereof. Contractor is of the opinion that it is desirable and worthwhile from the standpoint of both Government and Contractor that a reduced schedule of Wind Tunnel tests be completed with this model in order to obtain information of special value in designing future gas turbine and turbo jet installations. It is proposed that these tests be run.

2. As explained in Enclosure (A), this model incorporates inlets, ducting and general arrangement which is not only applicable to B-36C configuration, but also is typical of [illegible] turbine installations. Both leading edge and flush type inlets are included. The reduced schedule of tests herein proposed will provide the determination of power effects on leading edge inlets which are adjacent to a propeller nose boom and an investigation of the associated boundary layer problems and proposed method of solution. Also, it will afford an unusual opportunity to determine characteristics of flush type inlets located downstream of propellers as well as the effect of angle of attack and power changes on flush inlet recovery and critical mach number.

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CONSOLIDATED VULTEE AIRCRAFT CORPORATION
FORT WORTH DIVISION FORT WORTH TEXAS

Air Materiel Command
Wright-Patterson AFB

AC-7-FW#4006
13 July 1948

3. Contractor's final cost quotation, as set forth in Enclosure (B), shows the total estimated cost of $11,716.82 including 6% fixed fee. When this amount is contrasted with that already spent on this model up to this point and when compared to the estimated cost of the original duct and nacelle model test program ($106,882.38, not including fixed fee), Contractor is of the opinion that the sum of money required to complete this phase is relatively insignificant considering the value of the information to be obtained.

4. Prompt approval of this reduced test program is requested.

CONSOLIDATED VULTEE AIRCRAFT CORPORATION
FORT WORTH DIVISION

M. L. Hicks

M. L. Hicks,
Chief of Contracts

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CONSOLIDATED VULTEE AIRCRAFT CORPORATION
FORT WORTH DIVISION FORT WORTH, TEXAS

Sheet 1 of 1
9 July 1948

Est. Cost of Proposed Wind Tunnel Test
.1565 Scale Model of B-36C
Center Nacelle

	HOURS	RATE	COST	Cost Plus Fee
A. Installation of Model in Tunnel				
Labor				
Tooling Direct	120	1.70	204.00	
Engineering Direct	300	2.00	600.00	
Overhead				
Tooling		90%	183.60	
Engineering		65%	390.00	
Total Installation Cost				1377.60
B. Reports of Wind Tunnel Tests				
Labor				
Engineering	720	2.00	1440.00	
Overhead				
Engineering		65%	936.00	
Total Report Cost				2376.00
C. Other Charges				
Transportation Charges			2100.00	
Total Other Charges				2100.00
D. Use of CVAC Tunnel				
Tunnel Time	80	65.00	5200.00	
Total Cost of Tunnel				5200.00
Total Est. Cost				11053.60
Fixed Fee		6%		663.22
Total Cost Plus Fee				11716.82

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PRINT OFFICE SYMBOL INITIALS AND DATE OF COORDINATION IN APPROPRIATE BLOCK

AMC Form No. 18 Nov 47 (Old AMC Form No. 10-50)

CG COFOR DEPUTY

AIR INSPECTOR

MCREXP-74

PUBLIC INF OFFICE

COMPTROLLER

PERSONNEL & ADM

RESEARCH & DEV

INTELLIGENCE

SUPPLY AND MAINT

PROD & IND MOB PLNG

OTHER

MCREXP-74/JBC/rhk

July 14 1948

Qualification Test, R-4360-43 Engine,
Contract AC-18653

USAF Inspector-in-Charge
Pratt & Whitney Aircraft Division
United Aircraft Corporation
East Hartford 8, Connecticut

1. Reference is made to your letter MCPPXB3/RES/hgm, dated 9 July 1948, on the above subject.

2. It is the recommendation of the Air Materiel Command that the 150-hour endurance test of an R-4360-43 engine as planned by Pratt and Whitney Aircraft Division be witnessed by personnel from your office. In view of major deviations from requirements of an official model test, it is recommended by the Air Materiel Command, Engineering Division, that this test shall not be considered the official 150-hour qualification test on which the acceptance of the R-4360-43 engines will be based. However, much benefit will result at the present time in conducting such a test as proposed by Pratt and Whitney Aircraft Division, inasmuch as the mechanical durability of the engine can be tested.

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3. The following apparent discrepancies are considered to prevent acceptance of this test as the official 150-hour qualification test.

a. The boost control system which is a major and vital component of the engine and as listed in the engine specification cannot be adequately tested under the test conditions described in Paragraph 3 of Pratt and Whitney letter dated 6 July 1948, copy of which was forwarded with your above-referenced letter.

b. Cylinder head temperatures as listed on attached test schedule as proposed by Pratt and Whitney Aircraft Division are over the limits established in the table of guarantees, Page 9, in the engine specification.

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Hq. AMC Ltr, , to AF Insp.-in-Chg., Pratt & Whitney Aircraft Div., subj: "Qualification Test, R-4360-43 Engine, Contract AC-18653."

c. Take-off military and normal ratings of the engine do not agree with the guaranteed ratings as specified on Page 9 of the engine specification.

d. All accessory drives should be adequately loaded either with the exact accessories to be used on the engines in service or with suitable loading devices which will load the drives to the torque limits specified in the engine specification.

4. It is therefore recommended by the Engineering Division of the Air Material Command that this test be run, if the contractor concurs, in accordance with the plan as proposed in the Pratt and Whitney letter of 6 July 1943 and attached schedule of test. Then, based on the results of this test, an official qualification test can be run by the contractor at a later date with the complete boost control system, CH-2 turbosupercharger, flight propeller, governor, aircraft (engine driven) accessories mounted on engine, revised ratings, revised cylinder temperatures, etc. as determined by this 150-hour development endurance test as proposed by the contractor. Also, the engine specification and contract should be amended to cover the revised guaranteed powers, cylinder temperatures, etc. before the 150-hour official qualification test.

BY COMMAND OF GENERAL McNARNEY:

for R. J. MINTY
Colonel, USAF
Chief, Power Plant Laboratory
Engineering Division

Copy to:
MCPPIE, Mr. R. A. Bittner
MCPPIL, Mr. A. L. Johnson
MCREXP-9, Mr. V. E. Newman
MCREXP-6, Mr. Bodemuller

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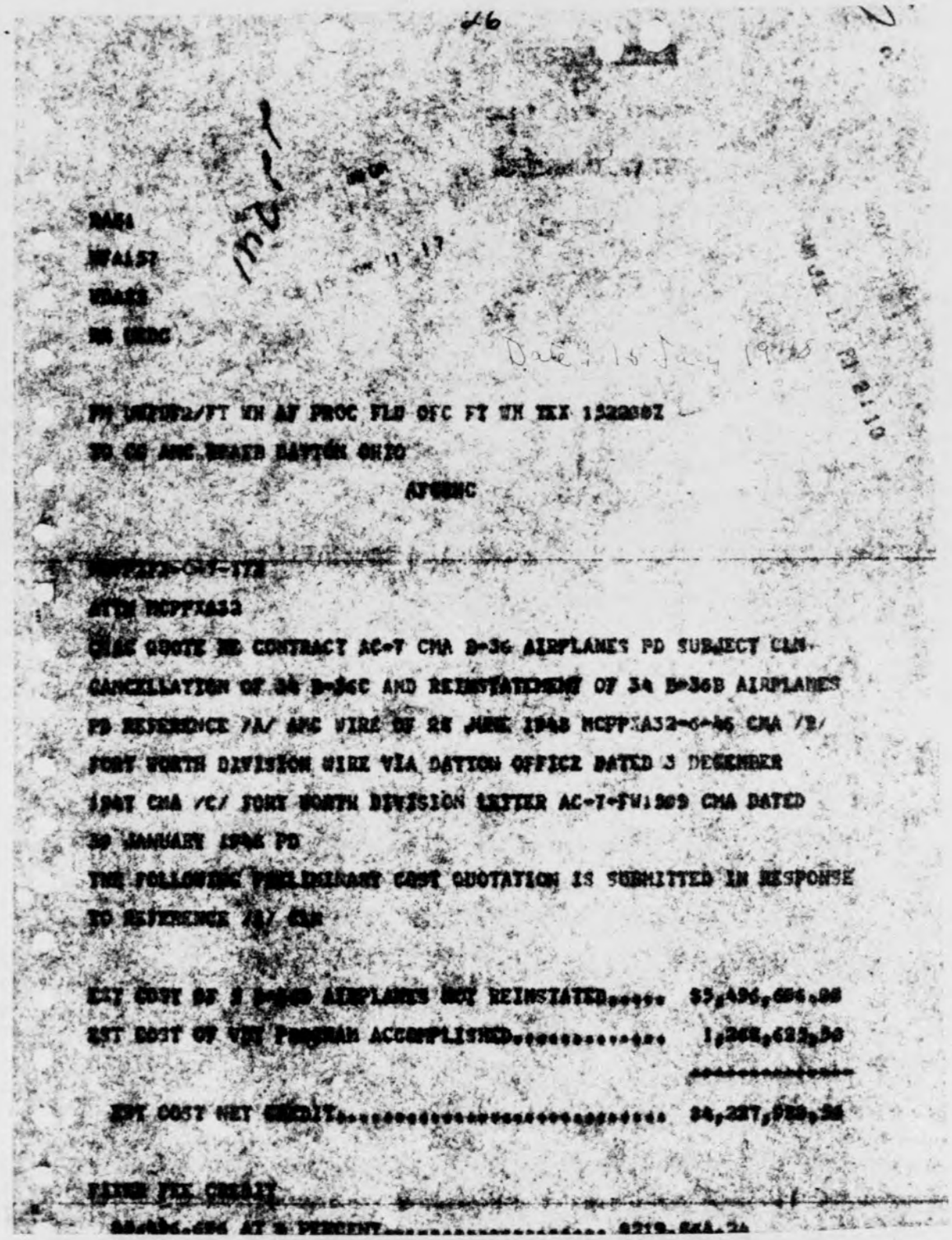

DARA
WWASF
WDAFD
HQ USAC

Date: 15 July 1945

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TO CG AMC WRAFB DAYTON OHIO
AFWRMC

[illegible]
AFDH MCPPA32
CHAC QUOTE HQ CONTRACT AC-7 CMA B-36 AIRPLANES PD SUBJECT CAN-
CANCELLATION OF 34 B-36C AND REINSTATEMENT OF 34 B-36B AIRPLANES
PD REFERENCE /A/ AMC WIRE DF 28 JUNE 1945 MCPPA32-6-46 CMA /B/
FORT WORTH DIVISION WIRE VIA DAYTON OFFICE DATED 3 DECEMBER
1941 CMA /C/ FORT WORTH DIVISION LETTER AC-7-FW1309 CMA DATED
30 JANUARY 1946 PD
THE FOLLOWING PRELIMINARY COST QUOTATION IS SUBMITTED IN RESPONSE
TO REFERENCE /B/ CMA

EST COST OF 3 B-36B AIRPLANES NOT REINSTATED..... $5,496,684.98
EST COST OF THE PROGRAM ACCOMPLISHED..... 1,268,632.50

EST COST NET CREDIT..... $4,227,952.36

LESS FEE CREDIT
[illegible] AT 5 PERCENT..... $219,[illegible]

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1,868,683.50 AT 6 PERCENT..... 76,117.83 148,746.71

[illegible] EST COST AND FIXED FEE CREDIT..... 84,371,727.21

CONTRACTOR ASSURES THAT AMC INTENDS TO RETAIN ON THE CONTRACT THE FUNDS HEREIN BEING MADE AVAILABLE CNA PARTICULARLY IN VIEW OF SUBSTANTIALLY INCREASED COSTS RELATING TO GEB PROGRAM AND OTHER CHANGES WHICH LIKELY WILL ARISE BEFORE COMPLETION OF THE B-36 PROGRAM PD PROMPT RECEIPT OF CCN COVERAGE AS PROVIDED IN REFERENCE [illegible] IS REQUESTED PD HQRS/OTZ

ABOVE ESTIMATED CREDIT APPEARS REASONABLE BASED UPON INVESTIGATION BY THIS OFFICE PD A DETAILED CHECK OF THE FINAL COST QUOTATION AND SUPPORTING COST BREAKDOWNS WILL BE MADE WHEN SUCH QUOTATION IS SUBMITTED AND FURTHER COMMENTS AS TO THE CREDIT INVOLVED WILL BE FORTHCOMING AT THAT TIME PD EARLY CCN COVERAGE IS REQUESTED PD [illegible]

[illegible] AND PD LAST LINE SHLD READ CREDIT INVOLVED EPT INVOLVED

1614302

BK

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In reply please refer to RHB:rij-Eng.

PRATT & WHITNEY AIRCRAFT

DIVISION OF UNITED AIRCRAFT CORPORATION
EAST HARTFORD 8, CONNECTICUT, U.S.A.
CABLE ADDRESS AIRCRAFT

ARMY OFFICE
APPROVED
CONCURRED IN
NO COMMENT 27/7/48

July 16, 1948

JUL 19 1948 03

VIA: United States Army Air Force Representative

To: Commanding General
Air Materiel Command
Wright-Patterson Air Force Base
Dayton, Ohio

Attention: MCPPXE4

Subject: Alternate Control for R-4360-43 Engine

1. This is further to your Mr. R. E. Hoffman's conversation with our Mr. W. A. Parkins. We have reviewed the design of the proposed Eclipse control for the R-4360-43 engine and it is our opinion their proposed design is sound and reasonable and believe that the Eclipse control would be a good alternate for the General Electric control presently being developed as part of the R-4360-43 engine. This Division concurs with the Air Materiel Command's thought that it would be wise to have a second source VDT control available for possible service use.

UNITED AIRCRAFT CORPORATION
Pratt & Whitney Aircraft Division

R. H. Begg

R. H. Begg
Piston Engine Development Engineer

From: BAR, East Hartford, Conn.
To: AMC, Wright-Patterson AFB
Dayton, Ohio

1. Forwarded

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ATSC Form No. 70-18A
(7 Dec. 44)

[R] FORCES, AIR MATERIEL COMMA[ND]
Fort Worth AF Procurement Field Office
Government Aircraft Plant No. 4
Fort Worth 1, Texas

MEM:EJB:MAD:bc

20 July 1948

W-53842
Master Serial No.

CONTRACT CHANGE NOTIFICATION NO. R (12h) 341
Mod. Ltr. No. CCN. No.

TO: Consolidated Vultee Aircraft Corporation
Fort Worth Division
Fort Worth 1, Texas

Purchase Order No.
Contract No. W 33-038-AC-7

Pursuant to the Articles of the contract relating to changes, the above named Contractor is hereby authorized and directed to accomplish the changes listed below in respect to the articles called for under said contract as the same has heretofore and may hereafter be amended; subject, however, to the terms and provisions set forth on the reverse side hereof.

"THIS CCN SUPERSEDES AND CANCELS CCN 237 (W-52610) DATED 4 DEC. 1947 AND CCN 241 (W-52329) DATED 10 DEC. 1947. THE CONTRACTOR SHALL MANUFACTURE A TOTAL OF 95 B-36 AIRPLANES AS FOLLOWS: 22 B-36A AIRPLANES AND 73 B-36B AIRPLANES IN LIEU OF 22 B-36A AIRPLANES, 39 B-36B AIRPLANES AND 34 B-36C AIRPLANES, AUTHORIZED BY ABOVE REFERENCED CCN'S."

1948 JUL 23 PM 12:33
PROCUREMENT DIVISION
MAP UNIT

PROPERTY CLASS 0102

Page 1 of 1 Page(s)

Authority for Issuance
[redacted]
Dated 19 July 1948
Wright-Patterson Air Force
Base

[redacted]
Contracting Officer

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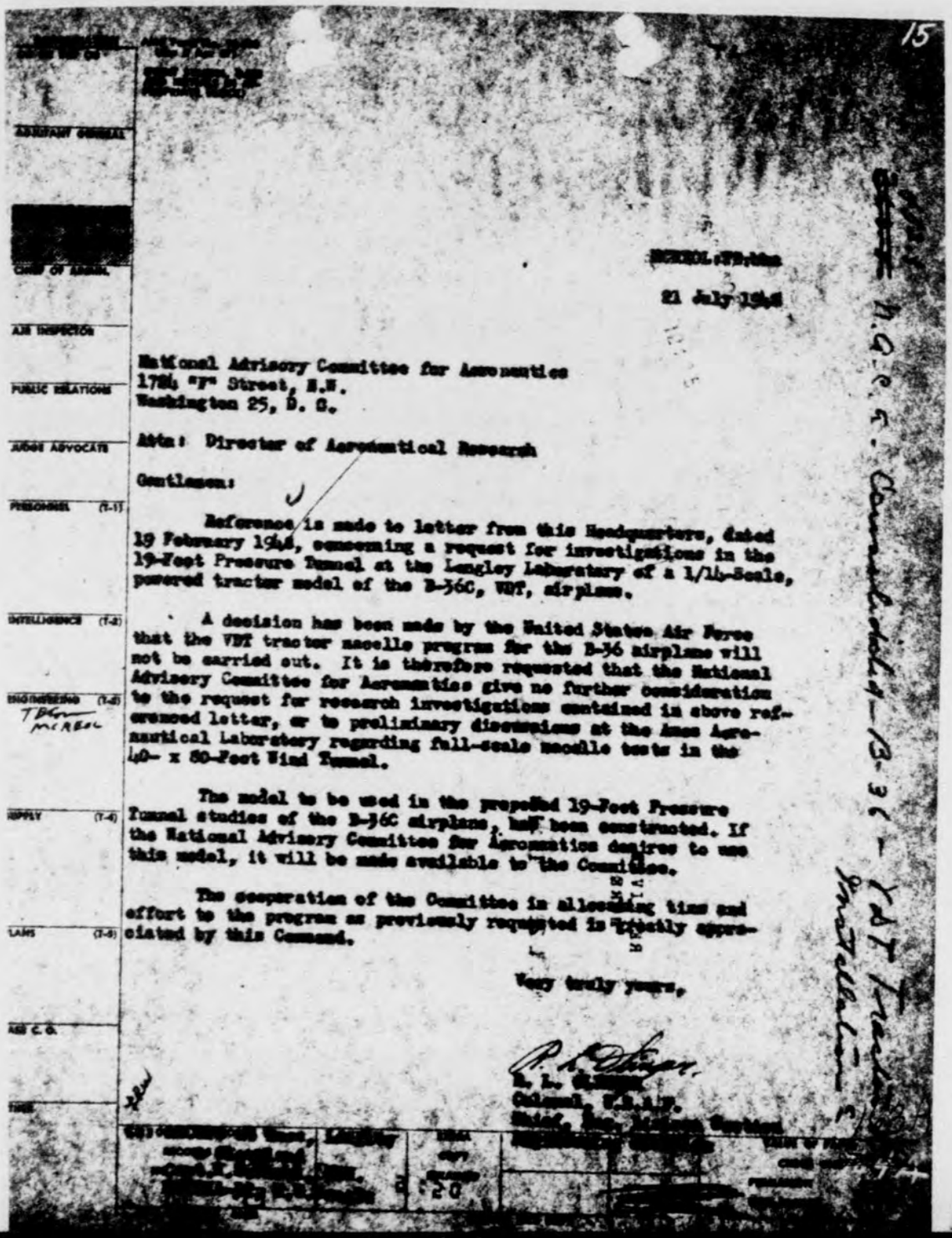

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21 July 1948

National Advisory Committee for Aeronautics
1724 "F" Street, N.W.
Washington 25, D. C.

Attn: Director of Aeronautical Research

Gentlemen:

Reference is made to letter from this Headquarters, dated 19 February 1948, concerning a request for investigations in the 19-Foot Pressure Tunnel at the Langley Laboratory of a 1/12-Scale, powered tractor model of the B-36C, VBF, airplane.

A decision has been made by the United States Air Force that the VBF tractor nacelle program for the B-36 airplane will not be carried out. It is therefore requested that the National Advisory Committee for Aeronautics give no further consideration to the request for research investigations contained in above referenced letter, or to preliminary discussions at the Ames Aeronautical Laboratory regarding full-scale nacelle tests in the 40- x 80-Foot Wind Tunnel.

The model to be used in the proposed 19-Foot Pressure Tunnel studies of the B-36C airplane, has been constructed. If the National Advisory Committee for Aeronautics desires to use this model, it will be made available to the Committee.

The cooperation of the Committee in allocating time and effort to the program as previously requested is greatly appreciated by this Command.

Very truly yours,

0766

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AMC Form No. 10-7
(Rev 1 Apr 48)

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CG, CO OR DEPUTY

AIR INSPECTOR

MCPPIE4

PUBLIC INF. OFFICE

COMPTROLLER

PERSONNEL & ADM.

RESEARCH & DEV.*

INTELLIGENCE

SUPPLY AND MAINT.

PROC. & IND. MOB. PLNG.*

OTHER

Wright-Patterson Air Forde Base
Dayton, Ohio

MCPPIE4:RAB:glg
21 July 1948

SUBJECT: Amendment to P.O. 45-22066-P

TO: Bureau of Aeronautics
Washington 25, D. C.

Attn: Section AER-C-25
Mr. K. Sargent

1. Confirming recent phone conversation between Major Frankel, Mr. K. Sargent of the Bureau of Aeronautics and Mr. R. Bittner of Air Material Command, steps are being taken to issue an amendment to Purchase Order 45-22066-P changing the quantity of eight (8) prototype and two-hundred-thirteen (213) production R-4360-51 engines plus spare parts back to a quantity of three-hundred-twentysix (326) R-4360-41 engines plus spare parts. It is desired that action be taken to stop all work at Pratt & Whitney on the R-4360-51 engine and inform Pratt & Whitney that a quantity of two-hundred-four (204) installation plus one-hundred-twenty-two (122) spare R-4360-41 engines at $55,885.34 each plus spare parts equal to $2,513,552.38 will be procured.

2. All possible action will be taken to expedite issuance of the above amendment at the earliest possible date.

FOR THE COMMANDING GENERAL:

V. O. HUSTON
Colonel, USAF
Chief, Aeronautical
Equipment Section
Procurement Division

cc: Bur. of Aero. Rep. - P&W
USAFIEC - P&W - R. E. Slade
P&W - Hugh Gosselin

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In reply please refer to RHB:rij-Eng.

PRATT & WHITNEY AIRCRAFT

DIVISION OF UNITED AIRCRAFT CORPORATION
EAST HARTFORD 8, CONNECTICUT, U.S.A.
CABLE ADDRESS: AIRCRAFT

July 22, 1948

ARMY OFFICE
APPROVED
CONCURRED IN
NO COMMENT 7-30

VIA: United States Army Air Force Representative

To: Commanding General
Air Materiel Command
Wright-Patterson Air Force Base
Dayton, Ohio

ac-18653

Attention: MCPPXE4

Subject: Qualification Test - R-4360-43 Engine - Contract W33-038 ac-18653

Reference: (a) USAF East Hartford RES/hgm letter dtd 19 July 1948 forwarding Wright-Patterson AFB letter, MCREXP-74/ JBC/rhk, dated 14 July 1948.

1. In response to reference (a), we too prefer to run the official qualification test as required by the subject contract with aid of a turbosupercharger such as will be used with the engine in service. Our test equipment is set up to employ such a turbosupercharger and if, as we expect, it is properly matched to the engine, it no doubt will simplify the running of the test.

2. On the other hand, we are under considerable pressure from the authorities in Washington to conclude the development of the subject engine and to start producing them in quantities. We released the Bill of Material for production engines last May and we are obligated to produce engines in production quantities July 1949 despite the fact that the Bill of Material is not yet fixed by a qualification test approved by the Air Materiel Command.

3. We also find ourselves in the position of having expended on this development all of the money provided in the contract price. Therefore, from this time forward the development must be paid for out of Pratt & Whitney Aircraft funds. This is another reason why we are eager to conclude the development at an early date.

4. We are not obligated by the terms of our contract to conduct the test with the CHM-2 turbosupercharger and in view of the foregoing, we don't believe that we should delay the test pending the receipt of a suitable CHM-2 turbosupercharger. As a matter of fact, the qualification test is already in progress and we don't know when we will receive a CHM-2 turbosupercharger that is suitable for conducting the qualification

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test. If the test now under way fails and it is necessary to conduct another test, and if at that time the development of a CHM-2 turbosupercharger has progressed to a point where it is capable of running a 150-hour qualification test, we will be pleased to use it.

5. Like running with the CHM-2 turbosupercharger, we prefer to conduct the qualification test at the cylinder temperature limits set forth in the contract as they make the requirements of the test less severe. We proposed changing to the higher temperature limits only after having been severely criticized by Air Force representatives for failing to meet the estimated cooling data contained in one of our early reports on the performance of the subject engine.

6. Water injection equipment was removed from the Bill of Material because it was found unnecessary. Obviously, we can still employ water injection but when it accomplishes nothing more than to complicate the mechanism and to add to the cost and weight of the engine, we can't recommend its use.

7. Our engine specification excludes the boost control from the basic engine Bill of Material and sets forth a separate test for it. Yet, if delays were not involved and we had a CHM-2 turbosupercharger, we would be pleased to use it for control of the engine during its qualification test.

8. Likewise, we do not feel obligated to run with the flight propeller and governor contemplated for the B-50C airplane or with the engine attached accessories employed in that airplane so long as they hold up the progress of the development. We believe that if a qualification test run in the manner proposed in reference (a) is considered essential by the Air Materiel Command, it should be a separate undertaking and the subject of another contract.

UNITED AIRCRAFT CORPORATION
Pratt & Whitney Aircraft Division

R. H. Begg

R. H. Begg
Piston Engine Development Engineer

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TO BEGLC/PRATT AND WHITNEY AIRCRAFT DIV UNITED AIRCRAFT CORP E HARTFORD CONN

INFO BEGLX/BAR E HARTFORD

UEDC/AMC WPAFB DAYTON ATTN MCPPX54

NAVY CPNC

ADVANCE NOTICE OF PENDING AMENDMENT TO CONTRACT NOW3 8322 GIVEN BY BUAER TWX 0322192 FEBRUARY 1946 IS HEREBY MODIFIED ON ADVICE FROM AIR MATERIAL COMMAND AS FOLLOWS- EIGHT PROTOTYPE R-4360-51 ENGINES AND TWO HUNDRED THIRTEEN PRODUCTION R-4360-51 ENGINES PLUS SPARE PARTS ARE TERMINATED AND REPLACED BY A QUANTITY OF TWO HUNDRED FOUR INSTALLATION AND ONE HUNDRED TWENTY-TWO SPARE R-4360-41 ENGINES AT $53'825.34 EACH PLUS SPARE PARTS EQUAL TO $2'513'552.38 BY APPROPRIATE AMENDMENT TO COVER ABOVE WILL BE WRITTEN IN THE NEAR FUTURE. IN THIS UNDERSTANDING IT IS REQUESTED THAT YOU STOP ALL WORK AND TERMINATE ALL SUBCONTRACTS IN CONNECTION WITH MODEL R-4360-51 ENGINES TO THE EXTENT NECESSARY TO GIVE EFFECT TO THIS CHANGE AND SUBSTITUTE THE ABOVE QUANTITIES OF R-4360-41 ENGINES THEREFORE X CONTRACTING OFFICER BUREAU OF AERONAUTICS

CFN 2333 0322192 1946 R-4360-51 R-4360-51 R-4360-41 $53'825.34 $2'513'552.38 R-4360-51 R-4360-41

2811062 JULY BEPE

R-2206-P

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B-36 Airplane Program.

MCREA-2 [redacted] 28 July 1948 1.
Attn: Mr. H. S. Rippeon.

1. This office has been advised verbally by General H. H. Wolfe that the B-36C Airplane program has been cancelled in its entirety and that all work pertaining to it be discontinued. Consequently, all data, requests for action from this office, specifications, etc., should be considered inactive and may either be returned to this office for disposition or retained by the holder, if desired.

[redacted] E. SCHANTZEL,
Colonel, USAF,
Chief, Aire. & Missiles Sec.,
Procurement Division.

Ref: [redacted]
Tel: [redacted]
File: MAC

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AMC Form No. 10-7
(Rev 1 Apr 48)

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PROC. & IND. MOB PLNG.

OTHER

WRIGHT-PATTERSON AIR FORCE BASE

MCPFXE4/RAB/bl
3 August 1948

SUBJECT: Contract W33-038 ac-18653
Qualification Test of R-4360-43 Engine

THRU: USAF Inspector In Charge

TO: Pratt & Whitney Aircraft Div.
United Aircraft Corporation
East Hartford 8, Connecticut

REF: (a) AMC Letter dated 14 July 1948, MCREXP-74/JPC:rhk

(b) Pratt & Whitney Aircraft Letter dated 22 July 1948, RmB:rij-Eng.

1. This will confirm the conference held at the AMC on 29 July 1948 between the following regarding referenced letters: Messrs. Ross Hegg, P & W, Don Barrett, P & W, Charles Lancaster, AMC, R. McLane, AMC, W. Brown, AMC, R. Dungan, AMC, and R. A. Rittner, AMC.

2. The AMC desires to supersede and amend referenced letter (a) as follows:

a. The availability of production components such as the CWN-2 Turbo Supercharger, Flight Propeller, Aircraft (engine driven) Accessories, etc. were investigated and discussed. Since all of the component items required for the R-4360-43 Engine installation in the B-50C Airplane are of either a developmental nature and not available at this time, or the exact accessory requirements are not know, it will not be possible for Pratt & Whitney to comply with AMC's previous request without unduly delaying the R-4360-43 engine qualification test.

b. Before the start of the present qualification test, this test should have been discussed and approval obtained as to the conditions under which the test would be conducted. The AMC voiced no objections to previous tests under subject contract, as they were preview development tests and did not have official status. At the present,

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AMC 6 August 1948

Subj: Contract W33-038 ac-18653, Qualification Test of R-4360-43 Engine

a qualification test is being conducted which is not in exact accordance with the engine model specifications. This should have been discussed and approval given prior to the qualification test for the use of higher cylinder temperatures and the non-use of water injection. These two items will require the revision of the engine model specifications, and a contractual change.

c. In order to establish a bill of materials for the prototype and production R-4360-43 Engines, and not delay this program, it will be satisfactory to conduct the qualification test without a Flight Propeller, CH4-2 Turbo Supercharger, Boost Controls, Aircraft (engine driven) Accessories, etc. However, all accessory drives should be adequately loaded with accessories or with suitable loading devices, which will load the drives to the torque limits specified in the engine specifications.

d. It is well known that the AMC considers it essential that, whenever possible during qualification tests, the equipment that will be used in the aircraft installation be used during qualification tests in order that a true evaluation of the engine can be obtained.

e. The AMC desires Pratt & Whitney to submit a proposal for the running of another qualification test of the R-4360-43 Engine with a Flight Propeller, Boost Controls, CH4-2 Turbo Supercharger, Aircraft (engine driven) Accessories, etc., at a later date, when the above components are available.

FOR THE COMMANDING GENERAL:

O. M. Scott Maj USAF

V. G. HUSTON
Colonel, USAF
Chief, Aeronautical
Equipment Section
Procurement Division

cc: BAR, Pratt & Whitney,
E. Hartford, Conn.

MCRKIP-74.

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GEM:bo Engineering II TC-42-15

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ARMY OFFICE
APPROVED
CONCURRED IN
NO COMMENT 8-6-48

PRATT & WHITNEY AIRCRAFT

DIVISION OF UNITED AIRCRAFT CORPORATION

EAST HARTFORD 8, CONNECTICUT, U.S.A.

CABLE ADDRESS "AIRCRAFT"

August 5, 1948

VIA: United States Air Force Representative, East Hartford 8, Connecticut

To: Commanding General
Air Materiel Command
Wright Field
Dayton, Ohio

Attention: TSBPE3B1

Subject: Contract W33-038 ac-18653 - R-4360 V.D.T. Engine - Article 15, Item 5
Monthly Progress Report

Reference: (a) PWA letr. GEM:bo Engineering II dated 2 July 1948 to CG, AMC, Wright Field, Dayton, Ohio, via: USAF Representative, East Hartford, Conn.

Enclosure: (A) Three (3) copies of Pratt & Whitney Cooling Curves C-21 and C-23.

1. The following summarizes the work accomplished under Contract W33-038 ac-18653 subsequent to the last monthly progress report submitted by reference (a):

(a) Total running time on eleven R-4360-C engines has been increased from 5179 hours to 5526 hours. This total includes 2930 hours of VDT type engine operation.

(b) The official qualification test including dives was completed today. The only repair made during the running was the replacement of one low tension ignition condenser. The exhaust system was not touched throughout the test. The engine was equipped with the new cylinders which have shown up so well cooling-wise.

(c) R-4360 engine No. X-109 completed a creditable 150-hour qualification test and has substantiated engine durability at the VDT ratings. A crack at the rear oil transfer bearing hole was noted in the propeller shaft which had in excess of 1000 hours of testing. In order to improve durability, the propeller shaft design has been revised slightly in the region of the oil transfer passages.

(d) An endurance program will be resumed in approximately one week on a new five-piece crankshaft in R-4360-43 engine No. X-114.

(e) Deep-finned cylinders will be installed on R-4360-43 engine No. X-156 for maximum cruise power, best economy spark advance operation. In the meantime, cruise endurance will continue on an improved version of the Pratt & Whitney exhaust system.

(f) As a further step towards improving fuel economy, a calibration of

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To: Commanding General, Air Materiel Command, Wright Field Dayton, Ohio - TSBPE3B1

Subject: Contract W33-038 ac-18653 - R-4360 VDT Engine - Article 16, Item 5
Monthly Progress Report

R-4360-43 engine No. X-109 equipped with high compression ratio pistons is scheduled to start in approximately two weeks.

(g) The initial phase of a cooling program on R-4360-43 engine No. X-101, with deep-finned cylinders, has been completed. Pratt & Whitney estimated cooling Curves Nos. C-21 and C-23 based on the sea level calibration of the engine are enclosed for the information of the Air Materiel Command. The contractor recommends that Curve C-21 be used for performance calculations at the present time. Curve C-23 reflects improved cooling to be realized at the higher cylinder temperatures and accordingly is intended as preliminary information only until additional experience is built up with cylinder components operating at the increased temperature limits.

(h) The single nacelle VDT installation (R-4360-43 engine No. X-151) has completed 17 flights accounting for a total time in the air of 31 hours, 15 minutes. During Flight 17 the airplane was flown to 38,500 feet, at which altitude engine performance was satisfactory. Modifications to the cowling to improve the turbo compressor inlet are in process. This rework is a further step to eliminate a roughness phenomenum in flight which may be caused by stall at the entrance of the compressor. In addition to this problem the immediate flight program will include further investigation of acceleration characteristics.

(i) A problem of parts availability will delay completion of the modernization program on R-4360-43 engine No. X-152 until approximately the second week in September. Every effort will be made to improve this date, if possible.

UNITED AIRCRAFT CORPORATION
Pratt & Whitney Aircraft Division

G. E. Meloy
G. E. Meloy
Project Engineer

GEM:bc
Enc.

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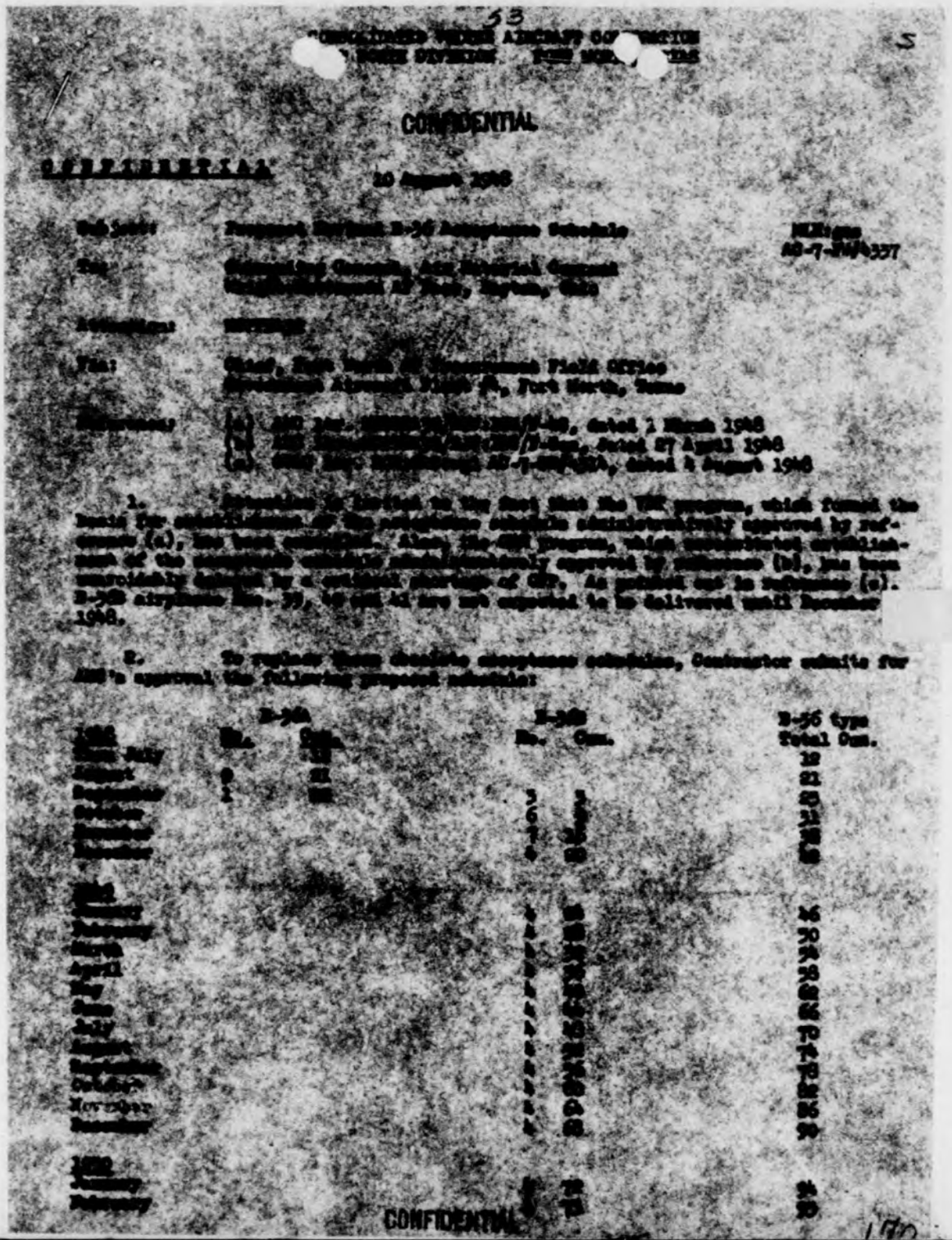

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CONSOLIDATED VULTEE AIRCRAFT CORPORATION
FORT WORTH DIVISION FORT WORTH, TEXAS

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Commanding General
[illegible]

AC-7-[illegible]
10 August 1943

3. Fulfillment of the above schedule for 600 airplanes is based upon presently known GFE availability information while completion of continuing program of four airplanes per month commencing with B-24 No. 42 is conditioned upon receipt of all GFE for production installation. Another setback in receipt of GFE or the GFE program or failure of the Government to furnish GFE for operational modification on continuing B-24 program may necessitate further revision in this proposed schedule.

4. It is requested that a Change Order be issued establishing the foregoing schedule for completion of the B-24D program, or in the alternative, modification approval be forwarded at an early date.

CONSOLIDATED VULTEE AIRCRAFT CORPORATION
FORT WORTH DIVISION

M. L. Hicks

M. L. Hicks,
Chief of Contracts.

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Subj: Purchase Requests Nos. 56256 and 56253

To - MCPPD
Attn: Col. Whitmell T. Rison

From - MCPPXE4 11 Aug '48 Comment No. 1

1. Subject Purchase Requests are being held in this office due to the non-availability of Fiscal Year 1949 Project 110-G Funds.

2. Purchase Request 56256 covers the instrumentation of six (6) R-4360-43 Engines. These engines are prototypes and will be delivered starting December 1948. If funds are not available for the instrumentation of these engines, then the flight testing program of the B-50C airplane will be seriously retarded, plus the fact that the information that should have been obtained will not be obtainable, and may affect both the R-4360 V.D.T. and B-50C Programs. These engines must have instrumentation prior to delivery to Boeing because if instrumentation is put on at a later date it will become necessary to almost disassemble each engine to provide for the required instrumentation.

3. Purchase Request 56253 covers the modification of 1178 Eclipse Automatic Power Controls. This modification is necessary to secure a Boost Control with 75% faster action, and a Control which will respond in a more positive and satisfactory manner. Modified Automatic Power Controls are necessary to provide the B-50 Airplane with satisfactory power plant operation, both at low and high altitudes. These modified Controls were to go into production aircraft at Boeing, Seattle, and the modification line at Boeing, Wichita, Kansas. In the event modified Controls are not available, the B-50 airplane will be an operationally limited airplane due to unsatisfactory engine and turbo operation. The modification of the Eclipse Automatic Power Control is a "must" item if satisfactory performance is to be derived from the B-50 airplane. Action has been taken to segregate all defective Controls for return to Pratt & Whitney for modification.

4. Since it is essential that funds be made available for the above Purchase Requests, information is desired, that since Fiscal Year 1949 Project 110-G Funds are not available, can other funds be made available to implement the above projects?

V. G. Huston
Colonel, USAF
Chief, Aeronautical
Equipment Section
Procurement Division

R. A. Bittner/ghs
Ext. 2-9207
Bldg. 11A
Rm 278

To - MCPPXE
Thence to: MCPPXE4

From: MCPPA 31 Aug 48 Comment No. 2

1. Issuance of TWX or other authority to proceed with the procurement covered by PR 56253 and 56256 could not be given for the reason that Project 110-G funds, against which these procurements are to be obligated, have not been released.

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o - MCPPXE From - MCPPA 31 Aug 48 Comment No. 2 (cont'd)

2. In the meantime, this procurement, as well as many other similar procurements, were discussed with Office, Chief of Staff, USAF, and the situation explained to them. That office was fully aware of the situation and appreciated the fact that serious delays were being encountered due to the non-release of funds, but stated no obligations should be made until the funds have been released. The total requirements to date on Project 110-G funds have been presented to Office, Chief of Staff, USAF, and it is anticipated that release of the funds will be forthcoming within the next few days. In addition to requesting release of funds for the projects approved to date, recommendations have been made for the release of approximately $11,000,000 to cover day to day operations which require the use of Project 110-G funds. It is anticipated that such approval will be obtained and that by utilizing similar procedure of obtaining at stated periods release of funds for day to day operations, no further delays will be encountered.

3. In the meantime, notwithstanding the fact that Project 110-G funds have not been released, and owing to the critical situation with respect to PR 56253 and 56256, Major C. M. Scott of your Section was authorized by telephone by Mr. Donnelly yesterday to send TWX's to the two contractors concerned, instructing them to proceed with the work covered by these two PR's. In the meantime, the copies of the TWX's, which are utilized by Budget & Fiscal Office for obligation purposes, will be withheld and not sent to that activity for official obligation until formal release of the funds is received.

W. E. DONNELLY
Assistant to Chief, WED:haw
Procurement Division 2-2215

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FORT WORTH AF PROCUREMENT FIELD OFFICE
AIR MATERIEL COMMAND
GOVERNMENT AIRCRAFT PLANT NO. 4
FORT WORTH 1, TEXAS

IN REPLY ADDRESS BOTH AIR VELOPT AND COMMUNICATION TO OFFICER, FORT WORTH AF PROCUREMENT FIELD OFFICE, AF, TEXAS

16 August 1948

MCPFXP1.RBW

SUBJECT: Proposed Revised B-36 Acceptance Schedule

TO: Commanding General
Air Materiel Command
Wright Patterson AF Base
Dayton, Ohio

ATTN: MCPFXA3, Lt. Col. T. P. Gerrity

Refs: CVAC Ltr. AC-7-[illegible], dated 10 August 1948

1. Inclosed Consolidated Vultee Aircraft Corporation's letter, AC-7-[illegible], sets forth schedule as regards the remainder of the B-36 Program. This office concurs with the schedule as set forth by CVAC except that it is believed entirely possible to close out the B-36 Program in November 1949. This would change the contractor's schedule as follows:

1948	B-36A Mo.	B-36A Cum.	B-36B Mo.	B-36B Cum.	B-36 type Total Cum.
Thru July		12			12
August	9	21			21
September	1	22	3	3	25
October			6	9	31
November			7	16	38
December			4	20	42
1949					
January			4	24	46
February			4	28	50
March			4	32	54
April			4	36	58
May			4	40	62
June			5	45	67
July			5	50	72
August			5	55	77
September			6	61	83
October			6	67	89
November			6	73	95

Concur to general

per letter 8/20/48

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TO: CG, AMC, Wright Patterson AF Base, Dayton, Ohio
ATTN: MCPPIA3, Lt. Col. T. P. Gerrity
SUBJECT: Proposed Revised B-36 Acceptance Schedule

It is suggested that the G. F. E. Program should be examined closely in order to ascertain if the above schedule can be properly supported. It is believed that late receipt and out-of-station installations of G.F.E. components would offset any advantage to be gained by attempting to close out the program in November 1949 rather than February 1950 as set forth by the contractor.

2. Consideration should also be given to the B-49 schedule requirements in order to assure personnel availability for this later program. In order to meet the date of January 1950 for delivery of the first B-49 airplane it is anticipated that detailed tool engineering will have to be one hundred percent (100%) complete before January 1949, and in addition detailed tools should be approximately fifty percent (50%) complete by January 1949. If engineering can be made available by Northrup in order to meet these requirements it is believed that a sufficient number of trained personnel can be held on the B-36 Program to take care of the needs for the B-49 Program. However, should it be determined that Northrup cannot meet the above engineering schedule, consideration should be given to extending the B-36 Program to perhaps an even later date than February 1950 as proposed by the contractor. This suggestion is made in view of the fact that CVAC is at present the only company in this area needing the services of skilled aircraft workers. Therefore, there is no pool in this area from which future hiring can be effected. The loss of trained personnel through the early close of the B-36 Program would undoubtedly cause a time delay in the B-49 Program and a considerable expenditure in training new personnel at a later date. In the event that Northrup is able to accomplish the B-49 engineering as required, it is not believed that the personnel problem will be largely affected by completing the B-36 Program in November 1949 rather than in February 1950 as proposed by CVAC, since manhour requirements for the B-36 Program in December 1949, January and February 1950 would be relatively small.

3. With the above conditions being considered it is recommended that the B-36 Program should be completed in November 1949.

Beverly H. Warren
BEVERLY H. WARREN
Lt. Colonel, USAF
Chief

Incl:
CVAC Ltr. FW-4337

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PRATT & WHITNEY AIRCRAFT

DIVISION OF UNITED AIRCRAFT CORPORATION
EAST HARTFORD 8, CONNECTICUT, U.S.A.
CABLE ADDRESS "AIRCRAFT"

August 18, 1948

Commanding General
Air Materiel Command
Wright-Patterson Air Force Base
Dayton, Ohio

Attention: MCPPXE4

Subject: Request for Change Order to Contract W33-038 ac-18653

1. In view of the recent decision by the Air Force with respect to the R-4360-51 program, it is requested that a Change Order to subject contract be issued to authorize the Contractor to convert the XR-4360-39 engine specified under Item 4 of Article 15, which has been converted to an R-4360-51, to an R-4360-43 engine.

2. This engine, when converted to an R-4360-43, will be similar to the two R-4360-43 engines specified in Item 1 of Article 15 and accordingly the 150-hour qualification test will not be required for this engine. The engine will be delivered with a high tension ignition system.

3. It is planned that this engine, when converted to an R-4360-43, will be available for installation in the B-50C airplane as a modernized replacement for the R-4360-43 engine currently being flight tested.

4. It is our understanding that this change in work is satisfactory to the Engineering Personnel at the Air Force and we are agreeable to doing this additional work at no change in the total contract price. We estimate that the conversion of this engine to an R-4360-43 can be accomplished on or before November 1, 1948.

5. In order that this additional work may proceed without delay, it is requested that the Change Order or other authorization from the Contracting Officer be furnished as soon as possible.

UNITED AIRCRAFT CORPORATION

L. C. Mallet

L. C. Mallet, Assistant General Manager
Pratt & Whitney Aircraft Division

A+R 9-13-48

LCM:sg
cc: U.S.A.F. Representative

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attached 9/15/48
TC-42-157

#9

Change Order to Contract W33-038 ac-18653

Contract W33-038 ac-18653, as amended, is hereby further amended as follows at no change in the total contract price:

1. Delete Item 4 now appearing in Article 15 of said contract and substitute the following in lieu thereof:

"Item 4 - Conversion of one (1) Government-owned XR-4360-39 engine to an R-4360-43 engine in accordance with Contractor's Engine Model Specification Number A-7065B dated 24 June 1947 except that the 150-hour qualification test as called for under Paragraph E-4a is not required and except that a high tension ignition system shall be furnished with the engine."

2. Change the delivery requirements set forth in Paragraph (g) of Article 16 of said contract for the work to be done under Item 4 of Article 15 of said contract to read "on or before November 1, 1948."

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TE.32.440

BOEING AIRPLANE COMPANY

SEATTLE DIVISION

SEATTLE 14, WASHINGTON

AFPR
File No. 19562

AUG 18 1948

IN REPLY REFER TO REFERENCE NO

E-731-296

To: Commanding General
Air Materiel Command
Wright-Patterson Air Force Base
Dayton, Ohio

ATTENTION: MCPPXA31

Through: Air Force Plant Representative
c/o Boeing Airplane Company
Seattle Division
Seattle 14, Washington

Subject: Contract AC-19562, Model B-54A Airplanes, Increase in Horsepower for R-4360-43 (VDT) Engines

Reference (a) MCPPXA31/WTR/jb/F-PSA Materiel letter dated 10 May, 1948 to Bac.

1. The reference letter requests the contractor's comments on the effect of a possible increase in power output from 4300 to 4800 BHP for the subject engine.

2. During the engine conference at the contractor's plant July 26-27, 1948, the P & W representatives stated that take off power might be increased to 4800 BHP and rated power substantially increased.

3. The contractor is making a study of the effect of power increase on airplane performance as well as turbo supercharger requirements for the increased power. A report will be forwarded in the near future as soon as this study is completed.

BOEING AIRPLANE COMPANY
SEATTLE DIVISION

Thoral E. Damlen

Thoral E. Damlen
Chief Project Engineer

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RESTRICTED

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE
Washington, D.C.

AUG 19 1948

SUBJECT: B-35 and B-36 Contracts

TO: Commanding General,
Air Material Command,
Wright-Patterson AFB
Dayton, Ohio

1. The Chief of Staff has determined that the current B-35 and B-36 contracts will be completed within the funds currently allocated to these projects. This excludes the $14,000,000 allocated to the B-36 project for the YET engine installation which will be the subject of separate determination as to its ultimate use.

2. Since the contractors are under no legal obligation to hold costs within the funds now allocated, it is directed that they be notified in writing that no further funds will be made available, and that the subject contracts are to be administered so that the maximum number of completed articles will be delivered from the funds now allocated.

3. It is requested that this office be furnished with copies of such notification to the contractors concerned and if the present contracts cannot be completed within the funds currently earmarked, an estimate should be furnished as to the number of completed articles that will be delivered to the USAF.

4. The several Government-Furnished Property procurements for the B-36, as discussed by Mr. Donnelly of your command in this headquarters on 18 August 1948, are excluded from the above consideration.

5. The above will apply to the basic B-35 and B-36 types currently under contract. Should future requirements dictate the need for a change of the basic type for other than their present mission, the above decision will be reconsidered.

BY COMMAND OF THE CHIEF OF STAFF:

N. A. CRAIG
Lieutenant General, USAF
Deputy Chief of Staff, Material

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3

MCPPXA32/RJW:EC

31 August 1948

MCPPXA32

SUBJECT: Money Required to Complete Contract AC-7.

TO: Consolidated Vultee Aircraft Corporation, Fort Worth Division - Fort Worth, Texas.

Through: Chief, FW-SF Procurement Field Office.

1. The Contractor is hereby informed that no additional funds will be allocated for the B-36 Program and it will be necessary for the Contractor to complete all the required work with the funds presently allotted to this Contract. In order to insure that all the articles called for under Contract AC-7 are delivered, it will be necessary for the Contractor to maintain close scrutiny of the B-36 Program costs.

2. It is requested that in addition to the monthly expenditure report submitted to this Headquarters, a monthly estimate of the money to complete the B-36 Contract also be submitted. It is suggested this estimate be made a part of the monthly expenditure report.

FOR THE COMMANDING GENERAL:

H. A. SHEPARD,
Brig. General, USAF,
Chief, Procurement Division.

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AMC Form No. 10-7
(Rev 1 Apr 48)

INSERT OFFICE SYMBOL AND FULL SIGNATURE IN APPROPRIATE BLOCK

G, CO OR DEPUTY

IR INSPECTOR

MCPPXE4

UBLIC INF. OFFICE

OMPTROLLER

ERSONNEL & ADM.

ESEARCH & DEV.*

NTELLIGENCE

UPPLY AND MAINT.

ROC. & IND. MOB. PLNG.*

OTHER

MCPPXE4/TBM/bl
31 August 1948

SUBJECT: Change Order to Contract W33-038 ac-18653

TO: USAF Inspector-In-Charge
Pratt & Whitney Aircraft
East Hartford 8, Connecticut

REF: Pratt & Whitney Letter dated 13 August 1948, LCW:sg

1. A change order is being written to authorize Pratt & Whitney to proceed with the following change in work under subject contract at no change in the total contract price:

a. Delete Item 4, now appearing in Article 15 of said contract, and substitute the following in lieu thereof: "Item 4 - Conversion of one (1) Government-owned XR-4360-39 engine to an R-4360-43 engine, in accordance with Contractor's Engine Model Specification Number A-7065B, dated 24 June 1947, except that the 150-hour qualification test, as called for under Paragraph E-4a, is not required, and except that a high tension ignition system shall be furnished with the engine".

b. Change the delivery requirements set forth in Paragraph (g) of Article 16 of said contract for the work to be done under Item 4 of Article 15 of said contract to read "on or before November 1, 1948".

BY COMMAND OF GENERAL McNARNEY:

J. L. ZOECKLER
Lt. Colonel, USAF
Acting Chief, Aeronautical
Equipment Section
Procurement Division

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UNITED STATES AIR FORCE
AIR MATERIEL COMMAND
Boston AF Procurement Field Office
ARMY BASE, POSTON 10. MASS.
Pratt & Whitney Aircraft Div. East Hartford, Conn.

MCPPXB3/EFM/dgm
2 September 1948

Subject: 150 hour Official Qualification Test of R-4360-43 Engine - Contract AC-18653

To: Commanding General
Air Materiel Command
Wright Patterson AF Base
Dayton, Ohio

Attn: MCREXP

1. Attached is PWA letter dated 1 September 1948 along with inclosures mentioned therein.

2. It should be noted that subject test was not run in strict accordance with engine model test Specification A-7065-D. It is expected that this model test specification will be revised to conform with the condition of this test.

3. The accessory pads were loaded in accordance with the information contained in PWA letter - GWA:lms, dated 6 July 1948. This is contrary to the request made by AMC letter MCREXP-74/JBC/rhk, dated 14 July 1948.

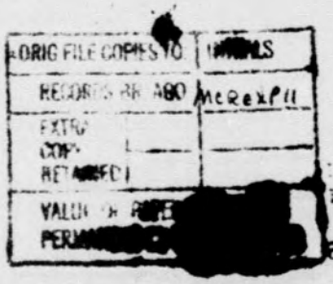
4. Inspection showed that the engine was in excellent and serviceable condition except for three engine mount cap screws, Part No. 120675. Complete inspection record is shown on pages 18 through 30 in PWA-745 Report.

5. It is concluded that the subject engine satisfactorily completed the model test.

FOR THE CHIEF, BOSTON AF PROCUREMENT FIELD OFFICE:

BERNARD JONES
Actg. AF Inspector-in Charge

Att.



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Department of the Air Force
HEADQUARTERS UNITED STATES AIR FORCE
Washington

3 September 1945

SUBJECT: Performance Study on the R-4 Airplane Equipped with the C-4 Model of the R-4360--VDT Engine.

TO: Commanding General
Air Materiel Command
Wright-Patterson Air Force Base
Dayton, Ohio

1. Attached is the manufacturer's performance data on the C-4 Model of the R-4360--VDT engine. This engine is tentatively rated at 4,000 horsepower for take-off, has an estimated specific fuel consumption of 0.375/BP/Hr. for cruising at altitudes up to 45,000 feet and reasonable cooling requirements.

2. It is desired that Air Materiel Command conduct a performance study of the R-4 airplane, incorporating these advance engine characteristics. A priority to assure completion of the study by 15 October 1945 will be assigned.

BY COMMAND OF THE CHIEF OF STAFF:

/s/ C. E. Dorsey, Jr. Lt. Col.
(for) JOHN K. SESSUMS
Colonel, U. S. Air Force
Acting Director of Research & Development
Office, Deputy Chief of Staff, Materiel

1 Incl.
As listed

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(Ohio AMC Form No. 10-508)

CO. CO [illegible] DEPUTY

AIR INSPECTOR

PUBLIC INF. OFFICE

COMPTROLLER

PERSONNEL & ADM.

RESEARCH & DEV.

INTELLIGENCE

SUPPLY AND MAINT.

PROC. & IND. MOB PLNG.

OTHER

Subject: Performance Study on the B-12 Airplane Equipped with the C-4 Model of the R-4360--VDT Engine

1st Ind MCPEOA/ATC/CMH/cal

Hq AMC, Wright-Patterson Air Force Base, Dayton, Ohio, 11 October 1943

TO: Chief of Staff, United States Air Force, Washington 25, D. C.
ATTN: Deputy Chief of Staff, Material

1. In order to conduct the requested performance study, it has been necessary for this Headquarters to contact the aircraft and engine manufacturers for additional data. Intermediate points are required on the engine performance curves and additional data are required on net jet thrust, cooling drag, etc.

2. The B-12A airplane which is the production model shown in the RAND Report is equipped with the C-3 model of the R-4360 VDT engine. The performance given in the RAND Report is at a much lower altitude than the optimum for this aircraft.

3. It is the intention of this Headquarters to revise the data shown in the RAND Report giving the optimum performance of the aircraft with the C-3 model engine and also to give the same performance data for the aircraft with the C-4 engine, thereby affording a direct and realistic comparison. The data requested will be forthcoming in approximately ten days.

FOR THE COMMANDING GENERAL:

1 Incl
w/d

A. T. CULBERTSON
Colonel, USAF
Acting Chief, Aircraft Projects Section
Engineering Division

[illegible] 8412

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TC-92-148
reply please refer to:
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COMMENT 9-3-48 Ltr Letone

PRATT & WHITNEY AIRCRAFT

DIVISION OF UNITED AIRCRAFT CORPORATION
EAST HARTFORD 8, CONNECTICUT, U.S.A.
CABLE ADDRESS "AIRCRAFT"

3 September 1948

VIA: United States Air Force Representative, East Hartford 8, Connecticut

To: Commanding General
Air Materiel Command
Wright Field
Dayton, Ohio

CONTRACT FILES
Ra13 10/11/48

Attention: TSBPE3B1

Subject: Contract W33-038 ac-18653 - R-4360 V.D.T. Engine - Article 15, Item 5
Monthly Progress Report

References: (a) PWA letr GEM:lms Engineering II dated 5 August 1948 to CG, AMC, Wright Field, Dayton, Ohio, via: USAF Repr. East Hartford, Connecticut
(b) PWA letr GEM:lms Engineering II dated 1 September 1948 to CG, AMC, Wright Field, Dayton, Ohio, via: USAF Repr. East Hartford, Connecticut

Enclosure: (A) PWA Photographs Showing Both Original and Re-worked Cowling on Single Nacelle V.D.T. Installation - Photographs Nos. EXP-20077 and EXP-21185

1. The following summarizes the work accomplished under Contract W33-038 ac-18653 subsequent to the last monthly progress report submitted by reference (a):

(a) Total running time on eleven R-4360-C engines has been increased from 5526 hours to 5697 hours. This total includes 3104 hours of V.D.T. type engine operation.

(b) R-4360-43 Engine No. K-123 following completion of the official 150-hour qualification test was found to be in excellent condition. Report No. PWA-745 covering this test has been transmitted to the Air Materiel Command by reference (b) in accordance with the provisions of Item 2 under Article 15 of the subject contract. This engine is currently being reassembled with the parts that completed the 150-hour test for continued endurance at lean mixture, high cruise conditions.

(c) The single nacelle V.D.T. installation in the B-50 test airplane has completed 18 flights at altitudes up to 38,500 feet accounting for a total time in the air of 34 hours. A major modification to the airplane cowling to improve the entrance to the compressor was undertaken and has been completed. Photographs showing the revised and original cowling are enclosed herewith for the information of the Air Materiel Command. In the flight completed subsequent to this rework it was evident that a decided improvement in cutting had been produced. Although a degree of engine roughness was apparent, it was noted that the air distribution at the compressor inlet was ideal with no indication of turbulence preceding the roughness phenomenum. A modernized R-4360-43 engine is being prepared for installation in the airplane.

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P&WA... & WHITNEY AIRCRAFT - September 1948

To: CG, Air Materiel Command, Wright Field, Dayton, Ohio

Subject: Contract W33-038 ac-18653 R-4360 V.D.T.Engine - Article 15, Item 5
Monthly Progress Report

(d) Fuel economy investigations are in progress to determine the potentialities indicated for advanced ratings by use of higher compression ratio pistons. The preliminary calibrations completed thus far give every indication that appreciably lower fuel consumptions for the V.D.T. engine are feasible.

(e) The development of the five-piece crankshaft as a possible future replacement for the production type single-piece crankshaft is continuing.

(f) The contractor plans to complete the modernization program on R-4360-43 engine No. X-152 by 15 September 1948.

UNITED AIRCRAFT CORPORATION
Pratt & Whitney Aircraft Division

G. E. Meloy
G. E. Meloy
Project Engineer

GEM:lms

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7C-12-29

ACTION INFOR. INFOR.

1948 SEP 8 AM 9:13

F.D.O. Lowe DB

ac-19092

1948 SEP 7 AM 11 40

WUA063 SER PD WUX EAST HARTFORD CONN SEPT 7 257P

COMMANDING GENERAL ATT MCPPXE4-9-141 AIR MATERIEL COMMAND

WRIGHT PATTERSON AIR FORCE BASE DATN

REFERENCE YOUR TELETYPE Ø122377 SEPTEMBER CONTRACTING OFFICERS AUTHORIZATION TO PROCEED WITH WORK ON FULL INSTRUMENTATION OF 3 AND PARTIAL INSTRUMENTATION OF 3 R-4360-43 AIRCRAFT ENGINES UNDER CONTRACT W33-038 AC-19032 IS HEREBY ACCEPTED. IN ACCORDANCE WITH SUCH AUTHORIZATION WE ARE ACCOMPLISHING SUCH INSTRUMENTATION

L C MALLETT PRATT AND WHITNEY AIRCRAFT

Ø122372 3 3 R-4360-43 W33-038 AC-19032

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ac 19032

MCPPX Ø32

10/14/48

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TC-92-147

AAFC Form No. 10-a
(Rev 27 Jul 47)

ROUTING AND RECORD SHEET

A.[illegible] MATERIEL COMMAND

Use this form for inter-office correspondence within headquarters.

Use authorized office symbols to designate addressee and addresses.

Place initials of dictator and typist, telephone number and location to right of signature.

Number all comments consecutively.

Note [illegible]

Separate comments by horizontal lines across page.

Use entire width of sheet, both sides.

SUBJECT: Change Order to Contract W33-038 AC-18653

TO: MCPPXEX-3
Attn: Legal Assistants

FROM: MCPPXEA

31088
5

DATE: 13 Sept. '48 COMMENT NO. 1

1. It is desired that a Change Order be written to authorize Pratt & Whitney to proceed with the following change in work under subject contract, at no change in the total contract price:

a. Delete Item 4 now appearing in Article 15 of said contract, and substitute the following in lieu thereof: Item 4 - Conversion of one (1) Government-owned XR-4360-39 engine to an R-4360-43 engine in accordance with Contractor's engine model Specification No. A-7065-B, dated 24 June 1947, except that 150-hour qualification test as called for under Paragraph E-4(a) is not required, and except that a high tension ignition system shall be furnished with the engine.

b. Change the delivery requirements set forth in Paragraph 3 of Article 16 of said contract for the work to be done under Item 4 of Article 15 of said contract to read: "on or before November 1, 1948".

2. Inclosed for your additional information is Pratt & Whitney Aircraft letter dated 18 August, 1948, LCM:sg.

1 Incl: P&WA Ltr 8/18/48

OLIVER M. SCOTT
Major, USAF
Actg. Chief, Power
Plant Branch

R.A.Bittner/ghs
Ext 2-9207
Bldg 11A
Rm 278

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AFC-O-20 APR 48 3600 M

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MCPP Form No. 71-36A
(Rev 31 Jan 48)

Contract Files

Execute in triplicate

C— 37088

Class— -

CHANGE ORDER

UNITED STATES AIR FORCE
Air Materiel Command
Wright-Patterson Air Force Base
Dayton, Ohio

BG

Date 14 September 1948
Change Order No. 5 to
Contract No. W 33-038 ac-
as amended 18653

To: United Aircraft Corporation, (Pratt & Whitney Aircraft Division), East Hartford, Connecticut

SUBJECT: Amendment of Item 4

1. Item 4, Paragraph (a), Article 15 of Contract W 33-038 ac-18653, as amended, is hereby amended to read as follows at no change in contract price:

"Item 4 - Conversion of one (1) Government-owned XR-4360-39 engine to an R-4360-43 engine in accordance with Contractor's engine Model Specification No. A-7065-B, dated 24 June 1947, except that 150-hour qualification test as called for under Paragraph E-4(a) is not required, and except that a high tension ignition system shall be furnished with the engine. Price included in the total price of Item 1 above."

2. The delivery date for Item 4, Paragraph (g), Article 16 of said contract, as amended, is hereby amended to read "On or before 1 November 1948" in lieu of "On or before 31 March 1948." at no change in contract price.

3. Nothing herein contained shall be deemed to require the Contractor to manufacture, furnish or deliver any articles or supplies, or to perform any work, as to which a Notice of Termination is in effect, at the effective date hereof, nor to require the Government to accept any such articles, supplies or work; and any such Notice of Termination shall be applicable, to the extent stated therein, to any articles, supplies or work called for hereby or otherwise referred to herein.

This change order has been (negotiated pursuant to) Public Law 703, 76th Congress, as amended by Public Law 580, 77th Congress, Section 13, Title II of the First War Powers Act, 1941, and Executive Order No. 9001, 27 December 1941.

1-b

Sheet 1

Encl. 1-a 182

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TC-92-62

AFPP Form No. 71-368
(21 Jan 48)

Total increase / decrease in fixed price $ nothing

[redacted] $

[redacted] $

Except as hereby amended, all terms and conditions of the Contract affected, as heretofore amended or modified, shall remain unmodified and in full force and effect and shall also apply in carrying out the provisions of this Change Order.

THE UNITED STATES OF AMERICA

4 Oct 48 (Date)

BY: Coy Cowan (Contracting Officer)

COY COWAN CAPT, USAF

1st Indorsement

TO: CONTRACTING OFFICER:

East Hartford, Conn. (Place) September 27, 1948 (Date)

1. Contractor hereby accepts the above Change Order.

UNITED AIRCRAFT CORPORATION
([redacted]) (Seal)
(Contractor)

BY: L. C. Mallet
(Signature of Official with Office held)
L. C. Mallet - Assistant General Manager
PRATT & WHITNEY AIRCRAFT DIVISION

PR No. none

The supplies and services to be obtained by this instrument are authorized by, are for the purpose set forth in and are chargeable to allotments below enumerated, the available balances of which are sufficient to cover cost thereof:

none

Change Order No. 5 to Contract No. W 33-038 ac-18653

2-c

Sheet 2

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CONFIDENTIAL

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE
WASHINGTON, D. C.

23 SEP 1948

SUBJECT: Procurement Directive 49-18 - (B-54A (B-50C) Aircraft)

TO: Commanding General
Air Materiel Command
Wright-Patterson AFB
Dayton, Ohio

1. Reference is made to letter from this headquarters, dated 10 September 1948, subject: "Supplemental 1948 Aircraft Procurement Program".

2. Funds have now been made available for the procurement of thirteen (13) B-54A (B-50C) aircraft, therefore, your Command is authorized to proceed with immediate procurement of subject aircraft.

3. This directive does not dispense with the necessity for conformance with applicable procurement regulations and directives.

BY COMMAND OF THE CHIEF OF STAFF:

/s/ H. A. Craig

H. A. CRAIG
Lieutenant General, USAF
Deputy Chief of Staff, Materiel

CONFIDENTIAL

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FC-92-145

reply please
refer to: WAP:tlr-Eng.

PRATT & WHITNEY AIRCRAFT

DIVISION OF UNITED AIRCRAFT CORPORATION
EAST HARTFORD 8, CONNECTICUT, U.S.A.
CABLE ADDRESS "AIRCRAFT"

September 24, 1948

ac 18653

VIA: United States Air Force Representative

To: Commanding General
Air Materiel Command
Wright-Patterson Air Force Base
Dayton, Ohio

Attention: MCPPXE4

Subject: Proposal for Flight Vibration-Testing of a Curtiss C6458-A Propeller on an R-4360-VDT Engine Installed in B-50 Airplane, Serial No. 46-008.

Reference: Coordinating Conference at Pratt & Whitney Aircraft, September 20-21, 1948.

1. As requested by representatives of AMC at the reference conference we submit herewith our proposal for a maximum of five (5) hours flight testing on a Government-furnished Curtiss Wright C-6458-A propeller. Since both the R-4360-VDT engine and the Boeing B-50 airplane which are to be used for this work have been loaned to this contractor for engine testing under Contract W33-038 ac 18653, we suggest that this proposal for propeller testing, if acceptable, be covered contractually by a Change Order to Contract W33-038 ac 18653.

2. If all the necessary Government-furnished and Curtiss-furnished equipment is on hand and if proper contractual coverage has been obtained beforehand, we will start preparing for the flight propeller test of a maximum of five (5) hours duration immediately upon completion of the 50-hour flight test program already called for under Item 3 of Contract 18653. We will use our best efforts to accumulate during successive flights as dictated by the propeller testing schedule or by the proper operation of the equipment these five (5) hours of testing time within one month from the time the airplane is first flown with the propeller. It must be recognized, however, that there are many factors involved here which are beyond our control and that we may fail in accomplishing the work within this relatively short period of time. It will be permissible during the course of the propeller testing program to obtain test data on other components of the power plant installation but they will not be allowed to interfere with the propeller work. If during the accumulation of the five (5) hours of flight time on the propeller delays, attributable to the propeller or the special propeller testing equipment, are involved, it will be permissible during those periods to use the airplane for obtaining test data on other power plant components.

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PRAT & WHITNEY AIRCRAFT 30 - TC-72-144

Air Force Command

3. We will furnish the labor necessary to install and remove the propeller vibration measurement equipment in the airplane. We will also furnish the fuel, oil and personnel required to operate and service the airplane during the period in which the tests are being conducted. We propose to do this work for $15,000.

4. It will be necessary for the Government to amend Instruction #12C under Blanket Bailment Contract W33-038 ac 10371, pursuant to which the B-50 airplane, Serial No. 46-006, has been loaned to us, so that this airplane can be used for this additional work. Bailment coverage for the C6453-A propeller on this Contract 10371 will also be necessary.

5. We understand that the Government, by separate contract with Curtiss-Wright Corporation, will arrange to have Curtiss furnish the vibration measuring equipment, stress gages and the necessary personnel to service and operate this equipment both in flight and on the ground.

6. Since this work is an accommodation to Curtiss, we expect that Curtiss will assume complete responsibility for its own personnel and equipment and will indemnify us against all loss or claims in this connection.

UNITED AIRCRAFT CORPORATION
Pratt & Whitney Aircraft Division

W. A. Parkins
Engineering Manager

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HEADQUARTERS
AIR MATERIEL COMMAND

MCPPXE13:EWS:mls
Wright-Patterson AF Base
Dayton, Ohio

1 October 1948

SUBJECT: Contracts W 33-038 ac-19391, ac-20794, ac-18653 and 19032

TO: Distributees

1. The allotments and all references to "Contract Authorization" and "Appropriated Funds" appearing on the cover page of Subject Contracts are hereby deleted and the following allotment inserted in lieu thereof:

57X0210 802-7004 P 110-09 S 33-038

2. This allotment of appropriated funds is, in whole or in part, the allotment contemplated by the provisions of Subject Contracts referring to "Fiscal Limitation" or "Contract Authorization Funds" and the limitation upon payment therefrom. Accordingly, if all requirements with respect to payment have been fulfilled by the Contractor, payment under Subject Contracts may now be made from the above allotment.

/s/ Therin J. Fahnestock
THERIN J. FAHNESTOCK
Contracting Officer

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TC-92-142

PRATT & WHITNEY AIRCRAFT

DIVISION OF UNITED AIRCRAFT CORPORATION
EAST HARTFORD 8, CONNECTICUT, U.S.A.
CABLE ADDRESS "AIRCRAFT"

ARMY OFFICE
APPROVED
CONCURRED IN
NO COMMENT
10/6/48

CONTRACT FILES
Rak 10/13/48

In reply please refer to:
GEM:mew Engineering II.

5 October 1948

VIA: United States Air Force Representative, East Hartford 8, Connecticut

To: Commanding General
Air Materiel Command
Wright Field
Dayton, Ohio

Attention: MCPPXE4

Subject: Contract W33-038 ac-18653 / R-4360 V.D.T. Engine - Article 15, Item 5
Monthly Progress Report

Reference: (a). PWA letr GEM:lms Engineering II dated 3 September 1948 to CG, AMC, Wright Field, Dayton, Ohio, via: USAF Repr. East Hartford, Connecticut

1. The following summarizes the work accomplished under Contract W33-038 ac-18653 subsequent to the last monthly progress report submitted by reference (a):

(a). R-4360-43 Engine, No. X-155, initially converted from an R-4360-39 to an R-4360-51 model, was recently rebuilt as an R-4360-43 engine and accepted by the government in accordance with Change Order No. 5 which covers the change in work in Item 4, Article 15, of the subject contract. This engine has been installed in the Boeing B-50 test airplane, #46008, for continuation of the single nacelle VDT flight program. To date 22 flights have been made, accounting for a total time in the air of 44 hours on the VDT powerplant installation. The engine cutting problem described at the 20 September 1948 B-50 Coordinating Meeting was encountered during the initial flight with the modernized engine, the reworked airplane cowling and one blocked air filter duct. During subsequent flights with both air filter ducts open no cutting was encountered. Two flights made thus far with a G. E. Turbo-super charger having a smaller nozzle box area indicate that acceleration has been improved considerably. Additional testing of the boost control system will be continued as soon as repairs currently being made to the G. E. turbo-supercharger are completed. However, the results of testing the control system to date have been encouraging and on this basis the present configuration is considered fundamentally satisfactory.

(b). Modernization rebuild, calibration and instrumentation of R-4360-43 engine, No. X-152, have been completed. The engine is now being prepared for shipment to Rohr Aircraft.

(continued)

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TC-42-143

To: CG, Air Materiel Command, Wright Field, Dayton, Ohio

Subject: Contract W33-038 ac-18653 - R-4360 V.D.T. Engine - Article 15, Item 5
Monthly Progress Report

(c). R-4360-43 Engine, No. X-181, recently removed from B-50 test airplane, No. 46006, will be modernized as soon as parts become available.

UNITED AIRCRAFT CORPORATION
Pratt & Whitney Aircraft Division

G. E. Meloy
G. E. Meloy
Project Engineer

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249

REPORT NO. 7

5 October 1948

SUBJECT: Resume' of R-4360 (VDT) Program
Report No. 9

PREPARED BY: RAYMOND A. HITTNER, MCPPIE5

The following has occurred since the issuance of Report No. 6 dated 11 August 1948 -

Pratt & Whitney has completed a model test on an R-4360-43 Engine, and in general the engine was in very good condition, and the following minor discrepancies were noted after the test:

1. All piston rings were satisfactory, except oil control ring was broken in D4 Cylinder. The face indication and broken end indicates the ring may have been broken at disassembly.

2. Exhaust valves were satisfactory for service. There was slight valve guide pick-up on B-5 Valve Stem. Exhaust Valves B-5, D-5, D-7 and B-2 were not seating completely. The exhaust back pressures used during test were slightly higher than those expected in the actual installation.

3. All intake valves were in satisfactory condition.

4. Three engine mount cap screws, Part No. 120675, had failed. Two were broken completely and the third one was cracked. All three failures apparently originated in the root of the last thread.

5. The Teflon seals in 14 of the exhaust capsules were heat-checked.

6. Cracks were found in 13 cylinder baffle pieces used in this test. The generator system included on this engine was made from preliminary dies and minor interferences and improper fits existed at assembly. This will be corrected in production.

7. Disassembly of the fuel injector indicated that some of the injector pistons were slightly scored. The injector had approximately 700 hours on it prior to the test.

8. In general, the model test R-4360-43 engine was in very good shape after the test, and the appearance of many of the parts was superior to previous tests run on production Model R-4360 engines previously accepted. However, it should be noted that this engine, due to the urgency of the schedule, was run on test without a flight propeller, boost controls, generator gear box, aircraft accessories. Pratt & Whitney did endeavor to load most of the drives as closely as possible to the torque values listed in the specification. However, loading the drives does not duplicate as closely as possible the actual running of the items that will be used on the engine when installed in the aircraft. For that reason, another qualification test

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will be run at Pratt & Whitney at a later date when all the items that will be used in the actual airplane installation are available.

9. The total running time on eleven (11) R-4360-C engines has been increased from 2226 hours to 3697 hours. This total includes 3104 hours of actual VDT type engine operation.

10. The single nacelle VDT installation in the B-50 test airplane has completed 18 flights at altitudes up to 36,500 feet accounting for a total time in the air of 24 hours. A major modification to the airplane cowling to improve the entrance to the compressor was undertaken, and has been completed. In the flight completed subsequent to this rework it was evident that a decided improvement in cooling had been produced. Although a degree of engine roughness was apparent, it was noted that the air distribution at the compressor inlet was ideal with no indication of turbulence preceding the roughness phenomenum. A modernized R-4360-43 engine is being prepared for installation in the airplane.

11. Pratt & Whitney is proceeding with fuel economy investigation to determine the potentialities indicated for advanced ratings by use of higher compression ratio pistons. The preliminary calibrations completed thus far give every indication that appreciably lower fuel consumptions for the VDT engine are feasible. Pratt & Whitney indicates that possibly it may be able to obtain, with a revised version of the R-4360 VDT engine, specific fuel consumptions of approximately .37

12. The development of the five-piece crankshaft as a possible future replacement for the production type single-piece crankshaft is continuing. Although not mentioned above, the model test was run with a single-piece crankshaft of the type presently used in production R-4360 engines.

Raymond A. Bitters

RAYMOND A. BITTERS
Buyer

Copies to:
[illegible] (Geo. Shepard)
[illegible] (Col. Nixon)
[illegible] (Col. Rustad)
[illegible] (Col. Schaetzel)
[illegible] Lt. Col. Zweibler)
[illegible] (Lt. Col. Gerwig)
[illegible] (Lt. Col. MacFie)
[illegible] (Maj. Knaley)
[illegible] (Maj. Scott)
[illegible] (Capt. Walling)
[illegible] (Mr. Hallbaker)
[illegible] (Mr. Coyle)

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4-27-48

T E L E T Y P E M E S S A G E
AIR SERVICE COMMAND TELETYPE NETWORK

MCPPXE5/RAB/bl

FROM: AMC 7 Oct. 1948

J. L. ZOECKLER, Lt. Colonel, USAF
Actg. Chief, Aeronautical Equipment Section, Procurement Div.

TO: PRATT & WHITNEY AIRCRAFT
EAST HARTFORD, CONNECTICUT

THRU: USAF INSPECTOR IN CHARGE
PRATT & WHITNEY AIRCRAFT
EAST HARTFORD, CONNECTICUT.

MCPPXE5-9-141 ... CONTRACT AC-18633, INFORMATION IS DESIRED AS TO WHETHER PRATT & WHITNEY CAN ARRANGE TO ALLOW CURTISS-WRIGHT TO CONDUCT A FLIGHT PROPELLER VIBRATION STRESS SURVEY ON AN R-4360-43 ENGINE INSTALLED ON A TEST STAND. ORIGINALLY PRATT & WHITNEY AGREED TO DO TEST STAND PROPELLER VIBRATION STRESS SURVEY AT TIME OF NEXT 150 HOUR QUALIFICATION TEST. THIS QUALIFICATION TEST MAY BE DELAYED DUE TO FINAL CLEARANCE OF CONTRACTUAL MATTERS OR RECEIPT OF ACCESSORIES, GENERATOR GEAR BOX AND OTHER EQUIPMENT REQUIRED FOR TEST. DUE TO ABOVE, THE ACTUAL STARTING OF ENGINE TEST CANNOT BE CONTROLLED. CURTISS HAS PLANNED PRODUCTION OF PROPELLER STARTING IN NOVEMBER 1948 TO MEET DELIVERY REQUIREMENTS IN AUGUST 1949. UNLESS CURTISS CAN OBTAIN TEST DATA ON PROPELLER PRODUCTION, MUST START WITHOUT DATA ON PROPELLER, WHICH IS NOT DESIRABLE. IF PRODUCTION DOES NOT START IN NOVEMBER, THE AIRPLANE PROGRAM MAY BE SERIOUSLY DELAYED. CURTISS HAS INFORMED AMC THAT VIBRATION STRESS SURVEY TEST WILL ONLY REQUIRE APPROXIMATELY ONE TO TWO DAYS TO COMPLETE. THIS MATTER IS CONSIDERED URGENT AND IMMEDIATE REPLY DESIRED.

PROCUREMENT DIVISION

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33

TC 92-140

PRATT & WHITNEY AIRCRAFT

DIVISION OF UNITED AIRCRAFT CORPORATION

EAST HARTFORD 8, CONNECTICUT, U.S.A.

CABLE ADDRESS: AIRCRAFT

In reply please refer to: ECG:GRS-Contract Admin.

October 8, 1948

Bellmer

ARMY OFFICE

APPROVED	
CONCURRED IN	
NO COMMENT	10-11-48

Via: USAF Inspector-in-Charge

To: Commanding General
Air Materiel Command
Wright-Patterson Air Force Base
Dayton, Ohio

Subject: Proposed Change Order No. 3 to Contract W33-038 ac-18653

Reference: (a) Proposed Change Order No. 3 to Contract W33-038 ac-18653 dated 10 April 1948
(b) Pratt & Whitney Aircraft Letter to Air Materiel Command dated May 12, 1948

1. Subject proposed Change Order covered a fan drive for the XR-4360-51 engine. In Contractor's letter of May 12th, reference (b), it was stated that acceptance of the Change Order was being withheld pending decision as to whether or not the fan drive specified in the proposed Change Order would be used.

2. In view of the present decision of the Air Force on the R-4360-51 program we are now returning, unaccepted, all copies of subject proposed Change Order which were forwarded to us.

UNITED AIRCRAFT CORPORATION
Pratt & Whitney Aircraft Division

E. C. Grimshaw

ECG:GRS
Enclosures (4)

RECEIVED OCT 1948 ARMY OFFICE PRATT & WHITNEY AIRCRAFT

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AF Form No. 10-7
Apr 48.

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RESEARCH & DEV.

INTELLIGENCE

SUPPLY AND MAINT.

PROC. & IND. MOB. PLNG.

OTHER

TSAGD5-NO.37

11 11:13

MCNEY.P61/RTD/vdb

OCT 11 1948

SUBJECT: XJ-60-3 Control System

TO: Pratt & Whitney Aircraft Division
United Aircraft Corporation
East Hartford 8, Connecticut
ATTN: Mr. Ross Begg

1. It is requested that plans be made for discussion of the subject control beginning 18 October 1948. Mr. R. T. Dungan will represent Air Material Command.

2. It is desired that the following subjects be covered in this meeting:

a. A description of the control system:

(1) A step by step explanation of a schematic wiring diagram for the system.

(2) A step by step explanation of the amplifier wiring diagram.

(3) A presentation of assembly or schematic drawings of the actuator, selector box, pressure pick-up, turbo generators, and overboost control.

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b. The status of control testing and a presentation of accumulated test data:

(1) Control characteristics

(2) Engine characteristics

c. A discussion of current control problems such as excessive acceleration time.

d. A brief description of the proposed Eclipse control system.

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TC-92-5)a

Ltr, AMC, OCT 11 1948 , to Pratt & Whitney, subj: "R1360-43 Control System"

3. It is requested that conference be at Pratt & Whitney. It is also requested that Mr. Bruce Wells of the General Electric Company be among those present.

FOR THE COMMANDING GENERAL:

cc: Boston USAFPO
MCPPRL

for E. J. LUFFY Col USAF
Colonel, USAF
Chief, Power Plant Laboratory
Engineering Division

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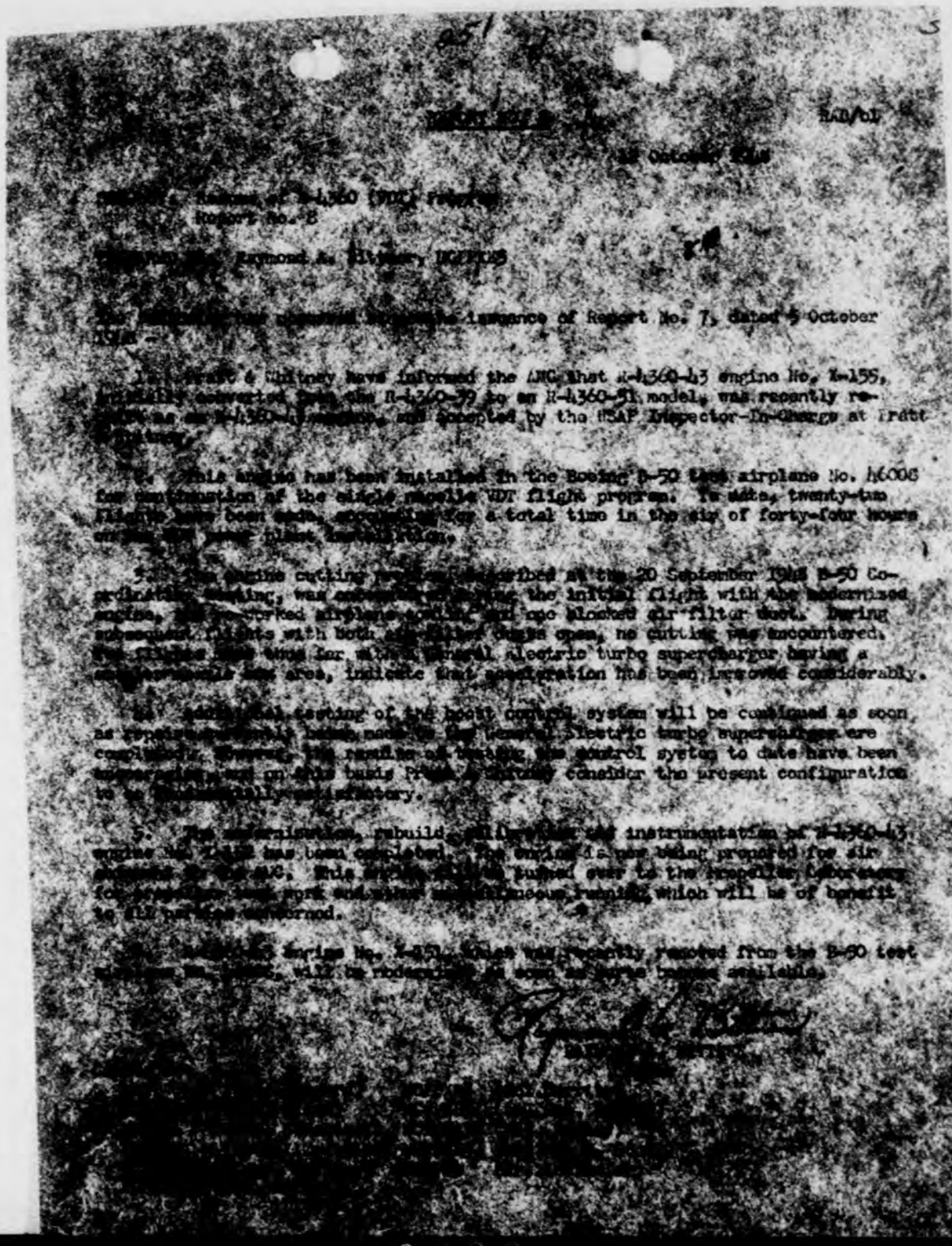

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AMC Form No 10-7 (18 Nov 47) (Old AMC Form No 1)

TSAGO5-NO.37

MCPPX35/R.A.Bittner/ghs
13 October 1948

13 16:12

SUBJECT: 150-Hour Qualification Test of R-4360-43 Engine No. X-123 - Contract [illegible]-13653

THRU: USAF Inspector in Charge

TO: Pratt & Whitney Aircraft Division
United Aircraft Corporation
East Hartford 8, Connecticut

1. The Air Material Command has examined Pratt & Whitney Report No. PWA-745 covering the qualification test of R-4360-43 Engine, Serial No. X-123.

2. The information contained in the above report regarding the condition of the engine is in agreement in detail with the findings of Air Material Command representatives, Messrs. Charles Lancaster and R. A. Bittner, who examined the engine at Hartford, Connecticut, on 17 and 18 August, when the engine was laid out for inspection after completion of the qualification test.

3. As shown in Report PWA-745, the engine completed the qualification test in generally good condition. This test was run to clear the basic XR-4360-43, VDT Engine for production before all the VDT components were available for test. All parts of the basic engine can be considered as satisfactorily completing the 150-hour qualification test, except those items listed below, and subject to the following recommendations:

a. Pratt & Whitney will demonstrate on the next 150-hour qualification test that all of the unsatisfactory conditions shown in Report PWA-745, on Page 9, Item 21; Page 10, Items 22, 23, 24, 25, 26, 27 and 28; Page 18, Item 2(f); Page 23, Items 39 and 40; Page 24, Items 42 and 43; Page 25, Item 5(d); Page 27, Item 1; Page 28, Items 2 and 3; Page 29, Items 2(g) and 1(h), and Page 30, Items (c) and (d) have been improved.

b. The Bendix Fual Injection System is considered as satisfactorily passing the 150-hour qualification test, except for the following items:

(1) Plunger and Bushing Assembly: Three (3) plungers and bushing assemblies, namely, #4, #26 and #28, were severely scored. The #2 plunger and bushing assembly was slightly scratched. These particular plungers are located at the bottom center of the pumps.

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13 October 1948

Subj: 150-Hour Qualification Test of R-4360-43 Engine No. X-123 - Contract AC-18653

(3) Fuel Injection Nozzles: The fuel injection nozzle checks shown in the report indicate an objectionable loss in the nozzle opening pressure from the 500 plus or minus p.s.i. original setting.

c. It is the understanding of the Air Material Command that several basic material changes to the plunger and bushing assembly are being made to the fuel injection pump design due to the elimination of the water injection requirements on the engine. It is recommended that on the next 150-hour qualification test that the production configuration of material changes be included in the fuel injection system subjected to the test. It is further recommended that Pratt & Whitney provide, prior to the testing, a list of changes to the fuel injection system design which differ from the design used on the first 150-hour qualification test. Pratt & Whitney will conduct, before and after the qualification test, calibration on the control fuel injection pump and nozzles.

d. Throttle Regulator: The cam follower and cam were worn. These parts should not show heavy wear considering the number of cycles imposed. Consideration should be made to improve the condition of other parts that show corrosion or wear.

e. It is requested that the calibration of the control shown on Page 32 be explained; the control checked closer at 171.1 hours to the original calibration, then at 31.5 hours. No curve showing the hysterisis of the control before and after test is shown in the report.

FOR THE COMMANDING GENERAL:

J. L. EOECKLER
Lt. Colonel, USAF
Actg. Chief, Aeronautical Equipment Section
Procurement Division

cc: USAFIIC, P&S
BAR, P&N
BuAer, Wash. D.C.
NCRExP-74

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Contract Files

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Execute in triplicate

C— 49-65

Class-02-A

CHANGE ORDER

UNITED STATES AIR FORCE
Air Materiel Command
Wright-Patterson Air Force Base
Dayton, Ohio

BG

Date 14 October 1948
Change Order No. 1 to
Contract No. W 33-038 ac-
19032

To: United Aircraft Corporation, East Hartford, Connecticut

SUBJECT: Specification Change

1. Item 1, Paragraph (a), Article 15 of Contract W 33-038 ac-19032 is hereby amended to read as follows at no change in contract price:

"Item 1 - Eight (8) Aircraft Engines, AAF designation R-4360-43, in accordance with Contractor's Specification No. A-7065-E dated 23 August 1948 except that five (5) of said engines shall be furnished with high-tension ignition systems in accordance with Appendix A to said specification, and three (3) of said engines shall be furnished with low-tension ignition systems. The unit price for Item 1 is $187,000.00; total price . . . . . $1,496,000.00."

2. Paragraph (c), Article 15 of said contract is hereby amended to read as follows at no change in contract price:

"(c) For the purpose of Article 1 (c) hereof, the only Government Specifications applicable to this contract are listed and dated in Contractor's Specification No. A-7065-E dated 23 August 1948 and Appendix A thereto. If any supplementary specifications are mentioned in said Specification, the Contractor will use its best efforts to comply with all details of such supplementary specifications."

3. Nothing herein contained shall be deemed to require the Contractor to manufacture, furnish or deliver any articles or supplies, or to perform any work, as to which a Notice of Termination is in effect, at the effective date hereof, nor to require the Government to accept any such articles, supplies or work; and any such Notice of Termination shall be applicable, to the extent stated therein, to any articles, supplies or work called for hereby or otherwise referred to herein.

This change order has been (negotiated pursuant to) Public Law 703, 76th Congress, as amended by Public Law 580, 77th Congress, Section 18, Title II of the First War Powers Act, 1941, and Executive Order No. 9001, 27 December 1941.

1-b

Sheet 1

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TC-92-46

ACSF Form No. 71-868
(28 June 48)

Total	increase / decrease	in	fixed price	$ nothing
			[illegible]	$
			[illegible]	$

Except as hereby amended, all terms and conditions of the Contract affected, as heretofore amended or modified, shall remain unmodified and in full force and effect and shall also apply in carrying out the provisions of this Change Order.

THE UNITED STATES OF AMERICA

8 Nov 48
(Date)

BY: G Cowan Jr USAF
(Contracting Officer)

COY COWAN, CAPTAIN USAF

1ST INDORSEMENT

TO: CONTRACTING OFFICER:

East Hartford, Connecticut (Place) October 29, 1948 (Date)

1. Contractor hereby accepts the above Change Order.

UNITED AIRCRAFT CORPORATION (SEAL)
(Contractor)

BY: L. C. Mallet
(Signature of Official with Office held)

L. C. Mallet, Assistant General Manager
Pratt & Whitney Aircraft Division

PR No. none

The supplies and services to be obtained by this instrument are authorized by, are for the purpose set forth in and are chargeable to allotments below enumerated, the available balances of which are sufficient to cover cost thereof:

none

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File: MCAGXF22 452.1/Republic R-12 (C)

MCREOA-5/GWH/hwh
21 October 1948

SUBJECT: Performance Study on the R-12 Airplane Equipped with the C-4 Model of the R-4360-VDT Engine

TO: Chief of Staff
United States Air Force
Washington 25, D. C.
ATTN: Deputy Chief of Staff, Materiel

1. Reference is made to letter from Headquarters USAF dated 3 September 1948, subject as above, and 1st Indorsement thereto dated 11 October 1948. The basic letter requested that the subject performance study be made.

2. The Characteristics Summary Sheet on the R-12A has been revised, giving the corrected performance data at the optimum altitude for the airplane equipped with the C-3 model of the R-4360-VDT engine. Two copies of this revision, dated November 1948, are inclosed.

3. Performance of the R-12A airplane with the C-4 model of the R-4360-VDT engine has been determined and is submitted herewith on a Characteristics Summary Form for purposes of comparison. Comparison shows that the combat range will be increased about 13.5% and the average speed increased 4% with the C-4 engine installation. Maximum speed is increased only slightly because of Mach number influence, but is attained at 40,000 foot altitude rather than 36,500 feet.

FOR THE COMMANDING GENERAL:

/s/ A. T. CULBERTSON
/t/ A. T. CULBERTSON
Colonel, USAF
Actg Chief, Aircraft
Projects Section
Engineering Division

2 Incls:
1. Char. Summary R-12A (in dup)
2. Char. Summary R-12A* (in dup)

DOCUMENT NO. 194

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TC-92-137

ROUTING AND RE[illegible]RD SHEET

[illegible] MATERIEL COMMAND

Use this form for inter-office correspondence within Headquarters.

Use authorized office symbols to designate addressee and addresses.

Place initials of dictator and typist, telephone number and location to right of signature.

Number all comments consecutively.

Note regrading/downgrading/declassification and type. Remember to classify and mark top and bottom of sheet, both sides.

Encircle symbol of person speaking of typewritten signature.

Separate comments by horizontal lines across page.

SUBJECT: Change No. 3 to Contract ac-18653 — PR-62280 - Cancelled

TO: MCPPIE13, Legal Assistants, Miss Betty Gile
MCPPIE, Mr. F. E. Roush
MCPPIE-33, Miss Hess (in [illegible])

FROM: MCPPIE5

DATE: 10-21-48 COMMENT NO. 1

In accordance with the request contained in the attached Pratt & Whitney letter, dated 8 October 1948, ECG:GRS-Contract Admin., it is desired that action be taken to cancel Change No. 3 to Contract W33-038 ac-18653 in its entirety.

2 Incls -
1. Change Order No. 3 to Contr. ac-18653.
2. P-WA ltr dtd 10-8-48, ECG:GRS-Contract Admin.

M. R. Ahern
J. L. ZOECKLER
Lt. Colonel, USAF
Actg. Chief, Aeronautical Equipment Section
Procurement Division

RAB:EL
29207 10/21
Rm 278
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FROM [illegible] BUILDING OR OFFICE SYMBOL EXT. COMMENT NO.

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6-27-6

In reply please refer to WAP:mew Eng.

October 25, 1948

To: Commanding General
Air Materiel Command
Wright-Patterson Air Force Base
Dayton, Ohio

3c-18653

Attention: MCPPXE

Reference: (a) TKL MCREXP-4-45 Dated April 13, 1948
(b) PWA Telegram to AMC Dated April 14, 1948
Signed: W. A. Parkins

Subject: Second Phase R-4360-VDT Engine, Proposal for

Enclosures: (A) Three (3) copies of Pratt & Whitney Report TR-61
(B) Three (3) copies of Pratt & Whitney Specification No. A-7072 Dated 6 October 1948.
(C) Three (3) copies of Cost Breakdown for Advanced R-4360-VDT Engine

1. The development of the first phase R-4360-VDT power plant is essentially complete. The engine and control part of this development is supported under contract by the AMC at a limiting price of $6,330,612.00 The accumulated expense of the project to date exceeds $6,500,000.00 and we expect that before the year is out it will exceed $7,500,000.00. This information is presented merely to show the high degree of effort that has been and is being expended on the project. From the standpoint of performance and durability the engine has exceeded all expectations. The official qualification test was completed roughly five months ahead of schedule and the first of eight prototype engines also being procured under contract will be delivered this month approximately four months ahead of schedule.

2. Based on these excellent results we have made a study of the performance potentialities of an advanced or second phase R-4360-VDT engine which is summarized in PWA report No. TR-61. This study indicates substantial increases in output and attractive reductions in fuel consumption throughout the whole range of operation. The following tabulated performance data illustrate by comparison the advantages of the proposed second phase engine over the present or first phase engine.

Ltr. 11-2-48

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1-27-7

POWER AND FUEL CONSUMPTION
(Excluding Ram & Jet Thrust Recovery)

Power Condition	PRESENT VDT BHP	ALT. FT.	BSFC	ADVANCED VDT BHP	ALT.FT	BSFC
Take-off and Military	4300	25,000	.700	4800	30,000	.700
Normal Rated	3150	33,600	.675	3500	37,000	.600
Maximum Cruise	2630	38,000	.412	2950	41,000	.390
Min. Con's Cruise	2190	41,000	.410	2210	43,000	.375

POWER AND FUEL CONSUMPTION
(Including Jet Thrust Recovery)
(Using 90% ram recovery, 80% propeller efficiency)

Power Condition	ALT.	Airspeed M.P.H.	PRESENT VDT Equiv. BHP	Equiv. BSFC	ADVANCED VDT Equiv. BHP	Equiv. BSFC
Take-off and Military	30,000	500	4820	.695	5310	.630
Normal Rated	30,000	450	3500	.710	3855	.545
Maximum Cruise	40,000	400	2850	.380	2865	.355
Min. Con's Cruise	40,000	365	2360	.380	2395	.350

3. It is worthy of note that an exploratory cruise run of 100 hours duration on the R-4360-43 engine which was used for running the official qualification test has just been completed under the following conditions of operation:

B.H.P.	2660
R.P.M.	2400
Specific Con's	.391 #/BHP/Hr.
Spark Advance	35°
Ex. Back Pressure	44" Hg.

Another experimental engine of the same type but equipped with higher compression ratio has been operated for an extended period of time to explore detonation levels at the proposed second phase performance ratings. Therefore, we are confident that the second phase ratings are obtainable and we believe that they can be realized in the course of another year of development effort.

4. The performance of the proposed engine is predicated on the use of a single General Electric CHM-6 turbo-supercharger, revisions to the cylinder combustion chamber components and regulation of ignition timing. In order for the engine to operate reliably at the higher output, redesign of the propeller shaft, reduction gearing and crank shaft system as well as a general part strengthening program will be necessary. Modifications to the fuel injection system to obtain high flow characteristics and water-methanol injection are also indicated. Other details of the engine are covered in PWA Specification No. 7072 dated October 6, 1948, which forms part of this proposal.

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4-27-8

5. We anticipate no external changes to the engine that would affect installation interchangeability with the present or first phase engine unless provision for a more flexible engine mounting system such as has been requested by the AMC necessitates major revision to the rear end of the engine.

6. Accordingly it is proposed, that:

Item (a). Conversion of two government supplied R-4360-43 engines to engines as described in PWA Model Specification No. A-7072 dated October 6, 1948, except that due to their early delivery acceptance will not be predicated on the successful completion of a 150 hour qualification test as set forth under paragraph E-4A.

Item (b). Report in triplicate of a satisfactory 150 hour qualification test as required in PWA Model Specification No. A-7072 dated October 6, 1948. This test will be conducted on a contractor furnished experimentally built engine substantially in accordance with the above mentioned specification.

Item (c). Detailed monthly reports in triplicate covering the progress of the work.

Item (d). Report in triplicate of a 50 hour development bench test of an Eclipse power control intended to serve the same purpose and accomplish the same task as the General Electric control with which the qualification test of Item (b) will be run and the experimental engines of item (a) will be delivered.

7. We propose to complete the whole project in the course of twelve months from date of contract. The two engines called for under item (a) will be delivered within six months from date of contract.

8. The cost of this undertaking to the government will be $3,942,000. A summary cost breakdown is attached.

9. This proposal does not include the flight development work such as is included in the first phase development program. This should be added once an airplane is chosen and is made available to us by the AMC. For estimating purposes a figure of $3,000 per hour of flight time can be used. Hence for 50 hours of flight operation such as is specified in the first phase contract approximately $150,000 should be added.

UNITED AIRCRAFT CORPORATION
Pratt & Whitney Aircraft Division

/s/ W. A. Parkins
W. A. Parkins
Engineering Manager

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1-27-9

PRATT & WHITNEY AIRCRAFT DIVISION

WASP MAJOR SECOND PHASE R-4360-VDT ENGINE PROJECT

COST BREAKDOWN

Material	
Design	3,500
Construction	1,234,600
Test	276,933
Total	1,515,033
Engineering Salaries and Wages	
Design	340,704
Construction	519,772
Assembly	200,736
Test	235,930
Total	1,297,142
Engineering Overhead at 80%	1,037,714
Total	3,848,889
General Administrative at 2.4%	92,397
Total Estimated Cost	3,942,286
Profit - 10% of Selling Price	438,032
Total Estimated Selling Price	4,380,318
Price Quoted	3,942,000

October 26, 1948

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AMC Form No. 10-3 (Rev 29 Jul 47)

ROUTING AND REC D SHEET

Ai ATERIEL COMMAND

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Place initials of dictator and typist, telephone number and location to right of signature.

Number all comments consecutively.

Note warning against use by unauthorized [illegible] for proper spacing of typewritten signature.

Use entire width of sheet, both sides.

Separate comments by horizontal lines across page.

SUBJECT: Request for Permission to Negotiate - Purchase Request No. 91781

TO: MCPC

FROM: MCPPXO-22

DATE: 25 Oct 1948

COMMENT NO. 1.

Ac-18653

1. Pursuant to Armed Services Procurement Regulation 3-302 (a), authority is requested to negotiate the following procurement:

a. Contractor: United Aircraft Corporation
Pratt and Whitney Aircraft Division
East Hartford, Connecticut

b. Services: Services and material necessary to conduct a flight vibration stress survey of a Curtiss Model C6458-4 propeller with design 1056-1C5-30 blades on an R-4360-43 (VDT) engine installed in a B-50 airplane, serial No. 46-008.

c. Prices: $15,000.00 - Estimated.

d. Funds: 611 Fiscal Year 1949 funds are to be obligated.

e. Selection of Source: The Pratt & Whitney Aircraft Division is recommended as the source for this procurement since the engine to be tested is manufactured by this concern and the airplane with the R-4360-43 engine installed in one nacelle is presently located at East Hartford, Connecticut, and since the testing required can only be accomplished in the stipulated time at this location.

2. The services covered by paragraph 1 b above fall within the category of experimental, developmental, or research work set forth in Armed Services Procurement Regulation 3-211. Request authority to place this procurement by negotiation.

3. Attached are findings and determination for approval.

JOHN R. MARTIN
Lt. Colonel, USAF
Chief, Research and Materiel
Section, Procurement Division

F.F.Voss/jmm
Ext. 2-8238

Incl.
Statement

161

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TC-92-441

BOEING AIRPLANE COMPANY

SEATTLE DIVISION

SEATTLE 14, WASHINGTON

P8A

AFPR
File No. 19562

OCT 21 1948

IN REPLY REFER TO REFERENCE NO.

B-70-1052

To: Commanding General
Air Materiel Command
Wright-Patterson Air Force Base
Dayton, Ohio

ATTENTION: MCPPXA31, Procurement Division
Bombardment Branch, Aircraft Section

NO COMMENT ☐
CONCURRED IN ☑
Joseph C. Dalton Jr.
O. F. C[illegible] 10/27/48
C[illegible]
AF Plant Representative

Through: Air Force Plant Representative
c/o Boeing Airplane Company
Seattle Division
Seattle 14, Washington

Subject: Contract W33-038 ac-19562 - Future Development of Power Plant for B-54A Airplanes

References: (a) AMC letter MCPPXA31/WTE/jb/F.P8A dated 10 May 1948
(b) Boeing letter E731-296 dated 18 August 1948

1. In the fourth R-4360-43 engine coordination conference held on September 20 and 21, 1948 at Pratt and Whitney, Hartford, Connecticut, the subject of future development of the R-4360-43 engine and associated CHM-2 turbo-supercharger came under discussion. The Boeing Airplane Company informally presented data indicating the operational capabilities and limitations of the B-54A airplane as influenced by current characteristics of the R-4360-43 engine-supercharger combination. The power plant developments to improve the performance of the B-54A airplane were indicated. Since the YB-50C and B-54A are the only airplanes using this power plant, it appears desirable to stimulate engine and turbo development in directions to aid in the efficient operation of these airplanes. It is the objective of this letter to transmit to the Air Force the information on this subject given at the engine conference supplemented by additional details not presented at that time.

2. Powerplant Critical Altitude and Airplane Altitude Limitations - The altitude performance of the B-54A power plant is indicated on Figure 1. Maximum cruise power, rated power, and military power are plotted versus altitude. The power plant critical altitude variation was determined from Pratt and Whitney reports and Boeing analyses. Also given on Figure 1 is the variation of brake horsepower required by the B-54A airplane for maximum economy cruise versus altitude and for several airplane weights. The weight at which the B-54A airplane can cruise at a given altitude is limited by compressibility effects. High speed wind tunnel tests of

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a model of the B-54A airplane were analyzed to determine the maximum weight or wing loading for a given cruise altitude based on the condition that the pilot will be able to accomplish a 1.3 "g" maneuver without encountering compressibility buffeting. This compressibility limitation is shown on Figure 1 as the "cruise at max. W/S" line terminating the brake horsepower required for cruise lines. It will not be desirable to cruise the B-54A airplane above this line regardless of the power available from the power plant. It should be noted that in cruising at this limitation an appreciable amount of compressibility drag has already been incurred. The approximate superposition of the engine critical altitude variation and the airplane cruise limit indicates that the present turbosupercharger provides sufficiently high critical altitudes for cruising operation. The shaded area on Figure 1 indicates the combinations of higher gross weights and altitudes for cruise which are not permitted at present due to limited maximum cruise power. An increase in maximum cruise power would allow airplane cruising operation into the shaded area. The maximum W/S cruise limit line on Figure 1 has been replotted on Figure 2 as gross weight versus altitude for a 1.3 g maneuver without compressibility buffeting to emphasize the fact that the heavier the airplane, the lower the cruise altitude must be to avoid compressibility difficulties, regardless of power available. The brake horsepowers required for cruising at this limit condition are also given on Figure 2.

Recent Air Force requirements for turbo-prop airplanes have restricted the cruise altitude to the altitude where 500 ft. per minute rate of climb is available at rated power at the weight considered. To permit this rate of climb when cruising at the maximum W/S cruise limit, the powers required at the altitudes on the line of Figure 1 marked "500 ft./min. climb at max. W/S" are necessary. This indicates an increase in normal rating and critical altitude would be desirable in order to meet this criterion when cruising at the airplane compressibility limitation. However, since maximum range is not obtained by cruising at the compressibility limit due to the compressibility drag rise, the fact that with the present normal engine rating and critical altitude the airplane must be cruised at lower altitudes in order to meet the 500 ft./min. criterion is not of great consequence in maximum range operation of the airplane.

A further limitation on airplane performance is given on Figure 1 as "level flight at critical Mach number". This line gives the brake horsepower required for level flight at 1g at the critical Mach number (or buffet limit) at a given altitude. This curve indicates that if the airplane were to fly in level flight at the critical Mach number, some increase in critical altitude would be necessary. However, since in level flight operation at this limit a slight dive angle would suffice to increase the speed of the airplane to the point where buffeting and other compressibility phenomena would occur, it is desirable to keep a speed margin between the level flight velocity and the critical Mach number. The present engine critical altitude variation provides this margin and is satisfactory from that standpoint.

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3. Specific Fuel Consumption and Turbo-Supercharger Limitations - The Contractor believes that it has not been generally understood that current turbo-supercharger limitations restrict the operating range of the R-4360-43 engine, thereby increasing the specific fuel consumption in the cruising power range. Because the fuel consumption of the engine decreases as BMEP is increased, it is desirable to operate the engine at the maximum allowable cruise BMEP (200 psi). However, 200 BMEP operation is not possible over a considerable part of the range of powers required for maximum economy cruising of the B-54A (see curves on Figure 1) due to insufficient turbo power output to meet compressor power requirements in the turbo-supercharger. It is therefore necessary to raise engine RPM, reduce BMEP, and thereby reduce compressor requirements. The approximate magnitude of the penalties for non-optimum operation are shown on the attached Figure 3 for a typical altitude of 15,000 ft. The plot indicates the variation of brake specific fuel consumption, jet thrust, propeller efficiency, and thrust specific fuel consumption with engine RPM for three cruising powers. A comparison of brake and thrust specifics for 200 BMEP and for present limited operation may be made from this plot as follows:

Brake Horsepower	% Decrease in Brake SFC at 200 BMEP	% Decrease in Thrust SFC at 200 BMEP
1400	12.0%	7.0%
1800	4.7%	3.2%

Various possible means exist for changing the CHM-2 turbo-supercharger limitations so that 200 BMEP operation of the R-4360-43 engine is possible over more of the cruising power range of the B-54A airplane. One such means not requiring a major design change in the turbo-supercharger would be the addition of a cruise valve to the CHM-2 turbo and the addition of a surge bleed in the induction system. A cruise valve installation would thus improve the maximum economy operation of the B-54A airplane as well as materially improving the carburetor heat and power plant acceleration situations as is indicated below.

4. Carburetor Heat Requirements - A study has been made of the external heat requirements for the R-4360-43 engine to provide the required minimum carburetor air temperature of 60°F. As shown in Figures 4 and 5, the amount of external heat required with the 28 square inch and 24 square inch nozzle box areas is almost prohibitive to cold weather operation. The only possible source of external heat with the present airplane configuration is the wing deicer heaters. The fuel consumption for two of these heaters supplying four engines is approximately 100 lbs. per hour which, with the drag of the heater scoops, would materially reduce the range of the airplane. For carburetor anti-icing requirements, this arrangement should prove entirely adequate, since anti-icing requirements are not expected to exist for long periods of flight.

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Shown in Figure 6 are the external heat requirements for the CH-2 turbo equipped with a 15 square inch cruise valve and the induction system equipped with a recirculating valve. It can be seen that external heat requirements have been reduced to low power operation at low altitudes. Also, the recirculation feature will reduce anti-icing requirements somewhat. The turbine efficiency with the 15 square inch cruise valve was based upon B-50 flight tests of the CH-7 turbo, except that a loss in turbine efficiency of 5% was used rather than 3% for the CH-7. This assumption was used in all calculations.

5. Turbine Acceleration - The Contractor has made a study of the improvement in turbine acceleration with the 15 square inch cruise valve in comparison with a 28 square inch nozzle box and a 24 square inch nozzle box. When considering the maximum allowable accelerating time of 6 seconds from idle to 4300 BHP, the cruise valve appears to offer the only possibility of approaching this Air Force requirement. As shown by Figure 7, the rate of acceleration from very low powers to medium powers is fairly high with the 15 square inch cruise valve. This is the region of extreme importance since very low powers must be held for the landing gross weights on the approach, and rapid power response must be available from low powers to maximum power, not from medium to maximum power.

6. In summary, increases in horsepower for takeoff are, of course, very desirable, but the extension of critical altitude for higher powers than now obtainable are of secondary importance to the above desired improvements.

In view of the foregoing, the Contractor firmly believes it is necessary to direct engine and turbo development toward improvement of the operation of the B-54 airplane in terms of better engine power response, reduced specific fuel consumption, and reduction in external heat requirements for the engine charge air.

BOEING AIRPLANE COMPANY
SEATTLE DIVISION

T. E. Gamlem
Chief Project Engineer

Encl.
Shipment Notice
No. 10,132

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TC-92-47

7

Execute in triplicate
C— 49-146
Class— C2-A

Contract Files

CHANGE ORDER

UNITED STATES AIR FORCE
Air Materiel Command
Wright-Patterson Air Force Base
Dayton, Ohio

Date 29 October 1948
Change Order No. 2 to
Contract No. W 33-038 ac-
as amended 19032

To: United Aircraft Corporation, East Hartford, Connecticut

SUBJECT: Providing for partial and complete instrumentation of certain engines

1. Paragraph (a), Article 15 of Contract W 33-038 ac-19032, as amended, is hereby further amended by adding thereto the following items at a total increase in contract price of - $8,490.00

"Item 3 - Three (3) R-4360-43 Engines called for under Item 1 above shall be completely instrumented with head and base iron and constantan thermocouples on all cylinders, as described in Contractor's Aircraft Drawing Inst. R-7875, base and head thermocouples harnesses, and complete baffle pressure drop instrumentation, as described in Contractor's Drawing Inst. 13197, 13198 and 13199. Unit price - $1,465.00, total price - $4,395.00

Item 4 - Three (3) R-4360-43 Engines called for under Item 1 above other than those modified in accordance with Item 3 above shall be partially instrumented with head and base iron and constantan thermocouples on all cylinders, as described in Contractor's Aircraft Drawing Inst. 7875, and base and head thermocouple harnesses. Unit price of $1,365.00, total price - $4,095.00 "

2. Paragraph (g), Article 16 of said contract, as amended, is hereby amended by adding thereto the following at no change in contract price:

"Items 3 and 4 - Delivery in accordance with delivery of the engines affected under Item 1 above."

3. Nothing herein contained shall be deemed to require the Contractor to manufacture, furnish or deliver any articles or supplies, or to perform any work, as to which a Notice of Termination is in effect, at the effective date hereof, nor to require the Government to accept any such articles, supplies or work; and any such Notice of Termination shall be applicable, to the extent stated therein, to any articles, supplies or work called for hereby or otherwise referred to herein. Section 2(c)(10)

This change order has been (negotiated pursuant to) Public Law 413, 80th Congress, as amended; Public Law 759, 81st Congress; Section 13, Title I of the First Supplemental Appropriation Act, 1948; and Executive Order No. 9001, dated 25 December 1941.

1-b

Sheet 1

Incl 1-2 1948

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4. Subject contract, as amended, is hereby further amended by adding thereto the following new article entitled Renegotiation, however, the provisions of this article shall apply only to the new procurement set forth in paragraph 1 hereof:

"ARTICLE 43B - RENEGOTIATION

(a) This contract is subject to the Renegotiation Act of 1948.

(b) The Contractor (which term as used in this clause means the party contracting to furnish the articles or perform the work required by this contract) agrees, within thirty (30) days after receipt of its signed copy of this contract, to notify the Military Renegotiation Policy and Review Board, Office of the Secretary of Defense, Washington 25, D.C., of such contract, indicating its own name and address; provided that, if the contractor has previously reported to the Military Renegotiation Policy and Review Board any contract or purchase order subject to the Renegotiation Act of 1948, such notification shall not be necessary.

(c) The Contractor agrees to insert the provisions of this clause, including this paragraph (c), in all contracts or purchase orders in excess of $1,000 to make or furnish any article or to perform all or any part of the work required for the performance of this contract."

5. This Change Order consists of Sheets 1, 1-A and 2.

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Total increase in fixed price $ 5,490.00

$

$ 8,490.00

Except as hereby amended, all terms and conditions of the Contract affected, as heretofore amended or modified, shall remain unmodified and in full force and effect and shall also apply in carrying out the provisions of this Change Order.

THE UNITED STATES OF AMERICA

8-DEC 1948 (Date)

BY: Marvin R. Shaw (Contracting Officer)

MARVIN R. SHAW

1ST INDORSEMENT

TO: CONTRACTING OFFICER:

East Hartford, Conn. (Place) December 1, 1948 (Date)

1. Contractor hereby accepts the above Change Order.

UNITED AIRCRAFT CORPORATION (Contractor) (Seal)

BY: L. C. Mallet (Signature of Official with Office held)

L. C. Mallet, Assistant General Manager
Pratt & Whitney Aircraft Division

PR No. 56256

The supplies and services to be obtained by this instrument are authorized by, are for the purpose set forth in and are chargeable to allotments below enumerated, the available balances of which are sufficient to cover cost thereof:

Debit: 57X0210 802-7004 P 110-07 S 33-038

Change Order No. 2 to Contract No. W 33-038 ac-19032

2-c

Sheet 2

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TC-42-13

ROUTING AND RECORD SHEET

Air MATERIEL COMMAND

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Number all comments consecutively.
Note carefully the distinction between "Concurrence" and "Approval" for proper spacing of typewritten signature.
Use entire width of sheet, both sides.
Separate comments by horizontal lines across page.

SUBJECT: Second Phase of R-4360-VDT Engine Program

ac-18653

TO: MCREXP-74 FROM: MCPPRE5 DATE: 11/1/48 COMMENT NO. 1

1. Inclosed for your information is a copy of Pratt & Whitney Aircraft letter dated 25 October 1948, WAP:mcw Eng., which is self-explanatory.

2. For your additional information, the above proposal has been submitted to Major General Wolfe for his information and approval in order that a second phase of the R-4360-VDT Engine Program can be conducted.

3 Incls:
1.Cy.P&WA ltr dtd 10/25/48
2.Report No. TR-61
3.P&WA Spec. No. A-7072

/s/ J. L. ZOECKLER
Lt. Colonel, USAF
Actg. Chief, Aeronautical Equipment Section
Procurement Division

RAB

R.A.Bittner/ghs
Ext 2-9207
Bldg 11A
Rm 278

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TC-42-129

PRATT & WHITNEY AIRCRAFT

DIVISION OF UNITED AIRCRAFT CORPORATION
EAST HARTFORD 8, CONNECTICUT, U.S.A.
CABLE ADDRESS "AIRCRAFT"

ARMY OFFICE
APPROVED
CONCURRED IN
NO COMMENT
5/1/48

CONTRACT FILES
Ref 11/26/48

In reply please refer to:
GEM:aed Engineering II.

2 November 1948

VIA: United States Air Forces Representative, East Hartford 8, Connecticut

To: Commanding General
Air Materiel Command
Wright Field
Dayton, Ohio

Attention: MCPPXE4

Subject: Contract W33-038 ac-18653 - R-4360 V.D.T. Engine - Article 15, Item 5 - Monthly Progress Report

Reference: (a). PWA letr. GEM:mew to AMC, dated 5 October 1948
(b). PWA letr. WAP:mew to AMC, dated 25 October 1948

Enclosure: (A). One (1) copy of Pratt & Whitney Aircraft Report No. TR-61, "Preliminary Estimates of the Performance of an Advanced R-4360 Variable Discharge Engine Supercharged by a Single CHM-6 Type Turbo-Supercharger."

1. The following summarizes the work accomplished under Contract W33-038 ac-18653 subsequent to the last monthly progress report submitted by reference (a):

200

(a). Flight time on the B-50 airplane with the single nacelle VDT engine (R-4360-43 Engine No. X-155) stands at 44 hours. The delay in obtaining additional time in the air was caused by difficulties experienced with CHM-2 turbo-superchargers that had been reworked to reduce the effective nozzle box area. General Electric reports that the temporary expedient of blanking off the nozzle box apparently caused distortion at operating temperatures resulting in loss of turbine wheel hot gas seal clearance. A replacement CHM-2 turbo-supercharger not reworked for reduced nozzle box area is currently being installed in the airplane. This unit has the 15,000 RPM turbine speed restriction lifted, and consequently, flight operation at turbine speeds up to 18,200 RPM will be possible. The General Electric boost control system will be subjected to additional flight test evaluation. At this point the operation is considered basically satisfactory.

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To: CG, Air Materiel Command, Wright Field, Dayton, Ohio

Subject: Contract W33-038 ac-18653 - R-4360 V.D.T. Engine - Article 15, Item 5 Monthly Progress Report

- -

(b). R-4360-43 Engine No. X-152 was shipped to Wright Field 21 October 1948.

(c). The modernization of R4360-43 Engine No. X-151 as a replacement for the test engine in B-50 airplane No. 46-008 is in progress.

2. As a further step in evaluating performance potentialities of the R-4360-VDT engine, a successful 100-hour exploratory cruise endurance test was run on the R-4360-43 engine which previously had completed the official 150-hour qualification test. The conditions that applied during the test were as follows:

B.H.P.	2650
R.P.M.	2400
Fuel Consumption	.391 lbs./EHP/Hr.
Spark Advance	35°
Exhaust Back Pressure	44" Hg. Abs.

In addition, two (2) R-4360-43 engines have been tested with higher compression ratio pistons to determine detonation levels at the proposed R-4360-VDT Second Phase ratings. Pratt and Whitney Aircraft's proposal for a Second Phase R-4360-VDT engine was submitted by reference (b). An additional copy of enclosure (A) report, initially transmitted by reference (b), is included with this progress report.

3. For the information of the Air Materiel Command, prototype R-4360-43 engines being built under Contract W33-038 ac (19032), and which have been substantiated by the 150-hour qualification test completed under the subject contract, are expected to be delivered as follows:

(a) 4 engines by 1 January 1949
(b) 4 engines by 31 March 1949

The first engine, now ready for final acceptance test, should be shipped in approximately one week.

UNITED AIRCRAFT CORPORATION
Pratt & Whitney Aircraft Division

G. E. Meloy
Project Engineer

GEM:aed
Enc.

NOV 1948 RECEIVED ARMY OFFICE

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE
WASHINGTON, D. C.

NOV 2 1948

SUBJECT: Procurement Directive 49-31 - (B-54 Aircraft)

TO: Commanding General
Air Material Command
Wright-Patterson AFB
Dayton, Ohio

1. Reference is made to your teletype No. B-648 dated 25 October 1948, (MCPPIA31-10142).

2. Letter from this headquarters, dated 23 September 1948, subject: "Procurement Directive 49-18 - (B-54A Aircraft)," which directed the procurement of thirteen (13) B-54A aircraft is hereby amended to procure six (6) RB-54A photo reconnaissance airplanes and seven (7) B-54A bombers.

BY COMMAND OF THE CHIEF OF STAFF:

/ H Craig

H. A. CRAIG
Lieutenant General, USAF
Deputy Chief of Staff, Materiel

CONFIDENTIAL

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AMC Form No. 10-2
(Rev 29 Jul 47)

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ROUTING AND RECORD SHEET

AIR MATERIEL COMMAND

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Separate comments by horizontal lines across page.

SUBJECT PR No. 62280 - (P&W) Cancelled

6c-186 5 2

TO MCPPXS-31
Attn: M. Gannon

FROM MCPPXE5

DATE 3 Nov '48

COMMENT NO. 1

The R-4360-51 engine called for under Item 4 of AC-18653 has been changed to an R-4360-43 engine by Change Order #4. In view of this change the proposed Change Order #3 to subject contract is no longer required, and PR 62280 should be cancelled.

1 Incl: PR No. 62280
w/attachments

J. L. ZOLOCKLEY
Lt. Colonel, USAF
Actg. Chief, Aeronautical
Equipment Section
Procurement Division

R.A.Bittner/ghs
ext 2-9207
Bldg 11A
Rm 278

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AMC Form No. 10-3
(Rev. 3rd Jul 47)

ROUTING AND RECORD SHEET

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SUBJECT: Second Phase of R-4360-VDT Engine Program

TO: MCREXP-74

FROM: MCPPXE5

DATE: 3 Nov. '48

COMMENT NO. 1

1. With respect to your activities R & R sheet dated 1 November 1948 RAB/ghs, Pratt & Whitney proposal covering the second phase of the R-4360-VDT program has not been forwarded to General Wolfe.

2. This action was not required, since General Chidlaw has set up a committee to review the turbo prop and R-4360-VDT programs. However, it is desired that the comments of your activity covering Pratt & Whitney proposal be forwarded at an early date.

M. L. Wurtz

J. L. ZOECKLER,
Lt. Colonel, USAF
Actg. Chief, Aeronautical Equipment Section
Procurement Division

RAB/mw
2-9207
Bldg. 11A
Rm 278

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TC-11-24 2-100

AMC Form No. 10-a
(Rev 29 Jul 47)

ROUTING AND RECORD SHEET

AIR MATERIEL COMMAND

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Separate comments by horizontal lines across page.

SUBJECT Second Phase of R-4360-VDT Engine Program

TO MCPPXE-5 FROM MCREXP-74 DATE 2 FEB 1945 COMMENT NO. 2.

1. The Power Plant Laboratory considers that further development of the R-4360 "C" series engine with a variable discharge turbosupercharger should be based on a specific requirement of the improved engine in an airplane. Also, the design should be compatible with specific aircraft requirements regarding power ratings, fuel consumption, critical altitude, cooling, etc.

2. The R-4360-VDT type of power plant is best suited to heavy bombers having extreme long range and operating at high altitude. It also would probably be suitable in heavy cargo airplanes. Any decision to be made regarding further development of the R-4360-VDT engine should very likely be made by higher authority in Headquarters, Air Materiel Command or Headquarters, United States Air Force.

L. F. Ayres, Maj. USAF

for R. J. [illegible]
Colonel, USAF
Chief, Power Plant Laboratory
Engineering Division

JBC/rhk
2-4232
Bldg. 18-A.

COORDINATION
J. B. Co[illegible] MCREXP74
Ed Wolfe MCREXP7

(CONTINUE ON OTHER SIDE)

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TO: MCPPXA
Attn: Colonel Funk

FROM: MCPPXE-5

8 Feb. 49

COMMENT NO. 3

1. Attention is directed to comment number 2 which is self explanatory.

2. By R&R sheet dated 1 November 1948, RAB/ghs, this office forwarded to your activity a copy of Pratt & Whitney's proposal letter plus Pratt & Whitney's report TR-61 and Specification No. A-7072.

3. It is desired that this office be informed as to what action will be taken by MCPPXA in regard to Pratt & Whitney's proposal of a second phase R-4360-43 engines in regard to present and future aircraft.

Coy Cowan Capt USAF
for

M. J. COFFIELD,
Colonel, USAF
Chief, Aeronautical
Equipment Section
Procurement Division

RAB/mw
2-9207
Bldg.11A
Rm 278

(DO NOT WRITE BELOW THIS LINE)

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reply please refer to WAP:rij-Eng.

PRATT & WHITNEY AIRCRAFT

DIVISION OF UNITED AIRCRAFT CORPORATION
EAST HARTFORD 8, CONNECTICUT, U.S.A.
CABLE ADDRESS AIRCRAFT

November 4, 1948

ARMY OFFICE
APPROVED
CONCURRED IN
NO COMMENT
11/4/48

NOV 9 - 1948
PRATT & WHITNEY AIRCRAFT DIV.

VIA: United States Army Air Force Representative

To: Commanding General
Air Materiel Command
Wright-Patterson Air Force Base
Dayton, Ohio

01-10603

Attention: MCPPXG-22

Subject: Cost Breakdown - Proposal 24 September 1948
Purchase Request No. 91781

Reference: (a) AMC letter MCPPXG22/FFV:jmm to P&WA dated 21 October 1948.
(b) PWA letter WAP:tlr-Eng. to AMC dated September 24, 1948.

Enclosure: (A) Cost Breakdown, Flight Vibration Testing of Curtiss C645S-A Propeller on an R-4360-VDT Engine Installed in B-50 Airplane, Serial No. 46-008.

1. Receipt of reference (a) is acknowledged.

2. We submitted our proposal in the amount of $15,000 to conduct five hours of flight testing on a Government-furnished Curtiss Wright C645S-A propeller using as a guide for estimating purposes the actual cost of flight testing the single nacelle R-4360-43 engine in the Boeing B-50 airplane. We estimate the schedule of flight vibration testing proposed for this installation with the Curtiss C645S-A will involve essentially the same amount of labor and material as currently involved in the VDT flight program.

3. A cost breakdown, covering the reference (b) proposed flight program, is attached for the information of the Air Materiel Command. Relative to the questions raised in reference (a) no subcontracting is contemplated on this project. It is estimated that the number of persons regularly employed for this work will vary from 20 to 28.

4. PARO 7 - Copyrights is unacceptable to us for the reasons presented by the Manufacturers Aircraft Association to the Milans Committee and as more recently explained by representatives of United Aircraft Corporation to Colonel Phillips Smith, Mr. Max Golden, Major D. G. Lambert, Mr. Wade Koontz and Mr. Frank O'Connell at the Pentagon

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Building on Friday, October 22, in connection with Contract W33-038 ac-18662. In the latter case, in view of the urgency of the situation, it was found expedient to accept PARO 7 with one deviation and with the understanding that the acceptance of PARO 7 in that contract was without prejudice to United in the negotiation of any future contracts. In the present instance we would not be willing to accept PARO 7 but would be willing to accept the following copyright clause which is incorporated in many of our recent Air Force contracts;

(a) Contractor hereby agrees that the Government has a royalty-free license to reproduce and publish, have reproduced and published for it, translate, use, sell and otherwise dispose of all material copyrightable by Contractor that is produced under this contract and that originates with Contractor or Contractor's employees.

(b) Insofar as Contractor has or shall hereafter acquire the right to do so without payment of compensation to others, Contractor agrees to and does hereby grant to the Government, and to its officers, agents, servants and employees when acting within the scope of their official capacities a royalty-free non-exclusive right and license to reproduce and publish, have reproduced and published for it, translate, use, sell and otherwise dispose of all copyrightable material (other than that specified in paragraph (a)) furnished in the performance of this contract and whether or not such material is printed or reprinted from plates and type furnished by the Contractor.

(c) The Contractor shall diligently and promptly report to the Contracting Officer in reasonable written detail the identity and apparent applicability of each adversely held domestic copyright pertinent to this contract which has heretofore or shall hereafter come to the attention of the Contractor's legal representatives or executive agents in its ordinary course of business.

UNITED AIRCRAFT CORPORATION
Pratt & Whitney Aircraft Division

W. A. Parkins
Engineering Manager

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PRATT & WHITNEY AIRCRAFT DIVISION

Flight Vibration Testing of a Curtiss C645S-A Propeller on an R-4360-VDT Engine Installed in B-50 Airplane, Serial No. 46-008

Cost Breakdown

Material - Gasoline, Oil, etc.	$ 3,400.00
Engineering Wages 3200 hrs. at $1.69/hr	5,408.00
Engineering Salaries 500 hrs at $1.92/hr	960.00
Engineering Overhead at 80%	5,094.00
Total Engineering Cost	14,862.00
General & Administrative Overhead at 2.4%	357.00
Total Estimated Cost	15,219.00
Profit - 10% of Selling Price	1,691.00
Total Estimated Selling Price	16,910.00
Price Quoted	$ 15,000.00

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In repl please refer to:
GJA:bc erimental Test II

PRATT & WHITNEY AIRCRAFT

DIVISION OF UNITED AIRCRAFT CORPORATION
EAST HARTFORD 8, CONNECTICUT, U.S.A.
CABLE ADDRESS AIRCRAFT

ARMY OFFICE	
APPROVED	
CONCURRED IN	
NO COMMENT	

November 5, 1948

VIA: United States Air Forces Representative, East Hartford, Connecticut

To: Commanding General
Air Materiel Command
Wright-Patterson Air Force Base
Dayton, Ohio

Attention: MCPPXE5

Subject: Transmittal of PWA Report 752 Covering Performance of Eclipse Automatic Boost Control during Qualification Test of R-4360-43 Engine No. X-123.

Reference: (a) PWA letr. GEM:lms Engineering II dated 1 September 1948 to AMC, Dayton, Ohio

Enclosure: (A) Three (3) copies of PWA Report 752 Titled "Performance of Eclipse Automatic Boost Control, Type 844900 during 150-Hour Qualification Test of R-4360-43 Engine No. X-123."

1. Enclosed herewith are three (3) copies of PWA Report 752 for your information and reference. This report covers the performance and inspection of the automatic boost control which satisfactorily completed the 150-hour Qualification Test conducted on R-4360-43 Engine X-123.

UNITED AIRCRAFT CORPORATION
Pratt & Whitney Aircraft Division

G. J. Andreini

G. J. Andreini
Assistant Project Engineer

GJA:bc
Enc.

RECEIVED NOV 1948 ARMY OFFICE PRATT & WHITNEY AIRCRAFT

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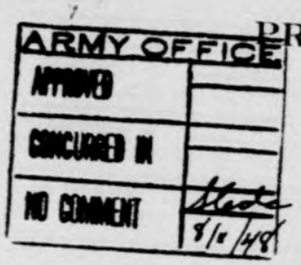
In reply please refer to:
GJA:bc Experimental Test II



PRATT & WHITNEY AIRCRAFT

DIVISION OF UNITED AIRCRAFT CORPORATION
EAST HARTFORD 8, CONNECTICUT, U.S.A.
CABLE ADDRESS AIRCRAFT

November 8, 1948

VIA: United States Air Forces Representative, East Hartford, Connecticut

To: Commanding General
Air Materiel Command
Wright Patterson Field
Dayton, Ohio

Attention: MCPPXB5

Subject: 150-Hour Qualification Test of R-4360-43 Engine No. X-123 - Contract W33-038 ac-18653.

References: (a) PWA letr. GEM:lms Engineering II dated 1 September 1948 to AMC, Dayton, Ohio via: USAF Representative, East Hartford, Conn.
(b) AMC letr. MCPPXB5/R.A.Bittner/hgs to PWA dated 13 October 1948.
(c) PWA letr. GJA:bc Experimental Test II dated 5 November 1948 to AMC, Dayton, Ohio via: USAF Representative, East Hartford, Conn.

1. The contractor wishes to acknowledge receipt of reference (b) containing the Air Materiel Command's approval of and comments on the Qualification Test of R-4360-43 engine No. X-123 as reported in reference (a).

2. The Air Materiel Command's comments on inspection details as listed in paragraph 3 of reference (b) have been reviewed and steps have been taken where necessary to improve the condition of the parts. A list of the engineering changes with a description and reference to specific items in Report PWA-745 is included for your information:

(a) (Page 5, Item 21) E.C. #25836 and #25836-A provide an improved bolt, hardened washers and increased contact area on the spherical inserts.

(b) (Page 10, Item 22) Although it is believed that the present elements will seal satisfactorily through a normal overhaul period, the contractor is continuing active development work to improve the life of the exhaust capsule sealing element.

(c) (Page 10, Item 23) The operation of the exhaust system spherical seats was satisfactory during the Qualification Test. Alternate materials with improved anti-corrosion properties are being investigated to determine whether other properties will be equally as good as those of the current material.

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Subject: 150-Hour Qualification Test of R-4360-43 Engine No. X-123 - Contract W33-038 ac-18653.

(d) (Page 10, Item 24) E.C. #25988 refines the tolerances on the torquemeter metering valve parts to insure proper alignment of metering groove. It should be noted that the torquemeter functioned satisfactorily in the Qualification Test engine after rebuild with a new metering piston.

(e) (Page 10, Item 25) E.C. #27520 provides additional clearance between crankcases, and engine mounts and forward lifting link.

(f) (Page 10, Item 26) E.C. #25428 provides an additional fin damper strip under the exhaust port.

(g) (Page 10, Item 27) All production ignition systems will incorporate a revised condenser. The revised condensers were used during 100 hours of cruise endurance on engine X-123 without difficulty.

(h) (Page 10, Item 28) All production ignition systems will incorporate high strength magneto coil brackets and redesigned and improved ignition harness elbows. A redesigned clamp for securing the leads within the magneto will also be provided.

(i) (Page 18, Item 2(f)) The ignition system air pump drive seal was damaged during disassembly after operating satisfactorily throughout the test. It should be noted that no air pump is required with low tension ignition. No change in design is indicated for this part.

(j) (Page 23, Item 39) E.C. #25836 and #26520 - The engine mount system revisions are covered in Items (a) and (e) above.

(k) (Page 23, Item 40) Cylinder deflectors and hoods made from production die equipment have eliminated the interferences reported in the inspection record.

(l) (Page 24, Item 42) Pattern equipment for rocker caps was in error and has been corrected.

(m) (Page 24, Item 43) The production die equipment for the cylinder deflectors and hoods has been revised to prevent chafing and has been redesigned and strengthened in the locations which were cracked.

(n) (Page 25, Item 5(d)) E.C. #23820 eliminated all solder from generator drive oil seals.

(o) (Page 27, Item 1) The slight wear noted on the silver-flashed exhaust linkage bushings is considered normal since this plating is incorporated to prevent galling.

(p) (Page 28, Item 2) The broken oil control ring is considered to be an isolated case. This is the first instance of this since testing of VDT engines was initiated. It should be noted that this same ring is being used successfully on current service R-2800 and R-4360 engines.

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Subject: 150-Hour Qualification Test of R-4360-43 Engine No. X-123 - Contract W33-038 ac-18653.

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(q) (Page 28, Item 3) As discussed on Page 9, paragraph 19d of PWA Report 745, the incomplete seating noted on 4 exhaust valves was very slight. It should be noted that these valves were refaced without difficulty.

(r) (Page 29, Item 2(g)) The strengthening of the magneto coil bracket is covered in Item (h) above.

(s) (Page 29, Item 1(h)) The redesigned primary lead hold down clamp is covered in Item (h) above.

(t) (Page 30, Item c) The cylinder deflectors and hoods made from production die equipment will allow additional clearance for the spark plug leads.

(u) (Page 30, Item d) The cylinder deflectors and hoods made from production die equipment will allow additional clearance for the coil supports.

(v) Fuel Injection System:

It is planned to conduct a 150-Hour endurance test, or equivalent, on the revised plunger and bushing parts which will be incorporated in production systems. The change in opening pressure of the nozzles did not affect engine operation and therefore is not considered objectionable. However, we are continuing development to minimize this change in opening pressure.

(w) Throttle Regulator:

The wear observed on the cam and follower was very slight and not considered serious. A detailed report covering the performance of this control has been forwarded by reference (c).

(x) With reference to the calibration of the throttle regulator shown on Page 32 of the subject report, there is no explanation for the shift in the setting. This shift is of the magnitude of 1" of Hg. and the effect upon performance is not considered critical. It should be noted that experimental error can account for a part of this difference. The hysteresis of the regulator is very small and for all practical purposes cannot be measured.

UNITED AIRCRAFT CORPORATION
Pratt & Whitney Aircraft Division

G. J. Andreini

G. J. Andreini
Assistant Project Engineer

GJA:bc

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AMC Form No. 10-1
(Rev 29 Jul 47)

ROUTING AND RECORD SHEET

AIR MATERIEL COMMAND

Use this form for inter-office correspondence within headquarters.

Use authorized office symbols to designate addressor and addressee.

Place initials of dictator and typist, telephone number and location to right of signature.

Number all comments consecutively.

Note warning signal at lower left of form. Remaining space is sufficient only for proper spacing of typewritten signature.

Use entire width of sheet, both sides.

Separate comments by horizontal lines across page.

SUBJECT: Second Phase Proposal for R-4360-43 (VDT) Engine

TO: MCR
Maj.Gen.F.C.Carroll

FROM: MCREXP-74

DATE: 8 NOV 1948

COMMENT NO. 1.

1. A copy of Pratt and Whitney Aircraft Division letter WAP:mew, Eng., dated 25 October 1948, is attached for information and file. The total cost of the R-4360 engine development would be $4,092,000.00, including fifty hours of flight testing.

2. The cost of development of the CH8-6 turbosupercharger necessary to attain the altitude ratings listed in the attached Pratt and Whitney Aircraft Division letter would be $485,788.00.

3. The estimated cost of providing propellers would be approximately $50,000.00 to $90,000.00. The present propeller hub has been developed for a No. 70 shaft size, but the hub is bored out for No. 60 shaft size as provided on the current R-4360-43 engines. To provide the No. 70 size, it would only be necessary to bore out the existing design hub to the larger size. Present propeller blades are considered adequate for the advance VDT engine in current aircraft unless some specific aircraft application might require different "tailor-made" blades. If it were found desirable to go to a 5-way hub on some specific application, such as a high speed reconnaissance airplane, then the cost of development of the 5-way hub would be $250,000.00.

4. It is not expected that a cooling fan will be necessary on this new VDT engine up to 40,000 ft. altitude for an airplane such as the B-54. Above 40,000 ft. a propeller mounted cooling fan probably would be required. For installations such as the Republic F-12 airplane, a propeller mounted cooling fan would probably be desirable or necessary, depending on results of a cooling study which would be necessary. For a pusher installation such as the B-36, an engine driven cooling fan would be required. Estimated cost of development of a two-speed propeller mounted fan is $250,000.00, and for a single-speed propeller mounted fan $100,000.00.

5. Insofar as fuels are concerned, the advanced VDT engine will not require any fuel development. Current fuel grade 115/145 will be satisfactory.

6. As with all new power plant installations, there will be other costs involved in the installation. Power plant installation cost will be relatively high for aircraft not now having the R-4360-43 installed, for example, Republic F-12. On the one installation established for the R-4360-43, the B-50C and B-54 airplanes, the installation cost should be relatively low.

1 Incl.
cy P&W Ltr dtd 25 Oct 48

Copy to:
MCREXB, Mr. C. L. Ford

R. J. MINTY
Colonel, USAF
Chief, Power Plant Laboratory
Engineering Division

JBC/rhk
2-4232
Bldg. 18-A

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WF-O-30 APR 48 2400 M

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AMC Form No. 10-3
(Rev 29 Jul 47)

ROUTING AND RECORD SHEET

AIR MATERIEL COMMAND

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Note warning signal at lower left of form. Remaining space is sufficient only for proper spacing of typewritten signature.

Place initials of dictator and typist, telephone number and location to right of signature.

Separate comments by horizontal lines across page.

SUBJECT Second Phase Proposal for [illegible]

TO [illegible]
Attn: General [illegible]

FROM [illegible]

DATE

COMMENT NO.

1. Reference is made to Comment No. 1 above and letter from Pratt and Whitney, dated 28 October 1948, copy attached.

2. The Pratt and Whitney [illegible] the development of the principles involved in this engine. The Pratt and Whitney proposals as generally outlined in their 28 October letter would [illegible] ment steps of a good basic engine. As will be noted in Comment No. 1 above, there will be several additional costs connected with a [illegible], propeller [illegible], etc.

3. It is my recommendation that a general improvement program [illegible] 4360 V8T engine out of the [illegible] plant in our large transports for several years.

4. I do not think we should [illegible] for Pratt and Whitney jet engine projects.

Incl:
n/c

[illegible]
Director,
[illegible] Development

:lw
61254

I concur, providing the current review of the Engine Program so indicates.

[illegible]

MICROFILM

Incl: n/c

WF-L-18 MAR 48 2 Mil 600M

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AMSP Form No. 71-27A
(Rev 11 - 20 48)

Supplemental Agreement No. 6 (S-49-120)
to Contract No. W 33-038 ac-18653 (18565)

Classification 03-A

PR 91781

Initiator: W. H. Carl, MCREXB-52

E. O. No.: 580-316

SUPPLEMENTAL AGREEMENT
TO
FIXED PRICE CONTRACT
for

SUPPLIES

DEPARTMENT OF THE AIR FORCE

(UNITED STATES AIR FORCE)

AAC/em

CONTRACTOR: UNITED AIRCRAFT CORPORATION (PRATT & WHITNEY AIRCRAFT DIVISION)

SUPPLEMENTAL AGREEMENT FOR: Conduct a Flight Vibration Stress Survey, and Other Changes

CHANGE IN PRICE: Increase - $15,000.00

Payments to be made by the Finance Officer, U. S. Army, Army Base, Brooklyn, New York.

The supplies and services, if any, to be obtained by this instrument are authorized by, are for the purpose set forth in, and are chargeable to the allotments below enumerated under the heading "Debit", the available balances of which are sufficient to cover the cost thereof. The reduction, if any, in price under this instrument will result in credits to the allotments below enumerated under the heading "Credit".

Debit: 5790200 902-7004 P 611-07 S 33-038

Contractor's invoices, or VSD's used as invoices, shall be made out to the Finance Officer designated to make payment hereunder, and shall be sent by the Contractor, for recording, to Chief, Boston AF Procurement Field Office, Army Base, Boston, Massachusetts, which has been designated as the place of AF administration for this Supplemental Agreement.

This formal contract supersedes Notice of Award dated 24 November 1948.

This Supplemental Agreement is authorized by the Armed Services Procurement Act of 1947, Public Law 413, 80th Congress, and has been negotiated pursuant to Section 2.(c)(11) of said Act.

208
Incl

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SUPPLEMENTAL AGREEMENT TO
FIXED PRICE CONTRACT FOR SUPPLIES

THIS SUPPLEMENTAL AGREEMENT No. 6 (S-49-120) to Contract No. W 33-038 ac-18653 (18565) entered into this 24th day of November, 1948, by and between THE UNITED STATES OF AMERICA, hereinafter called the "Government", represented by the Contracting Officer executing this Supplemental Agreement, and UNITED AIRCRAFT CORPORATION (PRATT & WHITNEY AIRCRAFT DIVISION), a corporation organized and existing under the laws of the State of Delaware, of the City of East Hartford, in the State of Connecticut, hereinafter called the "Contractor",

W I T N E S S E T H

WHEREAS, there is now in full force between the Government and the Contractor a certain Contract No. W 33-038 ac-18653 (18565), which contract, as heretofore amended, modified and supplemented, is hereinafter referred to as the "Supplies Contract", pursuant to which contract the Contractor agreed to convert engines, conduct tests and furnish reports with respect thereto; and

WHEREAS, the Government desires and the Contractor is willing to conduct a flight vibration stress survey as hereinafter set forth;

NOW, THEREFORE, in consideration of the premises and of the mutual covenants and agreements herein contained, and for other good and valuable considerations, the parties hereto agree as follows:

First: Article 1 - Definitions and Miscellaneous Provisions - of the Supplies Contract is hereby amended and supplemented as follows:

(a) By deleting paragraph (a) and substituting in lieu thereof the following:

"(a) The term 'Secretary of War' as used herein shall mean the Secretary of the Air Force with respect to such functions as have been or shall be transferred to and vested in the latter pursuant to law, and shall mean the Secretary of the Army with respect to functions not so transferred or vested; and the term 'his duly authorized representative' shall mean any person (other than the Contracting Officer) or board authorized to act for the Secretary concerned."

(b) By adding after paragraph (c) the following paragraph (d):

"(d) The term 'War Department' as used herein shall mean the Department of the Air Force with respect to all property, records, installations, agencies, activities, projects, and personnel that have been or shall be assigned or transferred to the latter pursuant to law, and shall mean the Department of the Army with respect to all property, records, installations, agencies, activities, projects, and personnel that have not been so assigned or transferred."

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Second: Article 5 - Delays-Damages - of the Supplies Contract is hereby amended effective from and after date of Supplemental Agreement No. 6 to the Supplies Contract by deleting paragraphs (c) and (d) thereof.

Third: Article 15 - Products, Materials and Services to be Furnished - of the Supplies Contract is hereby amended as follows:

(a) By adding in paragraph (a) after Item 6 the following Item:

"Item 7 - The Contractor shall furnish fuel, oil and personnel to operate a Government-furnished B-50 airplane, Serial No. 46-008, on a flight vibration stress survey of a Government-furnished Curtiss-Wright C-6458-4 propeller with Design 1056-1E5-30 blades on a Government furnished R-4360-43 (VDT) engine installed in said airplane. The Contractor shall also furnish labor necessary to install and remove propeller vibration measuring equipment in said airplane. The survey shall consist of a maximum of five (5) hours of flight testing and shall be conducted at Contractor's plant, East Hartford, Connecticut. Total price . . . . $15,000.00"

(b) By adding after paragraph (j) the following paragraph (k) which shall only be applicable to the work called for under Item 7 of paragraph (a) of Article 15 to the Supplies Contract:

"(k) The Government shall by separate contract with Curtiss-Wright Corporation (Propeller Division) have said Curtiss-Wright Corporation agree to obtain all data, furnish all reports required, and furnish the propeller vibration measuring equipment, stress gages and personnel necessary to service and operate this equipment both in flight and on the ground. It will be permissible for the Contractor during the course of this survey to obtain test data on other components of the power plant installation. Furthermore, if during the course of accumulating five (5) hours of flight time on the propeller survey delays attributable to the propeller or to the vibration measuring equipment are encountered the Contractor may use the airplane for obtaining test data on other power plant components. The provisions of paragraph (h) hereof shall apply and govern the Government-furnished equipment described in Item 7 of paragraph (a)."

Fourth: Article 16 - Delivery - of the Supplies Contract is hereby amended by adding in paragraph (g) after Item 6 the following:

"7 The Contractor shall use its best efforts to complete the work called for under Item 7 not later than 12 February 1949.

Fifth: Article 30 - Termination at the Option of the Government - of the Supplies Contract is hereby amended by adding after paragraph (h) the

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TSBCONT Form No. 22C
(27 Mar 48)

IN WITNESS WHEREOF, the parties hereto have executed this Supplemental Agreement as of the day and year first above written.

THE UNITED STATES OF AMERICA

NOTE: Type or print names under all signatures

By: N. RAY JOHNSON
Contracting Officer
(Official Title)

Two Witnesses:

Gertrude R. Sparks
Gertrude R. Sparks

Josephine Flor
Josephine Flor

UNITED AIRCRAFT CORPORATION
(Contractor)

By: L. C. Mallet
L. C. Mallet
Assistant General Manager
(Title)
Pratt & Whitney Aircraft Division
East Hartford 8, Connecticut
(Business Address)

I, Allen Dewing, certify that I am ~~xxx~~ an Assistant Secretary of the Corporation named as Contractor herein; that L. C. Mallet who signed this Supplemental Agreement on behalf of the Contractor, was then Assistant General Manager* of said Corporation; that said Supplemental Agreement was duly signed for and on behalf of said corporation by authority of its governing body, and is within the scope of its corporate powers.

*Pratt & Whitney Aircraft Division

Allen Dewing
Assistant Secretary
(Corporate Seal)

I hereby certify that, to the best of my knowledge and belief, based upon observation and inquiry, who signed this Supplemental Agreement for , had authority to execute the same, and is the individual who signs similar agreements on behalf of this corporation with the public generally.

(Contracting Officer)

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PRAT & WHITNEY AIRC AFT

DIVISION OF UNITED AIRCRAFT CORPORATION
EAST HARTFORD 8, CONNECTICUT, U.S.A.
CABLE ADDRESS "AIRCRAFT"

In reply please refer to:
GEM:aed Engineering II

1 December 1948

VIA: United States Air Forces Representative, East Hartford 8, Connecticut

ARMY OFFICE
APPROVED
CLASS
NO CHG. Date 3/10/49

To: Commanding General
Air Materiel Command
Wright Field
Dayton, Ohio

Attention: MCPPXB4

Subject: Contract W33-038 ac-18653 - R-4360 V.D.T. Engine - Article 15, Item 5 - Monthly Progress Report

Reference: (a) PWA Ltr. GEM:aed to AMC, dated 2 November 1948

Enclosure: (A) Three (3) Copies of Report "Development of The Boost Control System for R-4360-43 V.D.T. Engine" (Item 6, Article 15, Contract No. W33-038 ac-18653)

CONTRACT FILES

1. The following summarizes the work accomplished under Contract W33-038 ac-18653 subsequent to the last monthly progress report submitted by reference (a).

(a). B-50 airplane Serial No. 46-008 with the single nacelle VDT engine (R-4360-43 Engine No. X-155) has completed 47 hours of flight time. Through the coordinated efforts of General Electric Company and this Division, the recent mechanical difficulties encountered with the turbo-supercharger in the airplane installation have been thoroughly investigated and corrective measures have been taken. The material of the compressor housing is being changed from magnesium to aluminum to minimize distortion at elevated temperature. In addition, the exit area of the nacelle has been opened up to provide ample cooling of the turbo. Boeing have been advised in order to provide the necessary revisions for improved cooling of the turbo in the prototype and production airplanes. Engine instability in the intermediate altitude and low engine speed range has been traced to compressor pulsation. General Electric expect that a diffuser revision will provide a satisfactory extension in compressor range and accordingly, plan to provide revised diffusers for test in the flight turbo-supercharger as soon as parts are made available. In the meantime, the flight program in B-50 airplane No. 46-008 will continue within the next few days with boost control checks in the high engine power range.

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7C-12-120

1 December 1948

To: CG, Air Materiel Command, Wright Field, Dayton, Ohio

Subject: Contract W33-038 ac-18653 - R-4360 V.D.T. Engine - Article 15, Item 5 Monthly Progress Report

---

(b) Item 6, Article 15 of Contract No. W33-038 ac-18653 specifies that a report shall be furnished covering development of an electronic power control. Enclosure (A) report has been prepared as a record of development of the General Electric boost control and is submitted herewith in fulfillment of this contractual item. It should be noted that both prototype and production control designs have been established and parts have been released for manufacture.

2. Construction and delivery of prototype R-4360-43 engines (Contract W33-038 ac-19032) are proceeding according to schedule. The first two engines, P-2140 and P-2141, were delivered 19 November and 30 November 1948, respectively. Green test of the third engine is nearing completion, and initial assembly of the fourth engine is in process.

UNITED AIRCRAFT CORPORATION
Pratt and Whitney Aircraft Division

G. E. Meloy
G. E. Meloy
Project Engineer

GEM:aed

Encl.

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MCPPLS5

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PERSONNEL & ADM

RESEARCH & DEV *

INTELLIGENCE

SUPPLY AND MAINT

PROC. & IND. MOB PLNG *

OTHER

AMC Form No. 10-7
(18 Nov 47)
(Old AMC Form No. 10-508)

MCPPLS5/R.A.Bittner/ghs
6 December 1948

SUBJECT: Development of Improved Mounting for R-4360-35 and -43 Engines

TO: Bureau of Aeronautics Representative
Pratt & Whitney Aircraft Division
United Aircraft Corporation
East Hartford 8, Connecticut

1. It is desired that the following be transmitted to Pratt & Whitney Aircraft:

"At the last B-50 conference at Air Material Command 15 and 16 November 1948, it was indicated that considerable roughness existed in the present B-50 airplane, and would probably be much worse in the B-54 airplane unless softer vibration isolators were obtained. To alleviate this unsatisfactory condition the possibility of obtaining propellers with selected blades is being investigated to minimize the roughness now present. At present Boeing is switching propellers to obtain the desired results, which is an unsatisfactory procedure."

2. Pratt & Whitney has previously been informed of this unsatisfactory condition and has agreed to design new engine parts for a mounting system which would make possible the use of softer vibration isolators as specified by the airplane contractor in order that the anti-vibration requirements for aircraft power plant installations as given in the Handbook of Instructions for airplane designers might be complied with insofar as possible. However, at this time the Air Material Command does not possess detailed information as to the progress that Pratt & Whitney has made on this program. Information is desired as to what action has been taken by Pratt & Whitney, and when the program will be completed.

FOR THE COMMANDING GENERAL:

By Direction of the Commanding General

M. J. COFFEILD
Colonel, USAF
Chief, Aeronautical Equipment Section
Procurement Division

cc: MCREXA-5
MCPPXA-32

210

210

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WF-G-10 DEC 47 950M

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13

PRATT & WHITNEY AIRCRAFT

DIVISION OF UNITED AIRCRAFT CORPORATION

EAST HARTFORD 8, CONNECTICUT, U.S.A.

CABLE ADDRESS 'AIRCRAFT

In reply please refer to
ECG:eh-Contract Admin.

December 16, 1948

ARMY OFFICE
APPROVED
ENCLOSED IN
NO COMMENT
12/17/48

Via: U.S.A.F. Representative

To: Commanding General
Air Materiel Command
Wright-Patterson Air Force Base
Dayton, Ohio

Attention: MCPPXG2

Subject: Flight Vibration-Testing of a Curtiss C645S-A Propeller on a R-4360-VDT Engine Installed in B-50 Airplane, Serial No. 46-008.

Reference: (a) Notice of Award Dated 24 November 1948 Covering Supplemental Agreement No. 6 to Contract W33-038 ac-18653.

1. This will acknowledge receipt of referenced Notice of Award. As directed, we have endorsed HQAMC Form No. 10-513 (Rev. 20 Feb 48) and returned this Form to the attention of MCPPXS71 indicating our receipt and acceptance of reference (a).

2. As stated in our proposal letter of September 24, 1948, which is incorporated in paragraph 1 of reference (a), we are ready to start preparations for the flight propeller test program upon receipt of the necessary Government-furnished and Curtiss-Wright-furnished equipment.

3. Inasmuch as our proposal letter of September 24, 1948 is incorporated in reference (a) we assume that the necessary amendments to Blanket Bailment Contract W33-038 ac-10371 will be forthcoming to cover the Government-furnished equipment to be used in this propeller flight test program. One such item of Government-furnished equipment is the B-50 airplane, serial No. 46-008, which is at the present time loaned to this Contractor pursuant to Instruction 12C to the above referenced Blanket Bailment Contract. In order that this airplane may be used in this propeller flight test program the purpose of bailment expressed in paragraph 2 of Instruction 12C should be enlarged upon by adding to it the following sentence: "The airplane may also be used by the bailee for conducting a flight propeller test program on a Government-furnished C-645-A Curtiss-Wright propeller." Another item of Government-furnished equipment which will be necessary for this program is, of course, the Curtiss C645S-A propeller. We assume that an Instruction

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will be issued to the above referenced Bailment Contract which will adequately cover the loan of this propeller to the Contractor for as long as might be necessary to complete the test program contemplated by reference (a).

UNITED AIRCRAFT CORPORATION
Pratt & Whitney Aircraft Division

E. C. Grimshaw

ECG:eh

cc: Curtiss-Wright Corporation
Attn: Mr. Charles F. Farnsworth,
Manager Contract and Order Department

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Aer-CT-14
CA(535)43-22066-P

NAVY DEPARTMENT
BUREAU OF AERONAUTICS
WASHINGTON 25, D. C.

Enclosure (A)

92539

17 DEC 1948

From: Chief, Bureau of Aeronautics
To: Chief, Bureau of Supplies and Accounts

Attention: Property Accounting Division (Code AE-2)

Subject: AMC Purchase Order (535)43-22066-P - Model R-4360 Engines and Spare Parts - Forwarding of Amendments thereto

Reference:
(a) AMC, Wright Field, Dayton, O. ltr. MCPLX343 dtd 22 Jan. 1948 to BuAer.
(b) BuAer ltr. Aer-C-22, NOa(s)8333, Serial 37224 dtd 21 May 1948 to CO, AMC, Wright Field, Dayton, O.
(c) AMC, Wright Field, Dayton, O. ltr. MCPLX54 dtd. 21 July 1948 to BuAer.

Enclosure:
(A) Copy of Amendment No. (48)2379, Change No. 42.
(B) Original and four (4) copies of Amendment No. (48)3121, Change No. 43.
(C) Original and four (4) copies of Amendment No. (49)394, Change No. 44.

1. Enclosures (A), (B) and (C) are forwarded herewith for information.

2. By reference (a), as confirmed by Enclosure (A), the Air Material Command informally requested that the quantity of 633 Model R-4360-41 engines under Items 11 and 11A of the subject purchase order be reduced to a quantity of 303 R-4360-41 engines. Reference (a) further requested that the reduced quantity of 330 engines be replaced by 281 new type engines, Model R-4360-51.

3. Reference (b) advised the Air Material Command that changes in unit prices of engine models R-4360-41 and R-4360-51 would necessitate revision of figures set forth in Enclosure (A). Enclosure (B) revises Enclosure (A) as requested.

4. The change requested in paragraph 2 above was to be accomplished at no additional cost and since the matter was of extreme urgency to the Air Material Command, an advance notice of the change-over was forwarded to the contractor on 3 February 1948, applicable to Contract NOa(s)8333.

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Aer-CT-14
CA(535)43-22066-P
NOa(s)8333
92539

Subject: AAC Purchase Order (535)43-22066-P - Model R-4360 Engines and Spare Parts - Forwarding of Amendments thereto

---

5. It was impossible to cover this change immediately by a formal amendment to Contract NOa(s)8333 since the Air Materiel Command purchase order amendment was considerably delayed and cost information from the contractor was not available. In the meantime, however, the Bureau of Aeronautics was informally advised that a possibility existed that the requested change would never be formalized.

6. Reference (c), as confirmed by Enclosure (B), requested that no action be taken to procure the quantity of 221 Model R-4360-51 engines and that the Air Material Command desired to change back to 396 Model R-4360-41 engines, thereby resulting in a reduction of four (4) Model R-4360-41 engines from the quantity of 633 which were originally requested.

7. Amendment No. 32 to Contract NOa(s)8333 with the United Aircraft Corporation, Pratt & Whitney Aircraft Division, East Hartford, Conn., decreases the quantity of Model R-4360-41 engines being procured for the Air Force from 633 to 629, as indicated below, at a total decrease of $215,541.36 applicable to the subject purchase order:

Lot 9

Cont. Item	Quantity	Unit Price	Total Price
1	31	$54,312.09	$ 1,683,674.79
	598	53,885.34	32,223,433.32

8. No action is necessary regarding spare parts inasmuch as the procurement of Model R-4360-51 engines is not to be formalized and since the reduction of four (4) engines will be spare engines and not installation engines upon which the dollar amount for spare parts is predicated.

9. Attention is invited to the fact that the total decrease is $215,541.36, (four (4) times $53,885.34, the prevailing unit price of the Model R-4360-41 engine) in lieu of $474,245.53 as specified by Enclosure (C). The difference of $258,704.17 is accounted for by spare parts adjustments made by the Air Material Command upon which no action is necessary, as explained above.

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Aer-CT-14
CA(535)43-22066-P)
NOa(s)8333
Serial 92539
Subject: AAC Purchase Order (535)43-22066-P - Model R-4360 Engines and Spare Parts - Forwarding of Amendments thereto

- -

10. It is estimated that termination charges in connection with the changes requested will be approximately $200,000.00. Therefore, the Bureau of Aeronautics does not consider a refund in order until the definite amount of termination charges is known. It is recommended that funds under the subject purchase order be held until this bureau obtains from the contractor and advises the Bureau of Supplies and Accounts the total amount of charges resulting.

11. In view of the foregoing, it is requested that the Bureau of Supplies and Accounts take appropriate action to decrease the funds authorized under Special Allotment No. 212-47 applicable to the subject purchase order in the amount of $215,541.36.

/S/ A. R. Weldon
By Direction

C
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USAF, Air Material Command
Wright Patterson Air Force Base
Dayton, Ohio

MCPPXS22/MS/djs
30 April 1948
(48)2379 | 42
NAVY
(535)43-22066-P
33663 | 02H
MCPPXE43

AMENDMENT TO PURCHASE ORDER

CONTRACTOR: Navy Department
Washington, D. C.

FILE
CONTRACT FILES

The subject Purchase Order, covering Engines, Aircraft, is hereby amended to provide for the change over of 330 R-4360-41 Engines under Items 11 and 11A, and Spare Parts in the amount of $2,829,550.00 under Item 12 to 221 R-4360-51 Engines, designated as Items 16 and 16A, and Spare Parts in the amount of $2,056,539.70, designated as Item 17. Detailed description of the change is set forth in Exhibit "A" attached hereto.

NO FUNDS INVOLVED

DELIVERY SCHEDULE

1949	April	6	1950	January	38
	May	2		February	38
	September	2		March	38
	October	6		April	38
	November	12		May	37
	December	24			

SHIPPING INSTRUCTIONS: To be furnished at a later date.

NOTE: The first eight engines only are prototypes and Government inspection of these engines shall consist only of usual inspection during green test, during teardown after green test, during final assembly, final testing, packing and shipping. Whenever, in the best interests of the Government, additional inspection is considered necessary by the Government Inspector, and with the concurrence of the Contractor, other established forms of

(F.O. Washington)

(Continued on Page Two)

No funds involved

Claude W. Collins
CLAUDE W. COLLINS

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inspection should be accomplished at any time during manufacture, assembly or testing of these engines to assure satisfactory service engines. Routine inspection of raw material, source and detail inspection of parts should be waived on these engines since they will not be manufactured with production tooling. Strict interchangeability should not be required on detail parts, nor will the parts be strictly interchangeable with similar parts which may be purchased in production quantities at a later date.

ENGINEERING DATA: The Contractor shall furnish Engineering Data as set forth in Exhibits "B", "C" and "D" attached hereto.

PACKING AND MARKING: Pack and mark in accordance with requirements set forth in Exhibit "E" attached hereto.

NOTE: This Amendment issued in accordance with APR 10-203.

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EXHIBIT "A"

The description of the new items is as follows:

ITEM	QTY	UNIT	EST. UNIT COST	
16	8	ea.	$206,500.00	Aircraft Engines, USAF designation R-4360-51, built in accordance with Pratt & Whitney model Specification No. A-7067-A dated 24 June 1947. Note: These engines will be prototype R-4360-51 engines. Total - $ 1,652,000.00
16A	213	ea	80,000.00	Aircraft Engines, USAF designation R-4360-51, built in accordance with Pratt & Whitney model Specification No. A-7067-A dated 24 June 1947. Total - 17,040,000.00
17				Spare Parts equal to approximately 15% of the money value of 213 engines (Item 16A) minus the cost of accessories such as spark plugs, magnetos, ignition harness, fuel injector, electronic control for turbo, etc. at $15,000.00 TOTAL - 2,056,539.70

CHARGE:

Item 16	6	installation prototype R-4360-51 engines for one B-36C airplane at $206,500.00 ea., Project 110A	1,239,000.00
" 16	2	spare prototype R-4360-51 engines for one B-36C airplane at $206,500.00 each, Project 110B	413,000.00
" 16A	198	installation R-4360-51 engines for 34 B-36C airplanes at $80,000.00 each, Project 110A see page 43	15,840,000.00
" 16A	15	spare R-4360-51 engines for 34 B-36C airplanes at $80,000.00 each, Project 110B	1,200,000.00
" 17		Spare Parts equal to approximately 15% of the money value of 213 engines minus accessories, Project 110C	2,056,539.70 ✓
		TOTAL DEBIT	$20,748,539.70

CREDIT

Item 11	234	Installation R-4360-41 engines, Project 110A at $54,312.09 ea. to R-4360-51 engines	12,709,029.06
Item 11A	96	Spare R-4360-41 engines, Project 110B at $54,312.09 ea. to R-4360-51 engines	5,213,960.64
Item 12		Spare Parts equal to approximately 24% of the money value of 234 installation engines minus accessories, Project 110C	2,825,550.00 ✓
		TOTAL CREDIT	$20,748,539.70

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USAF, Air Materiel Comm.
Wright-Patterson Air Force Base
Dayton, Ohio

MCPFXS22/MS/eka

Date	24 June 1948
Amendment No.	(48) 3121
Change No.	43
Contract No.	NAVY
Purchase Order No.	(535) 43-22066-P
Purchase Request No.	69224
Class	02-H
Initiator	MCPFXE4
Net Debit	—
Net Credit	$194,120.95

AMENDMENT TO PURCHASE ORDER

CONTRACTOR: Navy Department
Washington, D. C.

FILE
CONTRACT FILE

Price changed from $78,128,826.89 to $77,934,705.94

The subject Purchase Order, covering Aircraft Engines, is hereby amended as follows:

(a) Price change on Amendment No. (48) 2289, Change No. 41, dated 16 April 1948, is hereby revised to read:

"Price changed from $78,124,605.62 to $78,128,826.89."

(b) Prices of Items 16A and 17, as set forth on Amendment No. (48) 2379, Change No. 42, dated 30 April 1948, are hereby revised as follows:

Item 16A - 198 each, installation R-4360-51 engines, unit price reduced from $80,000.00 to $79,125.00, a unit reduction of $875.00 and a total reduction of.....$173,250.00
Project 110a.

Item 16A - 15 each, spare R-4360-51 engines, unit price reduced from $80,000.00 to $79,125.00, a unit reduction of $875.00 and a total reduction of.....$ 13,125.00
Project 110b.

Item 17 - Spare Parts reduced in the amount of.....$ 7,745.95
Project 110c.

Total CREDIT.....$194,120.95

NOTE: This Amendment issued in accordance with APR 12-203.
(F.O. Washington)

Except as changed, either expressly or by necessary implication, all the terms, covenants, and conditions of the subject Purchase Order shall continue in full force and effect.

The supplies and/or services to be obtained by this instrument are authorized by, are for the purpose set forth in, and are chargeable to the following Allotment Number, the available balance of which is sufficient to cover the cost of same:

2180705 80X-7004 P 110-09 S 33-038

Contractor

Signature and title of person authorized to sign

Copy Retained at Subject Item Div and is Used as Supporting Document in Subject Item DOUG. AND FISCAL DIVISION
By 29 JUN 1948

MARVIN R. SHAW
Contracting Officer

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~~ARMY/AIR FORCES~~
~~AIR MATERIEL COMMAND~~
USAF, Air Materiel Command
Wright-Patterson Air Force Base
Dayton, Ohio

MCPPXS22/AS/djo

Date	11 August 1948
Amendment No.	(49)394
Change No.	44
Contract No.	NAVY
Purchase Order No.	(535)43-22066-P
Purchase Request No.	56251
Class	02H
Initiator	MCPPXE4
Net Debit	---
Net Credit	$474,245.53

AMENDMENT TO PURCHASE ORDER

CONTRACTOR: Navy Department
Washington, D. C.

Price changed from $77,934,705.94 to $77,460,460.41

The subject Purchase Order, covering Aircraft Engines, is hereby amended as follows:

a. Under Items 16, 16A and 17 of Amendment No. (48)2379, Change No. 42 and Amendment No. (48)3121, Change No. 43, the money allocated for 8 prototype and 213 production R-4360-51 engines plus spare parts shall be used in the change over to the R-4360-41 engines as set forth in Exhibit "A" attached hereto.

CREDIT.....$474,245.53

DELIVERY:

1949	Mar 10	Apr 6	May 19	June 21	July 21	Aug 33	Sept 20	Oct 39	Nov 34	Dec 38
1950	Jan 39	Feb 30	Mar 10	Apr 6						

NOTE: This Amendment issued in accordance with APR 10-203.

Copy Received. Sufficient Funds Have Been Or Will Be Allotted To Cover The Maximum Amount Of Money Which The Government Is Obligated To Pay Under This Instrument.
16 AUG 1948
BUDG. T AND FISCAL DIVISION

FILE
CONTRACT FILES

(F.O. Washington)

Except as amended, either expressly or by necessary implication, all the terms, covenants, and conditions of the subject Purchase Order shall continue in full force and effect.

The supplies and/or services to be obtained by this instrument are authorized by, are for the purpose set forth in, and are chargeable to the following Allotment Number, the available balance of which is sufficient to cover the cost of same:

212/60705, 662-2000 P 110-09 S33-038

Contractor hereby acknowledges receipt of this amendment and agrees to comply therewith.

Contractor

Signature and Title of Official

Marvin R. Shaw
MARVIN R. SHAW
Contracting Officer

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Amendment No. (49)394

P.O. (535)43-22066-P

EXHIBIT "A"

The description of the change is as follows:

Item	Qty.	Unit	Est. Unit Cost	Description
18	326	ea.	$53,885.34	Aircraft engines, USAF designation R-4360-41, built in accordance with Pratt & Whitney model specification No. A-7063A dated 18 Dec 1947.
				TOTAL $17,566,620.84
19	Spare Parts			Spare Parts equal to approximately 25% of the money value of 204 installation engines minus accessories such as spark plugs, ignition harness, carburetor, magnetoes, etc. at $4,600.00.
				TOTAL $2,513,552.38

CHARGE

Item 18 - 204 installation R-4360-41 engines for 34 B-36 B airplanes at $53,885.34 each, Project 110 A $10,992,609.36

Item 18 - 122 spare R-4360-41 engines for 34 B-36 B airplanes at $53,885.34 each, Project 110 B $6,574,011.48

Item 19 - Spare parts equal to approximately 25% of the money value of 204 installation engines minus accessories, Project 110C, $2,513,552.38

TOTAL DEBIT. . . $20,080,173.22

CREDIT

Item 16 - 6 installation Prototype R-4360-51 engines, Project 110 A at $206,500.00 each to R-4360-41 engines $1,239,000.00

Item 16 - 2 Spare Prototype R-4360-51, Project 110 B at $206,500.00 each to R-4360-41 engines $413,000.00

Item 16A - 198 installation R-4360-51 engines, Project 110A at $79,125.00 each to R-4360-41 engines $15,666,750.00

Item 16A - 15 spare R-4360-51 engines, Project 110B at $79,125.00 each to R-4360-41 . . . . . $1,186,875.00

Item 17 - Spare Parts equal to approximately 15% of the money value of 213 engines minus accessories, Project 110C $2,048,793.75

TOTAL CREDIT. . . $20,554,418.75

NET CREDIT. . . . $474,245.53

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AMC Form No. [illegible] (Rev 29 Nov 47)

ROUTING AND RECORD SHEET

AIR MATERIEL COMMAND

Use this form for inter-office correspondence within headquarters.

Number all comments consecutively.

Use entire width of sheet, both sides.

Use authorized office symbols to designate addressee and addressee.

Note warning signal at lower left of form. Remaining space is sufficient only for proper spacing of typewritten signature.

Place initials of dictator and typist, telephone number and location to right of signature.

Separate comments by horizontal lines across page.

SUBJECT R-4360-35 VDT Controls

TO MCPPXE5, Attn: Mr. R. A. Dittner

FROM MCREXPol

DATE DEC 21 1948 COMMENT NO. 1

1. This Laboratory has learned that the date for delivery of the first production VDT control is now established at 1 August 1949. This reduces the time available for General Electric to prepare for production, and will make manufacture of additional controls by General Electric for the Air Materiel Command impractical. The inclosed proposal received by this Laboratory is therefore not valid.

2. Pratt & Whitney will have at least one prototype control which will not be used on engines. It is impossible for this Laboratory to monitor the engineering of the controls without having on hand for test at least one complete control system. Further, in order to establish test equipment requirements and test methods, a control system must be available.

3. To cite an example of the importance of obtaining a control without further delay, attention is called to experience with the Type 1560 control for the R-4360-35 engine. This relatively simple control had to be modified throughout after having been placed in service. The Air Materiel Command had no background of experience on the control until the engines were delivered as production items. Comparatively, the VDT control is a very complex system.

4. It is requested that one prototype control be allocated to this Laboratory.

Incl: Ltr dtd 20 Oct 1948

J. J. MINTY
Colonel, USAF
Chief, Power Plant Laboratory
Engineering Division

RTD/vab
2-2208
Bldg. 18D

To: MCREXP-61 From: MCPPXE5 Date: 23 Dec. '48 Comment No. 2

1. With respect to comment No. 1, inclosed for your information is a copy of AMC letter MCPPXE5/RAB/mw dated 23 December 1948, which is self explanatory.

2. This office does not question the importance of obtaining a boost control for test purposes; however, it is felt that this matter should have been brought to the attention of this office at an earlier date rather than waiting two (2) months after the receipt of Pratt & Whitney Aircraft letter for action.

M. J. COFFIELD,
Colonel, USAF
Chief, Aeronautical Equipment Section
Procurement Division

RAB/mw
2-9207
Bldg. 11
Rm 278

Incl. AMC ltr dtd 23 Dec. '48

213

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AMC Form No. 10-a
(Rev 29 Jul 47)

ROUTING AND RECORD SHEET

AIR MATERIEL COMMAND

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Use authorized office symbols to designate addressor and addressee.

Place initials of dictator and typist, telephone number and location to right of signature.

Number all comments consecutively.

Note warning signal at lower left of form. Remaining space is sufficient only for proper spacing of typewritten signature.

Use entire width of sheet, both sides.

Separate comments by horizontal lines across page.

SUBJECT R-1,360-43 VDT Controls

TO MCPPXE5 FROM MOREY/61 DATE JAN 5 1949 COMMENT NO. 3

1. This Laboratory has made numerous requests to Pratt & Whitney representatives, such as Mr. R. Beck, for sample VDT control systems in the past year.

2. The quotation finally received (inclosure to Comment 1) was regarded as so unacceptable in delivery date that the controls vendor was contacted directly and immediately to determine the practicability of an earlier delivery date. The controls vendor stated at that time that it was entirely practical to deliver two production models within a short period of time, and that a revised quote would be forthcoming. At a later date, when questioned as to the status of the quotation, Mr. J. F. Hasney of General Electric stated that delivery of any additional controls could not be made until the fall of 1949, due to a change in production schedule. Within one week after learning this, Comment 1 was in the hands of Procurement Division.

L. F. Argus, Maj. USAF
for R. J. CROTTY
Colonel, USAF
Chief, Power Plant Laboratory
Engineering Division

RB
R Duncan
RTD/jts
2-2208
Bldg. 18D

Incl: n/c

WF-O-30 APR 48 2600 M

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for to RHB:rim-Eng.

PRATT & WHITNEY AIRCRAFT

DIVISION OF UNITED AIRCRAFT CORPORATION
EAST HARTFORD 8, CONNECTICUT, U.S.A.
CABLE ADDRESS "AIRCRAFT"

1-12

December 31, 1948

Via: Bureau of Aeronautics Representative

To: Commanding General
Air Materiel Command
Wright-Patterson Air Force Base
Dayton, Ohio

ac 18653

Attention: MCPPXE5

Subject: R-4360-43 Engine Boost Control System

Reference: (a) BAR E.H. End-1 F21-3 LES(10986)er dtd 28 December 1948 on AMC, Dayton ltr MCPPXE5/RAB/mw dtd 23 December 1948.
(b) PWA letter dated 20 October 1948, WAP:GMr-Eng.

1. We do not agree with the statement in reference (a) that "it would be impossible to furnish two (2) R-4360-43 engine boost control systems, prior to August 1949." Our proposal dated 20 October 1948 stated that delivery of two boost control systems for laboratory test and evaluation could be made six (6) months after date of contract. This proposal has never been revised or withdrawn.

2. In answer to the question raised in reference (a) please be advised that Pratt & Whitney does not have an extra R-4360-43 prototype control of its own which will not be used on an engine. However, in order to expedite boost control evaluation tests at Wright Field, we suggest the Air Materiel Command borrow one of the eight boost control systems currently being delivered with the eight prototype R-4360-43 engines under Contract W33-038 ac-19032. Since it is our understanding that not more than four of these eight engines will be flown at one time, it would appear that the loan of one unit for laboratory tests would not interfere with the YB-50C flight test program which, we understand, will not get under way until well into 1949. Four prototype R-4360-43 boost systems for use on engines being delivered under Contract 19032 are now available and if so directed, we will be pleased to ship immediately one of these systems directly to Wright Field.

F21-3
GWB(41)apm

3 JAN 1949

From: BAR, East Hartford, Conn.
To: AMC, Wright-Patterson AFB
Dayton, Ohio
1. Forwarded

G. W. BALL
Aeronautical Engineer
By direction

UNITED AIRCRAFT CORPORATION
Pratt & Whitney Aircraft Division

R. H. Begg
R. H. Begg
Piston Engine Development Engineer

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RESTRICTED

PRATT & WHITNEY AIRCRAFT

DIVISION OF UNITED AIRCRAFT CORPORATION

EAST HARTFORD 8, CONNECTICUT, U.S.A.

CABLE ADDRESS: AIRCRAFT

ARMY OFFICE
APPROVED
CONCURRED IN
NO COMMENT 31/49

December 31, 1948

In reply please refer to:
GEM:aed - Engineering II

VIA: United States Air Forces Representative, East Hartford 8, Connecticut

To: Commanding General
Air Materiel Command
Wright-Patterson Air Force Base
Dayton, Ohio

ATTENTION: MCPPXB4

Subject: Contract W33-038 ac-18653 R-4360-VDT Engine - Article 15, Item 5 - Monthly Progress Report

Reference: (a) PWA Ltr. GEM:aed to AMC, dated 1 December 1948

Enclosures: (A) Three (3) Copies of Pratt and Whitney Flight Test Report PWA-EFT-101 entitled "Summary of the 50 Hour Flight Development Program on R-4360-43 Powerplant Installed in Boeing B-50A Airplane U.S.A.F. Serial No. 46-008".

(B) Three (3) Copies of Pratt and Whitney Report TR-52R, revised 12-2-48, entitled "Preliminary Estimates of the Performance of the R-4360-C3 Variable Discharge Engine Supercharged by a Single CHM-2 Type Turbo-Supercharger".

1. Enclosure (A) report, covering 50 hours flight testing of an R-4360-43 engine in a B-50 airplane, is submitted herewith in fulfillment of Item 3, Article 15 of Contract W33-038 ac-18653. Furnishing this item now completes all items to be delivered to the government under Article 15 of the subject Contract. The Curtiss Propeller testing in B-50 airplane Serial No. 008 as covered by Notice of Award (Supplemental Agreement No. 6 to Contract W33-038 ac-18653 received December 16, 1948) is the only work remaining under the Contract. A review of the items furnished to the government is presented below for information:

Article 15 (Contract No. W33-038 ac-18653)

Item 1. Conversion of two (2) Government owned XR-4360-39 engines on or before Contract delivery date of 31, December 1947. Engines Nos. X-151 and X-152 were converted as required and delivered to the government 29 October 1947 and 23 December 1947, respectively.

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To: CG, Air Materiel Command, Wright-Patterson Air Force Base
Dayton, Ohio

Subject: Contract W33-038 ac-18653 - R-4360-VDT Engine - Article 15, Item 5 - Monthly Progress Report

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Item 2. Report of satisfactory qualification test of R-4360-43 engine on or before 31 December 1948. Qualification test was completed and report PWA-745 delivered to Government 1 September 1948. Supplementary information pertaining to the fuel injection system and the boost control regulator tests was furnished in reports PWA-754, transmitted 13 October 1948, and PWA-752, transmitted 5 November 1948, respectively.

Item 3. Report of minimum of 50 hours of flight testing of R-4360-43 engine in B-50 airplane on or before one year after date airplane with R-4360-43 engine installed is received. Report PWA-EFT-101 completed and delivered to Government 31 December 1948. (The completion date for this item was May 26, 1949.)

Item 4. (Amended - Change Order No. 5 to Contract) Conversion of one government owned XR-4360-39 engine on or before 1 November 1948. Engine No. X-155 was converted as required and delivered 10 September 1948.

Item 5. Detailed monthly report covering the progress of development - Sixteen (16) monthly progress reports have been delivered. In addition performance analyses of the R-4360-VDT powerplant were conducted and presented in Pratt and Whitney reports TR-52R, TR-56, TR-57 and TR-61, which have been transmitted to the Air Materiel Command.

2. B-50A airplane Serial No. 46-008 with the single nacelle VDT engine (R-4360-43 Engine No. X-155) has completed 29 flights accounting for a total time in the air of 53 hours. Flight operation during the past month has been concerned largely with boost control system checks. At present, Curtiss Propeller personnel are proceeding with the installation of special instrumentation in the airplane preparatory to propeller vibration tests on the VDT engine. Concurrently, repairs are in process involving replacement of wing fuel tank transfer connection seals which were found to be leaking. It is not expected that these repairs will delay the propeller program which should start next week.

3. Enclosure (B) report, revised 2 December 1948 to show performance based on approved R-4360-43 ratings (Engine Model Specification A-7065-E), is forwarded herewith for the information of the Air Materiel Command.

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31 December 1948

To: CG, Air Materiel Command, Wright-Patterson Air Force Base
Dayton, Ohio

Subject: Contract W33-038 ac-18653 - R-4360-VDT Engine - Article 15, Item 5 - Monthly Progress Report

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4. A brief statement of progress relating to the R-4360-43 prototype engines being furnished under Contract No. W33-038 ac- 19032 is included in this report for information purposes. The third prototype engine, No. P-2142, was delivered to the government 30 December 1948. Government acceptance test of the fourth engine, No. P-2143, was satisfactorily completed today. Shipment of this engine is scheduled for the first week in January.

UNITED AIRCRAFT CORPORATION
Pratt and Whitney Aircraft Division

G. E. Meloy
G. E. Meloy
Project Engineer

GEM:aed
Encls.

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PRATT & WHITNEY AIRCRAFT

DIVISION OF UNITED AIRCRAFT CORPORATION
EAST HARTFORD 8, CONNECTICUT, U.S.A.
CABLE ADDRESS "AIRCRAFT"

January 24, 1949

Via: United States Air Force Representative

To: Headquarters, Air Materiel Command
Wright-Patterson Air Force Base
Dayton, Ohio

Attention: MCPFXS71

Subject: Proposed Supplemental Agreement No. 6 to Contract W33-038 ac-18653

Reference: (a) AMC letter MCPFXS71 VEA:jed dated 6 January 1949

Enclosures: (A) Four (4) Copies of Supplemental Agreement No. 6 to Contract W33-038 ac-18653
(B) Termination Article

ARMY OFFICE
APPROVED
CONCURRED IN
NO COMMENT
25/1/49

Revisions made 1/28/49
A.G. Caulfield, Contract Authority

1. This will acknowledge receipt of four (4) copies of subject Supplemental Agreement which were enclosed with reference (a). This Supplemental Agreement purports to cover the work that this Contractor is to furnish in connection with a flight vibration stress survey on a Curtiss-Wright propeller. This work, at the present time, is being performed under a Notice of Award dated November 24, 1948. However, this Supplemental Agreement, which is to supersede the Notice of Award, does not in some respects conform to our proposal referred to in the Notice of Award. We are, therefore, returning herewith all copies of the proposed Supplemental Agreement with the request that it be revised to conform to our basic agreement

2. The description of the additional work in provision Third on page 2 of the subject Supplemental Agreement indicates that we are furnishing all the services and materials necessary for this flight vibration stress survey. Our proposal, however, was limited to furnishing the fuel, oil and personnel to operate and service the airplane and the labor necessary to install and remove from the airplane the vibration measuring equipment. Also our proposal was limited to a program of a maximum of five (5) hours' duration. Accordingly, we feel that provision Third on page 2 should be changed to read as follows:

"Third: Article 15 - Products, Materials and Services to be Furnished - of the Supplies Contract is hereby amended by adding in paragraph (a) after Item 6 the following Item:

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Item 7 - The Contractor shall furnish fuel, oil and personnel to operate a Government-furnished B-50 airplane, Serial No. 46-008, on a flight vibration stress survey of a Government-furnished Curtiss-Wright C-645S-A propeller with Design 1056-1C5-30 blades on a Government-furnished R-4360-43 (VDT) engine installed in said airplane. The Contractor shall also furnish labor necessary to install and remove propeller vibration measuring equipment in said airplane. The survey shall consist of a maximum of five hours of flight testing and shall be conducted at Contractor's plant, East Hartford, Connecticut.
Total price, Item 7. . . . . .$15,000.00."

3. In order to incorporate certain other necessary features of our proposal, we believe that an additional paragraph in this Supplemental Agreement is necessary. In order to do this, we suggest that the following paragraph be added as provision Fourth on page 2 of the Supplemental Agreement:

"The Government shall by separate contract with Curtiss-Wright Corporation (Propeller Division) have said Curtiss-Wright Corporation agree to obtain all data, furnish all reports required, and furnish the propeller vibration measuring equipment, stress gages and personnel necessary to service and operate this equipment both in flight and on the ground. It will be permissible for the Contractor during the course of this survey to obtain test data on other components of the power plant installation. Furthermore, if during the course of accumulating five hours of flight time on the propeller survey delays attributable to the propeller or to the vibration measuring equipment are encountered the Contractor may use the airplane for obtaining test data on other power plant components. The provisions of paragraph (h) of Article 15 of the Supplies Contract shall apply and govern the Government-furnished equipment described in Item 7."

Naturally, the addition of this new provision Fourth will require the renumbering of the succeeding provisions.

4. The proposed Supplemental Agreement as now written states in provision Fourth that this flight vibration stress survey shall be completed on or before 31 December 1948. Our proposal stated that we would use our best efforts to complete this program within one (1) month after the airplane was first flown with the Curtiss propeller installed. The last of the necessary Government-furnished and Curtiss-Wright-furnished equipment did not arrive at our plant until December 23, 1948. It was then necessary to install the test equipment and propeller on the airplane and to await suitable weather conditions before we were able to start the actual flight test work. As a net result, it was not until January 12, 1949 that we were able to make the first flight on this survey.

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Accordingly, in order to conform the Supplemental Agreement with the basic agreement, we suggest that what now appears as provision Fourth on page 2 be changed to read as follows:

"Fifth: Article 16 - Delivery - of the Supplies Contract is hereby amended by adding in paragraph (g) after Item 6 the following:

7 The Contractor shall use its best efforts to complete the work called for under Item 7 not later than February 12, 1949."

5. We notice in provision Fifth that Article 30 entitled, "Termination at the Option of the Government", has been changed to read as per the Termination clause enclosed with the Supplemental Agreement. There is no statement in this Supplemental Agreement that the new Termination Article applies only to the work added by Supplemental Agreement No. 6. We do not believe it is the intention of the Air Force at this time, by means of a Supplemental Agreement which covers only $15,000.00 of additional work, to incorporate a new Termination Article which will apply retroactively to the work under the basic contract and any amendments previous to this Supplemental Agreement No. 6. Furthermore, since there was no mention made in either our proposal or in the Notice of Award or in any prior negotiations on this propeller flight test program of the necessity of amending the Termination Article, we do not believe that it is necessary at this time to incorporate any new Termination Article. If the Air Force believes it is absolutely necessary to insert a new Termination Article for additional work contracted for at this time, we would be agreeable to accepting as a part of this Supplemental Agreement a Termination Article as per the Article which is enclosed with this letter. It is our understanding that the enclosed Termination Article is acceptable for use by the Air Force. The clause incorporating this Article should, however, clearly state that the new Termination Article is applicable only to the work to be performed under Item 7 of paragraph (a) of Article 15.

6. With one exception, the other provisions of the proposed Supplemental Agreement are satisfactory to us. This one exception is in the last line of the first WHEREAS clause on page 1. It is there stated that what we had agreed to do under the basic contract was, amongst other things, to "furnish engines." Strictly speaking, this is not true since our basic contract called for our converting Government-furnished engines. Accordingly, we believe that the word "furnish" should be deleted from this WHEREAS clause and the word "convert" should be substituted.

7. We believe it is for the best interests of both parties to have this Supplemental Agreement 6 accurately reflect the basic agreement between us. Accordingly, we request that the Supplemental Agreement be revised as outlined above. We will, however, be pleased to discuss this matter further if the Air Force so desires.

UNITED AIRCRAFT CORPORATION

L. C. Mallet

L. C. Mallet, Assistant General Manager
Pratt & Whitney Aircraft Division

LCM:fg
Enclosures

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7C-12-25

In reply please
refer to WAP:RBr-Eng.

PRATT & WHITNEY AIRCRAFT

DIVISION OF UNITED AIRCRAFT CORPORATION

EAST HARTFORD 8, CONNECTICUT, U.S.A.

CABLE ADDRESS: AIRCRAFT

ac-17032

January 25, 1949

PR67764

VIA: United States Army Air Force Representative

TO: Commanding General
Air Materiel Command
Wright-Patterson Air Force Base
Dayton, Ohio

Attention: MCPPXE5

Subject: 150 Hours of Flight Testing on R-4360-43 Power Plant Installation, Proposal for

Enclosure: (A) Cost Breakdown, 150 Hours of Flight Testing on R-4360-43 Power Plant Installation.

1. During the B-54 Coordination Conference held at the Lynn Works of the General Electric Company on January 19 and 20, the desirability of Pratt & Whitney Aircraft continuing flight test work at East Hartford on the B-50 single-nacelle R-4360-43 installation was discussed in considerable detail. Since it was evident that many additional problems relating to the installation of the R-4360-43 power plant in the airplane still exist which can be answered before either prototype or production airplanes are delivered, it was agreed that it would be a mistake not to continue this single-nacelle flight test work. General Electric for example will have available within the next few weeks a revised CHM-2 turbo-supercharger incorporating many of the features proposed for the prototype and production airplanes and other revisions are expected to follow. If the single-nacelle flight test program is not continued, the performance of the production unit will not be known until Boeing flies the YB-50C airplane late this summer and if further changes to the turbo-supercharger are indicated at that time, it may be too late to accomplish them without delaying the production program.

2. With respect to performing additional flight tests on the CHM-2 turbo-supercharger, it is important that the final acceleration characteristics of the R-4360-43 power package be checked in flight before the prototype B-54 airplane is flown.

3. Boeing as well as Pratt & Whitney would like to know what is the minimum usable carburetor air temperature in flight. It is also important to know whether it is more economical to burn extra fuel in auxiliary combustion heaters to obtain a minimum carburetor air temperature or whether it is more economical to save the weight and complication of combustion heaters and accept the slight loss in engine fuel economy resulting from reduced carburetor air temperatures. We have not had an opportunity to make such checks because of the urgency of working out the VDT control setting and the turbo-supercharger limitations.

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TC-92-26

4. The exhaust gas temperatures which may be encountered at the turbo nozzle box during various flight conditions have not been fully investigated and this information is urgently needed by Boeing to determine whether or not exhaust gas heat exchangers are required.

5. We have not had an opportunity to install an R-4360-43 low tension ignition system on the flight engine. While we have every reason to believe its performance at altitude will be excellent, it is desirable to have substantiating test data.

6. When turbo-superchargers which meet their expected performance become available and permit engine and airplane operation at all anticipated service conditions, the entire power plant including control should be checked over the full operating range and operating altitudes. Likewise should it be decided that a turbo-supercharger cruise valve is required for production B-54 airplanes, its characteristics and the revised VDT control characteristics will have to be checked and reset on the basis of flight tests.

7. In view of the difficulties experienced with the original turbo-supercharger air entrance and the carburetor air duct system in the single-nacelle B-50 installation, General Electric and Boeing have both requested that additional work be carried on to insure the elimination of any undesirable characteristics in the air inlet system of the production B-54 airplane. There are also many other items, such as engine cooling characteristics, carburetor metering and oil system characteristics pertaining to the VDT installation which should be investigated in flight.

8. In view of the foregoing, representatives of the Air Materiel Command requested that Pratt & Whitney Aircraft submit a proposal covering 150 hours of additional flight test time on the single-nacelle B-50A R-4360-43 installation. This flight test program would again be under Pratt & Whitney's direction and would be performed for the mutual benefit of Boeing, General Electric, Curtiss Propeller, Pratt & Whitney and the Air Materiel Command. In other words Pratt & Whitney will conduct a cooperative flight test program in which all parties concerned will participate and cooperate in an effort to produce a production power plant installation with a minimum of difficulty and time delay.

9. Accordingly, it is proposed that;

(a) A minimum of 150 hours of flight testing be performed on the government-furnished R-4360-43 power package installed in the No. 3 nacelle position of B-50A Airplane No. 46-008. The object of this flight testing is to investigate the performance characteristics of the R-4360-43 power package, including the engine, turbo-supercharger, controls, propeller and airplane nacelle, and to determine and demonstrate improvements to the production articles.

(b) The Contractor maintain the government-furnished R-4360-43 engine installed in the No. 3 nacelle of B-50A Airplane No. 46-008 and a spare government-furnished R-4360-43 airplane

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prefer mem. to reports TC-42-11

installation engine in operating condition as governed by the progress of the work outlined in subparagraph (a) above.

(c) Detailed monthly reports, in triplicate, covering the progress of the work be furnished.

(d) Report, in triplicate, covering the 150 hours of flight testing described in subparagraph (a) above be furnished.

10. We propose to start the work outlined above directly following the Curtiss Propeller flight test work on B-50A Airplane No. 46-008 now being completed under Contract W33-038 ac-18653. We propose to complete the 150 hours of flight testing within twelve (12) months from the date we receive acceptable contractual coverage for this work and to furnish the final report 13 months from the same date. These dates of completion are specified with the understandin that there will be no long or unusual delays resulting from lack of government-furnished equipment required for the flight testing. The maintenance of the R-4360-43 engines during these tests will be our responsibility as outlined in paragraph 9(b) above.

PWB. 2/10/49

11. The B-50 airplane, No. 46-008, and four CHM-2 turbo-supercharger are on loan to us until March 1, 1949 under Instructions 12c and 15c respectively to Blanket Bailment Contract W33-038 ac-10371. The two R-4360-43 engines, Nos. X-152 and X-155, are loaned to us under Contract W33-038 ac-18653. In order to contractually cover the loan of the airplane, the four turbo-superchargers and the two engines for this program, we suggest that Instructions 12c and 15c to the Blanket Bailment contract be amended to state that the complete airplane with the R-4360-43 power package, the spare R-4360-43 engine and the four CHM-2 turbo-superchargers be loaned to us for the purposes and the duration of the 150-hour flight test program.

12. The cost of obtaining each hour of B-50 flight operation to date exceeds $3000.00. The hourly cost of the proposed flight test program should not change appreciably. Therefore, we quote a price for the 150 hours of flying of $450,000.00. A summary breakdown is attached.

UNITED AIRCRAFT CORPORATION
Pratt & Whitney Aircraft Division

W. A. Parkins
W. A. Parkins
Engineering Manager

The word detailed means that P&W will furnish AMC comments regarding all power plant difficulties encountered & will furnish original sheets

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TA-42-48

PRATT & WHITNEY AIRCRAFT DIVISION

150 Hours Flight Testing on R-4360-43 Power Plant Installation

COST BREAKDOWN

Material - Gasoline, Oil, etc.	$ 102,000.00
Engineering Wages - 96,000 hrs. at $1.69/hr.	162,240.00
Engineering Salaries - 15,000 hrs. at $1.92/hr.	28,800.00
Engineering Overhead at 80%	152,832.00 ~~152,832.00~~
Total Engineering Cost	445,872.00
General & Administrative Overhead at 2.4%	10,700.00
Total Estimated Cost	456,572.00
Profit - 10% of Selling Price	50,730.00
Total Estimated Selling Price	507,302.00
Price Quoted	$ 450,000.00

F.H.B. 2/10/49

January 24, 1949

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TC-71-467

ROUTING AND R... ORD SHEET

A. MATERIEL COMMAND

SUBJECT: Controls for the R-4360-43 Engine

TO: ..., Attn: Mr. R. A. Bittner

SYMBOL: MCREXP61

DATE: JAN 31 1949

1. It is requested that two complete control systems for the VDT engine plus one extra control amplifier be obtained for this Laboratory. In the conference of 20 January 1949, at Lynn, both Boeing and Pratt & Whitney representatives stated that the control systems allocated to Boeing for flight test will not be required until late summer, because flight testing of the four-engine installation is now scheduled for August 1949. Boeing representatives further indicated that the 100 per cent spares now scheduled for shipment to Seattle will not be required until some later date, because it is unlikely that major changes in the controls would be required in the early stages of flight testing. It was also stated that the number of controls requested above could be shipped upon receipt of instructions. The tests and evaluation planned by this Laboratory for the controls are not of the destructive type, so that systems used for tests at this activity would be available for shipment to Boeing when required. It is planned that one control system will be used for operation of the engine which is to be run by the Propeller Laboratory, one system will be bench tested by this Laboratory, and one amplifier will be evaluated by Electronic Subdivision for components.

2. This Laboratory requests verification that funds will be allocated for development of the Eclipse-Pioneer - General Electric control system only and that flight and cell testing of other control systems for the engine is not contemplated. This Laboratory recommends that alternate controls which are now available be tested by Pratt & Whitney if funds are available. It was stated in the coordination conference of 20 January 1949 that any further engineering on VDT engines and components would be in the form of an improvement rather than a development program. Some facts relating to the control program follow:

a. The throttle controls tested to date for the R-4360-43 engine are manufactured by Eclipse-Pioneer and the Rochester Products Division of General Motors Corporation. The Eclipse control is definitely favored by Pratt & Whitney because all R-4360 engines which use hydraulic controls are equipped with the same basic Eclipse design, and because of the great amount of experience accumulated with Eclipse controls on various models of this engine.

b. The Eclipse control is the only hydraulic throttle control in the somewhat large experience of the USAF which incorporates an oil filter. The filter was included in the design because of close tolerances in the servo system. This filter is a probable source of engine trouble if not cleaned at frequent intervals. A by-pass is now being included in the controls for both the -35 and -43 engines, to permit oil flow when this filter is clogged. Mr. W. Parkins of Pratt & Whitney stated in the coordination conference that additional funds would be required to add the requirement of a filter-less throttle control.

c. Rochester Products and Simmonds Aerocessories are both interested in supplying a throttle control for the VDT engine. General Electric, being responsible for the entire control system, submitted a Rochester control to Pratt & Whitney, and a subsequent engine bench showed that the control was equal in performance with the Eclipse-Pioneer controls. This is stated in Pratt & Whitney Report "in fulfillment of Item 6, Article ... Contract W33-038-ac-19653". The Rochester control does not incorporate a filter. ...

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ROUTING AND RECORD SHEET.

AMC MATERIEL COMMAND

Use this form for inter-office correspondence within headquarters.

Use authorized office symbol to designate addressee and addresses.

Place initials of dictator and typist, telephone number and location to right of signature.

Number all comments consecutively.

Note warning signal at lower left of form. Remaining space is sufficient only for proper spacing of typewritten signature.

Use entire width of sheet, both sides.

Separate comments by horizontal lines across page.

SUBJECT: Controls for the R-4360-43 Engine

TO: MCPPLES, Attn: Mr. R. A. Bittner

FROM: MCREXP61

DATE: JAN 31 1949

COMMENT NO. 1 (cont.)

record of Rochester controls on Allison engines during the war was excellent. Simmonds Aerocessories supplied controls for Packard engines and had a very good record.

d. Eclipse-Pioneer has also designed and built, at no cost to the Government or to Pratt & Whitney, a complete control system for the VDT engine. This system is available for engine and flight test.

L. F. Ayres, Maj: USAF
for R. J. WINNY
Colonel, USAF
Chief, Power Plant Laboratory
Engineering Division

RTD/vdb
2-2208
Bldg.18D

COORDINATION
R Duncan MCREXP61
J Bartlett MCREXP61
R. E. Hoffman MCREXP6

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TO	FROM	DATE	COMMENT NO.
MCREXP-61	MCPPIE5	1 Feb. '49	2

1. With respect to comment No. 1, at present this office plans to allocate only one (1) prototype R-4360-43 engine to the Power Plant Laboratory for whatever test work is desired on the various components installed on the above engine.

2. At the present time there are eight (8) prototype R-4360-43 engines. Four (4) of these engines are slated for installation in the prototype B-50C airplane. The remaining four (4) engines are spares for this airplane, and they have been allocated as follows:

a. One (1) is slated for the ground test rig at Boeing, Seattle, Washington.

b. Two (2) are to be installed in a special B-50 airplane for a service life test on the R-4360-43 engine.

c. The remaining engine will be shipped to the Power Plant Laboratory .

3. In view of the many complications that have arisen in the R-4360-43 engine program recently, it is believed that personnel of your office meet with personnel of this activity to discuss their mutual problems in order that a satisfactory arrangement can be made in order that the required equipment can be obtained for test purposes. It is suggested that a conference be arranged at an early date for this purpose.

By direction

M. J. COFFIELD,
Colonel, USAF
Chief, Aeronautical
Equipment Section
Procurement Division

RAB/mw
2-9207
Bldg. 11A
Rm 278

DISPOSITION	NOTES
FILE	

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PRATT & WHITNEY AIRCRAFT

DIVISION OF UNITED AIRCRAFT CORPORATION

EAST HARTFORD 8, CONNECTICUT, U.S.A.

CABLE ADDRESS: AIRCRAFT

ARMY OFFICE
APPROVED
CONCURRED IN
NO COMMENT
3/2/49

February 2, 1949

In reply please refer to:
GEM:aed - Engineering II

VIA: United States Air Force Representative, East Hartford 8, Connecticut

To: Commanding General
Air Materiel Command
Wright-Patterson Air Force Base
Dayton Ohio

Attention: MCPPXE4

Subject: Contract W33-038 ac-18653 - R-4360-VDT Engine - Article 15, Item 5 - Monthly Progress Report

Reference: (a) PWA letter GEM:aed to AMC, dated 31 December 1948

1. This report is submitted as the final progress report required under Item 5 of Article 15 of Contract W33-038 ac-18653. The Curtiss Propeller flight vibration testing covered by proposed Supplemental Agreement No. 6 to Contract W33-038 ac-18653, has been completed on the R-4360-43engine in B-50 airplane No. 46-008. Flight time on the airplane now stands at 60.5 hours. The propeller flight vibration program was the only work remaining on the subject Contract. Reference (a) progress report included a summary of all items required by Contract that have been furnished to the government.

2. For information purposes a brief statement of progress for R-4360-43 prototype engines being furnished on Contract W33-038 ac-19032 is included. The fourth prototype engine, No. P-2143, was delivered to the government 13 January 1949. The fifth engine, No. P-2144, is now running green test and is scheduled for shipment during the third week of February.

UNITED AIRCRAFT CORPORATION
Pratt and Whitney Aircraft Division

G. E. Meloy

G. E. Meloy
Project Engineer

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TC-92-73

Dayton

Aer-OT-1
NOa(s) 8333

NAVY DEPARTMENT
BUREAU OF AERONAUTICS
WASHINGTON

CONTRACT NUMBER: NOa(s) 8333
AGREEMENT NUMBER: 32
APPR: 17X0888 NAV, P. O.
43-22066-P
Sp. Allot. No. 212-47

United Aircraft Corporation
Pratt & Whitney Aircraft Division
East Hartford, Connecticut

3 February 1948 -9

Gentlemen:

1. Contract NOa(s) 8333 provides for the furnishing to the Government of 633 R-4360-41 engines under Lot 9, Item 1 of Section A, "Articles to be Furnished and Prices".

2. On February 3, 1948, the Contracting Officer notified the Contractor that an amendment would be issued to the Contractor changing the articles to be furnished under said Lot 9, Item 1 from 633 R-4360-41 engines to 303 R-4360-41 engines plus 8 prototype R-4360-51 engines plus 213 production R-4360-51 engines, and requested that the Contractor proceed with the work.

3. On February 9, 1948 the Contractor advised the Bureau of Aeronautics that it would proceed with the work as requested by the Contracting Officer, and the Contractor did proceed with the change in the work as set forth above.

4. On July 28, 1948, the Contracting Officer notified the Contractor that the 8 prototype R-4360-51 engines and the 213 production R-4360-51 engines to be furnished under said Lot 9 in accordance with the notification set forth in paragraph 2 above would be further changed to 326 R-4360-41 engines, and requested that the Contractor proceed with the work.

5. On 12 August 1948 the Contractor advised the Bureau of Aeronautics that it would proceed with the work outlined in paragraph 4 above, and that there would be charges in the nature of termination charges resulting from this change in the work, and the Contractor did proceed with the work as requested by the Contracting Officer.

- 1 -

James S. Tassin
Certified a True Copy
James S. Tassin

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NOrd-[illegible]

NOrd 11X213/dcd
DLA/[illegible]: NOrd-XDE/A7-00

9 February 1949

(DC) 2200 | 3

U.I.&L.R. No. (55-030) N-40-521

CONTRACT: THE NAVY DEPARTMENT
Bureau of Ordnance
Washington 25, D. C.

CLEARED - COPY RETAINED
BUDGET - FISCAL DIVISION
DATE FEB 23 1949 BY

ST-367 | 02-41

V-E-Cobbold, NOrd-XDE

$4,356,850.00

Price changed from $16,016,975.00 to $20,[illegible]

The subject NOrd, covering aircraft engines and engine parts, is hereby amended as follows:

(1) The unit price of Item 1 is changed to read "92,585.00" in lieu of "372,475.00" and the total price is changed to read "17,172,450.00" in lieu of "[illegible]

(2) The estimated price of Item 2 is changed to read "[illegible]" in lieu of "[illegible]".

(3) The estimated price of Item 3 is changed to read "$61,625.00" in lieu of "[illegible]".

(4) The estimated total price of Items 1 to 3, inclusive is changed to read "$20,[illegible]" in lieu of "[illegible]".

120 of Item 1 and Item 3	57X0010 9[illegible]	[illegible]	$2,[illegible]
66 of Item 1	57X0010 9[illegible]	[illegible]	1,510,100.00
Item 2	57X0010 9[illegible]	[illegible]	995,500.00

Except as [illegible] remain in full force and effect.

The [illegible] Amendment Number [illegible] to the following Adjustment Number [illegible]

[illegible]

Contractor

[illegible]

G. Conan Doyle
G. CONAN, Captain, USN

219A

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7C-92-428

BOEING AIRPLANE COMPANY

SEATTLE DIVISION

SEATTLE 14, WASHINGTON

AFPR
File No. 13012

FEB 15 1949

IN REPLY REFER TO REFERENCE NO.
OR7-5679

To: Commanding General
Air Materiel Command
Wright-Patterson Air Force Base
Dayton, Ohio

Attention: MCPPXA31

No action taken
Contract Terminated.

Through: Air Force Plant Representative
c/o Boeing Airplane Company
Seattle 14, Washington

Subject: Contract W33-038 ac-13013,
Model YB-50C Airplane,
Removal of Water Injection System,
MCR 53-31.

References: (a) R-4360-43 and -35 Engine Installation Conference of USAF, Boeing, Pratt & Whitney, Curtiss-Wright and General Electric Representatives at the Boeing Airplane Company Plant 26 and 27 July 1948.
(b) B-50A, YB-50C and B-54A Coordination Power Plant Conference Held at Pratt & Whitney Aircraft on 20 & 21 September 1948.
(c) BAC letter E5-830-OR, dated 16 August 1948.
(d) AMC letter MCPPXA31/GGR/vp/3-9151, dated 1 November 1948.

1. In accordance with agreements reached at conferences, references (a) and (b), Contractor has established the subject change to remove the water tanks, tubing, filters, pumps, control components, brackets and other equipment necessary to operate and control the water injection system originally contemplated for the subject airplane. Complete details of this change were forwarded by reference (c) and AMC approval was contained in reference (d).

2. Since installation of the R-4360-43 engines is peculiar to the YB-50C airplane, no Engineering Change Proposal is being submitted. If the Air Materiel Command desires an Engineering Change Proposal, such proposal will be forwarded upon request.

3. For accomplishing the subject change on the YB-50C airplane Serial No. 46-61, Contractor quotes a decrease in total contract price of $253.12. This decrease results from the following charges and credits:

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TO-92-449

To: Commanding General
Page Two

OR7-5679

CHARGES:

Engineering Labor - 520 hrs. @ $2.10/hr.	$1,092.00
Engineering Overhead @ 78%	851.76
Engineering Material	16.00
Total Charges	$1,959.76

CREDITS:

Production Labor - 389 hrs. @ $1.55/hr.	$ 602.95
Production Material	167.20
Manufacturing Overhead @ 123%	741.63
Purchased Equipment	684.54
Total Credits	$2,196.32

SUMMARY:

Total Charges	$1,959.76
Total Credits	2,196.32
Net Credit	$ 236.56
Profit (Credit)	16.56
Total Decrease in Contract Price	$ 253.12

Credits noted above represent full credit for all items deleted by the subject change.

4. It is requested that the change contemplated by this proposal be authorized by a Change Order to the subject contract containing substantially the following provisions:

(a) In the modification of the sixtieth (60th) Model B-50 series airplane Serial No. 46-61 into a prototype airplane to be designated as Air Force Model YB-50C as called for by Item 7 of the subject contract, Contractor shall accomplish Master Change No. 53-31 entitled "Removal of Water Injection System" at a decrease in the price of Item 7 of $253.12 and a corresponding decrease in total contract price.

(b) As a result of the changes set forth in paragraph (a) hereof, Supplements 1 and 2 to Contractor's Model Specification D-7156 shall be amended to reflect the effects of Master Change No. 53-31.

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(c) The price of the work called for by paragraph (a) hereof constitutes an adjustment of the price of the airplane to be supplied under Item 7 of paragraph (a) of Article 15 and is subject to revision in accordance with Article 43 of the subject contract.

5. Contractor is proceeding with accomplishment of the change as herein proposed in accordance with authorization contained in CCN 140 (N-55035), dated 11 January 1949.

The undersigned certifies that, to the best of its knowledge and belief, this statement represents a fair and reasonable estimate of costs; the amounts shown hereon have been arrived at by methods consistent with its established accounting practices as far as applicable; the amounts reflect only expenses allocable to the work involved; all credits to which the Government might be entitled because of this change are reflected, except for such credit as may accrue to the account of the Government through sales effected in accordance with Contractor's established accounting procedure, of any salvageable material and/or parts made obsolete by the change; and all subcontractor's cancellation charges, if any, included in this claim are believed to be fair and reasonable.

BOEING AIRPLANE COMPANY
SEATTLE DIVISION

A. Selzenlichter
Chief, Contract Administration

Contractor's proposal is considered to be reasonable and in the event Change Order should be issued, as proposed by Contractor, acceptance of the proposal is recommended. In making this recommendation, I have considered the questions listed in paragraph 4 of ATSC Regulation 70-4.

R. Murphy Jr. Lieut. USAF
Contracting Officer

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AAFC Form No. 10-3
(Rev 29 Jul 47)

ROUTING AND RECORD SHEET

AIR MATERIEL COMMAND

Use this form for inter-office correspondence within headquarters.

Number all comments consecutively.

Use entire width of sheet, both sides.

Use authorized office symbols to designate addressor and addressee.

Note warning signal at lower left of form. Remaining space is sufficient only for proper spacing of typewritten signature.

Place initials of dictator and typist, telephone number and location to right of signature.

Separate comments by horizontal lines across page.

SUBJECT: Pratt & Whitney Aircraft Div, UAC - W33-038 ac 19032 - Case 13200

TO	FROM	DATE	COMMENT NO.
MCPPXE5 Attn: Mr. Caldwell	MCPPXE14	4 Mar 49	1

R4360-43

1. Subject quotation covers the proposed flight testing of one R-4360-43 engine for 150 hours at $3,000.00 per hour, or a total price of $450,000.00.

2. It is noted that the cost breakdown furnished by the contractor amounts to $507,302.00, a difference of $57,302.00 from the total price for which the contractor has agreed to do the work. It is further noted that the total cost shown on the breakdown amounts to $456,572, which is $6572.00 greater that the agreed price. It is the consensus of this office that this difference should be explained.

3. The Form 70-15 submitted carries a notation that similar tests have been conducted on the B-36 and B-50 airplanes. Investigation in this section, as well as other sections, does not disclose that such tests have been conducted; therefore, no actual comparison of costs could be made.

4. More detailed information is required before a definite analysis of the cost breakdown furnished can be accomplished.

5. This office requests that the contractor be asked to furnish the following information:

a. Breakdown of the material cost as to (1) the number of gallons of gasoline required in actual flight, as well as in ground tests, together with the price per gallon, and (2) the number of hours required for this test, both flight and ground, together with rates paid for each type of work.

b. Breakdown of engineering wages as to (1) number and type of men, together with wages paid each type, and (2) number of hours required for each type of operation.

c. Breakdown of engineering salaries as to (1) number and type of men, together with salaries paid to each type and (2) number of hours required for each type of operation.

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If contractor should state that no loss on the contract

6. This office recommends that a repricing clause be included any resulting contract.

7. Quotation is returned pending receipt of above requested information.

J. E. MARTIN
Chief, Price
Analysis Office

PWF/rpm - 2-2157

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TC-42-1

PRATT & WHITNEY AIRCRAFT

DIVISION OF UNITED AIRCRAFT CORPORATION
EAST HARTFORD 8, CONNECTICUT, U.S.A.
CABLE ADDRESS "AIRCRAFT"

In reply please refer to WAP:fbn-Eng.

March 7, 1949

ac-19032
PR 67764

Headquarters, Air Materiel Command
Wright-Patterson Air Force Base
Dayton, Ohio

Attention: MCPPXE5

Subject: 150 Hours of Flight Testing on Pratt & Whitney Aircraft R-4360-43 Power Plant Installation, Supplemental Proposal for.

Reference:
(a) Pratt & Whitney Aircraft letter to AMC, WAP:RBr-Eng. dated 1-25-49.
(b) Conference at AMC Headquarters on February 10, 1949 between representatives of Pratt & Whitney Aircraft and the U.S.A.F.
(c) Pratt & Whitney Aircraft letter to AMC, LCM:fbn dated February 9, 1949.

Enclosures:
(A) Description of Articles and Services to be Furnished.
(B) Proposed Copyrights Article.

1. Our proposal of January 25th, reference (a), included a statement of work, a total quoted price and a cost breakdown of the total estimated cost of the work contemplated for subject flight test program. At the conference, reference (b), we were requested by representatives of AMC to supplement our January 25th proposal with a formal quotation which would contain statements with respect to such items as subcontracting, facilities, type of contract and number of employees. We were also advised that the Air Force was considering contracting for subject flight test program by means of a supplemental agreement to the existing Contract W33-038 ac-19032. This letter, therefore, is in response to the requests made of us at reference (b).

2. We are attaching, as Enclosure (A), a detailed Description of the Articles and Services to be Furnished pursuant to this flight test program. It is satisfactory to us to have this detailed description incorporated in a Supplemental Agreement to Contract W33-038 ac-19032.

3. We offer to carry on the 150-hour flight test program described in Enclosure (A) for the fixed price of $450,000. A summary breakdown of this price was included with reference (a). Regarding the usual stipulations that the price quoted does not exceed that paid by any other purchaser and that the Government has been placed in the most favored price category, we wish to advise that flight test work of the type herein proposed has not been carried on under a contract with any other purchaser.

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4. Delivery - This flight test program can be undertaken immediately and the work can be completed within twelve (12) months from the date we receive an approved counterpart of the completely executed Supplemental Agreement covering this work. The final report on this work can be furnished within thirteen (13) months after such date. Monthly reports will commence thirty (30) days after such date and will follow every thirty (30) days thereafter until the final report is rendered. These delivery dates are predicated on the understanding there will be no delays in the furnishing of the necessary Government-furnished material.

5. Subcontracting - Since this work is to consist entirely of experimental and test work, little subcontracting is anticipated in the strict sense. The total amount of material costs, including charges for gasoline, oil, and repair parts, is One Hundred and Two Thousand ($102,000.00) Dollars, which is twenty-three per cent (23%) of the total estimated cost.

6. Facilities - The Government will not be called upon to furnish any plant facilities for use in accomplishment of any contract resulting from this quotation. As outlined in reference (c), however, the conduct of this flight test program will require the use of the following government-furnished equipment:

(a) one (1) B-50 aircraft, No. 46-008,
(b) four (4) CHM-2 turbo-superchargers,
(c) one (1) each, front and rear section sling assemblies, power package,
(d) two (2) Pratt & Whitney Aircraft Model R-4360-43 engines, Nos. X-152 and X-155,
(e) six (6) BH-1 turbo-superchargers.

All of the above equipment is now on loan to the contractor either under Contracts W33-038 ac-10371 or W33-038 ac-18653. Reference (c) set forth this matter in greater detail and requested that contractual coverage be provided for the further loan of this equipment under Blanket Bailment Contract W33-038 ac-10371 for the purposes and duration of the 150-hour flight test program.

7. Patent Articles - Since it is our understanding that any contract resulting from this quotation will be issued as a supplement to Contract W33-038 ac-19032, it is assumed that the patent articles contained in the latter contract will be the only such articles governing the work outlined in the present proposal. If the Air Materiel Command believes a copyright article should also be required, there is attached as Enclosure (B) a draft of an acceptable copyright clause which has been incorporated in our recent Air Force Contracts.

8. F.O.B. Point, and Inspection and Acceptance - Since the only articles to be delivered to the Government will consist of reports, a provision for transmittal of such reports by U.S. Mail to the Air Materiel Command for inspection and acceptance should suffice.

9. Premium Overtime - With respect to the usual stipulation regarding premium overtime, we wish to advise that the fixed price quoted herein does not include overtime premium.

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TC-92-20

10. Type of Contract - This quotation is based on the assumption that the contractual coverage for this proposed procurement will be in the form of a fixed price supplemental agreement to Contract W33-038 ac-19032, ATSC Form 32. It is also therefore assumed that all applicable provisions required by federal law, executive orders, and regulations are already included in such contract.

11. Profit - As indicated in the cost breakdown accompanying reference (a), this price herein quoted is an amount slightly below our total estimated costs. Accordingly, there is no allowance for any profit on any R. F. C. or Government-owned facilities.

12. Applicable Laws - It is our understanding that the provisions of the Neutrality Act are applicable to this proposed procurement, but that the Vinson-Trammell Act is considered not applicable. If the Air Force concludes that the provisions of the Renegotiation Act of 1948 are applicable to this procurement, it will be satisfactory to this Contractor to have such provisions included in any contract resulting from this quotation.

13. Tooling - There are no tooling charges involved in the proposed flight test program, and none are included in this quotation.

14. Employees - At the present time, the contractor has approximately 14,500 employees.

15. This quotation is submitted in triplicate.

UNITED AIRCRAFT CORPORATION
Pratt & Whitney Aircraft Division

W. A. Parkins
Engineering Manager

WAP:fbn
Enclosures (2)
cc: USAF Representative

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ENCLOSURE (A)

1. Paragraph (a), Article 15 of Contract W33-038 ac-19032, as amended, is hereby further amended by adding thereto the following items at a total increase in contract price of $450,000.00

"Item 5 - Report, in triplicate, of a minimum of one hundred and fifty (150) hours of flight testing on the Government-furnished R-4360-43 power package installed in the No. 3 nacelle position of the Government-furnished B-50A airplane No. 46-008. The Contractor shall maintain the Government-furnished R-4360-43 engine installed in the No. 3 nacelle of said B-50A airplane, and a spare Government-furnished R-4360-43 installation engine in operating condition for the purpose of flight testing. This flight testing shall include a general investigation of the performance characteristics of the R-4360-43 power package, including the engine, turbo-supercharger, controls, propeller and airplane nacelle to determine and demonstrate improvements to the production articles; total price . . . . . $450,000.00."

"Item 6 - Detailed Monthly reports, in triplicate, covering the progress of the testing work to be performed under Item 5 above. Price included in the total price of Item 5, above."

2. Article 15 of said contract as amended is hereby further amended by adding thereto the following new paragraph:

"(f) It is anticipated that the Government will lend to the Contractor, pursuant to Contract No. W33-038 ac-10371, the following Government-owned equipment for use in the performance of Items 5 and 6 of this contract:

(1) one (1) B-50 Aircraft No. 46-008,
(2) four (4) CH6-2 Turbo-superchargers,
(3) one (1) each front and rear section sling assemblies, power package,
(4) two (2) Pratt & Whitney Aircraft Model R-4360-43 engines, Nos. X-152 and X-155,
(5) six (6) BH-1 Turbo-superchargers.

The obligation of the Contractor to perform this contract is contingent upon such loan. However, this contract shall not be construed as affecting the bailment of such property nor as a commitment that such loan will be made."

3. Article 15 of said contract, as amended, is hereby further amended by adding thereto the following new paragraphs:

"(j) The 150 hours of flight testing shall be completed within twelve (12) months after date of receipt by the Contractor of an approved copy of Supplemental Agreement No. 3 hereto. The Report on said flight testing shall be delivered within thirteen (13) months after date of receipt by the Contractor of an approved copy of Supplemental Agreement No. 3 hereto. The first monthly report called

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ENCLOSURE (A) (continued)

for under Item 6, Article 15 (a) hereof, shall be delivered to the Government within thirty (30) days after date of receipt by the Contractor of an approved copy of Supplemental Agreement No. 3 hereto and each subsequent monthly report shall be delivered every thirty (30) days thereafter. These delivery dates are predicated on the understanding there will be no delays in the furnishing of the necessary government-furnished materials and equipment.

"(k) The reports called for under Items 5 and 6 of Article 15 (a) hereof shall be delivered to the Government by U. S. Mail, postage prepaid, addressed to: ."

4. Article 17 of said contract is hereby amended by adding thereto the following:

"Headquarters, Air Materiel Command, Wright-Patterson Air Force Base, Dayton, Ohio, is designated as the point for final inspection and acceptance of the reports called for under Items 5 and 6 of Article 15 (a) hereof."

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TC-42-10

PRATT & WHITNEY AIRCRAFT

DIVISION OF UNITED AIRCRAFT CORPORATION

EAST HARTFORD 8, CONNECTICUT, U.S.A.

CABLE ADDRESS: AIRCRAFT

In reply please refer to: WAP:sbn-Engrg.

March 10, 1949

PR67764

ac-19032

Headquarters, Air Materiel Command
Wright-Patterson Air Force Base
Dayton, Ohio

Attention: MCPPXE5

Subject: 95 Hours of Flight Testing on Pratt & Whitney Aircraft R-4360-43 Power Plant Installation, Proposal for.

References:
(a) Telephone Conversation from Messrs. R.A.Bittner and V.E.Caldwell of AMC to Mr. W.A.Parkins of P&WA on March 8, 1949.
(b) P&WA Proposal Letters to AMC, WAP:RBr-Eng. and WAP-fbn-Eng., dated January 25, 1949 and March 7, 1949.
(c) P&WA Letter to AMC, LCM:fbn, dated February 9, 1949.

Enclosures:
(A) Description of Articles and Services to be Furnished.
(B) Cost Breakdown, 95 Hours of Flight Testing on R-4360-43 Power Plant Installation.
(C) Proposed Copyrights Article.

1. This proposal is in response to the Air Materiel Command's request made in reference (a) and supersedes our previous proposal, reference (b), covering additional flight test work on the R-4360-43 engine.

2. During the B-54 Coordination Conference held at the Lynn Works of the General Electric Company on January 19 and 20, the desirability of Pratt & Whitney Aircraft continuing flight test work at East Hartford on the B-50 single-nacelle R-4360-43 installation was discussed in considerable detail. Since it was evident that many additional problems relating to the installation of the R-4360-43 power plant in the airplane still exist which can be answered before either prototype or production airplanes are delivered, it was agreed that it would be a mistake not to continue this single-nacelle flight test work. General Electric, for example, will have available within the next few weeks a revised CH4-2 turbo-supercharger incorporating many of the features proposed for the prototype and production airplanes and other revisions are expected to follow. If the single-nacelle flight test program is not continued, the performance of the production unit will not be known until Boeing flies the YB-50C airplane late this summer and if further changes to the turbo-supercharger are indicated at that time, it may be too late to accomplish them without delaying the production program.

3. With respect to performing additional flight tests on the CH4-2 turbo-supercharger, it is important that the final acceleration characteristics of the R-4360-43 power package be checked in flight before the prototype B-54 airplane is flown.

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4. Boeing as well as Pratt & Whitney would like to know what is the minimum usable carburetor air temperature in flight. It is also important to know whether it is more economical to burn extra fuel in auxiliary combustion heaters to obtain a minimum carburetor air temperature or whether it is more economical to save the weight and complication of combustion heaters and accept the slight loss in engine fuel economy resulting from reduced carburetor air temperatures. We have not had an opportunity to make such checks because of the urgency of working out the VDT control setting and the turbo-supercharger limitations.

5. The exhaust gas temperatures which may be encountered at the turbo nozzle box during various flight conditions have not been fully investigated and this information is urgently needed by Boeing to determine whether or not exhaust gas heat exchangers are required.

6. We have not had an opportunity to install an R-4360-43 low tension ignition system on the flight engine. While we have every reason to believe its performance at altitude will be excellent, it is desirable to have substantiating test data.

7. When turbo-superchargers which meet their expected performance become available and permit engine and airplane operation at all anticipated service conditions, the entire power plant including control should be checked over the full operating range and operating altitudes. Likewise should it be decided that a turbo-supercharger cruise valve is required for production B-54 airplanes, its characteristics and the revised VDT control characteristics will have to be checked and reset on the basis of flight tests.

8. In view of the difficulties experienced with the original turbo-supercharger air entrance and the carburetor air duct system in the single-nacelle B-50 installation, General Electric and Boeing have both requested that additional work be carried on to insure the elimination of any undesirable characteristics in the air inlet system of the production B-54 airplane. There are also many other items, such as engine cooling characteristics, carburetor metering and oil system characteristics pertaining to the VDT installation which should be investigated in flight.

9. In view of the foregoing, representatives of the Air Material Command requested that Pratt & Whitney Aircraft submit a proposal covering ninety-five (95) hours of additional flight test time on the single-nacelle B-50A R-4360-43 installation. This flight test program would again be under Pratt & Whitney's direction and would be performed for the mutual benefit of Boeing, General Electric, Curtiss Propeller, Pratt & Whitney and the Air Material Command. In other words, Pratt & Whitney will conduct a cooperative flight test program in which all parties concerned will participate and cooperate in an effort to produce a production power plant installation with a minimum of difficulty and time delay.

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10. Accordingly, we propose to perform a minimum of ninety-five (95) hours of flight testing on the Government-furnished R-4360-43 power package installed in the No. 3 nacelle position of the B-50A airplane, No. 46-008. We are attaching as part of this proposal, Enclosure (A), a detailed Description of the Articles and Services to be Furnished pursuant to this flight test program. It will be satisfactory to us to have this detailed description incorporated in a Supplemental Agreement to Contract W33-038 ac-19032.

11. The cost of obtaining each hour of B-50 flight operation to date exceeds $3,000.00. The hourly cost of the proposed flight test program should not change appreciably. Therefore, we quote a price for the ninety-five (95) hours of flying of $285,000.00. A summary breakdown is attached as Enclosure (B). Regarding the usual stipulations that the price quoted does not exceed that paid by any other purchaser and that the Government has been placed in the most-favored price category, we wish to advise that flight test work of the type herein proposed has not been carried on under a contract with any other purchaser.

12. Delivery - This flight test program can be undertaken immediately and the work can be completed within twelve (12) months from the date we receive an approved counterpart of the completely executed Supplemental Agreement covering this work. The final report on this work can be furnished within thirteen (13) months after such date. Monthly reports will commence thirty (30) days after such date and will follow every thirty (30) days thereafter until the final report is rendered. These delivery dates are predicated on the understanding there will be no delays in the furnishing of the necessary Government-furnished material.

13. Subcontracting - Since this work is to consist entirely of experimental and test work, little subcontracting is anticipated in the strict sense. The total amount of material costs, including charges for gasoline, oil, and repair parts, is Sixty-fourThousand Six Hundred Dollars ($64,600.00), which is twenty-three per cent (23%) of the total estimated cost.

14. Facilities - The Government will not be called upon to furnish any plant facilities for use in accomplishment of any contract resulting from this quotation. As outlined in reference (c), however, the conduct of this flight test program will require the use of the following Government-furnished equipment:

(a) one (1) B-50 aircraft, No. 46-008,
(b) four (4) CBM-2 turbo-superchargers,
(c) one (1) each, front and rear section sling assemblies, power package,
(d) two (2) Pratt & Whitney Aircraft Model R-4360-43 engines, Nos. X-152 and X-155,
(e) six (6) BH-1 turbo-superchargers.

All of the above equipment is now on loan to the contractor either under Contracts W33-038 ac-10371 or W33-038 ac-18653. Reference (c) set forth this matter in

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greater detail and requested that contractual coverage be provided for the further loan of this equipment under Blanket Bailment Contract W33-038 ac-10371 for the purposes and duration of the additional flight test program.

15. Patent Articles - Since it is our understanding that any contract resulting from this quotation will be issued as a supplement to Contract W33-038 ac-19032, it is assumed that the patent articles contained in the latter contract will be the only such articles governing the work outlined in the present proposal. If the Air Materiel Command believes a Copyright Article should also be required, there is attached as Enclosure (C) a draft of an acceptable Copyright clause which has been incorporated in our recent Air Force contracts.

16. F.O.B. Point, and Inspection and Acceptance - Since the only articles to be delivered to the Government will consist of reports, a provision for transmittal of such reports by U. S. Mail to the Air Materiel Command for inspection and acceptance should suffice.

17. Premium Overtime - With respect to the usual stipulation regarding premium overtime, we wish to advise that the fixed price quoted herein does not include overtime premium.

18. Type of Contract - This quotation is based on the assumption that the contractual coverage for this proposed procurement will be in the form of a fixed-price Supplemental Agreement to Contract W33-038 ac-19032, ATSC Form 32. It is also, therefore, assumed that all applicable provisions required by federal law, executive orders, and regulations are already included in such contract.

19. Profit - As indicated in the Cost Breakdown attached as Enclosure (B), the price herein quoted is an amount slightly below our total estimated costs. Accordingly, there is no allowance for any profit on any R.F.C. or Government-owned facilities.

20. Applicable Laws - It is our understanding that the provisions of the Neutrality Act are applicable to this proposed procurement, but that the Vinson-Trammell Act is considered not applicable. If the Air Force concludes that the provisions of the Renegotiation Act of 1948 are applicable to this procurement, it will be satisfactory to this Contractor to have such provisions included in any contract resulting from this quotation.

21. Tooling - There are no tooling charges involved in the proposed flight test program, and none are included in this quotation.

22. Employees - At the present time, the Contractor has approximately 14,500 employees.

23. This quotation is submitted in triplicate.

UNITED AIRCRAFT CORPORATION
Pratt & Whitney Aircraft Division

W. A. Parkins, Engineering Manager

WAP:sbn
Enclosures 3
cc: USAF Representative

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ENCLOSURE (A) TC-92-14

1. Paragraph (a), Article 15 of Contract W33-038 ac-19032, as amended, is hereby further amended by adding thereto the following items at a total increase in contract price of $285,000.00:

"Item 5 - Report, in triplicate, of a minimum of ninety-five (95) hours of flight testing on the Government-furnished R-4360-43 power package installed in the No. 3 nacelle position of the Government-furnished B-50A airplane No. 46-008. The Contractor shall maintain the Government-furnished R-4360-43 engine installed in the No. 3 nacelle of said B-50A airplane, and a spare Government-furnished R-4360-43 installation engine in operating condition for the purpose of flight testing. This flight testing shall include a general investigation of the performance characteristics of the R-4360-43 power package, including the engine, turbo-supercharger, controls, propeller and airplane nacelle to determine and demonstrate improvements to the production articles; total price. . . . $285,000.00."

"Item 6 - Detailed monthly reports, in triplicate, covering the progress of the testing work to be performed under Item 5 above. Price included in the total price of Item 5 above."

2. Article 15 of said contract, as amended, is hereby further amended by adding thereto the following new paragraph:

"(f) It is anticipated that the Government will lend to the Contractor, pursuant to Contract No. W33-038 ac-10371, the following Government-owned equipment for use in the performance of Items 5 and 6 of this contract:

(1) one (1) B-50 Aircraft No. 46-008,
(2) four (4) CHM-2 Turbo-superchargers,
(3) one (1) each front and rear section Sling Assemblies, power package,
(4) two (2) Pratt & Whitney Aircraft Model R-4360-43 engines, Nos. X-152 and X-155,
(5) six (6) BH-1 Turbo-superchargers.

"The obligation of the Contractor to perform this contract is contingent upon such loan. However, this contract shall not be construed as affecting the bailment of such property nor as a commitment that such loan will be made."

3. Article 16 of said contract, as amended, is hereby further amended by adding thereto the following new paragraphs:

"(j) The ninety-five (95) hours of flight testing shall be completed within twelve (12) months after date of receipt by the Contractor of an approved copy of Supplemental Agreement No. 3 hereto. The Report on said flight testing shall be delivered

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"within thirteen (13) months after date of receipt by the Contractor of an approved copy of Supplemental Agreement No. 3 hereto. The first monthly report called for under Item 6, Article 15 (a) hereof, shall be delivered to the Government within thirty (30) days after date of receipt by the Contractor of an approved copy of Supplemental Agreement No. 3 hereto and each subsequent monthly report shall be delivered every thirty (30) days thereafter. These delivery dates are predicated on the understanding there will be no delays in the furnishing of the necessary Government-furnished materials and equipment.

"(k) The reports called for under Items 5 and 6 of Article 15 (a) hereof shall be delivered to the Government by U. S. Mail, postage prepaid, addressed to: ."

4. Article 17 of said contract is hereby amended by adding thereto the following:

"Headquarters, Air Materiel Command, Wright-Patterson Air Force Base, Dayton, Ohio, is designated as the point for final inspection and acceptance of the reports called for under Items 5 and 6 of Article 15 (a) hereof."

0890

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ENCLOSURE (B)

PRATT & WHITNEY AIRCRAFT DIVISION

95 Hours Flight Testing on R-4360-43 Power Plant Installation

COST BREAKDOWN

Material - Gasoline, Oil, etc.	$ 64,600.00
Engineering Wages - 60,800 hrs. at $1.69/hr.	102,752.00
Engineering Salaries - 9,500 hrs. at $1.92/hr.	18,240.00
Engineering Overhead at 80%	96,794.00
Total Engineering Cost	282,386.00
General & Administrative Overhead at 2.4%	6,777.00
Total Estimated Cost	289,163.00
Profit - 10% of Selling Price	32,129.00
Total Estimated Selling Price	321,292.00
Price Quoted	$ 285,000.00

March 10, 1949

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CLOSURE (C) TC-42-17

COPYRIGHT ARTICLE.

(a) The Contractor agrees to and does hereby grant to the Government and to its officers, agents and employees acting within the scope of their official duties, (i) a royalty-free, nonexclusive and irrevocable license to reproduce, translate, publish, use, and dispose of, and to authorize others so to do, all copyrightable material first produced or composed and delivered to the Government under this contract by the Contractor, its employees or any individual or concern specifically employed or assigned to originate and prepare such material; and (ii) a license as aforesaid under any and all copyrighted or copyrightable work not first produced or composed by the Contractor in the performance of this contract but which is incorporated in the material furnished under the contract, provided that such license shall be only to the extent the Contractor now has, or prior to completion or final settlement of the contract may acquire, the right to grant such license without becoming liable to pay compensation solely because of such grant.

(b) The Contractor agrees that it will exert all reasonable effort to advise the Contracting Officer, at the time of delivering any copyrightable or copyrighted work furnished under this contract, of any adversely-held copyrighted or copyrightable material incorporated in any such work and of any invasion of the right of privacy therein contained.

(c) The Contractor agrees to report to the Contracting Officer promptly and in reasonable written detail, any notice or claim of copyright infringement received by the Contractor with respect to any material delivered under this contract.

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TC-42-8

PRATT & WHITNEY AIRCRAFT

DIVISION OF UNITED AIRCRAFT CORPORATION

EAST HARTFORD 8, CONNECTICUT, U.S.A.

CABLE ADDRESS: AIRCRAFT

March 18, 1949

PR 67764
ac-19032

Headquarters, Air Materiel Command
Wright-Patterson Air Force Base
Dayton, Ohio

Attention: MCPPXE5/VEC

Subject: 95 Hours of Flight Testing on Pratt & Whitney Aircraft R-4360-43 Power Plant Installation

References:
(a) AMC letter to PWA, MCPPXE5/VEC/mw dated 8 March 1949.
(b) PWA 150 Hour Flight Test Proposal letters to AMC, WAP:RBr-Eng. and WAP:fbm-Eng. dated January 25, 1949, and March 7, 1949 respectively.
(c) PWA 95 Hour Flight Test Proposal letter to AMC, WAP:sbn-Engrg. dated March 10, 1949.

1. Receipt of reference (a) requesting additional information covering our proposal, reference (b), to complete 150 hours flight test time on the single nacelle R-4360-43 B-50 is acknowledged. Since we were asked to supersede our original proposal for 150 hours flight time by a revised proposal covering 95 hours flight time, we have prepared our comments against our revised proposal, reference (c), rather than on original proposal, reference (b).

2. In answer to paragraph 1(a) of reference (a) please be advised that we estimate that we will use a total of 150,000 gallons of gasoline at $.23 per gallon for 95 hours flight time and the attendant ground checks, preflight checks and taxiing. Experience shows that ground time for this type of work will be approximately 190% of the flight time or an additional 180 hours of engine operation. The additional material costs cover engine parts for maintenance and overhaul, special instrumentation and lines to be expended during test, non-standard airplane parts including special sheet metal configuration for VDT nacelle, lubricating oil, alcohol (for water injection), hydraulic fluid, grease and similar maintenance materials.

3. With reference to paragraph 1(b) of reference (a), please be advised that personnel represented under engineering wages include airplane crew chiefs, assistants, crew mechanics, radio technicians, instrument men, engine overhaul mechanics, engine testers, sheet metal workers and machinists. The number of men involved in this category will vary from 25 to 35 through the period, representing a total estimate of 60,800 hours for the project. Cost Breakdown submitted with reference (c) reflects the average engineering wage for this group which is $1.69 per hour.

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TC-92-1

4. In answer to paragraph 1(c) of reference (a), please be advised that engineering salaries involve test pilot, co-pilot, flight engineer, flight observers, project engineer, test engineers and flight data analysts. This group includes up to 15 men and accounts for 9500 hours at the average salary rate of $1.92 per hour as indicated in Cost Breakdown (reference c). The approximate breakdown of engineering hours is 2500 man hours for flight and ground test and 7000 man hours for planning and analysis.

5. With reference to paragraph 1(d) of reference (a), which asks whether loss resulting from performance of this contract will be included in engine costs, please be advised that we expect to substantially recover our full costs as indicated in the Cost Breakdown attached to reference (c), and that in the event expenditures for this work exceed the contract amount, the Contractor will not request additional sums to cover the deficiency.

UNITED AIRCRAFT CORPORATION
Pratt & Whitney Aircraft Division

L. C. Mallet

L. C. Mallet
Assistant General Manager

LCM:RBm

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TC-12-6 3582

AMC Form No. 10-3 (Now 10 Jul 47)

ROUTING AND RECORD SHEET

AIR MATERIEL COMMAND

Use this form for inter-office correspondence within headquarters.

Number and comments consecutively.

Use entire width of sheet, both sides.

Use authorized office symbols to designate addressee and addresses.

Note warning signal at lower left of form. Remaining space is sufficient only for proper spacing of typewritten signature.

Place initials of dictator and typist, telephone number and location to right of signature.

Separate comments by horizontal lines across page.

SUBJECT: Pratt and Whitney Aircraft Division, UAC - Contract ac 19032 - Case 13200

TO	FROM	DATE	COMMENT NO.
MCPPXE5 Attn: Mr. Caldwell	MCPPXE14	25 Mar 49	2

R4360-43

1. Contractor's bid has been reduced from $450,000.00 to $285,000.00 primarily because of the reduction in hours from 150 hours flight time to 95 hours flight time.

2. The contractor's cost breakdown indicates that contractor expects to perform the test at no profit but instead will absorb a small loss. The cost breakdown is as follows:

Direct prime material (gas, oil, etc..)		$ 64,600.00
Engineering wages		102,752.00
Engineering salaries		18,240.00
Engineering overhead	80%	96,794.00
Total engineering cost		$282,386.00
General Administrative expense	2.4%	6,777.00
Total estimated cost		$289,163.00
Profit 10% of selling price		32,129.00
Total estimated selling price		$321,292.00
Price quoted		$285,000.00

3. The material and engineering cost appear reasonable. Engineering overhead is quoted at 80% and G & A is quoted at 2.4%. These rates are comparable to those approved on prior cases.

4. It is understood that a price redetermination article is to be included on this portion of the contract; therefore, the quotation of $285,000.00 is approved.

for G. D. Sharp
J. E. MARTIN
Chief, Price
Analysis Office

GDS
GSS/gvb - 3-0211

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ARMY OFFICE
APPROVED
CONCURRED IN
NO COMMENT
2/3/49

PRATT & WHITNEY AIRCRAFT
DIVISION OF UNITED AIRCRAFT CORPORATION
EAST HARTFORD 8, CONNECTICUT, U.S.A.
CABLE ADDRESS "AIRCRAFT"

March 25, 1949

In reply please refer
to: GEM:aed - Eng. II

Via: United States Air Force Representative, East Hartford 8, Connecticut

To: Commanding General
Air Materiel Command
Wright-Patterson Air Force Base
Dayton, Ohio

Attention: MCPPXE5

Subject: Contract W33-038 ac 19032 (R-4360-43 Engines(, Status of.

1. For the information of the Air Materiel Command, the Contractor submits the following status report relevant to the products and materials furnished to date under the subject contract:

(a) Item 1, Article 15. (Eight R-4360-43 Engines)
The following engines have been shipped:

Engine No.	Shipping Date
P-2140	November 19, 1948
P-2141	November 30, 1948
P-2142	December 30, 1948
P-2143	January 13, 1949
P-2144	March 10, 1949

Boost control systems for use with the engines have been delivered as follows:

Quantity	Shipping Date
3 systems	January 19, 1949
1 system	January 28, 1949
1 system	March 10, 1949

(b) Item 2, Article 15. (Data for engines called for in Item 1) Delivery of material required to complete this item were made October 6, 1948 (R.M.S. 426375) and October 13, 1948 (R.M.S. 428767). Miscellaneous additional data were shipped March 21, 1949 (R.M.S. 451673).

UNITED AIRCRAFT CORPORATION
Pratt and Whitney Aircraft Division

G. E. Meloy

G. E. Meloy
Project Engineer

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With PR TC-42-445

MESSAGEFORM

ARMY CENTER NO. | TRANSMITTING MEANS | CRYPTOGRAPH OR CLEAR TEXT

CALLS | SER. NO. | PRECEDENCE | TRANSMISSION INSTRUCTIONS | ORIGINATOR | DATE-TIME GROUP

MAR 26 1948

ADDRESS: AFPR | INFORMATION | EXEMPT | OPERATING SIGNALS | GROUP COUNT

File No. 13013

SPACE ABOVE FOR SIGNAL CENTER ONLY

FROM: (Originator) AIR FORCE PLANT REPRESENTATIVE 16 41
BOEING AIRPLANE COMPANY, SEATTLE 14, WASHINGTON

SECURITY CLASSIFICATION

ACTION TO:
COMMANDING GENERAL
AIR MATERIEL COMMAND DIRECTORATE
WRIGHT-PATTERSON AIR FORCE BASE
DAYTON, OHIO

PRECEDENCE FOR ACTION | INFORMATION

ORIGINAL MESSAGE

REFERS TO ANOTHER MESSAGE IDENTIFICATION | CLASSIFICATION

ATTENTION: MCPPXA35

INFORMATION TO:

MCPPXX -3-CR7-5969. SUBJECT: CONTRACT W33-038 AC-13013, MODEL XB-50C AIRPLANE, ENGINE COOLING REQUIREMENTS REVISION, MCR NO. 53-4.

No action taken Contract Terminated

SUBJECT CHANGE HAS BEEN ESTABLISHED TO COVER THE REVISION BY PRATT AND WHITNEY OF THE ORIGINAL ENGINE COOLING REQUIREMENTS FOR THE R-4360-43 ENGINE TO INCORPORATE HIGHER AIRFLOWS AND PRESSURE DROPS NECESSARY FOR ADEQUATE COOLING. THESE INCREASED REQUIREMENTS HAVE NECESSITATED A REVISION OF THE CONFIGURATION OF THE ENGINE COWL AS ORIGINALLY PLANNED FOR SUBJECT AIRPLANE AND RECALCULATION OF PERFORMANCE FOR SUBJECT AIRPLANE. THE RESULTING PERFORMANCE DATA NOW BEING COMPILED WILL BE FORWARDED TO AMC AS SOON AS POSSIBLE.

THE FOLLOWING CHANGES TO THE COWLING CONFIGURATION ARE BEING MADE AS A RESULT OF THE COOLING REQUIREMENTS SPECIFIED BY PRATT AND WHITNEY CURVE NUMBER C-5 DATED 23 JANUARY 1948:

(a) RING COWL RADIUS INCREASED TO 35 INCHES.

(b) COWL INLET DIAMETER INCREASED TO 44 INCHES.

(c) RING COWL CONTOUR MAINTAINED BUT MOVED OUTWARD 2 INCHES.

SECURITY CLASSIFICATION — AUTHORIZATION

ORIGINATING AGENCY — SIGNATURE

SYMBOL | DATE-TIME GROUP | OFFICIAL TITLE | PAGE 1 OF 3

WD AGO FORM 11-168 This form supersedes WD AGO Form 11-168, 22 Aug 44, and WD AGO Form 801, 12 Mar 45, which are obsolete.

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TC-92-446

MESSAGEFORM

MESSAGE CENTER NO.	TRANSMITTING MEANS	PHOTOGRAPH OR CLEAR TEXT

CALLS	STA. SER. No.	PRECEDENCE	TRANSMISSION INSTRUCTIONS	ORIGINATOR	DATE-TIME GROUP
	NR				MAR 29 194

ACTION	INFORMATION	EXEMPT	OPERATING SIGNALS	GROUP COUNT
				68

SPACE ABOVE FOR SIGNAL CENTER ONLY

FROM: (Originator)

SECURITY CLASSIFICATION

ACTION TO: COMMANDING GENERAL
OR7-5969

PRECEDENCE FOR ACTION / INFORMATION

☐ ORIGINAL MESSAGE

REFERS TO ANOTHER MESSAGE — IDENTIFICATION / CLASSIFICATION

INFORMATION TO:

(d) UPPER LIP OF INDUCTION AIRSCOOP DROPPED 1.16 INCHES, AND UPPER SCOOP CONTOUR FORWARD OF PP STATION 185 RE-FAIRED AS NECESSARY.

(e) OPERATING RANGE OF THE COWL FLAPS CHANGED TO FULLY CLOSED TO 25° OPEN.

(f) MAXIMUM COWL EXIT PERIPHERY PROVIDED.

THE FOLLOWING REVISION TO MODEL SPECIFICATION D-7156, SUPPLEMENT NO. 1, IS NECESSARY:

PAGE 31

PAGE 35, PARAGRAPH E-4c(1) CHANGE TO READ:

THE COOLING AND COWL FLAPS SHALL BE DESIGNED TO OBTAIN ADEQUATE ENGINE COOLING FOR THE FOLLOWING CONDITIONS BASED UPON THE ENGINE COOLING REQUIREMENTS AS GIVEN IN PRATT AND WHITNEY COOLING REQUIREMENT CURVE C-5 DATED 23 JANUARY 1948. PROVISIONS SHALL BE MADE FOR REDUCING THE COOLING AIRFLOW FOR LESS CRITICAL OPERATION.

PERFORMANCE VALUES FOR THE AIRPLANE SHOWN IN SPECIFICATION D-7156, SUPPLEMENT 2, (PAGES 7 THROUGH 11 OF SUPPLEMENT 1), WILL BE REVISED AS REQUIRED WHEN THE FINAL DATA IS AVAILABLE.

CONTRACTOR BELIEVES SUBJECT CHANGE CAN BE ACCOMPLISHED ON MODEL YB-50C PROTOTYPE AIRPLANE AT AN ESTIMATED TOTAL INCREASE OF

SECURITY CLASSIFICATION — AUTHORIZATION — SIGNATURE

ORIGINATING AGENCY — SYMBOL — DATE-TIME GROUP — OFFICIAL TITLE

WD AGO FORM 11-168 This form supersedes WD AGO Form 11-168, 28 Aug 44, and WD AGO Form 801, 12 Mar 43, which are obsolete.

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MESSAGEFORM

MESSAGE CENTER No. | TRANSMITTING MEANS | CRYPTOGRAPH OR CLEAR TEXT

CALLS | STA. SER. No. NR | PRECEDENCE | TRANSMISSION INSTRUCTIONS | ORIGINATOR | DATE-TIME GROUP: MAR 28 1949

ACTION | INFORMATION | EXEMPT | OPERATING SIGNALS | GROUP COUNT: 62

SPACE ABOVE FOR SIGNAL CENTER ONLY

FROM: (Originator)

SECURITY CLASSIFICATION

ACTION TO: COMMANDING GENERAL
OR7-5969

PRECEDENCE FOR: ACTION | INFORMATION

☐ ORIGINAL MESSAGE

REFERS TO ANOTHER MESSAGE: IDENTIFICATION | CLASSIFICATION

INFORMATION TO:

$8,750 IN CONTRACT PRICE. THIS PRICE IS PRELIMINARY ONLY AND IS NOT TO BE CONSIDERED CONTRACTUALLY BINDING.

AUTHORITY IS REQUESTED TO ISSUE CCN AS FOLLOWS:

CONTRACTOR IS AUTHORIZED TO ACCOMPLISH THE FOLLOWING:

MCR 53-4 - ENGINE COOLING REQUIREMENTS REVISION.

EFFECTIVE ON B-50 AIRPLANE 46-61 ONLY.

NO GFP IS AFFECTED BY THE ABOVE CHANGE.

SECURITY CLASSIFICATION — AUTHORIZATION

SIGNATURE: Robert J. Murphy, Jr.

ORIGINATING AGENCY

SYMBOL | DATE-TIME GROUP | OFFICIAL TITLE: ROBERT J. MURPHY, JR. Major USAF Contracting Officer | PAGE 3 OF 3

WD AGO FORM 11-168 This form supersedes WD AGO Form 11-168, 22 Aug 44, and WD AGO Form 801, 12 Mar 43, which are obsolete.

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T2-72-3

UNITED STATES AIR FORCE
AIR MATERIEL COMMAND
Boston AF Procurement Field Office
ARMY BASE, BOSTON 10, MASS.

MCPPIB3/[redacted]/dga
1 April 1949

Pratt & Whitney Aircraft Division E. Hartford, Conn.

SUBJECT: Report of Tests on R-4360 Engines, Contracts W33-038-AC-18653 & W33-038-AC-19032
TO: 150 Hour Qualification Test R-2180 Engine

Commanding General
Air Materiel Command
Wright Patterson AF Base
Dayton, Ohio

Attn: MCREXP

1. X-101 On stand. The detonation calibration has been completed. Started investigation at variable carburetor air temperature. Total time 896.92 hours.

2. X-105 In shop. Calibration on high compression pistons has been abandoned temporarily due to drop in power, engine being disassembled for investigation. Total time 984.21 hours.

3. X-110 In shop. Engine being rebuilt. Total time 465.55 hours.

4. X-123 On stand. Special slide valve CHMg2 Turbo was removed from stand to be installed in the B-50 Aeroplane #46-008. Replacement Turbo was damaged by foreign material entering the turbo section. Engine now waiting for second replacement turbo from G. E. Total time 537.66 hours.

5. X-155 R-4360 VDT Flight Test Program, B-50 Aircraft, S/N 46-008. The new Turbo with improved acceleration characteristics is currently being installed. Total time 593.12 hours.

6. X-156 In shop. Engine being rebuilt. Total time 895.37 hours.

7. X-157 On stand. Completed 97½ hours of lean cruise endurance. Total time 587.36 hours.

8. Contract W33-038-AC-19032 - 8 - R-4360 43 Engines.
P-2145 - Completed the final acceptance test this week. Engine being shipped to the Boeing Aircraft, Renton, Washington, 31 March 1949. Total time 28.20 hours.
P-2146 - Green test completed and engine is currently being disassembled for inspection. Total time 13.45 hours.
P-2147 - Green sub-assembly now in process.

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TC-92-4

[redacted] (cont'd) Report of T [redacted] s on R-4360 Engines

9. Four steel pistons completed over 100-hours of R-4360 VDT take-off operation in single cylinder engines. Two of these pistons have completed an additional 100 hours of operation in detonation at a power equivalent to normal rated and over 50-hours at maximum cruise. The testing on these pistons continues.

FOR THE CHIEF, BOSTON AF PROCUREMENT FIELD OFFICE:

R. E. Slade

R. E. SLADE
Supervising IID
of Hartford Area

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CONFIDENTIAL

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE
WASHINGTON 25, D. C.

5 APR 1949

AFMPD

SUBJECT: Procurement Directive 49-51 - (B-54 and RB-54 Aircraft)

TO: Commanding General
Air Material Command
Wright-Patterson AFB
Dayton, Ohio

1. Reference is made to the following communications from this headquarters wherein authority was granted to procure forty-three (43) B-54 and RB-54 aircraft:

a. Letter dated 1 June 1948, subject: "Procurement Directive 49-2."

b. Letter dated 23 September 1948, subject: "Procurement Directive 49-18."

c. Letter dated 2 November 1948, subject: "Procurement Directive 49-31."

2. It is directed that immediate action be taken to terminate subject procurement, except such experimental aircraft as can be secured without material additional expense.

3. It is requested that your command expedite your findings as to termination costs so that a firm fix on Project 110 fund availability can be ascertained.

BY COMMAND OF THE CHIEF OF STAFF:

Alfred A. Kessler

ALFRED A. KESSLER, JR.
Brig. Gen., USAF
Director, Procurement & Industrial Mob.
Office, Deputy Chief of Staff, Materiel

CONFIDENTIAL

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0908

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SECRET

L E T T E R A

Official Business--Government Rates

From: AMC
Mr. R. W. Logan
MCPPXS-Comm Ext. 59228
Depot No. 30065
6 April 1949

TO: Department of the Navy
Bureau of Aeronautics
Washington 25, D. C.

Attn: - - - - . . . . . Refer to General requirements for NAF letter transmittal

letter entitled Item No. 8- - -, Requisition Order No. (Navy) 49-MCPP-P

with the Department of the Navy.

Request that:

(1) Receipt of this letter be immediately confirmed.

(2) Except as to matters of interpretation or direction to this office, contract be completed in this command.

(3) Data furnished be utilized as intended and its elimination by this request.

Acknowledged by the above responsible person in Procurement Section, Procurement Division, MCPPXS-2, Air Materiel Command, Wright-Patterson Air Force Base, Dayton, Ohio, reference Material Requisition Depot No. 30065. Signed Robert W. Logan, contracting officer.

CONTRACT FILES
MCPPXS 73

Robert W. Logan

227A

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RECEIVED
8 23 54
NAVY DEPT.

RC15
EJC 1 RPT 212

J
ED 74
PP JEDC

Date: c. 8 Apr. 1949

FM DEPE 77/BUAER CT-5 Ø819Ø5Z
TO BEGLC/UAC PRATT AND WHITNEY AIRCRAFT DIV EAST HARTFORD CONN
INFO BEGLX/BAR E HARTFORD CONN
DEPRF/ASO PHILA
JEDC/READJUSTMENT SECTION PROCUREMENT DIV AMC MCPPXR-2 RMF DOCKET
NR Ø30285 WPAFB DATN

Doc. 76

NAVY GRNC

THE ADVANCE NOTICE OF AWARD FOR CONTRACT NOAS 9511 COVRING 14 REPEAT 14 MODEL R-4360-43 ENGINES IS HEREBY TERMINATED IN ITS ENTIRETY FOR THE CONVENIENCE OF THE GOVERNMENT EFFECTIVE IMMEDIATELY X IMMEDIATELY STOP ALL WORK CNA TERMINATE SUBCONTRACTS AND PLACE NO FURTHER ORDERS EXCEPT TO THE EXTENT THAT YOU OR A SUBCONTRACTOR WISH TO RETAIN AND CONTINUE FOR OWN ACCOUNT ANY WORK IN PROCESS OR OTHER MATERIALS X TELEGRAPH SIMILAR INSTRUCTIONS TO ALL SUBCONTRACTORS AND SUPPLIERS X LETTER OF CONFIRMATION AND INSTRUCTIONS FOLLOWX ACKNOWLEDGE RECEIPT IMMEDIATELY X CONTRACTING OFFICER BUREAU OF AERONAUTICS NAVY DEPARTMENT

CFN 9511 14 14 R-4360-43

Ø8/19Ø5Z APR DEPE

CONTRACT FILES
MCPPXR-73
22 78

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RECD MSG B-173 111349 EST AP IL AFMPI MEI

67764

111422 EST APR MSG NO A-426

MCPPXE 5 V AFMPI

E P 67764 WITH PRATT AND WHITNEY. INFORMATION CONTAINE IN LETTER DATED 4 APR 49 AND IN TLEPHONE CONVERSATION WITH MAJOR FRANKEL STILL NOT DEEMED SUFFICIENT JUSTIFICATION FOR EXPENDITURE OF AMOUNT IN OLVED FOR 95 HOURS OF ENGINE FLIGHT TESTING. ORE ADEQUATE SUBSTANTIATION IS REQUESTEDEAS TO THE NATURE OF THE WORK INVOLVED, ETC. END SIGNED COLONEL P W SMITH

PLS ACK

RECD MSG NO A-426 111430 EST APRIL MCP MFW

Lee TT 4/12/49

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T E L E T Y P E M E S S A G E

AIR SERVICE COMMAND TELETYPE NETWORK

MCPPXEJ/VEC/mw

FROM: Hq, AMC, Wright-Patterson Air Force Base
Dayton, Ohio

DATE 12 April 1949

TO: AF MPI
Washington, D. C.
ATTN: Colonel P. W. Smith

M. J. COFFIELD, Colonel, USAF
Chief, Aeronautical Equip. Section
Procurement Division

CLASS:

TELETYPE NO: MCPPXEJ-1-153 . . . Reference your Message No. A-426, dated 11 April 1949. Subject: Purchase Request No. 67764 with Pratt & Whitney. Due to B-54 termination and resulting termination of engines involved, ninety-five (95) hours flight testing will not be required. Signed, Procurement Division.

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ARMY AIR FORCES
AIR TECHNICAL SERVICE COMMAND

WRIGHT FIELD, DAYTON, OHIO

Military Interdepartmental Purchase Request

AMENDMENT TO [redacted]

CONTRACTOR: THE NAVY DEPARTMENT
Bureau of Aeronautics
Washington 25, D. C.

CMS item — Ext. 2-3215

Date: 15 April 1949

Amendment No.: (49) 3170 | Change No.: I-4

Address: MIPR(33-038) R-49-5-d

Purchase Order No.:

Purchase Request No.: | Class: 02-H

Initiator:

Mat Distr:

Fin Credit:

Price changed from ____ to ____

Docket No. 30206

Subject MIPR is hereby amended by cancelling same in its entirety.

NOTE: This Amendment issued in accordance with ASPR 5-401.

CLEARED - COPY RETAINED
BUDGET & FISCAL DIVISION
BY
JAN 25 1949

(F.O. WPAFB)

Except as amended, either expressly or by necessary implication, all the terms, covenants, and conditions of the subject Purchase Order shall continue in full force and effect.

The supplies and/or services to be obtained by this instrument are authorized by, are for the purpose set forth in, and are chargeable to the following Allotment Number, the available balance of which is sufficient to cover the cost of same:

Contractor

Signature and Title of Officer

ROBERT F. LOGAN
Contracting Officer

15

2290

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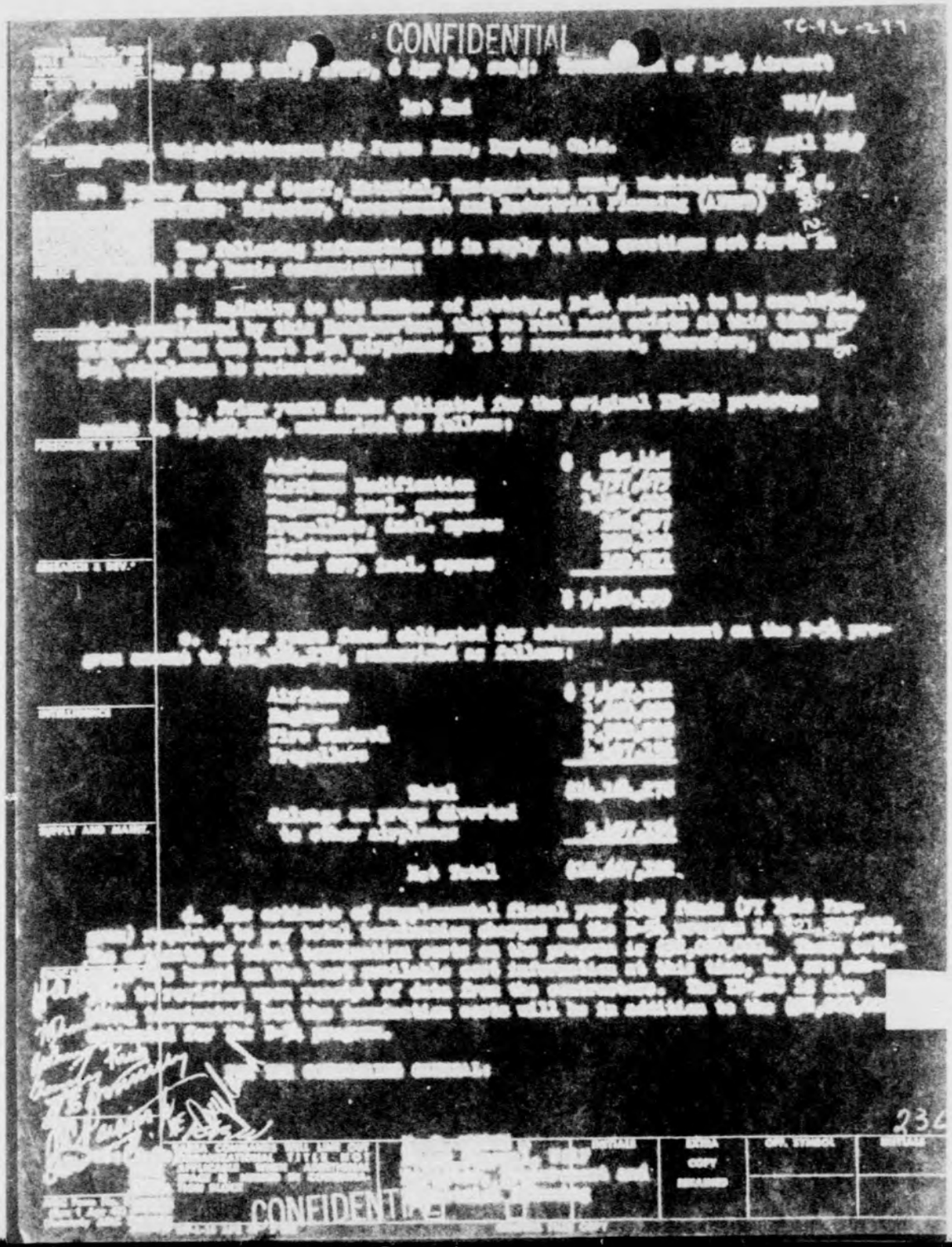

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UNITED STATES AIR FORCE
AIR MATERIEL COMMAND
Boston AF Procurement Field Office
ARMY BASE, BOSTON 10, MASS.
Office of the AF Inspector in Charge
Pratt & Whitney Aire. Div., E. Hartford, Conn.

MCPXEB/KEH/dgm

29 April 1949

Subject: Report of Tests on R-4360 Engines
Contract AC-19032

To: Commanding General
Air Materiel Command
Wright-Patterson AF Base
Dayton, Ohio

Attn: MCREXP

1. In view of the cancellation of the B-54 project, Pratt & Whitney is negotiating with the Air Materiel Command, Wright Patterson AF Base, with the expectation of adopting the R-4360-"B" Series engines for the B-36 Airplanes. At the present this involves primarily design studies since the engine configuration will require a change from tractor to a pusher type.

2. Contract W33-038-AC-19032 - 8 - R-4360-43 Engines

P-2146 - Shipped to the Boeing Aircraft on 22 April 1949.

P-2147 - In shop. Completed the initial test and is currently being inspected.

FOR THE ACTING CHIEF, BOSTON AF PROCUREMENT FIELD OFFICE:

R. E. Slade

R. E. SLADE
Supervising IIC
of Hartford Area

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UNITED STATES AIR FORCE
Air Materiel Command

Boston AF Procurement Field Office
Army Base, Boston 10, Mass.

MCPPXB45/GWM/ama
2 May 1949

File No. 400.145

SUBJECT: Contract W33-038 ac-18653, Pratt & Whitney Aircraft, Division of United Aircraft Corp., - Statement of Cost

TO: Commanding General
Headquarters, AMC
Wright-Patterson AF Base
Dayton, Ohio

ATTN: MCPPXB5

1. In accordance with Article 44 of contract, inclosed is Statement of Cost submitted in original and four (4) copies, together with transmittal letter from subject contractor. This submission is being made in accordance with request made by your office on 10 January 1949. Subject contractor completed contract approximately as of the end of April 1949.

2. It is believed by this office that the contractor has supporting detailed cost schedule in connection with the cost statement.

3. In the event any assistance is desired by your office, kindly advise.

GEORGE W. MARTIN
Contracting Officer

1 Incl.
Ltr. P&W d. 4/27/49 with incl. (in quadr.)

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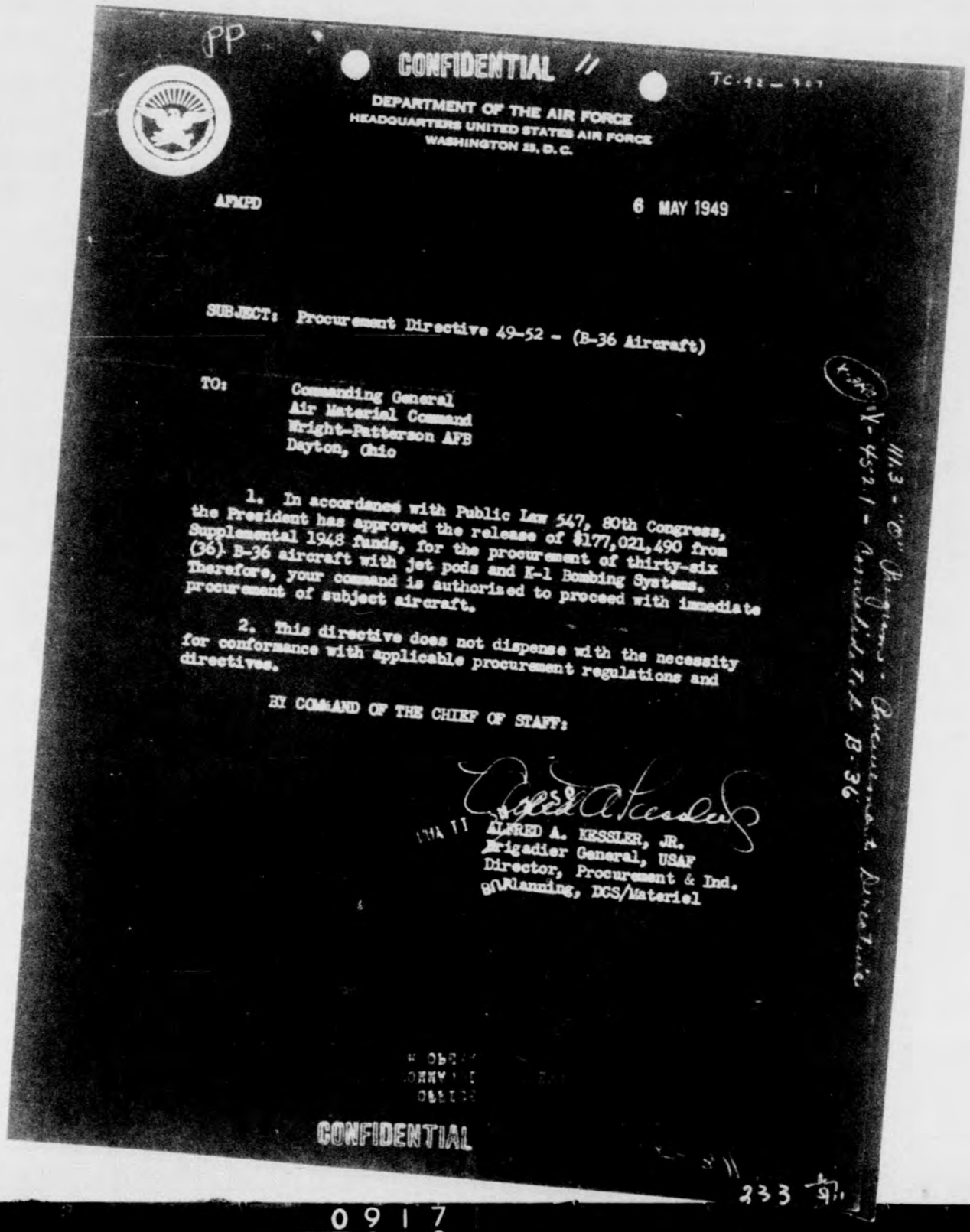

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CONFIDENTIAL //

TC-48-367

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE
WASHINGTON 25, D. C.

AFMPD

6 MAY 1949

SUBJECT: Procurement Directive 49-52 - (B-36 Aircraft)

TO: Commanding General
Air Material Command
Wright-Patterson AFB
Dayton, Ohio

1. In accordance with Public Law 547, 80th Congress, the President has approved the release of $177,021,490 from Supplemental 1948 funds, for the procurement of thirty-six (36) B-36 aircraft with jet pods and K-1 Bombing Systems. Therefore, your command is authorized to proceed with immediate procurement of subject aircraft.

2. This directive does not dispense with the necessity for conformance with applicable procurement regulations and directives.

BY COMMAND OF THE CHIEF OF STAFF:

ALFRED A. KESSLER, JR.
Brigadier General, USAF
Director, Procurement & Ind.
Planning, DCS/Materiel

CONFIDENTIAL

111.3 - "C" Procurement Directive
V-45.2.1 - Procurement Directive B-36

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MCPPXB5

PUBLIC INF. OFFICE

COMPTROLLER

PERSONNEL & ADM.

RESEARCH & DEV.*

INTELLIGENCE

SUPPLY AND MAINT.

PROC. & IND. MOB. PLNG.*

OTHER

MCPPXB5/RAB/mm
13 May 1949

Subject: Contract W33-038 ac-18653
Pratt & Whitney Aircraft
Division of United Aircraft Corporation -
Statement of Cost

To: Boston AF Procurement Field Office
Army Base
Boston 10, Massachusetts

ATTN: MCPPXB45

Reference: Boston AF PFO letter dated 2 May 1949, MCPPXB45/CWM/aaa, File No. 400.143 (Original letter held until work is complete.)

1. With respect to referenced letter, action has been taken to have an audit made of the work performed under Contract W33-038 ac-18653 at Pratt & Whitney Aircraft.

BY COMMAND OF GENERAL McNARNEY:

M. J. COFFIELD,
Colonel, USAF
Chief, Aeronautical
Equipment Section
Procurement Division

cc: MCPPXB1A - Mr. Martin

19 NOV 13
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TELETYPE MESSAGE
AIR SERVICE COMMAND TELETYPE NETWORK

BEF/ca

FROM: AMC 6 June 1949 — K. B. WOLFE, Major General, USAF, Director, Procurement and Industrial Planning

TO: Deputy Chief of Staff, Material, Headquarters USAF, Washington 25, D. C.

AT 2804
~~MURPHY-GIL~~ . . . . . Ask authority to proceed now with release of procurement of engines, propellers, turbos, and other GFP, plus revised airframe configuration based upon advanced R-4360 engine installation in 36 B-36's covered by Procurement Directive 49-2 pending presentation of complete recommendation justified in normal manner. Reason for this request is to immediately stop termination costs mounting daily against B-54 GFP cancellations. This procedure has the concurrence of the Under Secretary of the Air Force and he requests reply within twenty-four (24) hours, signed Director, Procurement and Industrial Planning.

Dispatched from Hq AMC at 4:20 AM - 7 June 1949

S-[illegible]-2

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TELETYPE MESSAGE

AIR SERVICE COMMAND TELETYPE NETWORK

KBW:emb

FROM: AMC 8 June 1949 K. B. WOLFE, Major General, USAF
Director, Procurement and
Industrial Planning

TO: Deputy Chief of Staff, Materiel
Headquarters, USAF
Washington 25, D. C.

REFERENCE YOUR WIRE AFMDC 55329

. . . . . Ask authority to proceed now with release of procurement for Series C Pratt & Whitney 4360 engine at 4300 horse power rating, and turbos and propellers for same, using materials resulting from B-36 cancellation. This approval will permit immediate stop of termination cost mounting daily and result in the salvage of approximately 60% of previously estimated cancellation losses for these items. This will assure the full development of the 4360 type engine for ultimate application in B-36, C-124, C-97, or C-119 airplanes. Signed, Director, Procurement and Industrial Planning.

S-50255-B2

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1949 JUN 9 02 24

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PP JEDC

FM JEPC 30C/HQ USAF WASH DC 1312Z

TO JEDC/COMGEN AMC WRIGHT-PATTERSON AFB DAYTON OHIO

AF GR NC

1

// C O N F I D E N T I A L // FROM AMDC 5329 ATTENTION

DIRECTOR, PROCUREMENT AND INDUSTRIAL PLANNING

REFERENCE YOUR 2894 OF 6 JUNE MESSAGE NOT CLEAR AND NOT UNDERSTOOD

HERE. REQUEST CLARIFICATION. IS YOUR REQUEST DIRECTED PRIMARILY

AT CONTINUED DEVELOPMENT OF THE R-4360 ENGINE WITH A VIEW TO

ITS POSSIBLE LATER INSTALLATION IN EVENT DEVELOPMENT SHOULD

INDICATE MARKED IMPROVEMENT? // C O N F I D E N T I A L //

1C/1912Z JUNE

AT - 2894 - S-50255 - MCPPX4

1. MCPP - ACTION S-50255-A-2
2. MCEXE - INFO
3. MCP " "
4. MCA " "

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1949 JUN 10 23 34

EJC

EWD14

PP JEDC

P JEP WC/HQ USAF WASH D C 1[illegible]Z

TO JEDC/COMGENAMC, WPAFB, DAYTON, OHIO

AF GENC

CITE

//C O N F I D E N T I A L// FROM AFMDC 1[illegible]9.

IN REPLY TO AT-[illegible] DTD 9 JUN 49, YOUR PROPOSAL IS APPROVED IN PRINCIPLE. REQUEST YOUR DETAILED PLAN FOR FURTHER DEVELOPMENT OF THE BASIC 4[illegible] ENGINE AND COMPONENTS FOR CONSIDERATION IN THIS HEADQUARTERS PRIOR TO FINAL APPROVAL. //C O N F I D E N T I A L//

1[illegible]Z JUNE 49.

AT-2957-S-50255-2-MCP

1. MCPP(MCM) - Action
2. A[illegible] - Info S-50255-[illegible]
3. MCP " "
4. MC[illegible] " "

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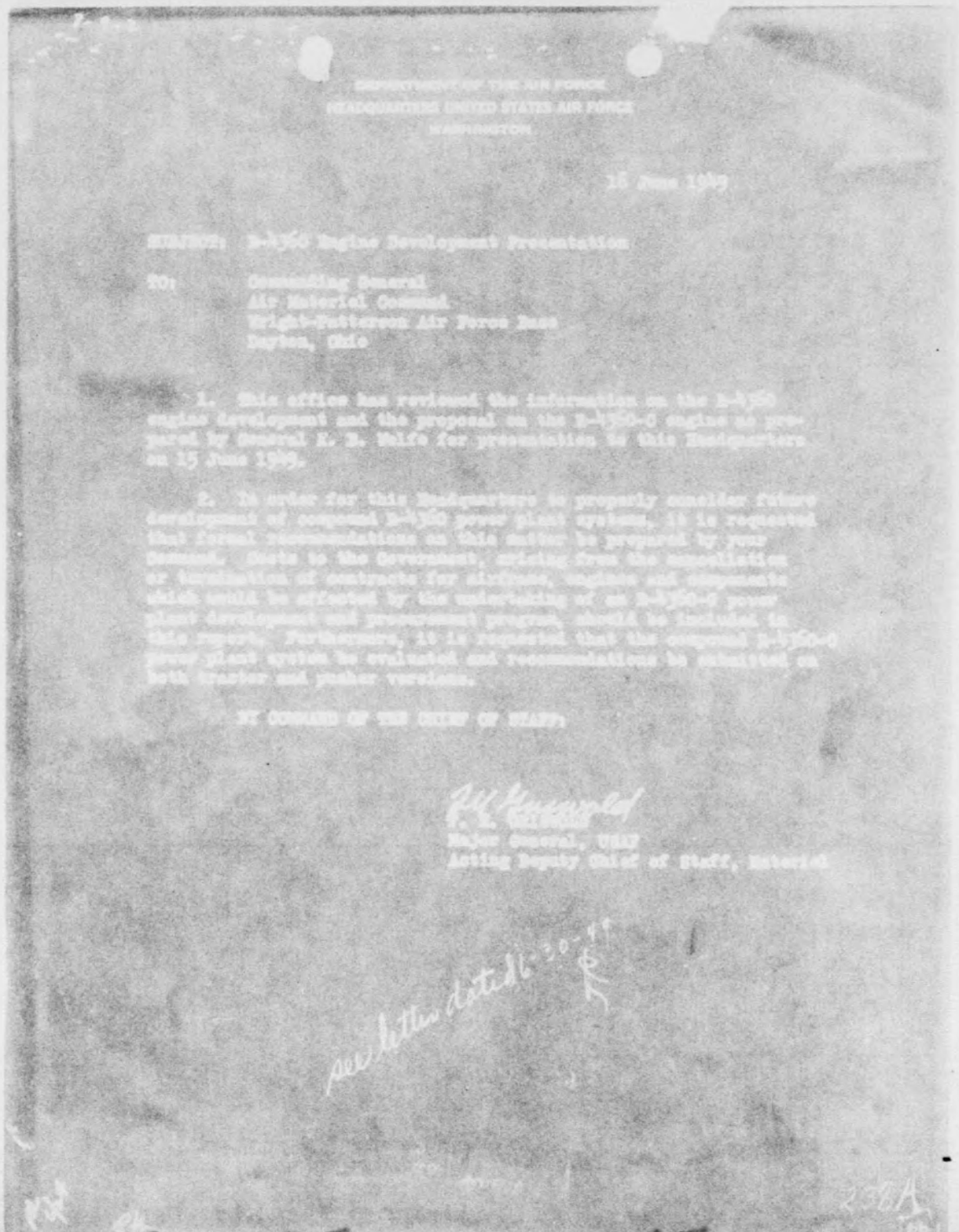

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE
WASHINGTON

15 June 1949

SUBJECT: R-4360 Engine Development Presentation

TO: Commanding General
Air Material Command
Wright-Patterson Air Force Base
Dayton, Ohio

1. This office has reviewed the information on the R-4360 engine development and the proposal on the R-4360-C engine as prepared by General E. M. Wolfe for presentation to this Headquarters on 15 June 1949.

2. In order for this Headquarters to properly consider future development of proposed R-4360 power plant systems, it is requested that formal recommendations on this matter be prepared by your Command. Costs to the Government, arising from the cancellation or termination of contracts for airframes, engines and components which would be effected by the substitution of an R-4360-C power plant development and procurement program, should be included in this report. Furthermore, it is requested that the proposed R-4360-C power plant system be evaluated and recommendations be submitted on both tractor and pusher versions.

BY COMMAND OF THE SECRETARY OF THE AIR FORCE:

K. B. Hawkins
Major General, USAF
Acting Deputy Chief of Staff, Material

per letter dated 6-30-49

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TAB F-
(2 sheets)

Information on VDT Engine Activity

MCR MCREXP 24 June 49 1
Attn: Major Curtiss

1. As result of telephone request from General Harbold's Office for information pertaining to the B-36 Aircraft from this Laboratory, Inclosure "A" is forwarded to your office for dissemination to General Harbold.

RALPH L. WASSELL
Colonel, USAF
Acting Chief, Power Plant Laboratory
Engineering Division.

OC/hhd
2-7224
13A
A-103

COORDINATION:

1 Incl.
Info for Gen. Harbold
on VDT Engine

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TAB F-
2 Pages

B

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24 June 1949

Material for General Harbold Re R4360 VDT Cooling

1. Pratt & Whitney Report No. TR-56, subject "Preliminary Report of the R-4360-51 VDT Power Plant as Applied to the B-36 Airplane", dated 16 February 1948, contains cooling curves prepared by Pratt & Whitney. Cooling Curve No. C-1, dated 25 June 1947, page 77, shows the original Pratt & Whitney estimate of the engine cooling requirements.

2. Subsequent to Curve C-1, Pratt & Whitney revised the engine cooling curves adversely to airplane performance based on Pratt & Whitney testing on the early R-4360 "C" cylinder design. Curve No. C-17, dated 6 February 1948, Page 91 of TR-56, shows these later Pratt & Whitney estimated engine cooling requirements based on this testing.

3. It is understood that CVAC Report No. PZM-100, dated 14 April (TAB E-12) 1948, defines the reasons why the B-36C airplane with the R-4360-51 (VDT) engine would not meet its original estimated performance. This report has not been seen by this Laboratory, but is probably available in Bombardment Branch, Procurement Division.

4. Between the time (January 1948) when Pratt & Whitney found that the early R-4360 "C" cylinder would not cool as well as their early predicted cooling, Pratt & Whitney developed a better cylinder design which had superior cooling characteristics. On 30 July 1948, Pratt & Whitney prepared Curve No. C-23 which represented the final Pratt & Whitney estimate of the R-4360 VDT engine cooling requirements based on use of the latest design of the R-4360 "C" cylinder. This later cooling data approached the original estimates.

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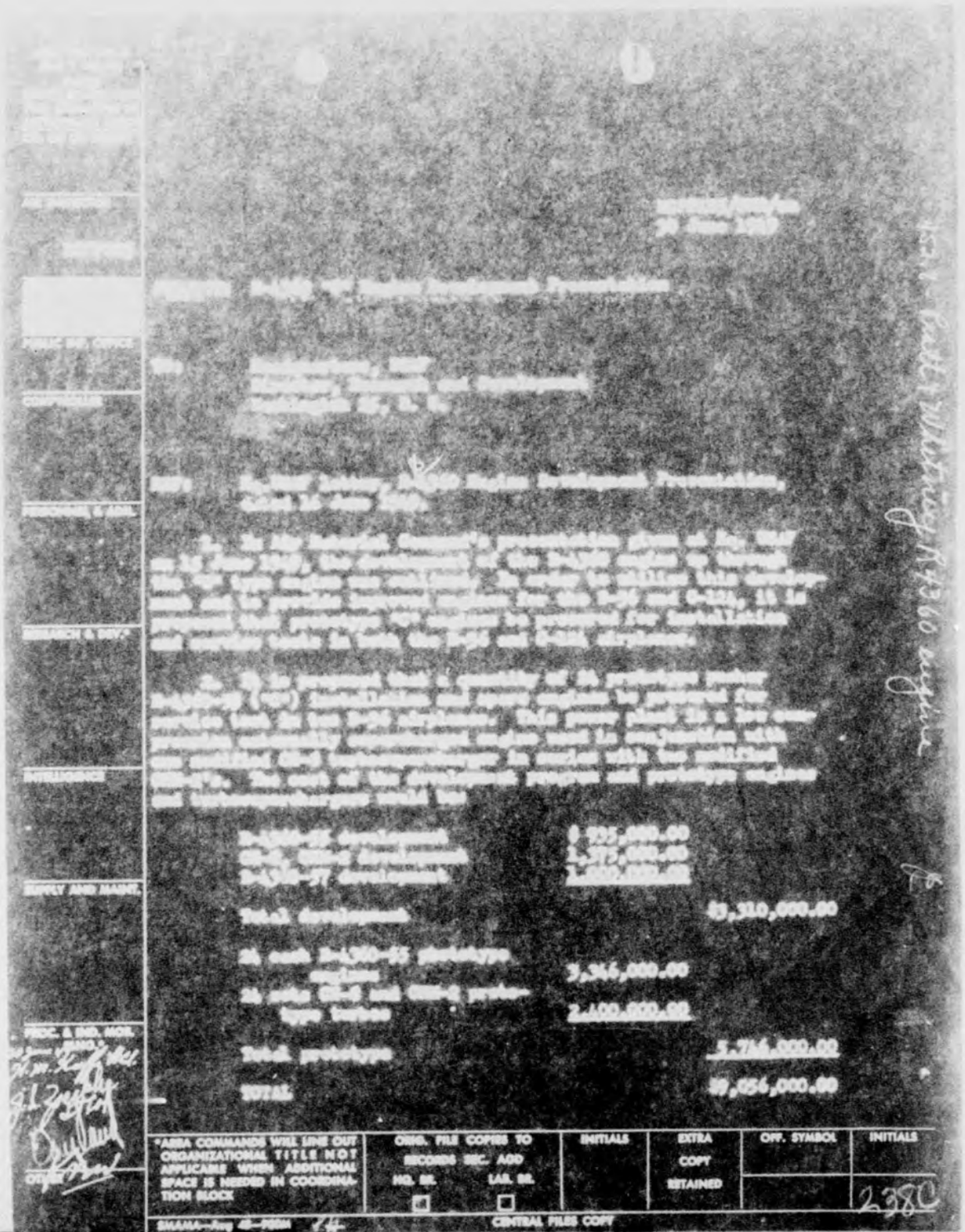

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30 June 1949

Subj: R-4360 "C" Engine Development Presentation

AIR INSPECTOR

This power plant combination would result in increased power ratings, altitude performance and dependability. The $1,000,000.00 for the R-4360-57 is for the development of high compression piston and cylinder assemblies giving lower specific fuel consumption ratings.

PUBLIC INF. OFFICE

3. It is proposed to procure 16 R-4360 "C" type tractor installation and spare engines for service test in the C-124 airplane. This engine has not been analyzed [illegible] configuration. The configuration would be similar to the R-4360-[illegible] currently being procured for the C-124. However, the power section and propeller reduction gearing would be the same as that proposed for the B-36 installation. An internal two-speed blower similar to that used on the R-4360-[illegible] engine would have to be developed. The cost of the development program and prototype engine would be:

COMPTROLLER

PERSONNEL & ADM.

R-4360 "C" development	$	750,000.00
16 each R-4360-"C" prototype engines		[illegible]
Total	$	[illegible]

This configuration improves the power ratings, provides greater dependability and takes advantage of the development of the parts used in the "C" type power section. Standardization of parts is also accomplished in that the nose section and the power section of this engine would be the same as that proposed for the R-4360-[illegible] for the B-36.

RESEARCH & DEV.*

4. The development and production of the R-4360-[illegible] (VDT type engine) and the [illegible] turbosupercharger [illegible] with the [illegible] of the B-36 airplanes. The termination cost for the engines [illegible] estimated to be $7,270,207.00 as shown in [illegible] [illegible]

INTELLIGENCE

SUPPLY AND MAINT.

[illegible]

PROC. & IND. MOB. PLNG.*

OTHER

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MCP 30 June 1949

Subj: R-4360 "VDT" Engine Development Presentation

5. In summary, the development and procurement of 40 prototype "VDT" engines for the B-36 and C-124 would result in power plants that (1) have improved power ratings; (2) better altitude performance; and (3) greatly increased durability, affording reduced maintenance and increased tactical availability of the airplanes. This program will insure the development of this type engine to its maximum capability. The R-4360 engine is the only large reciprocating engine in the United States Air Force program. The ultimate optimum development model will have application in both military bombardment and transport aircraft as well as civil transports. A chart showing the performance of the current and proposed engines is attached. The total cost of this program would be:

Power plants for two B-36's	$ 9,056,000.00
Power plants for two C-124's	[illegible]
Total	$12,[illegible]

6. Provided the proposed procurement of prototype engines is favorably considered by Hq. USAF, it is recommended that authority for procurement be given as soon as possible to expedite engineering of the installation which, in turn, will make possible the incorporation of the improved engines in production aircraft at the earliest date.

FOR THE COMMANDING GENERAL:

1 Incl:
Chart

K. B. WOLFE
Major General, USAF
Director, Procurement
and Industrial Planning

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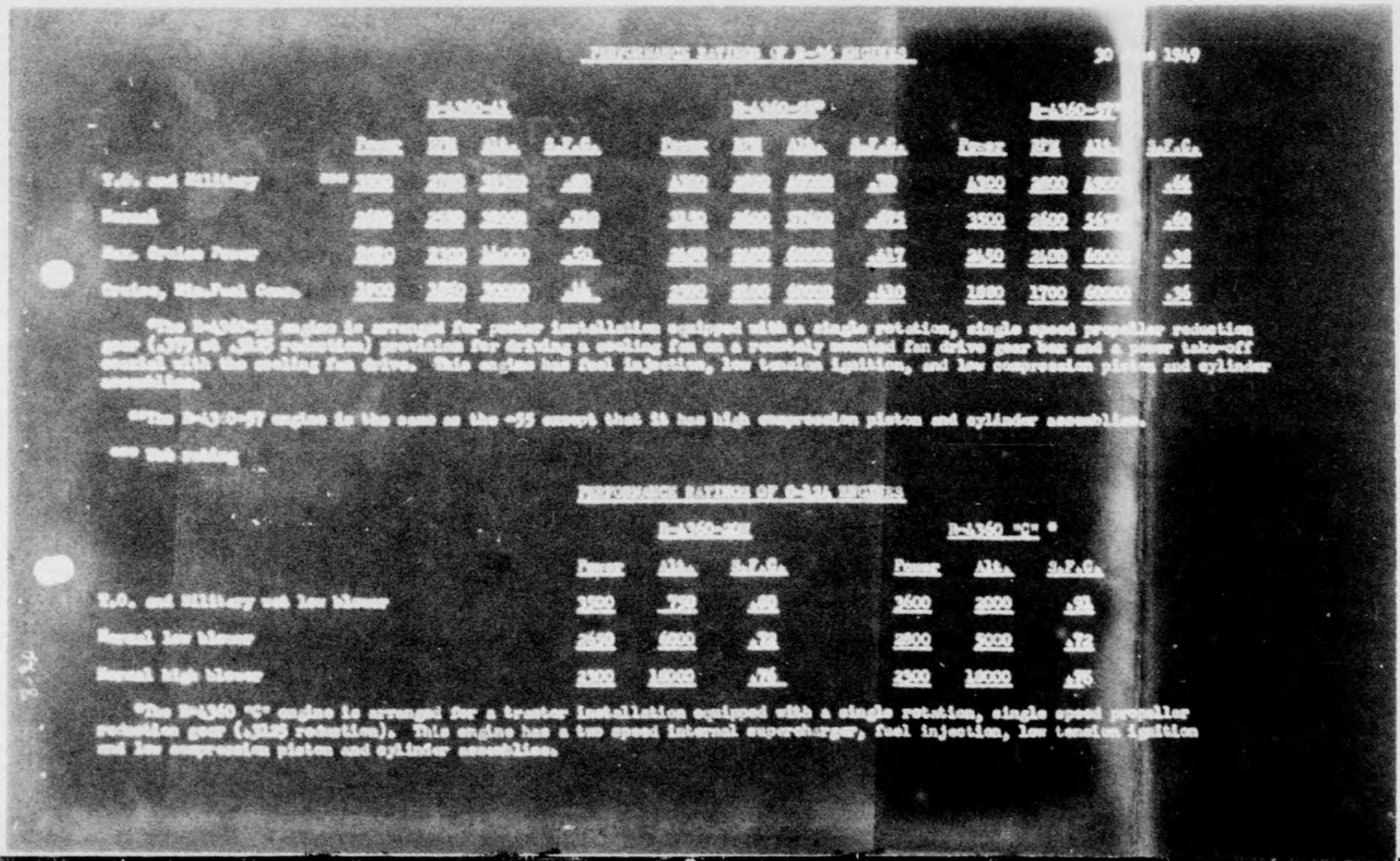

PERFORMANCE RATINGS OF R-1340 ENGINES

30 [illegible] 1949

	R-1340-AN				R-1340-SP				R-1340-77			
	Power	RPM	Alt.	B.F.S.F.	Power	RPM	Alt.	B.F.S.F.	Power	RPM	Alt.	B.F.S.F.
T.O. and Military	[illegible]	[illegible]	[illegible]	.48	[illegible]	[illegible]	[illegible]	.52	1420	2800	[illegible]	.44
Normal	[illegible]	[illegible]	[illegible]	.380	[illegible]	[illegible]	[illegible]	.415	1300	2600	[illegible]	.40
Max. Cruise Power	[illegible]	[illegible]	[illegible]	.32	[illegible]	[illegible]	[illegible]	.347	1140	2400	[illegible]	.36
Cruise, Manifold Press.	[illegible]	[illegible]	[illegible]	.34	[illegible]	[illegible]	[illegible]	.330	1080	1700	[illegible]	.36

The R-1340-AN engine is arranged for tractor installation equipped with a single rotation, single speed propeller reduction gear (.375 or .4375 reduction) provision for driving a cooling fan on a remotely mounted fan drive gear box and a power take-off coupled with the cooling fan drive. This engine has fuel injection, low tension ignition, and low compression piston and cylinder assemblies.

**The R-1340-77 engine is the same as the -55 except that it has high compression piston and cylinder assemblies.

*** Not rating

PERFORMANCE RATINGS OF R-1340 ENGINES

	R-1340-AN			R-1340 "C" *		
	Power	Alt.	B.F.S.F.	Power	Alt.	B.F.S.F.
T.O. and Military with low blower	1600	[illegible]	.48	1600	2000	.48
Normal low blower	[illegible]	[illegible]	.38	1400	2000	.42
Normal high blower	[illegible]	[illegible]	.36	1400	16000	.36

*The R-1340 "C" engine is arranged for a tractor installation equipped with a single rotation, single speed propeller reduction gear (.4375 reduction). This engine has a two speed internal supercharger, fuel injection, low tension ignition and low compression piston and cylinder assemblies.

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1 July 1949

SUBJECT: Inspector General's Report - 24 June 1949

TO: Headquarters, United States Air Force
ATTENTION: Deputy Chief of Staff, Materiel
Washington 25, D. C.

1. A thorough analysis of subject document has been made and the final report thereon is submitted herewith.

2. Certain statements as to facts or conditions were not available to this Headquarters and were supplied by Colonel Thomas J. Kennedy, Office of Deputy Chief of Staff, Materiel, Headquarters USAF, and are marked thus: *. Certain documents, Tabs 3, 4, 5, 6, 7, and 8, are not available at this Headquarters and will be supplied by Colonel Kennedy.

* * * * * *

FOR THE COMMANDING GENERAL:

3 Incls
#1 Analysis of Report of Inquiry of B-36 Procurement 13 Jul 48
#2 Cy ltr Pratt & Whitney 8 Aug 47
#3 Cy ltr Pratt & Whitney 15 May 47

ORVAL R. COOK
Major General, USAF
Deputy to The Commanding General for Operations

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ANALYSIS OF REPORT OF INQUIRY OF B-36 AIRPLANE PROCUREMENT
13 JULY 1948

Subject Report of Inquiry of B-36 Airplane Procurement, dated 13 July 1948, was initiated at the request of the Deputy Chief of Staff, Materiel, by letter dated 24 May 1948. (Exhibit A-1). Additional documentary evidence in support of statements contained in this analysis have been appended as Tabs in order to differentiate them from the Exhibits contained in subject report.

Contractual Data Summary:

Contract W535-ac-22352, for two XB-36 experimental airplanes, was approved 15 November 1941. Contract W33-038-ac-7, for 100 B-36 production aircraft, was approved 7 August 1943 (Letter Contract). As of 10 February 1945, the 23d and subsequent production aircraft were redesignated as B-36B airplanes by reason of engine change - R-4360-41. As of 5 December 1947, the last 34 production aircraft were redesignated as B-36C by reason of engine change - R-4360-51 (Variable Displacement Turbo). (See Tab 1 for itemization of the foregoing contractual changes.)

Reasons for Investigation:

In an undated letter forwarded to Hq USAF on 20 April 1948, the Commanding General, AMC, advised the Deputy Chief of Staff, Materiel, as to revised forecast performance figures for the B-36C airplane equipped with the VDT engine. (Exhibit UU). These figures showed such a reduction in performance over those upon which the original Procurement Directive of 5 December 1947 was based, (Exhibits NN and TT), as to eliminate practically all the contemplated advantages of the VDT engine. Inasmuch as the program involved a substantial number of production aircraft, the Deputy Chief of
* Staff, Materiel, deemed it advisable to initiate an inquiry by a member of his staff into the background of the original performance forecasts for the B-36 on which the 5 December 1947 directive was based, and to examine the validity of the new performance forecast.

As a result of the conclusions reached in this inquiry, (Exhibit KK), the Deputy Chief of Staff, Materiel, in furtherance of his responsibilities in connection with the monitoring and supervising of the B-36 Program, decided that a thorough and exhaustive inquiry into the background and development of
* the program was required. Accordingly, after discussion of his views with the Vice Chief of Staff and Under Secretary of the Air Force, the Deputy Chief of Staff, Materiel, as indicated above, called upon The Inspector General, Headquarters USAF to carry out such an investigation and to develop complete, up-to-date, and factual information pertaining to the program.

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Schedule of Investigation:

The Commanding General, AMC, was advised of the proposed investigation by the Deputy Chief of Staff, Materiel, on 22 May 1948. (Tab 2). The former suggested to the Deputy Chief of Staff, Materiel, by telephone, that inasmuch as a conference was scheduled for 4 June (later postponed to 24 June) in the office of the Secretary of the Air Force on future plans with respect to the B-36 Program, that initiation of the investigation should await finalization of such plans. The Deputy Chief of Staff, Materiel, concurred in this view, and requested the Inspector General, on 25 May, to defer action until further notice. (Tab 3).

On 7 June 1948, by memorandum to the Chief of Staff, the Secretary of the Air Force noted a report from the Inspector General concerning the proposed schedule of inspection and advised the Chief of Staff that he was for the investigation, but would like it done on a constructive basis. (Tab 4). This view was discussed with the Vice Chief of Staff by the Deputy Chief of Staff, Materiel, and it was decided that no constructive results could be obtained by a detailed, historical investigation into the wartime inception of the B-36 and subsequent program. Since the VDT engine proposal appeared to be the first postwar modification of the B-36 Program, it was concluded that the investigation should be limited to that portion of the program immediately identified with the decision to change to the VDT engine. This information was conveyed to the Commanding General, AMC, by the Deputy Chief of Staff, Materiel, on 8 June 1948. (Tab 5).

The Inspector General proceeded with the investigation, but in line with the recommendations of the Secretary of the Air Force, decided to confine the initial phase of his inquiry to the facts available at Headquarters USAF, thus avoiding undue disturbance to contractor morale at Fort Worth where intensive reorganization of Consolidated Vultee's management was under way. (Tab 6). It was contemplated that the second phase, involving visits to the Consolidated Plant, would be undertaken only in the event the facts developed at Headquarters USAF warranted such action.

Report of Inspector General:

The report of the Inspector General was completed on 13 July 1948, and submitted to the Vice Chief of Staff on 14 July 1948, by the Inspector General with the verbal comment that such report completed the initial phase of his inquiry and that he would await instructions before proceeding further. (Tab 7).

Remedial Action Taken:

Immediately prior to the submission of the report, the Deputy Chief of Staff, Materiel, directed a member of his staff to visit various aircraft contractors' plants and to submit his comments on the current status of their operations. These comments were submitted to the Deputy Chief of Staff, Materiel, under date of 10 August 1948. (Tab 8). Such comments indicated that the reorganizations at Consolidated were resulting in improvement in both engineering and production, but that considerable time would be required to reflect these improvements in aircraft deliveries.

Upon receipt of the report of the Inspector General, the Deputy Chief of Staff, Materiel, directed an analysis thereof by his staff. By letter dated

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2 September 1948, he advised the Commanding General, AMC, of the more serious conclusions and requested that they be reviewed and that comments and recommendations be submitted. (Tab 9). This request was modified by the Deputy * Chief of Staff, Materiel, during a visit to AMC on 17 September 1948, since it became apparent at that time that corrective action on the questions raised had been a subject of continuous action beginning as early as 1945 and continuing throughout the period of time up to and beyond the date of the report. In the light of these circumstances and the further fact that the basic decisions with respect to the future of the VDT program had been finalized, no special urgency attached to the matter of a formal reply by AMC. The chronological sequence of events showing the corrective action taken by AMC is attached hereto. (Tab 10).

Analysis of Inspector General's Report:

The facts pertaining to the Inquiry are reported in Section II in some 18 items, paragraph a, entitled "Overall B-36 Program," and paragraph b, entitled "B-36 VDT."

Section III consists of a discussion of the facts as reported in Section I and their supporting documents as enumerated in Exhibits A through Z, AA through ZZ and AA. This discussion is contained in paragraphs 5 through 15.

Section IV consists of 15 conclusions contained in paragraphs a through o. In general, these conclusions would establish that, as of 13 July 1948, the B-36 program proved to be a failure and that such failure was due, in brief, to:

a. Overall project deficiencies

b. Staff and Command organizational deficiencies

c. Contractual administrative and supervisory deficiencies

The conclusions contained in this report have been restated verbatim and discussed either separately or grouped in accordance with their related sense. Where the bases for such conclusions are apparent from the Exhibits, the applicable Exhibit or Exhibits are specified.

It is believed that the merits of the individual conclusions, forming part of this Report of Inquiry, should be judged individually in consideration of the discussion presented herewith, together with the additional evidence presented.

Certain of the conclusions have been modified and restated to accord with additional evidence not available to The IG in Hq USAF files. These conclusions are attached as Tabs, marked to correspond with the conclusion in the original report; i.e., Tab AA - Restatement of Conclusion A.

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CONCLUSION E

"Information within HQ USAF pertaining to the B-36 Project was not always disseminated to key staff personnel for their evaluation prior to arriving at major decisions."

CONCLUSION I

"There was a lack of effective coordination between CVAC, AMC and HQ USAF to assure concerted and jointly controlled efforts."

CONCLUSION J

"Major decisions involving millions of dollars were made without proper engineering evaluation by AMC to assure a modicum of success of various phases of the project."

CONCLUSION K

"The practice of HQ USAF to accept data direct from contractor representatives instead of dealing through proper Air Force channels to secure evaluated data has resulted in many of the deficiencies noted in the B-36 Program."

CONCLUSION N

"There was no centralized agency within HQ USAF which has regularly monitored this highly expensive and controversial project."

All five of these conclusions are interrelated and were derived from substantially the same evidence contained in this report as indicated by the discussion in paragraphs 12 through 15. It is evident from this discussion that the above conclusions pertain primarily to the VDT engine project in its relationship to the B-36 Program. A chronological review of the pertinent documents included in this report indicates the following:

a. 5 May 1947 - Initial proposal for the installation of the VDT engine in the B-36 airplane submitted by letter from CVAC to the CG AMC, signed, Learman, (Exhibit NN).

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CONCLUSIONS E, I, J, K & N (CONT'D)

(1) This letter includes the statement that the proposal was being submitted at the request of representatives of the Engineering Division, AMC, and that performance estimates had been informally presented to AMC representatives.

b. 19 June 1947 - An interdesk memorandum, subject: "Bombardment Airplane and Guided Missile Programs," signed by Brig. General A. R. Crawford, Chief, Research & Engineering Division, DC/SM Hq USAF. (Exhibit RR). This memorandum includes the following:

(1) Mention of General Spaatz's approval at a Staff Meeting on 16 June 1947 for proceeding with prototype installation of VDT engine in the B-36 Airplane.

(2) That AMC (General Putt) had been informed by General Gardner, by telephone, of this approval.

c. 19-22 August 1947 - An extract of minutes of the USAF Aircraft and Weapons Board indicated decision of the Board to cancel the development of the B-36Z with VDT engines. (Exhibit WW).

(1) Records available at HQ AMC indicate that the Deputy Commanding General, General Chidlaw, attended this Board Meeting.

(2) The discussion contained in this document indicates that this decision stemmed from operational considerations primarily.

d. DATE UNKNOWN: A telegram sent to HQ USAF, signed R. G. Mayer, Convair, (Exhibit MM), containing a proposal to reinstate the VDT engines in one B-36, and amending the previous proposal for VDT installation as contained in the letter of 5 May 1947. The new proposal was for 22 B-36A, 39 B-36B and 34 B-36C (VDT) Airplanes.

(1) This proposal was submitted by CVAC upon request (telephone) of Lt. Colonel Gerrity, Chief, Bombardment Branch, Procurement Division, AMC, as a result of the action of the Aircraft and Weapons Board cited in "c" above.

(2) The proposal included the statement: "Need for reinstating VDT engines in one B-36 is immediate."

(3) This telegram was sent directly to Hq USAF, and included statement that copy of the wire was being sent to O. H. Snyder, (CVAC representative), for delivery to AMC. This is also sustained in other documents.

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CONCLUSIONS E, I, J, K & N (CONT'D)

e. 5 September 1947 - An interdesk memorandum, Research & Engineering Division, AC/AS-4 HQ USAF, signed, Lt. Colonel N. C. Appold to Colonel Damler, subject: "Proposed Reinstatement of B-36 P&W VDT," (Exhibit SS). This document included the statement that Colonel Minty, Chief of Power Plant Branch, Engineering Division, AMC, had been advised of the contractor's proposal and his comments requested. Colonel Minty concurred with opinion of members of Propulsion Branch, HQ USAF, that delays could be expected of at least six months between B-36 VDT prototype schedule and actual delivery.

f. 5 September 1947 - Another interdesk memorandum AC/AS-4 Research and Engineering Division, HQ USAF, to Colonel Holtoner, subject: "Convair's Proposal for Reinstating B-36 VDT Aircraft into Planned USAF Programming," signed by Major Brady. (Exhibit SS). This memorandum includes the following:

(1) Reference to the proposal of CVAC as having stemmed from the recent decision of the USAF Aircraft Weapons Board to cancel the one B-36 prototype having the VDT engine.

(2) Statement that this decision precludes any further B-36 procurement thereby ending Consolidated's "goldmine."

(3) That the production schedule is quite optimistic as to engine delivery in face of requirement for engines in B-50Z and F-12.

(4) That AMC is currently checking with Pratt & Whitney to see if B-36 VDT engine delivery schedule can be met without detracting from B-50Z and F-12.

(5) That Pratt & Whitney will not, at this time, guarantee the control features of the variable discharge outlet for the VDT engine.

(6) That the development of the turbosupercharger by GE is presently doubtful.

g. 10 September 1947 - A letter from HQ USAF, subject: "Proposed B-36 VDT Production Schedule," submitted by CVAC, was forwarded to the CG, AMC, (Exhibit NN).

(1) This proposal was the initial proposal of 5 May 1947 cited in a, above.

(2) There was no mention in this letter of the decision of the Aircraft and Weapons Board on 19-22 August 1947, cited in c, above.

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CONCLUSIONS E, I, J. K & N (CONT'D)

h. 30 September 1947 - First Indorsement by HQ AMC to the letter from HQ USAF containing the CVAC - VDT proposal cited in g, above, (Exhibit NN), includes the following:

(1) A statement that it appeared feasible to change the B-36 program to procure twenty-two (22) B-36A airplanes; thirty-nine (39) B-36B and thirty-four (34) B-36C airplanes * for a total of ninety-five (95) airplanes in lieu of 100 36A and B-36B airplanes currently on the program.

* NOTE: This was VDT version.

(2) "9. AMC believes contractor's proposal to modernize B-36A and B-36B airplanes by retrofitting with VDT installation is feasible. However, a firm recommendation on this (Retrofit) program cannot be made until complete engineering and cost proposal is submitted by the contractor." (Underscoring supplied).

i. 7 October 1947 - First indorsement, signed by the CG, AAF, General Spaatz, to "Summary of Minutes of Aircraft and Weapons Board convened on 19 August 1947," submitted by the Acting Chairman on 12 September 1947, (Exhibit NN).

(1) Summary of the Minutes were approved with certain exceptions. Amongst these, (Par. 1c) is the direction for evaluation and submission to the members of the Board of the proposal made by CVAC for the installation of the VDT engine in the last thirty-four (34) B-36 airplanes, disapproving, in effect, the Board recommendation to cancel the VDT program as cited in c, above.

j. 8 October 1947 - A letter to each member, USAF Aircraft and Weapon Board, Subject: "Proposal to Improve Performance of the Last thirty-four (34) B-36-type Aircraft", signed by the Board Secretary, Brig. General F. H. Smith, (Exhibit NN).

(1) This letter requested approval or disapproval of the proposal submitted by CVAC on 5 May 1947 cited in a, above.

(2) Inclosures to this letter included both the letter from Hq USAF, of 10 September 1947 to the CG, AMC cited in g, above, and the reply of AMC cited in h, above.

k. 15 October 1947 - A letter, Subject: "Proposal to Improve Performance of the last thirty-four (34) B-36-type Aircraft", was forwarded to CG, AMC by the Secretary of the Aircraft and Weapons Board, Brig. General F. H. Smith, (Exhibit NN).

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CONCLUSIONS E, I, J, K & N (CONT'D)

(1) A reference to the decision of the last Board Meeting to cancel the one prototype B-36 having VDT engine installation is included.

(2) This letter refers to the proposal submitted by CVAC by wire cited in c, above.

(3) Attention was invited to the paragraph of the inclosure, wherein General Spaatz directed the evaluation of subject proposal and its submission to members of the Board for interim consideration and decision.

l. 16 October 1947 - First Indorsement, signed by General McNarney, CG, AMC, to the C/S, USAF, (Exhibit MM), to the letter of 15 October 1947 cited in i, above, includes the following:

(1) That the performance figures, production costs and airplane delivery schedule had been examined and found entirely feasible.

(2) The recommendation that this program be approved.

m. 5 December 1947 - Letter, subject: "Proposal to Improve Performance of the last thirty-four (34) B-36 Aircraft", addressed to CG, AMC, signed by Lt. General H. A. Craig, DC/SM, Hq USAF, (Exhibit TT). This letter directs AMC to implement the proposal of CVAC as cited in d, above. Inclosures to this letter included the (1) teletype proposal of CVAC, (2) letter Hq USAF, 10 September 1947, cited in g, above, (3) 1st Indorsement, Hq AMC, 30 September 1947, cited in h, above.

n. 20 April 1948 - Letter, subject: "B-36 Program," to C/S, USAF, signed, J. T. McNarney, CG, AMC, (Exhibit UU). This letter is undated in the report, and apparently did not get into AF files until o/a 20 April 1948. This letter includes the following:

(1) Reference to Hq USAF directive of 5 December 1947, cited in m, above, approving the B-36 VDT program.

(2) That AMC had re-examined this program because increased engine cooling requirements precluded meeting original estimated performance.

(3) That in view of this fact, it appeared advisable to again evaluate the B-36 program based on operational requirements.

(4) Four alternate changes in the program are proposed.

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CONCLUSIONS E, I, J, K & N (CONT'D)

o. 26 April 1948 - Memorandum, subject: "B-36 Program," to General Craig, DC/SM, Hq USAF, signed, Lt. General Lauris Norstad, DC/SO, (Exhibit VV). This memorandum concurs with the recommendation for reevaluation as proposed by General McNarney in n, above, and selects the action suggested in paragraph 4b of General McNarney's letter as most desirable from purely an operational point of view.

p. 13 May 1948 - Memorandum for General Craig, DC/SM, Hq USAF, subject: "B-36," signed by Colonel B. S. Kelsey, Chief, Control Group, (Exhibit KK). This letter contains certain pertinent statements which are quoted herewith:

"d. The claims made for loss in performance due to later revisions in cooling and installation difficulties cannot be justified either in detail or in whole. * * * * . It is not understood how it was possible to accept estimates with so little justification and so little element of conservation in the first place."

"e. A technical solution appears feasible. It is believed that a rough and firm policy at a meeting of representatives of the contractors and the AMC would provide a satisfactory solution in short order."

"2a. It is inconceivable that the estimated figures could have been accepted and used for Planning purposes without question." * * *

"2c. Considering the overall performance, the figures quoted are ridiculous. e. * * * The present situation involves several parties accepting blame for errors but doing nothing to correct those errors. * * Furthermore, there appears to be a lack of coordination between engine and aircraft manufacturers. f. * * * It all points to extremely casual, if not negligent, supervis on of the project within the Air Force." * * *
These statements are unsupported by reference to any specific data included within this report.

q. 26 May 1948 - An interoffice memorandum, DC/SM, Hq USAF, subject: "Unsatisfactory Technical Information Major Brady/bfs/6255," to M. Graichen, signed by Colonel J. S. Holtoner, Chief, Aircraft Branch, (Exhibit LL). This memorandum includes the following:

(1) Reference to an attached R&R from Requirements Division, DC/SO (not included).

(2) Statement that AMC recommendation on the proposal for installation of VDT engines in 34 B-36 aircraft was based on evaluation of the engine contractor's power plant data.

(3) That the aircraft contractor submitted a seemingly realistic proposal based on this initial engine data.

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CONCLUSIONS E, I, J, K & N (CONT'D)

(4) That it was understood that the engine contractor changed the data greatly at a later date.

(5) That due to this change, VDT engine installation became doubtful.

(6) That this fact, together with the installation of tractor-type in lieu of pusher-type engine, resulted in AMC reconsideration of VDT installation in B-36.

(7) That AMC was not entirely at fault in their original evaluation of B-36 VDT proposal as it was based on Phase I engine of the engine contractor.

(8) Statement: "It is felt that a closer working agreement and coordination between the Engineering Division in their recommendations to Hq USAF might be one possible solution to the problem indicated in the attached R&R, (not included in this report).

(9) Suggestion of certain specific solutions to accomplish the above. (underscoring supplied).

From an analyses of these documents used as exhibits and discussed in paragraphs 12 through 15 of this report, it is apparent that the two documents which appear to be the primary basis for the conclusions made, are: Colonel Kelsey's letter, (Exhibit KK), cited in p. above, and the Interoffice Memorandum signed, Holtoner, (Exhibit LL), cited in q. above.

As for a central agency within Hq USAF, the office of the DC/S/I has been designated and constitutes for the AMC the central agency within Hq USAF. Reasons for the submission of the CVAC proposal directly to Hq USAF are not known. However, it was submitted to AMC by the CVAC representative for concurrent action.

Although operational considerations may at times outweigh engineering and other considerations in arriving at a decision, the evidence in this report indicates that full technical and engineering consideration was given the decisions rendered.

Seven months elapsed from the date of the proposal of CVAC, (cited in a, above), to the authority to implement the proposal on 5 December 1947, (cited in m, above). During this time considerable interexchange of information and data is evidenced by the documents contained in this report and by the following additional documents between Staff Sections of Hq USAF, AMC, the contractors involved, and with the members of the Aircraft and Weapons Board.

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CONCLUSIONS E, I, J, K & N (CON'T'D)

(a) A TWX from AAF Plant Representative, Ft. Worth, to CG, AMC, dated 30 April 1947, (TAB F-1) documents the initial consideration of the VDT engine installation in the B-36 airplane, and includes the following:

(1) Mention of preliminary performance estimate submitted by TWX of 19 March 1947.

(2) The fact that Pratt & Whitney had submitted additional fuel consumption data.

(3) Cooling methods.

(4) Revised performance estimate.

(b) A letter dated 6 May 1947 from Engineering Division, ATSC, subject: "Medium Bombardment" to CG, AAF (Tab E-1) indicates that a conference was held in Washington with representatives of Hq USAF and AMC on 25 March 1947. At this conference, CVAC's original proposal for installation of the VDT engine was presented.

(c) A subsequent conference was held at Wright Field on 23 May 1947, (Tab E-2), at which time the decision to modernize one B-36 to include R-4360-43 (VDT) engines was made.

(d) A letter dated 8 May 1947, subject: "Medium Bombardment Aircraft" to the CG, AMC, signed by General Powers, (Tab E-3), refers to the "tentative decision" of the conference of 25 March 1947 and concurs therewith. It also includes the statement that a firm directive implementing such a program should be held in abeyance pending receipt of certain information from AMC. The information requested included:

(1) Listing of the specific projects scheduled for FY 1948 which would have to be cancelled were the decision outlined placed into effect.

(2) AMC's comments, in such detail as to warrant an intelligent appraisal by Hq USAF on the effect resulting from cancellation or postponement of projects, recommended for exclusion from 1948 program.

(e) The 1st Indorsement by AMC to letter of 8 May 1947, cited in (c), above, is dated 27 May 1947, (Tab E-4), and states that the data requested in basic communication was furnished at the conference of 23 May 1947, cited in (b) above, and that no additional data would be required.

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CONCLUSIONS E, I, J, K & N (CONT'D)

(f) Directive to initiate the prototype B-36 with VDT engine is contained in letter, Hq USAF, subject: "Bombardment Development Program," dated 10 July 1947, signed, Gardner, (Tab E-5).

(g) Approval of the prototype VDT engines from an engineering standpoint was secured from the Power Plant Lab, Engineering Division by Routing and Record dated 12 Aug 1947 (Tab E-6).

Action was taken toward implementing the decision of the USAF Aircraft and Weapons Board to cancel the VDT prototype by letter dated 26 August 1947, to CG, AMC, signed, Powers, (Tab E-7). However, the letter from Hq USAF of 10 September 1947, (Exhibit NN) cited in g, above, directed AMC to re-evaluate the CVAC proposal for reinstating the prototype VDT installation and modification of the last thirty-four (34) B-36 airplanes to VDT installation.

Additional action during this period prior to 30 September 1947, date of letter, signed by CG, AMC, cited in h, above, included the following:

(a) Continued evaluation of the VDT engine by the Power Plant Laboratory, Engineering Division, AMC, (Tab E-8); with General Electric in reference to propellers, with Pratt & Whitney, and with other elements of AMC.

(b) Continued evaluation by the Bombardment Branch, Procurement Division, AMC of the VDT engine installation involved correspondence with NACA and other elements of the AMC (Tab E-9)

The letter of 16 October 1947, signed by General McNarney, cited in i, above was in response, as a member of the USAF Aircraft and Weapons Board, to the letter from the Secretary thereof, dated 15 October 1947, cited in k, above. This letter was based on knowledge of the prior approval of the AMC contained in 1st Indorsement, dated 30 September 1947, cited in h, above. It should be noted again that the last paragraph of this Indorsement referring to additional information to be furnished, applied to the proposal for the retrofit of the B-36A and B-36B with VDT and not to the basic proposal for VDT installation in the last B-36C airplanes.

Pratt & Whitney Report No. TR-56, dated 16 February 1948 (Tab F-2) contained the cooling curve C-17, dated 6 February 1948 which reduced the performance of the B-36 airplane with VDT engine.

Further, indication of Power Plant Laboratory coordination with procurement action at the AMC is indicated by Routing and Record dated 24 February 1948 (Tab E-11).

A conference was held at Fort Worth on 12 and 14 April 1948 to review the performance of the B-36C type airplanes based on engine performance data recently

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CONCLUSIONS E, I, J, K & N (CONT'D)

submitted by Pratt & Whitney. (Tab E-12). As a result of this conference the letter of 20 April 1948, cited in n. above, was forwarded.

The revised performance figures were again checked as indicated in Routing and Record dated 7 May 1948 (Tab E-13). An R&R from Power Plant Lab to General Putt dated 11 June 1948 (Tab E-14), includes the following statements:

(a) That based on original performance estimates the procurement of prototype R-4360-51 (VDT) engines appeared well founded and justifiable.

(b) That Power Plant Lab would not approve standardization of this engine on 24 February 1948.

(c) That there were wide technical differences between this (VDT) and other R-4360 engines.

(d) That since February 1948, CVAC had revised performance estimates based on revised engine data from Pratt & Whitney.

These later evaluations further substantiated the AMC recommendation of 20 April 1948.

On 25 June 1948 the B-36C Program was cancelled by TWX to CVAC. (Tab E-15).

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CONCLUSION F

"While the design and construction of the B-36 Airplane were confronted with tremendous engineering and manufacturing problems, the whole project was seriously retarded by poor engineering and manufacturing practices."

From the discussion contained in paragraph 12 of the report it is apparent that this conclusion was based primarily on the memorandum for General Craig signed by Colonel Kelsey and dated 13 May 1948 (Exhibit KK), and the Inter-Desk Memorandum to Mr. Graichen signed by Colonel Holtoner of 26 May 1948 (Exhibit LL).

From this same discussion contained in the Report, it is assumed that the "poor manufacturing processes" referred to in the conclusion are those of an engineering or technical nature rather than those of production control as discussed under Conclusions G and H.

* * * * * * *

Colonel Kelsey's Memorandum (Exhibit KK) contains the following statements:

Par. 1c. "A brief study of the arrangement selected in the proposal for the B-36C indicates that the detail engineering solution was a very poor one."

"d. The claims made for loss in performance due to later revisions in cooling and installation difficulties cannot be justified either in detail or in whole."

"2a. In fact, it is possible to interpret the present claims as meaning that an installation involving a higher powered, more efficient engine has considerably less performance than the preceding model. If this is true, it indicates a technical solution of such low quality as to reflect actual technical incompetence on the part of all parties concerned."

"e. There should be severe penalties for such carelessness and incompetence. The two landing gear failures on this program have indicated gross incompetence in design and manufacturing processes." (Underscoring supplied.)

Colonel Holtoner's Memorandum (Exhibit LL) pertains to the VDT engine installation but infers incomplete or inaccurate engineering calculation of performance data.

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CONCLUSION F (CONT'D)

Colonel Kelsey's memorandum (Exhibit KK) does not indicate the technical data upon which he based his opinions. The only technical data furnished Hq USAF consisted of the limited figures accompanying the Findings and Recommendations of the AMC as contained in the letters from Headquarters, AMC, dated 30 September 1947 (Exhibit MM), and 2 April 1948 (Exhibit UU). The minutes of the series of conferences on the VDT airplane held at Fort Worth 12-14 April 1948, do not indicate Colonel Kelsey's presence, although those reports may have become available to him.

The discussion under Conclusions I, J, K, and N also are pertinent to the statements contained in the documents (Exhibits KK and LL) used as basis for this conclusion.

The critical phase of the VDT engine installation in the B-36 airplane appears to have been the cooling requirements.

Original VDT performance data prepared by Pratt & Whitney was submitted by CVAC in conference at AMC and later substantiated by wire of 19 March 1947. (Tab F-1).

The original cooling requirements were restated in the Pratt & Whitney Report No. TR-56 dated 16 February 1948, as Cooling Curve No. C-1 dated 25 June 1947. (Tab F-2). These requirements were necessarily based on calculations and represented a developmental goal. For this reason, they were termed "seemingly realistic" in the memorandum to Mr. Graichen dated 26 May 1948 (Exhibit LL), cited above. This same report included the revised engine cooling curve, adverse to the original calculated airplane performance. This Cooling Curve C-17, dated 6 February 1948, was based on the early testing of the R-4360-C cylinder design. These later data (16 February 1948) were made part of the discussion at the B-36 Conference at Fort Worth on 12-14 April 1948 (Tab E-12), which resulted in the AMC proposal of 20 April 1948 to reevaluate the B-36 VDT program. (Exhibit NN).

However, between January 1948 and 30 July 1948, Pratt & Whitney, by redesign of the cylinder, produced Cooling Curve No. C-23, which approached the original estimates for the B-36 (VDT) performance.

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18 July 1949

MCPFLS/Mail/sm

SUBJECT: Procurement of R-4360-33 Engines for Installation in the Last 36 B-36's on Supplemental Fiscal Year 1948 Program

TO: Headquarters, United States Air Force
Director, Research and Development
Washington 25, D. C.

REF: (a) Ltr. USAF letter "R-4360 Engine Development Presentation" dated 16 June 1949.
(b) AMC letter "R-4360 'C' Engine Development Presentation" dated 30 June 1949.

1. The Air Materiel Command is now in the process of procuring R-4360-41 engines for installation in the last 36 B-36 airplanes on the Supplemental Fiscal Year 1948 Program. This is the same engine that has been installed in previously procured B-36's.

2. In order to take advantage of the completed development by Pratt & Whitney of a superior power section and to be consistent with the Air Force's policy of continuous improvement of equipment, it is proposed that the current procurement be changed to call for R-4360-33 engines. The current procurement of -41 engines has been placed with the Bureau of Aeronautics, however, to date no letter of intent or definitive contract has been issued to the Pratt & Whitney Company. The following amount of money has been budgeted for this procurement:

216 each R-4360-41 engines including ground handling equipment	$12,276,000.00
69 each R-4360-41 spare engines	3,928,320.00
25% of money value of the instal ation engines for spare parts	3,069,000.00
TOTAL	$19,273,320.00

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AMC

Subject: Procurement of R-4360-53 Engines for Installation in the last 36 B-36's on Supplemental Fiscal Year 1948 Program

The unit cost of this engine is $55,425.00. Substituting the -53 engine for the -41 engine would result in the following costs:

216 installation engines	$17,712,000.00
69 spare engines	5,658,000.00
25% of the money value of the installation engines for spare parts	4,428,000.00
2% of money value of total engines for ground handling equipment	467,400.00
TOTAL	$28,265,400.00

The unit price of this engine is $82,000.00 which includes engine mounts and exhaust collector previously furnished by the airframe manufacturer. As stated in referenced letter (b), the adoption of the 40 engine prototype program will reduce the termination costs at Pratt & Whitney on the R-4360-43 engine from $7,500,000.00 to $6,700,000.00. The adoption of this proposed program will further reduce the termination costs to $2,500,000.00. These -53 engine prices and reduced termination costs are predicated on the adoption of the 40 engine prototype program outlined in reference (b).

3. The advantages of the -53 engine over the -41 engine are:

a. An improvement in the wet power take-off rating from 3500 hp to 3800 hp.

b. Greater dependability and durability.

c. Greater freedom from ignition and carburetion troubles in that this engine will be equipped with low tension ignition and fuel injection, thus making backfires impossible.

The installation of this engine in the B-36 can be made with a minimum of changes to the airplane and related equipment. It is proposed to use the present BH-1 turbosuperchargers with the new configuration. The propeller changes will be held to a minimum. The engine will have a 70 spline shaft, therefore, a new propeller hub will have to be designed; however, in all probability the blades that are currently being used will be used with the new engine.

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Subject: Procurement of R-4360-53 Engines for Installation in the Last 36 B-36's on Supplemental Fiscal Year 1948 Program

4. The advantages of changing from the -41 to the -53 engine are real and material but difficult to estimate in dollars, since it is exceedingly difficult to project savings resulting from increased tactical availability and reduced maintenance and replacement of parts. The Air Material Command bases its determination that savings will be realized on the fact that the power and nose sections of this engine have successfully completed qualification tests at 4300 hp, which is far in excess of the powers that will be taken from the engines.

5. It is recommended that favorable consideration be given the proposal to procure R-4360-53 engines in lieu of -41 engines for the last 36 B-36's on the Supplemental Fiscal Year 1948 Program. The additional money for this procurement will have to be allocated from the 1950 Change Order Funds. Delivery of these engines can be made to meet the program provided an immediate favorable consideration is given to this project.

FOR THE COMMANDING GENERAL:

K. B. WOLFE
Major General, USAF
Director, Procurement
and Industrial Planning

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PUBLIC INF. OFFICE

TO: COMPTROLLER

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MCPPXA32/JMcA/bam/F-Wash
18 July 1949

SUBJECT: Proposal to Install Pratt & Whitney R-4360-53 Engines in the Last 36 B-36 Airplanes on Supplemental Fiscal Year 1948 Program.

Headquarters USAF,
Director of Procurement and Industrial Planning
Washington 25, D. C.

Ref: (a) Hq USAF ltr "R-4360 Engine Development Presentation" dated 16 June 1949.
(b) AMC ltr "R-4360 'C' Engine Development Presentation" dated 30 June 1949.

1. In view of the substantial improvement in servicability of B-36 airplanes which can be obtained with installation of R-4360-53 engines, AMC recommends that these engines be installed in B-36 airplanes on the earliest possible production airplanes. If authority for this change is granted immediately, it will be possible to install these engines in the last 36 airplanes of Supplemental 1948 Fiscal Year procurement.

2. The installation of the R-4360-53 engines in B-36's will result in: (a) increase in wet take-off power, (b) elimination of the backfiring problem, since fuel injection is installed on the -53, (c) closer control of specific fuel consumption with fuel injection, (d) a better ignition system (low tension), (e) an improved exhaust system (furnished by Pratt & Whitney with each engine), (f) a more rugged, dependable power section, with a longer overhaul life.

These improvements will enable the service to obtain greater utility from the B-36 airplane with less maintenance effort and will give greater assurance of successful missions through increased engine dependability.

3. Basically, the R-4360-53 engine affects the performance of the B-36 (jet pod) airplane in two ways, the increased power rating from 3500 to 3800 HP, Military; 2650 to 2800, Normal, improves the take-off and rate-of-climb but on the other hand, the 2600 pound increase in engine weight results in a decrease in radius of approximately 100 nautical miles. However, if the airplane gross weight is increased by approximately 7,500 lbs., from 357,500 to 365,000, the range performance is substantially the same as the present B-36D with R-4360-41 engines. Present gross weight restrictions are due to airplane structure, and not take-off performance. This 2% weight increase is considered feasible and will be substantiated during static tests to be conducted at this Command in late 1949.

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To: Hq USAF

4. The estimated cost of installing this improved power plant in the last 36 B-36 airplanes of the Supplemental Fiscal Year 1948 procurement is summarized as follows:

a. Cost of R-4360-53 installation in the last 36 B-36 airplanes:

R-4360-53 Engines, 30% Spares, Spare Engine Parts & Ground Handling Equipment	$28,265,400.00
Airframe	2,550,000.00
New Propeller Hubs for 70 Spline Shaft	436,280.00
	$31,251,680.00

Available funds programmed for 36 B-36 airplanes, and recoverable B-54 termination funds, and Fiscal Year Supplementary 1948 unallocated funds available:

b. R-4360-41 Engines, 32% Spares, Spare Engine Parts & Ground Handling Equipment $19,273,320.00

Unallocated Funds 414,941.00

Over Estimate, B-54 Engine Termination Funds . . 1,770,507.00

Reduction in Actual Termination Cost, $7,500,000.00 to $2,500,000.00 . . . . . 5,000,000.00

$26,458,768.00

c. Net Additional Funds Required for This Change. . $ 4,792,912.00

This money will be obtained from 1950 Fiscal Year 'Change Order' funds.

5. This program is contingent on Headquarters, USAF acceptance of the development and prototype procurement of 40 R-4360 'C' Series engines for the B-36 and C-124 airplanes which was outlined in AMC letter, dated 30 June 1949, Subject: "R-4360 'C' Engine Development Presentation", at a cost of $12,268,000.00, therefore, the total cost of R-4360 'C' Series engine program is:

a. Cost of 40 Prototype Power Plants for B-36 and C-124 airplanes $12,268,000.00

b. Cost of Installing R-4360-53 Engines in the Last 36 B-36 Airplanes. 4,792,912.00

Total Cost $17,060,912.00

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The money required for these two programs will be obtained from Fiscal Year 'Change Order' Funds.

6. Although AMC cannot at this time quantitatively assess the savings which will accrue from longer engine life between overhauls and reduced maintenance, it is believed that these savings will substantially exceed the cost of this change.

7. A decision on this change is required by 31 July 1949 in order to achieve the program outlined in this letter.

FOR THE COMMANDING GENERAL:

K. B. WOLFE
Major General, USAF
Director, Procurement
and Industrial Planning

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TO COMGENAMC WRIGHT PATTERSON AFB DAYTON OHIO

AFGRMC

/ X X R E S T R I C T E D / X X FROM AFMDC 56710. YOUR COMMAND IS AUTHORIZED TO IMPLEMENT THE PROGRAM FOR 40 R-4360 ENGINES PROTOTYPE FOR B-36 AND C-124 AIRPLANES AS OUTLINED IN AMC LETTER 30 JUNE 1949, SUBJECT: "R-4360 'C' ENGINE DEVELOPMENT PRESENTATION." IT IS UNDERSTOOD THE TOTAL COST OF THIS PROGRAM WILL NOT EXCEED $20,200,000 TO COVER THE FOLLOWING: 12,286,000 OUTLINED IN REFERENCED LETTER;$2,284,000 FOR DEVELOPMENT AND PROCUREMENT OF B-36 AND C-124 PROPELLERS? $4,128,000 FOR AIRFRAME MODIFICATION OF 2 B-36' INCLUDING TESTING; $1,500,000 FOR AIRFRAME MODIFICATION OF 2 C-124'S INCLUDING TESTING. YOUR COMMAND IS AUTHORIZED TO OBLIGATE AGAINST FY 1950 ALLOTMENTS. PROGRAM SYMBOL 50-110A-1 IS ASSIGNED TO THIS APPROVED PROCUREMENT PROGRAM. YOU ARE FURTHER AUTHORIZED TO IMPLEMENT THE CHANGE TO R-4360-53 ENGINES AS GFP IN THE LAST 36 B-36 AIRPLANES SCHEDULED FOR DELIVERY FROM THE FY 1948 SUPPLEMENTAL PROGRAM AS OUTLINED IN AMC LETTER 18 JULY 1949, SUBJECT: "PROCUREMENT OF R-4360-53 ENGINES FOR INSTALLATION IN THE LAST 36 B-36'S ON SUPPLEMENTAL FY 1948 PROGRAM". THIS HEADQUARTERS WILL ADJUST EXISTING FY

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FM JEP HQ USAF WASH DC

TO COMGENAMC WRIGHT PATTERSON AFB DAYTON OHIO

AFGRMC

/ X X R E S T R I C T ED / X X FROM AFMDC 56710. YOUR COMMAND IS AUTHORIZED TO IMPLEMENT THE PROGRAM FOR 40 R-4360 ENGINES PROTOTYPE FOR B-36 AND C-124 AIRPLANESAS OUTLINED IN AMC LETTER 30 JUNE 1949, SUBJECT: "R-4360 'C' ENGINE DEVELOPMENT PRESENTATION." IT IS UNDERSTOOD THE TOTAL COST OF THIS PROGRAM WILL NOT EXCEED $20,200,000 TO COVER THE FOLLOWING: 12,286,000 OUTLINED IN REFERENCED LETTER;$2,284,000 FOR DEVELOPMENT AND PROCUREMENT OF B-36 AND C-124 PROPELLERS? $4,128,000 FOR AIRFRAME MODIFICATION OF 2 B-36' INCLUDING TESTING; $1,500,000 FOR AIRFRAME MODIFICATION OF 2 C-124'S INCLUDING TESTING. YOUR COMMAND IS AUTHORIZED TO OBLIGATE AGAINST FY 1950 ALLOTMENTS. PROGRAM SYMBOL 50-110A-1 IS ASSIGNED TO THIS APPROVED PROCUREMENT PROGRAM. YOU ARE FURTHER AUTHORIZED TO IMPLEMENT THE CHANGE TO R-4360-53 ENGINESAS GFP IN THE LAST 36 B-36 AIRPLANES SCHEDULED FOR DELIVERY FROM THE FY 1948 SUPPLEMENTAL PROGRAM AS OUTLINED IN AMC LETTER 18 JULY 1949, SUBJECT: "PROCUREMENT OF R-4360-53 ENGINES FOR INSTALLATION IN THE LAST 36 B-36'S ON SUPPLEMENTAL FY 1948 PROGRAM". THIS HEADQUARTERS WILL ADJUST EXISTING FY 1948 FUNDS ALLOTMENTS IN AMOUNTS ADEQUATE TO COVER INCREASED COST OF THESE ENGINES UPON SUBMISSION OF REVISED FORM 0-65 REFLECTING INCREASED ESTIMATED COSTS. THE AMC WILL BE PREPARED WHEN SO INSTRUCTED BY THIS HEADQUARTERS TO PREPARE REVISED CERTIFICATIONS ON ALL AIRCRAFT IN THE FY 1948 SUPPLEMENTAL AIRCRAFT PROGRAM TO BRING THE AMOUNTS CERTIFIED INTO CONSONANCE WITH YOUR LATEST COST ESTIMATES ON THAT PROGRAM. IT IS CONTEMPLATED THAT REVISED CERTIFICATES WILL BE REQUIRED UPON COMPLETION OF A FIRM FY 1950 AIRCRAFT PROCUREMENT PROGRAM. THIS PROGRAM WILL BE REVIEWED BY THE SENIOR OFFICERS BOARD LATER THIS MONTH .

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MINUTES OF THE AMC CONFERENCE

HQ. AIR MATERIEL COMMAND

27 July 1949

EXTRACT

* * * * * * * * * * * *

26. R-4360 Engine Program (Restricted)

Teletype AFMDC 56710, dated 20 July 1949, has been received from Deputy Chief of Staff, Materiel, authorizing the following:

a. Implementation of a program for the procurement of 40 R-4360 "C" engines.

b. Development and procurement of B-36 and C-124 propellers.

c. Airframe modification and installation of R-4360-C type engines in two B-36 airplanes, including testing.

d. Airframe modification and installation of R-4360-C type engines in two C-124 airplanes, including testing.

e. Procurement of R-4360-53 engines for the last 36 type B-36 airplanes scheduled for delivery on the Supplemental FY 1948 Program.

By agreement between the Director, Procurement and Industrial Planning and the Deputy Chief of Staff, Materiel, Hq. USAF, action on items b, c, and d above will be delayed pending review by the Senior Officers Board later this month.

Immediate action has been initiated by the Directorate, Procurement and Industrial Planning, to implement items a and e above and to inform Consolidated-Vultee Aircraft Corporation of the change in engines in the last 36 type B-36 airplanes. (Submitted by Procurement Division and presented by General Wolfe, Director, Procurement and Industrial Planning.)

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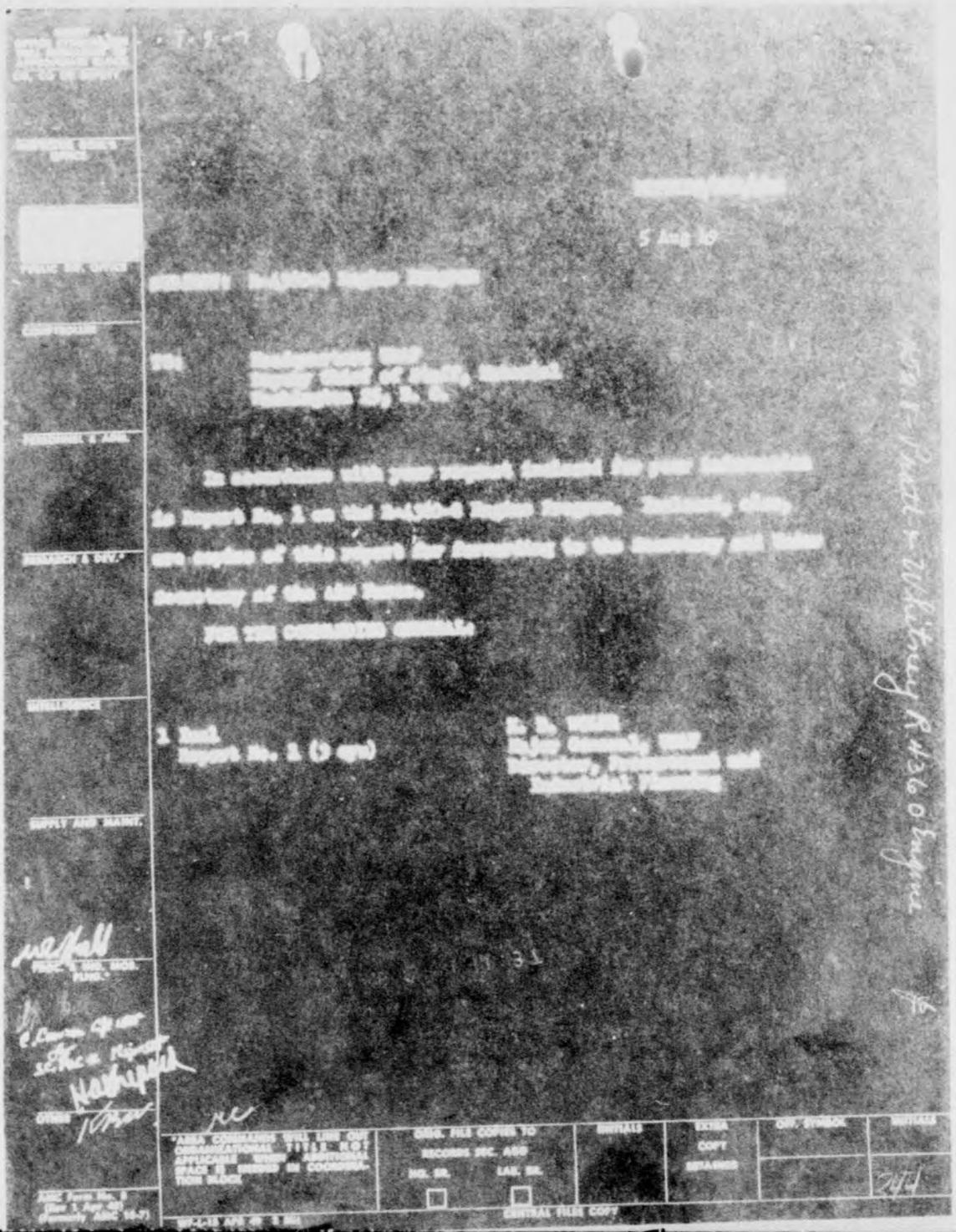

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8-9-8

4 August 1949

SUBJECT: Resume' of R-4360-C Engine Program

Report No. 1

Prepared by: Raymond A. Bittner, MCPPXE-5

1. On 20 July 1949 Headquarters USAF wire AFCRMC authorized action to implement the program for forty (40) R-4360-C Engines, Prototype, for the B-36 and C-124 Airplanes as outlined in Air Material Command letter of 30 June 1949, subject "R-4360-C Engine Development Presentation". Authorization was also given to implement the change to R-4360-53 in lieu of R-4360-41 Engines in the last thirty-six (36) B-36 airplanes.

2. Action was taken on 26 July 1949 to cancel MIPR No. R-49-375-N for two hundred eighty-one (281) R-4360-41 Engines plus supporting items. The Navy was also informed that a new MIPR was being initiated for the procurement of three hundred fifty-six (356) R-4360-53 Engines and supporting spare parts and special tools for a money value of $34,087,400.00 in lieu of the engines on cancelled MIPR No. R-49-375-N.

3. Action has been taken to initiate Purchase Request No. 82845 for the procurement of three hundred fifty-six (356) R-4360-53 Engines, spare parts and special tools. This Purchase Request will be hand-carried and given special attention in order that an MIPR can be furnished to the Bureau of Aeronautics at the earliest possible date. Procurement action will also be started to procure forty (40) R-4360-C Engines, Prototype, from Pratt & Whitney. The contract for the Prototype engines will be a direct contract between the Air Forces and Pratt & Whitney Aircraft Division. The Navy has agreed to the direct procurement of the Prototype engines by the Air Forces from Pratt & Whitney.

4. The greater portion of the engineering research and development work for the R-4360-C Engine Models was completed in the R-4360-43 Engine Program. The present program will utilize this previous work to obtain the improved engines for the B-36 and C-124 Airplanes. To implement the Prototype Program eight (8) R-4360-43 Engines will be returned to Pratt & Whitney Aircraft Division for conversion to R-4360-55 (C) Engines. Delivery of these converted engines from Pratt & Whitney will be as follows:

Qty. of Engines		Months
1	in	3-1/2
2	"	4-1/2
3	"	5-1/2
3	"	6-1/2

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MCPPXE5/RAB/ghs

4 August 1949

Report No. 1 (Cont)

The delivery of the remaining engines will start in 11-1/2 months.

5. Pratt & Whitney proposes to deliver R-4360-53 engines at the following rate:

Months after Date of Contract	No. of Engines
12	18
13	24
14	24
15	30
16	36

and thirty-six (36) engines per month thereafter until completion of the contract.

Raymond A. Bittner

RAYMOND A. BITTNER
Buyer

Copies To:

Secretary of the Air Force
Under Secretary of the Air Force
Deputy Chief of Staff, Material
Maj. Gen. K. B. Wolfe
Brig. Gen. H. A. Shepard - MCPP
Col. Geo. E. Schaetzel, MCPPD
Col. M. J. Coffield, MCPPXE
Col. B. L. Funk, MCPPXA
Col. T. P. Gerrity, MCPPXA2
Maj. Stanley C. Pace, MCPPXE5
Maj. J. P. Forrey, MCPPXA32
Capt. Ocy Comm, MCPPXE5
Mr. Kellhofer, MCPPXA
Mr. Coyle, MCKKIP74

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Lt Col USAF

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AIDS FOR USING THIS CASE HISTORY

The Summary describes the major phases of the subject. Marginal notations refer to documents numbered in Document File and to digests in Document Brief.

The digests in Document Brief are summaries of the individual documents, arranged and numbered, like the documents, in chronological order.

The Supplements, which consist of abbreviation list, charts, maps, photographs, news items, etc., serve as descriptive aids.

If not otherwise described, offices or sources are Wright Field agencies; dates given for contractual instruments are Government approval dates.

SUGGESTED REFERENCES

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SUMMARY OF CASE HISTORY

ON

SHEEP SHEARLING

(1)* The use of sheep shearling for aviation clothing was a practice of long standing with the Air Corps. A standard specification for the purchase of raw shearling was in existence 23 July 1935. That some attention was given to shearling clothing design at an early date is evidenced by a questionnaire of 7 April 1939 in which Wright Field requested the opinion of a Langley Field flyer on the suitability for enclosed airplanes of "an experimental light weight flying suit constructed with 1/4" sheep shearling." Success of the Wright Field design is indicated in Lieutenant Colonel W. E. Kepner's evaluation of (2) the suit as "the best I have ever used."

In the months immediately preceding World War II purchases of shearling suits increased appreciably and attention turned to another problem, that of protecting shearling skins against damage by moths. On 24 February 1941 the Field Services Section at Wright Field asked the Experimental Engineering Section to investigate the possibility of a process which would render (3) shearling skins mothproof for a reasonable period of time. Napthalene flakes, currently being used by the Air Corps, were (3,10,11) not entirely satisfactory, and the cold storage space which that method of mothproofing necessitated was at a premium. Accordingly, a search was initiated for a product which would make shearling mothproof without affecting the appearance or (4,5) serviceability of the skins. A number of firms making demothing products were consulted on the matter, and tests were conducted (5,6,9,10,11) by the Air Corps. As a result of these tests, several products (10,11,12) were discovered which were effective if used on raw shearlings, especially during the tanning process. Shearling specifications (13) were revised 29 July 1941 to include provision for a mothproofed finish.

Shearling contractors objected to mothproofing requirements (16,17) as unnecessary and likely to interfere with delivery schedules.

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* The numbers placed in parentheses in the margin refer to the documents found in the Document File attached.

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Wright Field proceeded to investigate the problem, however, and purchased service test quantities of mothproofed shearling
(18,19,20,24,25) from several manufacturers. Tests were also run on mothproofed
(26) material by private concerns. As a result of the Wright Field tests, the Experimental Engineering Section recommended that
(27) 100,000 square feet of each type of shearling under procurement for the fiscal year 1942 be mothproofed.

At this time politics became involved in the question of mothproofing shearling. The proposal of Wright Field to field test mothproofed shearling garments before making such mothproofing a firm requirement was questioned by Senator Robert Reynolds, Chairman of the Senate Military Affairs Committee, on behalf of "[his] friend Mr. Sweet." Mr. Sweet was a representative of
(34) Demotex, Incorporated, manufacturer of one of the mothproofing compounds under consideration for Air Forces use. In answer to Senator Reynolds, Brigadier General O. P. Echols indicated that the Air Service Command insisted on the mothproofing requirement and that allergy tests of mothproofed garments were considered essential before these garments were shipped to various parts
(36) of the world. The reasons for making such tests had been explained to the Demotex representative both in Washington and at Wright Field.

Senator Reynolds was not satisfied with General Echols' answer, however, and continued to insist that Wright Field waive service tests and buy "Demotexed" shearling immediately. Either the persistent Mr. Sweet or the Senator had managed to acquire a number of reports on Navy tests showing that "Demotexed" garments had no injurious effects on the human body. This evidence
(39) the Senator passed along to General Echols.

The Materiel Division, as a result of the Senator's insistence, asked Wright Field to reconsider the matter of service tests.
(47) Wright Field indicated that tests were still considered essential but than an effort would be made to expedite them. The tests which were eventually accomplished indicated that mothproofing did not
(64,68) damage the leather and had no ill effects on personnel. The specification was accordingly amended to include the mothproofing
(68) requirement. All shearling tanners were directed to mothproof all shearling furnished on Army Air Forces contracts after
(73) 1 October 1942. Official attitude on whether mothproofing damaged leather changed, however, and the Equipment Laboratory, on 13 March 1943, asked that the mothproofing be eliminated from the specification because it was "susceptible to doing more harm to the skins than the benefit which might be gained from the mothproof-
(87,95) ing."

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The aforementioned increase in the purchase of shearling suits in early 1941 necessitated planning in order that domestic shearling stock could be procured at a favorable price and in order that the United States supply plus that of Australia and New Zealand would be sufficient for military and commercial needs. However, according to the Office of Production Management, supply did not constitute
(7) a problem, for supplies were considered satisfactory at this time. As news of the prospective increase in Air Forces procurement
(8) became known, however, supplies were hoarded and the price of
(8) shearling increased. As a result, government purchases had to be made immediately instead of at the most favorable part of the season.

Air Corps procurement for the 54 group program had been completed by 15 August 1941 and 75% of the procurement had been delivered. The 100 group program requirements had been estimated at 14,500,000 square feet. No contracts had been signed as yet. The requirements for the 200 group program were estimated at this
(15) time as 29,000,000 square feet.

Increased concern over a possible shortage in the shearling supply developed as a result of rapidly increasing Army needs, and a conference of representatives of the Air Corps, Office of Production Management, and other interested agencies was called in September 1941 concerning requirements for the fiscal years 1942 and 1943. This conference indicated that the 28,000,000 square feet available per year would be absorbed by Air Corps contractors and that Air Corps expansion during 1943 might increase
(23) needs still more.

The shortage which subsequently developed is partially attributable to the Air Corps' tendency to base estimates of
(38) requirements on old figures. For example, the Under Secretary of War asked on 14 January 1942 for figures on Air Corps
(33) requirements for shearling. The Air Corps reply of 28 January
(38) was not considered satisfactory, and an estimate of requirements was again requested by the Under Secretary of War on 31 January. On 4 February the Industrial Planning Section received this request for an estimate of the requirements for the calendar years 1942 and 1943, based on the 8-I program and reported separately for each year in square feet. The section was advised to guess
(40) high rather than low in estimating requirements at this time.

Numerous suggestions were advanced in the effort to solve
(41) the shearling shortage. As concern over the shortage increased,

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the Material Division accelerated its investigations of suitable substitute materials. The Division indicated in December 1941 (30) that samples of a material using alpaca were being tested. However, both the Air Corps and the Quartermaster Corps indicated at this time that such substitutes were not entirely satisfactory for (30,31) various reasons. The Office of Production Management, concerned over the possible 1942 shortage, cooperated in the search for (32,37) substitute material, as did various private concerns. By 20 February 1942 substitute materials had been studied and had reached the service test phase, which was expected to be completed by (48) 20 May 1942. In March it was indicated that a specification (51) would be available by 1 June if service tests were successful. However, shearling supplies became more plentiful, and this phase of the search for a substitute material was no longer pursued vigorously at this particular time.

Other ways to combat the shortage were suggested by the Office of Production Management, which advanced the possibility of using skins with longer wool, skins from which wool would ordinarily (32,42,46) be pulled to make sheepskin leather. It was also suggested that the quality required be reduced in the specification to a Bradford (42,46,48,51) wool count of 46. The War Production Board initiated Order M-94, (16 February 1942) which made all wool supplies in this country available to the Army and prohibited the pulling of wool from any (45) skins with wool two inches or less in length.

An additional problem to complicate the shearling situation arose when the Navy complained on 26 February 1942 that their contractors were not supplying them with enough flying suits due (49) to a shortage of raw shearling. Wright Field indicated that it was unable to meet its own program and therefore it could divert no shearling to Navy contracts. It was suggested that the Navy problem might best be solved by adding Navy needs in with those of the Air Corps and purchasing all skins as Government Furnished Equipment in accordance with Air Corps practice. The Aeronautical (53) Board agreed to this, and a technical instruction of 16 March (55) directed Wright Field to handle all shearling procurement. The amount of shearling to the various services was subsequently (62) allocated on a percentage basis.

By the various expedients listed above, sheep shearling became plentiful; the necessary millions of square feet were contracted for by the Air Corps, principally with the three leading companies, J. Laskin & Sons, Winslow Brothers & Smith, and the A. C. Lawrence (63,70) Leather Company. But as the skin grades and suits were standardized

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and shearling clothing went into the field in quantity, it appeared that it was not entirely satisfactory. According to the clothing manufacturers, the quality of skins was not up to standard. According to the tanners, however, poor design and workmanship were to blame. The Navy submitted numerous complaints concerning the quality of the skins which it received, and various sources agreed that clothing designs were not "the best obtainable."

(68)

(81)

As early as November 1942 rumors began to circulate that the Air Corps was contemplating the use of another material for aviation clothing. This rumor was extremely disquieting to the sheep growers, who had greatly expanded their capacity to meet huge Air Corps needs. Wright Field indicated on 17 November 1942 that a complete changeover was not contemplated, but admitted that other materials were being tested and that some new type clothing would be bought if the tests were successful. A conference in January 1943, attended by General Arnold, Mr. Lovett, and others, recommended further tests on quilted down suits and electrically heated clothing and suggested that "the development of more suitable flying clothing for Army Air Forces use be expedited."

(76)

(77)

(79)

The Navy became so dissatisfied by March 1943 that it requested release from the arrangement under which all shearling was procured by the Air Corps as Government Furnished Equipment and expressed the desire to return to its former system of Contractor Furnished Equipment. The Navy request was forwarded to Wright Field for consideration on 17 March 1943. In April, Materiel, Maintenance, and Distribution in Washington informed the Aeronautical Board that it was willing to purchase shearling on a Contractor Furnished Equipment basis and requested that the case be reopened. The War Production Board did not favor the change, indicating that it "would result at best in some confusion and hesitancy in production and it would risk a complete bogging down of the entire program." The Aeronautical Board subsequently reviewed the case and directed the changeover to Contractor Furnished Equipment approximately 1 July 1943. At the time of the decision the Board recommended that the services take joint action to coordinate contractors' requirements, assure adequate supplies, and provide equitable distribution. For reasons which will be explained later, the Air Corps afterwards returned to Government Furnished Equipment procurement for the Fiscal Year 1944.

(83,86)
(88)

(100,101)

(104)

(106,107)

In an effort to improve the quality of shearling clothing numerous conferences were held and a positive effort was made to

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and shearling clothing went into the field in quantity, it appeared (68) that it was not entirely satisfactory. According to the clothing manufacturers, the quality of skins was not up to standard. According to the tanners, however, poor design and workmanship were to blame. The Navy submitted numerous complaints concerning the quality of the skins which it received, and various sources (81) agreed that clothing designs were not "the best obtainable."

As early as November 1942 rumors began to circulate that the Air Corps was contemplating the use of another material for (76) aviation clothing. This rumor was extremely disquieting to the sheep growers, who had greatly expanded their capacity to meet huge Air Corps needs. Wright Field indicated on 17 November 1942 that a complete changeover was not contemplated, but admitted that other materials were being tested and that some new type (77) clothing would be bought if the tests were successful. A conference in January 1943, attended by General Arnold, Mr. Lovett, and others, recommended further tests on quilted down suits and electrically heated clothing and suggested that "the development of more suitable flying clothing for Army Air Forces (79) use be expedited."

The Navy became so dissatisfied by March 1943 that it requested release from the arrangement under which all shearling was procured by the Air Corps as Government Furnished Equipment and expressed the desire to return to its former system of Contractor Furnished (83,86) Equipment. The Navy request was forwarded to Wright Field for (88) consideration on 17 March 1943. In April, Materiel, Maintenance, and Distribution in Washington informed the Aeronautical Board that it was willing to purchase shearling on a Contractor Furnished (100,101) Equipment basis and requested that the case be reopened. The War Production Board did not favor the change, indicating that it "would result at best in some confusion and hesitancy in production and it would risk a complete bogging down of the entire (104) program." The Aeronautical Board subsequently reviewed the case and directed the changeover to Contractor Furnished Equipment (106,107) approximately 1 July 1943. At the time of the decision the Board recommended that the services take joint action to coordinate contractors' requirements, assure adequate supplies, and provide equitable distribution. For reasons which will be explained later, the Air Corps afterwards returned to Government Furnished Equipment (134) procurement for the Fiscal Year 1944.

In an effort to improve the quality of shearling clothing numerous conferences were held and a positive effort was made to

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improve the general situation. For example, an attempt was made to arrive at Army-Navy standard specifications on numerous
(81) items. The recommendation was made that revised specifications
(82) for shearling skins be written with the advice and assistance of industry and the War Production Board. Wright Field also
(85) investigated certain tanners because reports were current that the shearling which they had been furnishing was unsatisfactory. One result of these investigations was the recommendation that
(87) the mothproofing requirement be eliminated as harmful to the fabric. It was recommended also that contracts be cancelled
(89,90,91,92,94) with a number of the manufacturers who had been furnishing poor quality skins. This could not be accomplished immediately, however, for the skins were satisfactory according to the specifications, which had few appearance requirements and which
(95) also failed to specify such things as a stitch tear test. To remedy this situation the inspection system was tightened up
(96,98,105) and the use of faulty imported skins was stopped.

Various indications appeared to be pointing toward a drastic change in Air Force flying clothing. In April 1943
(97) the War Production Board stated that it had heard that Wright Field wanted 999,000 yards of alpaca or wool fabrics. That same month Wright Field initiated an inventory of shearling stock on hand as to grade, class, type, quantity, and suitability. Further indication of the trend toward new material is contained in a memorandum report of 1 May 1943 describing Alaskan tests
(102) of new types of flying clothing. These tests showed that layers
(102,200) of fabric clothing were warmer and more flexible than shearling. Further investigations by the Army Air Forces Equipment Board indicated that while the new types of clothing needed improvement, in various respects they were "vastly superior" to the clothing then in use. The Board recommended that the new clothing be procured immediately for issue overseas and that the old type
(111) shearling clothing be used in this country. Interested individuals up to and including the Chief of the Air Staff,
(112) General Giles, approved the report. The latter indicated in his comments that "no further need for sheep shearling for flying
(113) clothing will be required."

The earlier decision to change over to Contractor Furnished Equipment had caused considerable repercussion among tanners. Winslow Brothers & Smith stated that if tanners had to step down to a position of subcontractor, a termination contract would
(118) have to be given to them as a matter of protection. The A. C. Lawrence Company took the same stand, pointing out that shearling

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tanners as subcontractors would supply 75% of the final cost of shearling clothing while the suit manufacturer as prime contractor would supply only 25%. Government Furnished Equipment procurement, moreover, would assure the Air Corps of a larger and steadier supply of better suits. J. Lasskin & Sons also submitted the (120) above percentages and raised the same arguments.

A meeting of contractors and Air Corps representatives was held 19 June 1943 to study the contract situation. The contractors were reassured somewhat by a plan which was worked out to protect (122) them in the event of terminations. No sooner had this been accomplished, however, than the decision to change over to new types of material was announced. Numerous complaints concerning (123) the cancellation of shearling contracts were heard immediately. The question of the cost of terminating the contracts was raised, as well as the cost of replacing the shearling suits on hand (124) or on order for the 224 group program. The most emphatic protest, however, came from and on behalf of the shearling industry. The California Wool Growers Association stated that producers in that state alone would take a $350,000 loss and accused the government of "welching" on its promises to encourage (132) more production: Various authorities indicated that the termination of government purchases would have a disastrous effect on the industry, which had been greatly expanded to (133,135) satisfy Air Corps requirements.

Various meetings were held in an effort to clarify the confused situation. A decision was made to procure an additional 11,000,000 square feet of shearling in order to meet Army Air Forces requirements and to help ease the situation in the industry. The Air Corps returned to a Government Furnished Equipment method of procurement for the fiscal year 1944 as a (134,136,137,141) gesture of encouragement to the tanners and shearers. These measures gave some immediate relief to the shearers and tanners and gave the War Production Board and the Department of Agriculture an opportunity to decelerate and terminate their promotional program with the growers and to put shearling back (143,148) on the civilian market.

The Air Service Command indicated in July 1943 that it saw no justification for the abovementioned new purchase of shearling (146) if clothing of other materials was to be used. The Command reported in August that it had made no definite commitments for additional shearling requirements but that such requirements had been suggested "with a quasi directive that the necessary

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sheep shearling clothing procurements be made to utilize raw sheep shearling for which commitments had apparently been made by higher authority." The Air Service Command understood at this time that the 11,000,000 square feet being purchased was
(158) to be stored and disposed of at a later date. Later in the same month Air Service Command requested again that the additional procurement of shearling be stopped as "useless waste." Moral commitments to the shearling industry were not considered
(159) sufficient grounds for the expenditure of $11,000,000.

The only result of the objections on the part of the Air Service Command was a firm directive to go ahead with the procurement. Washington indicated that the new procurement was essential
(160) to relieve the chaotic market situation. It was also felt that the Army Air Forces should not get out of the shearling market "because of projected requirements and because of the possibility that the material for the new buoyant type flyers suit may not
(161,165,168) be available." General Chidlaw termed the shearling procurement
(165) "an insurance against possible shortages later on."

The extent of the shearling supply on hand was indicated in a report of 8 September 1943 to the effect that the Air Corps
(169) had some 16,000,000 square feet of backed shearling in storage. The report indicated that 13,011,274 square feet was due on 1943 procurement, 603,325 square feet was to be returned by the clothing manufacturers as overage, and only 3,179,080 square feet would be needed to complete present clothing contracts.

The Air Inspector became cognizant of these excessive supplies and of the proposed further procurement of shearling as a result of an inspection of the Air Service Command late in September 1943. Inquiries on the part of his office brought out the points outlined in previous pages of this discussion, namely the moral obligation of the Air Corps, the possible adverse effect on the market, and the possibility that some shearling clothing might be used. An inspection of the Clothing Branch at Wright Field revealed that "shearling flying clothing is not satisfactory" and that shearling clothing "would not continue to be manufactured for Army Air Forces use if it were not necessary to use the
(176) shearling now on hand or under procurement." The Air Inspector
(176) suggested cancellation of shearling procurement in view of the above facts. As a result of the Air Inspector's report General
(177) Giles agreed that the situation should be reviewed and discounted the so-called moral obligation to purchase shearling.

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In reply to the comments of the Air Inspector, General Meyers of Materiel, Maintenance, and Distribution indicated that the surplus of shearling would be only about 4,000,000 square feet. He stated that the question of the market being affected had been exaggerated, that in reality the civilian market was very limited, and "it appeared doubtful that favorable disposition of the shearling could have been made even if it had been found (181) desirable to do so." He said that difficulties in getting down and alpaca would make it necessary to use shearling for some time. In view of the foregoing arguments General Meyers maintained that (181) the procurement of more shearling was entirely justified whereas the disposition of any considerable quantity was not.

In October 1943 General Frank of the Air Service Command and General Branshaw of the Materiel Command were directed to review the shearling situation to determine whether any of the shearling (186) on hand or under contract could be disposed of. They indicated in an immediate report that they felt that no disposition should be made of any shearling on hand or on contract pending an (187) inventory of shearling in storage. Such an inventory was necessary to determine the amount on hand which was defective or unsuitable (189) for Air Forces use. Generals Frank and Branshaw reported again on 27 October that they considered it inadvisable to dispose of any shearling "at the present time," partially becuase of the (180) scarcity of down and feathers for the new type suits. They agreed that future flying clothing should be made of fabric, and that shearling suits in use outside the United States should be replaced by the new type clothing. After these requirements had been (190,191) determined, any shearling surplus could then be disposed of.

The above recommendations were given to the Chief of Air (185,192,193) Staff and others by General Meyers. Higher authority concurred in the recommendations relative to use of new materials, and indicated that an investigation would be made as to the amounts of these materials available. No mention was made at this time (194) concerning the shearling surplus. On 11 November, however, the Chief of Air Staff indicated that the handling of the surplus (197,198) shearling was still considered unsatisfactory.

The "heat" continued to be on relative to the disposal problem for some time. Various meetings were held concerning the availability of new materials and an attempt was made to dispose of some of the "unsuitable" shearling by selling it to Russia, (195,198,199,200, 201,203) in an effort to allay the criticism. General Giles indicated on 25 November 1943 that disposal of surplus could wait but that he still felt that "action should be taken now to cancel procurement

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(202) (207) of additional shearling." A directive to study the possibility of terminating existing contracts was issued 4 December 1943. The results of the study, which were forwarded 8 January 1944, indicated a surplus on hand of some 3,000,000 square feet, with a total surplus on hand or on contract of approximately 21,000,000 square feet. The study recommended that all open (212) contracts be cancelled and all surplus sold.

The surplus problem continued to be confused for some time, or as General Branshaw put it, the situation "still seems to be (213) SNAFU and quite contradictory. What do we do now?" In connection with the Russian deal, the facilities of the Treasury Department had been considered as a means of disposing of the shearling, and it was suggested that the Treasury might be talked into taking (205) over the entire surplus. A directive to dispose of surplus on hand through the Treasury to the extent of 2,500,000 square feet (213) was received 12 January 1944. This amount consisted of various (214) obsolete pile lengths. The Materiel Command was directed to terminate contracts and thus dispose of 17,000,000 more square (215,216) feet, provided enough new type clothing was available.

The Air Service Command subsequently asked that the directive concerning the disposal of obsolete shearling be reconsidered and that they (the Command) be allowed to sell all surplus (220) shearling through the Memphis Depot. Disposal through the Treasury was agreed upon as the most economical means, however, and the Treasury agreed to accept shearling direct from the contractors (219,222,226) as well as obsolete lengths from Air Service Command. A report of 22 April 1944 showed that approximately six million square feet (229) had been turned over to the Treasury. On 29 June 1944 it was (230) indicated that all of the surplus had been finally disposed of except approximately 155,000 square feet.

The change from shearling to pile fabrics, quilted down, and cotton twills was discussed thoroughly by H. B. Washburn, Jr. (Special Assistant to the Chief of the Clothing Branch) in a report of 6 December 1943. It was extolled at that time as a great (208,209,210) step forward. Shearling ceased to be used except for some shoes and gloves. The fur fabric utilized after that date was moutom, which was employed for trim, primarily collars, on some types (210,218,224,225, 232) of suits.

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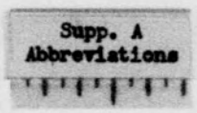

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Aircraft Resources Control Office	ARCO
Aircraft Scheduling Unit	ASU
aluminum	alum.
Amendment	Amend.
American Federation of Labor	AFL
ampere	amp.
Analysis Division	Anal. Div.
approximately	approx.
Arctic, Desert, and Tropic Information Center	ADTIC
Armament Laboratory	Arm. Lab.
Army Air Corps	AAC
Army Air Field	AAFld.
Army Air Forces	AAF
Army Air Forces Board	AAF Bd.
Army Air Forces Central Files	AAF CF
Army Air Forces Inspector-in-Charge	AAFIC
Army Air Forces Institute of Technology	AAFIT
Army Air Forces Plant Representative	AAFPR
Army Air Forces Procurement Field Office	AAFPFO
Army Air Forces Resident Representative	AAFRR
Army Air Forces Tactical Center	AAF Tact. Center
Army Air Forces Technical Base	AAFTB
Army Ground Forces	AGF
Army-Navy-British Purchasing Commission	A-N-B PC
Army-Navy-British Standardization Branch	A-N-B Stds. Br.
Army-Navy Munitions Board	A-N Mun. Bd.
Army-Navy Standards Branch	A-N Stds. Br.
Army Regulation	AR
Army Service Forces	ASF
assembly	assy
Assistant	Asst.
Assistant Chief of Air Staff, Intelligence	AC/AS, Intell.
Assistant Chief of Air Staff, Materiel, Maintenance, and Distribution	AC/AS, MM&D
Assistant Chief of Air Staff, Operations, Commitments, and Requirements	AC/AS, OC&R
Assistant Chief of Air Staff, Personnel	AC/AS, Pers.
Assistant Chief of Air Staff, Plans	AC/AS, Plans
Assistant Chief of Air Staff, Training	AC/AS, Trng.
Assistant Secretary of War	Asst. Secy. War
Assistant Secretary of War for Air	Asst. Secy. War (Air)
Association	Assoc.
Associated Equipment Development Unit	Assoc. Equip. Dvlpmt. Unit
Atlantic Overseas Air Materiel District	AOAMD
attachment	attach.
Attention	Attn.
Authority for District Purchase	AIP
Authority for Purchase	AFP
auxiliary	aux.

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Aviation Ordnance Engineering Office	Avn. Ord. Eng. Office
BASE TRAINING UNITS	Base Tng. Units
bill of lading	B/L
Board	Bd.
Bombardment Branch	Bomb. Br.
brake horsepower	bhp
Branch	Br.
British Air Commission	BAC
British Thermal Unit	B. T. U.
Budget and Fiscal Office	Bud. & Fisc. Office
Bulletin	Bull.
Bureau of Aeronautics	BuAer.
Bureau of Aeronautics General Representative	BuAer. Gen. Repr.
Bureau of the Budget	BuBud.
Bureau of Ordnance	BuOrd.
Bureau of Ships	BuShips
CENTER OF GRAVITY	c. g.
Centigrade	C
Central Files	CF
Central Procurement District	CPD
Change Order	Chg. O.
chapter	chap.
Chief of Administration	Chief of Admin.
Chief of Air Staff	C/AS
Chief of Staff	C/S
Circular	Cir.
Civil Aeronautics Administration	CAA
Civil Aeronautics Authority	CAA
Civilian Personnel Division	Civ. Pers. Div.
Classified Technical Instruction	CTI
Collection Division	Coll. Div.
Commander	Comdr.
Commanding General	CG
Commanding Officer	CO
Committee	Comm.
Commission	Comm.
Communications Equipment Officer	Commun. Equip. Officer
compiler(s)	comp(s).
Conference	Conf.
Confidential	C
Congress	Cong.
Congress of Industrial Organizations	CIO
Congressional	Cong.
Conservation Branch	Conserv. Br.

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Contract	Contr.
Contract Change Notification	CCN
Contract Files	Contr. Files
Contract Law Branch	Contr. Law Br.
Contract Section	Contr. Sect.
Contracting Officer	Contr. Officer
Contractor-Furnished Equipment	CFE
Control Branch	Control Br.
Control Section	Control Sect.
Controlled Materials Plan	CMP
Coordination	Coord.
Coordinator	Coordr.
Corporation	Corp.
Corps of Engineers	Corps of Engrs.
Corps of Intelligence Police	CIP
Cost-Plus-a-Fixed-Fee	CPFF
Counter Intelligence Corps	CIC
Counter Intelligence Division	Count. Intell. Div.

DEFENSE AID	DA
Defense Plant Corporation	DPC
Department	Dept.
Deputy Chief of Air Staff	Dep. C/AS
Deputy Chief of Staff	Dep. C/S
development	dvlpmt.
Development Engineering Branch	Dvlpmt. Eng. Br.
Director	Dir.
Director of Military Requirements	Dir. Mil. Req.
Disposal Section	Disp. Sect.
Distribution	Distrib.
District	Dist.
District Engineering Division Liaison Officer	Dist. Eng. Div. Lia. Officer
District Service Section	Dist. Serv. Sect.
District Supervisor	Dist. Supvr.
Division	Div.

EASTERN PROCUREMENT DISTRICT	EPD
editor	ed.
Emergency Plant Facilities	EPF
Engineer(s)	Engr(s).
Engineering (as used after AC/S [MM&D])	(E)
Engineering	Eng.
Engineering and Procurement	Eng. & Proc.
Engineering Division	Eng. Div.

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Engineering Order	E. O.
Engineering Section	Eng. Sect.
Engineering Shops Laboratory	Eng. Shops Lab.
Equipment	Equip.
Equipment Laboratory	Equip. Lab.
European Theater of Operations	ETO
Executive	Exec.
Expenditure Control Branch	Expend. Control Br.
Expenditure Order	Expend. O.
Experimental	Exp.
Experimental Engineering Branch	Exp. Eng. Br.
Experimental Engineering Section	Exp. Eng. Sect.
FACILITIES BRANCH	Fac. Br.
Facilities Engineering Branch	Fac. Eng. Br.
Fahrenheit	F
Federal Bureau of Investigation	FBI
Field Installation	Field Install.
Field Manual	FM
Field Service Section	Field Serv. Sect.
Fighter Branch	Fighter Br.
Fiscal Branch	Fisc. Br.
Fiscal Records Branch	Fisc. Records Br.
Fiscal Year	FY
Fixed Price	FP
Flight Section	Flight Sect.
Flying Training Command	FTC
from	fr.
GENERAL HEADQUARTERS	GHQ
General Order	G. O.
General Procurement Branch	Gen. Proc. Br.
General Staff Corps	GSC
Glider Branch	Glider Br.
Government	Govt.
Government-Furnished Equipment Branch	GFE Br.
Ground Forces Liaison Section	GF Lia. Sect.
Ground Safety Section	Ground Safety Sect.
HEADQUARTERS	Hq.
Historical	Hist.
horsepower	hp
House Report	H. Rpt.

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INCLOSURE	Incl
Incorporated	Inc
Indicated Air Speed	IAS
Indorsement	Ind
Industrial Facilities Section	Indust. Fac. Sect.
Industrial Planning Section	Indust. Plan. Sect.
Industrial Service Branch	Indust. Serv. Br.
Informational Division	Inform. Div.
Inspection	Insp.
Inspection Division	Insp. Div.
Inspection Section	Insp. Sect
Inspector	Inspr.
Inspector-in-Charge	Insp. In-Charge
Inspector General	IG
Inspector of Naval Aircraft	INA
Instrument	Instr.
Intelligence	Intel
Inter-Desk Correspondence	IDC
Inter-Desk Memorandum	IDM
Inter-Office Memorandum	IOM
Interstate Commerce Commission	ICC
Intransit Depot	ID

JOINT-ARMY-NAVY TASK OFF	JANTO
Joint Aircraft Committee	JAC
Joint Committee	Joint Com.
Judge Advocate General	JAG
Judge Advocate General's Department	JAGD

LANGLEY MEMORIAL AERONAUTICAL LABORATORY	LMAL
Legal Branch	Legal Br.
Letter	Ltr.
Letter Contract	Ltr. Contr.
Letter of Instruction	L. I.
Letter of Intent	Ltr. Intent
Letter Termination Notice	Ltr. Term. Notice
Library	Lib.
Limited	Ltd.
Logistics Planning Division	Log. Plan. Div.

MAINTENANCE CONTROL SECTION	Maint. Control Sect
Maintenance Division	Maint. Div.

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Manager	Mgr.
Management	Mgmt.
Management Control	Mgmt. Control
Manufacturing Methods Staff	Mfg. Methods Staff
Massachusetts Institute of Technology	MIT
Master Change Record	MCR
Materials Distribution Branch	Mat. Distrib. Br.
Materials Laboratory	Mat. Lab.
Materiel and Services	M&S
Materiel Center	Mat. Center
Materiel Command	Mat. Com.
Materiel Division	Mat. Div.
Materiel, Maintenance, and Distribution	MM&D
Mechanical Engineer	Mech. Engr.
Mediterranean Theater of Operations	MTO
Memorandum	Memo.
Memorandum Report	Memo. Rpt.
Miami Air Depot	MIAD
Midcentral Procurement District	MCPD
Middletown Air Materiel Area	MAMA
Midwestern Procurement District	MWPD
miles per hour	mph
Military Intelligence Service	Mil. Intell. Serv.
Military Personnal Division	Mil. Pers. Div.
Miscellaneous Branch	Misc. Br.
Mobile Air Materiel Area	MOAMA
Modification Center	Mod. Center
NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS	NACA
National Defense Research Committee	NDRC
Notice of Termination and Request for Negotiated Settlement	Notice of Term. & Request for Negot'd Settle.
OFFICE ADMINISTRATION SECTION	Office Admin. Sect.
Office, Chief of Air Corps	OCAC
Office of Emergency Management	OEM
Office Instruction	O. I.
Office of the Judge Advocate	Office of JA
Office of Naval Intelligence	ONI
Office of Production Management	OPM
Office of Scientific Research and Development	OSRD

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Office of Strategic Services	OSS
Office of the Under Secretary of War	Office, Under Secy. War
Ogden Air Materiel Area	OAMA
Oklahoma City Air Materiel Area	OCAMA
Operational Division	Op'l Div.
Operational Training Unit	Op'l Tng. Unit
Operations, Commitments, and Requirements	OC&R
Operations Div.	Op. Div.
Ordnance Department	Ord. Dept.
Ordnance Motor Maintenance Company	Ord. Motor Maint. Co.
Organization(al)	Org.
Organizational Planning Division	Org. Plan. Div.
Overseas Air Materiel District	OAMD

PACIFIC OVERSEAS AIR MATERIEL DISTRICT	POAMD
Patent Liaison Branch	Pat. Lia. Br.
Personnel	Pers.
Personnel and Base Services Division	Pers. & Base Servs. Div.
Personnel Section	Pers. Sect.
Photographic Laboratory	Photo. Lab.
Plans, Analysis, and Reports Division	Plans, Anal. & Rpts. Div.
Plans and Liaison Division	Plans & Lia. Div.
Plant Clearance Officer	Plant Clear. Officer
pounds per square inch	p. s. i.
Power Plant Laboratory	Power Plant Lab.
President	Pres.
Procurement Control Section	Proc. Control Sect.
Procurement Division	Proc. Div.
Procurement Field Offices	Proc. Field Offices
Production (as used after AC/S [M&D])	(P)
Production	Prod.
Production Coordination Branch	Prod. Coord. Br.
Production Division	Prod. Div.
Production Engineering Section	Prod. Eng. Sect.
Production Requirements Plan	Prod. Req. Plan
Production Resources Section	Prod. Resources Sect.
Production Survey Branch	Prod. Survey Br.
Program Control	Prog. Control
Project Records	Proj. Records
Propeller Laboratory	Prop. Lab.
Propulsion and Accessories Sub-Division	Propul. & Access. Sub-Div.
Proving Ground Command	PGC
Public Relations Office	PRO
Publications Branch	Pub. Br.
Publications Library	Pub. Lib.
Purchase Order	P. O.
Purchase Section	Purchase Sect.

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QUALITY CONTROL SECTION	Qual. Control Sect.
Quartermaster	QM
Quartermaster Subsistence Research Laboratory	QMSRL
RADIATION LABORATORY	Radiation Lab.
Radiogram	RG
Readjustment Division	Readj. Div.
Rear Admiral	Rear Adm.
Reconstruction Finance Corporation	RFC
Records Branch	Records Br.
Redistribution and Salvage Office	Redistrib. & Salv. Office
Reference Library	Ref. Lib.
Regulation	Reg.
report	rpt.
Representative(s)	Rep(s).
Requirements Branch	Req. Br.
Requirements Division	Req. Div.
Research	Res.
Research and Development Branch	Res. & Dvlpmt. Br.
Research and Engineering Division	Res. & Eng. Div.
Resources Control Section	Resources Control Sect.
Resources Division	Resources Div.
Restricted	R
Rome Air Material Area	RAMA
Routing and Record Sheet	RAR
revolutions per minute	rpm
SACRAMENTO AIR MATERIAL AREA	SAMA
San Antonio Air Materiel Area	SAMA
San Bernardino Air Material Area	SBAMA
School of Aviation Medicine	School of Avn. Med.
Secret	S
Secretary	Secy.
Secretary of War	Secy. War
Section	Sect.
Service(s)	Serv(s).
Service Group	Serv. Group
Service(s) Sub-Section	Serv(s). Sub-Sect.
Services of Supply	SOS
Session	Sess.
Society of Automotive Engineers	SAE
Society of Mechanical Engineers	SME
Southeastern Procurement District	SEPD

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Special Assistant	Special Asst.
Special Facilities	SF
Special Orders	S. O.
Special Project	Special Proj.
Special Service Division	Special Serv. Div.
Specialized Depot	SD
Specification(s)	Spec(s).
Specifications Branch	Specs. Br.
Spokane Air Material Area	SPAMA
Squadron	Sqdn.
Standard(s)	Std(s).
Standardization	Stdz.
Statistical Control Office	Stat. Control Office
Statistical Division	Stat. Div.
Statutes	Stat.
Superintendent	Supt.
Supervisor(s)	Supvr(s).
Supplement	Supp.
Supplemental Agreement	Supp. Agree.
Supply Division	Supply Div.
Surplus Property Board	SPB
TACHOMETER	Tach.
Technical	Tech.
Technical Data Laboratory	Tech. Data Lab.
Technical Executive	Tech. Exec.
Technical Instruction	TI
Technical Manual	TM
Technical Order	T. O.
Technical Service Division	Tech. Serv. Div.
Technical Training Command	TTC
Technical Training Division	Tech. Tng. Div.
Telegram	TG
Telegram Termination Notice	TG Term. Notice
Terminations Section	Terms. Sect.
Traffic Division	Traffic Div.
Trainer	Tr.
Training	Tng.
Training Aids Division	TAD
Training and Transport Branch	Tng. & Trans. Br.
Training Plans Division	Tng. Plans Div.
Treasurer	Treas.
Troop Carrier Command	TCC
TWX Message	TWX

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UNDER SECRETARY OF WAR	Under Secy. War
Unit Training Division	Unit Tng. Div.
United Automobile Workers	UAW
United Kingdom	U. K.
United States Marine Corps	USMC
United Nations	U. N.
United States Navy	USN
VERIFICATION TEST SECTION	Verif. Test Sect.
vice president	v. pres.
Victory in Europe Day	VE Day
Victory in Japan Day	VJ Day
volume(s)	vol(s).
WAR ASSETS ADMINISTRATION	WAA
War Department	WD
War Manpower Commission	WMC
War Production Board	WPB
Warner Robins Air Materiel Area	WRAMA
Washington, D. C.	Wash.
Weather Division	Weather Div.
Western Procurement District	WPD
World War I	WW I
World War II	WW II
Wright Field	WF
Wright Field Central Files	WF CF
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Supp. B
Principal Contracts

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SHEEP SHEARLING CHART
(Principal Contracts)

Contractor and Location	Contract and P. O. Number	Approval Date	Quantity on Order	Cost
J. Laskin & Sons Corp., Milwaukee, Wisc.	W535 ac-16115	28 Oct. 1940	1,839,000 sq. ft.	707,410.00
	W535 ac-17639	4 Feb. 1941	1,101,352 sq. ft.	470,067.16
	W535 ac-19614	28 Aug. 1941	1,840,300 sq. ft.	786,448.50
	W535 ac-23322	24 Dec. 1941	5,610,000 sq. ft.	2,437,521.25
	W535 ac-28773	13 July 1942	16,454,535 sq. ft.	9,387,989.25
A. C. Lawrence Leather Co., Peabody, Mass.	W535 ac-19613	10 Sept. 1941	1,849,050 sq. ft.	787,152.25
	W535 ac-23321	27 Dec. 1941	5,610,000 sq. ft.	2,493,206.25
	W535 ac-28776	31 July 1942	24,080,047 sq. ft.	12,987,542.83
Winslow Bros. & Smith Co., Norwood, Mass.	W535 ac-19615	17 Sept. 1941	1,841,700 sq. ft.	786,836.50
	W535 ac-23323	20 Dec. 1941	2,244,000 sq. ft.	983,722.50
	W535 ac-28775	27 July 1942	18,651,135 sq. ft.	10,224,493.13
Muskegon Tanning Co., Muskegon, Mich.	W535 ac-28774	15 July 1942	10,007,157 sq. ft.	5,596,879.71
Weil & Eisendrath Co., Chicago, Ill.	W535 ac-23324	18 Dec. 1941	49,800 sq. ft.	21,500.00
	W535 ac-30350 (P.O. 42-22414-P)	(July 1942)	500,000 sq. ft.	282,825.00
Chicago Tanning Co., Chicago, Ill.	W535 ac-23325	23 Dec. 1941	200,000 sq. ft.	95,740.00
	W535 ac-30343 (P.O. 42-22412-P)	(July 1942)	1,027,500 sq. ft.	593,537.50
Anglo-American Tanning Co., Sheboygan Falls, Wisc.	W535 ac-23326	20 Dec. 1941	498,000 sq. ft.	227,965.00
	W535 ac-30351 (P.O. 42-22415-P)	(July 1942)	719,250 sq. ft.	404,731.25
American Beaver Lace Corp., Johnstown, N. Y.	W535 ac-23327	5 Jan. 1942	310,500 sq. ft.	196,000.00
	W535 ac-30352 (P.O. 42-22416-P)	(July 1942)	719,250 sq. ft.	417,436.15
Seaboard Fur Co., New York, N. Y.	W535 ac-23330	15 Dec. 1941	498,000 sq. ft.	236,430.00
	W-535 ac-30358 (P.O. 42-22422-P)	(July 1942)	719,250 sq. ft.	417,436.25
Workman & Co., Philadelphia, Pa.	W535 ac-30347 (P.O. 42-22411-P)	(July 1942)	1,027,500 sq. ft.	596,337.50
Berlin Tanning Co., Berlin, Wisc.	W535 ac-30346 (P.O. 42-22413-P)	(July 1942)	1,027,500 sq. ft.	596,337.50

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Muskegon Tanning Co., Muskegon, Mich.	W535 ac-26774	15 July 1942	10,027,157 sq. ft.	5,596,679.71
Weil & Eisendrath Co., Chicago, Ill.	W535 ac-23324 W535 ac-30350 (P.O. 42-22414-P)	18 Dec. 1941 (July 1942)	19,800 sq. ft. 500,000 sq. ft.	21,500.00 288,825.00
Chicago Tanning Co., Chicago, Ill.	W535 ac-23325 W535 ac-30343 (P.O. 42-22412-P)	23 Dec. 1941 (July 1942)	200,000 sq. ft. 1,027,500 sq. ft.	95,700.00 593,537.50
Anglo-American Tanning Co., Sheboygan Falls, Wisc.	W535 ac-23326 W535 ac-30351 (P.O. 42-22415-P)	20 Dec. 1941 (July 1942)	498,000 sq. ft. 719,250 sq. ft.	227,660.00 404,731.25
American Beaver Lamb Corp., Johnstown, N. Y.	W535 ac-23327 W535 ac-30352 (P.O. 42-22416-P)	5 Jan. 1942 (July 1942)	310,500 sq. ft. 719,250 sq. ft.	106,070.00 417,436.25
Seaboard Fur Co., New York, N. Y.	W535 ac-23330 W-535 ac-30358 (P.O. 42-22422-P)	15 Dec. 1941 (July 1942)	498,000 sq. ft. 719,250 sq. ft.	236,430.00 417,436.25
Workman & Co., Philadelphia, Pa.	W535 ac-30347 (P.O. 42-22411-P)	(July 1942)	1,027,500 sq. ft.	596,337.50
Berlin Tanning Co., Berlin, Wisc.	W535 ac-30349 (P.O. 42-22413-P)	(July 1942)	1,027,500 sq. ft.	596,337.50
Amalgamated Fur Corp., New York, N. Y.	W535 ac-30353 (P.O. 42-22417-P)	(July 1942)	719,250 sq. ft.	410,891.25
Celeste Fur Dressing & Dyeing Co., Newark, N. J.	W535 ac-30354 (P.O. 42-22418-P)	(July 1942)	719,250 sq. ft.	417,136.25
Master Industries, Detroit, Mich.	W535 ac-30355 (P.O. 42-22419-P)	(July 1942)	719,250 sq. ft.	412,536.25
Petzold Ltd. Fur Dyeing Corp., New York, N. Y.	W535 ac-30356 (P.O. 42-22420-P)	(July 1942)	719,250 sq. ft.	421,443.75
Certified Dressers & Tanners, Brooklyn, N. Y.	W535 ac-30357 (P.O. 42-22421-P)	(July 1942)	719,250 sq. ft.	415,876.25
Beerfur Dressing & Dyeing Corp., New York, N. Y.	W535 ac-30359 (P.O. 42-22423-P)	(July 1942)	719,250 sq. ft.	415,217.75
Acme Fur Dressing Co., Inc., Maspeth, N. Y.	W535 ac-25057	12 Apr. 1942	500,000 sq. ft.	233,375.00
TOTALS			103,179,927 sq. ft.	54,158,572.08

Source of Information: Contract Files, Proc. Div., WF

Compiled by: Historical Office, Intelligence Dept., WF

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Document Briefs

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1.	(U) Spec. No. 16089, 23 July 1945 (File: Spec. Br., Prod. Eng. Sect.)	Specifications were issued on electrified sheep shearling for aviation clothing to cover two types of sheep skins: Type I - Fine wool sheep skin and Type II - Fine wool shorn sheep skin, yearlings or older. Detailed requirements for each type were given.
2.	(U) Ltr., 7 Apr. 1939 Fr: Col. F. M. Kennedy, Exec., Mat. Div., WF To: CO, Langley Field, Va. (File: Mat. Lab., Eng. Div.)	Letter forwarded questionnaire on experimental lightweight flying suit constructed with 1/4" sheep shearling to Lt. Col. W. E. Kepner of Langley Field to determine whether this type of suit was suitable for enclosed airplanes. Col. Kepner completed questionnaire (attached to this document) and stated he considered design of this suit and shearling material used satisfactory and he further stated it was the best suit he had ever used.
3.	(U) IOM, 24 Feb. 1941 Fr: Lt. Col. F. S. Borum, Chief, Field Serv. Sect., WF To: Chief, Exp. Eng. Sect., WF (File: Mat. Lab., Eng. Div.)	Due to greatly increased quantities of shearling type flying garments being procured it was desired, if practicable, to have skins treated at contractor's plant in such a manner as to afford protection against damage by moths for a period of one year at least. Benefits would be derived, if such a process were known, which would not affect serviceability and appearance of skins. Requested recommendations on subject of mothproofing and if information was not available suggested it would be necessary to contact other sources to determine feasibility of such a process.
4.	(U) IOM, 7 Mar. 1941 Fr: Lt. Col. F. O. Carroll, Chief, Exp. Eng. Sect., WF To: Chief, Field Serv. Sect., WF (File: Mat. Lab., Eng. Div.)	Answered IOM requesting information on a process for mothproofing sheep shearling. Stated that as far as was known there were no such treatments commercially available that would not affect the appearance other than napthalene flakes used by Air Corps. Expected a further report could be made by 1 Apr. 1942 after other sources had been contacted for latest information.
5.	(U) Ltr., 10 Mar. 1941 Fr: Lt. Col. F. O. Carroll, Chief, Exp. Eng. Sect., WF To: General Dyestuff Corp., New York, N. Y. (File: Mat. Lab., Eng. Div.)	It was requested that samples of a mothproofing compound called "Eulan" which was produced by General Dyestuff Corp. be sent to Mat. Div., WF, along with information for applying it to sheep shearling.

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6.	(U) Ltr., 10 Mar. 1941 Fr: Lt. Col. F. O. Carroll, Chief, Exp. Eng. Sect., WF To: Laskin Bros., Milwaukee, Wis. (File: Mat. Lab., Eng. Div.)	Requested that Laskin furnish Air Corps any available information they might have regarding suitable moth-prevention treatments for sheep shearling which would not impair serviceability or affect the appearance of the skins. Manufacturers of commercial mothproof treatments had been contacted for samples of their products.
7.	(U) Ltr., 25 Mar. 1941 Fr: H. H. Meadoo, Consultant, Leather Unit [OPM] To: C/AC, Wash. (File: CF-B)	OPM investigated shearling situation in regard to supply-demand relationship. Following information was forwarded to the Air Corps: 1. Raw shearling in U. S., Australia, and New Zealand should take care of potential military needs and commercial needs. 2. Timing of purchases of shearling for military purposes was particularly important. 3. Tanners owned little raw stock and were well booked up with government orders. 4. Postponement of purchase of such a quantity of shearling flying clothes until end of domestic raw shearling production season would make it possible to obtain these at relatively low prices. 5. Revision of specification to 3/8" from 1/4" pile length would result in utilization of domestic skins. Inclosed with this letter was a detailed history from one of the larger producers concerning the above points.
8.	(U) Ltr., 11 Apr. 1941 Fr: H. H. Meadoo, Consultant, Leather Unit [OPM] To: C/AC, Wash. (File: Gen. Proc. Br., Proc. Div.)	OPM had recommended in memorandum dated 25 Mar. 1941 that further purchase of shearling be delayed until June on assumption that quantitative data on prospective buying would be held strictly confidential. Sellers would have been more eager for business at time of next purchase and thus more favorable conditions for purchasing would be created. Since somehow it became known to supplying trade that approximately 4,200,000 feet of shearling was to be bought, speculative bidding for raw stock had resulted. OPM suggested that the sooner these transactions were carried out the better it would be for both the Air Corps and the trade in general.
9.	(U) Ltr., 27 May 1941 Fr: Lt. Col. F. S. Borum, Chief, Field Serv. Sect. To: CO, Middletown Air Depot (File: Mat. Lab., Eng. Div.)	Letter informed Middletown Air Depot that Mr. Sweet of Demotex Corp. would demonstrate use of Demotex materials in demothing of sheep shearling. Requested a report be forwarded upon completion of the demonstration together with recommendations.

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10. (U) 1st Ind., 7 June 1941
Fr: Lt. J. C. Wachtman, Actg. Depot Supply Officer, Middletown Air Depot
To: Chief, Maint. Com., WF
(File: Mat. Lab., Eng. Div.)

It was found that Demotex was impractical for application on materials in storage at this depot. It was recommended that future shearling supplies be mothproofed according to U. S. Dept. of Agriculture pamphlet "Insects in Relation to National Defense, Circular 3, Fabric Insects, February, 1941." While this treatment would not solve the problem of storing shearling and clothing already on hand, the adoption of specification requirements of mothproofing of raw materials should ultimately solve the problem of storing sheep shearling.

11. (U) Memo. Rpt., 24 July 1941
EXP-A-56-3905
(File: CF-B)

Conference concerning mothproofing materials for sheep shearling indicated that Eulan CN & Demotex No. 1 were suitable moth resistant finishes. Mothproofing treatment was to be added to specification. Additional cost was estimated at 1.3 to 1.5 cents per square foot.

12. (U) 1st Ind., 25 July 1941
Fr: Lt. Col. F. O. Carroll, Chief, Exp. Eng. Sect.
To: CO, Maint. Com., WF
(File: Mat. Lab., Eng. Div.)

Col. Carroll stated that requirements of Spec. 8-113 were being revised to provide for a permanent mothproofing finish of sheep skins, and Demotex No. 1 or Eulan WK could be used.

13. (U) U. S. Army Spec. No. 8-113-B, Amendment No. 2, 29 July 1941
(File: Spec. Br., Prod. Eng. Sect.)

Specification 8-113-B (26 Dec. 1940, copy attached) gave detailed requirements for various grades of wool and skin finishes for the following types of sheep shearling:
Type I: Electrified
Type II: Leveled
Type III: Water-repellant
Amendment 2 provided for the mothproofing of sheep shearling.

14. (U) IOM, 29 July 1941
Fr: Lt. Col. F. O. Carroll, Chief, Exp. Eng. Sect., WF
To: Chief, Inspection Sect., WF
(File: Mat. Lab., Eng. Div.)

Tests had been conducted to determine toxicity of solvents in finishes for shearling. The polyvinylchloride finish was regarded as a superior treatment and it was recommended that it be supplied on shearling intended for flying garments.

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15. (U) TT, 15 Aug. 1941
Fr: [Brig. Gen. J. C.] Kenney
To: [Brig.] Gen. [O. P.] Echols
(File: CF-B)

Gen. Kenney gave status of contracts for shearling on 54, 100, and 200 group programs. Contracts on fifty-four programs had all been placed and seventy-five per cent had been delivered. No contracts had been let for one hundred program, which would total 14,500,200 square feet. Twenty-nine million square feet would be required on two hundred group program.

16. (U) Ltr., 20 Aug. 1941
Fr: A. C. Lawrence Leather Co.
To: Mat. Div., WF
(File: Mat. Lab., Eng. Div.)

A. C. Lawrence Leather Co. presented its views on mothproofing treatments. Possible damage from moths would not equal a fraction of cost of treatments. Necessary test to determine whether proposed treatments would have serious effect on shearlings or not would delay deliveries. This company felt it unwise to proceed with mothproofing.

17. (U) Ltr., 22 Aug. 1941
Fr: L. F. Sweet, Demotex, Inc.
To: Col. J. T. Morris
Depot Liaison, Mat. Div., WF
(File: Mat. Lab., Eng. Div.)

Mr. Sweet of Demotex suggested that the Air Corps furnish the manufacturers with the mothproofing chemical and instruct them as to application to the material. On this basis mothproofing would cost approximately two-thirds of the figure estimated in the instructions to the manufacturers. Mr. Sweet stated that Mr. Hasseboom of J. Laskin & Sons (the most conscientious objector to the application of mothproofing and shearling) would comply with this plan.

18. (U) AFF No. 19249
26 Aug. 1941
(File: Contr. Files)

AFF with J. Laskin & Sons Co. provided for purchase of 5250 square feet of shearling skins, pile length 1/4", Type I, Finish II, Class A fiber in accordance with Spec. 8-113 at an estimated cost of $2,887.50. This mothproofed shearling was to be used to fabricate experimental flying suits. Addendum to this AFF provided that 1750 square feet each of shearling should be treated with Demotex, Nevamoth, and General Dye Co. mothproofing preparations. Latter was later changed to Hitten FF from Geigy Co.

19. (U) AFF No. 193755
26 Aug. 1941
(File: Contr. Files)

AFF with Winslow Bros. and Smith Co. provided for purchase of 5250 square feet of shearling, pile length 1/4", Type I, Finish II, Class A fiber in accordance with Spec. 8-113-B at an estimated cost of $2,887.50. This AFF covered same provisions for experimental mothproofing of flying suits as AFF No. 192949 [See Digest 18.]

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20. (U) AFF No. 192950
26 Aug. 1941
(File: Contr. Files)

AFF with A. C. Lawrence Co. provided for purchase of 5250 square feet of shearling, pile length 1/4", Type I, Finish II, Class A fiber in accordance with Spec. 8-113-3 at an estimated cost of $2,887.50. This AFF covered same provisions for experimental mothproofing of flying suits as AFF 192949. [See Digest 18.]

21. (U) TT, 2 Sept. 1941
Fr: Contr. Sect., AF
To: Contr. Sect. [Wash.]
(File: CF-B)

This teletype included a detailed breakdown of shearling by square feet, types, and cost, supplied on three contracts. Totals of contracts and percentages completed were as follows:

Company	Amount	% Complete
A. C. Lawrence Leather Co.	$787,152.25	11%
J. Laskin & Sons Corp.	$786,448.50	12%
Winslow Bros. & Smith Co.	$786,836.50	deliveries started end of Aug. 1941

22. (U) TT, 6 Sept. 1941
Fr: [Brig.] Gen. [U. S.] Echols [Wash.]
To: Asst. Chief, Mat. Div., AF
(File: CF-B)

Shortage of shearling was anticipated and a meeting was called to discuss supply. Estimate of requirements for FY 1943 was requested.

23. (U) Memo. Rpt., 20 Sept. 1941
EAF-M-54-002-196A
(File: CF-B)

Requirements for sheep shearling for the fiscal years 1942 and 1943 were discussed at a conference attended by representatives of OPM, Air Corps, Marine Corps, Navy Bureau of Aeronautics, and Quartermaster Corps. In a preliminary conference the Air Corps had set up its requirements for sheep shearling, exclusive of possible expansion in 1943, as 10,000,000 square feet for the fiscal year 1942 and 12,000,000 square feet for the fiscal year 1943, and these requirements were furnished to OPM. Available world supply was discussed and the total estimated shearling available for National Defense would total 28,037,000 square feet yearly. Tanners of shearling would be advised of shearling requirements for 1942 and 1943, and their facilities for meeting these requirements would be determined.

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24. (U) TT, 24 Sept. 1941
Fr: Exp. Eng. Sect., WF
To: Eng. Sect., Wash.
(File: Mat. Lab., Eng. Div.)

No tests had been accomplished at WF on mothproofing compounds but adoption of materials recommended by the Dept. of Agriculture had been considered for shearling only. Service test quantities were being processed with Bulan MK, Demotex and Nevamoth.

25. (U) IOM, 6 Oct. 1941
Fr: Lt. Col. F. O. Carroll, Chief, Exp. Eng. Sect., WF
To: Chief, Contr. Sect., WF
(File: Mat. Lab., Eng. Div.)

Tanning procedure prohibited use of Bulan MK, manufactured by General Dyestuff Corp., in mothproofing an experimental lot of shearlings. As provided by AFI's previously mentioned, Mitten FF, manufactured by the Geigy Co. had been substituted. This memorandum directed that Mitten FF be eliminated and Mothex MK, product of General Dyestuff Corp., substituted.

26. (U) Ltr., 22 Oct. 1941
Fr: E. R. Theis, Lehigh University
To: L. V. Sweet, Demotex, Inc., New York, N. Y.
(File: Mat. Lab., Eng. Div.)

Dr. Theis, Chemist of Lehigh University, conducted test on "Demotex-ed" leather and concluded that leather so treated was considered softer, rounder and fuller than the samples not so treated. It was believed that this Demotex leather would stand up as well as untreated in a hot climate with a prevailing high humidity or in cold storage. This treatment could be used without looking for any further trouble. A detailed report of the physical testing of the leather under accentuated conditions which might prevail in extremely cold countries or in the tropics was enclosed.

27. (U) IOM, 12 Nov. 1941
Fr: Lt. Col. F. O. Carroll, Chief, Exp. Eng. Sect., WF
To: Chief Field Serv. Sect., WF
(File: Mat. Lab., Eng. Div.)

In view of nature of findings regarding adequacy of Demotex method of mothproofing described in digest 25, it was believed advisable to have part of current procurement mothproofed in quantities greater than 240 suits previously agreed upon. Recommendation was made for mothproofing at least 100,000 feet of each type. The following mothproofing materials could be obtained: Demotex from Demotex Co., Mitten FF from Geigy Co. and Mothex FF from Geigy Co. and Mothex MK Extra from General Dyestuff Corp.

28. (U) TT, 28 Nov. 1941
Fr: Tech. Exec., WF
To: Exec., Wash.
(File: Mat. Lab., Eng. Div.)

In answer to request from Quartermaster General, on tannage, the following information was forwarded: Experience at WF indicated tannage used over a period of more than 10 years had been satisfactory,

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and deliveries were being received without objection or difficulty. It was suggested that any change in tannage or specification requirements be referred to technical officers of using services for experimental and service tests without interfering with production.

29. (U) 2nd Ind., 6 Dec. 1941
Fr: Lt. Col. F. O. Carroll, Chief, Exp. Eng. Sect., AF
To: Chief, Mat. Div., OCAC, Wash.
(File: Mat. Lab., Eng. Div.)

Matter of tannage and other specification requirements for shearlings for Air Corps and Quartermaster Corps were discussed at a meeting in Washington on 2 Dec. 1941. Quartermaster Corps was to initiate a quartermaster specification similar to one of AC, #8-113. However Spec. #8-113-C was a War Dept. specification rather than Air Corps and as such new requirements for other government agencies should be added to this spec.

30. (U) Ltr., 19 Dec. 1941
Fr: Lt. Col. F. O. Carroll, Chief, Exp. Eng. Sect., AF
To: American Velour Mills, Inc.
(File: CF-B)

In answer to offer of this company to present a pile fabric, statement was made that the only pile fabric contemplated for Air Corps use was a substitute for sheep shearlings. No specifications had been issued due to its experimental stage. Samples of this fabric using alpaca had been submitted to AF, but use had been discouraged due to its limited supply and strategic nature.

31. (U) Ltr., 31 Dec. 1941
Fr: Lt. C. L. Lynch, Asst., QMC, Q.M. Depot, Philadelphia, Pa.
To: Alexander Smith & Sons, Yonkers, N. Y.
(File: CF-B)

Army QMC procured several million feet of sheep shearling in 1941 for parka coat linings and trimming of winter caps; the Air Corps bought a much larger quantity of the material for flying and ground crew suits. Many substitute fabrics had been submitted but the excessive cost and low insulating properties made them impractical for winter clothing. The QM Depot did not anticipate any difficulties, in the near future, in securing shearling requirements although some lower grade skins might have to be used. All shearling production had been allocated to the Armed Services.

32. (U) Ltr., 13 Jan. 1942
Fr: Douglas C. Mackenchie, Dir. of Purchases, OPM
To: C/AC, Attn: Col. W. F. Volandt
(File: M&D)

OPM reported that the supply of sheep shearling included prospective receipts of imported shearling as well as the domestic crop would not exceed 40,000,000 feet with about 24,000,000 feet suitable for military requirements. Estimated military requirements for shearling were given as 29,000,000

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feet plus a further requirement for the Quartermaster Corps. Two possibilities were given for supplementing the supply of shearling. (1) Tests were being conducted on a so-called fur fabric or wool push; (2) skins might be employed bearing long wool which would have to be clipped and therefore would result in some loss of value. Mr. E. Youngren had been appointed as a special OPM consultant on shearling garments.

33. (U) Memo., 14 Jan. 1942
Fr: Maj. C. V. Morgan,
Chief, Commodities Div.,
Plan. Br., OUSW
To: C/AC
Attn: Col. W. F. Volandt
(File: MMD)

Memorandum from OUSW requested a recomputation of requirements on shearling skins for 1942 and 1943 since the demand for shearling had undoubtedly increased as a result of the expanded aircraft program. He asked that this information be reported to Commodities Div. by 23 Jan. 1942 and that requirements be stated in square feet of skins with each year reported separately.

34. (U) Ltr., 21 Jan. 1942
Fr: R. A. Reynolds, Chairman,
Senate Mil. Affairs Comm.
To: Brig. Gen. O. P. Echols,
Chief, Mat. Div., Wash.
(File: Mat. Lab., Eng. Div.)

Senator Reynolds requested that General Echols waive the tests on "Demotex-ed" mothproofing planned by WF that would take an additional ninety days or longer. This was requested in view of the information already gathered by Mr. Sweet of Demotex Corp., by WF, and by outstanding laboratories and chemists of the country, including the Bureau of Entomology of the Dept. of Agriculture. Senator Reynolds was convinced that mothproofing with Demotex would increase life of shearling clothing and save the Govt. money.

35. (U) Memo., 28 Jan. 1942
Fr: Col. W. F. Volandt,
Asst. to Chief, Mat. Div.
To: Under Secy. of War
Attn: Maj. Morgan,
Chief, Commodities Div.
(File: MMD)

Memorandum supplied computations on requirements for sheep shearling to the Under Secy. of War in reply to his request. Reports had been submitted to the above office in accordance with previous directives covering 549,327 skins, July 1941, and a requirement of 4,942,427 square feet of Type I and 9,831,251 square feet of Type II, Oct. 1941 Supplemental estimate "D" requiring 52,016 square feet for Type I and 486,420 square feet for Type II was the only increase in shearling skin to date. Deliveries had been scheduled for all the above in calendar year 1942. An increase to 263 groups was contemplated under the Victory Program, and revised requirements would be submitted when the program was stabilized.

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36. (U) Ltr., 28 Jan. 1942
Fr: Brig. Gen. C. P. Echols, Asst. for Proc. Services
To: Sen. K. R. Reynolds, Chairman, Senate Mil. Affairs Comm.
(File: Mat. Lab., Eng. Div.)

Test made on Demotex-ed treated material by the Dept. of Agriculture were considered by the Air Corps to be very thorough. In view of the fact that certain individuals might be susceptible to skin irritation caused by Demotex treated material and that clothes so treated would be shipped to remote parts of the world where replacements would be difficult, it was deemed necessary to conduct allergy tests on clothes so treated.

37. (U) Ltr., 28 Jan. 1942
Fr: Col. F. O. Carroll, Chief, Exp. Eng. Sect., MF
To: Alexander Smith & Sons, Yonkers, N. Y.
(File: CF-B)

Mat. Div. was developing a woven pile fabric which was contemplated as a substitute for shearling. It was suggested that Alexander Smith & Sons continue their development of a similar material because the present sheep shearling supply would be inadequate for all requirements and a substitute would then be necessary.

38. (U) Memo., 31 Jan. 1942
Fr: Maj. C. V. Morgan, Chief, Commodities Div., Plan. Br., OUSW
To: C/AC
Attn: Col. W. F. Volandt
(File: M&D)

OUSW had been informed by hides and skins industry that there would be a serious shortage of shearling skins for Army unless measures were taken to increase the supply and restrict civilian use. This shortage would seriously affect the Air Corps. Reply to the request from this office for a recomputation of shearling requirements did not provide a satisfactory basis for determining action which might be necessary to supplement the domestic supply. Therefore it was desired that a new estimate of shearling skin requirements for the Air Corps for 1942 and 1943 be supplied at earliest possible date in terms of square feet.

39. (U) Ltr., 4 Feb. 1942
Fr: Sen. R. A. Reynolds
To: Brig. Gen. C. P. Echols, Asst. for Proc. Services
(File: Mat. Lab., Eng. Div.)

Senator Reynolds stated that tests conducted by Dr. R. R. McLaughlin, Norfolk Naval Hospital, on the effect of Demotex on humans were very thorough and left no doubt concerning the fact that there would be no injurious results to humans after wearing Demotex treated garments. In view of these results reconsideration should be given to waiving further tests on Demotex.

40. (U) IT, 4 Feb. 1942
Fr: Facilities Sect., Wash.
To: Ind. Plan. Sect., Requirements Br., MF
(File: M&D)

Facilities Sect. asked Ind. Planning Sect. to give them an estimate of shearling requirements for calendar years 1942 and 1943 since the previous report prepared for OUSW did not reflect an accurate demand for this material or furnish a satisfactory

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basis for obtaining additional skins needed to supplement the domestic supply. Need for revised requirements frequently came as a result of a projected program which made the original estimate fall short of actual requirements. Air Corps estimates had been constantly understated due to advancing programs and tendency to use old figures.

41. (U) IOM, 6 Feb. 1942
Fr: Maj. F. I. Ordway, Asst. Exec., Mat. Div., Wash.
To: Tech. Exec., WF
(File: Mat. Lab., Eng. Div.)

Comments were requested as to adequacy of test data attached to letter from Senator Reynolds (See digest 39). Asked that question of conducting service tests of mothproofing processes be reviewed and recommendation be made.

42. (U) TT, 10 Feb. 1942
Fr: Ind. Planning Sect., WF
To: Facilities Sect., Wash.
(File: M&D)

This teletype stated that serious shortages of sheep shearling could be avoided by: 1. Reducing amount of skins used for pullery, freeing these skins for military use. 2. Reducing quality of wool under specification 8-113B from Class A-50's to Class A-44's or A-46's. Estimates for shearling skins on undelivered contracts for 1942 based on 83 group program was 5,460,000 square feet on Spec. 8-113B, Type I; 10,500,000 square feet on Spec. 8-113B, Type II; total 15,960,000 square feet. Deliveries were to be completed by 1 Oct. 1942. Statement was made as to requirements needed for the new contemplated program with figures covering types of suits and specifications given.

43. (U) Ltr., 11 Feb. 1942
Fr: Joseph W. Byron, WPB, Wash.
To: Col. W. F. Volandt, AC, Wash.
(File: M&D)

WPB stated that they were working out plans to allocate the shearling supply problem in order to take care of demands of Air Corps and other service requirements for shearling which far exceeded normal available supply. Mr. Youngren, WPB representative, had visited WF and reported tests were being made there on use of mohair pile as a substitute for shearling. WPB requested a decision on this subject as it would substantially effect the overall planning picture.

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44. (U) Memo., 12 Feb. 1942
Fr: Col. W. F. Volandt, Asst. to Chief, Mat. Div., Wash.
To: Under Secy. of War Attn: Lt. Col. C. V. Morgan Commodities Div.
(File: M&D)

In reply to a request from OUSW following information was submitted: 1. Estimates for shearling skins on undelivered contracts for year 1942 amounted to 5,460,000 square feet of Spec. 8-113B, Type I; 10,500,000 square feet of Spec. 8-113B, Type II. Deliveries on total of 15,960,000 square feet were to be completed by 1 Oct. 1942. 2. The new program covered suits for approximately 550,000 pilots and crew men and 400,000 mechanics. Estimated requirements of shearling machines for this program totaled 66,025,000 square feet and was to be divided over 24 monthly increments beginning 1 July 1942. Two methods were suggested by WF whereby a serious shearling shortage could be avoided; these are included.

45. (U) General Conservation Order L-94, 16 Feb. 1942
Fr: WPB
(File: M&D)

WPB General Conservation Order L-94 made permanent the provision that entire sheep shearling supply was to be made available for military requirements. However, it released for civilian use shearlings that did not meet military specifications as defined in the order. This order prohibited the pulling of wool from any freshly flayed or salted sheepskin when the wool was 2" or less in length and had a Bradford wool count of 48 and up. It defined shearling as a sheep or lambskin with some wool left on. Telegraphic order of 12 Dec. 1941 freezing shearlings in this country was superseded by L-94.

46. (C) Memo., 16 Feb. 1942
Fr: Col. W. F. Volandt, Asst. to Chief, Mat. Div.
To: WPB, Leather & Shoe Sect.
(File: M&D)

Col. Volandt informed WPB that conservation of shearling was being studied at WF. Mat. Lab. there had previously recommended that: 1. Amount of skins used for pullery wool be reduced and saving turned over to military use. 2. Quality of wool on various specifications to be reduced. Extent of conservation under above methods was being investigated. An additional requirement of 66,025,000 sq. ft. had been reported to WPB on the contemplated "pilot and mechanic" program.

47. (U) 1st Ind., 16 Feb. 1942
Fr: Col. F. O. Carroll, Chief, Exp. Eng. Sect., WF
To: Chief, Mat. Div., OCAC, Wash.
(File: Mat. Lab., Eng. Div.)

This indorsement stated that service test on mothproofing compounds would be initiated and to expedite results would be cut to 30 days. Test was being conducted to determine effect of perspiration on these compounds and whether high altitudes had any

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detrimental effects on their performance. Accelerated tests would be conducted on original garments as soon as they were received.

48. (U) Memo. Rpt. EXF-1.-56-4060, 20 Feb. 1942 (File: M&D)

A conference was held to discuss availability and conservation of sheepskins for Flying Clothing. Comparison of current and anticipated available shearling for period to March 1944 with proposed requirements for AC indicated the possibility of insufficient skins for projected program. Development of a suitable substitute for shearling and unrestricted cooperation of domestic sheep raisers was essential to the program. The conference recommended reduction of specification requirements to permit use of wool grades as low as 40's and limitation of initial procurement to 15,000,000 square feet to explore and determine price movement. Exhibits to this Memo Report included comparisons of available skins with projected requirements, proposed requirements of AC from June 1942, suggested procedure of WPB regarding control of price and availability of shearling.

49. (U) TT, 2 Mar. 1942
Fr: [Col. W. F.] Volandt [Contr. Sect., Wash.]
To: Asst. Chief, Mat. Div., AF
(File: CF-B)

Lack of shearling was causing a shortage of flying suits for the Navy.

50. (U) TT, 2 Mar. 1942
Fr: Lt. Col. J. H. Hicks, Chief, Field Serv. Sect., ASC [AF]
To: Office, Chief of ASC, Wash.
(File: CF-B)

It would be impossible to divert any of the sheep shearling [to the Navy] because that on order for the AC was insufficient to completely meet requirements of the 115 Group Program.

51. (U) Memo., 3 Mar. 1942
Fr: Col. W. F. Volandt, Asst. to Chief, Mat. Div., Wash.
To: Under Secy. War
(File: M&D)

In order to conserve skins, development of a substitute for sheep shearling was being advanced, and fiber content was being reduced in current specifications. Specification for substitute materials would be available about 1 June 1942, if service lists were satisfactory. In order to

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stabilize market and find out need for substitute, bids would be accepted on small quantities rather than based on total quantities of Air Corps needs.

52. (U) Ltr., 5 Mar. 1942
Fr: Lt. Col. J. A. McDonnell, Dist. Insp. Officer, Eastern Dist., New York, N.Y.
To: Asst. Chief, Mat. Div., WF
(File: CF-B)

Sheep shearling specifications had been revised with result that manufacturers were unable to produce flying clothing at the figure originally quoted. The raw skin supply presented another problem as present orders were in excess of the supply, and skins formerly devoted to commercial market were all being used for military purposes leaving none for commercial trade. The demand for shearlings necessitated lowering the standard of quality. Shearlings averaging 65 to 75 sq. ft. per doz., instead of the former 75 to 85 sq. ft., were being accepted; the smaller skins resulted in a greater cutting loss. It was determined, after an investigation of conditions, that Insp. Sect. action would not alleviate the situation.

53. (U) TT, 5 Mar. 1942
Fr: Col. F. O. Carroll [Chief] Exp. Eng. Sect., WF
To: Exec. [Wash.]
(File: CF-B)

Procurement of 15,000,000 sq. ft. of sheep shearling represented approximately 25% of AC requirements for two years, and that was not in excess of available skins. The AC policy was to procure skins from the tanners and turn them over to garment manufacturers as GFS; the Navy purchased garments but did not supply any of the materials. The Navy's procedure was believed to be reason for difficulties experienced in obtaining suitable flying clothing. Consolidation of AC and Navy requirements with materials furnished as GFS to Navy garment contractors was suggested as a solution to the problem. The order for 15,000,000 sq. ft. of shearling was only an exploratory order to determine the effect on prices; four times that amount would have been ordered if WF had not been afraid prices would soar sky high.

54. (U) Ltr., 12 Mar. 1942
Fr: E. A. Back, Prin. Entomologist, U. S. Dept. of Agriculture
To: Mr. B. C. Nelson, Winslow Bros. & Smith Co. Norwood, Mass.
(File: Mat. Lab., Eng. Div.)

Shearling had been treated with all solutions for protection against moths, and tests were disappointing. It was decided that sheep shearling could not be protected by mothproofing solutions as well as fabrics. Fabrics treated in hot dye bath with certain solutions stand a chance of receiving a good moth resistance, but sheep shearling could not stand hot dye bath due to effect on leather.

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55. (U) TI-1037, 16 Mar. 1942
Fr: Col. H. F. Volandt
To: Asst. Chief, Mat. Com., WF
(File: Central Files)

TI directed procurement and equitable division of shearling relative to requirements of AAF and Baker as directed by Aeronautical Board Case #140 dated 12 Mar. 1942 (copy included and attached to this document). Nine hundred thousand square feet of shearling was to be made immediately available to Baker since AAF would undertake procurement of raw commodity components of flight clothing and by allocation would provide for needs of other service whenever same raw commodity was common to both services. Shearling allocation would be on basis of providing heavy flight clothing for plane crews only.

56. (U) TT, 21 Mar. 1942
Fr: Contr. Sect., Wash.
To: Contr. Sect., WF
(File: Materials Lab.)

USW granted authority to contract for shearling on firm price basis on deliveries through 30 June 1942. Contracts should include price negotiation clause for deliveries subsequent to 30 June. Negotiated price should not exceed ceiling price at time of negotiation.

57. (U) TI-1037, Add. 1
23 Mar. 1942
Fr: Col. H. F. Volandt
To: Asst. Chief, Mat. Com., WF
(File: Central Files)

Expeditious action was directed to make shearling available for Navy use as indicated in Aeronautical Board Case #140.

58. (U) Ltr., 26 Mar. 1942
Fr: Moulder Hudgins,
Actg. Dir. of Purchases,
WPB
To: Secy. of War
(File: M&D)

Mr. Hudgins confirmed conclusions reached at a meeting 23 Mar. Col. Volandt and WF personnel represented the AAC. They agreed on unified procurement of tanned shearling flying suits for AAF and Navy Bureau of Aeronautics with Air Corps acting as purchasing agent for both services. This plan was to be presented to the Joint Aeronautical Board for ratification and as necessary the Air Corps would make available to Navy the shearlings required as directed by Aeronautical Board. WPB presented certain recommendations regarding contracts for purchase of shearling which are discussed. Agreed at conference that use of shearling for purposes other than flying suits would be confined to skins unsuitable for such suits. WPB recommended that Aeronautical Board direct Air Corps to eliminate from ground crew suits shearling suitable for flying suits. List of shearling tanners with their stated capacity included as an attachment.

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59. (U) TT, 26 Mar. 1942
Fr: Lt. Col. J. H. Hicks, Chief, Field Serv. Sect., WF
To: Hq., ASC
(File: M&D)

Delivery requirements by month from Apr. 1942 through June 1944 based on shearling needed for fabrication of winter flying and ground crewman's clothing were listed. Also included were the quantities of various types of shearling suits to be procured listed according to program.

60. (U) Ltr., 26 Mar. 1942
Fr: Joseph M. Byron, Leather & Shoe Sect., WPB
To: Col. W. F. Volandt [M&D]
(File: M&D)

WPB considered it highly important for WF to submit their report on suitability of potential contractors for shearling which should form a basis for considering available capacity and would have a bearing on preference rating applications for expansion of plants. Eight direct Air Corps contractors were listed. However, it appeared that WF was not satisfied that all these constituted satisfactory sources. Care should be exercised to avoid unnecessary spoilage of skins by incompetent processing.

61. (U) Ltr., 11 Apr. 1942
Fr: Col. H. P. Dellinger
To: Col. D. G. Lingle, Army Member, Working Comm., Aero Bd.
(File: M&D)

The Navy had placed on procurement fifty thousand winter flying suits of shearling. This information was not divulged at the conference of the Working Committee which had met during week the order was placed. Inasmuch as Army's motives and actions in placing their procurement for skins was questioned the Navy motive might also be questioned. Contract had been placed with Haskin thereby freezing all their available shearling for the Navy. This was 25 percent of available domestic output, which percentage was not in accord with basis determined at the conference.

62. (U) Ltr., 18 Apr. 1942
Fr: Aero Bd.
To: CG, Mat. Com., WF
(File: M&D)

In accordance with directive in Case No. 140, a conference of representatives of WF and Buker was held on 31 Mar. to submit recommendations regarding allocation of silk, nylon, and shearling. The recommendations were concurred in and were embodied on 18 Apr. 1942 in the following findings and decisions of the board. The policy of procuring finished articles was not desired. It was agreed that A-N standard specifications should be written for winter flight clothing. Plane crew requirements were based on six suits per S-1 program airplane and 75 sq. ft. per suit. Ground crew requirements

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were based on providing suits for 50% of ground personnel. Navy ground crew requirements were computed on proportional basis established by Army plane to ground requirements. Allocations of shearlings for Army and Navy were listed from the second half of 1942 to the second half of 1944, inclusive, proportioned between plane and ground crews. Totals were as follows:

Plane Crews		Ground Crews	
Army	Navy	Army	Navy
47,100,000	16,790,000 (sq. ft.)	40,060,000	14,250,000

It was decided that shearling be allocated in accordance with these requirements, or on proportional basis conforming to Army-Navy allocation; plane crew requirements would be satisfied for each six-months period before consideration would be given to ground crews; procurement of all shearlings would be accomplished by the Army by six months periods.

63. (U) IOM, 29 Apr. 1942
Fr: Col. A. B. Jones,
Chief, Contr. Sect., AF
To: Chief, Contr. Br., AF
(File: Contr. Files)

This IOM recommended that contracts be awarded to J Laskin & Sons, Corp., Muskegon Tanning Co., Winslow Bros. & Smith Co., and A. C. Lawrence Leather Co. It also set forth detailed information as to quantity, quality, types and cost per square foot on each contract. Inspection, acceptance, delivery and other standard contract clauses were included. It was pointed out that price of J. Laskin & Sons, Corp. and Muskegon Tanning Co. were slightly higher than those quoted by Winslow Bros. & Smith Co. due to the fact that these companies were independently owned and not connected with larger packing houses. Prices of Winslow Bros. and Smith were slightly higher than those of A. C. Lawrence & Co. due to the fact that the latter company had accumulated a quantity of skins at a low figure and gave the government the benefit of the saving.

64. (U) Memo. Apt., 12 May 1942
EXP-L-56-3905, Add. 1
(File: Mat. Lab., Eng. Div.)

Report on investigation made to determine effect of Mevamoth, Demotex and Lothex treated garments in regard to physical properties and human allergies. Exhibit A attached to this report showed results of tests conducted in regard to physical properties. Suits were tested for tensile, elongation and stitch

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tear and there was no indication of any damaging effect due to various mothproofing treatments. Exhibit B attached to this report showed results of tests conducted in regard to allergies. Suits were worn by a group of non-commissioned officers and privates. After wearing garments so treated on the average of eighteen hours no evidence of skin irritation was found. It was stated that specifications were being written to include requirements for mothproofing and the measurement of the degree of moth resistance.

65. (U) Ltr., 13 May 1942
Fr: J. L. Nelson, Secy.
Tanners' Council of America
To: Mat. Div., WF
(File: CF-B)

Information was requested as to whether contractors working on shearling garments had the right to dispose of scrap, or whether the scrap was the property of the government.

66. (U) Ltr., 14 May 1942
Fr: Col. T. H. Chapman,
Chief, Insp. Sect., WF
To: Dist. Insp. Officer,
SPD, New York, N.Y.
(File: CF-B)

No skins which could possibly be used for flying clothing were to be released for civilian use because of the limited supply of raw material and probable increased requirements for military purposes. No. 2 and 3 skins with defects in excess of those on No. 1 skins were to be made into boots. WPB would amend the Conservation Order to release to civilian trade only those skins rejected by WAF inspectors. Hinslow Bros. & Smith Co. and the A. C. Lawrence Leather Co. had both requested release of listed rejected shearlings; Insp. Sect. stated that 2,118 doz. of the skins listed by A. C. Lawrence Co. were usable in aircraft clothing so should not be released.

67. (U) Ltr., 20 May 1942
Fr: Capt. C. F. Howard,
Contr. Officer, WF
To: Tanners' Council of America
(File: CF-B)

All pieces of scrap shearling, irrespective of size, were to be segregated, and on completion of contract shipped to designated destination. This material was the property of the government and was not to be disposed of by the contractor.

68. (U) Memo. Rpt.
ExF-E-56-4182,
23 June 1942
(File: CF-B)

Report on a conference held at J. Laskin & Sons plant, with representatives of several government agencies and one or more individuals from practically all of the sheep shearling contractors present, for purpose of defining skin grades and interpreting

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manufacturing terms included in specification 8-113B and Amendment 6 to this specification. Accepted definitions of skin grades were given and announcement was made that mothproofing had been added to specifications for shearling. Specification changes discussed would be accomplished.

69. (U) IOI, 25 June 1942
Fr: Col. A. S. Jones, Chief, Contr. Sect., WF
To: Chief, Purchase Br., WF
(File: Contr. Files)

This memorandum forwarded quotations from 13 companies and recommended that purchase orders be issued to them. Detailed breakdown of shearlings for each company was included listing quantities, types, quality and cost. Contractors had already been informally notified of awards and it was recommended that formal notice be issued at once.

70. (U) Contr. W535 ac-28776
29 June 1942
Fr: Capt. C. P. Rowan, Contr. Officer
To: A. C. Lawrence Leather Co.
(File: Contr. Files)

This contract was for 24,080,047 square feet of sheep shearlings for the stated consideration of $12,987,542.83. Contract approved by Gen. C. T. Nichols, 28 July 1942 and approved by direction of the Secy. of War, 31 July 1942. (Contracts similar to this were issued to all contractors for sheep shearling procured by the Army Air Corps. In addition to a number of contracts let to smaller contractors, four large concerns were given contracts for the bulk of the AAF requirements. This contract is included as a sample contract of the larger contractors).

71. (U) Ltr., 12 Aug. 1942
Fr: Mr. R. F. Butler, Chief, Sheepskin & Specialty Leather Unit, WPB
To: Col. M. F. Volandt
(File: Materials Lab.)

WPB acknowledged its indebtedness to Dept. of Agriculture for promotion of domestic shearling production, which was 17 per cent ahead of last year. Samples of shearling and clothing were requested for demonstration to sheep growers in New Mexico.

72. (U) Ltr., 1 Sept. 1942
Fr: Col. F. O. Carroll, Chief, Exp. Eng. Sect., WF
To: W. C. Mahon Co., Chicago, Ill.
(File: CF-B)

All manufacturers holding AAF contracts for sheep shearling were satisfactorily producing; changes in methods would decrease production. Sufficient contracts had been let to meet AAF requirements and no new sources of supply were contemplated for future contracts.

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73. (U) Ltr., 18 Oct. 1942
Fr: Col. A. E. Jones,
Chief, Contr. Sect., AF
To: All Shearling Tanners
(File: CF-B)

Mat. Center instructed all shearling tanners to mothproof and label all shearling under AAF contracts after 1 Oct. 1942 in accordance with Fed. Spec. 8-113 and Amendment 7.

74. (U) Ltr., 30 Oct. 1942
Fr: Miller Tanning Co.
To: Maj. Gen. Daniel
Van Voorbis, AF
(File: CF-B)

Mr. Miller indicated that he had discussed the matter of shearlings with Senator Reynolds and enclosed a detailed report on the subject. The report indicates writer has extensive knowledge of the subject plus some personal "gripes." It is included for such information as it may contain, but a digest has not been attempted because the latter factor reduces the value of his statements.

75. (U) 2nd Wrapper Ind.,
4 Nov. 1942
Fr: Col. F. O. Carroll,
Chief, Exp. Eng. Sect., AF
To: Chief, Prod. Eng. Sect., AF
(File: Materials Lab.)

AF objected to proposed Federal specification for shearling since AAF was sole user of the material and had covered it completely in own spec. 8-113.

76. (U) IOM, 6 Nov. 1942
Fr: Col. W. F. Volandt,
Asst. Chief of Staff(C),
Mat. Com., Wash.
To: CG, Mat. Center, AF
(File: CF-B)

This IOM forwarded a letter from WPB dated 2 Nov. 1942 (included as an attachment to this document) for comments and recommendations. WPB stated reports had reached them that AAF might have under consideration a change in materials used for winter flying clothing, which were being manufactured from sheep shearling. This was a disturbing report and was hampering efforts to obtain supplies of new shearlings. Due to fact that AAF requirements had been much greater than tanning industry could have supplied on a normal basis. WPB had inaugurated following program to step up production: 1. Entered into arrangements with British for division of world crop of shearling. 2. High shipping priority and a substantial tonnage of shipping space had been given these foreign skins. 3. OPA had been requested to increase price ceiling on domestic skins in order to encourage greater production of shearling skins. 4. Through Dept. of Agriculture had appealed to patriotism of sheep growers in order to encourage increased production of shearling skins. 5. Tanners had been encouraged to develop a means of clipping

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certain type of long wool skins which would produce acceptable shearlings. c. Close contact had been maintained between AF and tanners in placing of contracts in order to get greatest use of available material. If shearling program were discontinued the above discussed programs would have to be curtailed and finally abandoned which would bring serious consequences. In this case shearling prices would fall to a very low level and tanners holding contracts would suffer a large inventory depreciation. Sheep growers and packers would suffer substantial losses and foreign market would suffer sever repercussions. However, there was no reason why program, properly handled could not be tapered off.

77. (U) 1st Ind., 17 Nov. 1942
Fr: Brig. Gen. F. O. Carroll
To: CG, Mat. Com., Wash.
Attn: MC/S(C)
(File: CF-B)

It was not intended that shearling be discontinued as a material to be used in AAF clothing. Plans were being completed for the testing of materials and clothing designs for use on special missions in special cases. If results of these tests, which were expected to be completed in 90 days, revealed other materials for use in extreme cold, only a limited amount of this special type would be ordered.

78. (U) Proc. Table Year 1942
(File: Gen. Proc. Br., Proc. Div.)

This table listed the 13 contractors and their respective purchase order numbers relative to AFP #286964. It also contained a breakdown as to quantities, types and sizes of shearlings. The total number of square feet for all 13 companies was 10,055,750. The four large contractors were also listed showing their respective contracts, and breakdown as listed for the above 13. Total number of square feet for these four contractors was 79,248,625. Grand total for year 1942 was 79,248,625.

79. (U) Memo. Rpt., 12 Jan. 1943
MMG-M-54-666-54
(File: Flying Clothing Br.)

A conference was held relative to Clothing Branch development work since 15 Oct. 1942, at which the following personnel were present: Lt. Gen. H. H. Arnold, Maj. Gen. G. E. Stratemeyer, Brig. Gen. T. J. Hanley, Jr., Col. Shelmire, Hon. Robert Lovett, Col. J. D. Hills, Capt. J. R. Schenck, Dr. James Clark. A display of various types of flying clothes were examined and it was recommended that development of more suitable flying clothing be expedited and flotation tests be made on quilted down type suit.

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80. (U) Proc. Div. Office Memo. 43-22, 26 Jan. 1943
Fr: Brig. Gen. R. D. Jones, Chief, Proc. Div., AF
(File: Admin. Br., Proc. Div.)

Proc. Div., AF had been authorized by TI-1344, Addendum No. 1 to negotiate contracts to sell scrap, cuttings, and by products resulting from manufacturing operations in arsenals, depots, plants or commercial establishments which had been classified as salvage by an inspector. The AF contracting officer at any depot, plant or other commercial establishment or any other officer so designated by Chief, Proc. Div. could act for Chief.

81. (U) Memo. Rpt., 6 Feb. 1943
EMG-1-54-666-56
(File: CF-B)

Rpt. of a conference held to discuss a program for the improvement of the quality of shearling skins and garments made from them. Navy had complained of quality of shearlings. Recommendation was made that AAF and Buaer survey tanneries and clothing mfg. to see what could be done to improve general situation. Army and Navy representatives were to consider revision of clothing specifications after survey was completed.

82. (U) Memo. Rpt., 8 Feb. 1943
EMG-1-54-666-56a
(File: Aero. Equip. Br., Prod. Div.)

A conference was held Jan. 18-20 regarding special clothing for flying personnel, with representatives of Nat. Center and Buaer present. Design standards on heavyweight shearling and design and fabric for one-piece lightweight flying suit were discussed. Both Navy and Army representatives concurred in opinion that some of shearling being delivered was unfit for use by the services and stated that necessary action should be taken to improve quality of shearling. Recommended that fair and equal distribution of shearling to AAF and Navy contractors for garments be insured.

83. (U) Ltr., 8 Mar. 1943
Fr: Chief, Buaer.
To: Working Comm., Aero. Board
(File: M&D)

Procurement of raw materials by AAF for Army and Navy on a GFE basis had imposed an excessive burden on Wright and Patterson Fields. The following unsatisfactory conditions were being experienced: 1. Inadequate inspection resulting in acceptance of inferior materials. 2. Waste due to rejects from incompetent sources. 3. Delays in delivery due to inadequate scheduling. 4. Increased cost of furnished product. Standardization of flight clothing for AAF and naval aviation was to be effected which it was believed would result in benefit to the Govt. It was also believed that

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in order to derive maximum benefits, procurement on a CPE basis would be advisable. The Navy requested that the decision to procure on a GFE basis as set forth in case 140 be reconsidered, that Buaer be authorized to return to a CPE basis, and that necessary action be taken to assure contractors of a source of raw materials.

84. (U) TT, 9 Mar. 1943
Fr: Brig. Gen. A. E. Jones, Proc. Div., WF
To: Mat. Com., Wash.
(File: CF-B)

AAF required 30,000 ft. of sheep shearling for the FY 1944. Navy requirements would be in addition to that for the AAF.

85. (U) Rpt. INSP-F-3B-(192), (10 Mar. 1943)
Investigation of Govt. Furnished Shearling, 1-3 Mar. 1943
(File: CF-B)

Investigation was made after several flying clothing manufacturers complained of weak leather being furnished them by the Govt. Such defects, which usually occurred at the points of strain on the garments, were not noticeable by mere examination of skins but were found when the material was cut and sewed. The largest percentage of weak material was supplied by Celeste Fur Dressing & Dyeing Corp.; the best, as to quality, came from J. Laskin & Sons Corp. and the A. C. Lawrence Leather Co. Conclusions were that difficulties were due to improper tannage, the use of foreign skins, and mothproofing which reduced tensile strength of the leather. It was recommended that: (1) Shearling be closely inspected before the backing was applied. (2) Various mothproofing methods be tested to determine the effect on strength of shearling. (3) Specifications call for tensile, stretch tear, sewing, etc. tests to insure strong skins. (4) Shearling delivered by Celeste, Acme, Certified, Retzold, and Berlin be held at the depots and contractors until disposition was decided upon.

86. (U) 1st Ind., 13 Mar. 1943
Fr: Col. J. G. Lingle, Army Member, Working Comm., Aero. Board
To: CG, Mat. Com., Wash.
(File: R&D)

This indorsement forwarded above request for comment and recommendation. Matter had been discussed with Col. Mills of Mat. Center and Commander Beck of Buaer.

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87. (U) IOM, 13 Mar. 1943
Fr; Col. G. V. Holloman, Chief, Equip. Lab., AF
To: Chief, Mat. Lab., AF
(File: Mat. Lab., Eng. Div.)

Equip. Lab. requested that U. S. Army Spec. No. 3-113 be revised and mothproofing requirements eliminated, as survey had shown that this process had done more harm to the skins than the benefit which might be gained from mothproofing. It was also requested that only No. 1 skins without seaming be used.

88. (U) IOM, 17 Mar. 1943
Fr: Col. W. F. Volandt, AC/S(S)
To: Tech. Exec., AF
(File: R&D)

Col. Volandt forwarded above request of the Navy to AF for appropriate action.

89. (U) IOM, 18 Mar. 1943
Fr: Col. G. V. Holloman, Chief, Equip. Lab., AF
To: Chief, Prod. Eng. Sect., AF
(File: Aero. Equip. Br., Prod. Div.)

As the result of a recent survey of sheep shearling furnished by AAF contractors it was recommended that contracts with seven companies should be immediately cancelled. The skins furnished by these companies had been found to be generally poor in quality. Inspection Section and Engineering Division, AF, had conducted separate surveys of this industry and had made concurrent findings.

90. (U) IOM, 19 Mar. 1943
Fr: Col. S. R. Brentnall, Chief, Prod. Eng. Sect., AF
To: Chief, Proc. Div., AF
(File: Aero. Equip. Br., Prod. Div.)

Production Division agreed that immediate steps should be taken to cancel the contracts of the seven contractors mentioned above.

91. (U) Memo. Rpt., 20 Mar. 1943 EMG-M-54-666-51E
(File: Flying Clothing Br.)

As the result of visits to a number of tanners AF recommended that Materials Lab. determine most effective mothproofing process and method of application and neutralization which would cause no deterioration of skins; that Materials Lab. incorporate these formulas and methods into specifications to apply to all shearlings contracted for by U. S. Govt.; that no more skins be accepted from the following tanners: (1) Celeste Fur Dressing and Dyeing Co., Newark, N. J. (2) Petzold Fur Dyeing Corp., N. Y. (3) Beerfur Dressing and Dyeing Corp., N. Y. (4) Amalgamated Fur Corp., N. Y. (5) Certified Dressers and Tanners, Brooklyn, N. Y. (6) Seaboard Fur Co. N. Y.

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92. (U) Minutes of Confer. 20 Mar. 1943
By: Capt. C. B. Smith
(File: Aero. Equip. Br., Prod. Div.)

At a conference attended by representatives of Follow-Up Production Control Sect. and Prod. Div., AF the cancellation of the contracts with the seven contractors listed above was approved.

93. (U) IOM, 22 Mar. 1943
Fr: Brig. Gen. A. E. Jones, Chief, Proc. Div., AF
To: Distr. Supvr., Central Proc. Dist.
(File: Redistrib. and Salvage Office)

AF suggested that consideration be given to feasibility of requesting bids for purchase of all government owned shearling scrap, as disposal of this scrap had been causing some difficulties due to large number of manufacturers and small amount of scrap to each plant. If satisfactory bids were received for scrap shearling an over-all contract could be written to provide for sale of this scrap.

94. (U) Memo. Rpt., EMG-1-54-666-51F, 23 Mar. 1943
(File: Aero. Equip. Br., Prod. Div.)

This memo report concerned quality of shearlings delivered to five manufacturers of shearling garments and the tanners who were delivering these inferior skins. H. L. B. Manufacturing Co. had received 40,000 ft. of poor quality shearling while Aero. Leather Co. held 50 boxes too poor for manufacturing and also had 200 suits that were falling apart. Rpt. listed discrepancies found after examining many bales of skins from various manufacturers. Recommended that inspection of skins be improved and production by three tanners who were producing unsuitable skins be stopped.

95. (U) IOM, 30 Mar. 1943
Fr: Lt. Col. F. C. Greulich, Chief, Inspection Sect.
To: Chief, Proc. Div.
(File: CF-B)

Col. Greulich referred to recent memo from Equip. Lab. recommending that certain shearling contracts be cancelled because product was unsatisfactory for clothing. Main fault of material was fact that stitching tore when it was sewn. Col. Greulich suggested that a stitch tear requirement be added to specifications and that additional tests be accomplished. He felt that contracts could not be cancelled otherwise since it could not be shown that either tanners or inspectors were at fault.

96. (U) IOM, 31 Mar. 1943
Fr: Brig. Gen. F. O. Carroll, Chief, Eng. Div., AF
To: Chief, Proc. Div., AF
(File: Mat. Lab., Eng. Div.)

Sheep shearling situation was reviewed in regard to the tanners meeting requirements as set up in U. S. Army Spec. 8-113-C. There was little doubt that some of the tanners were inadequate in meeting these requirements. This was substantiated by information obtained from Equip. Lab. AF. The

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opinion of Lat. Lab. AF was that unsatisfactory sources should be eliminated so that suitable skins would be obtained to produce first quality garments for the AAF.

97. (U) Ltr., 15 Apr. 1943
Fr: Charles B. Rodswell, Chief, Upholstery & Pile Fabric Unit, WPB
To: Capt. J. K. Schenck, AF
(File: OF-B)

Mr. C. B. Rockwell had recently assumed work in Pile Fabric Unit of WPB and requested a statement on status of orders to be placed for alpaca, both in regard to quantity and specifications. On Mar. 17th it had been indicated that AF would soon be interested in purchasing 250,000 yds. of 50 per cent alpaca and 50 per cent wool blend while on Apr. 13th a memorandum had been received which gave requirements for needed alpaca and other fabrics from Apr. to Dec. 1943 as 999,000 yds.

98. (U) IOL, 22 Apr. 1943
Fr: Lt.J. A. F. Wentzel, Chief, Tech. Control Br. Insp. Sect., AF
To: Chief, Gen. Proc. Br., AF Attn: Col. C. H. McGrath
(File: Gen. Proc. Br., Prod. Div.)

Inspection procedure to be incorporated in sheep shearling and aircraft clothing contracts was to be set up as follows: An inspection should be made at the contractor's plant with a final inspection at the clothing manufacturer's plant to determine whether shearling was suitable for fabrication into clothing. Any defective material should be replaced or purchase price refunded. Incorporated in contracts for aircraft clothing should be the following: Suit manufacturer was to specify the amount of shearling required for each article and a sufficient amount of shearling for fabrication of these garments. Contractors should segregate unsatisfactory material so that AAF inspector might verify contractor's findings and notify the contracting officer concerning replacement and disposition.

99. (U) Memo. Rpt., 23 Apr. 1943
EMG-56-4477
(File: Flying Clothing Br., AF)

Report on conference held 22 Apr. 1943 to obtain information on suitability of sheep shearling in AAF stock, relative to its application to garments and clothing. The majority of shearling was at the air depot in Syracuse, N. Y., but complete classification as to grade, quality and amount was not available. It was recommended that ASC obtain complete inventory of stock by grade, class, type and quantity; that Inspection Section, AF reclassify stock by quality and suitability. Materials Lab., Eng. Div., AF would assist in the reclassification.

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100. (U) Ltr., 29 Apr. 1943
Fr: Col. W. F. Volandt, Chief, Proc. Br., M&D
To: Working Comm. Aero. Board
(File: M&D)

It was opinion of AAF that it would be desirable to make sheep-shearling contractor-furnished rather than Govt-furnished, and that case #140 should be reopened to allow adoption of this method of procurement.

101. (U) TT, 30 Apr. 1943
Fr: Exec. for Procurement, WF
To: Proc. Br., Mat. Div., Wash. Attn: Col. Workum
(File: M&D)

Request for reopening of case 140 originated with Col. Mills and had his approval. If case would be opened, requirements would be determined by ASC and transmitted to WPB by Mat. Com., with names of contractors quantities, and dates required. Procurements would be placed with large mfrs. having adequate facilities and experience. Navy would be requested to make its procurements coincide with AAF so that WPB could make simultaneous allocations.

102. (U) Memo. Rpt. EXG-P.-54-666-59J, 1 May 1943
(File: Aero. Equip. Br., Prod. Div.)

This memo report concerned tests that had been conducted in Alaska from Dec. 7, 1942 to Jan. 27, 1943 to ascertain the durability, flexibility, practicability, comfort, health properties and appearance of AAF winter clothing. A detailed report was given on various tests which had been made. The group concluded that dry tanned shearling was less warm and flexible than layer fabric suits. Recommended that WF take action to standardize certain items of winter clothing as suggested by this report.

103. (U) Ltr., 11 May 1943
Fr: A. C. Lawrence Leather Co.
To: Mat. Com., WF
(File: Contr. Files)

A. C. Lawrence Co. objected to provision that decision as to whether or not skins were suitable for fabrication of flying clothing was left to the clothing manufacturer. It was suggested that provision be amended to stipulate that skins not meeting AAF specifications be returned to tanner within 30 days from date of shipment from tannery, and by agreement with tanner, skins would be replaced. Only whole and uncut skins should be returned. Statement was also made that clothing manufacturer should not determine whether or not leather would stand up under tests as outlined in specification. This company asked for exemption from this provision until such time as a finish had been developed and proved to be satisfactory. If these deviations were acceptable, contractor would make no change in cost or delivery on commitments already made to AAF.

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104. (U) Ltr., 18 May 1943
Fr: R. P. Butler,
Chief, Leather Sect., MPB
To: Lt. Col. A. P. Blanphin
Working Comm. Aero Bd.
(File: M&D)

It was opinion of MPB that a change to CFE basis for processed shearlings would be detrimental to supply program. MPB had implemented program throughout United States to assure supply of raw shearlings based on requirements which were four times the prewar production. Action had already been taken to correct unsatisfactory conditions that existed with regard to inspection, deliveries, etc., and under these modifications the Services could enjoy advantages of a CFE basis without interruption of arrangements for continued supply of shearlings. CFE would put procurement into hands of clothing manufacturers, increasing risks of diversion of suitable material into uses other than flying clothing, and lower grade material into military clothing. Controls of production and conservation would be impossible. The Navy planned to incorporate a termination clause in the prime contract which would extend to the subcontractor. If this became general, larger shearling tanners would not stock necessary raw materials for which segregation for each sub-contract would be necessary in order to maintain protection under several indirect termination agreements. Tanners must carry stocks of several months supply at all times due to short three month season of domestic supply and limited shipping opportunities of imports. A change to CFE basis would result in comparison and hesitancy in production and a complete bogging down of entire program.

105. (U) Ltr., 19 May 1943
Fr: Col. S. K. Brentnall,
Chief, Prod. Eng. Sect., MP
To: A. C. Lawrence Leather Co.
(File: Contr. Files)

Inspection would be accomplished by clothing manufacturer at clothing manufacturer's plant under supervision of an AAF inspector. Tanner would be permitted to inspect unsatisfactory skins before return of same for replacement or refund. In event of disagreement AAF inspector would render final decision. In response to contractor's suggestion of an inspection limit of 30 days, it was indicated no limitation as to when final inspection could be effected existed. MP was initiating measures to limit final inspection to one year from date of shipment by tanner. No deviations to cover physical properties and requirements of leather could be allowed. Temporary deviations concerning backed skins could be granted until contractor could have a finish approved that would conform to specifications.

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106. (U) Ltr., 21 May 1943
Fr: Chief, Bu.Aer
To: CG, AAF
Attn: Contr. Sect., Proc. Br., M&D
(File: M&D)

In order to control more effectively the quality and deliveries of winter flying suits required by Bu.Aer, it had been determined that contractors would furnish and be responsible for all materials used in their manufacture. Effective 1 July 1943, by agreement with AAF, Bu.Aer was returning to a CFE basis. A detailed schedule of sheep shearling requirements was set forth, and Bu.Aer requested that the AAF relinquish capacity to Navy contractors at specified rates. Bu.Aer calculated quantities of sheep shearling used to date and claimed a refund of $4,382,821.40. It was stated this was in accordance with directive contained Aero Board Case 172.

107. (U) Ltr., 22 May 1943
Fr: Col. W. F. Volandt, Chief, Proc. Br., M&D
To: CG, Mat. Com., AF
Attn: Tech. Exec.
(File: M&D)

In accordance with directive of Case A 172, Capt. A. C. Schemerhorn, AAF, was appointed as representative of Proc. Br., M&D, to coordinate contractors' requirements for shearling in order to assure contractors a source of materials and equitable division of available supply.

108. (U) Ltr., 24 May 1943
Fr: Working Comm., Aero. Bd.
To: WPB
Attn: M. P. Butler
(File: M&D)

Aero Board approved change of shearling from government furnished to contractor furnished status, and also a recommendation that Services should coordinate contractors' requirements, assure adequate supplies, and provide equitable distribution.

109. (U) Ltr., 24 May 1943
Fr: Lt. Com. A. L. Blamphin, Navy Member, Working Comm. Aero Bd.
To: AC/AS, M&D
Attn: Capt. Schermerhorn
(File: M&D)

WPB had been informed by telephone 13 May 1943 that the change from GFE to CFE had been approved in principle by the procurement branches of both Services. No indication that the case would be delayed was given. It was pointed out that the Services should coordinate contractor requirements, assure adequate supply, and provide for equitable allocation.

110. (U) Ltr., 28 May 1943
Fr: Charles B. Rockwell, Chief, Floorcovering & Upholstery Sect., WPB
To: Mr. H. G. Battles, Mat. Lab., WF
(File: CF-B)

This letter confirmed telephone conversation regarding the alpaca situation. Agreed that there were probably good reasons why Air Corps should have its own specifications rather than use Quartermaster's. Air Corps had indicated that they wished best commercial grade of alpaca used and had specified No. 1 Arequipa fleece, with a fineness

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quality of 56's or finer. WPB stated that alpaca situation had eased up since Mar. and placing of an order for 500,000 yds. (approx. 350,000 lbs.) for Air Corps, divided into classes I & II, would not place undue strain on alpaca market. However, if the order were increased it might be very difficult to adjust the situation and obtain finest commercial grade of fleece.

111. (U) Ltr., 31 May 1943
Fr: Col. G. W. McGregor, Pres.
AAF Equip. Bd., AAFSAT
To: AC/AS, OC&R
Attn: Req. Liaison Br.
(File: MM&D)

Rpt. on conference held by AAF Equip. Board for purpose of making recommendations on types of clothing to be adopted by the AAF. The quilted type buoyancy suit was recommended as a winter flying suit. As a general policy, it was recommended that clothing be procured as quickly as possible and be issued to combat crews destined for overseas; that stock on hand be issued to individuals for training in continental limits of U. S. until supply was exhausted.

112. (U) 1st Ind., 31 May 1943
Fr: Capt. Andrew Hughes,
Secy. AAF Board
To: AC/AS, OC&R
(File: MM&D)

AAF Board approved recommendations of Equip. Board on flying clothing.

113. (U) [Undated] 2nd Ind.
Fr: Maj. Gen. B. M. Giles,
AC/AS, OC&R
To: AC/AS, MM&D
(File: MM&D)

Recommendations of Equip. Board regarding flying clothing were approved with a few exceptions. Procurement of winter flying suits was suggested on a basis of 50% quilted and 50% alternate type. No further use of shearling was contemplated. Procurement should be kept to a minimum but all requirements should be met. Provisions should be made for prompt issuance of new type clothing to theaters outside continental limits of U. S. with Alaskan theater receiving first priority on winter clothing. All old clothing should be turned in to ASC for reissue in U. S.

114. (U) Table, 31 May 1943
(File: MM&D)

This table set forth breakdown of processed and raw shearlings, foreign and domestic, as to unfilled contracts, requirements, total supply, and undelivered finished shearlings as of 31 May 1943.

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		It was estimated that there would be 26,000,000 sq. ft. of finished shearlings undelivered as of 30 June 1943.
115.	(U) Ltr., 2 June 1943 Fr: A. C. Lawrence Leather Co. To: Mat. Com., WF (File: Contr. Files)	A. C. Lawrence Co. took exception to contemplated inspection time limit of one year. The plan as discussed in meetings with Col. Mills at WF, and which provided that certain tanners could ship direct to certain manufacturers, thereby eliminating necessity of shipping through storage depots, seemed feasible. If this plan were put into effect it should allow for inspection of any tanner's material within thirty days.
116.	(U) Proposed FO Memo., 10 June 1943 Fr: Col. A. E. House, Exec. for Proc., WF (File: MM&D)	This proposed FO Memo set forth suggested procedures for compliance with directives contained in Aero. Board Case 172, which reopened case 140. These directives covered CFE procurement and joint action of Services to assure contractors a source of material and equitable division of available supply.
117.	Memo., 10 June 1943 Fr: Capt. W. J. Montgomery, Chief, Non-Controlled Materials Br., Res. Div., Airc. Prod. Bd. To: Capt. Schermerhorn (File: MM&D)	New procurement procedure for winter flying clothing would place materials on same basis as other items regularly procured by the AAF and same general procedure would apply. Recommendations for changes in proposed FOM relative to Case 172 were included.
118.	(U) Ltr., 11 June 1943 Fr: Winslow Bros. & Smith Co. To: CG, AAF, Wash. Attn: Col. W. F. Volandt (File: MM&D)	New method of CFE would change tanners from prime to sub-contractors. Tanners preferred old arrangement of GFE, but if a termination contract would be provided including direct protection by the Army equivalent to that given in a prime contract and adequate credit protection as to the prime contractor, Winslow Bros. believed it would be possible to do business under new method.
119.	(U) Ltr., 11 June 1943 Fr: Stephen Palmer, Vice Pres., A. C. Lawrence Leather Co. To: CG, AAF, Wash. Attn: Col. W. F. Volandt (File: MM&D)	A. C. Lawrence Co. objected to change to CFE and listed in detail many reasons, the most outstanding of which were: 1. Tanners had purchased sufficient raw skins to complete AAF contracts. 2. Tanners were reluctant to purchase high priced domestic skins without definite assurance of continuation of

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program. Price established by Dept. of Agriculture in conjunction with AFB was $2.15 per skin for largest grade, as compared with normal average of $0.75 per skin and low of $0.10 in 1932. 3. Delay would be caused in placing of orders because of lengthy negotiations necessary between tanners and suit manufacturers. Necessity of early decision by Air Corps was emphasized in order to insure against breakdown of raw skin supply in U. S. Producers could not hold raw skins because of spoilage.

120. (U) Ltr., 14 June 1943
Fr: J. Laskin & Sons Corp.
To: CG, AAF, Wash.
Attn: Col. W. F. Volandt
(File: M&D)

J. Laskin and Sons Corp. voiced objections to CFE and listed reasons in detail. A finished flying suit represented an investment of 75% by the tanner and 25% by the manufacturer. CFE would make the manufacturer a prime contractor and place responsibility of contract on one who had a minor interest.

121. (U) Ltr., 18 June 1943
Fr: Col. S. R. Brentnall,
Chief, Prod. Eng. Sect., AF
To: A. C. Lawrence Leather Co.
(File: Contr. Files)

This letter gave further instructions regarding the inspection of sheep shearling and stated that inspection should be accomplished at the contractor's plant by an AAF inspector, but a final inspection would be made at clothing manufacturer's plant. Any unsuitable material which had been shipped by shearling contractor within one year of date of rejection should be subject to replacement or refund of the purchase price. AAF inspectors assigned to clothing manufacturer's plant should sign statement of agreement with manufacturer's findings. Should shearling become defective because of poor storage conditions at AAF depots, shearling contractor would not be held liable. Finish which had been specified in letter dated 2 June 1943 should be waived until a finish in accordance with specifications was approved by Mat. Com.

122. (U) IOM, 19 June 1943
Fr: Lt. W. F. Spalding
To: Chief, Proc. Div.
(File: Proc. Div.)

This IOM reported on a meeting held 16 June 1943 to discuss with the tanners change of plans for future procurement of winter flying clothing from CFE to CFE. Tanners pointed out that financial structure of manufacturers making this winter flying clothing was such that they would be unable to purchase quantity of shearling needed. Col. Volandt stated this could be taken care of by advance payments

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or V-loams. Tanners also asked how they could be assured of proper representation in negotiations in event of termination of contracts since they would have much more at steak than garment manufacturers. A plan was suggested to remedy this situation and was being investigated. In answer to question raised regarding time required for a settlement after termination of contracts, it was stated that as high as 75% of a claim could be paid pending a govt. audit. Discussed lack of storage place in plants of tanner and garment manufacturers, necessary since tanners' present contracts would be completed in Oct. while garment manufacturers' contracts would not be completed until approximately 60 days later. A decision was to be made by Proc. Div., WF as to whether present contracts of garment manufacturers could be run on basis of 1/3 of materials GFS and contractors take in 2/3 of requirements, which would eliminate question of storage space. Decided to have inventories of manufacturer's plants as to number of weeks supply of shearling on hand. Tanners had seemed satisfied with GFS arrangement of plan if termination could be arranged satisfactorily.

123. (U) Ltr., 23 June 1943
Fr: Col. H. F. Bellinger, Chief, Equip. Sect., Supply Div.
To: AC/AS, M&D
(File: M&D)

In answer to telephonic inquiry ASC presented the following information on sheep shearling stocks: (1) Stock on hand plus undelivered balances constituted approximately nine months supply; (2) cancellation of shearling clothing contracts would be small if any in view of 6-8 months required to effect new program; (3) Shearling clothing on hand would probably be insufficient for requirements; (4) Shearling commitments not needed for flying clothing could be utilized in ground crew winter clothing and intermediate flying shoes.

124. (U) Tele., 23 June 1943
Fr: Gen. Frank, ASC
To: Budget & Fiscal Office, Wash.
(File: M&D)

Equipment Board, AFSAT, had recommended replacement of existing winter clothing made with sheep shearling by more flexible garments. Since complete requirements for 224 group program had already been ordered and deliveries were approximately 80% complete the new clothing program would involve and expenditure of between 25 and 50 million dollars. A meeting was

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to be held 24 June, and since the proposed expenditure was not included in estimates for FY 1944, a representative of Budget and Fiscal Office was invited to attend.

125. (U) Ltr., 25 June 1943
Fr: A. C. Lawrence Leather Co.
To: CG, Mat. Com., AF
Attn: Col. S. R. Brentnall,
Chief, Prod. Eng. Sect.
(File: Contr. Files)

A. C. Lawrence Leather Co. stated that they were in agreement with new procedure for the inspection of sheep shearling with the exception of the time allowed for rejection. This company stated that there was no doubt that if its shearling was properly stored, it would be as suitable a year from the date of shipment, as on the date of delivery. It would be difficult over a year's period to prove whether the damage originated when the skins were in the hands of the government or garment manufacturers or both with storage conditions unknown to the tanner during this interval. Mr. Abbot stated that he could not see the necessity of requiring such a long period of time before material was accepted or rejected, particularly when shearling had been inspected before shipment by the AAF inspector.

126. (U) Ltr., 25 June 1943
Fr: Col. W. F. Volandt,
Chief, Proc. Br., M&D
To: CG, ASC
(File: M&D)

This letter forwarded to ASC for necessary action the request of the Navy dated 14 June 1943. (Copy included) In order to return to CPE basis, Navy requested that AAF release 315,000 sq. ft. of shearling monthly from J. Laskin & Sons and 120,000 from Winslow Bros; terminate and account for as of 1 July 1943 joint operations under Case No. 140; and take up for its own account surplus materials remaining in plants of Buher contractors on 1 July 1943. It was understood that AAF monthly requirements for shearling totaled 1,800,000 sq. ft. and Buher 550,000 sq. ft. monthly.

127. (U) Memo., 25 June 1943
Fr: Col. W. F. Volandt,
Chief, Proc. Br., M&D
To: AC/AS, M&D
(File: M&D)

Report on meeting held 24 June 1943 in office of Chief, Proc. Br., M&D, to determine sheep shearling requirements for FY 1944. Distribution of winter flying suits during calendar year 1944 was recommended as follows: 200,000 pilot suits and 200,000 mechanic suits of sheep shearling; 100,000 new type alpaca and buoyancy suits. AAF would need approximately 12,500,000 sq. ft. of shearling to complete this program, in addition to present commitments. Navy requirements for FY 1944 were 6,500,000 sq. ft. This program could be covered by supply of domestic shearling then coming on market.

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128. (U) R&R-1, 26 June 1943
Fr: Col. C. B. Stone, Chief, Supply & Maint. Br.
To: AC/AS, M&D
(File: M&D)

Col. Volandt's recommendations were concurred in. A directive was being sent to ASC to initiate procurement of shearling, alpaca, and buoyancy suits.

129. (U) Lemo. Rpt. MB-MOR-MST-M-295 26 June 1943
(File: M&D)

Report on meeting held in office of Col. Volandt regarding availability and procurement of sheep shearling. 12,500,000 sq. ft. of shearling would have to be purchased during FY 1944 to meet requirements. This quantity, plus the carry over from 1943 and Navy 1944 requirements would total 33,500,000 sq. ft. requirements compared to 35,000,000 sq. ft. estimated production from new kill. Detailed figures showing requirements and availability were listed. Notwithstanding other recommendations as to type of material for these suits, there would be a directive issued for the use of shearling. It was recommended that a further study be made by Airc. Sched. Unit in order to be able to carry on the proposed scheduling and allocating of sheep shearling.

130. (U) R&R-2, 29 June 1943
Fr: Col. D. F. Fritch, Exec. Office, AC/AS, M&D
To: Chief, Proc. Br.
(File: M&D)

Office AC/AS, M&D approved procurement plan of Col. Volandt.

131. (U) TT, 29 June 1943
Fr: Lt. J. H. Leyer, ASC
To: Proc. Br., M&D
(File: M&D)

This teletype forwarded the information that Materiel Command, WF was instructed by letter from Bureau of Aeronautics to release shearling to Navy Department.

132. (U) TG, 29 June 1943
Fr: W. F. King, Secy., Calif. Wool Growers Assn.
To: CG, Mandell, Farm Credit Admin.
(File: M&D)

California wool growers vigorously protested possibility of the Government welching on its promises that had encouraged sheepmen to increase shearling production. If this happened California growers would have to take a loss of $350,000. Packers were already decreasing prices.

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133. (U) TT, 30 June 1943
Fr: Clarence F. Lea, Mat. Com., WF
To: Col. W. F. Volandt, M&D, Wash.
(File: M&D)

The Air Corps had been buying shearling direct from tanner at OPA ceilings, a program designed to encourage shearling production by farmers. The proposed change of purchase of shearling from raw material to manufactured garments would result in reduction of price, which would cause the tanner to refuse to buy. The owners of 350,000 shearlings on feed in California would take a loss of approximately $7.00 per head. The farmer, having relied on the government program and sheared his lambs to meet special requirements, had in part sacrificed his normal income.

134. (U) TT, 1 July 1943
Fr: Col. W. F. Volandt, Chief, Proc. Br., Wash.
To: A. C. Lawrence Leather Co.
(File: M&D)

This teletype informed A. C. Lawrence Leather Co. that AAF would return to GFE method of procurement for FY 1944. Materiel Command was to be contacted for negotiation of the contracts.

135. (U) TG, 1 July 1943
Fr: CG, Randell and C.D. Lowe
To: Chairman State Shearling Comm.
(File: M&D)

A program adopted by the AAF made it possible for tanners to remain active bidders for shearling to help support live values for shorn lambs for the three months period before they were marketed. Discontinuation of effort to have lambs shorn for shearling program was suggested. The WPB was planning to remove freeze order on shearlings and reopen civilian market.

136. (U) TT, 1 July 1943
Fr: Col. H. B. Benedict
To: CG, ASC
(File: M&D)

ASC was advised to contact Lt. Spaulding, WF concerning an additional eleven million sq. ft. of shearling to be procured to supplement existing contracts.

137. (U) TT, 2 July 1943
Fr: Col. W. F. Volandt
To: Proc. Div., Mat. Com., WF
(File: M&D)

On 1 July 1943 representatives of WPB, Dept. of Agriculture, War Meat Board and AAF met to determine the best method to procure shearling coming on the market in large quantities with no buyers. This situation was due to the fact that there had been a delay in transferring from GFE to CFE and the tanners were reluctant to make commitments on anticipated business not on contract. In order to meet AAF requirements and prevent a chaotic market the AAF decided to return to GFE method of procurement for FY 1944. The AAF announced its

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		intention to procure 15 million square feet of new domestic shearling which would cover requirements for FY 1944 and help restore the market to normal.
138.	(U) Ltr., 2 July 1943 Fr: G. H. Wilson, AAF Inspector in Charge, Chicago Area To: CG, Mat. Com., WF Attn: Chief, Inspection Sect. (File: CF-B)	Inspection of a number of shearling contractors in the St. Paul-Minneapolis area revealed that most difficulties had resulted from defective South African hides. Difficulties were resolved satisfactorily. Companies involved were Western Fur Dressing and Dyeing Works, Laster Industries, Inc., and United Garment Co.
139.	(U) TT, 3 July 1943 Fr: [Maj. Gen. C. B.] Branshaw, WF To: AC/AS, M&D Attn: Col. W. F. Volandt (File: M&D)	ASC stated that an AFP for sheep shearling could not be issued until pile length requirements were determined. WF thought that ASC was waiting for a signed directive from Washington regarding this.
140.	(U) Ltr., 6 July 1943 Fr: Col. W. F. Volandt, Chief, Proc. Br., AC/AS, M&D To: Chief, BuAer (File: Gen. Proc. Br., Proc. Div.)	Tanneries under contract were instructed to release shearling to Navy contractors in accordance with request made in BuAer letter 21 May 1943. AAF agreed to absorb any excess stock that remained in the plants of the contractors.
141.	(U) TT, 7 July 1943 Fr: Col. W. F. Volandt, Chief, Proc. Br., M&D To: CG, Mat. Com., WF Attn: Gen. Proc. Br., Proc. Div. (File: M&D)	Col. Benedict, Supply and Maintenance Br., M&D verbally advised Mr. Wynn of ASC that shearling contracts should be extended to replace the 4,000,000 square feet of sheep shearling released to the Navy. This replacement was to be made at a subsequent date when new skins became available on the market. It was requested that instructions be incorporated in the AFP for the already initiated procurement of 11,000,000 square feet that new domestic shearling purchased would be interchangeable with shearling applicable to existing contracts. Imported shearling under contract could be used at a later date owing to its longer lasting powers.

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142. (U) Ltr., 7 July 1943
Fr: Capt. A. C. Miles, Buaer
To: CG, AAF
Attn: Chief, Proc. Br., M&D
(File: M&D)

Buaer concurred with the AAF system whereby the AAF would absorb the surplus materials under the GFE system. An accurate account of winter flying suits manufactured from GFE up to point of change-over to CFE would be made and this information would be made available immediately.

143. (U) Ltr., 7 July 1943
Fr: R. F. Butler, Chief, Leather Sect., WPB
To: Col. W. F. Volandt, M&D
(File: M&D)

WPB understood that the Air Forces would procure on GFE basis over and above current contracts sufficient quantities of shearling to relieve domestic producers of the skins which were being produced under the accelerated program. As there was no shearling procurement contemplated for FY 1945, WPB and Dept. of Agriculture were taking immediate steps to terminate the existing program to secure the maximum quantity of shearlings. If a large need again developed it would be doubtful that current production rates could again be reached.

144. (U) Memo., 8 July 1943
Fr: Capt. A. C. Schermerhorn
To: Col. W. F. Volandt
(File: M&D)

Telephonic conference of Lt. J. H. Meyer, ASC and Lt. W. F. Spaulding, Mat. Com., WF with Capt. A. C. Schermerhorn, M&D indicated that the reasons for the delay in issuance of the AFP for the 11,000,000 sq. ft. of sheep shearling were as follows: (1) AFP would not be issued by Supply Div. ASC from instructions received by wire. (2) It was necessary to await complete inventory of sheep shearling at both Army and Navy contractors plants in order to determine various pile lengths that were necessary. Suggestion made that AFP could be issued based on pile lengths in relation to past procurements. Amendments could be issued at a latter date to include proper specifications and delivery dates.

145. (U) Memo. Rpt., 8 July 1943
ENG-56-14556
(File: Contract File)

A conference was held relative to clarifying requirements of U. S. Army Spec. 8-113-C and Amendment 1 and the tentative Army-Navy Aeronautical Specification for sheep shearling. This was made necessary in view of procurements of this material that were pending. U. S. Army Spec. 8-113-C and Amendment 1 would be altered so that requirements would be waived with reference to performance at 60° F and accelerated aging of the coating on the flesh side of the sheep shearling because no suitable finishes

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were available. Formula for backing would be included in the notes of the tentative Army-Navy specification but would not be a specifications requirement. It was concluded that in case Army-Navy specification had not been made effective when procurements were made, specification 8-113-C and Amendment 1 would be used.

146. (U) IOM, 9 July 1943
Fr: Col. H. I. Bellinger, Chief, Equip. Sect., Supply Div.
To: Chief, Supply Div.
(File: M&D)

When Equip. Sect., Supply Div. submitted shearling figures for 273 group program they were informed that figures were already available. At a conference 22 Feb. 1943 they were told that new clothing would require no shearling, but "since at a prior meeting in Washington, D. C., with other branches of service, Colonel Mills said that the Air Forces had committed themselves to the use of shearling for flying suits" and that "part of our requirements would continue to be shearling." At a subsequent meeting it was suggested that 190,000 flying suits and all mechanics' winter suits be shearling. Meanwhile a new shearling suit was developed and standardized by Mat. Com. Further confusion resulted from a directive from General Giles saying that "there would be no further need for sheep shearling" and a statement from Wright Field that "shearling clothing could and would not be discontinued." A conference relative to clothing on 24 June 1943 recommended the following action: (1) ASC was to purchase 400,000 shearling suits "in order to use up this year's crop of shearling now in the market to make good what was believed to be a moral commitment to sheep growers"; (2) 100,000 of the new type suits were to be purchased. ASC objected to letter recommendation on grounds of impracticability, stating that "as soon as they will appear in the Field, the demand will be so great as to necessitate further procurements of the same type, leaving our Depots filled with hundreds of thousands of shearling lined suits."

147. (U) TT, 17 July 1943
Fr: CG, ASC
To: CG, AAF, Proc. Sect., M&D
Attn: Capt Schermerhorn
(File: M&D)

Purchase request 4696-A for 11,000,000 sq. ft. of shearling had been initiated and new domestic shearling procurement could be made interchangeable with shearling applicable to existing contracts. Instructions had been received to extend present shearling contracts to cover 4,000,000 sq. ft.

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148. (U) Ltr., 17 July 1943
Fr: Leo Bonnard, WPB
To: Col. C. H. McGrath, Mat. Com., WF
(File: Gen. Proc. Br., Proc. Div.)

As there was enough shearling available to cover new procurement of FY 1944 and no future requirements beyond this time could be foreseen the WPB and Dept. of Agriculture took steps to decelerate the production of raw shearlings. No further authorization for the importation of foreign shearlings would be recommended until the domestic supply question could be clarified. WPB having been instrumental in the building up of this program, was interested in an orderly termination and the liquidation of domestic stocks. Mr. Bonnard stated that certain suggestions had been made orally to Capt. Spalding concerning distribution of procurement. It was understood that these suggestions were tentative, and subject to the actions of WF in negotiation of the contracts. Mr. Bonnard suggested that each tanner be required to undertake the purchase of a quantity of domestic shearlings during the period 1 July to 20 Sept. 1943 (at a reasonably equal weekly rate) in accordance with the square footage awarded to him, plus the footage which he had released to the Navy, divided by the footage factor of 6.8 suitable sq. ft. per skin. Although it might be unhandy to include this in contract it could be submitted in a letter that would notify the tanner that his contract might be reduced if there is any lack in purchase. A further suggestion was that delivery rates on the old contracts be modified and new contracts be scheduled to permit delivery reduction rates for completion as late in 1944 as possible.

149. (U) IOM, 17 July 1943
Fr: Capt. M. F. Spalding, Gen. Proc. Br., Proc. Div.
To: Chief, Proc. Div.
(File: Gen. Proc. Br., Proc. Div.)

A meeting was held 17 July 1943 to consider whether or not contractors whose contracts had been cancelled should participate in additional procurement. Samples had been submitted by these contractors which did not indicate that they could furnish skins any better than had been furnished when contracts were cancelled. Opinion of this meeting was that no procurements should be made from these contractors but a further analysis should be made of their production to determine whether later procurements could be placed with these companies. However due to limited procurement and necessity for placing orders immediately and as capacity of other manufacturers would cover the procurement it was not possible to make necessary investigation within a sufficient time.

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150. (U) Ltr., 22 July 1943
Fr: Brig. Gen. A. E. Jones, Chief, Proc. Div.
To: Mr. Leo Bonnard, Chief, Sheepskin Unit, WPB
(File: Gen. Proc. Br., Proc. Div.)

Gen. Jones stated that major part of awards for procurement of 11,000,000 sq. ft. of shearling had been made by letter contract 21 July 1943 as follows: Winslow Bros. 4,900,000 sq. ft., A. C. Lawrence 4,000,000 sq. ft., J. Laskin & Son 1,000,000 sq. ft. Bids had been asked and should be received from eight other contractors. Contractors had been asked to undertake their purchases of skins without interference with or interruption of execution of the contracts insofar as possible.

151. (U) TT, 22 July 1943
Fr: Proc. Div., WF
To: AC/AS, M&D
Attn: Proc. Br.
(File: M&D)

Purchase authority for shearling had been received; however total quantities of all types flying and mechanics suits, and authority for purchase for fabrics and manufacture of suits were not included. Continued delay in placing contracts would hinder the delivery system. To avoid loss of fabric production facilities, conferences had been arranged with fabric manufacturers. However, this action would be voided unless authorities for purchase and quantities needed were received immediately.

152. (U) TT, 23 July 1943
Fr: Proc. Div., WF
To: Mat. Div., Wash.
Attn: Col. W. F. Volandt
(File: Gen. Proc. Br., Proc. Div.)

Approximately 88% of shearling requirements had been placed with A. C. Lawrence, Winslow Bros. and Smith, and J. Laskin Companies. Safest precaution against unsatisfactory skins would be inspection at tannery. Inspection Branch reported insufficient competent inspectors available to accomplish inspection at tannery to meet rate of production. Remedy could be storage by Government with inspection upon release from storage within period of one year. Inspection should also be made at clothing manufacturer's plant. Only protection under this procedure would be to withhold payment to extent of from 3 to 10% scaled in proportion to total volume placed with each contractor to cover replacement of rejections. Tanners objected seriously to any guaranty beyond 90 days, which Government stated was insufficient. Storage by Government and witholding of funds was recommended.

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153. (U) TT, 26 July 1943
Fr: Col. W. F. Volandt, Wash.
To: CG, Mat. Com., WF
Attn: Proc. Div.
(File: Gen. Proc. Br., Proc. Div.)

Recommendation of storage by Government concurred in. It was suggested that inspection be accomplished within 180 days at point of storage in lieu of inspection upon release from storage within a period of one year. It was not believed that it would be necessary to withold payment to tanners in view of past record on replacing rejections.

154. (U) TT, 27 July 1943
Fr: Redistr. & Salvage Officer
To: Capt. Avery, Mat. Com., WF
(File: CF-B)

Eastern Dist. had informed WF that all sheep shearling rejects on hand at AAF contractors' plants had been disposed of, and none were available for either salvage or redistribution.

155. (U) TT, 29 July 1943
Fr: Proc. Div., WF
To: AC/AS, M&D
Attn: Col. W. F. Volandt
(File: M&D)

Tanners had advised difficulties in supporting shearling market and asked release of procurement. Believed Navy should be advised of prices offered Air Forces by three largest tanners, which were as follows: Type 3/4", 54 to 57 cents, Type 1/2", 51 1/2 - 52 cents, Type 1/4", 46 1/2 - 49 1/2 cents.

156. (U) 1st Ind., 29 July 1943
Fr: Capt. C. I. Changstrom Asst., Equip. Sect., ASC
To: Prod. Eng. Sect., WF
(File: Prod. Div., WF)

ASC requested that necessary action be taken to advise contractors to fill balance of 24,227 suits on their purchase orders with AN type suit. Contractors manufacturing B-3, B-6, A-3 and A-5 flying suits should be instructed to change over to the AN type suit.

157. (U) Rpt., 29 July 1943
Inspection of Rejected Shearling,
24th AAF Supply Depot,
Topeka, Kans.
(File: CF-B)

Manufacturer had rejected approximately 79,852 sq. ft. of sheep shearling and sent it to the 24th AAF Supply Depot. The material was then inspected, and although found to be inferior and unsuitable for original flying clothing, it was usable for maintenance and repair. Recommendation was that the rejected skins be placed in stock.

158. (U) Rpt., 2 Aug. 1943
Fr: Col. E. H. White
Budget & Fiscal Office, ASC
To: CG, AAF
Attn: Budget & Fiscal Officer
(File: M&D)

ASC indicated that all shearling clothing requirements for 273 group program were being delivered. Procurement had also been made 11,000,000 sq. ft. of shearling which was to be "stored and disposed of at a later date with the least inconvenience to the Army Air Forces and without disrupting the sheep shearling commercial market." No further sheep shearling flying suits were to be ordered.

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159. (U) Ltr., 4 Aug. 1943
Fr: Maj. Gen. W. H. Frank, ASC
To: CG, AAF
(File: M&D)

As directed by third indorsement from Headquarters, AAF and teletype from Gen. Arnold reconsideration was given to the procurement of additional sheep shearlings. Third Indorsement from Gen. B. B. Myers, Deputy AC/AS, M&D, requested that a program be put into effect to acquire the following, as recommended by OC&R: (1) 50,000 Winter flying suits (buoyancy type) (2) 50,000 Winter flying suits (alternate type). In addition, because it was decided to procure sheep shearling suits, 200,000 mechanic and 200,000 pilots suits should be obtained over and above present commitments. In order to cover this additional procurement and to meet commitments made by Hq, AAF it was requested that 11,000,000 sq. ft. of domestic sheep shearlings be procured in addition to current contracts. The following percentages represented the current portions of each delivery from contractors to each theater: (1) Winter Flying Clothing (Buoyancy type); Alaskan 50%, Greenland and Iceland 35%, U.K. 15%. (2) Winter Flying Clothing (Alternate type); Alaskan 30%, Greenland and Iceland 25%, U.K. 25%, India and China 10%, E. D. and N. W. Continental 10%. Such percentages were to continue until requirements for each item had been fulfilled. Gen. Frank replied to this indorsement that no additional sheep shearling procurement was required because current orders would meet requirements for the calendar year 1943 and development of new type clothing eliminated future use of shearling. In view of these facts procurement of 400,000 suits would be a "useless waste" and would impose a serious disposal problem upon ASC. Disposition of discarded serviceable equipment would arouse future questions and possible investigation. It was desired that the full implications of the flying clothing program be presented to Gen. Arnold's office. However, ASC had initiated the procurement of sheep shearlings in accordance with directive from Headquarters, AAF.

160. (U) Ltr., 12 Aug. 1943
Fr: Brig. Gen. A. E. Jones, Chief, Proc. Div., WF
To: CG, AAF
Attn: Col. W. F. Volandt, Chief, Proc. Br., AC/AS, M&D
(File: M&D)

Gen. Jones forwarded a report on the procedure followed in the negotiation of shearling purchases for the Fiscal Year 1944. Report indicated that after extensive negotiations AAF had decided to procure 15 million sq. ft. of shearling for FY 1944, primarily in order to stabilize the shearling market. A total of 88% of this procurement

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was awarded to A. C. Lawrence Leather Co., Winslow Bros. & Smith, and J. Laskin & Sons. Latter Co. withdrew, and its share of 12% was to be divided among six small tanners. No decision had been reached on the question of CFB vs GFB.

161. (U) Rpt., 13 Aug. 1943
Lt. T. G. Baptist, Recorder
(File: LM&D)

A meeting was held in office of Gen. Hopkins to discuss shearling situation. Meeting had been precipitated by communication from CG, ASC indicating that new procurement of 11,000,000 sq. ft. of shearling was unnecessary. A short summary on background of shearling situation was given by Col. Volandt and Mr. Bonnard of Sheepskin Unit, WPB. They reported that shearling production had increased from 2,000,000 - 2,500,000 to 5,200,000 skins in 1942 and 1943 with a potential production of 5,500,000 skins in 1944. Effect on tanners of cancellation of contracts was discussed. Col. Benedict felt that the 11,000,000 sq. ft. of shearling would be needed and would not be surplus. It was concluded that the 11 million procurement should not be cancelled and that an investigation of requirements and possible other uses of shearling would be made. The information thus acquired would be used "as a basis for answer to the Commanding General, Air Service Command and also to satisfy General Echols on the whole problem."

162. (U) R&R-1, 14 Aug. 1943
Fr: Lt. Col. F. H. Bonner, Chief, Redistrib. & Salvage Br.
To: Chief, Proc. Br., Mat. Div.
(File: Aero Equip. Br., Proc. Div.)

Mr. Leo Bonnard of WPB had reported that tanners of shearlings advised him that the backing process could be performed at any time and did not have to be done with original tanning of skin. Inasmuch as unbacked skins were more saleable, it was suggested that AAF order tanners to back only those skins which were to be made up immediately into clothing, thereby making it easier to dispose of excess stock.

163. (C) Chart, 15 Aug. 1943
Compiled by Analysis and Req. Br., Wash.
(File: LM&D)

This chart gave a detailed breakdown of winter clothing and shearling procurement inventories, and requirements through 30 June 1944.

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164. (U) Ltr., 16 Aug. 1943
Fr: Cdr. E. C. Beck
To: CG, AAF
Attn: Contr. Sect.,
Proc. Br., M&D
(File: M&D)

A final accounting of AAF furnished sheep shearling used up to this time by Navy. Navy contracts had been amended pursuant to procedure established in Aeronautical Board Case No. 172 to provide for CFE. Information was requested as to when Buaer could expect a refund for $3,784,472.12 on Purchase Order No. 09564. It was understood that action had been taken to accomplish return to AAF from Navy contractors of shearling materials furnished in excess of Navy needs.

165. (U) Lemo., 18 Aug. 1943
Fr: Brig. Gen. B. M. Chidlaw,
Chief, Mat. Div.
To: AC/AS, M&D
(File: M&D)

At a meeting held in Office of the Chief, Resources Div., M&D, it was concluded that procurement of 11,000,000 sq. ft. of shearling would not be interrupted, and that a memorandum would be prepared under direction of Chief, Proc. Br. to be used as a basis for reply to letter from Gen. Frank, Air Service Command, dated 4 Aug. 1943. Statements propounded by Gen. Frank were refuted in detail as follows: 1. It was not certain that current orders would meet 273 Group Program for 1943. 2. Development of new type clothing would not eliminate future use of shearling as requirement existed for 200,000 mechanic suits in 1944. Availability of alpaca to meet 1944 requirements was questionable, and negotiations for procurement of first 50,000 alpaca suits had not been consummated. 3. 200,000 of the 300,000 winter flying suits under new requirements were to be made from sheep shearling and a directive to that effect was issued. Remaining 100,000 suits would be divided between alpaca and buoyancy. Procurement of 11,000,000 sq. ft. of shearling would cover by a small margin requirements of 200,000 mechanic and 200,000 flying suits. 4. New storage space had been made available to ASC near Syracuse, N. Y. and inspection arrangements over a period of 9 months were completed with contractors. In view of difficulties involved in change over to new type clothing, procurement of sheep shearling should be considered as insurance against possible shortages. Reopening of market for civilian demands and discontinuance of program between Dept. of Agriculture and sheep raisers made this procurement advisable.

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166. (U) Ltr., 20 Aug. 1943
Fr: Brig. Gen. A. E. Jones, Chief, Proc. Div.
To: CG, ASC
(File: Prod. Div., WF)

Gen. Jones advised ASC that in accordance with AFP providing for the procurement of 11,000,000 sq. ft. of sheep shearling contracts had been placed with the following: A. C. Lawrence Leather Co., Peabody, Mass., Winslow Bros. & Smith, Norwood, Mass., Berlin Tanning Co., Berlin, Wisc., Anglo American Tanning Co., Sheboygan, Wisc., Chicago Tanning Co., Chicago, Ill., Weil & Eisendrath Co., Chicago, Ill., Workman & Co., Philadelphia, Pa., Master Industries Inc., St. Paul, Minn. ASC was to provide for proper storage.

167. (U) IOM, 24 Aug. 1943
Fr: Col. S. R. Brentnall Chief, Prod. Eng. Sect., WF
To: Chief, Eng. Div., WF
(File: Prod. Eng. Sect.)

Materials Laboratory had advised that Winslow Bros. were furnishing a sheep shearling backing which would satisfactorily pass the laboratory low temperature test requirements cited in Spec. 8-113-C, Amendment 1. Suggested a sufficient number of flying suits of shearling backed with Winslow Bros' new finish be made up and shipped to a station for test in actual service. Production Div. should be advised of disposition of this suggestion.

168. (C) 1st Ind., 26 Aug. 1943
Fr: AC/AS, M&D Control Office
To: CG, ASC
(File: M&D)

Requirements for use and disposition of 11,000,000 additional square feet of shearling had been reconsidered, as well as shearling on hand or on delivery. Most of this material would be needed for clothing required through 30 June 1944 and for a three months inventory beginning 30 June 1944. After inventory there would be a net surplus of about 4,000,000 square feet. The difficulties encountered in procuring new type materials and the fact that sheep shearling would not be readily available made the disposal of the current stock of material seem inadvisable.

169. (U) IOM, 8 Sept. 1943
Fr: Col. S. R. Brentnall, Chief, Prod. Eng. Sect., WF
To: Chief, Eng. Div., WF
(File: Aero. Equip. Br., Prod. Eng. Sect.)

Statement regarding status of sheep shearling as of 24 Aug. 1943 indicated that on completion of present clothing contracts there would be 16,853,930 feet of backed shearling on hand. ASC Purchase request 43696-A, dated 9 July 1943, provided for purchase of an additional 11,000,000 sq. ft. of shearling with backing. Production Division, WF recommended that the 11,000,000 sq. ft. be procured

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without backing for following reasons: 1. An improved backing was to be tested. 2. Backing could be applied to shearling at any time, not necessarily at the tannery. 3. Sufficient backed shearling on hand for use at that time. 4. Unbacked shearling was more saleable in event AAF should consider shearling excess material. 5. Unbacked shearling could be used for Air Forces requirements where backing would prohibit its use.

170. (U) Rpt. on Alpaca, 8 Sept. 1943
Fr: WPB
(File: M&D)

This report set forth detailed figures on requirements and availability of alpaca. With the exception of 597,000 lbs., there was sufficient inventory to meet 1944 requirements. However there were 600,000 lbs. in Peru, licenses for which had been granted for import to the U. S. It was expected that 1944 requirements could be met within 60 days. Shearling would be started in Dec. 1943, making 6,000,000 lbs. more available from Peru. It was recommended that certain types of alpaca be released for civilian use.

171. (U) IOM, 8 Sept. 1943
Fr: Col. E. W. Rawlings, Chief, Resources Control Sect., WF
To: Capt. C. B. Smith, Aero. Equip. Br., Prod. Eng. Sect., WF
(File: CF-B)

Status of sheep shearling, as of 24 Aug. 1943, was:

Due from tanners on 1943 procurement ...	13,011,274 sq. ft.
To be returned to depots as overage from clothing manufacturers	603,325 sq. ft.
To complete existing clothing contracts	3,179,030 sq. ft.

172. (U) IDC, 10 Sept. 1943
Fr: Capt. J. H. Smith, M&D
To: Col. P. H. Bonner, M&D
(File: M&D)

Eastern Proc. Dist. had reported that contractors were accumulating excess sheep shearlings. The H.L.B. Co. had reported an excess of 600,000 sq. ft. due to fact that AAF contracts had run out and new contracts were calling for alpaca. Eastern Dist. asked for information as to disposition. Until figures on requirements had been received from Air Service Command, this 600,000 sq. ft. could not be declared excess. Redistribution and Salvage Office, WF reported that a directive was being prepared authorizing shipment to ASC Depot at Pauline, Kansas.

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173. (C) Table 1 & 2, 10 Sept. 1943
Compiled by Analysis and Rpts., Control Office, M&D
(File: M&D)

These tables listed winter clothing requirements and sheep shearling requirements, as of June 30, 1944. They included a breakdown as to inventories at ASC and suit manufacturers, undelivered contracts, and additional procurement.

174. (U) Spec. A-N S-35, 16 Sept. 1943
(File: Spec. Br., Proc. Div.)

This Army-Navy Aeronautical specification for sheep shearling was approved 16 Sept. 1943 by joint action of the War and Navy Depts. for use in procurement of shearling. This specification superseded U. S. Army Spec. No. 8-113 and Navy Aero. Spec. M379.

175. (U) Press Release, 21 Sept. 1943
Fr: OWI-WPB
(File: M&D)

All restrictions on purchase and processing of shearlings were removed by WPB as a result of reduced demand of AAF. Previous requirements limiting sale of shearlings to AAF was revoked.

176. (C) M&R-1, 24 Sept. 1943
Fr: Brig. Gen. J. W. Jones, The Air Inspector
To: C/AS
(File: M&D)

CG, AAF and Dep. C/AS had directed an inspection of ASC and Clothing Br., WF. These inspections had revealed a program for procurement of shearling in quantities in excess of expected requirements. Large additional quantities were still being procured even though needs were to decrease. Gen. Whitten, Supply and Service Div. was interviewed in regard to an order which he had issued to ASC directing procurement of an additional 11,000,000 sq. ft. of shearling. He stated that procurement was necessary because: 1. AAF had previously arranged with Dept. of Agriculture that a certain quantity and quality of shearling would be made available to the AAF. Therefore, there was a moral obligation on part of AAF to purchase this shearling. 2. Shearling market would be adversly affected if this material were dumped on it. 3. Some of this additional shearling would be used in flying suits and remainder would be stored for future disposal. Investigation had disclosed the fact that shearling clothing was not satisfactory and would not continue to be manufactured if it were not necessary to use the shearlings on hand and under procurement. Since shearling supplies on hand and under procurement for exceeded expected use and because shearling suits were not satisfactory nor desired by flying personnel, it was suggested that question of additional procurement

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of shearling be reconsidered, and "arrangements made to cancel contracts or otherwise dispose of this material."

177. (C) R&R-2, 26 Sept. 1943
Fr: Col. Millard A. Libby, Secy. Air Staff, M&D
To: C/AS
(File: M&D)

After noting discussion of Air Inspector in Comment 1 on excessive procurement of sheep shearling, Gen. Giles was of opinion that if a mistake had been made in purchasing this shearling they should not perpetuate situation by entering into further contracts. Discounted moral obligation as stated by Gen. Whitten and saw no reason for buying shearling simply to store it.

178. (U) TT, 27 Sept. 1943
Fr: AC/AS, M&D
To: Redistrib. & Salvage Office, WF
(File: Redistrib. & Salvage Office)

Air Service Command had advised Redistribution and Salvage Office of Eastern Proc. Dist that it was the opinion of that Command, after reviewing the flying clothing situation for 1944, that the 600,000 sq. ft. of shearling held in contractors' plants should be shipped to ASC Depot, Pauline, Kansas.

179. (U) TT, 27 Sept. 1943
Fr: Brig. Gen. F. H. Hopkins Jr.
To: Eastern Dist. Supvr.
(File: M&D)

ASC stated that they did not desire at that time to dispose of the 600,000 sq. ft. of shearling.

180. (U) Memo. Report ENG-54-666-83D, 29 Sept. 1943
(File: Flying Clothing Br.)

Report on meeting held at Quartermaster Corps, Wash. on immediate requirements of AAF for down and feathers, substitutes for down and feathers, and policy of distribution among branches of Armed Forces. Recommended that Artic Feather and Down Co. should be notified to proceed immediately to manufacture suits for AAF on their contract using 40/60 down and feathers in excess of Quartermaster orders, when WPB had determined amount of excess, if any; that tests of substitutes for down and feathers should be continued; that ASC should expedite a check on AAF requirements for 1944; and that representatives from Aero Medical, Materials, and Equipment Laboratories should be appointed to meet regularly with Quartermaster Corps in order to coordinate developmental and research work.

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181. (C) R&R-3, 1 Oct. 1943
Fr: Brig. Gen. B. L. Meyers, AC/AS, M&D
To: C/AS
(File: M&D)

Gen. Meyers stated that facts regarding procurement of sheep shearling had not been clearly presented by Air Inspector in Comment 1. Refuted statement that quantities of sheep shearling far exceeded any expected use and presented as evidence tables to prove that most of additional 11,000,000 sq. ft. of shearling was needed for clothing required. Surplus would be approximately 4,000,000 sq. ft. It was inferred in Comment 1 that moral obligation mentioned by Gen. Whitten was a major reason for procurement. This was not the case, as Gen. Whitten had only given this as one of factors which had to be given consideration. Gen. Whitten had pointed out that the shearling market would be adversely affected if this material were dumped on the market. WPB and Dept. of Agriculture had pointed out that civilian market was extremely limited and for civilian use shearling would have to be sold at considerably less than cost. Therefore it was doubtful that favorable disposition of shearling could have been made even if it had been desirable: Gen Meyers stated that even though shearling would no longer be used for flying clothes, mechanics suits and certain other items would still be manufactured from shearling. Additional shearling flying suits to meet immediate requirements were needed since difficulties had been encountered in getting materials for the new type suits. Gen. Meyers believed that amount of shearling now under procurement was entirely justified.

182. (U) TT, 2 Oct. 1943
Fr: Brig. Gen. F. M. Hopkins, Jr.
To: Eastern Dist. Supvr.
(File: M&D)

Gen. Hopkins gave authority to sell 600,000 sq. ft. of sheep shearling stored at H. L. B. Co. warehouse.

183. (U) Ltr., 6 Oct. 1943
Fr: C. B. Rockwell, WPB
To: Lt. T. G. Baptist, M&D
(File: M&D)

In reply to a request by telephone a review of the 1944 alpaca situation was forwarded. If all the available unsold alpaca on hand, in Peru and in transit on the water and estimated new clip were used in the Air Force specifications it would make approximately 10,000,000 yards or 850,000 yds. per month.

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184. (U) Ltr., 6 Oct. 1943
Fr: Maj. Gen. C. B. Branshaw, CG, MF
To: Maj. Gen. B. M. Giles, C/AS, Wash.
(File: Gen. Wolfe's, CF-B)

The Air Inspector had investigated the Clothing Br. in regard to numerous complaints made against AAF flight clothing, particularly the sheep shearling clothing which was not considered satisfactory. Although the CG agreed that newer standardized types of clothing were better, it was found to be more economical to continue procurement of sheep shearling garments for use within the continental U.S. and use the newer clothing in theaters outside the U. S. Gen. Branshaw also requested that source of derogatory remarks on flying clothing be investigated.

185. (C) R&R-4, 7 Oct. 1943
Fr: Col. Millard H. Libby, Secy. Air Staff
To: AC/AS, M&D
(File: M&D)

Assistant Chief of Air Staff, M&D was directed to render an immediate report on action being taken or contemplated to decrease shearling purchases.

186. (U) TT, 8 Oct. 1943
Fr: Brig. Gen. B. E. Meyers, Actg. AC/AS, M&D
To: Maj. Gen. W. H. Frank, CG, ASC
(File: M&D)

Gen. Frank and Gen. Branshaw were requested to review the sheep shearling situation in regard to the possible disposal of quantities on hand or under contract. Attention was to be given the availability of alpaca and down. Specific recommendations were to be made to the office of the CG, AAF.

187. (U) Rpt. of Confer., 13 Oct. 1943
Fr: Lt. W. L. Allman, Control Office, Analysis & Rpts., M&D
To: Brig. Gen. B. E. Meyers
(File: M&D)

It was concluded at a conference at Wright Field that sheep shearling on hand and on order be retained with the exception of shearling that was unsuitable for the Air Corps. It should be determined when alpaca and down would be made available, and after deliveries of this new material had begun, possible disposition of shearling should be reconsidered. Revised requirements of the ASC from 50,000 shearling suits a month to 30,000 with no shearling used for helmets and shoes made a possible surplus of 10 million feet.

188. (U) Rpt. of Confer., 13 Oct. 1943
Fr: Lt. Col. F. H. Bonner
To: Brig. Gen. F. L. Hopkins, Jr.
(File: M&D)

Col. Bonner reported that Lt. J. H. Meyer of ASC indicated by telephone that action had been taken to secure an accurate inventory of shearling on hand at Syracuse. Previously reported figure of 2,640,000 sq. ft. of defective skins should be disregarded. It was estimated that two weeks would be required to complete the inventory because of the disorderly and disarranged manner of storage.

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189. (U) Ltr., 16 Oct. 1943
Fr: Brig. Gen. B. E. Meyers, Dep. AC/AS, M&D
To: CG, ASC
(File: M&D)

It was requested that amount of shearlings on hand or on contract that were unusable by the Air Corps due to deterioration or not meeting standards be determined and forwarded. In the 1st Indorsement to this letter dated 30 Oct. 1943 from ASC the following figures based on the most accurate information available were forwarded: (a) Shearlings on hand that were considered below specification standards totaled 680,831 sq. ft. (b) Shearlings on hand that had become obsolete because of revised specifications totaled 2,032,752 sq. ft. (c) Current contracts have been amended so that pile lengths would meet new shearling clothing specifications.

190. (U) TT, 27 Oct. 1943
Fr: Gens. Frank and Branshaw
To: Brig. Gen. B. E. Meyers, Actg. AC/AS, M&D
(File: M&D)

In reply to teletype dated 8 Oct. 1943 the following recommendations were made: (1) Current stock of shearlings were not to be disposed of at that time. (2) Future requirements and procurement of winter flying suits should be made of fabric and sent to replace all shearling flying suits issued outside of continental U. S. (3) After this program has been initiated and delivery schedule determined, disposal and surplus shearling over and above requirements for shoes and mechanics suits should be made.

191. (U) Memo. Rpt. 666-89, 27 Oct. 1943
(File: M&D)

This report gave a detailed comparison of sheep shearling requirements against material on hand and on contract with an estimated surplus of 10,088,558 sq. ft. as of 1 Jan. 1945. The alpaca and down and waterfowl feathers situation was reviewed to determine the date on which new standardized fabric clothing could replace sheep shearling clothing. Conclusions: (1) It was estimated, on the basis of current raw material facilities that the delivery of fabric suits to replace shearling flying clothing could begin four months after receipt of directive to procure such suits. (2) Scarcity of 40/60 down and waterfowl feathers would limit the available quantity of this type clothing and the purchase of 50% down and waterfowl and 50% alpaca type suits would depend on this factor. (3) There was an indicated surplus of 10,088,558 sq. ft. as of 1 Jan. 1945 which would increase to 20,000,000 sq. ft. as of 30 June 1944 after winter flying and

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mechanic suit requirements were completed as of 30 June 1944. The rpt. recommended the following: (1) Shearling on hand and not under contract should not be disposed of at present time; (2) Future winter flying suits should be made of fabric and all shearling suits outside continental U. S. should be replaced; (3) Surplus shearling should be disposed of as fabric suits become available.

192. (U) Ltr., 30 Oct. 1943
Fr: Brig. Gen. B. E. Meyers, Actg. AC/AS, M&D
To: C/AS
(File: M&D)

Gen. Meyers forwarded to C/AS the recommendations of Generals Frank and Branshaw on sheep shearling.

193. (C) R&R-5, 5 Nov. 1943
Fr: Brig. Gen. B. E. Meyers, AC/AS, M&D
To: C/AS
(File: M&D)

In response to a directive Gen. Meyers reported on action that was being taken regarding sheep shearling situation. Recommendations of General Frank and General Branshaw given in Teletype dated 27 Oct. 1943 were listed. ASC had reported that 2,713,583 sq. ft. of shearling was unsuitable for AAF clothing and additional quantities might be disclosed by further investigation. Samples of AAF shearling, including unsuitable types had been submitted to Russian Purchasing Mission which had expressed an interest in obtaining shearling. Following action was being taken in regard to shearling situation: (1) Shearling on hand and on order was being retained except such shearling as was unsuitable for AAF use. (2) Steps had been taken to dispose of unsuitable shearling. (3) Directive had been issued to ASC to initiate procurement to meet future requirements of winter flying clothing with fabric suits. (4) Steps had been taken to expedite procurement program so that delivery schedules could be determined and surplus shearling disposed of as soon as possible.

194. (C) Ltr., 5 Nov. 1943
Fr: Brig. Gen. B. E. Meyers, Dep. AC/AS, M&D
To: CG, ASC
(File: M&D)

Gen. Meyers directed that procurement of fabric suits to meet future requirements of winter flying suits be initiated. These suits would be used first to replace shearling flying suits in use outside of continental U. S. Resources Div., AC/AS, M&D was to take steps to investigate availability of materials.

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195. (U) Ltr., 5 Nov. 1943
Fr: Brig. Gen. Frederick M. Hopkins, Jr., Redistrib. & Salvage Officer, AAF
To: Govt. Purchasing Comm. of the Soviet Union in the U. S. A.
Attn: Mr. U. Zoyarny
(File: M&D)

This letter forwarded to the Soviet Purchasing Commission three samples of shearling: (1) 5/8 inch pile made available by changes in the AAF specification concerning pile length (2) 1/2 inch pile and (3) 1/4 inch pile made available because of minor defects which made it impossible to meet strict AAF specifications. An exact inventory of the quantity of the above types would not be available for 30 days.

196. (U) 1st Ind., 9 Nov. 1943
Fr: Lt. Col. O. D. Thompson, Chief, Equip. Sect., Supply Div., Patterson Field, Ohio
To: CG, Mat. Com., WF
(File: CF-A)

Mat. Com. would accept responsibility for initiation of purchase requests, storage, deliveries to clothing manufacturers, and other records of sheep shearling. ASC asked that notification be given as to date when shearling would be transferred from ASC depots to GFE depots. Records would be picked up by Mat. Com. as shipments move from control of one Command to the other.

197. (C) R&R-6, 11 Nov. 1943
Fr: Col. M. A. Libby, Secy. Air Staff
To: AC/AS, M&D
Attn: Gen. Echols
(File: M&D)

Chief of Air Staff was still not satisfied with action that was being taken on shearling situation and requested Gen. Echols to review it and report his views to Gen. Giles.

198. (C) R&R-7, 16 Nov. 1943
Fr: Maj. Gen. O. P. Echols, AC/AS, M&D
To: C/AS
(File: M&D)

After reviewing shearling situation Gen. Echols concurred in action outlined by Gen. Meyers, and gave a brief report of current status of the situation. A conference was scheduled for Nov. 17 and 18 between representatives of M&D, WF and WPB to determine availability of new type materials and suitability of substitutes.

199. (U) TT, 8 Nov. 1943
Fr: Res. Div. ARCO, Wash.
To: CG, Mat. Com., WF
(File: M&D)

Dep. C/AS requested immediate answer to following questions: (1) What is inventory of unsuitable shearling; (2) What is total shearling inventory; (3) Have stocks been rendered unsuitable as result of specification changes; (4) What factors brought about change from shearling to other type clothing.

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200. (U) TT, 22 Nov. 1943
Fr: Tech. Exec., WF
To: AC/AS
Attn: Res. Div.
(File: M&D)

In response to above request from Deputy C/AS, M&D the following information was submitted: (1) unsuitable shearling - 680,831 sq. ft. (2) Total inventory, suitable and unsuitable - 11,176,201 sq. ft. (3) Changes in specifications eliminated use of certain pile lengths totaling 2,032,752 sq. ft. in addition to 680,831 sq. ft. mentioned above. (4) Changes were necessary because (a) Shearling became stiff at low temperatures. (b) Bulkiness hindered free movement (c) Flying personnel from combat areas and AAFSAT did not desire shearling clothing (d) Tests proved fabric combinations more satisfactory under extreme cold conditions.

201. (C) Memo., 23 Nov. 1943
Fr: Maj. Gen. O. P. Echols, AC/AS, M&D
To: C/AS
(File: M&D)

Meeting was held with WPB regarding new flying clothing and excessive supplies of shearling. Mat. Com. representatives later proceeded to N. Y. to resume conferences with cloth weavers. Materials for new suits of alpaca and down could be made available beginning in January 1944 according to WPB who had consulted manufacturers. Approximately 2 or 3 weeks would be necessary to complete all conferences and contracts after which time a delivery schedule for clothing could be determined. The shearling situation would then be reviewed with disposal of surplus as objective.

202. (C) MAR-8, 25 Nov. 1943
Fr: Brig. Gen. E. S. Perrin, Dep. C/AS
To: AC/AS, M&D
(File: M&D)

Gen. Giles felt it would be satisfactory to delay shearling disposition plans until conferences had been completed. However, action should be taken to cancel procurement of additional shearling if it had not already been taken.

203. (U) Ltr., 2 Dec. 1943
Fr: Brig. Gen. F. M. Hopkins, Redistrib. & Salvage Off.
To: Govt. Purch. Comm. of Soviet Union
(File: M&D)

This letter contained a breakdown of estimated quantities of shearling on hand. Totals were as follows: 680,831 sq. ft. below specification standards. 2,032,752 sq. ft. obsolete due to specification changes. Due to pressure on AAF to dispose of this shearling through civilian economy, it was suggested that the USSR submit requirements as soon as possible.

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204. (U) Ltr., 3 Dec. 1943
Fr: Col. W. F. Volandt, Chief, Proc. Br., M&D
To: CG, Mat. Com., WF
Attn: Tech. Exec.
(File: M&D)

This letter forwarded a breakdown of quantity and cost of sheep shearling used by the Navy Department. This could be used as a comparison in computing funds to be reimbursed by the AAF at such time as formal request for same was received from the Navy. The following totals were given: Shearling, Suits-37,849; Sq. Ft.-2,554,808; Cost-$1,567,139.13.

205. (U) Memo., 4 Dec. 1943
Fr: Capt. J. H. Smith
To: Lt. Col. P. H. Bonner
(File: M&D)

Capt. J. H. Smith called on Mr. E. I. King, Asst. Chief, Property Utilization Branch, U. S. Treasury Dept., Procurement Div. and discussed proposed sale of excess shearling to the Soviet Union. He also pointed out that 5,000,000 sq. ft. of good shearling would be excess within 60 days. Mr. King stated the Treasury Dept. would be willing to handle the Soviet deal and also take over all excess and obsolete shearling from the A.F. Mr. King requested a complete inventory of shearling showing location, to facilitate issuance of shipping instructions.

206. (U) Memo., 4 Dec. 1943
Fr: Capt. J. H. Smith
To: Col. P. H. Bonner
(File: M&D)

Capt. Smith contacted ASC and requested complete inventories of all excess and obsolete shearlings showing locations. ASC could furnish inventories on Syracuse and Memphis Depots, but due to certain difficulties a complete inventory at other depots would be delayed.

207. (U) Ltr., 4 Dec. 1943
Fr: Brig. Gen. B. E. Meyers, Dep. AC/AS, M&D
To: CG, Mat. Com., WF
(File: M&D)

Gen. Meyers directed that a study be made of the extent to which contracts for sheep shearling could be terminated with minimum cost to the Government. The objective of the study was to expedite cancellation of contracts in excess of requirements to 31 Dec. 1944, when requirements would be recalculated because of procurement of new type flying clothing.

208. (U) IOM, 6 Dec. 1943
Fr: H. B. Washburn, Jr., Special Assistant, Mat. Com., WF
To: CG, Mat. Com., WF
(File: Flying Clothing Br.)

Mr. Washburn reviewed the adequacy of new clothing items. Considered new clothing a notable improvement over flying clothing of previous year due mainly to change from use of shearling to pile fabrics and quilted down, which resulted in increased flexibility and comfort. New clothing had also done much to eliminate internal condensation of moisture, which had been a chief disadvantage of shearlings. New

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clothing was particularly practical for use in Arctic but had presented definite drawbacks in other theatres. Indecision as to field requirements or lack of confidence in new clothing was apparent since program included three distinct flying outfits, shearling, down and alpaca suits and there was no relationship between choice of materials in these suits and their basis of issue. Mr. Washburn also discussed electrically heated suits and presented detailed recommendations on new clothing designs.

209. (U) 1st Ind., 9 Dec. 1943
Fr: Maj. Gen. C. E. Branshaw, CG, WF
To: Capt. D. Hoppenstand, Actg. Chief, Clothing Br., WF
(File: Clothing Br.)

Study and recommendations of Mr. Washburn appeared to be sound, and it was directed that action be taken to put them in effect. If evidence was had to the contrary, such evidence should be forwarded to CG in writing.

210. (U) 2nd Ind., 13 Dec. 1943
Fr: Capt. D. Hoppenstand, Actg. Chief, Flying Clothing Br.
To: Dep. C/S, Mat. Com., WF
(File: Flying Clothing Br.)

Flying Clothing Branch presented detailed statements refuting many of the arguments set forth by Mr. Washburn. The Flying Clothing Branch considered the winter flying cover-all (alpaca lined), quilted winter flying suit (alpaca optional, depending on raw material) and other items to be the best in the world today for AAF use and desired a chance to prove it.

211. (U) Rpt. of Meeting, 6 Dec. 1943
(File: Flying Clothing Br.)

In accordance with directive from Deputy AC/AS, M&D, a meeting of representatives of ASC and Mat. Com. was held regarding new winter flying clothing. Delivery schedule and requirements were set up for materials needed for new types of winter flying suits. These materials were to be furnished by the clothing manufacturer. WPB stated that the contractors would have no difficulty purchasing these materials. It was agreed that the P. O. should call for delivery of 20,000 suits in Mar. and 95,000suits per month during Apr., May, June and July.

212. (U) Ltr., 8 Jan. 1944
Fr: Maj. Gen. C. E. Branshaw, CG, WF
To: Brig. Gen. B. E. Meyers, Dep. C/S, M&D, Wash.
(File: Gen. Wolfe's, CF-B)

A study was made to determine extent to which existing sheep shearling contracts could be terminated at a minimum cost to the Govt. It was found that at the end of Nov. 1943, there was a surplus of 3,007,262 sq. ft. of usable shearling at ASC Depots and clothing manufacturers plus 18,058,450 sq. ft. undelivered

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shearling. The undelivered material was considered to be "green" or untanned skins which were perishable and could not be stored. Tanned hides cost the Govt. 50¢ per sq. ft.; green skins would cost an estimated 30¢ per sq. ft. Mat. Com. recommended termination of open contracts for undelivered shearling, and disposal of the surplus at depots and manufacturers plus that delivered to date of termination of open contracts.

213. (U) 1st Ind., 12 Jan. 1944
Fr: Brig. Gen. B. E. Meyers, Dep. AC/AS, M&D, Wash.
To: CG, Mat. Com., WF
(File: Gen. Wolfe's, CF-B)

Mat. Com. was directed to take steps to dispose of an estimated 17,000,000 sq. ft. of sheep shearling which was surplus according to ASC's calculations of requirements. Treas. facilities were available for use in disposing of surplus shearling in case contract terminations appeared to be especially costly to AAF and to the Govt. Approximately 2,500,000 sq. ft. of obsolete shearling was to be transferred to the Treas., leaving a total of 1,500,000 sq. ft. surplus in ASC. Enough shearling for 269,000 suits was needed by ASC. No action was to be taken on the 1,500,000 sq. ft. at this time. Disposal of the above shearling was to be made only if Mat. Com. was sure materials for the new type flying clothes required for last half of 1944 could be obtained. [Marginal notation: "General Crawford, This still seems to be SNAFU and quite contradictory. What do we do now? B."]

214. (U) Ltr., 12 Jan. 1944
Fr: [Lt. W. L. Ullman, Control Officer, M&D, Wash.]
To: CG, ASC, Patterson Field, Ohio
(File: Gen. Wolfe's, CF-B)

ASC had reported that no action had been taken to dispose of the 2,510,933 sq. ft. of obsolete pile lengths of sheep shearling. Arrangements had been made with Proc. Div. of Treas. Dept. to take over all reject and obsolete shearling. ASC was directed to take steps to transfer the obsolete material to the Treas. Dept.

215. (U) Ltr., 13 Jan. 1944
Fr: [Unsigned]
To: CG, ASC, Patterson Field, Ohio
(File: Gen. Wolfe's, CF-B)

Review of information, as submitted by ASC and Mat. Com., indicated that by 15 Jan. 1944 there would be 17,700,000 sq. ft. of sheep shearling on hand and 17,000,000 sq. ft. undelivered against contracts; total requirements for 14,980,000 sq. ft. of shearling left a surplus of 19,720,000 sq. ft.; of that

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amount, 2,500,000 sq. ft. was committed to the Treas. as obsolete, leaving 17,220,000 sq. ft. to be disposed of. Mat. Com. was directed to dispose of the 17,000,000 sq. ft. undelivered against contracts. ASC had, on hand or on order, approximately 173,000 shearling flyers' suits; those would adequately cover requirements for the first half of 1944. Information was requested concerning action to be taken to provide suits for latter half of 1944.

216. (U) 2nd Ind., 26 Jan. 1944
Fr: Col. T. A. Sims, Dep. C/S, Mat. Com., WF
To: Chief, Proc. Div., WF
(File: Gen. Wolfe's, CF-B)

An analysis of all flight clothing requirements for remainder of the year 1944, and study of availability of new materials was necessary before making disposition of completed sheep shearling. Provided there was insufficient new material to meet 1944 requirements for new type flying clothing, ASC might use more shearling than previously contemplated.

217. (U) Ltr., 3 Feb. 1944
Fr: Mr. J. B. Johnson, Chief, Mat. Lab., Eng. Div., WF
To: A. C. Lawrence Leather Co., Peabody, Mass.
(File: Mat. Lab., Eng. Div.)

Samples of shearling tested at Mat. Lab. indicated a tensile strength of 1,250 to 1,500 pounds per sq. in.; therefore, the 900 lb. minimum for Type III skins, as specified in Spec. AN-S-35, was believed to be adequate.

218. (U) IOM, 3 Feb. 1944
Fr: Mr. J. B. Johnson, Chief, Mat. Lab., Eng. Div., WF
To: Chief, Resources Control Sect., Prod. Div., WF
(File: Mat. Lab., Eng. Div.)

J. Laskin & Sons and Winslow Bros. & Smith had submitted samples of mouton which complied with Spec. AN-S-35 requirements; samples submitted by Loyal Fur, Workman Bros., and American Beaver Lamb were not acceptable because the fiber finish did not have a suitable mouton appearance. The problem of acceptance and rejection of the material needed to be clarified as some confusion had resulted from contract changeover from shearling to mouton, and because some contractors had never supplied shearling previous to the demand for mouton.

219. (U) TT [Approx. 5 Feb. 1944]
Fr: Office, AC/AS, R&D, Wash.
To: Lt. J. H. Meyer, ASC [Patterson Field, Ohio]
(File: CF-A)

Arrangements had been made with Treas. Dept. to take over all available rejected and obsolete AAF sheep shearling and additional quantities that might become available in the near future.

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220. (U) 1st Ind., 8 Feb. 1944
Fr: Maj. Gen. L. T. Miller, Chief, Supply Div., ASC, Patterson Field, Ohio
To: Dep. AC/AS, M&D, Wash.
(File: CF-A)

ASC was contemplating termination of shearling contracts on which 15,000 sq. ft. of material were still due; this was in addition to the 2,500,000 sq. ft. stored in depots awaiting disposal. It was felt that placing supervision of the shearling partially with the Treas. Proc. Div. and partially with Mat. Com. and ASC would result in a competitive situation which would prove disastrous to the best interests of the Govt. and the shearling industry. Although contracts had not been terminated, the tanners had been ordered to stop all future shearling deliveries. ASC recommended that existing contracts be terminated by Mat. Com. as soon as possible, and that disposal of serviceable and obsolete shearling be effected through one AAF agency in accordance with established procedures involving the 830th Specialized Depot at Memphis.

221. (U) IOM, 10 Feb. 1944
Fr: Col. M. R. Herod, Actg. Chief, Resources Control Sect., AF
To: Mat. Lab., Eng. Div., AF
(File: Mat. Lab., Eng. Div.)

Mouton for use in flying clothing was being procured from J. Laskin & Sons, A. C. Lawrence, Winslow Bros. & Smith, Workman Bros., American Beaver Lamb, and Loyal Fur Co. Mat. Lab. was requested to contact those companies who had submitted unsatisfactory samples and to advise them of the deficiencies in order that they could improve their material and subsequently produce it for accelerated flying clothing program.

222. (U) Ltr., 11 Feb. 1944
Fr: Col. T. A. Sims, Dep. C/S, AF
To: Brig. Gen. B. E. Meyers, Dep. AC/AS, M&D, Wash.
(File: Gen. Wolfe's, CF-B)

Treas. Dept. had agreed to accept direct from the tanners shearling under contract, the excess shearling in AAF warehouses, and that at manufacturers plants which was excess to completion of clothing contracts; either tanned or green skins were acceptable. Figures submitted by ASC indicated there were 34,806,412 sq. ft. of shearling on hand or on order; total 1944 requirements were 14,069,482 sq. ft.; 2,500,000 sq. ft. of the surplus had been committed to Treas. as obsolete leaving a balance of 18,236,930 sq. ft. of shearling for disposal. Formal declaration for surpluses would be made.

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223. (U) Memo., 18 Feb. 1944
Fr: Lt. Col. D. B. Cluxton, Asst., Supply Div. Req., ASC /Patterson Field, Ohio/
To: Prod. Eng. Sect., Mat. Com., WF
(File: CF-A)

In view of intended disposition of sheep shearling in excess of requirements, ASC recommended that the material undelivered on contracts be changed from backed to unbacked shearling.

224. (U) IOL, 22 Feb. 1944
Fr: Lt. J. B. Johnson, Chief, Mat. Lab., Eng. Div., WF
To: Chief, Prod. Eng. Sect., Prod. Div., WF
(File: Mat. Lab., Eng. Div.)

AN-S-35 and Amend. 1 covered specification requirements for mouton under procurement for current flying clothes contracts. Requirements as to finish, acidity, color, tensile strength, grease content, and cuttable skin size were listed.

225. (U) Ltr., 24 Feb. 1944
Fr: Lt. J. B. Johnson, Chief, Mat. Lab., Eng. Div., WF
To: Loyal Fur Mfg. Co., Inc., Danville, Pa.
(File: Mat. Lab., Eng. Div.)

Loyal Fur Co. was notified of the new mouton requirements being incorporated in Spec. AN-S-35. Mouton sample submitted by Loyal Fur had been tested at Mat. Lab.

226. (U) Ltr., 24 Feb. 1944
Fr: Brig. Gen. A. R. Crawford, C/S, WF
To: CG, AC/AS, M&D
(File: Gen. Wolfe's, CF-B)

WF indicated that ASC had reported approximately 16,824,716 1/2 sq. ft. of surplus shearling. Redistrib. & Salvage Br. of Resources Div. had negotiated agreement whereby U. S. Treasury would assume possession of all surplus shearling direct from tanners. By doing this rather than terminating contracts labor and community situations, market, and industry conditions would be least disturbed and cost to govt. would also be less

227. (U) 1st Ind., 3 Mar. 1944
Fr: Brig. Gen. F. O. Carroll, Chief, Eng. Div., WF
To: CG, ASC, Patterson Field, Ohio
(File: Mat. Lab., Eng. Div.)

The United Finish Co. of Peabody, Mass., and Rohm and Haas Co. of Philadelphia, were the only approved sources of a plastic resin finish for refinishing sheep shearling flying clothes, as required by Spec. AN-S-35.

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228. (U) IOM, 22 Mar. 1944
Fr: Lt. J. B. Johnson, Chief, Mat. Lab., Eng. Div., AF
To: Chief, Flying Clothing Br., AF
(File: Mat. Lab., Eng. Div.)

Six skins having a straight electrified finish, as covered by Spec. AN-S-35, Type I, were sent to the Flying Clothing Br. for consideration as a substitute in case of a shortage of mouton, Type III. The Govt. owned large quantities of the skins which could be refinished like the sample at a small charge. Use of the skins on hand would result in a considerable saving to the Govt.

229. (U) IOM, 22 Apr. 1944
Fr: Capt. H. F. Mullins, Asst. Tech. Exec.
To: Col. T. A. Sims
(File: CF-B)

Capt. Mullins indicated that approx. 100,000 sq. ft. of shearling appropriate for the new type shearling suit with cloth shell was available at ASC. Approx. 114,930 sq. ft. could be reclaimed from surplus declared to treasury plus 304,490 on hand with tanners.

230. (U) Ltr., 29 June 1944
Fr: Maj. Gen. B. E. Meyers, CG, AF
To: Office, AC/AS, M&D, Wash.
(File: Gen. Wolfe's, CF-B)

Action taken as of 29 June 1944 on disposal of sheep shearling was summarized by AF:

Total surplus	17,042,269	sq. ft.
Declared surplus to Treas. by ASC on 18 Mar. 1944	5,979,579	" "
Total undelivered against contracts	11,062,690	" "
Completed shearling shipped prior to 2 Mar.; amended figure submitted by contractors	156,134 1/4	sq.ft.
Completed shearling shipped and allocated after 2 Mar. to clothing manufacturers	188,129	" "
Surplus after adjustments	10,718,426 3/4	"
Surplus declared excess to Treas. 10 Mar., 12 Apr., and 30 May	3,129,509 1/4	"
Surplus after adjustments and declarations	7,588,917 1/2	"
Surplus material eliminated through termination agreements	7,433,016 1/4	"
Balance of surplus shearling under cancelled Contr. W535 ac-38080	155,901 1/4	"

Final proceedings were still pending on this amount.

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231. (U) MAR-2, 24 July 1944
Fr: Mr. J. B. Johnson, Chief, Mat. Lab., Eng. Div., MF
To: Chief, Aero. Stds. Br., Eng. Div., MF
(File: Mat. Lab., Eng. Div.)

Manufacturers whose products had been approved under qualification test of AN-S-35 were: Muskegon Tanning Co., Winslow Bros. & Smith, A. C. Lawrence Leather Co., Workman Bros., Chicago Tanning Co., Veil & Eisendrath, Berlin Tanning Co., Anglo-American Tanning Co., American Beaver Lamb Co., Loyal Fur Co., and Laskin Bros.

232. (U) 1st Ind., 16 Aug. 1944
Fr: Brig. Gen. F. O. Carroll, Chief, Eng. Div., MF
To: CG, Q. Depot, ASF, Philadelphia, Pa.
(File: Mat. Lab., Eng. Div.)

MF indicated that mouton was fur material being used for intermediate flying clothing. Tannage and finishing made material waterproof, but moth-proofing agent had not been used. A melamine resin was being investigated. MF suggested that Monsanto be contacted relative to this resin finish and Winslow Bros. relative to mouton finish of sheep shearling.

233. (U) MAR-1, 3 Oct. 1944
Fr: Col. A. W. Wise, Chief, Misc. Equip. Maint. Sect., Maint. Div., MF
To: Mr. [C. J.] Cleary, Mat. Lab., MF
(File: Mat. Lab., Eng. Div.)

Cleaning and refinishing operations had to be suspended because of difficulties being experienced with shearling garment finishing materials furnished by Rohm and Haas to the Mobile and San Bernardino ASC. A more rigid specification requirement made it necessary to change from use of the Eaton Clark product which had been satisfactory in temperatures above -50°F. Because of the urgent demand for shearling clothes, Mat. Lab. was requested to grant permission to deviate from the -67°F requirement and to temporarily use the Eaton Clark finishing material.

234. (U) R&R-2, 4 Oct. 1944
Fr: Mr. J. B. Johnson, Chief, Mat. Lab., Eng. Div., MF
To: Mr. Goldsmith, Misc. Equip. Maint. Sect., Maint. Div., MF
(File: Mat. Lab., Eng. Div.)

Several stations had successfully used shearling refinishing materials specified by AN-S-35; therefore, it was believed that faulty techniques at the Mobile and Sacramento ASC were responsible for the troubles encountered there. The Eaton Clark refinishing product was to be used until refinishing difficulties at the two stations were solved. Samples of unsatisfactory material were to be check tested at Mat. Lab.

235. (U) R&R-2, 13 Feb. 1945
Fr: Mr. J. B. Johnson, Chief, Mat. Lab., Eng. Div., MF
To: Chief, Aero. Equip. Sub-Sect., Quality Control Sect., Proc. Div., MF
(File: Mat. Lab., Eng. Div.)

After visual examination of defective skins, Mat. Lab. reported that: (1) Skins were slightly greasy probably due to faulty tannage; (2) skins were of adequate quality for manufacture of mouton; and (3) the ribby, spotty, wavy appearance, often desired in commercial garments, did not necessarily mean the skins were defective. If the inspected skins were representative of all those on the contract, Mat.

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Lab. recommended that ten skins be taken from the lot for complete specification tests.

236. (U) Ltr., 26 July 1945
Fr: Lt. Col. D. G. H. Lord, Chief, Maint. Div., CC ATSC
To: CG, ATSC, WF
(File: Mat. Lab., Eng. Div.)

Col. Lord indicated that polyacrylate refinish compounded by Mr. Alfred White of United Finish Co. and Mr. H. G. Battles of WF was far superior to any other dye ever used. The dye made finishing of shearling garments a single operation by eliminating necessity of lacquering over the dye.

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AIR CORPS
SPECIFICATION

No. 16009
JULY 23, 1935

SHEARLING; SHEEP, ELECTRIFIED

I. GENERAL SPECIFICATIONS.

1. THE CURRENT ISSUE OF THE FOLLOWING SPECIFICATIONS IN EFFECT ON DATE OF ISSUANCE OF PROPOSALS, FORMS PART OF THIS SPECIFICATION:

U.S. ARMY 23-54 BOXES AND CRATES FOR SHIPMENT.
" 100-2 STANDARD SPECIFICATIONS FOR MARKING SHIPMENTS.

II. TYPE.

1. THIS SPECIFICATION COVERS TWO TYPES OF ELECTRIFIED SHEEP SKINS:

TYPE I FINE WOOL SHEEP SKIN.
TYPE II FINE WOOL SHORN SHEEP SKIN, YEARLINGS OR OLDER.

III. MATERIAL AND WORKMANSHIP.

1. THE MATERIAL FURNISHED TO THIS SPECIFICATION SHALL BE SUITABLE FOR THE MANUFACTURE OF AVIATION CLOTHING.

2. QUALITY - WOOL FIBER.- THE SKINS USED FOR THIS MATERIAL SHALL BE FINE WOOL SKINS OF THE FIRST SELECTION WITH WOOL FIBER OF A QUALITY NOT LESS THAN "HALF BLOOD MERINO".

3. WORKMANSHIP, APPEARANCE AND QUALITY SHALL BE AT LEAST THE EQUAL OF THE STANDARD SAMPLE WHICH WILL BE AVAILABLE FOR INSPECTION AT THE LABORATORY OF THE PROCURING AGENCY, OR SUCH OTHER PLACE OR PLACES AS MAY BE DESIGNATED BY THE CONTRACTING OFFICER.

IV. GENERAL REQUIREMENTS.

1. FINISHED SKINS SHALL BE FREE FROM BALD SPOTS, GRAIN CRACKS, LOOSE OPEN WOOL, OPEN RIBS AND OTHER OBVIOUS DEFECTS.

2. TANNAGE.- THE SKINS SHALL BE TANNED WITH A SUITABLE TANNAGE TO CONFORM TO THE REQUIREMENTS OF THIS SPECIFICATION.

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3. DYEING.- THE WOOL SHALL BE UNIFORMLY DYED SIEGE, WITH A SUITABLE PERMANENT DYE.

4. COLOR.- MATERIAL FURNISHED TO THIS SPECIFICATION SHALL CONFORM IN SHADE TO A STANDARD SAMPLE WHICH WILL BE FURNISHED THE SUCCESSFUL BIDDER BY THE PROCURING AGENCY.

5. THE HIDE SHALL BE UNDYED, EXCEPT FOR THE COLOR ABSORBED IN DYEING THE WOOL. THE FLESH SIDE SHALL HAVE A BUFFED SURFACE AND SHALL BE OF UNIFORM SHADE.

6. COLOR FASTNESS.- THE MATERIAL SHALL SHOW NO SIGNS OF CROCKING OR COLOR TRANSFER WHEN RUBBED WITH A WET CLOTH ON EITHER SURFACE.

7. PLIABILITY.- THE SKINS SHALL BE SOFT AND PLIABLE.

8. FINISH.- THE WOOL FIBER SHALL BE LUSTERED AND SHEARED TO A FINISH COMMERCIALLY KNOWN AS "ELECTRIFIED".

9. SIZE OF SKINS.- THE SIZE OF THE SKINS FURNISHED SHALL NOT BE SMALLER THAN FIVE SQUARE FEET NOR LARGER THAN TEN SQUARE FEET.

10. MARKING OF SKINS.- EACH SKIN SHALL BE MARKED ONLY ON ONE CORNER OF THE FLESH SIDE, TO INDICATE THE NUMBER OF SQUARE FEET. NO ADDITIONAL TRADEMARK OR OTHER MARKING WILL BE PERMITTED.

V. DETAIL REQUIREMENTS.

1. TYPE I.- TYPE I SKINS SHALL BE FINE WOOL SHEEP SKINS.

A. LENGTH OF PILE.- THE WOOL FIBER OF TYPE I SKINS SHALL BE UNIFORMLY SHEARED TO A PILE LENGTH OF 3/8 OR 5/8-INCH AS SPECIFIED BY THE PROCURING AGENCY. THE LENGTH OF PILE WILL BE MEASURED ALONG THE BACKBONE.

B. WEIGHT.- THE AVERAGE WEIGHT OF THE FINISHED TYPE I SKINS SHALL NOT EXCEED 3-3/4 OUNCE PER SQUARE FOOT, CALCULATED FROM THE SIZE AND WEIGHT OF ONE DOZEN SKINS. NO SINGLE SKIN SHALL WEIGH MORE THAN FOUR OUNCES PER SQUARE FOOT.

2. TYPE II.- TYPE II SKINS SHALL BE FINE WOOL SHORN SHEEP SKINS FROM YEARLINGS OR OLDER.

A. LENGTH OF PILE.- THE WOOL FIBER OF TYPE II SKINS SHALL BE UNIFORMLY SHEARED TO A PILE LENGTH OF 3/4 OR 1-1/4 INCHES AS SPECIFIED BY THE PROCURING AGENCY. THE LENGTH OF THE PILE WILL BE MEASURED ALONG THE BACKBONE.

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B. WEIGHT.- THE AVERAGE WEIGHT OF THE FINISHED TYPE II SKINS SHALL NOT EXCEED 4-3/4 OUNCES PER SQUARE FOOT, CALCULATED FROM THE SIZE AND WEIGHT OF ONE DOZEN SKINS. NO SINGLE SKIN SHALL WEIGH MORE THAN 5-1/4 OUNCE PER SQUARE FOOT.

VI. METHOD OF INSPECTION AND TESTS.

1. THE SHEARLING SHALL BE SUBJECT TO INSPECTION BY AUTHORIZED GOVERNMENT INSPECTORS WHO SHALL BE GIVEN ALL NECESSARY FACILITIES TO DETERMINE COMPLIANCE WITH THIS SPECIFICATION.

2. ACCEPTANCE OR APPROVAL OF MATERIEL IN COURSE OF MANUFACTURE SHALL IN NO CASE BE CONSTRUED AS A GUARANTEE OF THE ACCEPTANCE OF THE FINISHED PRODUCT.

3. THE INSPECTOR SHALL SELECT AT RANDOM NOT LESS THAN SIX SKINS REPRESENTATIVE OF THE QUANTITY OFFERED FOR DELIVERY. THE SKINS SHALL BE FORWARDED TO THE LABORATORY OF THE PROCURING AGENCY, OR SUCH OTHER PLACE OR PLACES AS MAY BE DESIGNATED BY THE CONTRACTING OFFICER FOR COMPARISON WITH THE STANDARD SAMPLE.

4. PLIABILITY TEST.- A SMALL SAMPLE OF THE SHEARLING SHALL BE IMMERSED FOR THIRTY SECONDS IN DISTILLED WATER AT 150 DEG. F., REMOVED AND PERMITTED TO AIR DRY AFTER SHAKING OUT THE EXCESS WATER. THE SAMPLE AFTER COMPLETION OF THE TEST SHALL BE AT LEAST THE EQUAL OF A STANDARD SAMPLE TESTED UNDER THE SAME CONDITIONS.

VII. PACKING AND MARKING.

1. SHEARLING OF THE SAME PILE LENGTH ONLY SHALL BE PACKED IN THE SAME BOX. THE BOXES SHALL BE MARKED TO PROVIDE THE FOLLOWING INFORMATION:

SHEARLING; SHEEP, ELECTRIFIED
TYPE _____ LENGTH OF PILE _____
SPEC. NO. 16089
ORDER NO. _____
(MFR'S. NAME OR TRADEMARK).

2. DOMESTIC SHIPMENT.- WHEN DOMESTIC SHIPMENT IS SPECIFIED, THE SHEARLING SHALL BE PACKED IN BOXES ACCEPTABLE TO THE FREIGHT AGENT IN COMPLIANCE WITH THE CURRENT ISSUE OF THE CONSOLIDATED FREIGHT CLASSIFICATION.

3. EXPORT SHIPMENT.- WHEN EXPORT SHIPMENT IS SPECIFIED, THE SHEARLING SHALL BE PACKED IN BOXES LINED WITH WATERPROOF PAPER IN ACCORDANCE WITH SPECIFICATION No. 23-54.

4. SHIPMENTS SHALL BE MARKED IN ACCORDANCE WITH SPECIFICATION No. 100-2.

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VIII. NOTES.

1. SHEEP SHEARLING IS INTENDED FOR USE IN THE MANUFACTURE OF AVIATION GARMENTS AND EQUIPMENT.

2. NOTICE: WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

(COPIES OF THIS SPECIFICATION MAY BE OBTAINED FROM THE CHIEF, MATERIEL DIVISION, AIR CORPS, WRIGHT FIELD, DAYTON, OHIO.)

/EBK 7-9-35
RE/HB

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A. C. 304-Wright Field 9-29-37-25M

Address Reply to CHIEF, MATERIEL DIVISION

36

WAR DEPARTMENT
AIR CORPS
MATERIEL DIVISION
OFFICE OF THE CHIEF OF DIVISION

WRIGHT FIELD, DAYTON, OHIO

April 7, 1939

~~Subject:~~ Test of Light Weight Sheep Shearling Flying Suit

To: Commanding Officer,
Langley Field,
Hampton, Virginia.

1. On February 15, 1939, an experimental light weight flying suit constructed with 1/4" sheep shearling was issued on loan by the Materiel Division to Lieutenant Colonel W. E. Kepner of your station for the purpose of determining whether or not this type suit is suitable for use in enclosed airplanes. It is requested that the following questionnaire be accomplished and returned to the Materiel Division giving the results obtained to date by Lieutenant Colonel Kepner with this type garment.

QUESTIONNAIRE

a. Is the design of this type suit considered satisfactory?

b. Is the shearling material used for the fabrication of this type suit considered satisfactory?

c. Is the windbreak and waterproof feature of this type garment satisfactory or should fabric material be considered?

d. Should the interlocking fasteners on the legs be full length?

e. Is the pocket arrangement satisfactory?

f. Is the fit of the trousers satisfactory?

g. Is the fit and bellows arrangement of the jacket satisfactory?

h. Should this type garment be adopted as standard for enclosed airplanes?

i. Comments and recommendations.

For the Chief of the Materiel Division:

Frank O. Kepner

FRANK O. KEPNER,
Colonel, Air Corps,
Executive.

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APR 10 1939
LANGLEY FIELD, VA.

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M-2 (2/2pp) 37

HEADQUARTERS EIGHTH PURSUIT GROUP, GHQ AIR FORCE WEK/MRA/tlr
Office of the Group Commander
Langley Field, Virginia

April 14, 1939

SUBJECT: Report on Test of Light Weight Sheep Whearling Flying Suit.

TO : Commanding Officer, Air Base, Langley Field, Virginia.
(THRU: Base Engineering Officer, Langley Field, Virginia)

1. In compliance with letter from Chief of Materiel Division, subject: "Test of Light Weight Sheep Whearling Flying Suit.", dated April 7, 1939 the following is submitted in answer to Questionnaire:

a. Yes.

b. Yes.

c. Yes.

d. Yes.

e. Yes.

f. Fit is satisfactory. The bellows should be larger.

g. Yes. I particularly like the large leg room and the pockets.

h. Yes.

i. I think this is a very satisfactory suit. The best I have ever used.

W. E. KEPNER,
Lieut. Colonel, Air Corps,
Commanding.

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MDAC-265-WF-3-11-40-10M

#2712

1442

INTER-OFFICE MEMORANDUM

AIR CORPS
MATERIEL DIVISION

RLW:km

Date February 24, 1941.

TO: Chief, Experimental Engineering Section, Wright Field.

SUBJECT: (check)

Anti-Moth Treatment of Shearling Skins, Spec. 8-113.

EXPERIMENTAL ENG.
- Engines
- Propellers
- Aircraft
- Armament
- Equipment
- Accessories
- Communications
- Misc.

PRODUCTION ENG.
- Attack
- Bombardment
- Cargo
- Observation
- Pursuit
- Training
- GFE
- Radio
- Misc.

CONTRACTS
- Administration
- Legal
- Purchase

FIELD SERVICE
- Administrative
- Depots
- X Supply
- Maintenance
- Transportation

INDUSTRIAL PLANNING

ADMINISTRATIVE

DIV. COM. OFFICER

RADIO LAB.

S. C. LIAISON OFFICER

MUSEUM

INSPECTION

1. In view of the greatly increased quantities of shearling type winter flying garments now being procured and to be procured in the future, it is desired if practicable to have the shearling skins used in the manufacture of such garments treated at the contractor's plant prior to shipment, in such a manner as to afford positive protection against damage by the various species of moths and their larvae, for a period of at least one year. If such a process is known and could be applied without adversely affecting the serviceability and appearance of the skins, and would not involve complicacy or expensive equipment in its application, it is believed considerable benefits could be derived. Adequate protection would at least be assured until the completed garment is delivered to government stock.

2. It is requested that comments and recommendations on the above be submitted to this Section. If this information is not available at this time and it will be necessary to contact commercial or other sources in determining the feasibility of such a process, this Section should be advised as to the approximate date same can be furnished.

F. S. BORUM,
Lt. Col., Air Corps,
Chief, Field Service Section.

By: Samuel H. Cutler
and Brl

Signature

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INTER-OFFICE MEMORANDUM

AIR CORPS
MATERIEL DIVISION

JJG:hmr
Wright Field, Dayton, Ohio
Date March 7, 1941

TO: Chief, Field Service Section, Wright Field.

SUBJECT: (check)

Anti-Moth Treatment of Shearling Skins, Spec. 8-113.

EXPERIMENTAL ENG.
- Engines
- Propellers
- Aircraft
- Armament
- Equipment
- Accessories
- Communications
- Misc.

PRODUCTION ENG.
- Attack
- Bombardment
- Cargo
- Observation
- Pursuit
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- Administration
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INDUSTRIAL PLANNING

ADMINISTRATIVE

DIV. COM. OFFICER

RADIO LAB.

S. C. LIAISON OFFICER

MUSEUM

INSPECTION

1. Reference is made to Inter-Office Memorandum from your office, dated February 24, 1941, regarding mothproofing of sheep shearlings.

2. As far as is known, there are no treatments commercially available that will render sheep shearlings mothproof without affecting the appearance, other than that used by the Air Corps which consists of naphthalene flakes.

3. Several sources are being contacted for the latest information with reference to this problem, and if a more suitable treatment can be obtained, the information will be forwarded to your Section. It is expected that further report can be made by April 1, 1941.

F. O. CARROLL,
Lt. Colonel, A. C.,
Chief, Experimental
Engineering Section.

Signature

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1444

A[illegible] t Chief, Materiel Divisi[illegible]
Reference: JBO:hmr:56

Wright Field, Dayton, Ohio
March 10, 1941

General Dyestuff Corporation,
435 Hudson Street,
New York, New York.

Gentlemen:

The Air Corps is attempting to develop an improved finish for rendering sheep shearlings moth-repellent or mothproof for periods of at least one year. It is desired to obtain a treatment which would not impair the serviceability or affect the appearance of the garment.

In this connection it is noted that your company has produced a compound called "Eulan" which is recommended for this use. Personnel at the Materiel Division would like to obtain a sample of this product and information for applying it to sheep shearlings.

Your cooperation in this matter is appreciated.

Very truly yours,

F. O. CARROLL,
Lt. Colonel, A. C.,
Chief, Experimental
Engineering Section.

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1445

Ass't Chief, Materiel Division
Reference: CJC:hmr:56

Wright Field, Dayton, Ohio
March 10, 1941

Laskin Brothers,
Milwaukee, Wisconsin.

Gentlemen:

The Air Corps is attempting to develop an improved finish for rendering sheep shearlings moth-repellent or mothproof for periods of at least one year. It is desired to obtain a treatment which would not impair the serviceability or affect the appearance of the garment.

Manufacturers of commercial mothproof treatments have been contacted for samples of their product, in order to determine its value to the Air Corps.

It is requested that any information you may have available with reference to suitable moth-preventive treatments be supplied to the Air Corps at your earliest convenience.

Very truly yours,

F. O. CARROLL,
Lt. Colonel, A. C.,
Chief, Experimental
Engineering Section.

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March 25, 1941

Chief of Air Corps
War Department
Washington, D. C.

Sir:

A short time ago it came to our attention that the Air Corps is planning to order 15,000 flying suits within something like a period of two months. We have not been able as yet to confirm this fact definitely, however. We have been investigating the shearling situation in order that we might keep informed of supply-demand relationships in this field. As a result we should like to offer the following information with the thought that it may be helpful to the Air Corps:

(1) Supplies of raw shearlings in the United States, Australia, and New Zealand should be ample to care for ptential military needs for flying suits plus commercial needs. Substantial quantities of wool skins which formerly went to the Continent are now available in the latter countries.

(2) The timing of purchases of shearling coat stock for military purposes is particularly important.

(3) Tanners of shearlings at present own little raw stock and are well booked up with government orders for tanned shearlings.

(4) If the purchase of such a quantity of shearling flying suits could be delayed until the end of the domestic raw shearling production season, some time in June, it is believed quantities needed for the above order could be obtained at relatively favorable prices.

(5) Finally, if the present specification for the shortest wool length of 3/8" were revised so that 1/4" to 3/8" would be acceptable, an additional important quantity of domestic skins could be utilized. These skins should be perfectly satisfactory for aviation coat stock. Such an increase in supply would reflect itself in lower prices for aviation coat stock.

Apropos the above points, I am enclosing copy of a letter from one of the large producers of shearlings outlining his view of the shearling situation today. I think this may prove very interesting.

H. M. McAdoo
Chief Consultant
Leather Unit

CENTRAL FILES

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~~Navy~~ (3/5PP)

DEPT

March 17, 1941

Since receiving your letter of March 7 and talking with you on the telephone regarding the government requirements of aluminum, we have been reviewing the whole situation.

The head of our Fabricating Department is at Wright Field today and we have talked with him on the telephone and he tells us that, so far as he can find out, there isn't any particular argument regarding the future supplies of aluminum now there and that its contacts have indicate that any possible interruptions for aluminum have not been particularly embarrassing.

It might be well to give you a little history of this aluminum business. Aluminum was so very expensive for the development of it in the first place had been real success at early fall the army air corps bought in the vicinity of 2 million feet. Later in the fall, they told us that they were really afraid that there was an acute shortage of aluminum and that they would be unable to get their requirements, which they estimated would be in the vicinity of 3 million more feet.

We told them at that time that we did not think they would have any difficulty in getting the quantity they required over a reasonable period and, on the strength of our statements to them, they made out in December their requirements to be 5 million feet.

We are on the basis 5 million feet and more but we want to make sure that the government might put the requirements by the first of July. We relinquished part of the order to a competitor, where it was somewhat higher than ours, and it finally ended up with both transactions being placed on a basis of negotiated contract.

At the present time, we and other producers of aluminum for furnishing to the government aviation work are fairly well booked up, largely on government work.

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Regarding raw stock: We are coming into the domestic shearling production season, which will run from now thru June. This will mean that during that period there will be substantial quantities of good domestic shearlings available for this type of work. At the present time, we and other tanners own very little raw stock which is not already sold to the government.

If the government, as you have indicated, were to insist upon buying further quantities at the present time prior to the opening of the new domestic season, it might have a bullish effect on prices of raw material. To bid on more business at the present time, tanners would have to be willing to sell something they do not yet own. This naturally would mean that they would have to quote high enough prices so as to cover any increase which might take place in prices of raw stock they would need to buy to fill such orders.

However, if the government invites bids for further quantities later in the season, say in June, we feel quite certain that they would not have so much difficulty in buying substantial quantities for delivery over the balance of the year, and at prices which would be relatively favorable compared with what they might have to pay at the present time.

What I am trying to say is that timing in buying, which is always important, is extremely important in this particular case.

We have proven that our advice last fall regarding the shearling situation was correct and I am sure that if serious consideration is given to the above, the government will buy their shearlings at fair prices without the necessity of any artificial control of prices.

There is one feature of this shearling business which might be changed somewhat to expedite the buying of substantial quantities. This is in connection with the strict requirements as to wool lengths of various grades, particularly the shorter wools. Present requirements for the shortest grade call for a minimum of 3/8", which one wool length accounts for over 50% of the total requirements. If this were broadened to read 1/4" to 3/8", it would mean that very sizable quantities of domestic skins could be included which now have to be eliminated but which we are sure would be perfectly satisfactory if they were permitted. This would not only increase the quantity available but would also tend to make the price somewhat more reasonable on this particular grade. This change would also allow the use of substantially more domestic shearlings, which during the period of heavy production run largely to shorter-wool lengths.

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In the tanning industry, as in any other manufacturing business, it takes some time to get plants geared up to increased production and shearling tanneries are no exception. However, shearling tanneries are now operating at full capacity. Our own plant is producing more than it ever did before and with fairly large quantities of suitable foreign wool skins available for this market, which in the past have gone to France, we see no reason why the government's requirements for shearlings for aviator's uniforms cannot continue to be met, provided, of course, they are not unreasonable on the question of speed of delivery.

The above is a somewhat long-winded explanation of the general shearling situation but in view of the feeling prevalent in Washington that shearlings will not be available and should be discontinued, I have gone into it in considerable detail.

If the above is not in sufficient detail, I will be glad to talk the matter over with you further, preferably here in Peabody, but if absolutely necessary, I can meet you either in New York or in Washington.

Very truly yours,

GENERAL FILES

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41

COPY

OFFICE OF PRODUCTION MANAGEMENT
SOCIAL SECURITY BUILDING
WASHINGTON, D. C.

April 11, 1941

Chief of Air Corps
War Department
Washington, D. C.

Sir:

On March 25, the Leather Unit submitted a memorandum containing certain recommendations on the purchase of shearling coat stock for flying suits. This memorandum was accompanied by a letter from a producer of shearling coat stock, confirming the recommendation. Copies of these communications are enclosed.

The basic assumption behind our recommendation that further purchase of shearlings be delayed until June was that quantitative data on prospective buying would be held strictly confidential and would not become known to the supplying trade. Sellers would have been more eager for business at the time of the next purchase and thus more favorable conditions for purchasing would have been created.

We learn now that at approximately the time our recommendation was made, somehow or other it became known to the supplying trade that approximately 4,200,000 feet of shearlings were to be bought. The information did not go out from our office. In the interim, the knowledge of the prospective purchase has become widespread throughout the trade and has created hectic bidding for rawstock. As a result, point #4 of our recommendation, which reads as follows:

> "If the purchase of such a quantity of shearling flying suits could be delayed until the end of the domestic raw shearling production season, some time in June, it is believed quantities needed for the above order could be obtained at relatively favorable prices."

is no longer of any value. Under the present circumstances, now that the story is know, it is probable that the sooner the contemplated transaction is carried out, the better it will be both for the Air Corps and the trade in general. We have discussed this matter with the two producers who have been supplying shearlings to the Air Corps during the last few months. They agree with this conclusion.

H. M. McAdoo
Chief Consultant
Leather Unit

CENTRAL FILES

mwb

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Attach To 2-9

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WAR DEPARTMENT
AIR CORPS
MATERIEL DIVISION
Office of the Commanding Officer
Provisional Air Corps Maintenance Command

Patterson Field, Dayton, O.
May 27, 1941.

Subject: Impregnation of Sheep Shearing with Demotex.

To: Commanding Officer,
Middletown Air Depot,
Olmsted Field,
Middletown, Pennsylvania.

1. Mr. E. W. Sweet, of Demotex, Incorporated, New York City, expects to visit your station on or about June 5th or 6th for the purpose of demonstrating the use of Demotex materials in demothing of sheep shearing, which is stored at your depot.

2. There is being shipped to your Depot by the Demotex people, some equipment to be used in the purpose of demonstrating its effectiveness on sheep shearing. It is being shipped to your Supply Officer with a note to hold for Mr. Sweet.

3. It is requested that a report be forwarded to this office upon the completion of the demonstration together with your recommendations.

By order of the Chief, Maintenance Command, Air Corps:

F. S. BORUM,
Lieut. Col., Air Corps,
Chief, Field Service Section.

By: JOSEPH T. MORRIS,
Lieut. Col., Air Corps,
Depot Liaison.

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S:JCW:JP

1st Ind.

Hq. Middletown Air Depot, Olmsted Field, Middletown, Pa., June 7, 1941.
To Chief of the Maintenance Command, Air Corps, Wright Field, Dayton, Ohio.

1. The representative of Demotex, Inc., arrived this Depot June 5 and presented his plan for demothing or mothproofing Air Corps property susceptible to moth damage. It was found that the method is impracticable for application or treatment of material in storage at this Depot, but it appears that by mothproofing the raw materials, such as sheep shearling, particularly during the tanning process, the entire problem of protecting against moth damage throughout the life of the garment would be eliminated.

2. Recommend that sheep shearling for flying clothes be mothproofed according to recommendations in U. S. Department of Agriculture pamphlet "Insects in Relation to National Defense, Circular 3, Fabric Insects, February 1941".

3. Inclosed specimen of specification is believed to be sufficient in definition to bring about the desired mothproofing.

4. While this moth treatment will not solve our present problem of storing sheep shearling and manufactured flying clothes which have not been moth treated, the adoption of specification requiring permanent mothproofing of the raw materials will ultimately bring about a complete solution of the problem and eliminate special care such as cold storage and the use of crystals now generally employed for the purpose.

5. It is important that labels be clearly applied so as to distinguish mothproofed material from that which has not been so treated.

For the Commanding Officer:

J. C. Wachtman
1st Lieut., Air Corps
Acting Depot Supply Officer

1 Incl-
Spec. Specification

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Memorandum Rpt., Dated 24 July 1941
and Appendix 1.
on "conference with Referee to
Milkproofing Treatment of
Sheep Shearing"

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INTER-OFFICE MEMORANDUM

AIR CORPS
MATERIEL DIVISION

Maintenance Command, A. C.,
Wright Field, Dayton, Ohio

Date June 23, 1941

TO: Chief, Experimental Engineering Section,
Wright Field, Dayton, Ohio.

SUBJECT: (check)

EXPERIMENTAL ENG.
- Engines
- Propellers
- Aircraft
- Armament
- Equipment
- Accessories
- Communications
- Misc.

PRODUCTION ENG.
- Attack
- Bombardment
- Cargo
- Observation
- Pursuit
- Training
- GFE
- Radio
- Misc.

CONTRACTS
- Administration
- Legal
- Purchase

FIELD SERVICE
- Administrative
- Depots
- Supply
- Maintenance
- Transportation

INDUSTRIAL PLANNING

ADMINISTRATIVE

DIV. COM. OFFICER

RADIO LAB.

S. C. LIAISON OFFICER

MUSEUM

INSPECTION

Use of Demotex in De-mothing of Sheep Shearing.

1. Attached hereto is correspondence together with recommendations from Middletown Air Depot on the use of Demotex materials in de-mothing of sheep shearing.

2. It is requested that your comments and recommendations be furnished this office.

F. S. BORUM,
Lieut. Col., Air Corps,
Chief, Field Service Section.

JEG:hmr

1st Ind.

Experimental Engineering Section, Wright Field, July 25, 1941.
To: The Commanding Officer, Provisional A. C. Maintenance Command, Wright Field.

1. The requirements of Specification 8-113 are being revised to provide for a permanent mothproofing finish. The Production Engineering Section has been contacted, and recommendations made to effect this change on current contracts.

2. For your further information, Demotex No. 1 or Eulan NK may be used to accomplish the above finish.

F. O. CARROLL,
Lt. Colonel, A. C.,
Chief, Experimental
Engineering Section.

1 Incl.
Ltr. dated 5/27/41 to
M.A.D. fr. F.S.S.
w/1 Ind.

Signature

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U. S. ARMY
SPECIFICATION

No. 8-113-B
December 26, 1940
AMENDMENT NO. 2
July 29, 1941

SHEARLING; SHEEP

(This amendment supersedes and includes Amendment No. 1 dated May 7, 1941)

SECTION B.

ø Paragraph B-2. - Add the following as new paragraph B-2:

"B-2. Mothproofed. - Unless otherwise specified, the Type I and II skins shall be furnished with a mothproofed finish."

SECTION C.

ø Paragraph C-1b. - Add the following as new paragraph C-1b:

"C-1b. Mothproofing. - The materials used to insure mothproofness shall contain no arsenic or other chemicals that are known to promote skin irritations or dermatitis."

SECTION D.

Paragraph D-5 "Wool". - Delete entire paragraph and substitute the following:

"D-5. Wool. - The fiber length of the wool shall be 1/4 plus 1/8 minus zero inches; 3/8 plus zero minus 1/8 inch; 1/2 inch, 5/8 inch, 3/4 inch or 1 inch as specified and the pile shall be uniform throughout the skin."

SECTION E.

Paragraph E-6a "Type I". - Delete the first sentence "Unless otherwise specified, the skin shall be furnished with Finish No. 1" and substitute the following:

"The skin shall be furnished with Finish No. 1 or Finish No. 2 as specified by the Procuring Agency."

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Amendment No. 2 to
Specification No. 8-113-B

SECTION E (continued)

ø Add the following as new Paragraph E-7:

"E-7. Mothproofing. - When exposed to the conditions described in Section F, specimens of mothproofed shearlings shall resist damage by moths, and the weight of the excrement shall not exceed 8 milligrams for the original specimen and not more than 10 milligrams for the specimen subjected to 20 dry cleanings. In neither case shall there be any visual damage of moth attacked wool or skin."

SECTION F

ø Add the following as new Paragraph F-11:

"F-11. Moth Resistance:

"F-11a. Two specimens of mothproofed shearling 3 inches in diameter shall be exposed to the action of ten larvae of black carpet beetles for 28 days in a petrie dish at a temperature of 28 to 30 degrees Centigrade.

"F-11b. Portions of the specimens selected shall be subjected to 20 dry cleaning operations using carbon tetrachloride, Stoddard Solvent, or perchlorethylene as the cleaning fluid. After cleaning, the specimens shall be subjected to the above tests for insect resistance.

"F-11c. Chemical Tests. - A 1/2 gram portion of wool shall be taken from one skin and tests accomplished to determine the amount of mothproofing materials present. Copies of the test procedure used to determine the presence of a mothproofing compound may be obtained upon application to the Chief, Materiel Division, Air Corps, Wright Field, Dayton, Ohio.

"F-11d. The above tests for mothproofing will not be required from manufacturers who in the past have supplied shearlings in conformance with this specification.

"F-11e. With each 5 shearlings, a suitable woven label shall be furnished for permanent identification, and each skin shall be properly identified with a stamp or other suitable method to show that it has been mothproofed."

SPECIFICATION

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Amendment No. 2 to
Specification No. 8-113-B

SECTION H

ø Add the following as new Paragraph H-2 and renumber the remaining paragraphs accordingly:

"H-2. Two satisfactory methods of mothproofing are contained in Circular 3 "Fabric Insects" of "Insects in Relation to National Defense" dated February, 1941, copies of which may be obtained upon application to the Bureau of Entomology and Plant Quarantine, U. S. Department of Agriculture, Washington, D. C."

ø Indicates changes which have been incorporated in this amendment over previous amendments.

THIS AMENDMENT FORMS A PART OF AND SHOULD BE FILED WITH SPECIFICATION NO. 8-113-B, DATED DECEMBER 26, 1940.

MATERIEL DIVISION, AIR CORPS,
WRIGHT FIELD, DAYTON, OHIO

JRB:MDH
Chg. Rec. 7-24-41

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U.S. ARMY
SPECIFICATION

No. 8-113-B
DECEMBER 26, 1940

SUPERSEDING
No. 8-113-A
AUGUST 7, 1940

SHEARLING; SHEEP

A. APPLICABLE SPECIFICATIONS.

A-1. THE CURRENT ISSUE OF THE FOLLOWING SPECIFICATIONS IN EFFECT ON DATE OF ISSUANCE OF PROPOSALS, FORMS PART OF THIS SPECIFICATION:

AIR CORPS	2001C	PROOFING; POLYVINYLCHLORIDE PLASTIC (FOR SHEEP SHEARLING).
ARMY-NAVY AERONAUTICAL	AN-VV-F-756	FUEL, AIRCRAFT-ENGINE, GRADE 55.
U.S. ARMY	2-27	OIL, LUBRICATING, FOR AIRCRAFT INSTRUMENTS AND MACHINE GUNS.
U.S. ARMY	23-5	BOXES AND CRATES FOR SHIPMENT.
U.S. ARMY	100-2	STANDARD SPECIFICATIONS FOR MARKING SHIPMENTS.

B. TYPES, CLASSES AND FINISH.

B-1. THIS SPECIFICATION COVERS SHEEP SKINS OF THE FOLLOWING TYPES, CLASSES AND FINISHES:

TYPE I - ELECTRIFIED.

TYPE II - LEVELED.

TYPE III - WATER-REPELLENT.

CLASS A - 50's GRADE WOOL FIBER.
CLASS B - 58's GRADE WOOL FIBER.
CLASS C - 64's GRADE WOOL FIBER.

SPECIFICATION

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FINISH 1. - POLYVINYLCHLORIDE PLASTIC FINISH ON FLESH SIDE.

FINISH 2. - POLYACRYLATE BASE PLASTIC FINISH ON FLESH SIDE.

FINISH 3. - TANNED FINISH.

C. MATERIAL AND WORKMANSHIP.

C-1. MATERIAL.- THE SKINS USED FOR THIS MATERIAL SHALL BE WOOL SKINS OF FIRST SELECTION, PACKER'S NO. 1. THE QUALITY OF THE WOOL SHALL BE NOT LOWER THAN THAT SPECIFIED AND SHALL BE IN ACCORDANCE WITH THE OFFICIAL STANDARDS FOR GRADES OF WOOL TOP AS ISSUED BY THE U. S. DEPARTMENT OF AGRICULTURE.

C-1A. UNLESS OTHERWISE SPECIFIED BY THE PROCURING AGENCY, TYPE I AND TYPE II SKINS SHALL BE FURNISHED TO CLASS A.

C-2. WORKMANSHIP.- THE WORKMANSHIP SHALL BE IN ACCORDANCE WITH HIGH GRADE COMMERCIAL PRACTICE AND THE FINISHED SKINS SHALL BE FREE FROM GRAIN CRACKS, LOOSE OPEN WOOL, BONY NECKS, GREASY LEATHER, OPEN RIBS, AND OTHER DEFECTS WHICH MAY AFFECT APPEARANCE OR SERVICEABILITY.

D. GENERAL REQUIREMENTS.

D-1. THE FINISHED SKINS SHALL BE FREE FROM GRAIN CRACKS, LOOSE OPEN WOOL, BONY NECKS, GREASY LEATHER, OPEN RIBS, AND OTHER OBVIOUS DEFECTS. SKINS MAY BE REPAIRED TO ELIMINATE GRAIN CRACKS OR BALD SPOTS BY THE PROCESS KNOWN COMMERCIALLY AS SEAMING. SEAMING SHALL BE ACCOMPLISHED BY FUR SEAMING ON AN OVERSTITCH MACHINE, AND THE FINISHED SEAMS SHALL LIE FLAT AND SHALL NOT INTERFERE WITH PATTERNING OR CUTTING. TYPE I SKINS SHALL HAVE NOT MORE THAN ONE-THIRD OF THE TOTAL DELIVERY AS REPAIRED SKINS AND TYPE II SKINS SHALL NOT HAVE MORE THAN 60 PER CENT OF THE TOTAL DELIVERY AS REPAIRED SKINS. THERE WILL BE NOT MORE THAN FOUR SEAMS PER SKIN AND THE SEAMS SHALL BE ACCOMPLISHED BEFORE THE APPLICATION OF THE PROOFING TREATMENT. FIFTY PER CENT OF THE SKINS ON ORDER MAY CONTAIN UP TO THREE BARE SPOTS, NOT TO EXCEED ONE AND ONE-HALF INCHES IN DIAMETER, PROVIDED THE SPOTS OCCUR WITHIN 8 INCHES FROM THE EDGE OF THE SKIN. TWENTY PER CENT OF THE ABOVE FIFTY PER CENT MAY CONTAIN ONE OR TWO HOLES, NOT TO EXCEED 1/4-INCH IN DIAMETER, PROVIDED THAT THE HOLES OCCUR WITHIN 8 INCHES FROM THE EDGE OF THE SKIN. AN ALLOWANCE SHALL BE MADE BY THE MANUFACTURER FOR THE LOSS IN CUTTING

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FOOTAGE DUE TO THE PRESENCE OF THESE BARE SPOTS OR HOLES. THE DESIRED SHAPE AND THE ALLOWABLE TRIM OF THE FINISHED SKINS SHALL BE IN ACCORDANCE WITH FIGURE 1. NECKS, FLANKS, AND BUTTS ARE TO BE TRIMMED WHEN FIBER FINISH DOES NOT EXTEND TO EDGES OR WHEN WOOL DENSITY OF SKIN DEFECTS AFFECT THE QUALITY OF THE FINISHED SKIN. POCKETS AND BARE SPOTS SHALL BE TRIMMED FROM THE SHANK.

D-2. TANNAGE.- THE SKINS SHALL BE PROPERLY AND FULLY TANNED WITH A SUITABLE TANNAGE TO CONFORM TO THE REQUIREMENTS OF THIS SPECIFICATION.

D-3. COLOR.- THE COLOR SHALL BE AS SPECIFIED BY THE PROCURING AGENCY AND SHALL CONFORM IN SHADE TO A STANDARD SAMPLE WHICH WILL BE FURNISHED THE SUCCESSFUL BIDDER BY THE PROCURING AGENCY. THE WOOL FIBER SHALL BE UNIFORMLY AND EVENLY DYED WITH A FAST COLOR DYE WHICH SHALL SHOW NO SIGNS OF CROCKING OR COLOR TRANSFER WHEN RUBBED WITH A WET OR WITH A DRY CLOTH ON EITHER FACE OR BACK OF THE SKIN.

D-4. LEATHER.- THE FLESH SIDE OF THE SKIN SHALL BE UNIFORMLY BUFFED TO PRODUCE AN EVEN SUEDE SURFACE. THE LEATHER BEFORE PROOFING SHALL BE UNCOLORED EXCEPT FOR THE COLOR, WHICH MAY BE ABSORBED IN TANNING THE SKIN AND IN DYEING THE WOOL.

D-5. WOOL.- THE FIBER LENGTH OF THE WOOL SHALL BE 1/4-INCH, 3/8-INCH, 1/2-INCH, 5/8-INCH, 3/4-INCH OR 1-INCH AS SPECIFIED, AND THE PILE SHALL BE UNIFORM THROUGHOUT THE SKIN.

D-6. MARKING.- EACH SKIN SHALL BE LEGIBLY MARKED OR STAMPED IN ONE CORNER OF THE FLESH SIDE TO SHOW THE NUMBER OF SQUARE FEET. NO OTHER MARKING SHALL BE PERMITTED.

E. DETAIL REQUIREMENTS.

E-1. SIZE.- THE SKINS SHALL BE NOT LESS THAN 5 SQUARE FEET NOR MORE THAN 11 SQUARE FEET IN SURFACE AREA.

E-2. WEIGHT.- THE WEIGHT OF THE SKINS SHALL BE AS SHOWN IN TABLE 1:

TABLE 1

FIBER LENGTH	MAXIMUM AVERAGE WEIGHT PER DOZEN SKINS	MAXIMUM WEIGHT OF SINGLE SKIN
INCH	OZS. PER SQUARE FOOT	OZS. PER SQUARE FOOT
1/4 TO 3/8	3.50	4.00
1/2 TO 3/4	4.25	5.00
1	5.00	5.50

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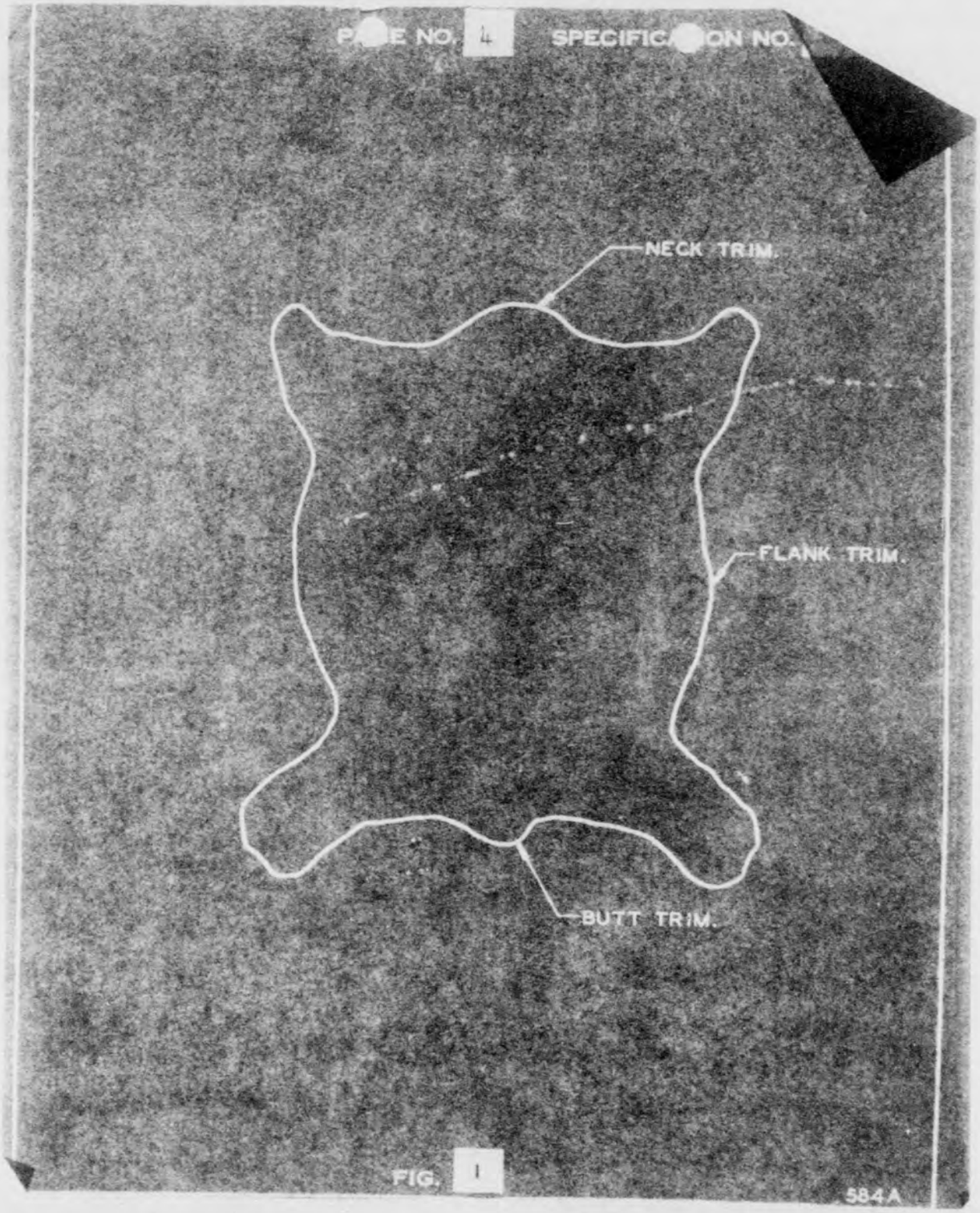

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E-3. GREASE CONTENT.- THE SKINS BEFORE PROOFING SHALL CONTAIN NOT MORE THAN 20 PER CENT BY WEIGHT OF SOLUBLE MATERIAL IN CARBON TETRACHLORIDE.

E-4. CURL.- THE FINISHED SKINS SHALL NOT CURL OR BE APPRECIABLY AFFECTED WHEN SUBJECTED TO THE CURLING TEST SPECIFIED IN PARAGRAPH E-5.

E-5. PLIABILITY.- THE FINISHED SKINS SHALL BE SOFT AND FLEXIBLE AND WHEN SUBJECTED TO TEST FOR PLIABILITY SHALL AT LEAST BE EQUAL TO STANDARD SAMPLE TESTED UNDER SAME CONDITIONS.

E-6. FINISH:

E-6A. TYPE I.- UNLESS OTHERWISE SPECIFIED, THE SKIN SHALL BE FURNISHED WITH FINISH No. 1. THE WOOL FIBER SHALL BE LUSTERED AND SHEARED TO A FINISH COMMERCIALLY KNOWN AS ELECTRIFIED OR BEAVERIZED. THE FINISH SHALL PRODUCE A CLEAN FIBER, FREE FROM FOREIGN MATTER, AND THE DEGREE AND DEPTH OF FINISH ON THE FIBER SHALL BE OF THE SAME TYPE, AND EXTEND TO THE SAME DEPTH OF FIBER AS SHOWN ON THE STANDARD SAMPLE.

E-6B. TYPE II.- UNLESS OTHERWISE SPECIFIED, THE SKIN SHALL BE FURNISHED WITH FINISH No. 2. THE WOOL FIBER SHALL BE IN ITS ORIGINAL UNSTRAIGHTENED CONDITION AND CLIPPED OR SHEARED TO A UNIFORM HEIGHT ALL OVER THE SKIN, AS SPECIFIED. THIS CONDITION IS COMMERCIALLY KNOWN AS LEVELED.

E-6C. TYPE III.- THE WOOL FIBER SHALL BE CHEMICALLY TREATED AND PROCESSED TO PRODUCE A WATER-REPELLENT WOOL PARTIALLY CONVERTED TO A FUR FIBER. THE WOOL FIBERS SHALL SHOW NO SHORTENING, BULLING, OR KINKING OR CHANGE IN SURFACE APPEARANCE WHEN SUBJECTED TO TEST FOR WATER-REPELLENCY.

E-6D. FINISH 1.- UNLESS OTHERWISE SPECIFIED THE FLESH SIDE OF THE SKINS SHALL BE FINISHED IN ACCORDANCE WITH THE REQUIREMENTS OF SPECIFICATION No. 20016.

E-6E. FINISH 2.- UNLESS OTHERWISE SPECIFIED THE FLESH SIDE OF THE SKINS SHALL BE COATED WITH A POLYACRYLATE BASE PLASTIC WITH BROWN PIGMENT INCORPORATED, TO SEAL THE PORES AND TO GIVE THE FINISH AND APPEARANCE DESIRED. THE PROOFED BACK SHALL SHOW IN addition TO TESTS HERETOFORE SPECIFIED "GOOD RESISTANCE" WHEN SUBJECTED TO TESTS FOR RESISTANCE TO WATER, GASOLINE, AND OIL. THE COATING SHALL NOT CRACK NOR THE FLEXIBILITY OF THE PROOFED SKINS MATERIALLY REDUCED WHEN SKINS ARE EXPOSED TO LOW TEMPERATURE CONDITIONS.

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F. METHOD OF INSPECTION AND TESTS.

F-1. THE SHEARLING SHALL BE SUBJECT TO INSPECTION BY AUTHORIZED GOVERNMENT INSPECTORS. WHEN INSPECTION IS CONDUCTED AT THE CONTRACTOR'S PLANT, TESTS SHALL BE CONDUCTED BY THE CONTRACTOR, UNDER THE SUPERVISION OF THE AUTHORIZED GOVERNMENT INSPECTOR, AND THE REPORTS REFERRED TO HEREIN SHALL BE FURNISHED TO THE INSPECTOR.

F-2. ACCEPTANCE OR APPROVAL OF MATERIEL IN COURSE OF MANUFACTURE, SHALL IN NO CASE BE CONSTRUED AS A GUARANTEE OF THE ACCEPTANCE OF THE FINISHED PRODUCT.

F-3. UNLESS OTHERWISE SPECIFIED, THE CONTRACTOR SHALL FURNISH A TEST REPORT, CERTIFIED BY AFFIDAVIT, GIVING THE RESULTS OF TESTS REQUIRED TO DETERMINE CONFORMANCE OF THE REQUIREMENTS AND TESTS SPECIFIED HEREIN. ALL TESTS SHALL BE MADE ON SAMPLES TAKEN FROM MATERIAL TO BE SUPPLIED ON THE CONTRACT OR ORDER. THE TEST REPORTS SHALL BE FURNISHED IN DUPLICATE TO THE PROCURING AGENCY, AND SHALL BE SIGNED BY THE DIRECTOR OF THE LABORATORY IN WHICH THE TESTS ARE CONDUCTED. CONTRACTORS NOT HAVING LABORATORY FACILITIES SATISFACTORY TO THE PROCURING AGENCY SHALL ENGAGE THE SERVICES OF A COMMERCIAL TESTING LABORATORY, CAPABLE OF CONDUCTING TESTS TO DETERMINE COMPLIANCE WITH ALL OF THE REQUIREMENTS AND TESTS SPECIFIED IN THE SPECIFICATION AND ACCEPTABLE TO THE PROCURING AGENCY.

F-4. SAMPLING.- NOT LESS THAN SIX SKINS REPRESENTATIVE OF THE QUANTITY ON ORDER SHALL BE SELECTED AT RANDOM FOR THE TESTS SPECIFIED HEREIN. SAMPLES SHALL BE IN ADDITION TO THE QUANTITY SPECIFIED ON THE ORDER, AND SHALL BE FURNISHED WITHOUT INCREASING THE COST OF THE CONTRACT TO THE PROCURING AGENCY.

F-5. PLIABILITY TEST.- A SMALL SAMPLE, APPROXIMATELY 4 INCHES SQUARE, OF THE SHEARLING SHALL BE IMMERSED FOR 30 SECONDS IN DISTILLED WATER AT 150 DEGREES F. (66 DEGREES C.), REMOVED AND PERMITTED TO AIR DRY AFTER SHAKING OUT THE EXCESS WATER. THE SAMPLE AFTER COMPLETION OF THE TEST SHALL BE AT LEAST THE EQUAL OF A STANDARD SAMPLE TESTED UNDER THE SAME CONDITIONS.

F-6. CURL TEST.- THIS TEST SHALL BE ACCOMPLISHED ON AN UNBACKED SKIN FROM WHICH SAMPLES OF LEATHER TWO INCHES SQUARE SHALL BE CUT AND THE WOOL SHEARED OFF IN A SUITABLE MANNER SO THE SKIN IS NOT DAMAGED, AFTER WHICH THE SPECIMENS SHALL BE PLACED IN A BEAKER CONTAINING APPROXIMATELY 400 ML. OF DISTILLED WATER. THE WATER SHALL BE HEATED TO 150 DEGREES F. PLUS OR MINUS 2 DEGREES F. (71 DEGREES C. PLUS OR MINUS 1.1 DEGREES C.) AND THE PREPARED SPECIMEN IMMERSED FOR 3 MINUTES. THE SAMPLE IS THEN REMOVED AND AIR DRIED AT ROOM TEMPERATURE.

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F-7. WATER-REPELLENCY TEST.- SPRINKLE WATER AT ROOM TEMPERATURE ON THE WOOL SIDE OF THE SHEARLING UNDER TEST. ALLOW DROPS TO REMAIN FOR 15 MINUTES AND THEN SHAKE SAMPLE TO REMOVE THE EXCESS WATER AND ALLOW TO DRY THOROUGHLY UNTIL THERE IS NO FEELING OF DAMPNESS APPARENT TO THE TOUCH. THE DRYING TIME SHALL BE NOT LESS THAN 3 HOURS IN STILL AIR NOR LESS THAN 30 MINUTES IN CIRCULATING AIR UNDER NORMAL ATMOSPHERIC CONDITIONS.

F-8. TEST FOR GREASE CONTENT.- EXTRACT THE GREASE FROM AN ACCURATELY WEIGHED SAMPLE BY BOILING FOR FOUR HOURS IN COMMERCIAL CARBON TETRACHLORIDE, USING A REFLUX CONDENSER. CONDITION AND REWEIGH AND CALCULATE THE LOSS AS A PERCENTAGE OF THE ORIGINAL WEIGHT OF THE SHEARLING AS RECEIVED.

F-9. LOW TEMPERATURE TEST.- EXPOSE SAMPLE TO A TEMPERATURE OF MINUS 20 DEGREES F. (MINUS 28.9 DEGREES C.) OR LOWER FOR A PERIOD OF 5 HOURS.

F-10. PROOFING TESTS.- ALL SKINS FURNISHED WITH FINISH NO. 2 SHALL BE SUBJECTED TO THE FOLLOWING TESTS.

F-10A. WATER RESISTANCE.- PREPARE A BAG FROM A PORTION OF THE SKIN WITH THE WOOL OUTSIDE, AND POUR A QUART OF WATER IN THE POCKET CREATED. THE BACKING SHALL NOT BE AFFECTED AFTER CONTACT WITH THE WATER FOR A PERIOD OF ONE HOUR.

F-10B. GASOLINE RESISTANCE.- SPOT THE PROOFED BACK OF THE SKIN WITH SEVERAL DROPS OF GASOLINE CONFORMING TO SPECIFICATION NO. AN-VV-F-756. THERE SHALL BE ONLY A VERY SLOW PENETRATION OF THE FLUID, AND AFTER THE FLUID IS REMOVED EITHER BY WIPING OR EVAPORATION, THERE SHALL BE NO DISCOLORATION OF THE BACKING.

F-10C. OIL RESISTANCE.- SPOT THE PROOFED BACK OF THE SKIN WITH SEVERAL DROPS OF LUBRICATING OIL CONFORMING TO SPECIFICATION NO. 2-27, AND ALLOW TO REMAIN FOR 4 HOURS. THERE SHALL BE NO EVIDENCE OF PENETRATION OR DISCOLORATION AFTER THE OIL IS REMOVED FROM THE SURFACE.

3. PACKING AND MARKING.

3-1. PACKAGING.- THE SKINS SHALL BE BUNDLED AND WRAPPED IN ACCORDANCE WITH STANDARD COMMERCIAL PRACTICE. INDIVIDUAL BUNDLES SHALL CONTAIN SKINS OF A SINGLE TYPE, CLASS AND FINISH.

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3-2. PACKING.- BUNDLES SHALL BE PACKED FOR SHIPMENT IN SUBSTANTIAL COMMERCIAL CONTAINERS SO CONSTRUCTED AS TO INSURE ACCEPTANCE BY COMMON OR OTHER CARRIERS FOR SAFE TRANSPORTATION AT THE LOWEST RATE TO THE POINT OF DELIVERY.

3-3. MARKING.- EACH BUNDLE SHALL BE MARKED TO GIVE THE FOLLOWING INFORMATION:

SHEARLING; SHEEP
SPECIFICATION NO. 8-113-B
TYPE _____
CLASS _____
FINISH _____
LENGTH OF PILE _____
ORDER NO. _____
(MFR'S. NAME OR TRADEMARK).

3-4. DOMESTIC SHIPMENT.- WHEN DOMESTIC SHIPMENT IS SPECIFIED, THE SHEARLING SHALL BE PACKED IN BOXES ACCEPTABLE TO THE FREIGHT AGENT IN COMPLIANCE WITH THE CURRENT ISSUE OF THE CONSOLIDATED FREIGHT CLASSIFICATION.

3-5. EXPORT SHIPMENT.- WHEN EXPORT SHIPMENT IS SPECIFIED, THE SHEARLING SHALL BE PACKED IN BOXES LINED WITH WATERPROOF PAPER IN ACCORDANCE WITH SPECIFICATION NO. 23-5A.

3-6. SHIPMENTS SHALL BE MARKED IN ACCORDANCE WITH SPECIFICATION NO. 100-2.

4. NOTES.

4-1. THE SHEARLING COVERED BY THIS SPECIFICATION IS INTENDED FOR USE IN THE MANUFACTURE OF AVIATION GARMENTS, WINTER CAPS, AND EQUIPMENT.

4-2. NOTICE: WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

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H-3. THE USE OF THIS SPECIFICATION, WHENEVER APPLICABLE, IS MANDATORY ON ALL PROCURING AGENCIES OF THE ARMY

(COPIES OF THIS SPECIFICATION MAY BE OBTAINED FROM THE CHIEF, MATERIEL DIVISION, AIR CORPS, WRIGHT FIELD, DAYTON, OHIO.)

Dist. ALS:GIB.
10-31-40
I.O.M. (4-E) 10-9-40

Wright Field 1-12-40-15M

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MDAC-265-A-WF-6-28-41-200M

2-10

152

INTER-OFFICE MEMORANDUM

WAR DEPARTMENT, AIR CORPS
Office, Assistant Chief
Materiel Division

JEG:hmr

Wright Field, Dayton, Ohio

Date July 29, 1941

TO: Chief, Inspection Section, Wright Field.

SUBJECT: Toxicity of Solvents in Finishes for Sheep Shearling.

1. Reference is made to Inter-Office Memorandum dated July 17, 1941, from your office under the subject "Test Samples - Contracts W 535 ac-16115 and W 535 AC-17639."

2. The solvents of the polyacrylate and polyvinylchloride finishes have been tested, and for the polyacrylate, ammonia water is used, and for the polyvinylchloride, methyl ethyl ketone. Obviously, the ammonia water is not a toxic material, and it is considered that the methyl ethyl ketone is non-toxic also.

3. This is further substantiated by a list of non-toxic substances issued by the State of Massachusetts in which methyl ethyl ketone is not mentioned.

4. The odor of methyl ethyl ketone is not desirable, and in large concentrations it is unsuitable to breathe. Common practice in commercial organizations where these finishes are applied is to equip a booth with the necessary ventilating fans to remove the fumes. The contractors finishing sheep shearlings should provide this equipment and continue finishing sheep shearling in both the polyacrylate and polyvinylchloride finishes as required by Air Corps contracts.

5. The polyvinylchloride finish is regarded as a superior treatment, particularly with reference to flexibility at low temperatures, and this finish should be supplied on sheep shearling intended for officers' flying garments.

F. O. CARROLL,
Lt. Colonel, A. C.,
Chief, Experimental
Engineering Section.

1 Incl.
Cy of ltr. fr. Insp. Officer
Central Procurement District

Signature .....

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N-6

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OHT

423 Shearling

15

AUG 15 1941

EXP-T-835 8-15-41

GENERAL ECHOLS

REFERENCE TELEPHONE CONVERSATION AUGUST 14, 1941, REGARDING SHEARLING MATERIAL FOR THE FIFTY-FOUR, ONE HUNDRED AND TWO HUNDRED GROUP PROGRAM; CONTRACTS FOR THE SHEARLING MATERIAL AND FABRICATION OF GARMENTS FOR THE FIFTY FOUR GROUP PROGRAM HAVE ALL BEEN PLACED AND ARE NOW IN PRODUCTION. SEVENTY FIVE PERCENT OF THE SHEARLING MATERIAL HAS ALREADY BEEN DELIVERED. SHEARLING MATERIAL FOR FLYING AND GROUND CREWS' CLOTHING FOR THE ONE HUNDRED GROUP PROGRAM TOTAL FOURTEEN MILLION FIVE HUNDRED THOUSAND TWO HUNDRED SQUARE FEET. NO CONTRACTS LET FOR ONE HUNDRED GROUP PROGRAM. IN CONNECTION WITH THE TWO HUNDRED GROUP PROGRAM TWENTY NINE MILLION SQUARE FEET WILL BE REQUIRED.

KENNEY

MVS

9:45 AM

File cy - 111.3 Confd.

15

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A. C. LAWRENCE LEATHER CO.

PEABODY, MASSACHUSETTS, U. S. A.

August 20, 1941

U. S. Army Air Corps
Materiel Division
Wright Field
Dayton, Ohio

Gentlemen:

In discussion last Friday, August 15th, with Mr. C. J. Cleary, we promised to forward our views on moth-proofing treatments for shearlings. Our position has already been outlined in our letters of July 7th and 31st. With further experience we feel more strongly on the subject.

Briefly, our position is that moth-proofing treatments on shearling are not necessary in light of our own experience with this material over a great many years. We have not yet seen sufficient data to become convinced that treatments offered so far will be permanent and efficacious. It seems unlikely to us that any possible damage from moths will equal a fraction of the cost of the moth-proofing treatments.

What we believe is more important from your point of view is that the proposed treatments will entail additional work and hence to some extent slow up deliveries of shearlings. Also, we do not yet have any assurance that the proposed treatments will not have serious effects on the life and properties of the shearlings. We do not see how this can be completely determined without both accelerated and actual long time tests. In other words, it seems to us premature at this time to embark on a program of one hundred percent moth-proofing of all shearlings for the Air Corps account.

We have not yet established costs of moth-proofing. Apart from the direct indicated cost for material plus labor, there is also the factor that we must treat all shearlings in our tannery due to our method of processing. This means that the rejects unsuitable for Air Corps account must be treated as well as those accepted. Consequently, the acceptable skins should properly bear the cost of treating the rejects. Further, we are not certain that the moth-proofing treatment will not adversely affect our footage yield. This would not only increase our cost, but more serious, decrease our deliveries to the Air Corps.

Summarizing, we are firmly convinced that it is unwise to proceed at this time with moth-proofing of all shearlings.

Yours very truly,
A. C. LAWRENCE LEATHER CO.

KEB:L

Technical Director

BOSTON CAMDEN PEABODY NEW YORK ST. LOUIS COLUMBUS CHICAGO MILWAUKEE HOOVERSVILLE

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R-1[illegible]-38

163

cc Assistant Chief, Materiel Division, Wright Field. ✓
Production Control
Mr. Plaut
Mr. Bell

August 22, 1941

Lieut. Col. Joseph T. Morris
Depot Liaison
War Department
Air Corps
Material Division
Wright Field
Dayton, Ohio

Dear Colonel Morris:

Confirming my talk with you yesterday after the mothproofing meeting, I related to you that the Army Air Corps would be in a better position to insist on mothproofed shearlings and operate in the same manner as Sears Roebuck & Co. For their merchandise which they want mothproofed, they buy the chemical, send it to the material suppliers and instruct them to apply it in accordance with their directions. For this service, they pay no premium for the application above the cost of the raw material, thereby assuring themselves that they are getting the job done that they require and at the minimum cost to them. The mills, of course, at first objected to this but, under pressure from Sears Roebuck & Co., finally submitted.

The cost of mothproofing your shearlings on this basis will be approximately two-thirds of the figure estimated in the letter of instructions to the shearling manufacturers.

On my trip to the Airport last night, Mr. Kasseboom of J. Laskin & Sons (the most conscientious objector to the application of mothproofing to shearlings) stated to me that if the Government purchased a mothproofing agent and sent it to them with instructions of application, they would be willing to do this without objection since they were familiar with the fact that Sears Roebuck & Co. does this same thing with some of the manufacturers of cloth from whom they purchase. He stated that they were not interested in making any money from the Government if the Government sent them the materials and the inspector ascertained that they applied the mothproofing properly. Under the circumstances, it seems that this is the logical thing for the Government to do as the Government could then select the product which they felt would do the most satisfactory job at the least cost.

I regret very much that this situation developed as it did but we are still anxious to co-operate with you and your various supply depots in overcoming the hazardous conditions that exist at the present time due to the excessive purchases which you are making. Since your most serious objector to mothproofing is willing to operate on this basis, I think it would be better

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164

for you to give this due consideration. By doing so, you will, of course, be able to secure your mothproofed shearlings at a reduced cost to you.

We await with interest your reaction and sincerely hope that our suggestion meets with your approval, as we are anxious to co-operate, and we feel that on a preferred bid we will be in a position to enjoy at least a good portion of the business.

Very truly yours,

DEBUTEX, INC.

E. W. Sweet

EWS:jh

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M[illegible]-WF-8-11-41--20M sets of 4

ORIGINAL 3 C X

Authority for Purchase

No. 192949

VENDOR

CONTRACT No. ac-2[illegible]6

PURCHASE ORDER No. 42-4252-P

DELIVERY	VIA	TERMS	METHOD	PROPOSAL
				Letter Sept 11 + Wire " 29

THE ABOVE SPACE TO BE USED BY THE PURCHASE BRANCH ONLY

Item	Quantity	Unit	Estimated Unit Price	DESCRIPTION OF MATERIAL OR SERVICES TO BE PURCHASED.	Unit Price	Total Price
	5,250	sq.ft.	.55	Shearling, sheep, Pile length 1/4" Type I, Finish II, Class A fiber in accordance with spec. 8-1138 dated Dec. 26, 1940 and amendment #2 dated July 29, 1941.	.455	
				(Above shearling to be prepared as shown on the attached addendum).		
				S		

fob Milwaukee, Wisc.

COMPLETED

mam. A-1-E

Total Estimated Cost $2,887.50 | CLASSIFICATION 21 | Total Actual Cost 2,386.75

B—FUNDS			A—FUNDS		1942	C—FUNDS		
EXPEND. ORDER No. / MISCL. CHARGE No.	Project No.	Item No.	Project No.	Item No.	Project No. 82	Class. No. 2	Item No.	Increase of Funds to Actual Cost Approved

MATERIAL TO BE OBLIGATED FOR | WANTED NOT LATER THAN October 1, 1941. (Date) | Section Chief

DELIVER TO Shipping instructions to be furnished later. | Accounting Branch

Procurement Data Number of Sets | DATE FURNISHED | Budget Officer

Remarks on the following matter marked with "X" appear in the space below:

1. [redacted] Sources of Supply X 2. Government furnished material ____ 3. Tools, patterns, etc., loaned by Government ____
4. Should Serial Number be assigned ____ 5. Point of Inspection ____ 6. Increase Existing Orders ____ 7. General Remarks: 1

1. J. Laskin & Sons Co., Milwaukee, Wisconsin.

7. Note: The mothproofed shearling obtained by this authority for purchase to be used to fabricate experimental mothproofing flying suits.

1 Inspection at Contractor's plant not req'd 9/25 Notify Central Testing Lab 10/6

Proc. Auth. No.	AC	P [redacted]	A	
Proc. Auth. No.	AC 18	P 82-02	A 0705-2	
Proc. Auth. No.	AC	P	A	

Upon due inquiry made it was found that the articles enumerated hereon could not be procured from any other branch of the Government without transfer of funds, or the immediate need of the supplies or the emergency of this station from point of supply precludes their purchase from any other branch of the Government.

Date 8/26/41

Initiated by [illegible] D, FSS

Signed: Branch Chief — J.H. HICKS, Major, A.C.

Signed: Section Chief — F.S. BOHM, Lt. Col., A.C.

J.T. JACKSON, Major, A.C.

Coordinated by Production Engineering Sec. — T.H.P. 7 — Cleared ..... Spec. Br.

Coordinated by Chief, Contract Sec.

Approved — Air Supply Br. — R. N. STAPLES, Major, Air Corps — AUG 26 19[illegible]

Approved — Budget Officer — [illegible], Major, A.[illegible]

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ADDENDUM TO AUTHORITY FOR PURCHASE NO. 1[illegible]49 DATED 8-[illegible]-41.

5,250 sq.ft. shearling to be prepared by the J. Laskin & Sons Co.

The shearling producer will prepare the shearling as follows:

1750 sq.ft. of shearling to be treated with the Demotex Inc. mothproofing preparations and each shearling stamped in not less than 3 positions with the shearling producers name and the number 1 to denote treatment by the Demotex preparation.

1750 sq.ft. shearling to be treated with the Neva-Moth Corporation of America mothproofing preparations and stamped in not less than 3 positions with the shearling producers name and the number 2 to denote treatment by the Neva-Moth preparation.

substitute Eugen mitten FF

~~that~~ 1750 sq.ft. shearling to be treated with the ~~General Dye Co. moth~~proofing preparation and stamped in not less than 3 positions with the shearling producers name and the number 3 to denote treatment by the General Dye preparation.

~~Ship to Morris Aux Depot~~

~~packing case to be marked as follows:~~

~~"Mothproofed Shearling to be held pending receipt of instructions from Maintenance Command"~~

Shipping instructions to be furnished later

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MDAC-194-WF-8-11-41-20M sets of 4

ORIGINAL 1 2

Authority for Purchase

№ 193755

VENDOR K-(fb)

CONTRACT No. ac-21877

PURCHASE ORDER No. 42-41848

DELIVERY | VIA | TERMS | METHOD | PROPOSAL

☞ THE ABOVE SPACE TO BE USED BY THE PURCHASE BRANCH ONLY ☜

Item	Quantity	Unit	Estimated Unit Price	DESCRIPTION OF MATERIAL OR SERVICES TO BE PURCHASED.	Unit Price	Total Price
1	5,250	sq.ft.	.55	Shearling, sheep, Pile length 1/4" Type I, Finish II, Class A fiber in accordance with spec. 8-113A dated Dec. 26, 1940 and amendment #2 dated July 29, 1941. ←		
				(above shearling to be prepared as shown on the attached addendum.) S		
				A-1-E		

COMPLETED ✓

Total Estimated Cost $2,887.50 CLASSIFICATION 21 Total Actual Cost

B—FUNDS			A—FUNDS		1942 C—FUNDS			Increase of Funds to Actual Cost Approved
EXPEND. ORDER No. MISCL. CHARGE No.	Project No.	Item No.	Project No.	Item No.	Project No.	Class. No.	Item No.	
					82	21		

MATERIAL TO BE OBLIGATED FOR — WANTED NOT LATER THAN October 1, 1941. (Date)

DELIVER TO Shipping instructions to be furnished later.

Procurement Data Number of Sets — DATE FURNISHED

Section Chief

Accounting Branch

Budget Officer

Remarks on the following matter marked with "X" appear in the space below:

1. [redacted] Sources of Supply X 2. Government furnished material 3. Tools, patterns, etc., loaned by Government
4. Should Serial Number be assigned 5. Point of Inspection 6. Increase Existing Orders 7. General Remarks: 1-a

1. Winslow Bros. and Smith Co., Norwood, Mass.

7. Note: The mothproofed shearling obtained by this authority for purchase to be used to fabricate experimental mothproofing flying suits.

Inspection & Contractors plant

K notify Easton Dist. 4th Pl. 5

Proc. Auth. No.	AC	P [redacted]	A	
Proc. Auth. No.	AC 18	P 42-02	A 0702 2	
Proc. Auth. No.	AC	P	A	

Upon due inquiry made it was found that the articles enumerated hereon could not be procured from any other branch of the Government without transfer of funds, or the immediate need of these supplies or the remoteness of this station from point of supply precludes their purchase from any other branch of the Government.

Date	Initialed by	Signed—Branch Chief	Signed—Section Chief
8-26-41	J.L. JACKSON, Major, A.C.	J.T. HICKS, Major, A.C.	[illegible], Lt. Col., A.C.

Coordinated by Production Engineering Sec.	Coordinated by Chief, Contract Sec.	Approved—Accounting Br.	Approved—Budget Officer
Cleared Spec. Br.			

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ADDENDUM TO AUTHORITY FOR PURCHASE NO. 193755 DATED 8-26-41

5,250 sq.ft. shearling to be prepared by the Winslow Bros. and Smith Co.

The shearling producer will prepare the shearling as follows:

1750 sq.ft. of shearling to be treated with the Demotex Inc. mothproofing preparation and each shearling stamped in not less than 3 positions with the shearling producers name and the number 1 to denote treatment by the Demotex preparation.

1750 sq.ft. shearling to be treated with the Neva-Moth Corporation of America mothproofing preparation and stamped in not less than 3 positions with the shearling producers name and the number 2 to denote treatment by the Neva-Moth preparation.

1750 sq.ft. shearling to be treated with the General Dye Co. mothproofing preparation and stamped in not less than 3 positions with the shearling producers name and the number 3 to denote treatment by the General Dye preparation.

~~this to match Air Corps~~

~~packing case to be lined as follows:~~

~~Mothproof flannel to be laid~~

~~pinking except~~

~~[illegible]~~

Shipping instructions to be furnished later

Purchase Branch
Wright Field

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ORIGINAL

Authority for Purchase

No. 192950

VENDOR Stephen

CONTRACT No. OC-2452

PURCHASE ORDER No. 42-4077-P

DELIVERY 3 wks VIA Govt B/L TERMS Net METHOD Oct 1 1941 PROPOSAL

THE ABOVE SPACE TO BE USED BY THE PURCHASE BRANCH ONLY

Item	Quantity	Unit	Estimated Unit Price	DESCRIPTION OF MATERIAL OR SERVICES TO BE PURCHASED	Unit Price	Total Price
1	3,550	sq.ft.	.55	Shearling, sheep, Pile length 1/4" Type I, Finish II, Class A fiber in accordance with spec. 8-[illegible] B dated Dec. 20, 1940 and amendment #2 dated July [illegible], 1941.		
				COMPLETED ✓		
				(Above shearling to be prepared as shown on the attached addendum).		
				for Winchester, New Hampshire		
				MBM A-1-E		
					(plh)	

Total Estimated Cost $2,887.50 CLASSIFICATION 21 Total Actual Cost 2283.75

B—FUNDS A—FUNDS 1942 C—FUNDS

EXPEND. ORDER No. / MISCL. CHARGE No. | Project No. | Item No. | Project No. | Item No. | Project No. | Class. No. | Item No.

Increase of Funds to Actual Cost Approved

MATERIAL TO BE OBLIGATED FOR

WANTED NOT LATER THAN October 1, 1941. (Date)

Section Chief

DELIVER TO Shipping instructions to be furnished later.

Accounting Branch

Procurement Data Number of Sets

DATE FURNISHED

Budget Officer

Remarks on the following matter marked with "X" appear in the space below:

1. Possible Sources of Supply X 2. Government furnished material ___ 3. Tools, patterns, etc., loaned by Government ___
4. Should Serial Number be assigned ___ 5. Point of Inspection ___ 6. Increase Existing Orders ___ 7. General Remarks:

1. A.C. Lawrence Leather Co., Peabody, Mass.

7. Note: The mothproofed shearling obtained by this authority for purchase to be used to fabricate experimental mothproofing flying suits.

Inspection at Contractor's plant West End Boat Work 9/25 Destroy

K

Proc. Auth. No.	AC	P	[illegible]	A	
Proc. Auth. No.	AC 18	P	42-02	A	0705-2
Proc. Auth. No.	AC	P		A	

Upon due inquiry made it was found that the articles enumerated hereon could not be procured from any other branch of the Government without transfer of funds, or the immediate need of these supplies or the remoteness of this station from point of supply precludes their purchase from any other branch of the Government.

Date	Initiated by	Signed—Branch Chief	Signed—Section Chief
8/26/41	UNIT D, FSS J. [illegible] JACKSON, Major, A.C.	J.H. HICKS, Major, A.C.	F.S. [illegible], Lt. Col., A.C.

Coordinated by Production Engineering Sec.	Coordinated by Chief, Contract Sec.	Approved by Accounting Officer	Approved—Chief Air Corps
[illegible] Spec. Br.	H. N. SEARLES Major, Air Corps	AUG 26 1941	E.H. WHITE, Major, A.C.

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ADDENDUM TO AUTHORITY FOR PURCHASE NO. 192950 DATED 8-26-41.

5,250 sq.ft. shearling to be prepared by the A.C. Lawrence Leather Co.

The shearling producer will prepare the shearling as follows:

1750 sq.ft. of shearling to be treated with the Demotex Inc. mothproofing preparations and each shearling stamped in not less than 3 positions with the shearling producers name and the number 1 to denote treatment by the Demotex preparation.

1750 sq.ft. shearling to be treated with the Neva-Moth Corporation of America mothproofing preparations and stamped in not less than 3 positions with the shearling producers name and the number 2 to denote treatment by the Neva-Moth preparation.

1750 sq.ft. shearling to be treated with the General Dye Co. Edison N.J. mothproofing preparation and stamped in not less than 3 positions with the shearling producers name and the number 3 to denote treatment by the General Dye preparation.

Ship to Mobile Air Depot

Packing cases to be marked as follows:

"Mothproofed shearling"

Await instructions from Materiel Command

Shipping instructions to be furnished later

RECEIVED SEP 27 1941 Purchase Branch Wright Field

RECEIVED SEP 30 Purchase Wright

RECEIVED AUG 26 1941

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CONT-I-423 9-2-41

423

CONTRACT SECTION

EXTRA PRIORITY

RE TELETYPE CS-898 DATED 8-30-41 COVERING SHEEP SHEARLING. THREE CONTRACTS FOR SHEEP SHEARLING ARE IN PROCESS. CONTRACT AC-19613, PLACED WITH A. C. LAWRENCE LEATHER COMPANY NOW AT CONTRACTORS FOR SIGNATURE AS FOLLOWS:

305,250 SQ. FT. TYPE ONE, FINISH TWO, CLASS A, PILE LENGTH 1/4", U. S. ARMY SPEC. 8-113-B AT 40-1/2 CENTS PER SQUARE FOOTE, TOTAL $123,623.25.

16,400 SQ. FT. TYPE ONE, FINISH TWO, CLASS A, PILE LENGTH 3/8", 43-1/2 CENTS SQUARE FOOT, TOTAL $7,134.00.

202,800 SQ. FT. TYPE ONE, FINISH TWO, CLASS A, PILE LENGTH 5/8", 49 CENTS PER SQUARE FOOT, TOTAL $99,372.00

93,800 SQ. FT. TYPE ONE, FINISH TWO, CLASS A, PILE LENGTH 3/4", 53 CENTS PER SQUARE FOOT, TOTAL $49,714.00.

120,000 SQ. FT. TYPE ONE, FINISH TWO, CLASS A, PILE LENGTH 1", 57 CENTS PER SQUARE FOOT, TOTAL $68,856.00.

1,110,000 SQ. FT. TYPE TWO, FINISH TWO, CLASS A, PILE LENGTH 3/8", 39-1/2 CENTS PER SQUARE FOOT, TOTAL $438,450.00

TOTAL THIS CONTRACT $787,152.25. THIS CONTRACT NEGOTIATED SOMETIME AGO AND CONTRACTOR WAS INSTRUCTED TO PROCEED AS RAPIDLY AS POSSIBLE WITH DELIVERY. RECORDS SHOW CONTRACT 11 PERCENT COMPLETE. ALL ITEMS CONTRACT AC-19614 PLACED WITH J. LASKIN & SONS CORP. NOW AT OFFICE CHIEF OF AIR CORPS FOR APPROVAL, COVERS FOLLOWING QUANTITIES:

21

300,000 SQ. FT. SHEEP SHEARLING, TYPE ONE, FINISH TWO, CLASS A,

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FILE LENGTH 1/4", SPEC. 8-113-B, 44 CENTS PER SQUARE FOOT, TOTAL $132,000.00.

16,400 SQ. FT. TYPE ONE, FINISH TWO, CLASS A, PILE LENGTH 3/8", 44 CENTS PER SQUARE FOOT, TOTAL $7,216.00.

202,000SQ. FT. TYPE ONE, FINISH TWO, CLASS A, PILE LENGTH 5/8", 48-1/2 CENTS PER SQUARE FOOT, TOTAL $97,970.00.

92,500 SQ. FT. TYPE ONE, FINISH 2, CLASS A, PILE LENGTH 3/4", 52-1/2 CENTS PER SQUARE FOOT, TOTAL $48,562.50.

120,000 SQ. FT. TYPE ONE , FINISH TWO, CLASS A, PILE LENGTH 1", 56-1/2 CENTS PER SQUARE FOOT, TOTAL $67,800.00.

1,110,000 SQ. FT. TYPE TWO, FINSIH TWO, CLASS A, PILE LENGTH 3/8", 39 CENTS PER SQUARE FOOT, TOTAL $432,900.00. TOTAL ENTIRE CONTRACT $786,448.50.

DELIVERY THIS CONTRACT SHOWS 12 PERCENT COMPLETE AT THIS WRITING.

ALL ITEMS CONTRACT AC-19615 PLACED WITH WINSLOW BROS. & SMITH NOW AT CONTRACTORS FOR SIGNATURE. COVERS FOLLOWING QUANTITIES:

300,000 SQ. FT. SHEET SHEARING TYPE ONE, FINISH TWO, CLASS A, PILE LENGTH 1/4" SPEC. 8-113-B. 44 CENTS PER SQUARE FOOT, TOTAL $132,000.00,

16,400 SQ. FT. TYPE ONE, FINSIH TWO, CLASS A, PILE LENGTH 3/8", 44 CENTS PER SQUARE FOOT, TOTAL $7,216.00.

202,800 SQ. FT. TYPE ONE, FINISH TWO, CLASS A, PILE LENGTH 5/8", 48-1/2 CENTS PER SQUARE FOOT, TOTAL $98,358.00.

92,500 SQ. FT. TYPE ONE, FINISH TWO, CLASS A, PILE LENGTH 3/4", 52-1/2 CENTS PER SQUARE FOOT, TOTAL $48,562.50.

120,000 SQ. FT. TYPE ONE, FINISH TWO, CLASS A, PILE LENGTH 1", 56-1/2 CENTS PER SQUARE FOOT, TOTAL $67,800.00

1,110,000 SQ. FT. TYPE TWO, FINSIH TWO, CLASS A, PILE LENGTH 3/8", 39 CENTS PER SQUARE FOOT, TOTAL $432,900.00. TOTAL ENTIRE CONTRACT $786,836.50.

NO DELIVERIES MADE UP TO THIS WRITING HOWEVER RECORDS INDICATE DELIVERY WILL START END OF AUGUST. NO REPORT RECIVED AS TO QUANTITY DELIVERED AT THIS TIME.

CONTRACTS 19613 AND 19615 WILL BE FORWARDED TO YOUR OFFICE FOR APPROVAL AS SOON AS RECEIVED FROM CONTRACTORS.

CONTRACT SECTION

KJM

10:54 AM

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N-8

~~Maj. L. Knox~~ 52

Files

Prod Eng.

RECEIVED

MATERIAL DIVISION WRIGHT FIELD

SEP 6 1941

ORIGINAL

423-

Shearling

C-84 9/6/41

ASSISTANT CHIEF MATERIEL DIVISION

O.P.M. IS CALLING A CONFERENCE AT 2 PM SEPTEMBER 11, 1941, WITH RESPECT TO THE SUPPLY OF SHEARLINGS. IT IS NOW ANTICIPATED THERE WILL BE A SHORTAGE AND IT IS REQUESTED THAT AN ESTIMATE OF OUR REQUIREMENT THROUGH THE FISCAL YEAR 1943 SPECIFICATIONS REQUIREMENTS BE PREPARED FOR SUBMISSION AT THIS MEETING. YOU WILL ALSO DELEGATE SUCH PERSONNEL AS YOU MAY DESIRE TO ATTEND THIS MEETING. COLONEL VOLANDT WILL REPRESENT THIS OFFICE: WRIGHT FIELD PERSONNEL WILL BE IN ROOM 4125 MUNITIONS BUILDING NOT LATER THAN 10:00 A.M., SEPTEMBER 11, 1941 FOR CONFERENCE PRIOR TO ATTENDING JOINT MEETING AT 2:00 P.M.

ECHOLS

DK

copies sent to Field Service and Exp. Eng. 9-9-41

11:50 AM

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Mat. Div A. C. 266a-Wright Field 10-13-39-30M

53

WAR DEPARTMENT
AIR CORPS, MATERIEL DIVISION

FOM:iej-54-6063

MEMORANDUM REPORT ON

SUBJECT: Sheep Shearling. 423

Date September 20, 1941

SECTION Experimental Engineering

SERIAL No. EXP-M-54-602-196A

Contract No.
Expenditure Order No. 602-1-
Purchase Order No.

A. Purpose.

1. To report on conference with Colonel W. F. Volandt, Office, Chief of the Air Corps, and Major Joseph W. Byron, Office of Production Management, Washington, D. C., regarding Air Corps requirements for sheep shearling for the fiscal years 1942 and 1943.

B. Factual Data.

1. Present at the conference were:

Colonel W. F. Volandt, Office, Chief of the Air Corps.

Colonel Charles Sanderson, Marine Corps.

Lt. Colonel J. M. Fellows, Marine Corps.

Lt. Colonel M. Feldman, Quartermaster Corps.

Major Joseph W. Byron, Office of Production Management.

Major J. L. Jackson, Air Corps, Wright Field.

Lieutenant E. C. Beck, Bureau of Aeronautics.

Mr. M. F. McCown, Bureau of Aeronautics.

Mr. H. M. Florshiem, Office of Production Management.

Mr. Willard Helburn, Office of Production Management.

Mr. C. J. Cleary, Air Corps, Wright Field.

Mr. R. L. Whitacre, Air Corps, Wright Field.

Mr. F. G. Manson, Air Corps, Wright Field.

DATE
CHF. DIV.
TECH. EXC.
ADM. EXC.
C. O.
BUD. OFF.
EXP. ENG.
PROD. ENG.
CONTRACT
INSP.
F. S. S.
I. P. S.
OTHERS

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M. R. No. EXP-M-54-602-196A
September 20, 1941.

B. Factual Data. (Cont'd)

2. A preliminary conference was held in Colonel W. F. Volandt's office with only the Air Corps representatives present, at which time the Air Corps requirements for shearling for the fiscal years 1942 and 1943 were set up. These requirements included 16,000,000 sq. ft. of shearling for 1942 and 12,000,000 sq. ft. of shearling for 1943, excluding possible Air Corps expansion during 1943.

3. Following the meeting of the Air Corps representatives, a conference was held with the Office of Production Management attended by all the representatives referred to in paragraph 1. During this conference the previously set up Air Corps shearling requirements were furnished the Office of Production Management. A discussion of the available world supply from various sources resulted in the following yearly estimates:

a. 12,187,000 sq. ft. domestic supply.

b. 7,000,000 sq. ft. importable from Australia, of which only 50% is suitable for defense needs.

c. 6,300,000 sq. ft. importable from South Africa, of which only 60% is suitable for defense needs.

d. 2,550,000 sq. ft. importable from South America, of which only 75% is suitable for defense needs.

This totals 28,037,000 sq. ft. of shearling available for National Defense, yearly.

4. It was indicated by Mr. H. M. Florshiem, Office of Production Management, that, based on the information furnished at this conference, a meeting of all shearling tanners will be called to advise them of the total 1942 and 1943 shearling requirements for National Defense and to determine their facilities for meeting these requirements.

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M. R. No. EXP-M-54-602-196A
September 20, 1941.

B. Factual Data. (Cont'd)

5. A request was made by Mr. Florshiem that sample swatches as covered by Air Corps specifications be submitted to his office for reference.

F. G. Manson

RANDOLPH P. WILLIAMS, Lt. Col. A.C.
Equip. Lab.

F. G. CARROLL, Lt. Col. A. C.
Chief, Expr. Engr. Sec.

Office of Prod. Management.
Chief, Mat. Div. Att: Exec.
Chief, Contract Sec.
Chief, Prod. Engr. Sec.
Chief, P. S. Sec.
Mr. Cleary, Mat. Lab.
Central Files.

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154

JEG:hmr
10:00 A.M.

September 24, 1941

F. O. CARROLL, Lt. Colonel, A.C.

ENGINEERING SECTION

EXP-T-999. RE TELETYPE EX-665, DATED 9-22-41, PERTAINING TO MOTHPROOFING OF SHEEP SHEARLING, NO TESTS HAVE BEEN ACCOMPLISHED AT WRIGHT FIELD ON MOTHPROOFING COMPOUNDS, BUT ADOPTION OF MATERIALS RECOMMENDED IN U.S. DEPARTMENT OF AGRICULTURE CIRCULAR NO. 3, "INSECTS IN RELATION TO NATIONAL DEFENSE", HAS BEEN CONSIDERED FOR THE MOTHPROOFING OF SHEEP SHEARLING ONLY. SERVICE TEST QUANTITIES ARE BEING PROCESSED WITH EULAN NK, DEMOTEX, AND NEVAMOTH, AFTER WHICH TESTS, DECISION WILL BE MADE AS TO THE ADVISABILITY OF MOTHPROOFING SHEEP SHEARLING. LATEST INFORMATION OBTAINABLE ON THESE MATERIALS IS PRESENTED IN MEMORANDUM REPORT EXP-M-56-3905.

EXPERIMENTAL ENGINEERING SECTION

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MDAC-265 A-WF-1-26-41-200M

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154A

INTER-OFFICE MEMORANDUM

WAR DEPARTMENT, AIR CORPS
Office, Assistant Chief
Materiel Division

JGG:eds:56
Wright Field, Dayton, Ohio
Date October 6, 1941

TO: Chief, Contract Section, Wright Field.

SUBJECT: Mothproofing Sheep Shearlings as Provided for under Authority for Purchase Nos. 192950, 192949, 193755

1. It was originally intended that Eulan NK, product of the General Dye Stuff Corporation, would be used in mothproofing an experimental lot of sheep shearlings to determine the effectiveness and favorability of adopting this finish for Air Corps use. Information has been obtained with reference to the application of Eulan NK and the manufacturer has determined the present tanning procedure will not permit the use of this product.

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2. Item 3 on each of the subject Authorities for Purchase should be amended to eliminate Mitten FF and substitute Mothex WX. This action should be taken as quickly as possible to expedite the proposed service test on this material to determine the suitability for such treatment with reference to its adoption for future procurement.

F. O. CARROLL,
Lt. Colonel, A. C.,
Chief, Experimental
Engineering Section.

Signature

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LEHIGH UNIVERSITY

WILLIAM H. CHANDLER CHEMISTRY LABORATORY

BETHLEHEM PENNSYLVANIA

October 22, 1941

Mr. E. W. Sweet
Demotex, Inc.
683 Fifth Avenue
New York, N. Y.

Dear Mr. Sweet:

I am enclosing a report in duplicate for the work which we agreed to do for you on shearlings. This work is as complete as necessary in my judgment. It covers my personal opinions of the leather as it arrived in the laboratory and further covers the physical testing of the leather under accentuated conditions which might prevail in very cold countries and in the tropics.

As a summary of the report I might state rather positively that I consider the "Demotex-ed" leather softer, rounder, and fuller than the samples not so treated. As far as any accentuated test is concerned I firmly believe that this Demotex leather will stand up as well as the untreated leather in a climate which is hot with a prevailing high humidity. I further believe that this leather will stand up in cold storage as well if not better than the untreated leather.

In looking over all of the physical tests both for tensile strength and for shrinkage temperature I believe that there is no real difference between the treated and untreated leather. While there may be differences in the shrinkage temperature or in the tensile strength of the leather any differences that exist between the treated and untreated leather is far overshadowed by the actual differences that exist between the skins themselves.

I might explain that this shrinkage temperature is a test that was developed here in this laboratory and has been used in many other places since the development. This shrinkage temperature is a measurement of the degree of leathering. The

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higher this shrinkage temperature the better the tannage. It has been found through a great deal of experimentation that anything which will cause this shrinkage temperature to decrease decreases the tannage and therefore the degree of leathering. You will note in the physical test data that the shrinkage temperature only changes a few degrees in any case and further that this shrinkage temperature is somewhat different between skins themselves.

Personally it is my opinion that the "Demotex-ing" treatment does not change in any way the leather itself. In all these treatments I could notice no change in the use of the polyacrylate coating treatment, that is I could note no reaction between the "Demotex" and the coating. I believe that these skins will stand up under storage in both dry and moist conditions and under practically any reasonable temperature. I think that you may feel free to use this treatment without looking for any further trouble.

If you should run up against any questions regarding this report I shall be only too happy to expand upon it.

Very truly yours,

Edwin R. Theis

E. R. Theis.

ERT:vds
Enclosures 2

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Shearling samples obtained from the Berlin Tanning and Manufacturing Company were tested. Ten half skins were "Demotex-ed" while another ten half skins were not so treated. Half the skins in the treated and untreated groups were finished on the flesh side with a polyacrylate resin.

The skins received in this laboratory were judged by the writer according to "feel" and appearance and according to physical tests made in this laboratory. It was the judgment of the writer that the skins having the "demotex" treatment were "rounder", "fuller"and "softer" than the skins having no such treatment. The writer further felt that the "demotex" skins were better from physical appearance viewpoint.

In order to correlate physical judgment, certain laboratory tests were made -- namely, shrinkage temperature of the leather and tensile strength of the leather treated under various conditions to accelerate the effects of aging. The shrink temperature is a measure of the degree of "leathering" and measures very accurately any change which might occur in such tests. As a corrolary to the shrinkage temperature, tensile strength tests were made on all samples.

I

Tests were made upon the half skins as they were received and are as follows --

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			Tensile Strength lbs./sq. in.	
			D°	MD°°
			1400	1400
			1400	1400
			1700	1290
			1150	1250
		84.5	1300	1350
		84.1	1370	1298

		Tensile Strength lbs./sq. in.	
		D°	MD°°
	85.5	1350	1400
	86.2	1080	1250
	86.5	600	1270
	86.0	1300	1500
	84.0	1170	1380

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Tests were made using ultraviolet light for eight hours on dry skin pigment. Such exposure to ultraviolet light should be equivalent to several years actual aging.

Coated Samples

	Shrink Temperature °C		Tensile Strength lbs./sq. in.	
	D*	MD**	D*	MD**
1	76.0	78.0	1500	1350
2	80.0	83.0	1100	1350
3	77.0	83.0	1550	1100
4	81.0	85.0	1150	1300
5	82.0	86.0	1100	1150
Average	78.2	82.4	1240	1250

Uncoated Samples

	Shrink Temperature °C		Tensile Strength lbs./sq. in.	
	D*	MD**	D*	MD**
7	80.0	78.1	1400	1450
8	75.5	75.5	600	750
10	79.5	82.0	700	1250
11	74.0	75.0	1600	1500
Average	76.0	77.1	1075	1240

*treated with "Demotex"
**untreated with "Demotex"

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XIX

Samples were treated wet using ultraviolet light for eight hours. This is a severe test.

Demoted Samples

	Shrink Temperature °C		Tensile Strength lbs./sq. in.	
	D*	MD**	T*	MD**
1	80.6	82.8	1350	1850
2	80.9	84.5	1150	1350
3	79.8	84.8	1650	1850
5	80.5	84.5	1050	1900
6	85.5	85.0	1000	1350
Average	81.1	84.3	1240	1660

Uncoated Samples

	Shrink Temperature °C		Tensile Strength lbs./sq. in.	
	D*	MD**	D*	MD**
7	80.5	79.0	1350	1400
8	86.0	86.1	800	700
10	86.5	87.0	700	700
11	78.0	79.5	1850	1450
Average	82.2	82.4	1040	1060

*treated with "demoten"
**untreated with "Demoten"

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IV

Samples were placed in water and then frozen with the water for 48 hours. They were then allowed to thaw and were then tested.

Coated Samples

	Shrink Temperature °C		Tensile Strength lbs./sq. in.	
	D*	ND**	D*	ND**
1	82.3	84.1	1580	1710
2	85.0	85.0	1610	1500
3	83.0	86.0	2100	1920
5	81.0	83.0	1400	1500
6	82.9	86.1	1750	1830
Average	82.8	84.8	1690	1690

Uncoated Samples

	Shrink Temperature °C		Tensile Strength lbs./sq. in.	
	D*	ND**	D*	ND**
7	79,8	86.1	2250	2200
8	81.4	87.0	900	1130
10	83.0	88.0	1350	1500
11	79.3	81.8	2100	1900
Average	80.9	85.6	1650	1682

*treated with "Dunoter"
**untreated with "Dunoter"

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V

Samples were treated in an oven at 95° C -- relative humidity 30 % for 48 hours and then tested.

Coated Samples

	Shrink Temperature °C		Tensile Strength lbs./sq. in.	
	D*	MD**	D*	MD**
1	72.8	78.9	890	1440
2	74	73.5	1000	1230
3	66.5	78.0	1670	1160
5	78.8	73.0	1370	1300
6	76.0	76.8	1370	1680
Average	73.6	76.0	1260	1362

Uncoated Samples

	Shrink Temperature °C		Tensile Strength lbs./sq. in.	
	D*	MD**	D*	MD**
7	79.0	74.0	2100	1640
8	69.8	76.8	770	1040
10	68.0	73.0	870	1460
11	59.0	69.0	1090	1690
Average	68.9	73.2	1208	1457

*treated with "Demotex"
**untreated with "Demotex"

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VI

Samples were subjected to 100 percent relative humidity at 65° C for 48 hours before testing.

Coated Samples

	Shrink Temperature °C		Tensile Strength lbs./sq. in.	
	D*	MD**	D*	MD**
1	82.1	83.5	1375	1500
2	86.1	85.5	1460	1500
3	82.5	84.8	2000	1600
5	83.2	86.0	1000	1530
6	83.4	80.8	1540	1540
Average	83.9	84.1	1475	1575

Uncoated Samples

	Shrink Temperature °C		Tensile Strength lbs./sq. in.	
	D*	MD**	D*	MD**
7	85.0	86.9	2000	1920
8	82.4	80.8	1030	1150
10	82.0	84.3	1250	1475
11	78.5	76.0	1530	1300
Average	81.9	82.0	1452	1586

*treated with "Demotex"
**untreated with "Demotex"

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Conclusions

In no case were we able to note a real and distinct difference in physical tests between the "Demotex-ed" and untreated samples. The differences existing between the treated and untreated skins were smaller than the differences existing between the skins themselves. In no case did we find any significant change taking place under any of the conditions which could be interpreted as the effect of the "Demotex".

It is the writers opinion that the skins given the "Demotex" treatment are in just as sound condition (if not better) as the skins not treated. The writer would not expect, high humidity, temperature either warm or cold, or light-ultraviolet or infrared-to have any deleterious effect which would not obtain in the untreated skins. It is certain that we would expect the "Demotex-ed" skins to stand up under storage conditions just as well as the skins not given this treatment.

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MDAC-265-A-WT-6-28-41-200M

2-14

INTER-OFFICE MEMORANDUM

WAR DEPARTMENT, AIR CORPS
Office, Assistant Chief
Materiel Division

CJC:hmr

Wright Field, Dayton, Ohio
Date November 12, 1941

TO: Chief, Field Service Section,
Wright Field.

SUBJECT: Mothproofing Sheep Shearlings.
(Fiscal Year 1942 Program).

1. Information reference the adequacy of the Demotex method of mothproofing is presented in the inclosures submitted herewith.

2. In view of the nature of the findings in these inclosures, it is believed advisable to have part of the current procurement mothproofed in quantities greater than the 240 suits previously agreed upon. A definite recommendation of mothproofing at least 100,000 feet of each of the types under procurement is made.

3. The following mothproofing materials can be obtained: Demotex from the Demotex Company; Mitin FF from the Geigy Company; and, Mothex W Extra from the General Dyestuff Corporation.

4. It is requested that the inclosures listed below be returned to the Materials Laboratory.

F. O. CARROLL,
Lt. Colonel, A. C.,
Chief, Experimental
Engineering Section.

4 Incls.
Incl. 1 - Ltr. fr. Lehigh Univ. dated 10/22/41 w/2 incls. (Photostat)
Incl. 2 - Report No. 21228 fr. U. S. Testing Co.
Incl. 3 - Report No. 21321 fr. U. S. Testing Co.
Incl. 4 - Draft of Proposed Amendment of Sheep Shearling Spec. fr. Quartermaster Corps (Okylid).

Signature .....

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CJC:hmr
1:10 p.m.

November 28, 1941

F. O. CARROLL,
Lt. Colonel, A. C.

EXECUTIVE.

EXP-T-991. RE TELETYPE E-368, DATED 11-26-41, I.O.M. FROM YOUR OFFICE, DATED 11-6-41, SUBJECT, SHEARLINGS, AND 1ST IND., DATED 11-13-41, TO BASIC LETTER FROM OFFICE OF THE QUARTERMASTER GENERAL, DATED 11-10-41, SUBJECT, TANNAGE OF LAMBSKINS, THE FOLLOWING INFORMATION IS OFFERED: EXPERIENCE AT WRIGHT FIELD INDICATES TANNAGE USED AT PRESENT ON SHEARLINGS HAS BEEN SATISFACTORY OVER A PERIOD OF MORE THAN 10 YEARS, AND DELIVERIES ARE BEING RECEIVED UNDER CURRENT ORDERS WITHOUT OBJECTION OR DIFFICULTY. SUGGESTED THAT ANY CHANGE IN TANNAGE OR SPECIFICATION REQUIREMENTS FOR SHEEP SHEARLINGS BE REFERRED TO TECHNICAL OFFICERS OF USING SERVICES FOR EXPERIMENTAL AND SERVICE TESTS WITHOUT INTERFERING WITH PRESENT PRODUCTION ACTIVITIES. PERSONNEL FROM WRIGHT FIELD WILL BE PRESENT FOR DECEMBER 2 MEETING REFERENCE THIS SUBJECT.

TECHNICAL EXECUTIVE

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2-18

162

SUBJECT: Tonnage of Lambskins.

(4-A)

1st. Ind.

War Department, Materiel Division, O. C. A. C., Washington, D. C. November 13, 1941. To: Assistant Chief Materiel Division, Wright Field, Dayton, Ohio.

1. For comment and recommendation.

W. F. Volandt,
Colonel, Air Corps,
Assistant.

CJC:hmr

2nd Ind.

Experimental Engineering Section, Wright Field, December 6, 1941.
To: Chief, Materiel Division, O.C.A.C., Washington, D. C.
Attention: Executive.

1. The matter of tonnage and other specification requirements for shearlings for the Air Corps and the Quartermaster Corps was discussed at a meeting at the Quartermaster Corps in Washington on December 2, 1941.

2. Final decision of the Quartermaster Corps was to initiate a Q.M. specification similar to that developed by the Air Corps, No. 8-113, with the revisions considered necessary by the Quartermaster Corps.

3. It is suggested that the Quartermaster Corps be advised that Specification No. 8-113-C is a War Department specification rather than an Air Corps specification, and, as such, new requirements for other Government agencies should be added to the specification.

F. O. CARROLL,
Lt. Colonel, A. C.,
Chief, Experimental
Engineering Section.

1 Incls
I.O.M. dated 11/6/41
from OCMO w/5 incls.

Signature .....

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G-1

Reference: EAH:hmr:56

December 19, 1941

American Velour Mills, Inc.,
Bound Brook, New Jersey.
Attention: Mr. H. Goldstein.

Gentlemen:

Receipt is acknowledged of your letter of November 25, 1941, regarding pile fabrics used by the Air Corps.

At the present time, the only pile fabric contemplated for Air Corps use is a substitute for sheep shearlings. There are no specifications issued for this type of material because it is still in the experimental stage. Samples of this fabric using alpaca have been submitted to the Materiel Division; however, the use of this fiber has been discouraged due to its limited supply and strategic nature.

The Materiel Division is interested in obtaining data regarding the thermal conductivity of this material in comparison with natural sheep shearlings.

Very truly yours,

DEC 20 1941

F. O. CARROLL,
Lt. Colonel, A. C.,
Chief, Experimental
Engineering Section.

DATE
CHF. DIV.
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ADM. EXC.
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WAR DEPARTMENT
Philadelphia Quartermaster Depot
Office of the Commanding General
2800 South 20th St.
Philadelphia, Pa.

December 31, 1941

Ref.:#423 PD-RD (Shearling)

Alexander Smith&Sons,
Yonkers,
New York

Gentlemen:

Receipt is acknowledged of your letter of December 29, 1941.

The Army Quartermaster Corps has procured several million feet of shearling in the past year, for use in parka coat linings and for trimming the winter cap. The Army Air Corps, however, has purchased many times this quantity for use in the manufacture of flying and ground crew suits.

There has been submitted to this Depot in the past, and probably also to the Air Corps, a number of pile fabrics for possible use as substitutes for natural shearling. None of these have as yet proved practical due to excessive cost, lower insulating properties,etc.

As you probably know, the entire shearling production has been allocated to the Armed Services, and although it is expected that it will be necessary to use lower grade skins, this Depot does not anticipate any great difficulty in obtaining shearling requirements in the near future. However, it is suggested that you write the Chief of Materiel Division, U.S.Army Air Corps, Wright Field, Dayton, Ohio, for their reaction.

Have done
12/29/41

In the event that you develop a practical substitute for shearling, this Depot would be interested in having samples submitted.

For the Commanding General:

Very truly yours,

CHARLES E. LYNCH
1st Lieut., Q.M.C.
Assistant

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OFFICE OF PRODUCTION MANAGEMENT
SOCIAL SECURITY BUILDING
WASHINGTON, D. C.

OFFICE OF
DOUGLAS C. MacKEACHIE
DIRECTOR OF PURCHASES

January 13, 1942

Chief, U.S. Army Air Corps
Room 4129 Munitions Building
Washington, D. C.

Attention: Col. A. F. Volandt

Dear Sir:

Confirming conversations between Col. Volandt and Major Byron, Chief of Leather and Shoe Section of this Division, we are giving below a brief outline of the supply and military requirements of sheep shearlings based on the best information obtainable at the present.

Including prospective receipts of imported shearlings as well as our own domestic crop, the total supply for the calendar year will probably not exceed 40,000,000 feet. Based on present specifications, about sixty percent of this amount, or 24,000,000 feet, would be suitable for military requirements. We are informed that the extent of these requirements, as estimated for the calendar year 1942, is 29,500,000 feet, plus a further requirement for the Quartermaster Corps which has not been quantitatively estimated as yet. Bearing in mind that the above estimates in military requirements probably do not reflect the full effects of the all-out program, it is obvious that the situation must be dealt with promptly to augment the supply and, if possible, to relax specifications so as to utilize a greater percentage of the total available quantity.

There is a possibility that the supply of shearlings can be increased by arranging to employ skins bearing long wool from which the wool is normally pulled, leaving a skin suitable for sheepskin leather. If these are to be used, the wool, of course, will have to be clipped to the desired length and some loss of value would result.

A further possibility is the utilization of so-called fur fabric or wool plush of suitable pile length which, we understand, is being tested by the Quartermaster and, possibly, the Air Corps Field.

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We are energetically pursuing all of these matters with a view to assuring satisfactory supply for the armed services, and it is particularly in connection with the specifications and the possible substitution of wool plush for certain of the military requirements that we are writing to enlist your assistance.

We have employed Mr. W. W. Youngren as a Special Consultant on shearling garments and it would be very much appreciated if you would issue the necessary instructions to Wright Field to permit Mr. Youngren to call on the procurement officer concerned with a view to discussing the broadening of present specifications and the possibilities of substitution of wool plush, if any exist, in connection with Air Corps requirements.

Yours very truly,

Douglas C. MacKeachie

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WAR DEPARTMENT
OFFICE OF THE UNDER SECRETARY
WASHINGTON, D. C.

January 14, 1942.

MEMORANDUM FOR THE OFFICE, CHIEF OF THE AIR CORPS

Attention: Colonel W. F. Volandt, A.C.,
Liaison Officer to the
Commodities Division, O.U.S.W.

Subject: Shearling Skin Requirements for
Calendar Years 1942 and 1943.

1. In view of the expanded aircraft program, Air Corps requirements for sheep shearling skins no doubt have been increased. It is felt, therefore, that a recomputation of requirements for shearling skins in the calendar years 1942 and 1943 should be made at this time.

2. These requirements should be reported in square feet of skins and it would be helpful if the requirements for each year are reported separately.

3. It is important that this information be reported to the Commodities Division, Planning Branch, O.U.S.W., not later than January 23, 1942.

CLIFFORD V. MORGAN,
Major, Medical Corps,
Chief, Commodities Division,
Planning Branch.

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113

COPY

UNITED STATES SENATE
Committee on Military Affairs

January 21, 1942

Brig. Gen. Olive P. Echols,
Chief of the Material Division,
Army Air Corps,
War Department,
Washington, D.C.

My dear General Echols:

You will recall that I talked to you on the phone some several days ago concerning the matter of using Demotex, a chemical, in connection with moth proofing, and the treatment of sheep shearling.

In this connection you will recall further that you were good enough to discuss this matter at some length with Mr. E. W. Sweet, an official of Demotex, Inc.

I have just this minute concluded another conference with my friend, Mr. Sweet, who advises me that in response to an inquiry directed to Wright Field, they have informed you they are now going ahead with a field service test of Demotex garments.

I am writing now to request, my dear General Echols, that in view of the information which has already been gathered by Mr. Sweet and by Wright Field, as well as by outstanding laboratories and chemists of the country, including the Bureau of Entomology of the Department of Agriculture, you will again take a few minutes to review the matter with a view to waiving this afore-mentioned field test purely in the essence of time as I am advised this test would in all probability take an additional ninety days or probably longer. There is no question in my mind but that the principal of moth proofing and the use of Demotex as specified in U.S. Army Specification No. 8-113-B dated December 26, 1940 (Amendment No. 2, July 29, 1941) would result in a tremendous saving on the part of the government and would add to the life of the garments which are so necessary at this particular time.

Will you please advise me after you have had an opportunity to consider the matter further if it would be possible to waive the additional test mentioned in this letter on the part of Wright Field officials. I shall appreciate hearing from you at your earliest opportunity.

Sincerely yours,

/s/ Robt. R. Reynolds
Robert R. Reynolds, Chairman
Senate Military Affairs Committee

rrr/mw

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E

(4-I)

MEMORANDUM FOR - The Under Secretary of War
Attention - Major Morgan,
Chief, Commodities Div.

SUBJECT - Shearling Skin Requirements for Calendar Years 1942 and 1943.

1. This refers to your memorandum dated January 14, 1942, above subject. Sheep Shearling Skin requirements have been computed up to and including the 83 group program.

2. Reports have been submitted your office in accordance with previous directives covering 549,327 skins submitted in July 1941 and a requirement of 4,942,427 square feet of type I and 9,831,251 square feet of type II submitted in October 1941.

3. Supplemental estimate "D", requiring RCT:me 52,016 square feet for type I and 486,420 square feet for type II, represents the only increase in sheep shearling skins to date. Deliveries have been scheduled for all the above in the calendar year 1942.

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4. Under the Victory Program, an increase to 263 groups is contemplated. When this program becomes stabilized, revised requirements will be submitted your office.

For the Chief of the Air Corps

CC: Industrial Planning Section
Attention: Major Crom.

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P-9(3/400) 114

COPY

Written 1/28/42

Honorable Robert R. Reynolds,
Chairman, Senate Military Affairs Committee,
United States Senate,
Washington, D. C.

Dear Senator Reynolds:

Receipt of your letter of January 21st is acknowledged.

Upon a previous visit of Mr. E. W. Sweet, an official of Demotex, Inc., in my office, the question of the acceptance of the tests made by the Department of Agriculture and other agencies was discussed. This matter was gone over with Mr. Sweet by officers of my office and discussed with our laboratory people at Wright Field, as well as officers of our Air Service Supply and Maintenance Command who store and issue this equipment. It is my understanding that all of those concerned in the Air Corps agree that the Department of Agriculture made a very thorough test in regard to the moth proof prevention qualities of Demotex, and if that were the only point involved the service tests could readily be waived.

I have been informed that no suitable evidence of tests have been presented to date showing the effects on the human body of garments which have been moth proofed by Demotex. It appears there is a possibility that certain individuals may be susceptible to skin irritations or rashes on the face or body as a result of wearing garments which have been treated with Demotex. In view of the large number of garments which would eventually be involved and the fact that they must, of necessity, be shipped to remote parts of the world, where they cannot be readily replaced, it was decided that this matter should be determined as a result of actual tests before decision, which might be of such great significance, was made. Three hundred suits treated with Demotex are now on order and I understand they are due for delivery in February. It should be possible to have sufficient data within about sixty days after delivery so that a decision in regard to this matter can be made at that time.

Very truly yours,

(Sgd)

O. P. ECHOLS,
Brig. General, U. S. A.,
Assistant for Procurement Services

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14

Reference: BAH:hmr:56

JAN 28 1942

Alexander Smith & Sons,
Yonkers, New York.
Attention: Mr. A. G. Ashcroft.

Gentlemen:

Receipt is acknowledged of your letter of December 29, 1941, regarding a substitute material for sheep shearling.

At the present time, the Materiel Division is developing a woven pile fabric which is contemplated for a shearling substitute. It is suggested that if your firm is working along similar lines, samples of the material should be forwarded to the Materiel Division. The present supply of sheep shearling will not be sufficient to meet all the requirements. The quantity of the substitute material which will be needed is not known; however, it is suggested that your development work be expedited.

Very truly yours,

JAN 28 1942

F. O. CARROLL,
Colonel, Air Corps,
Chief, Experimental
Engineering Section.

DATE
CHF. DIV.
TECH. ENG.
ADM. ENG.
C. O.
BUD. OFF.
EXP. ENG.
PROD. ENG.
CONTRACT
INSP.
MAINT. COMM.
T. P.
OTHERS

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CENTRAL FILES

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WAR DEPARTMENT
OFFICE OF THE UNDER SECRETARY
WASHINGTON, D.C.

January 31, 1942.

MEMORANDUM FOR THE OFFICE, CHIEF OF THE AIR CORPS.

Attention: Col. W. F. Volandt, A.C.,
Liaison Officer to the
Commodities Division,
Planning Branch, C.U.S.W.

Subject: Shearling Skin Requirements for Calendar Years 1942 and 1943.

1. This office was informed by a representative of the Hides and Skins Industry about the middle of January that there would be a serious shortage of shearling skins for the Army unless appropriate measures were taken to substantially increase imports and further restrict civilian use. Such a shortage, as you know, would affect primarily the Air Corps inasmuch as its needs constitute virtually all of the Army's requirements for shearling skins.

2. In view of the expanded aircraft program, it was apparent that shearling skin requirements already submitted to this office by the Air Corps did not reflect an accurate demand for this material. As a basis for evaluating the supply and demand situation, the Office of the Chief of Air Corps was requested by memorandum on January 14, 1942, to recompute the Air Corps requirements for shearling skins for the calendar years 1942 and 1943.

3. The reply from your office under date of January 28, 1942, regarding this matter does not provide a satisfactory basis for determining the action, if any, which should be taken to supplement the domestic supply of shearling skins for Air Corps use. It will be appreciated, therefore, if an estimate of shearling skins requirements for the Air Corps in the calendar years 1942 and 1943 can be supplied this office at the earliest practicable date. These requirements should be reported separately for each year in square feet of skins.

CLIFFORD V. MORGAN,
Major, Medical Corps,
Chief, Commodities Division,
Planning Branch.

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P 9(4/4000)

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COPY

UNITED STATES SENATE

Committee on Military Affairs

February 4, 1942

Brigadier General O.P. Echols,
Assistant for Procurement Services,
Army Air Corps,
Washington, D. C.

My dear General Echols:

I am indeed grateful to you for your kind letter of January 26 which was in reply to mine of the 21st concerning my keen interest in the matter of the using of Demotex in connection with moth-proofing and the treatment of sheep shearling.

In response to that paragraph of your letter which has to do with additional tests to show the effects on the human body of garments which have been moth-proofed by Demotex, I am sending you herewith photostatic copies of some reports which have been given to Dr. Emil Klarmann, Director of the Plant Research Laboratories of Bloomfield, N. J., by Robert R.M. McLaughlin of the Norfolk Naval Hospital. It would seem that Dr. McLaughlin's tests insofar as the effects of the use of Demotex on humans are concerned, are very thorough and would leave no doubt concerning the fact that these garments treated by Demotex when worn by humans result in no injurious effects.

I will personally appreciate it, my dear General Echols, if you will, on the strength of the information contained in these photostatic copies of the reports of Dr. McLaughlin, consider the advisability of waiving any further tests so that a decision as to the use of Demotex by the Army Corps could be given at an early date.

Sincerely yours,

/s/ ROBERT R. REYNOLDS
Robert R. Reynolds, U.S.S.

rrr/mch

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(4-I) RCT:lwc

February 4, 1942

Frederick M. Hopkins, Jr.,
Colonel, Air Corps

INDUSTRIAL PLANNING SECTION

REQUIREMENTS BRANCH

P-478.....IT IS REQUESTED THAT IMMEDIATE RECONSIDERATION BE GIVEN THE WHOLE OUTLOOK FOR SHEEP SHEARLING SKIN REQUIREMENTS. IN THE MIDDLE OF JANUARY, THE OUSW WAS INFORMED BY A REPRESENTATIVE OF THE HIDES AND SKINS INDUSTRY THAT THERE WOULD BE A SERIOUS SHORTAGE OF SHEARLING SKINS FOR THE ARMY UNLESS APPROPRIATE MEASURES WERE TAKEN TO SUBSTANTIALLY INCREASE IMPORTS AND FURTHER RESTRICT CIVILIAN USE. SUCH A SHORTAGE WOULD AFFECT PRIMARILY THE AIR CORPS INASMUCH AS ITS NEEDS CONSTITUTE VIRTUALLY ALL THE ARMY'S REQUIREMENTS FOR SHEARLING SKINS. IN VIEW OF THE EXPANDED AIRCRAFT PROGRAM, IT WAS APPARENT THAT SHEARLING SKIN REQUIREMENTS ALREADY SUBMITTED BY THIS OFFICE TO THE OUSW DID NOT REFLECT AN ACCURATE DEMAND FOR THIS MATERIAL. IT IS BELIEVED THAT YOUR REPORT CONTAINED IN IND-T-181 DID NOT PROVIDE A SATISFACTORY BASIS FOR OBTAINING ADDITIONAL SKINS WHICH ARE NEEDED TO SUPPLEMENT THE DOMESTIC SUPPLY OF SHEARLING SKINS FOR AIR CORPS USE. IT IS REQUESTED THAT THIS OFFICE BE GIVEN AN ESTIMATE OF SHEEP SHEARLING SKIN REQUIREMENTS FOR THE CALENDAR YEARS 1942 AND 1943, REPORTED SEPARATELY FOR EACH YEAR IN SQUARE FEET, BASED ON, OR CLOSELY RELATED TO, THE S-I PROGRAM.

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IN REQUESTS OF THIS NATURE, THE NEED FOR REVISED REQUIREMENTS FREQUENTLY COMES AS A RESULT OF A PROJECTED PROGRAM WHICH MAKES THE ORIGINAL ESTIMATE

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FALL SHORT OF ACTUAL REQUIREMENTS. IT SEEMS THAT THE AIR CORPS' ESTIMATES HAVE BEEN CONSTANTLY UNDERSTATED DUE TO CONSISTENTLY ADVANCING PROGRAMS AND THE TENDENCY TO USE OLD FIGURES. IT MAY BE NECESSARY TO APPOINT AN OFFICER TO DETERMINE THE EFFECT OF THESE PROJECTED PROGRAMS ON EACH ITEM, THAT IS, IF IT IS NECESSARY TO KNOW THE NUMBER OF GROUPS IN EACH PROGRAM IN FIGURING SHEEP SHEARLING SKIN REQUIREMENTS, IT APPEARS TO BE THE RESPONSIBILITY OF YOUR ORGANIZATION TO BE ABLE TO PROVIDE INFORMATION AND REQUIREMENTS ON THE NEW PROGRAM, EVEN THOUGH NOT COMPLETELY FORMULATED. THIS OFFICE WAS RECENTLY TOLD TO BE A BIT MORE ELABORATE ON PR SPECTIVE PROGRAMS, IN THAT IT WAS BETTER TO BE A LITTLE ON THE HIGH SIDE THAN TO FALL SHORT.

FACILITIES SECTION

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P-9(1/408)

(4-E-3) 112

INTER-OFFICE MEMORANDUM

WAR DEPARTMENT, AIR CORPS
OFFICE, CHIEF, MATERIEL DIVISION
WASHINGTON

FEB 8

TO: Technical Executive, Wright Field.

SUBJECT: Moth-proofing of Sheep Shearling

1. Attention is invited to the attached copies of two letters from Senator Reynolds, dated January 21, 1942 and Febr.4, 1942, and letter dated January 28, 1942 from the C.C.A.C. to Senator Reynolds.

2. Your comments are requested as to the adequacy of the test data attached to the Senator's letter of February 4, 1942, from the medical point of view.

3. It is requested that the question of conducting service tests of subject process be reviewed and that your further recommendations be submitted.

F.I. ORDWAY, JR.
Major, Air Corps
Asst. Exec.

3 Incls.
Cy.let.1/21/42 fr.Senator Reynolds
Cy.let.2/4/42 fr.Senator Reynolds
Cy.let.1/28/42 fr.OCAC to Senator Reynolds
w/Test Data.

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IND-T-198 2-10-42

FACILITIES SECTION

REURTELETYPE F-478 DATED FEBRUARY 4, 1942, REFERENCE - SHEEP SHEARLING SKIN REQUIREMENTS, A SERIOUS SHORTAGE OF SHEARLING SKINS CAN BE AVOIDED BY TWO METHODS:

(1) REDUCE THE AMOUNT OF SKINS USED FOR PULLERY WOOL, USING SUBSTITUTES FOR PULLERY WOOL WHEREVER POSSIBLE, AND THEREBY FREEING THE SKINS FOR MILITARY USE.

(2) REDUCE THE QUALITY OF WOOL UNDER SPECIFICATION 8-113B, FROM CLASS A-50'S TO CLASS A-44'S OR A-46'S IN MECHANICS SUITS AND PILOTS SUITS, EXCEPT FOR THE COLLAR OF PILOTS SUITS, WHICH REMAIN CLASS A-50'S. SPECIFICATION 8-113B FOR SHEEP SHEARLINGS, AND SPECIFICATIONS COVERING ITEMS INVOLVED, CAN BE AMENDED TO COVER THESE CHANGES. THE ABOVE IS RECOMMENDED BY MR. CLEARY OF THE MATERIALS LABORATORY.

AT PRESENT, THE ESTIMATES FOR SHEEP SHEARLING SKINS ON UNDELIVERED CONTRACTS FOR CALENDAR YEAR 1942 BASED ON THE 83 GROUP PROGRAM AMOUNT TO -

5,460,000 SQUARE FEET ON SPECIFICATION 8-113B TYPE I - AND
10,500,000 SQUARE FEET ON SPECIFICATION 8-113B TYPE II - OR A TOTAL OF 15,960,000 SQUARE FEET. THE ABOVE DELIVERIES ARE TO BE COMPLETED BY OCTOBER 1, 1942.

THE REQUIREMENTS ON THE 83 GROUP PROGRAM HAVE PRVIOUSLY BEEN REPORTED IN IND-T-181 OF JANUARY 20, 1942.

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IND-T-198 2-10-42

FACILITIES SECTION

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10,500,000 SQUARE FEET ON SPECIFICATION 8-113B TYPE II - OR A TOTAL OF 15,960,000 SQUARE FEET. THE ABOVE DELIVERIES ARE TO BE COMPLETED BY OCTOBER 1, 1942.

THE REQUIREMENTS ON THE 83 GROUP PROGRAM HAVE PRVIOUSLY BEEN REPORTED IN IND-T-181 OF JANUARY 20, 1942.

THE NEW CONTEMPLATED PROGRAM REPRESENTS A COMPLEMENT OF APPROXIMATELY 550,000 PILOTS AND AIRCRAFT CREW MEN, AND APPROXIMATELY 400,000 MECHANICS, IN ADDITION TO THE 83 PROGRAM. ESTIMATED REQUIREMENTS OF SHEARLING SKINS FOR THIS CONTEMPLATED PROGRAM AMOUNT FO 39,525,000 SQUARE FEET, SPECIFICATION 8-113B TYPE I, AND 26,500,000 SQUARE FEET, SPECIFICATION 8-113B TYPE II, OR A TOTAL OF 66,025,000 SQUARE FEET, THIS TO BE DIVIDED OVER 24 MONTHLY INCREMENTS STARTING JULY 1, 1942 AND EXTENDING THROUGH JUNE 30, 1944. THESE ESTIMATES ARE BASED ON THE NUMBER OF PILOTS AND MECHANICS RATHER THAN ON THE 8-I AIRPLANE PROGRAM.

INDUSTRIAL PLANNING SECTION

MK

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WAR PRODUCTION BOARD

WASHINGTON, D. C.

Leather and Shoe Section

IN REPLY REFER TO:

February 11, 1942

Col. W. F. Volandt
U. S. Army Air Corps
Room 4129 Munitions Building
Washington, D. C.

Dear Col. Volandt:

As you know, the shearling supply problem is a very difficult one and we are vigorously engaged in working out plans with a view to taking care of Air Corps and other service requirements which far exceed the normal available supply of skins.

You were kind enough to authorize Mr. Youngren to visit Wright Field and we have arranged for him to contact other service procurement agencies.

It is too early to write you with certainty the exact nature of the program which we feel offers the best chance of success, but it is very sure that any program adopted will involve great deal of dislocation and difficulty. Furthermore, to be effective quick action is essential.

We understand from Mr. Youngren that Wright Field has been conducting tests involving the use of mohair pile fabrics as a substitute for shearlings. If this material were adopted for any substantial portion of the Air Corps requirements, it would effect the overall program to a substantial degree. You will readily understand that we are most anxious to have a definite decision on the subject so as to avoid waste motion in setting up ways and means to obtain the present large Air Corps requirements of which you were kind enough to advise us in your letter of January 30.

Will you please, therefore, take whatever steps may be possible to obtain a definite decision from Wright Field on this point. If this can be had promptly, it will very greatly facilitate our plans to provide the necessary supply.

Yours very truly,

Joseph W. Byron

Joseph W. Byron

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FOR DEFENSE
BUY UNITED STATES DEFENSE BONDS AND STAMPS

91 UBS

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(A-I)

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FEB 12 1942

MEMORANDUM - The Under Secretary of War,
Commodities Division.
Attention: Lt. Col. C. V. Morgan.

SUBJECT - Sheep Shearling Skin Requirements.

1. This refers to your memorandum, above subject, dated January 31, 1942.

2. At the present time, estimates for sheep shearling skins on undelivered contracts for the calendar year 1942, based on the 84 group program, amount to 5,460,000 square feet of Specification 8-113B Type I and 10,500,000 square feet of Specification 8-113B Type II, making a total of 15,960,000 square feet. Deliveries on the above amounts are to be completed by October 1, 1942.

3. The contemplated program represents a complement of approximately 550,000 pilots and aircraft crew men and approximately 400,000 mechanics, in addition to the 84 group program. Estimated requirements of sheep shearling machines for this contemplated program amount to 39,525,000 square feet of Specification 8-113B Type I and 26,500,000 square feet of Specification 8-113B Type II, making a total of 66,025,000 square feet. This amount is to be divided over twenty-four monthly increments, starting July 1, 1942, and extending through June 30, 1944. These estimates are based on the number of pilots and mechanics, rather than on the number of planes in the 8-I airplane program. It has been suggested by our Wright Field organization that a serious shortage of shearling skins may be avoided by the following two methods:

a. Reduction of the amount of skins used for pullery wool, using substitute wool wherever possible, and thereby freeing the skins for military uses.

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b. Reduction of the quality of wool under Specification 8-1138, from Class A-50's to Class A-44's or A-46's in mechanics' suits and pilots' suits, except for the collars of pilots' suits, which would remain Class A-50's. Specifications covering the items involved can be amended to cover these changes. These steps have been recommended by Mr. Cleary of the Materials Laboratory, Wright Field.

3. It is being suggested to the Conservation Branch, Production Engineering Section, that immediate investigation be conducted along these lines.

For the Chief of the Air Corps RCT:lwc

A. F. Volandt
Colonel, Air Corps,
Asst. to Chief, Mat. Div.

cc: Lt. Co. N. G. Kenny,
Conservation Branch,
Room 6122,
New War Dept. Bldg.,
Washington, D.C.

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WAR PRODUCTION BOARD

For Immediate Release
Monday, February 16, 1942

sheep shearlings

FEB 240

The War Production Board today took another step to increase the supply of shearlings for the Armed Services.

Today's order (M-94) supersedes a telegraphic order of December 10, 1941, freezing shearlings in this country. It makes permanent the provision in the previous order making available for military requirements the entire shearling supply, but it releases for civilian use shearlings previously frozen which do not meet military specifications as defined in the order.

Today's order also prohibits the pulling of wool from any freshly flayed or salted sheepskin when the wool is two inches or less in length and has a Bradford wool count of 48 and up.

A shearling is a sheep or lamb skin with some of the wool left on. It is used mainly for flying suits. It also serves as lining in boots, helmets and other garments worn by the Armed Services.

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TITLE 32 - NATIONAL DEFENSE
CHAPTER IX - WAR PRODUCTION BOARD WPB 240
Subchapter B - DIVISION OF INDUSTRY OPERATIONS

PART 1097 - SHEARLINGS
GENERAL CONSERVATION ORDER M-94

TO CONSERVE THE SUPPLY AND DIRECT THE DISTRIBUTION OF SHEARLINGS

WHEREAS, the uncertainty of future shipments of shearlings and the fulfillment of requirements for the defense of the United States have resulted in a shortage in the supply of shearlings for defense, for private account, and for export, and it is necessary in the public interest and to promote the defense of the United States, to conserve the supply and direct the distribution of shearlings and to allocate the supply thereof in the manner hereinafter in this Order provided;

NOW, THEREFORE, IT IS HEREBY ORDERED THAT:

1097.1 - GENERAL CONSERVATION ORDER

(a) Applicability of Priorities Regulation No. 1. This Order and all transactions affected thereby are subject to the provisions and definitions of Priorities Regulation No. 1 (Part 944), as amended from time to time, except to the extent that any provision hereof may be inconsistent therewith, in which case the provisions of this Order shall govern.

(b) Additional Definitions. For the purposes of this Order,

(1) "Shearling" shall mean the skin of a sheep that has been shorn, a so-called California lamb skin, or other native lamb skin, whether raw, semi-processed, or finished, having a wool growth of 2" or less and a Bradford wool count of 50 and up.

(2) "Mouton" shall mean a shearling which has been fur dressed, made water repellent, and is of the type normally used in the manufacture of women's fur coats.

(3) "Process" shall mean tanning, dressing, dyeing or finishing.

(c) Restrictions on Processing. No person shall hereafter process any shearling or cause it to be processed, except to the extent necessary to fill Defense Orders.

(d) Restrictions on Pulled Wool. No person shall hereafter pull or cause to be pulled any wool from any freshly flayed or salted sheep skin or lamb skin when the wool is of such a length and type as to constitute a wool growth of 2" or less having a Bradford wool count of 48 and up.

(e) Restrictions on Processed Shearlings. Any person owning, or possessing processed or semi-processed shearlings, not needed to fill his then existing Defense Orders, except shearlings, (1) of a natural black or mottled with black [illegible], or (2) having a wool pile which will finish with less than a 1/4" wool pile, or [illegible] which were processed prior to December 12, 1941 and are held in stock in a color other than beige, cream, white or logwood, must not finish such shearlings or cause them to be finished in a color not acceptable under specifications respecting processed shearlings in any Military or Naval contract which is unfilled on the

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date of this order or in any future Military or Naval contract and may use such shearlings only for filling such contracts.

(f) Release of Moutons and Imperfect Shearlings. Any person having, owning or possessing

(1) Moutons which had been processed on or before December 12, 1941

(2) Processed shearlings which cannot be used to fill Defense Orders because of imperfections in the wool or leather of the same.

may apply to have such released from the terms and provisions of this Order by making written application to the Director of Industry Operations, manually signed on behalf of the person requesting such release by a person duly authorized thereto, containing a statement of the reasons why such moutons and/or shearlings should be released and having at the end thereof the following statement:

"The undersigned hereby represents to the Director of Industry Operations that the steterents contained herein are true and correct with full knowledge that he may be prosecuted under Section 35(A) of the Criminal Code (18 U.S.C. 80) for any false representations contained herein."

(g) Repeal of Telegraphic Order. This Order shall and hereby does repeal and revoke the telegraphic order sent by the Director of Priorities to shearling tanners on December 12, 1941.

(h) Appeal. Any person affected by this Order, who considers that compliance therewith would work an exceptional and unreasonable hardship upon him, or that it would result in a degree of unemployment which would be unreasonably disproportionate compared with the amount of shearlings and moutons conserved, or that compliance with this Order would disrupt or impair a program of conversion from nondefense to defense work, may appeal to the War Production Board by letter or telegram, or upon such forms as may hereafter be prescribed, Reference M-94, setting forth the pertinent facts and the reason he considers he is entitled to relief. The Director of Industry Operations may thereupon take such action as he deems appropriate.

(i) Communications to the War Production Board. All communications concerning this Order shall, unless otherwise directed, be addressed to:

"War Production Board
Washington, D. C. Ref: M-94."

(j) Violations. Any person who wilfully violates any provision of this Order, or who by any act or omission falsifies records to be kept or information to be furnished pursuant to this Order, may be prohibited from receiving further deliveries of any Material subject to allocation, and such further action may be taken as is deemed appropriate, including a recommendation for prosecution under Section 35(A) of the Criminal Code (18 U.S.C. 80).

(k) Effective Date. This Order shall take effect immediately.

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(P. D. Reg. 1 Amended, Dec. 23, 1941, 6 F. R. 6680; W.P.B. Reg. 1, Jan. 26, 1942, 7 F.R. 561; E.O. 9024, Jan. 16, 1942, 7 F. R. 329; E. O. 9040, Jan. 24, 1942, 7 F.R. 527; sec. 2(a), Public No. 671, 76th Congress, Third Session, as amended by Public No. 89, 77th Congress, First Session)

Issued this 16th day of February, 1942

(Signed) J. S. Knowlson
Director of Industry
Operations

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FEB 1 (

MEMORANDUM FOR - War Production Board
Leather and Shoe Section.
Attention: Mr. Joseph W. Byron. (Room 3345)

SUBJECT - Sheep Shearling Skins.

1. The problem of conserving sheep shearling skins is being studied at the present time by the Conservation Branch, Production Engineering Section, at Wright Field. The seriousness of the shearling supply problem has been pointed out, particularly that the Air Corps would suffer most from any deficiencies.

2. For your information, a report has been subsequently submitted by the Requirements Branch in addition to the 15,960,000 square feet based on the 84 group program. This latter report is based on the contemplated "pilot and mechanic" program of 550,000 pilots and 400,000 mechanics. Requirements were stated as 39,525,000 square feet of Specification 8-113B Type I and 26,500,000 square feet of Specification 8-113B Type II, making a total of 66,025,000 square feet. This amount is to be divided over twenty-four monthly increments, starting July 1, 1942, and extending through June 30, 1944. RCT:lwc

3. It has been recommended by Mr. Cleary of the Materials Laboratory that a serious shortage of sheep shearling skins may be averted by the following two methods:

a. Reduce the amount of skins used for pullery wool, using substitutes wherever possible and thereby freeing the skins for military use.

b. Reduce the quality of wool under Specification 8-113B from Class A-50's to Class A-44's or Class A-46's in mechanics' suits and pilots' suits, except for the collars of pilots' suits which would remain Class A-50's.

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4. The extent of conservation under the above methods, or any other methods which may be devised, is being investigated.

For the Chief of the Air Corps

W. F. Volandt
Colonel, Air Corps,
Asst. to Chief, Mat. Div.

RCT:lwc

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Moth-proofing of Sheep Shearling

BAH:hmr:56

1st Ind.

Experimental Engineering Section, Wright Field. February 16, 1942.
To: Chief, Materiel Division, O.C.A.C., Washington, D. C.

1. A service test on this material will be initiated; however, in order to expedite results, the test will be cut to 30 days.

2. The service test is being conducted to determine the effect of perspiration upon the mothproofing compounds, and to ascertain whether there is any detrimental effect upon their performance under high altitude flying conditions.

3. Accelerated tests will be conducted on original garments upon their receipt at this office.

F. O. CARROLL,
Colonel, Air Corps,
Chief, Experimental
Engineering Section.

3 Incls.

Signature .....

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WAR DEPARTMENT
AIR CORPS, MATERIEL DIVISION

MEMORANDUM REPORT ON

SUBJECT: Conference to discuss the availability and Conservation of Sheepskins for Flying Clothing. Date February 20, 1942

SECTION Experimental Engineering

SERIAL No. [illegible]

Contract No.
Expenditure Order No. 720-4
Purchase Order No.

A. Purpose.

1. The purpose was to discuss the current and the anticipated availability of sheepskins until March, 1944, with reference to the proposed requirements of the Air Corps for the same period.

B. Present at the conference were:

Mr. S. P. Butler, War Production Board
Mr. W. W. Youngren, War Production Board
Lt. Col. R. C. Bromafield, Materiel Division, Production Conservation Branch
Mr. H. C. Woodburn, Materiel Division, Field Service Section
Mr. F. A. Heisinger, Materiel Division, Field Service Section
Mr. M. B. Simmons, Materiel Division, Contract Section
Mr. H. T. Manson, Materiel Division, Equipment Laboratory
Mr. C. J. Cleary, Materiel Division, Materials Laboratory

B. Factual Data.

1. Comparison of available skins with projected requirements indicated by representatives of War Production Board is shown in Exhibit A.

2. Proposed requirements of Air Corps from June, 1942 to be completed by March, 1944, to permit completion of clothing requirements by July 1, 1944. See Exhibit B.

3. Substitute material, woven pile fabric with coated back similar to coating on back of shearling, to be completed through service test phase by approximately May 20, after which specification will be available if material is suitable. This material is essentially a wool pile fabric.

4. The suggested procedure of the War Production Board reference the control of price and availability of sheepskins for the projected Air Corps program is included in Exhibit C.

5. Revision of the requirements of U. S. Army Specification 8-113-B to permit wool grades as low as 46's compared to the present 50's will increase the supply of available skins.

-48

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L.

Experimental Engineering Section
Memorandum Report No. [illegible]
February [illegible], 1942

C. Conclusions.

1. A comparison of available supply with projected requirements indicates the possibility of insufficient skins for the projected program.

2. The development of a suitable substitute for sheep shearling for part or for all types of equipment is considered essential.

3. Action by the War Production Board (Exhibit C) is necessary to insure availability of an adequate supply of sheepskins.

4. The urgency of the needs and the lack of available supply requires the unrestricted cooperation of domestic sheep raisers, especially those concerned with raising fine wool sheep.

D. Recommendations.

1. Specification requirements per U. S. Army Specification 6-113-B to permit the reduction of fibre quality to a minimum of 46's as against the current requirements of 50's are being initiated by the Materials Laboratory to increase available supply of sheepskins.

2. Owing to the possibility of a definite shortage of sheepskins (Exhibit A), the development of a substitute is being advanced, and the specification for the material will be available by June 1, if results of service test are successful.

3. Owing to the current situation, the suggestion of the War Production Board (Exhibit C) is recommended, and this recommendation should be forwarded to the War Production Board through OCAC and CUSW.

4. Initial procurement of the requirements noted in Exhibit B should be limited to 15,000,000 square feet, to explore and determine price movement, after which there should be a delay in further procurements of approximately 90 days to permit the War Production Board to obtain information relative to the remaining inventory of sheepskins on the market, and the extent of the new crop coming on the market. These data will determine the need for a substitute material.

Concurrence:

Prepared by C. J. [illegible]

Approved by [illegible]
Chief, Materials Laboratory

Approved by [illegible]
Colonel, Air Corps,
Chief, Experimental
Engineering Section

Distribution:
Chief, Mat. Div., Att: Lieut.
WPB, Washington, D.C.
Prod. Mat. Section, Att: Prod. Conc. Inc.
Field Service Section
Contract Section
Equipment Lab.
Central Files

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Normal Available Domestic Skins per Year	2,000,000
Estimated Imported Skins Per Year (Doubtful)	3,000,000
Total Available Skins per Year	5,000,000 Skins
Total Available Footage Per Year Based on Average [illegible] Sq. Ft. per Skin	60,000,000 Sq. Ft.
Total Available Footage for 2 Year Procurement	86,000,000 Sq. Ft.
(A) Less Imp Estimated for Subjects	74,000,000 Sq. Ft.
(B) Total Available Domestic Skins (Without Imports)	26,000,000 Sq. Ft.
Air Force - 2 Year Program	46,000,000 Sq. Ft. (Approx.)
Navy (Estimated)	20,000,000 Sq. Ft. (Approx.)
Amphibian (Estimated)	12,000,000 Sq. Ft. (Approx.)
Marines (Estimated)	2,500,000 Sq. Ft. (Approx.)
(C) Projected Gross Requirements	100,500,000 Sq. Ft. (Approx.)

Comparison between (A) and (C) shows a deficiency between projected requirements and the available supply if normal imports are maintained.

Comparison between (B) and (C) shows complete inadequacy of available supply if no imports are maintained.

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EXHIBIT C

The following solution of the problem was suggested by the representatives of War Production Board:

1. Have the provisions of the leather ceiling revoked as they apply to tanned shearlings.

2. Prohibit by WPB order the purchase by a packer or sale to a packer of any live sheep or lamb with less than 1/4" of wool growth at the low point on the belt (or so-called No. 3 shearlings).

3. Attempt to have a ceiling imposed on pickled sheepskins below present market. This is justified in the interests of the pickled sheepskin industry and will contribute to the solution of the shearling problem by reducing the value of long wool skins.

4. Air Corps and other services should pay somewhat more for tanned shearlings, thereby permitting the tanners to offer a higher price to the packers for the raw shearlings which will encourage natural shearing and greatly increase the supply. Tentatively the price for the raw skin needed to accomplish this purpose probably lies between $1.75 and $2.00, and if a differential is maintained for No. 1's against No. 2's, it should be very small.

5. A WPB order should be issued obliging wool pullers to clip a certain percentage of wool skins, meeting certain specifications, leaving 3/8" wool growth on such skins. Specifications might be somewhat as follows: Raw salted wool sheepskins with 3-1/2" or more of wool, a Bradford wool count of 50 and up, packer take off sound pelts, no belt, measuring approximately 6-1/2' and up per skin prior to June 1, 7' and up per skin June 1 to October 1. The percentage of skins to be clipped would have to be small at first, and provision might be made to increase it month by month.

6. The Air Corps should be requested to abandon and prevent plan of issuing an invitation on their total requirements until June, 1942. They should be requested not to invite bids on more than 20,000,000 feet in advance of immediate needs at any one time.

7. Publicity program encouraging shearing as a contribution to the war effort should be released as soon as possible and directed to all shearing and feeding centers, [illegible] Texas.

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TT 5-26-42
volault to AC, mat. div.

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412 Commanding Shearing 1 2
C-7-B
2 - 1/1

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S-6-3D

PAR/nmc
Mar. 2, 1942

J. H. HICKS, Lt. Col.,A.C.
Chief, F.S.S.

Office, Chief of Air Service Command,
14th and Constitution Ave.,
Washington, D. C.

ASCT-6256-SD CLASS 13. RE E-97 DATED 2-26-42 TO THE ASSISTANT CHIEF, MATERIEL DIVISION, IT IS REQUESTED THAT THE FOLLOWING INFORMATION BE FURNISHED TO COL. VOLANDT: "WITH THE SHEARLING THE AIR CORPS NOW HAS ON AIR CORPS ORDER, IT WILL BE IMPOSSIBLE TO COMPLETELY MEET REQUIREMENTS OF THE 115 GROUP PROGRAM, THE COMPLETION OF WHICH IS SCHEDULED FOR DECEMPER 31, 1942. ACCORDINGLY IT WILL BE IMPOSSIBLE TO DIVERT ANY AIR CORPS SHEARLING."

ASSISTANT CHIEF, AIR SERVICE COMM.

File copy in Service Command

MAR 5 1942

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M

(4-I)

MAR 3 - 1942

MEMORANDUM FOR - The Under Secretary of War,
Materials Division,
Attention - Resources Branch
(Lt. Col. H. G. Henry)

SUBJECT - Shearling Skins

1. In connection with the conservation of sheep shearling skins the following steps are being taken:

a. Action to have U. S. Army Specification 2-113-B amended to permit the reduction of fiber content to a minimum of 46's as against the current requirements of 50's.

b. The development of a substitute for sheep shearlings is being advanced, and the specification for substitute materials will be available on or about June 1, if results of the service tests are successful.

2. For your information, recommendation as listed on R/H in Paragraph D-4, and recommendation number 6 in Exhibit C are being automatically taken care of by the Air Corps, and bids will be put out in small quantities rather than based on the total quantities of the Air Corps, in order to stabilize the market and find out the need of a substitute.

RST:IA

For the Chief of the Air Corps

W. F. Volandt
Colonel, Air Corps,
Asst. to Chief, Mat. Div.

Incl:
Cy: [illegible]-4-56-4060 (5 sheets)

Airplane crews are to be provided for first - ground crew next.

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IMMEDIATE ACTION

423
8-4(1)
C7-B

WAR DEPARTMENT
AIR CORPS - MATERIEL DIVISION
EASTERN DISTRICT SUPERVISOR
90 CHURCH ST., NEW YORK, N. Y.

Inspection Section

PSC:mfa

Subject: Sheep Shearling

March 5, 1942

To: Assistant Chief
Materiel Division
Wright Field
Dayton, Ohio

1. Due to revisions of the sheep shearling specifications, a number of contractors producing flying clothing for the Air Corps now find that they are unable to produce the garments on the figure originally submitted with their bid.

2. This condition is also brought about by the fact that the shearling manufacturers have orders on hand in excess of the available raw skin supply. Raw skins are being used today which in former years were devoted exclusively to the commercial market. However, the Government requirements at this time will utilize all raw skins available, leaving none for commercial trade. Because of this heavy demand, the standard of quality has, of necessity, been lowered, resulting in a trifle greater cutting loss when the shearlings are cut for garments. The condition is further aggravated by the fact that where formerly shearlings were being accepted averaging from 75 to 85 square feet per dozen, the skins being accepted today average from 65 to 75 square feet per dozen and in cutting these small skins, a greater cutting loss is sustained.

3. Considerable time and effort has been devoted to an investigation of these conditions and it has been definitely determined that no action which inspection could take would mitigate existing conditions. This office will, therefore, from time to time, recommend that various contractors be supplied with additional shearlings to complete existing contracts.

For the Eastern District Supervisor:

J. A. McDONNELL
Lieut. Colonel, Air Corps
District Inspection Officer

CENTRAL FILES

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IMMEDIATE ACTION

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NF-9-12-40-15M

TELETYPE MESSAGE

CJC:hmr:56

DATE: March 5, 1942

FROM Exp. Eng. Section 9:30 A.M.
Keith A. Fitch
F. O. CARROLL, Jr.
Colonel, Air Corps

ATTENTION: EXECUTIVE

EXP-T-6005. RE TELETYPE E-97, DATED 2-26-42, PERTAINING TO SHEARLING FOR WINTER FLYING SUITS, THE MATTER OF AVAILABILITY OF SHEARLINGS IS DISCUSSED IN MEMORANDUM REPORT EXP-M-56-4060, DATED 2-20-42, COPY OF WHICH WAS FORWARDED TO YOUR OFFICE. EXHIBIT A, THIS REPORT, GIVES A RESUME OF THE AVAILABLE SKINS AGAINST THE REQUIREMENTS OF THE SEVERAL SERVICES INCLUDING THE NAVY. AIR CORPS PROCUREMENTS ARE BEING INITIATED IN THE AMOUNT OF 15,000,000 SQUARE FEET, WHICH IS APPROXIMATELY 25 PERCENT OF AIR CORPS REQUIREMENTS FOR TWO YEARS. THIS AMOUNT IS NOT IN EXCESS OF CURRENT AVAILABLE SKINS. IT IS THE POLICY OF THE AIR CORPS TO PROCURE SKINS FROM THE TANNERS WHICH ARE THEN SUPPLIED AS GFE ITEMS TO THE GARMENT MANUFACTURERS. THE PRACTICE OF THE NAVY IS TO BUY GARMENTS ONLY, NOT SUPPLYING ANY OF THE MATERIALS TO THE MANUFACTURERS, AND IT IS BELIEVED THAT THIS DIFFERENCE IN PROCEDURE WITH THE COMPLICATIONS INCIDENTAL TO MATERIAL PRIORITIES IS THE CAUSE OF THE NAVY'S DIFFICULTY IN OBTAINING SUITABLE RESULTS REFERENCE THEIR PROCUREMENTS FOR FLYING CLOTHING. IT IS BELIEVED THAT THE

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March 16, 1942

United States Department of Agriculture
Bureau of Entomology and Plant Quarantine
Washington, D.C.

March 12, 1942

Mr. B.C. Nelson
Winslow Bros. & Smith Company
Norwood, Massachusetts

Dear Mr. Nelson:

Your letter of March 6 regarding the processing of sheep shearlings to render them moth resistant has been received.

We have tested shearlings treated with practically all of the solutions that have been used on them and have been somewhat disappointed in the protection imparted by the treatments. For test insects we have used the larvae of the black carpet beetle. It would seem to us that sheep shearlings cannot be so well protected by mothproofing solutions as fabrics. If fabrics are treated in the hot dye bath with certain of the solutions, they stand a chance of receiving a moth resistance that is exceptionally fine; but sheep shearlings cannot be treated, as I understand it, in hot baths due to the effect that these will have upon the leather. Most shearlings in which the hairs are straightened are also later subjected to a heating and oiling process which breaks down the resistance imparted by the treatment given. In all of our tests there has been some cutting of the hairs by the insects, although there is a big difference between the amount of the hair cut from untreated and treated shearlings.

If in writing you expect information as to how to treat sheep shearlings to render them entirely moth resistant, I regret to say that we cannot furnish this, for we do not know how it can be done. It would seem that any of the aqueous-fluorine solutions which are generally available can be made to impart to shearlings as good a moth resistance as any, even though this is not a perfect treatment from the standpoint of protection from moths and carpet beetles.

Yours very truly,

(Signed: E.A. Back)

Principal Entomologist
Insects Affecting Man and Animals

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Washington, D. C.
March 16, 1942

TECHNICAL INSTRUCTIONS

SERIAL NO: TI-1037 423

SUBJECT: Requirements, Procurement and Equitable Division of Silk, Nylon and Shearling.
(A.B. No. 520, Case No. 140)

TO: Assistant Chief, Materiel Command
Wright Field, Dayton, Ohio

1. Objective

The procurement and equitable division of silk, nylon and shearling relative to requirements of the Air Forces and the Bureau of Aeronautics.

2. Authority

The Aeronautical Board

3. Action Desired

As directed in Aeronautical Board letter (A.B.NO. 520, CASE NO. 140) dated March 12, 1942, copy attached:

a. That necessary to make immediatley available to the Bureau of Aeronautics 3,500,000 yards of parachute silk cloth and 900,000 square feet of shearling. it is understood that the transfer of the parachute silk will provide in addition the proportional quantity of silk for shroud lines, tape and thread required for the manufacture of parachutes.

b. For the present, the Air Forces will undertake the procurement of raw commodity components of parachutes and flight clothing and will, by allocation, provide for the needs of the other service, whenever the same raw commodity is common to both services.

c. The allocation of parachute silk and nylon will be on the basis of an average of six parachutes per program airplane for each service; and the shearling allocation will be on the basis of providing heavy flight clothing for members of airplane crews only, before any consideration is given to ground crews.

By order of the Commanding General, Air Force Materiel Command:

(Copy for 14 [illegible] 2)

W. F. VOLANDT
Colonel, Air Forces

Incl: Cy. Aer. Board Ltr., 2/12/42

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THE AERONAUTICAL BOARD
Washington

A. B. No. 520
(Case No. 140)

OK

March 12, 1942

To: Commanding General, Materiel Command, Army Air Forces, Chief of Bureau of Aeronautics.

SUBJECT: Requirements, procurement and equitable division of silk, nylon and shearling.

The following extract from the minutes of the Aeronautical Board meeting of March 7, 1942, is forwarded, by direction of the Aeronautical Board, for information and guidance:

"The Board then took up Case No. 140 and considered a report by the Working Committee on Requirements, procurement and equitable division of silk and shearling. After detail discussion the Board agreed

"(a) That the Army Air Corps will make immediately available to the Bureau of Aeronautics 3,500,000 yards of parachute silk cloth and 900,000 square feet of shearling.

"(b) That as a principle only one service will procure the raw commodity components of parachutes and flight clothing and will, by allocation, provide for the needs of the other service, whenever the same raw commodity is common to both services. That for the present, the Air Corps will undertake such procurement:

"(c) That the allocation of parachute silk and nylon will be on on the basis of an average of six parachutes per program airplane for each service; and that shearling allocation will be on the basis of providing heavy flight clothing for members of airplane crews only, before any consideration is given to ground crews.

"The Board then directed thr return of Case No. 140 to the Working Committee with instructions to submit recommendation for the allocation of parachute silk, nylon, and shearling on the basis agreed upon by the Board.

"Following the consideration of Case No. 140, Rear Admiral Towers withdrew, and General Echols assumed the Chair. The Following officers also withdrew: Captain "ing, Captain Miles, Commander Schaeffer, Commander Ketcham, Commander Olney and Lieutenat Beck."

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A.B. No. 520 (Case No. 140)

2. It is understood that the transfer of parachute silk, sub-paragraph (a) above, will provide in addition the proportional quantity of silk for shroud lines, tape and thread required for the manufacture of parachutes.

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Exp Eng Section (dupe for Cleary — materials Lot).

3-21-42

CONTRACT SECTION

EXTRA PRIORITY

REFERENCE TELETYPE CONT-T-64 DATED MARCH 14, 1942 CONCERNING MODIFICATION IN SHEEP SHEARLING CONTRACTS ALONG THE LINES SET FORTH FOR WHEEL IN PC-E-411.5. OFFICE, THE UNDER SECRETARY OF WAR ADVISES AS FOLLOWS:

"UNDER THE CIRCUMSTANCES SET FORTH IN BASIC MEMORANDUM AUTHORITY IS GRANTED TO ENTER INTO CONTRACTS FOR SHEEP SHEARLING ON A FIRM PRICE BASIS FOR SO MUCH OF THE COMMODITY AS IS SCHEDULED FOR DELIVERY UP TO AND INCLUDING JUNE 30, 1942. IN EACH SUCH CONTRACT WILL CONTAIN A PROVISION FOR PRICE NEGOTIATION WITHIN A REASONABLE TIME AND PRIOR TO DELIVERIES SCHEDULED SUBSEQUENT TO JUNE 30, 1942. IN THE EVENT THAT PRICES CANNOT BE NEGOTIATED AT ONE TIME FOR ALL OF THE COMMODITY TO BE DELIVERED SUBSEQUENT TO JUNE 30, 1942, THE CONTRACT MAY PROVIDE FOR TWO, OR MORE IF NECESSARY, SEPARATE NEGOTIATIONS FOR SO MUCH OF THE SHEARLING AS IS SCHEDULED TO BE DELIVERED WITHIN SEPARATE PERIODS TO BE SET FORTH IN THE CONTRACT. NO NEGOTIATED PRICE WILL EXCEED ANY CEILING PRICE' EXISTENT AT THE TIME OF THE NEGOTIATION."

PAPERS ARE BEING RETURNED TODAY.

CONTRACT SECTION

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Washington, D.C.
March 23, 1942

TI-1037, Addendum No. 1

Allocation of Parachute Textiles and Shearling
Allotted to Bureau of Aeronautics by the Army Air Forces.

Assistant Chief, Materiel Command
Wright Field, Dayton, Ohio.

1. Problem Presented:

To make parachute textiles and shearling available for the Navy Department.

2. Factual Data:

As contained in Aeronautical Board letter (A.C. No. 520, Case No. 140), dated March 12, 1942, forwarded under basic Technical Instruction.

3. Authority:

Assistant Chief, Bureau of Aeronautics.

4. Action Desired:

Expeditious action to make parachute textiles and shearling available for Navy use as indicated in Bureau of Aeronautics letter (Aer-PR-10-MVP/BA), dated March 18, 1942, copy attached.

By command of Major General Echols:

W.F. VOLANDT
Colonel, Air Corps
Assistant

Incl:
Cy. Bureau of Aeronautics ltr., 3/18/42

APR 6 1942

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WAR PRODUCTION BOARD
WASHINGTON, D. C.

March 26, 1942

IN REPLY REFER TO

The Honorable
The Secretary of War
War Department
Washington, D. C.

My dear Mr. Secretary:

We are writing to confirm the principal conclusions reached at a meeting on Monday, March 23, at which the U. S. Army Air Corps was represented by Col. W. F. Volandt accompanied by personnel from Wright Field.

In the first place, it was agreed that unified procurement of tanned shearlings for flying suits required by the Army Air Corps and the Navy Bureau of Aeronautics should be set up. It was further agreed that the Air Corps should buy such skins for both services and that the combined program should be presented for ratification to the meeting of the Joint Aeronautical Board scheduled for next Tuesday; that under such a plan, the Air Corps would make available to the Navy the tanned shearlings required by it from tanners' deliveries of suitable skins, in the amounts and at the times, as directed by the Joint Aeronautical Board. In making such division, we assume that the Joint Aeronautical Board will direct the delivery to the Navy of skins tanned by qualified tanners and new contractors in proportion to the total amounts being tanned by each.

In regard to the contract covering such purchases by the Air Corps, may we recommend that the Air Corps negotiate a contract with each tanner on the basis of his total capacity to produce, and that such contract should embody, among other provisions:

1. The termination clause from War Department Supply Contract Form No. 1, approved by the Under-Secretary of War, September 16, 1941.

2. Advance Payment Article from Article for Inclosure in Fixed-Price Contracts, re: Advance Payments. Advance Payment Form approved by the Under-Secretary of War, January 10, 1942.

3. A yearly quota will be given each tanner by letter of intent or by contract, the price to be a fixed price, determined in advance for each quarter. In the absence of agreement on price, it should be understood that the mechanism of Section 9 of the Selective Training and Service Act will be used to obtain the skins.

FOR DEFENSE
BUY
UNITED STATES SAVINGS BONDS AND STAMPS

4/3/42

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The reason for the above provisions lies in the extremely heavy investment which tanners will have to make to meet the requirements of the combined program and the fact that uncertainties of price and supply make it impossible for tanners to commit themselves to a firm price for the entire life of a long term contract, without the inclusion of allowances for risk which will make the price to the government unduly high.

The use of shearlings for purposes other than flying suits including boots, helmets, gloves, parka coats, officers' coats, Alaskan suits was discussed and it was agreed that all services would confine themselves to tanned skins unsuitable for flying suits for such purposes, procuring the finished items rather than the skins whenever possible, and that if it became necessary to place forward orders for such items beyond the tanners' ability to quote firm to the garment manufacturers, appropriate raw material escalator clauses should be used.

The figures embodying the requirements of both services were discussed and we await the up-to-date analysis of Air Corps requirements, which no doubt is already being worked out for us at Wright Field, and which we hope will be able to be transmitted to us within a day or two. May we recommend that the Joint Aeronautical Board direct the Army Air Corps to eliminate from garments for ground crew shearlings of flying suit quality from their procurement, employing shearlings unsuitable for flying suits or pile fabrics or other substitute material in lieu thereof. This step has been taken by the Navy, and we are informed also by the British. It was pointed out that these figures are required not only for our general information but as a basis of negotiations with the British regarding world supply of shearlings and the share to which this country is entitled, and unless they are promptly received by us, loss of essential foreign skins may result.

As promised, we attach a list of shearling tanners and persons desiring to be considered as such, together with the number of skins per year each tanner states he is capable of handling without additions to his plant. The ones marked with an asterisk are tanners for whom we have no 1941 record of production and most of whom, therefore, are new producers. We will appreciate it if you will submit this list to Wright Field for checking and direct them to advise us, as soon as possible, but in any event not later than April 20, 1942, the maximum number of these facilities which can be considered as effective capacity from the point of view of their ability to produce suitable skins.

We should also like to have any suggestions Wright Field might wish to make regarding the need for expansion in this industry. We might tell you that both Winslow Bros. & Smith and A. C. Lawrence Leather Co. have expressed willingness to expand, and the former has already commenced work. Both will need preference ratings for equipment and we are awaiting the reply to this letter before making a definite recommendation in that regard.

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We are enclosing an extra copy of this letter which we felt you might like to refer to Gen. O.P. Echols in view of the impending meeting of the Joint Aeronautical Board to consider this matter.

Yours very truly,

Houlder Hudgins

Houlder Hudgins
Acting Director of Purchases

Attachment

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	Number of Skins Per Year	Approximate Feet Per Year
* Acme Fur Dressing Co. 57-09 59th Street Maspeth, L. I.	23,400	175,500
Anglo-American Tanning Co. 334 Broadway Sheboygan Falls, Wisconsin	138,632	1,039,740
* American Beaver Lamb Co. Johnstown, New York	83,304	624,780
A. C. Lawrence Leather Co. Sawyer Street Peabody, Massachusetts	2,496,000	18,720,000
Berlin Tanning & Mfg. Co. 401-413 Wisconsin Street Berlin, Wisconsin	187,200	1,404,000
Celeste Fur Dyeing Co. 44 St. Francis Street Newark, N. J.	182,000	1,365,000
* Goldhill Tanning Corp. 23 New York Avenue Newark, N. J..	208,000	1,560,000
(Seaboard Fur Corp., Agents)		
H. Renner & Sons 3976 W. 25th Street Cleveland, Ohio	7,800	58,500
J. Laskin & Sons Corp. Milwaukee, Wisconsin	3,328,000	24,960,000
Loyal Fur Dyeing Corp. Danville, Pa.	62,400	468,000
* Jacob Becher & Bro. 214 West 26th Street New York, N. Y.	138,632	1,039,740
* Fred'k Hoffner Tanning Co. Salem, Mass.	260,000	1,950,000
* Shearling Processing Corp. 48 Roebling Street Brooklyn, New York	39,000	292,500

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	Number of Skins Per Year	Approximate Number Per Year
Osmo Tanning & Mfg. Co. Spartansburg, Pa.	31,200	234,000
* Patterson Fur Dressing & Dyeing Corp. Patterson, N. J. (Amalgamated Fur Corp., Agents)	312,000	2,340,000
W. B. Place & Co. 368 W. Sumner Street Hartford, Wisconsin (Chicago Tanning Co., Agents)	374,400	2,808,000
Sunnyside Tannery Clackamas, Oregon	5,200	39,000
Weil & Eisendrath Co., Inc. 2221-39 Elston Avenue Chicago, Illinois	109,200	819,,000
Winslow Bros. & Smith Co. 246 Summer Street Boston, Mass.	1,872,000	14,040,000
* Western Fur Dressing & Dyeing Co. 266 State Street St. Paul, Minn.	187,200	1,404,000
* Workman & Co. 2139 E. Huntingdon St. Philadelphia, Pa.	130,000	975,000
# Mitchell & Peirson 30th & Reed Streets Philadelphia, Pa.	-	-
	10,175,568	76,316,760

* Have no 1941 record of production.

This concern has never produced shearling skins, being a goatskin tanner, but has expressed the desire to enter the field. They estimate their maximum production at 300,000 skins per annum.

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TRANS-BUDGET

MARCH 26, 1942

PRIORITY

J. H. HICKS, Lt. Col. A.C.
Chief, F.S.S.

Hq. Air Service Command,
14th & Constitution Ave.,
Washington, D.C.

ASCT-7194-SD CLASS 21. IT IS REQUESTED THAT THE FOLLOWING INFORMATION REGARDING MONTHLY DELIVERY OF SHEARLINGS REQUIRED BY THE AIR CORPS BE FURNISHED TO COL. VOLANDT AT THE EARLIEST POSSIBLE DATE.

A.	SQ. FEET REQUIREMENTS FOR FLYING PERSONNEL	SQ. FEET REQUIREMENTS FOR GROUND PERSONNEL	TOTAL REQUIREMENTS	PROGRAM
APRIL 1942	800,000	1,600,000	2,400,000	84 GROUP PROGRAM.
MAY 1942	800,000	1,600,000	"	" " "
JUNE 1942	2,407,000	2,883,000	5,290,000	84 GROUP PROG. & VICTORY PROG.
JULY 1942	"	"	"	" " " " " "
AUG. 1942	"	"	"	" " " " " "
SEPT. 1942	1,607,000	1,283,000	2,890,000	Victory PROG.
OCT. 1942	"	"	"	" "
NOV 1942	"	"	"	" "
DEC 1942	"	"	"	" "
JAN. 1943	"	"	"	" "
FEB. 1943	"	"	"	" "
MAR. 1943	"	"	"	" "
APR 1943	"	"	"	" "
MAY 1943	"	"	"	" "
JUNE 1943	"	"	"	" "
JULY 1943	"	"	"	" "

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Exhibit "B"

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	SQ. FEET REQUIREMENTS FOR FLYING PERSONNEL	SQ. FEET REQUIREMENTS FOR GROUND PERSONNEL	TOTAL REQUIREMENTS	PROGRAM
AUG. 1943	1,607,000	1,283,000	2,890,000	VICTORY PROG.
SEPT. 1943	1,607,000	1,283,000	2,890,000	VICTORY PROG.
OCT. 1943	1,607,000	1,283,000	2,890,000	VICTORY PROG.
NOV. 1943	1,607,000	1,283,000	2,890,000	VICTORY PROG.
DEC. 1943	1,607,000	1,283,000	2,890,000	VICTORY PROG.
JAN. 1944	1,607,000	1,283,000	2,890,000	VICTORY PROG.
FEB. 1944	1,607,000	1,283,000	2,890,000	VICTORY PROG.
MAR. 1944	1,607,000	1,283,000	2,890,000	VICTORY PROG.
APR. 1944	1,607,000	1,283,000	2,890,000	VICTORY PROG.
MAY 1944	1,607,000	1,283,000	2,890,000	VICTORY PROG.
JUNE 1944	1,610,000	1,267,850	2,877,850	VICTORY PROG.
TOTAL	44,178,000	40,059,850	84,237,850	

THE ABOVE DELIVERY REQUIREMENTS ARE BASED UPON SHEARLING REQUIREMENTS FOR FABRICATION OF WINTER FLYING AND GROUND CREWMEN'S CLOTHING IN THE FOLLOWING QUANTITIES:

84 GROUP PROG.	VICTORY PROG.	TOTAL	SQ.FT. REQUIREMENTS PER EACH	ITEM
52,800	500,800	553,600	70	SUIT, FLYING, WINTER
87,000	435,740	522,740	70	SUIT, GROUND CREWMAN'S
	936,540	936,540	7-1/2	SHOES, FLYERS & GROUND CREWMAN'S
	501,000	501,000	2	HELMET, FLYING, WINTER
	334,000	334,000	2	CAP, FLYING, WINTER

C. THE ABOVE FIGURES PROVIDE FOR INITIAL EQUIPMENT FOR NEW ORGANIZATIONS OF THE "84 GROUP PROGRAM" AND THE "VICTORY PROGRAM" PLUS MAINTENANCE REQUIREMENTS OF THESE PROGRAMS, AS WELL AS ALL PREVIOUS AIR CORPS PROGRAMS.

ASSISTANT CHIEF, AIR SERVICE COMMAND.

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WAR PRODUCTION BOARD

WASHINGTON, D. C.

March 28, 1942

IN REPLY REFER TO:

Col. W. F. Volandt
U. S. Army Air Corps
Room 4129 Munitions Building
Washington, D. C.

Dear Col. Volandt:

We enclose a copy of letter addressed to the Secretary of War embodying the conclusions arrived at during our meeting on Monday, which you were kind enough to attend. May we call your attention particularly to the enclosed list of shearling tanners with their stated capacity.

The more we consider this matter the more certain we are that it is highly important for Wright Field to let us have their report regarding the suitability of these sources as soon as possible. This should form a basis for considering the available capacity which in turn has a bearing on preference rating applications for expansion of plants.

We believe we are correct in stating that the following tanners have had direct Air Corps contracts for which we show the contract numbers:

A. C. Lawrence Leather Co.	--	W535AC-23321
J. Laskin & Sons	--	W535AC-23322
Winslow Bros. & Smith	--	W535AC-23323
Weil & Eisendrath	--	W535AC-23324
Chicago Tanning Co.	--	W535AC-23325
Anglo-American Tanning Co.	--	W535AC-23326
American Beaver Lamb Co.	--	W535AC-23327
Seaboard Fur Corporation	--	W535AC-23330

We believe also that the following tanners later received direct Air Corps contracts of which we do not have the numbers:

Berlin Tanning & Mfg. Co.
Acme Fur Dressing Co., Inc.

We gathered, however, at the meeting that Wright Field is not at all satisfied that all of these constitute satisfactory sources and the suggestion was made that we should be extremely careful to avoid unnecessary spoilage of skins by incompetent processing. We are, therefore, doubly anxious to have Wright Field's determination in regard to the enclosed list. If they feel that some of these

FOR DEFENSE
BUY
UNITED
STATES
SAVINGS
BONDS
AND STAMPS

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sources are definitely established, steps should be taken to ascertain the position of other services and if necessary, to curtail or eliminate skins going to such producers.

Yours very truly,

Joseph W. Byron
Leather and Shoe Section
Textile, Clothing and Leather Branch

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P

S-6-3A
HPG rms

April 11, 1942

Colonel D. C. Lingle,
Army Member, Working Committee,
Aeronautical Board,
Room [illegible], Navy Building,
Washington, D. C.

Dear Colonel Lingle:

It has just come to the attention of the undersigned that the Navy has placed on procurement fifty thousand suits, winter flying, made of shearling. This order apparently was placed during the week in which was held the conference by the Working Committee of the Aeronautical Board on the subject of "Shearling". Information concerning the fifty thousand suits was not divulged at the conference. It seems that inasmuch as the Army's motives and actions in placing our procurement for skins was questioned that the Navy motive perhaps could also be questioned.

Fifty thousand suits will require three and one half million square feet or five hundred thousand skins. This is 25 per cent of available domestic output. The contract was let with the J. Laskin Company, Milwaukee, and the available shearling which they have is frozen and earmarked for the Navy Project.

This percentage is not in accord with the percentage basis determined at this conference and inasmuch as this action was taken without a coordination with the Army, or apparently the Aeronautical Board, it seemed wise to me that it should be brought to your attention.

Very truly yours,

H. PAUL DEL INGER,
Lt. Col., Air Corps.

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SECRETARY
ROOM 4848
NAVY DEPARTMENT BUILDING

A.B. No. 520
(Case No. 140-A)

THE AERONAUTICAL BOARD

WASHINGTON

RAB

To: Commanding General, Materiel Command, Army Air Forces,
Chief of Bureau of Aeronautics.

SUBJECT: Requirements, procurement and equitable division of silk, nylon and shearling.

Reference: (a) Aeronautical Board letter A.B. No. 520 (Case No. 140) dated March 12, 1942.

Pursuant to its action of March 7, 1942, reference (a), the Aeronautical Board has made a careful study of the requirements, procurement and equitable distribution of parachute silk, nylon and shearling. This study has included a conference of responsible representatives of the Army Air Forces and Bureau of Aeronautics the conclusions and recommendations of which are concurred in and are embodied in the findings and decision of the Board, following.

2. Silk and Nylon allocation: The Board adopted the following computations and tabulation under assumptions

(a) Plane crew requirements are based upon six parachutes per 8-I program airplane;

(b) Paratroop requirements are listed in accordance with Infantry & Marine figures;

(c) That the available silk, 34,000,000 square yards, consists of all Army purchases since the silk freezing order in August, 1941, namely, 32,200,000 square yards, plus the Naval Aircraft Factory stock pile as of 1 January, 1942, namely, 1,800,000 square yards;

(d) That the distribution of the available silk has been made on a proportional basis of total silk parachute requirements through June, 1943, as shown below:

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~~58~~

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Fiscal Year	ARMY				NAVY			
	Plane Crews		Paratroops		Plane Crews		Paratroops	
	Silk	Nylon	Silk	Nylon	Silk	Nylon	Silk	Nylon
2nd half 1942	62,442	0	10,800	0	14,958	250	0	0
1st half 1943	93,666	0	79,000	5,000	29,412	0	2,000	2,000
2nd half 1943	152,670	0	23,000	62,000	51,834	0	0	0
1st half 1944								
2nd half 1944								
TOTALS	308,778		112,800		96,204		2,000	
			308,778				96,204	
			421,578				98,204	

Distribution: Army $\frac{421,578}{519,782}$ x 34,000,000 - 27,577,000 yards

Navy $\frac{98,204}{519,782}$ x 34,000,000 - 6,423,000 yards

3. Shearling allocation: The following tabulation of shearling requirements is agreed upon, based upon assumptions

(a) That plane crew requirements are based upon six suits per 8-I program airplane, and 75 square feet per suit;

(b) That ground crew requirements for Army are based upon providing suits for 50% of ground personnel. The Navy ground crew requirements are computed upon the proportional basis established by Army plane to ground requirements. Navy, at this time, does not require wool shearling. Actual requirements will depend upon availability of sufficient substitute materials.

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(Shearling allocation)

	ARMY		NAVY	
	Plane Crews	Ground Crews	Plane Crews	Ground Crews
2nd half 1942	4,670,000	3,990,000	1,120,000	950,000
1st half 1943	7,020,000	5,980,000	2,200,000	1,870,000
2nd half 1943	11,450,000	9,710,000	3,880,000	3,290,000
1st half 1944	14,200,000	12,060,000	5,270,000	4,470,000
2nd half 1944	9,760,000	8,320,000	4,320,000	3,670,000
TOTAL	47,100,000 sq. ft.	40,060,000 sq. ft.	16,790,000 sq. ft.	14,250,000 sq. ft.

4. It is agreed, therefore,

(a) That the silk supply now available to Army Air Forces and Bureau of Aeronautics, namely, 34,000,000 square yards, be divided as follows:

Army Air Forces - 27,577,000 square yards.
Bureau of Aeronautics - 6,423,000 square yards.

It is understood that such allocations of silk include the proportional quantities of shroud lines, tape, and thread required for the fabrication of parachutes.

(b) This same proportion of allocation, namely; 4.29 to 1, shall apply to any additional silk which may become available and also, to the distribution of nylon for parachutes;

(c) That shearling be allocated in accordance with the requirements tabulated in paragraph 3 above, or on the proportional basis conforming to those Army-Navy allocations, and that plane crew requirements will be satisfied for each six months' period before any consideration is given to ground crews. Procurement of all shearling will be accomplished by the Army by six months' periods;

(d) That the Bureau of Aeronautics supplement this agreement by submission of requisitions through appropriate channels.

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5. The Board considered the possibility of procuring finished articles and agreed that such policy is not desired at this time. Army-Navy Standard Aeronautical Specifications exist for all types of parachutes; the preparation of similar specifications for winter flight clothing will be undertaken immediately.

H. H. ARNOLD
Lieutenant General, U.S. Army,
Senior Army Member Present.

J. H. TOWERS
Rear Admiral, U.S. Navy,
Senior Navy Member Present.

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NDAC-366-WP-12-24-41-200M

7-2(1/588)

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REFER REPLY TO:
MHS:AB:62

INTER-OFFICE MEMORANDUM
WAR DEPARTMENT, AIR CORPS
Office, Assistant Chief
Materiel Division

Wright Field, Dayton, Ohio
Date April 29, 1942

TO: Chief, Contract Branch

AC-28773

SUBJECT: Procurement of Shearling, sheep

1. Attached hereto are Authorities for Purchase Nos. 229286 and 226605, together with letters from J. Laskin & Sons, Corp., Milwaukee, Wisc., dated April 20, 1942, Muskegon Tanning Co., Muskegon, Mich., dated April 20, Winslow Bros. & Smith Co., Norwood, Mass., dated April 16, 1942, and A. C. Lawrence Leather Co., Peabody, Mass., dated April 24, 1942.

2. It is recommended that contracts be awarded the above named companies for sheep shearlings in accordance with specification AS-113-B dated December 26, 1940, and latest amendment thereto, under the Act of July 2, 1940, as follows:

J. LASKIN & SONS CORPORATION AC-28773 (#264)

Type I, Finish 2, Sheep Shearlings
1,944,000 sq.ft. Beige, 1" Pile at $0.67 per sq. ft.
1,944,000 " " " 3/4" " " .65 " " "
5,103,000 " " " 5/8" " " .62 " " "
303,750 " " " 3/8" " " .57 " " "
2,025,000 " " " 1/4" " " .57 " " "

Type II, Finish 2, Sheep Shearlings
7,281,900 sq.ft. Beige, 3/8" Pile at $0.52-1/2 per sq.ft.

Type I, Finish 3, Sheep Shearlings
83,500 sq.ft. Yellow, 1/4" pile at $0.425 per sq.ft.

Type I, Finish 3, Sheep Shearlings
703,000 sq.ft. Yellow, 3/4" pile at $0.60 per sq.ft. for 1's
.50 " " " " 2's
(approximately 30% #2's)

TERMS: Net 10 days, F.O.B. Milwaukee, Wisconsin

DELIVERY: 4,538,800 sq.ft. are to be delivered prior to December 31, 1942 - balance during 1943.

Disregard Shipping Instructions and use "Shipping instructions to follow later" FTM 5/7/42

Signature

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F-2(2/500)

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Chief, Contract Branch
April 29, 1942

INSPECTION AND ACCEPTANCE shall be at the plant of the contractor or subcontractor, and delivery shall be f.o.b. cars at such plant for shipment on Government bill of lading.

MUSKEGON TANNING CO. W 535 ac 28774 (8265)

Type I, Finish 2, Sheep Shearlings
486,000 sq.ft. Beige, 1" Pile at $0.67 per sq.ft.
486,000 sq.ft. " 3/4" " " .65 " " "
2,187,000 " " " 5/8" " " .62 " " "
101,250 " " " 3/8" " " .57 " " "
675,000 " " " 1/4" " " .57 " " "

Type II, Finish 2, Sheep Shearlings
4,463,100 sq.ft. Beige, 3/8" Pile at .525 " " "

Type I, Finish 3, Sheep Shearlings
473,167 sq.ft. Yellow 1/4" Pile at .425 " " "

Type I, Finish 3, Sheep Shearlings
1,640,334 sq.ft. Yellow 3/4" Pile at $0.60 per sq.ft. for #1's
.50 " " " " #2's
(Approximately 30% #2's)
(Chrome combination tannage)

TERMS: Net ten days, F.O.B. Muskegon, Mich.

DELIVERY: 2,461,200 sq.ft. to be delivered prior to December 31, 1942. Balance during 1943.

INSPECTION AND ACCEPTANCE shall be at the plant of the Contractor or subcontractor and delivery shall be f.o.b. cars at such plant for shipment on Government bill of lading.

WINSLOW BROS. & SMITH CO. W 535 ac 28775 (8266)

Type I, Finish 2, Sheep Shearlings
1,687,500 sq.ft. Beige, 1" Pile at $0.67 per sq.ft.
1,687,500 " " " 3/4" " " .65 " " "
5,062,500 " " " 5/8" " " .59 " " "
281,250 " " " 3/8" " " .55 " " "
1,875,000 " " " 1/4" " " .55 " " "

Type II, Finish 2, Sheep Shearlings
8,156,250 sq.ft. Beige, 3/8" to 1/4", $0.51 per sq.ft.

Type I, Finish 3, Sheep Shearlings
2,343,334 sq.ft. Yellow 3/4" Pile at $0.60 per sq.ft. for #1's
.50 " " " " #2's

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Chief, Contract Branch
April 29, 1942

(Approximately 30% of Type I, Finish 3 will be #2's). Tannage to be equally divided between chrome tan, yellow tinted, and bark tan, yellow tinted.

Type I, Finish 3, Sheep Shearling, Helmet Stock
556,667 sq.ft. yellow or beige, 1/4" Pile at $0.425 per sq.ft.
This grade to consist of 2's and 3's.

TERMS: All prices quoted are f.o.b. Norwood, Massachusetts.

DELIVERY: 4,750,000 sq. ft. to be delivered prior to December 31, 1942. Balance during 1943.

INSPECTION AND ACCEPTANCE shall be at the plant of the Contractor or subcontractor and delivery shall be f.o.b. cars at such plant for shipment on Government bill of lading.

A. C. LAWRENCE LEATHER CO. TQ 5350 ac 27176 (SAC)

Type 2, Finish 2, Sheep Shearling, Garment Stock
11,093,000 sq.ft. Beige, 1/4-3/8" Pile at $0.50 per sq.ft.

Type I, Finish 2, Sheep Shearling, Garment Stock

2,295,000 sq.ft.	Beige,	1"	pile at	$0.67	per sq.ft.
2,295,000 sq.ft.	"	3/4"	" "	.63	" " "
6,885,000 sq.ft.	"	5/8"	" "	.595	" " "
382,000 sq.ft.	"	3/8"	" "	.525	" " "
2,550,000 sq.ft.	"	1/4"	" "	.515	" " "

Type I, Finish 3, Sheep Shearling, Boot Stock
2,343,000 sq.ft. Yellow, 3/4" pile at $0.60 per sq.ft. for #1's
.50 " " " " #2's

(Approximately 30% #2's)

Type 1, Finish 3, Sheep Shearling, Helmet Stock
556,667 sq.ft. yellow, 1/4" pile at $0.40 per sq.yd.

TERMS: Net ten days from date of invoice, f.o.b. cars at Lawrence's tannery at Winchester, New Hampshire, or Peabody, Mass.

DELIVERY: 7,999,067 sq.ft. to be delivered prior to December 31, 1942. Balance during 1943.

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Chief, Contract Branch
April 29, 1942

INSPECTION AND ACCEPTANCE shall be at the plant of the contractor and delivery shall be f.o.b. cars at such plant for shipment on Government bill of lading.

Standard 3. Contracts should provide that the amounts to be delivered prior to December 31, 1942 are to be at the fixed prices as shown in each contractor's letter, and as listed above. Provision should be made for renegotiations each quarter during the calendar year 1943.

4. The above prices are somewhat higher than those paid for material covered by contracts placed in December 1941, due to the fact that the War Production Board set a ceiling on the raw skins which increased the prices approximately ten (10) cents per square foot.

5. Clauses should be incorporated in the contracts to the effect that failure to deliver shearlings in the period stipulated will not affect the prices. If shearlings are delivered at a later date than specified the prices will prevail as set forth in the original delivery schedule for each quarter, as well as those quantities to be delivered prior to December 31, 1942.

6. These four sources represent the largest dealers in sheep shearlings in this Country, and quantities allotted each corporation are the amounts stipulated by them as being what they could deliver.

7. There is still to be purchased approximately 30,000,000 square feet of sheep shearling, which will be covered by contracts as soon as sources can be located and negotiations completed.

8. Bonds are not required.

9. Award made in accordance with the Act of July 2, 1940 is in the best interests of the Government for the following reasons:

a. See paragraph No. 6 above.
b. Contractors can meet the delivery requirements of the National Defense Program.
c. Limited sources of supply.
d. Awards made to more than one contractor in order to accelerate delivery.

10. As contracts have already been placed with shoe manufacturers, for which a portion of this sheep shearling is to be used, it is requested that contract numbers be immediately assigned, priorities issued, and each contractor notified by wire in order that shipments can be made forthwith.

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Chief, Contract Branch
April 29, 1942

This is essential in order that the shoe manufacturers will not be further delayed.

11. During the negotiations several of the contractors stipulated that they may desire the 30% advance payment. Negotiations were started prior to the issuing of recent memorandum which stipulated 2-1/2% interest would be charged.

12. Attention is invited to the fact that the prices of J. Laskin & Sons Corporation and Muskegon Tanning Co. are slightly higher than those quoted by Winslow Bros. & Smith Co. This is due to the fact that these companies are independently owned and are not connected with the big packing houses. Attention is also invited to the fact that the prices quoted by Winslow Bros. & Smith Co. are slightly higher than those quoted by A. C. Lawrence Leather Co. It was the understanding during the negotiations that A. C. Lawrence Leather Co. had accumulated a considerable quantity of skins at a cheap price and was giving the Government the benefit of these savings. The above is furnished as explanation of the difference in prices quoted by the above companies.

13. Negotiations were conducted by Mr. Bell of A. C. Lawrence Leather Co., Mr. Laskin for J. Laskin & Sons Corporation and Muskegon Tanning Co., and Mr. B. Nelson for Winslow Bros. & Smith Co. Mr. M. H. Simmons of the Negotiation Branch, Contract Section, represented the Materiel Center.

14. These contracts, when prepared, will bear the signature of Claude P. Rowan, Captain, Air Corps.

A. E. JONES
Colonel, Air Corps
for Chief, Contract Section

6 Encls.
(All related corres.)

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WAR DEPARTMENT
AIR CORPS, MATERIEL DIVISION

MEMORANDUM REPORT ON

Date May 12, 1942

SUBJECT: Test of Physical Properties and Allergy Test of Mothproofed Shearling.

SECTION: Experimental Engineering

SERIAL No. EXP-M-56-3905, Add. 1

Contract No. 7004
Expenditure Order No.
Purchase Order No.

A. Purpose.

1. The purpose of this investigation was to determine the effect of mothproofing on the physical properties of treated shearlings, and to determine the effect of the various mothproofing treatments with reference to the allergy of the treatment.

B. Factual Data.

1. The identification of the treatments, and the manners accomplishing the treatments are as follows:

Stamping on Shearling Hides	Code Marking to be Placed on Garment Labels
A.C. Lawrence #1 (Demotex)	Type A-1 Moth Treatment
A.C. Lawrence #2 (Neva-Moth)	Type A-2 " "
A.C. Lawrence #3 (Mothex)	Type A-3 " "
Winslow Bros. #1 (Demotex)	Type B-1 Moth Treatment
Winslow Bros. #2 (Neva-Moth)	Type B-2 " "
Winslow Bros. #3 (Mothex)	Type B-3 Moth Treatment
Laskin & Son #1 (Demotex)	Type C-1 Moth Treatment
Laskin & Son #2 (Neva-Moth)	Type C-2 " "
Laskin & Son #3 (Mothex)	Type C-3 " "

2. Four Type B-6 winter flying jackets, manufactured by the Aero Leather Clothing Company, Beacon, New York, were obtained from stock for the purpose of determining the effect of the various treatments on the physical properties of the shearlings. Details of this test are covered in Exhibit A.

3. The allergy test of mothproofed winter flying jackets was accomplished by the Aero Medical Research Unit of the Equipment Laboratory, and is described in detail in Exhibit B.

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C. Conclusions.

1. Test data indicate that none of the treatments tested has any damaging effect on the physical properties of the leather.

2. Allergy tests indicate that these treatments are satisfactory with reference to the effect on wearing personnel.

D. Recommendations.

1. The specification covering the subject basic material is being revised to include requirements for mothproofing and the measurement of the degree of moth resistance.

Prepared by C. J. CLEARY
(Name)

Approved by J. D. JOHNSTON
Chief, Materials Laboratory.

Concurrence:

Approved by F. O. CARROLL,
Colonel, Air Corps,
Chief, Experimental
Engineering Section.

Distribution:
Material Command, Attn: Sec.
Air Force Section
Prod. Eng. Sec., Att: Spec. Br. Central Files

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Experimental Engineering Section
Memorandum Report No. EXP-M-56-3905, Add. 1
May 12, 1942

EXHIBIT A

WAR DEPARTMENT
AIR CORPS, MATERIEL DIVISION

MEMORANDUM REPORT ON

SUBJECT: Mothproofing Treatments of Sheep Shearling.

Date April 16, 1942

SECTION: Experimental Engineering

Contract No.
Expenditure Order No. 351-1
Purchase Order No.

SERIAL No. EXP-M-56-Th2-34

A. Purpose.

1. To determine the effect of various mothproofing treatments on the physical properties of sheep shearling for winter flying suits.

B. Factual Data.

1. Four Type B-6 winter flying suit jackets manufactured by Aero Leather Clothing Company, Beacon, New York, were obtained from stock for the purpose of determining the effect of the various mothproofing treatments.

2. The lower back panel from each jacket representing the mothproofing treatments was removed and tested for tensile, elongation, and stitch tear characteristics according to the test procedure set forth in Air Corps Specification 12022-A.

3. Test data on Types A-1, B-2, and C-3 mothproofed shearlings, compared with an untreated shearling, are presented in Appendix 1, Table I.

C. Conclusions.

1. That there are no indications of any damaging effect due to the various mothproofing treatments of sheep shearlings.

Concurrence:

Prepared by WILLIAM PERRY

Approved by J. B. JOHNSON,
Chief, Materials Laboratory

Distribution:
Materiel Command, Att: Exec.
Central Files

Approved by F. O. CARROLL,
Colonel, Air Corps,
Chief, Experimental
Engineering Section.

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Experimental Engineering Section
Memorandum Report No. EXP-M-56-3905, Add. 1
May 12, 1942

EXHIBIT A (CONTINUED)

Experimental Engineering Section
Memorandum Report No. EXP-M-56-TL2-34
April 16, 1942

APPENDIX 1

TABLE I

Type Treatment	Tensile Str. lbs/in^2 Horizontal	Tensile Str. lbs/in^2 Vertical	Elongation % Horizontal	Elongation % Vertical	Tear Stitch lbs.	Thickness (inches)
A-1-Demotex	862.0	1175.8	52.3	45.3	326	.058
B-2-Neva-Moth	728.3	720.3	59.3	59.3	243	.060
C-3-Mothex	2200.0	1559.5	52.7	52.7	544	.045
Untreated	739.2	1066.0	52.0	52.0	345	.051

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Experimental Engineering Section
Memorandum Report No. EXP-M-56-3905, Add. 1
May 12, 1942

EXHIBIT B

INTER-OFFICE MEMORANDUM
War Department, Air Corps
Office, Assistant Chief
Materiel Division

OOB:mmj:54
Wright Field, Dayton, Ohio

Date May 9, 1942

TO: Chief, Materials Laboratory,
Wright Field.

SUBJECT: Allergy Test of Mothproofed Winter Flying Jackets.

1. The Aero Medical Research Unit of the Equipment Laboratory, in cooperation with Mr. C. J. Cleary of the Materials Laboratory, has conducted some tests on the allergenic properties of mothproofing compounds incorporated in sheep shearling winter flying jackets. The tests were conducted on a group of approximately 15 volunteer enlisted men of the Army Air Forces.

2. In the testing of the allergenic properties of the sheep shearling winter flying jackets, the following procedure was followed:

a. Fifteen non-commissioned officers and privates of the Army Air Forces were selected at random from among a group of volunteers.

b. Each experimental subject was issued a sheep shearling winter flying jacket, Model B-6. These garments had been treated with Demobex, Mothex, or Neva-Moth. Five garments treated with each of the compounds mentioned were used in the test.

c. The subjects were instructed to wear the garments as much of the time as possible and to insure that the maximum area of contact with the bared skin be obtained. In some instances the subjects wore the garment without underclothing and shirts so that the entire neck, arms, and torso came in contact with the treated shearling.

d. The garments were worn an average of eighteen hours per subject with a minimum wearing time of eleven hours and a maximum of approximately forty hours.

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EXHIBIT B (CONTINUED)

Chief, Materials Laboratory, Wright Field.
"Allergy Test of Mothproofed Winter Flying Jackets."
May 9, 1942.

e. Results. - Each of the volunteer subjects was carefully inspected for evidence of dermatitis, particularly about the neck, axillae and forearms, and was questioned to determine whether or not any symptoms of irritation of the skin (or upper respiratory tract) occurred. In no instance was there any evidence of irritation.

f. The tests as conducted are thought to be superior to "patch" tests of the mothproofing chemicals. However, a larger group of test subjects would have been desirable.

g. Appended is a summary of the experimental tests.

OTIS O. BENSON, Jr.,
Lt. Col., Medical Corps,
Chief, Aero Medical
Research Unit.

1 Incl.
(Summary of
Experimental Tests)

Approved by: RANDOLPH P. WILLIAMS,
Colonel, A. C.,
Chief, Equipment Laboratory.

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EXHIBIT B (CONTINUED)

TEST OF IRRITATING PROPERTIES OF MOTHPROOFING SUBSTANCES

SUBJECT	DATE GARMENT ISSUED	SIZE	TYPE OF SUBSTANCE ±	FIRST INSPECTION Date		Effect on Skin	SECOND INSPECTION Date		Effect on Skin
M/Sgt. Adkins	4/18/42	42	C-3	4/21/42	10 hrs. wear	none	5/1/42	Total 15 hrs. wear	none
M/Sgt. Andrick	4/18/42	40	C-1	"	10 hrs. wear	"	"		
T/Sgt. Bryant *	4/17/42	40	C-1	"	10 hrs. wear	"	"	18 hrs. wear	"
M/Sgt. Bennett	4/17/42	38	B-2	"	10 hrs. wear	"	"	20 hrs. wear	"
Pvt. Burns	4/18/42	42	C-3	"	10 hrs. wear	"	"	15 hrs. wear	
Pvt. Eaton	4/18/42	38	B-2	"	10 hrs. wear	"	"		
Pvt. Gardner	4/18/42	40	C-1	"	10 hrs. wear	"	5/7/42	40 hrs. wear	"
Pvt. Garcia	4/17/42	38	B-2	"	10 hrs. wear	"	5/1/42	20 hrs. wear	"
M/Sgt. Graham	4/17/42	42	C-3	"	10 hrs. wear	"	"	20 hrs. wear	"
M/Sgt. Grey	4/17/42	42	C-3	"	10 hrs. wear	"	"	20 hrs. wear	"
T/Sgt. Holloway	4/17/42	42	C-3	"	10 hrs. wear	"	"	18 hrs. wear	"
T/Sgt. Moorhead	4/18/42	40	C-1	"	10 hrs. wear	"	"	11 hrs. wear	"
Pvt. Miller	4/17/42	38	B-2	"	10 hrs. wear	"	5/4/42	15 hrs. wear	"
S/Sgt. Riggins	4/18/42	40	C-1	"	10 hrs. wear	"	"	15 hrs. wear	"
Pvt. Weigand	4/17/42	38	B-2	"	10 hrs. wear	"	5/1/42	16 hrs. wear	"

* Sgt. Bryant wore garment one week (10 hrs)
Jacket then worn by Sgt. Dixon for second week (8 hrs)

± Key to treatment types.

B-2 = Neva-Moth
C-1 = Demotex
C-3 = Mothex

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H-3

120

TANNERS' COUNCIL OF AMERICA

100 GOLD STREET
NEW YORK

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E. CARLE SHOTWELL, TREASURER
MERRILL A. WATSON, EXECUTIVE VICE-PRES.
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F. STURGIS STOUT
WILLIS E. THORPE
MARCUS C. WEIMAR

WASHINGTON OFF
TRANSPORTATION BU
TELEPHONE: NATIONA

65

TANNERS' COUNCIL CODE
CABLE ADDRESS "TANNERCIL

NEW YORK TELEPHONE:
BEEKMAN 3-0494

May 13, 1942

Materiel Division,
Army Air Corps,
Wright Field,
Dayton, Ohio.

Dear Sirs:

As a matter of information, will you kindly tell us whether contractors working on shearling garments have the right to dispose of scrap resulting from the manufacture of garments, or whether this scrap is still the property of the Government.

I am under the impression that formerly such scrap became the property of the contractor but that more recently a contractor was supposed to return to the Air Corps any unused pieces.

Any information on this point would be appreciated.

Very truly yours,

J. Louis Nelson
Secretary.

jln/mm

CENTRAL FILES

MAY 20 1942

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2

Address reply to:
Commanding General,
AAF Material Center,
Wright Field, Dayton, Ohio,
MPS:mlb:60

May 14, 1942.

Inspection of Shearling for
Flying Clothing.

District Supervisor,
Eastern Procurement District,
AAF Material Center,
11th Floor, 90 Church St.,
New York, N. Y.

Attention: District Inspection Officer.

1. In view of the limited volume of raw material available for shearlings and the probability of increased needs for flying clothing, it has been agreed that no skins which could possibly be used for warm flying clothing should be released for civilian use.

2. In order to make the most efficient use of the available supplies, a change recommendation to Specification 8-113-B has been initiated which defines what will be considered acceptable. A copy of the change recommendation is being enclosed with this letter for your information. It will be noted that paragraph B-1d defines No. 2 skins as having an area of 4 square feet or more containing defects in excess of those allowed in the No. 1 skins, and No. 3 skins as having an area of less than 4 square feet. Both skins, however, should have sufficient cutting area to permit cutting of boot patterns. A boot pattern is also being enclosed with this letter to further clarify the minimum cutting area acceptable.

3. It is the understanding of this office that some contracts are now in process which will provide for the furnishing of the No. 2 and No. 3 skins, and copies of these contracts will be forwarded with the applicable data when received, in accordance with the regular procedure.

4. The War Production Board will amend its Conservation Order to prohibit the release to civilian trade of any shearlings other than those rejected by Army Air Forces Inspectors. The War Production Board has requested that the Army Air Forces Inspector accomplish a rejection certificate for the skins which are not acceptable under the revised specification so that release of skins for other uses than as covered by the revised specification can be obtained by the shearling suppliers.

5. The request of the War Production Board meets with the approval of this office, and it is requested that necessary instructions be issued to inspectors concerned so that release of rejected material for commercial use may be obtained by the contractor. It is suggested the inspection certificate be prepared in letter form, with copies for the contractor,

DATE
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ADM. EXC.
C. O.
BUD. OFF.
EXP. ENG.
PROD. ENG.
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INSP.
MAINT. COMM.
P. S.
OTHERS

66

CENTRAL FILES MDAC-190-WF-6-28-41-1 Mil.

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Address reply to:
Commanding General,
AAF Material Center,
Wright Field, Dayton, Ohio,
MPS:mtb:dd

May 14, 1942.

Inspection of Shearling for
Flying Clothing.

District Supervisor,
Eastern Procurement District,
AAF Material Center,
11th Floor, 90 Church St.,
New York, N. Y.

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District Supervisor, East. Proc. Dist.
May 14, 1942.

the War Production Board, Washington, D. C., your office and this office, listing the amount and condition of the rejected shearling.

6. In connection with the release of rejected shearling as referred to in this letter, two contractors in the Eastern District have already requested release of shearling as outlined in sub-paragraphs "a" and "b" following:

a. Winslow Bros. & Smith Co., Norwood, Mass.

Applicant requests release of the following specified shearlings:

150 dozen RB6 White Shearlings
40 " RN Dark "

These skins are listed in letter of April 28, 1942, and described as unfit for any defense order, including boots or helmets, because of damage in the wool and in the leather.

b. A. C. Lawrence Leather Co., Peabody, Mass.

Applicant requests release of the following specified shearlings:

1. 519 doz. #3 Mutan & Beige) 1/4" topped wool, wool slips,
560 " #4 " " ") cracked grain, tender, tinny leather, coarse, matted wool.
68 " Special #4 Mutan & Beige) Very poor, poorer than #4, only suitable for cheap slippers.

2. 2069 doz. #3 Beige Electrified) 1/2"/1" wool, too much cracked grain, slip wool, etc. for coat linings.
49 doz. #3 Beige Acrylate) 1/4" wool, wool matty, too poor for aviation garments or helmets.

7. It is requested that an inspector be detailed to inspect the shearlings referred to in sub-paragraphs "a" and "b", accomplishing the certificates as outlined in paragraph 5. The recommended action for the inspector with the available knowledge is as follows: Release to Winslow Bros. & Smith the 190 dozen skins referred to in sub-paragraph "a". Release to A. C. Lawrence Leather Company the 1147 dozen skins referred to in sub-paragraph "b-1", but deny release of the 2118 dozen skins referred to in sub-paragraph "b-2", as this material appears to be useable in aircraft clothing.

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CENTRAL FILES MDAC-190-WF-2-5-42-1 MIL

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District Supervisor, East. Proc. Dist.
May 14, 1942.

8. It is requested that this office be advised of the action taken by copies of correspondence initiated in connection with subject matter.

By Command of Brigadier General Wansman:

THOS. M. CHAPMAN,
Colonel, Air Corps,
Chief, Inspection Section.

Incl.

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H-4

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REFER REPLY TO:
MES:AB:82

Wright Field, Dayton, Ohio
May 20, 1942

Scrap Shearling

Tanners' Council of America
100 Gold Street
New York, New York

1. This is in response to your letter of May 13, 1942, in which you make reference to the contractors who are furnishing the Army Air Forces with garments made from sheep shearlings, for which the Government is furnishing the shearlings.

2. All pieces of scrap shearling, irrespective of size, are to be segregated and upon completion of contract they are to be shipped to destination designated. All of this type material is the property of the Government and is not to be disposed of by the contractor.

For the Commanding General, Army Air Forces, Material Center:

MAY 20 1942

CLAUDE P. MOWAN
Captain, Air Corps
Contracting Officer

Cy to:
Inspection Section (2)

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CENTRAL FILES MDAC-190-WP-2-5-42-1 MP.

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A. C. 266a-Wright Field 10-13-39-30M

H-6(1/3/00)

CJC:hmr:56

123

WAR DEPARTMENT
AIR CORPS, MATERIEL DIVISION

MEMORANDUM REPORT ON

123

Date June 23, 1942

SUBJECT: Conference Regarding Standardization of Shearling Grades.

SECTION Experimental Engineering

SERIAL No. EXP-M-56-1182

Contract No.
Expenditure Order No. 780-4
Purchase Order No.

A. Purpose.

1. The purpose of this conference was to define the skin grades noted in Amendment 6, Specification 8-113-B, and to interpret the manufacturing terms included in the specification and the amendment.

B. Factual Data.

1. A conference was held at the plant of the J. Laskin & Sons Corporation, Milwaukee, Wisconsin, on June 3, 1942. Personnel at the conference included representatives of the several Government agencies and one or more representatives from practically all of the contractors supplying sheep shearlings to the Army Air Forces. A list of personnel present is shown below:

Mr. Randolph Butler	War Production Board	Washington, D. C.
Mr. C. G. Loose	Materiel Center	Dayton, Ohio
Mr. R. P. Salisbury	Materiel Center	Dayton, Ohio
Mr. T. H. Pope	Materiel Center	Dayton, Ohio
Mr. P. Coluni	Eastern Procurement Dist.	New York City
Mr. Frank Cook	District Inspector, A.A.F.	Milwaukee, Wis.
Mr. J. V. Colwell	Inspector, A.A.F.	Milwaukee, Wis.
Mr. C. A. Anderson	Inspector, A.A.F.	Milwaukee, Wis.
Mr. Irving Roth	Inspector, A.A.F.	Berlin, Wis.
Mr. Joe Slager	Inspector, A.A.F.	Hartford, Wis.
Mr. Morris Bisnow	Inspector, A.A.F.	Sheboygan Falls, Wis.
Mr. Stratton	Inspector, A.A.F.	Milwaukee, Wis.
Mr. Steve Palmer	A. C. Lawrence Leather Co.	Peabody, Mass.
Mr. W. C. Abbott	A. C. Lawrence Leather Co.	Peabody, Mass.
Mr. Ben Place	W. B. Place Co.	Hartford, Wis.
Mr. E. R. Miller	Berlin Tanning Co.	Berlin, Wis.
Mr. H. J. Miller	Chicago Tanning Co.	Chicago, Ill.
Mr. Morris Miller	Chicago Tanning Co.	Chicago, Ill.
Mr. Jos. Stern	Anglo-Amer. Tanning	Sheboygan Falls, Wis.
Mr. Art Stern	Anglo-Amer. Tanning	Sheboygan Falls, Wis.
Mr. A. W. Stern	Weil Eisendrath	Chicago, Ill.

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B. Factual Data (Contd)

Mr. E. Vandeweghe	American Beaver Lamb	New York City
Mr. J. Workman	Workman & Workman	Philadelphia, Pa.
Mr. W. Eisenhaver	Inspector, A.A.F.	Chicago, Ill.
Mr. J. Goodstein	Amalgamated Fur	New York City
Mr. J. Dacais	Celeste Fur Dressing	Newark, N. J.
Dr. Kestenbaum	Petzold Ltd. Fur Dyeing	New York City
Mr. Jos. Basis	Heerfur Dressing & Dyeing	New York City
Mr. Myron Laskin	J. Laskin & Sons Corp.	Milwaukee, Wis.
Mr. D. V. Nason	J. Laskin & Sons Corp.	Milwaukee, Wis.
Mr. S. J. Karsseboom	J. Laskin & Sons Corp.	Milwaukee, Wis.
Mr. Leslie Dahl	J. Laskin & Sons Corp.	Milwaukee, Wis.
Mr. Theo. Hasse	Muskegon Tanning Co.	Muskegon, Mich.
Mr. Joe Riedy	J. Laskin & Sons Corp.	Milwaukee, Wis.

2. The following were the accepted definitions of the skin grades specified:

a. A No. 1 skin is one conforming to all of the requirements of the specification including limitation on the amount of serging allowed in the skins.

b. A No. 2 skin is essentially the same as a No. 1 skin with reference to serging, etc., except as follows:

(1) It can have more serged seams than a No. 1 skin.

(2) It can have more edge defects than a No. 1 skin.

c. The No. 3 skin was not included in this discussion owing to the fact that it is strictly a boot and helmet material, and as such is to be discussed further with the tanners and the boot and helmet manufacturers. It was agreed, however, that a No. 3 skin can be serged or added to by other skin parts to produce a No. 2 or No. 1 skin, provided there is a proper match in color, shade, wool grade, and quality.

d. A rejected skin was defined as a No. 1 or No. 2 skin not suitable for cutting garment patterns due to non-reparable defects.

3. It was decided to remove the top limit of 11 square feet as the maximum skin area allowed under this specification. No top limit will be indicated.

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H-6(3/300)

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Experimental Engineering Section
Memorandum Report No. EXP-M-56-4152
June 23, 1942

B. Factual Data (Contd)

4. Mothproofing requirements have been added to the specification for sheep shearlings. The tanners will obtain certification from the manufacturer of the mothproofing compounds to show conformance of their material with the requirements of the specification. Specification changes to this effect are to be accomplished.

5. Shearling used for boot stock requires a maximum grease content which is considerably below the maximum grease content allowed for the garment and helmet leathers. This question was not raised at this conference, but will require further discussion with the tanners and manufacturers of boots.

C. Conclusions.

1. All tanners and clothing manufacturers were in agreement with the definitions indicated under "Factual Data".

2. Specification changes indicated under "Factual Data" will be accomplished.

C. J. CLEARY

J. B. JOHNSON,
Materials Laboratory

F. O. CARROLL,
Colonel, Army Air Forces,
Chief, Experimental
Engineering Section.

Materiel Command, Att: Exec.
Central Files
Inspection Section
Contract Section
Air Force Section (4)

3

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INTER-OFFICE MEMORANDUM

ARMY AIR FORCES
MATERIEL CENTER
Office of The Commanding General

IJS:hh:82F
Wright Field, Dayton, Ohio
Date June 25, 1942

"A"

6/30 — Gave APP to Capt Mitchell Room 3 Legal Br.

TO: Chief, Purchase Branch

SUBJECT: Shearling

a7P 286964

1. Attached hereto are quotations from the Workman and Company, Philadelphia, Pa., dated June 4, 1942, telegram dated June 20, 1942; Chicago Tanning Co., Chicago, Ill., dated June 4, 1942, telegram dated June 22, 1942; Berlin Tanning Co., Berlin, Wisconsin, dated June 9, 1942, telegram dated June 22, 1942; Weil & Eisendrath Co., Chicago, Ill., dated June 5, 1942; Anglo-American Tanning Co., Shebogan Falls, Wisconsin, dated June 6, 1942, telegram dated June 22, 1942; American Beaver Lamb Corp., Johnstown, N. Y., dated June 6, 1942, telegram dated June 22, 1942; Amalgamated Fur Corp., New York, N. Y., dated June 8, 1942, telegram dated June 22, 1942; Celeste Fur Dressing & Dyeing Corp., Newark, N. J., dated June 10, 1942, telegram dated June 19, 1942; Master Industries, Inc., Detroit, Michigan, dated June 9, 1942; Petzold Fur Dyeing Corp., New York City, N. Y., dated June 12, 1942, telegram dated June 22, 1942; Certified Dressers and Tanners, Brooklyn, N. Y., dated June 5, 1942, telegram dated June 23, 1942; Seaboard Fur Corp., New York City, N. Y., dated June 12, 1942, telegram dated June 23, 1942; Heer Fur Dressing & Dyeing Corp., New York, N. Y., dated June 11, 1942, telegram dated June 22, 1942.

2. A.F.F. #286964 is now in Contract Section attached to Contracts AC 28774, AC 28775, AC 28776.

3. It is recommended that Purchase Order on Form 33 be issued to the above named companies in accordance with the First War Powers Act as follows:

X-42-10,470 Workmen and Company $596,337.50

W-535-ac-40347

Purchase Order No. 42-22411-P has been assigned to this procurement. Shearling in accordance with Spec. 8-113B and Amend. No. 6 dated May 16, 1942.

42-30-22411-P

	Type 2, Finish 2			
①	200,000 sq. ft.	1/4" Pile length	.51½ sq. ft.	103,000.00
	Type 1, Finish 2			
	100,000 sq. ft.	1" Pile length	.66½ sq. ft.	66,500.00
	140,000 " "	3/4" " "	.64½ " "	90,300.00
	180,000 " "	5/8" " "	.59½ " "	107,100.00
	140,000 " "	1/2" " "	.59½ " "	83,300.00

Form 33

Signature .....

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O-1 (w/pp)

88

6	17,500 sq. ft.	3/8" Pile length	.56½ sq. ft. 9,887.50
7	250,000 " "	1/4" " "	.54½ " " 136,250.00

Shearling to be furnished in natural or cream shade.
F.O.B. Philadelphia, Pa. Terms Net
Delivery 12½% monthly starting Sept. 15, 1942.
Inspection at plant, Philadelphia, Pa.

Saucier

K-42-10, 471 Chicago Tanning Company #593,537.50 ac 30348 42-22412-P

Purchase Order No. 42-22412-P has been assigned to this procurement.
Shearling in accordance with Spec. 8-113B and Amend. No. 6 dated May 16, 1942.

	Type 2, Finish 2		
(1)	200,000 sq. ft.	1/4" Pile length	.51½ sq. ft. 103,000.00
	Type 1, Finish 2		
(2)	100,000 sq. ft.	1" Pile length	.66½ sq. ft. 66,500.00
(3)	140,000 " "	3/4" " "	.64½ " " 89,600.00
(4)	180,000 " "	5/8" " "	.59½ " " 107,100.00
(5)	140,000 " "	1/2" " "	.59½ " " 83,300.00
(6)	17,500 " "	3/8" " "	.56½ " " 9,887.50
(7)	250,000 " "	1/4" " "	.54½ " " 136,250.00

Form #33

NOTE: Shearling to be furnished in natural or cream shade.
F.O.B. Hartford, Wisconsin Terms Net notify C.O.S.
Delivery 10% 30 days; 15% 60 days; 15% 90 days; 20% 120 days; 20% 150 days; balance 180 days.
Inspection at plant of W. B. Place Co., Hartford, Wisconsin.

K-42-10, 472 Berlin Tanning Company #596,337.50 ac 30349 42-22413-P

Saucier

Purchase Order No. 42-22413-P has been assigned to this procurement.
Shearling in accordance with Spec. 8-113B and Amend. No. 6 dated May 16, 1942.

	Type 2, Finish 2		
(1)	200,000 sq. ft.	1/4" Pile length	.51½ sq. ft. 103,000.00
	Type 1, Finish 2		
(2)	100,000 sq. ft.	1" Pile length	.66½ sq. ft. 66,500.00
(3)	140,000 " "	3/4" " "	.64½ " " 90,300.10
(4)	180,000 " "	5/8" " "	.59½ " " 107,100.00
(5)	140,000 " "	1/2" " "	.59½ " " 83,300.00
(6)	17,500 " "	3/8" " "	.56½ " " 9,887.50
(7)	250,000 " "	1/4" " "	.54½ " " 136,250.00

Form #33

notify C.O.S.

Shearling to be furnished in natural or cream shade.
F.O.B. Berlin, Wisconsin Terms Net
Delivery Start within 30 days after completion of present contract at rate of at least 100,000 sq. ft. per month.
Inspection at plant, Berlin, Wisconsin.

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A-42-10,473 Weil & Eisendrath Company $ 288,625.00 ac 42-22414-P 30350

Purchase Order No. 42-22414-P has been assigned to this procurement.
Shearling in accordance with Spec. 8-113B and Amend. No. 6 dated May 16, 1942.

		Type 2, Finish 2		
1	97,500 sq. ft.	1/4" Pile length	.51½ sq. ft.	
		Type 1, Finish 2		
2	50,000 sq. ft.	1" Pile length	.66½ sq. ft.	
3	70,000 " "	3/4" " "	.62½ " "	
4	80,000 " "	5/8" " "	.59½ " "	
5	70,000 " "	1/2" " "	.56½ " "	
6	7,500 " "	3/8" " "	.54½ " "	
7	125,000 " "	1/4" " "	.52½ " "	

Shearling to be furnished in natural or cream shade.
F.O.B. Chicago, Ill. Terms Net
Delivery 1/12 per month until complete; start 30 days. (13 mo.)
Inspection at plant, Chicago, Ill.

A-42-10,474 Anglo-American Tanning Company $ 484,731.25 ac 42-22415-P 30351

Purchase Order No. 42-22415-P has been assigned to this procurement.
Shearling in accordance with Spec. 8-113B and Amend. No. 6 dated May 16, 1942.

		Type 2, Finish 2		
1	140,000 sq. ft.	1/4" Pile length	.49½ sq. ft.	
		Type 1, Finish 2		
2	70,000 sq. ft.	1" Pile length	.66½ sq. ft.	
3	98,000 " "	3/4" " "	.62½ " "	
4	126,000 " "	5/8" " "	.58½ " "	
5	98,000 " "	1/2" " "	.56½ " "	
6	12,250 " "	3/8" " "	.54½ " "	
7	175,000 " "	1/4" " "	.52½ " "	

Shearling to be furnished in natural or cream shade. Delivery 10 mos.
F.O.B. Sheboygan Falls, Wisconsin. Terms Net
Delivery 75,000 sq. ft. per month 30 days after receipt of order.
Inspection at plant, Sheboygan Falls, Wisconsin.

American Beaver Lamb Corporation $ 417,436.25 ac 42-22416-P 30352

Purchase Order No. 42-22416-P has been assigned to this procurement.
Shearling in accordance with Spec. 8-113B and Amend. No. 6 dated May 16, 1942.

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O-1 (4/8/42)

Chief, Purchase Branch -2- Jun 25, 1942

Type 2, Finish 2
140,000 sq. ft. 1/4" Pile Length .[illegible] sq. ft.
Type 1, Finish 2
70,000 sq. ft. 1" Pile Length .[illegible] sq. ft.
98,000 " " 3/4" " " .[illegible] " "
126,000 " " 5/8" " " .[illegible] " "
98,000 " " 1/2" " " .[illegible] " "
12,250 " " 3/8" " " .[illegible] " "
175,000 " " 1/4" " " .[illegible] " "

Shearling to be furnished in natural or dress shade.
F.O.B. Johnstown, N. Y. Terms Net 30 days.
Delivery Start 30 days after receipt of order at rate of 1/[illegible] of total quantity per month.
Inspection at plant, Johnstown, N. Y.

K-42-10,476 for Amalgamated Fur Corporation OK $410,891.25 ac 30353 42-22417-P
Purchase Order No. 42-22417-P has been assigned to this procurement.
Shearling in accordance with Spec. S-1138 and Amdt. No. [illegible] dated May 15, 1942.

Type 2, Finish 2
140,000 sq. ft. 1/4" Pile Length .[illegible] sq. ft.
Type 1, Finish 2
2 70,000 sq. ft. 1" Pile Length .[illegible] sq. ft.
3 98,000 " " 3/4" " " .[illegible] " "
4 126,000 " " 5/8" " " .[illegible] " "
5 98,000 " " 1/2" " " .[illegible] " "
6 12,250 " " 3/8" " " .[illegible] " "
1 175,000 " " 1/4" " " .[illegible] " "

Shearling to be furnished in natural or dress shade.
F.O.B. Paterson, N. J. Terms Net 30 days.
Delivery 25,000 sq. ft. weekly starting week of [illegible]
Inspection at plant, Paterson Fur Dressing & Dyeing Co., Paterson, N. J.

K-42-10,477 Celeste Fur Dressing & Dyeing Corporation $417,136. 25 ac 30357 42-22418-P
Purchase Order No. 42-22418-P has been assigned to this procurement.
Shearling in accordance with Spec. S-1138 and Amdt. No. [illegible] dated May 15, 1942.

Type 2, Finish 2
140,000 sq. ft. 1/4" Pile Length .[illegible] sq. ft.
Type 1, Finish 2
2 70,000 sq. ft. 1" Pile Length .[illegible] sq. ft.
3 98,000 " " 3/4" " " .[illegible] " "

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O-1(5/400)

91

4	126,000 sq. ft.	5/8" Pile length	.59½	sq. ft. 74,970.00
5	98,000 " "	1/2" " "	.59½	" " 58,310.00
6	12,250 " "	3/8" " "	.56½	" " 6,921.25
7	175,000 " "	1/4" " "	.54½	" " 95,375.00

Shearling to be furnished in natural or cream shade.
F.O.B. at plant, Newark, N. J. Terms Net
Delivery will be made at the rate of 75,000 sq. ft. per month after receipt of order.
Inspection at plant, Newark, N. J.

10 mos.

K 42-10,478 Master Industries, Inc. OK $ 12,536.25 ac 30356 42-22419-P

Purchase Order No. 42-22419-P has been assigned to this procurement.
Shearling in accordance with Spec. 8-113B and Amend. No. 6 dated May 16, 1942.

	Type 2, Finish 2			
1	140,000 sq. ft.	1/4" Pile length	.48	sq. ft.
	Type 1, Finish 2			
2	70,000 sq. ft.	1" Pile length	.66½	sq. ft.
3	98,000 " "	3/4" " "	.64½	" "
4	126,000 " "	5/8" " "	.59½	" "
5	98,000 " "	1/2" " "	.59½	" "
6	12,250 " "	3/8" " "	.56½	" "
7	175,000 " "	1/4" " "	.54½	" "

Shearling to be furnished in natural or cream shade.
F.O.B. Tannery, St. Paul, Minn. Terms Net
Delivery 15,000 sq. ft. per week starting 5 weeks after receipt of order.
Inspection at Tannery, St. Paul, Minn.

53 weeks

K 42-10,479 Petzold Fur Dyeing Corporation OK 90856 $ 421.443.75

Purchase Order No. 42-22420-P has been assigned to this procurement.
Shearling in accordance with Spec. 8-113B and Amend. No. 6 dated May 16, 1942.

ac 30356 42-22420-P

	Type 2, Finish 2			
1	140,000 sq. ft.	1/4" Pile length	.50½	sq. ft. 70,700.00
	Type 1, Finish 2			
2	70,000 sq. ft.	1" Pile length	.65½	sq. ft. 45,500.00
3	98,000 " "	3/4" " "	.64½	" " 63,210.00
4	126,000 " "	5/8" " "	.61½	" " 77,490.00
5	98,000 " "	1/2" " "	.61½	" " 60,270.00
6	12,250 " "	3/8" " "	.55½	" " 6,748.75
7	175,000 " "	1/4" " "	.55½	" " 97,125.00

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O-1 (6/8/00)

92

Shearling to be furnished in natural or cream shade.
F.O.B. New York City, N. Y. Terms Net
Delivery 20,000 sq. ft. weekly 4 weeks after receipt of order.
Inspection at plant, New York City, N. Y.

40 wks

K-42-10,480 OK for 30357 Certified Dressers and Tanners $ 416,876.25

Purchase Order No. 42-22421-P has been assigned to this procurement.
Shearling in accordance with Spec. 8-113B and Amend. No. 6 dated May 16, 1942.

OK 30357 42-22421-P

Type 2, Finish 2			
140,000 sq. ft.	1/4" Pile length	.52½ sq. ft.	73,500.00
Type 1, Finish 2			
70,000 sq. ft.	1" Pile length	.66⅔ sq. ft.	46,530.00
98,000 " "	3/4" " "	.62½ " "	61,250.00
126,000 " "	5/8" " "	.59½ " "	74,970.00
98,000 " "	1/2" " "	.59⅓ " "	58,310.00
12,250 " "	3/8" " "	.56⅔ " "	6,921.25
175,000 " "	1/4" " "	.54½ " "	95,375.00

Shearling to be furnished in natural or cream shade.
F.O.B. Brooklyn, N. Y. Terms Net
Delivery will start in July at rate of 60,000 sq. ft. per month until complete.
Inspection at plant, Brooklyn, N. Y.

12 mo.

K-42-10,481 OK Seaboard Fur Corporation $ 417,436.25

Purchase Order No. 42-22422-P has been assigned to this procurement.
Shearling in accordance with Spec. 8-113B and Amend. No. 6 dated May 16, 1942.

OK 30358 42-22422-P

Type 2, Finish 2			
140,000 sq. ft.	1/4" Pile length	.52½ sq. ft.	73,500.00
Type 1, Finish 2			
70,000 sq. ft.	1" Pile length	.66⅔ sq. ft.	46,530.00
98,000 " "	3/4" " "	.62½ " "	61,250.00
126,000 " "	5/8" " "	.59½ " "	74,970.00
98,000 " "	1/2" " "	.59⅓ " "	58,310.00
12,250 " "	3/8" " "	.56⅔ " "	6,921.25
175,000 " "	1/4" " "	.54½ " "	95,375.00

Shearling to be furnished in natural or cream shade.
F.O.B. Newark, N. J. Terms Net
Delivery to start 30 days after receipt of order at the rate of 80,000 sq. ft. per month.
Inspection at plant, Newark, N. J.

10 mo.

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O-1(7/1/80)

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Chief, Purchase Branch -7- June 25, 1942

K-42-10,482 Heerfur Dressing & Dyeing Corporation W535-30359 $ 415,213.75

Purchase Order No. 42-22423-P has been assigned to this procurement. Shearling in accordance with Spec. S-113B and Amend. No. 6 dated May 16, 1942.

140,000 sq. ft.	Type 2, Finish 2 1/4" Pile length	.50½ sq. ft.
70,000 sq. ft.	Type 1, Finish 2 1" Pile length	.65½ sq. ft.
98,000 " "	3/4" " "	.60½ " "
126,000 " "	5/8" " "	.59½ " "
98,000 " "	1/2" " "	.59½ " "
12,250 " "	3/8" " "	.59½ " "
175,000 " "	1/4" " "	.55½ " "

Shearling to be furnished in natural or cream shade.
F.O.B. Bronx, New York City. Terms Net
Delivery will start in 30 days after receipt of order at the rate of 50,000 sq. ft. per month and to be complete within 1 year.
Inspection at plant, Bronx, New York City.

4. Purchase orders should provide that the amounts to be delivered prior to December 31, 1942 are to be at first prices as shown in each contractor's letter and as listed above.

5. Provisions should be made for renegotiation each quarter during the calendar year of 1943.

6. The above prices are somewhat higher than those paid for material covered by contracts placed in December, 1941 due to the fact that the War Production Board set a ceiling on raw skins which increased the prices approximately 10¢ per sq. ft.

7. Clauses should be incorporated in the contracts to the effect that failure to deliver shearlings in the period stipulated will not affect the prices. If shearlings are delivered at a later date than specified, the prices will prevail as set forth in the original delivery schedule for each quarter as well as those quantities to be delivered prior to December 31, 1942.

8. Awards already have been made to the 4 largest sources of supply on shearling and quantities allotted to those companies were in accordance with their production capacities.

9. The above 13 sources represent the smaller dealers in sheep shearling and quantities allotted to each company are the amount stipulated by them as being what they could deliver in accordance with their production capacities.

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O-1 (8/4/38)

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Chief, Purchase Branch -41- June 25, 1942

10. Bonds will not be required.

11. Award, made in accordance with the First War Powers Act is in the best interests of the Government for the following reasons:

a. Contractors can meet the delivery requirements of the National War Program.

b. Quotations were solicited from [illegible] sources and awards were made to all bidders representing the only known sources of supply on shearling.

c. Awards were made for reasons as set forth in paragraph 9 and 10 above.

d. Awards were made to more than one contractor to obtain adequate deliveries.

12. Prices are not in excess of those as set up by the Office of Price Administration.

13. Contractors are familiar with the provisions of the Walsh-Healey Act.

14. Shipping instructions will be furnished at a later date.

15. Contractors have been informally notified of award and it is recommended that formal notice be issued with the next communication.

16. Preference rating certificates have already been issued for this procurement. Purchase orders have also been assigned as noted above. numbers

17. This material being procured is for the [illegible] Depot described on A...P. 28694.
Applicable funds: AC 2385 P-85-02 A 8705-23).

18. Negotiations were conducted by conference, telephone, telegram, and letters between Lt. [illegible] Simons and Mr. [illegible] of the Negotiation Branch, Contract Section, with Mr. Morris Forman of the Workman & Company, Mr. Robert J. Miller of Chicago Tanning Co., Mr. Robert H. Miller of Berlin Tanning & Mfg. Co., Mr. Milford H. Stern of Neil & Eisenrath Co., Mr. Arthur Stern of Anglo-American Tanning Co., Mr. Ernest Vanderwighe of American Beaver Lamb Corp., Mr. Nathan Goldstein of Integrated Fur Corp., Mr. Jack Dichis of Celeste Fur Dressing & Dyeing Corp., Mr. Paul Kostenbaum of Petzold Ltd. Fur Dyeing Corp., Mr. A. L. Lowenthal of Certified Fur Dressers & Tanners, Mr. David Goldberg of Seaboard Fur Corp., and Mr. Joseph Bases of Meerfur Dressing & Dyeing Corp., and Mr. Harry T. Wiels of Master Industries, Inc.

/s/ Herbert S. Wagner May 4 43
for H. M. Jones
Colonel, A.G.D.
Chief, Contract Section

ATTACH: quotations

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U. S. Standard Form No. 23 (Revised)
Approved by the Secretary of the Treasury June 18, 1935

FJC:jec

Contract No. W 535 ac-28776 (3267)

70

CONTRACT
(SUPPLIES)

ANMB Preference ~~A-1-A~~
A-1-B
A-1-E

A TRUE COPY

M. C. HARDING
Capt., Air Corps
Contracting Officer

WAR DEPARTMENT
(Department)

A. C. LAWRENCE LEATHER COMPANY
(Contractor)

ac 28776

Contract for 24,080,047 Square Feet Sheep Shearlings *Amount, $* 12,987,542.63

Place Army Air Forces, Materiel Center, Wright Field, Dayton, Ohio

The Finance Officer, U. S. Army, Wright Field, Dayton, Ohio, is designated as the officer to make payments in accordance with this contract. The supplies and services to be obtained by this instrument are authorized by, are for the purpose set forth in, and are chargeable to the Procurement Authorities listed hereon, the available balances of which are sufficient to cover the cost of the same.

AC 2385 P 85-08 A 0705-23

AFP: 286964 Classification: 21

APPROVED: RECOMMENDED:
July 28, 1942,
/s/ O. P. Echols,
O. P. Echols,
Major Gen., U.S.A.,
Commanding General
Materiel Command.

APPROVED: JULY 31, 1942.
By direction of the Secretary of War under the provisions of the First War Powers Act, 1941 and Executive Order No. 9001 dated December 27, 1941.

/s/ Phillips W. Smith
Phillips W. Smith, Major, Ord. Dept.
Special Representative,
of Under Secretary of War.

(1)

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CONTRACT FOR SUPPLIES

THIS CONTRACT, entered into this 29th day of June, 19 42, by THE UNITED STATES OF AMERICA, hereinafter called the Government, represented by the Contracting Officer executing this contract, and

A. C. LAWRENCE LEATHER COMPANY

a corporation organized and existing under the laws of the State of MAINE

~~an individual trading as~~
of the city of PEABODY, in the State of MASSACHUSETTS
hereinafter called the contractor, witnesseth that the parties hereto do mutually agree as follows:

ARTICLE 1. *Scope of this contract.*—The contractor shall furnish and deliver to the Government the products and materials specified in Article 15 hereof

for the consideration stated Twelve Million Nine Hun red Eighty-seven Thousand Five Hundred Forty-two Dollars and Eighty-three Cents ($12,987,542.83) payable, subject to any changes in the stated consideration provided for herein, on final inspection, delivery to and acceptance by the Government of the Articles called for under the terms hereof, at the unit prices stated herein.

in strict accordance with the specifications, schedules and drawings, all of which are made a part hereof and designated as follows: As set forth in Article 15 hereof.

Deliveries shall be made as follows: As set forth in Article 16 hereof.

Classification: None

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ARTICLE 42 — Alterations. The following changes were made in this contract before it was signed by the parties hereto: Articles 15 to 42, inclusive, on pages 4a, 4a-1, and 4b to 4i, inclusive, and 5, added as approved by the Director of the Bureau of the Budget and/or the Under Secretary of War. Letter "(A)" in the last line of Article 34, paragraph (c) deleted and letter "(b)" substituted therefor.

IN WITNESS WHEREOF, the parties hereto have executed this contract as of the day and year first above written.

THE UNITED STATES OF AMERICA

By /s/ Claude P. Rowan
CLAUDE P. ROWAN, CAPTAIN, AIR CORPS, U. S. ARMY
Contracting Officer
(Official title)

Two witnesses:

/s/ J. D. Hill

/s/ E. P. Hawes

A. C. LAWRENCE LEATHER COMPANY
By /s/ S. Palmer, Vice President.
} Contractor

Peabody, Massachusetts
(Business address)

I, J. J. Gallagher certify that I am the Secretary of the corporation named as contractor herein; that S. Palmer who signed this contract on behalf of the contractor, was then Vice President of said corporation; that said contract was duly signed for and in behalf of said corporation by authority of its governing body, and is within the scope of its corporate powers.

/s/ J. J. Gallagher. [Corporate Seal]

I hereby certify that, to the best of my knowledge and belief, based upon observation and inquiry,

who signed this contract for the

, had authority to execute the same, and is the individual who signs similar contracts on behalf of this corporation with the public generally.

Contracting Officer

(5) W 535 ac-28776

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6-(1/1)
M. Col.

WAR PRODUCTION BOARD
Washington, D.C.

August 12, 1942

Col. W. F. Volandt,
U. S. Army Air Forces,
Room 4129 Munitions Building
Washington, D. C.

Dear Col. Volandt:

As I may have told you, we are greatly indebted to the Department of Agriculture, who have undertaken a program through their field offices to promote increased production of domestic shearling skins suitable for flying suits. They have been quite successful and I am told by leading packers that this production is already some 17% ahead of last year, with prospects of even greater increase by the end of the season. This is one of the factors that makes it possible for the tanners to meet the Air Forces' shearling program.

I wonder if it would be possible for you to instruct Wright Field to forward one shearling skin, 1/4" to 3/8" wool, electrified and acrylated (type 1, finish 2) and one complete flying suit to —

Mr. L. S. Kurtz
County Extension Agent
U. S. Department of Agriculture
Clayton, New Mexico

A meeting isto be held at Clayton the latter part of August at which time these exhibits will be used to demonstrate to sheep growers just what use is made of the shearlings they are being asked to produce. The exhibits will be forwarded from field office to field office.

Dr. C. D. Lowe of the Department of Agriculture, East Wing, Administration Building, Room 247, is responsible for this promotional program and if any further information is required on the subject, I feel sure he would be glad to supply it. I am forwarding a copy of this letter to Dr. Lowe for his information.

I hope it may prove possible to provide this material and would appreciate anything you can do in that connection.

Yours very truly,

R. P. BUTLER

Chief, Sheepskin and Specialty Leather Unit
Textile, Clothing and Leather Branch

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423
9-1/1)
C7-B

Reference: D/H:hm:56

September 1, 1942

W. C. Mahon Company,
220 South State Street,
Chicago, Illinois.

Gentlemen:

Receipt is acknowledged of your letter of August 13, 1942, regarding sheep shearling.

At the present time, all manufacturers of this material having Army Air Forces contracts are in production, and the method being used is satisfactory. Any attempt made by them to change method would decrease production. Sufficient contracts have been given to satisfy Army Air Forces requirements, and no future contracts will be given to new sources of supply.

Very truly yours,

P. O. CARROLL,
Colonel, Air Corps,
Chief, Experimental
Engineering Section.

SEP 2 1942

DATE
C/S, DIV
TECH. EXC
ADM. EXC
C.O.
BUD. OFF.
EXP. ENG.
PROD. ENG.
CONTRACT
A.T.S.
I.P.T.
OTHERS
72

CENTRAL FILES

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AAFMC 504-WP-8-25-42-500M

ARMY AIR FORCES
MATERIEL CENTER

Address reply to:
Commanding General
Army Air Forces
Materiel Center

Ref: THP:mn 70-5

Wright Field, Dayton, Ohio
October 15, 1942

Subject: Sheep Shearling Clothing

To:

1. The Materiel Center has instructed all shearling tanners to moth-proof all shearling furnished under A.A.F. Contracts after October 1, 1942, in accordance to Federal Specification C-113 and Amendment 7.

2. The shearling tanners have been requested to supply one label with each five shearlings, placed in a transparent envelope, stapled to the top shearling in each carton.

3. All A.A.F. Contractors of sheep shearling clothing are requested to fasten one of the moth-proofed labels on each garment, under the label supplied by the Contractor.

For the Commanding General, Army Air Forces, Materiel Center:

A. E. Jones
Colonel, Air Corps
Chief, Contract Section

cc:

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H-7(2/28)

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The following companies have been sent the attached letter.

H. Bornstein & Company
1036 Van Buren Street
Chicago, Illinois
P. O. 42-22267-P

Aero Leather Company (Clothing)
79 Ferry Street
Beacon, New York
P. O. 42-22899-P

Weber Sportswear Company
324-330 Water Street
Newburgh, New York
P. O. 42-22266-P

Paul Reed Company
918 North Fourth Street
Milwaukee, Wisconsin
P. O. 42-22269-P

Western Leather Clothing Company
2836-50 South Jefferson Avenue
St. Louis, Missouri
P. O. 42-22265-P

Perry Sportswear Inc.
54 Liberty Street
Newburgh, New York
P. O. 42-12689-P

H. L. B. Corporation
146 W. 46th Street
New York, N. Y.
P. O. 42-18655-P

Rough Wear Clothing Company
93 Worth Street
New York, N. Y.
P. O. 42-18853-P

Cable Raincoat Company
68 Northampton Street
Boston, Mass.
Contract W 535 ac 27753

United Garment Company
First Avenue North & Fourth Street
Minneapolis, Minnesota
P. O. 42-12690-P

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423
C8-B
13-(1/12)

21

Not Signed

MILLER TANNING CO.
SHEEP SKINS
AND SHEARLINGS

100 GOLD STREET, NEW YORK, N. Y.
Telephone BArclay 7-4993

October 30, 1942

Major General Daniel Van Voorhis
The Commanding Officer,
Wright Field, Dayton, Ohio.

Dear Sir:

Sometime ago I discussed a length with Senator Reynolds the critical matter of Shearlings.

Instead of coming to you at once, decided to wait until the situation cleared somewhat. I now offer this report to you for what it is worth and trust that same will be kept as absolutely confidential matter.

I have tried repeatedly to become a Commissioned Officer in the U. S. Army Air Forces either in the Industrial or Supply Branch without apparent success.

Your courtesy in this matter is greatly appreciated.

Thank you.

Very truly yours,

MILLER TANNING CO.,

By: Robert R. Miller

RRM-b

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1st Wrapper Ind. JRH:mdh:71

Production Engineering Section, Specification Branch, Specification Unit, September 29, 1942. To: Experimental Engineering Section, Materials Laboratory.

1. Forwarded for information upon which to base a reply.

G. R. [illegible]
Colonel, Air Corps
Chief, Production
Engineering Section

75

CJC:hmr:56

2nd Wrapper Ind.

Experimental Engineering Section, Wright Field. November 4, 1942. To: Chief, Production Engineering Section, Wright Field.

1. The inclosed specification was originated by the Materiel Center as a result of continuing experience and intermittent revisions, to procure the sheep shearling used in the construction of Army Air Forces clothing, helmets, etc. There are variations between this specification and the proposed Federal specification for the same item.

2. Specification 8-113-C was in existence prior to the proposed specification which was initiated chiefly for the Quartermaster without particular regard to the requirements of Army Specification 8-113. In view of the fact that the experience of the Materiel Center is considered to be greater, that the Army Air Forces are the sole users of this type of material, and that the requirements peculiar to Army Air Forces operation are completely covered by the U.S. Army specification, as well as the fact that there will be practically no Government agencies procuring this material, it is recommended that the coordination of Specification 8-113-C be accomplished and that the proposed Federal specification for the same material be discontinued.

3. A discussion of these two specifications has been presented previously, and in the judgment of the Materials Laboratory, the action indicated in the foregoing should be taken.

F. O. CARROLL,
Colonel, Air Corps,
Chief, Experimental
Engineering Section.

1 Incl.

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H-8(2/500)

INTER-OFFICE MEMORANDUM

ARMY AIR FORCES
HEADQUARTERS OF THE MATERIEL COMMAND
WASHINGTON

AFMC-hA

November 6, 1942.

TO: Commanding General, Materiel Center,
Wright Field, Dayton, Ohio

SUBJECT: Materials for Winter Flying Clothing
Using Sheep Skin Shearlings.

1. Forwarded herewith for your comments and information from which to base a reply, is copy of letter dated November 2, 1942, from the Deputy Chief, Textile, Clothing and Leather Branch, War Production Board.

W. F. VOLANDT,
Colonel, Air Corps,
Assistant Chief of Staff (C)

Incl:
Cy Ltr fr Dep.Chief,
Text.Clo.& Lthr.Br.WPB.
dated 11-2-42

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63.

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A-8(3/500)

2

COPY

WAR PRODUCTION BOARD
WASHINGTON DC.
Nov. 2, 1942.

COPY

Col. W. F. Volandt
U.S. Army Air Forces
Room 4129 Munitions Bldg.,
Washington, D.C.

My dear Col. Volandt:

Reports have reached us from the trade that the Air Forces may have under consideration a change in the materials used for winter flying clothing for which sheep skin shearlings are currently employed in very large numbers. This is a very disturbing report and is hampering our efforts to obtain supplies of raw shearlings to meet your present procurement. If false, it should be at once publicly denied. If true, then many programs which we have underway must be altered and new programs to meet your new requirements devised.

It is, of course, quite obvious that the determination of materials to be used for this purpose is primarily a technical matter to be decided by the Air Forces, subject to the availability of the material selected.

In the case of sheep skin shearlings, the Army Air Forces' requirements have been very much greater than the industry could have provided on a normal basis of operation. The fulfilment of the present procurement program involves processing approximately 9,000,000 skins per annum against a previous level of operations of not more than 3,000,000 skins per annum. We are glad to say that we have been successful in obtaining the necessary raw material and stepping up the production of this industry to the level required. In order to do so, we have embarked on the following programs:

1. Arrangements have been entered into with the British for the division of world crops of foreign shearlings, and for U. S. Purchases on those markets have been enormously increased.

2. A high shipping priority has been provided and a substantial tonnage of shipping space devoted to bringing in these foreign skins.

3. The Office of Price Administration was requested deliberately to increase the price ceiling applying to domestic shearlings with a view to encouraging greater production of shearling pelts as opposed to long wool skins which would be unsuited to the program. This has been done.

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4. Coincidental with the price increase, the cooperation of the Department of Agriculture was requested and obtained, through its field organizations, to encourage and promote increased production of shearling pelts by an appeal to the sheep growers based upon patriotism, coupled with the advantageous price structure.

5. Shearling tanners were encouraged to develop means of clipping long wool skins of certain types at an early stage in the process so as to produce acceptable shearling material from them in addition to the natural shearlings, and steps were taken to insure the availability of such wool skins in the domestic market, giving these tanners preference over other users in purchasing them.

6. Close contact was maintained with Wright Field and with the tanners to insure the placing of contracts and writing of specifications in a manner which would make the greatest possible use of the material available.

Obviously, if the shearling program is to be discontinued, these programs, especially when shipping is involved, must be curtailed and finally abandoned. Shipping space ought not to be used for materials when they are not needed for war purposes.

Furthermore, if the shearling program were suddenly discontinued, most serious consequences would follow in view of the tremendous volume which has been stimulated and which the civilian economy could not possibly support. In the first place, the price of raw and processed shearlings would fall to a very low level. The shearling tanners now holding contracts would suffer an enormous inventory depreciation, as their present holdings represent about six month supply of skins in the raw state, in process and completely finished.

Secondly, the sheep growers, packers and skin dealers would all sustain substantial losses and the sheep growers, in particular, would have every reason to complain that their loss was directly attributable to Government promotional activities .

Finally, such an eventuality will have severe repercussions in foreign markets, principally Australia, South Africa, and South America unless adroitly handled.

While all of these serious consequences would follow a sudden discontinuance of shearling procurement, there is, of course, no reason why the program can not be tapered off, provided we have ample notice of the Air Forces' intentions. Properly handled, this operation might be accomplished with very much less dislocation and loss. It would require, however, as much notice as possible -- preferably a year, but certainly not less than nine months.

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We have gone into some detail in order to acquaint you with the difficult situation which might eventuate in this connection and we should be grateful for any information you can give us regarding it.

Yours very truly,

/s/ Frank L. Walton

FRANK L. WALTON,
Deputy Chief,
Textile, Clothing and Leather Branch.

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"Materials for Winter Flying Clothing using Sheep Skin Shearlings"

GVH:ek:54-19839

1st Ind.

Experimental Engineering Section, Wright Field. November 17, 1942.
To: Commanding General, Materiel Command, Headquarters Army Air Forces, Washington, D. C. Attention: Assistant Chief of Staff (C).

1. Reference basic communication, it is not intended to discontinue sheep shearling as a material used in clothing for Army Air Forces personnel.

2. Plans are currently being completed for the testing of materials and clothing designs for use by special Army Air Forces personnel on special missions in special areas, such as the extreme cold to be expected in Alaskan operations. These tests will be completed in approximately ninety days.

3. Should the results of the above tests reveal materials other than sheep shearling to be more desirable for extreme cold, it is anticipated that only a limited amount of clothing of this special type will be necessary.

F. O. CARROLL,
Brig. General, U.S.A.,
Chief, Experimental Engineering Section.

1 Incl.

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Signature

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CENTRAL FILES MDAC-190-WF-2-5-42-1 Mil.

E-4

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AFF 4086964

SHEEP SHEAR

Name of Contractor	Purchase Order Number	Type 2 Finish 2 1/4 inch	Type 1 Finish 2 1 inch	Type 1 Finish 2 3/4 inch
Workman and Company Philadelphia, Pennsylvania	42-22411	200000	100000	140000
Chicago Tanning Company Chicago, Illinois	42-22412	200000	100000	140000
Berlin Tanning & Mfg. Company Berlin, Wisconsin	42-22413	200000	100000	140000
Weil & Eisendrath Chicago, Illinois	42-22414	97500	50000	70000
Anglo American Tanning Co. Sheboygan Falls, Wisconsin	42-22415	140000	70000	98000
American Beaver Lamb Corporation Johnstown, New York	42-22416	140000	70000	98000
Amalgamated Fur Corporation New York City, N. Y.	42-22417	140000	70000	98000
Celeste Fur Dressing & Dyeing Co. Newark, N. J.	42-22418	140000	70000	98000
Master Industries Detroit, Michigan	42-22419	140000	70000	98000
Petzold Fur Dyeing Corp. New York City, N. Y.	42-22420	140000	70000	98000
Certified Dressers & Tanners Brooklyn, New York	42-22421	140000	70000	98000
Seaboard Fur Company New York, N. Y.	42-22422	140000	70000	98000
Heerfur Dressing & Dyeing Corp. New York, N. Y.	42-22423	140000	70000	98000
Totals		1,957,500	980,000	1,372,000

		1" pile	3/4" pile	5/8"
J. Laskin & Sons Corp.	AC-28773	894,000 sq.ft.	1,457,000 sq.ft.	1,579,075 sq
Muskegon Tanning Co.	AC-28774	286,000 "	394,000 "	863,075
Winslow Bros. & Smith Co.	AC-28775	737,500 "	1,400,500 "	1,538,575
A. C. Lawrence Leather Co.	AC-28776	838,500 "	1,814,850 "	2,361,075

TOTAL	
J. Laskin & Sons Corp.	16,454,535 sq.ft.
Muskegon Tanning Co.	10,007,157 sq.ft.
Winslow Bros. & Smith	18,651,136 sq.ft.
A. C. Lawrence Leather Co.	24,080,047 sq.ft.

Total Lawrence 79248625

78

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LINE

Previous Procurement

5/8 inch	1/2 inch	3/8 inch	1/4 inch	Total
180000	140000	17500	250000	1027500
180000	140000	17500	250000	1027500
180000	140000	17500	250000	1027500
80000	70000	7500	125000	500000
126000	98000	12250	175000	719250
126000	98000	12250	175000	719250
126000	98000	12250	175000	719250
126000	98000	12250	175000	719250
126000	98000	12250	175000	719250
126000	98000	12250	175000	719250
126000	98000	12250	175000	719250
126000	98000	12250	175000	719250
126000	98000	12250	175000	719250
126000	98000	12250	175000	719250
1,754,000	1,372,000	170,250	2,450,000	10,055,750

1/2"	3/8"	1/4"	Type 1, Finish 2 Helmet stock	Type 1, Fin. 3 Boot stock	Type 2, Fin. 2 Sheep shearlings
.ft 950,000 sq.ft	303,750 sq.ft.	3,775,000 sqft	133,500 sq.ft.	1,025,500 sq. ft.	6,336,710 sq.ft.
" 950,000 sq.ft.	110,000 "	1,288,875 "	523,167 "	1,962,833 "	3,629,207 "
" 824,750 "	281,250 "	3,375,000 "	616,667 "	2,665,834 "	7,211,060 "
"1,950,000 "	382,000 "	4,300,000 "	621,666 "	2,665,833 "	9,146,123 "

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57

AMF WP 4-5-43-40M

ARMY AIR FORCES
MATERIEL CENTER
ENGINEERING DIVISION
MEMORANDUM REPORT ON

JRS:mac:54:2977

Date January 12, 1943

SUBJECT: Conference with Lieutenant General H. H. Arnold Relative to Army Air Forces Clothing.

~~SECTION~~ Equipment Laboratory

Contract No. .....
Expenditure Order No. 666
Purchase Order No. .....

SERIAL No. ~~EMO-M-54-666-54~~

A. Purpose:

1. To report on a trip to Washington, D. C. for the purpose of displaying Clothing Branch Development Work accomplished since October 15, 1942.

B. Factual Data:

1. Those present at the display were:

Lt. Gen. H. H. Arnold	Hon. Robert Lovett
Maj. Gen. Geo. E. Stratemyer	Col. J. S. Mills, M. C.
Brig. Gen. T. J. Hanley, Jr.	Capt. J. R. Schenck, M. C.
Colonel Shelmire	Dr. James Clark, M. C.

2. The following types of clothing were displayed:

a. Electrically Heated Combat Suit (New Design).

b. Quilted Type Feather-Tex Extreme Cold Flying Suit.

c. Park Type Layer Suit (Alpaca and windbreak).

d. Teddy Bear Pants and Coat (Alpaca and windbreak) for extreme cold temperature zones.

e. Jacket - Lightweight Flying.

f. Shearling Winter Flying Suit (with ventilation features).

g. Shearling Jacket (Experimental Design).

h. Shearling Jacket and Trousers (AAF Standard).

Number of pages 2

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AAFMC-266-WF-4-6-42-50M

Engineering Division
Equipment Laboratory
Memorandum Report No. ENG-M-54-666-54
January 12, 1943

i. Gloves - Standard and Experimental Models.

j. Shoes - Shoe Pack, Standard A-6 and Experimental Models.

k. Parka Hoods - Experimental Models.

3. Honorable Robert Lovett expressed keen interest in the trigger finger type mitten, rafts and multi-layer suits. Similar gloves and suits are on test by the Army Air Forces in Alaska. Quartermaster type life rafts are also on order for test purposes in comparison with Army Air Forces life rafts.

4. A visit was made to the Special Forces Section, Quartermaster Corps, by Colonel Mills, Captain Schenck, and Dr. Clark. Quartermaster Corps clothing and auxiliary equipment were inspected and discussions on clothing were held with representatives of the Special Forces Section.

5. A conference was held at Honorable Gifford Pinchot's house on the subject of emergency fishing kits between Honorable Pinchot, Colonel Mills, Captain Schenck, and Dr. Clark. Honorable Pinchot explained the contents of the fishing kit which he had discussed with Navy representatives for use in life rafts. It was agreed that the Army Air Forces would accept this type of fishing kit for their life rafts.

C. Recommendations:

1. That flotation tests be made on the quilted down type suit as soon as possible.

2. That tests be completed on the new design of electrically heated clothing as soon as possible.

3. That the development of more suitable flying clothing for Army Air Forces use be expedited.

Concurrence:

.....

.....

Distribution:

[redacted]
Central Files

Prepared by J. R. SCHENCK, Capt., A. C.
(Name)

Approved by C. V. HOLLOMAN, Col. A. C.
Chief, Equipment Laboratory
Engineering Division

Approved by F. O. CARROLL, Brig. Gen. U.S.A.
Chief, Engineering Division

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WAR DEPARTMENT
ARMY AIR FORCES
MATERIEL CENTER
WRIGHT FIELD, DAYTON, OHIO

80-4 RHD:DS:HV
January 26, 1943

PROCUREMENT DIVISION OFFICE MEMORANDUM NO. 43-32

SUBJECT: Sale of Government Owned Property
Scrap, Cuttings and By-Products

1. By TI-1344, Addendum No. 1, the Chief, Procurement Division, Materiel Center, Wright Field, has been authorized, whenever he determines that such action will facilitate the prosecution of the war, without further approval, to make contracts by negotiation for the sale of and to sell any and all scrap, cuttings and by-products resulting directly from manufacturing operations in arsenals, depots, plants or commercial establishments and which have been classified as salvage or as "to be sold" property by an inspector. TI-1344, Addendum No. 1, also authorized the Chief, Procurement Division, to delegate this authority to such officers or civilian officials of the Materiel Command as he may direct. 80

2. The Materiel Command Contracting Officer at any depot, plant or commercial establishment at which scrap, cuttings or by-products such as referred to in paragraph 1 hereof may be located, or in the event there is no such Contracting Officer at the depot, plant or commercial establishment, the Area Contracting Officer of the area in which said depot, plant or commercial establishment is located, or if neither the Plant Contracting Officer or the Area Contracting Officer is available, the Depot Contracting Officer, are hereby authorized to exercise the authority of the Chief, Procurement Division, to make contracts by negotiation for the sale of such scrap, cuttings and by-products.

3. The price charged for scrap, cuttings and by-products authorized to be sold shall in no instance exceed the maximum price, if any, fixed by the Office of Price Administration.

A.E. JONES
Brig. Gen., U.S.A.
Chief, Procurement Division

Distribution:
Chief, Sections, Branches and Units
District Supervisors (3)
Mr. C.B. Orton
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MD:AC-266-A-WF-8-27-41-60M

H-9(1/300)

121

WAR DEPARTMENT
AIR CORPS, MATERIEL DIVISION
ENGINEERING DIVISION
MEMORANDUM REPORT ON

423

JSM:mao:54
Date February 6, 1943

SUBJECT: Shearling Skins for Army Air Forces Flying and Mechanics' Clothes.

SECTION ~~XXXXXXX~~ Equipment Laboratory

SERIAL No. ~~ENG-M-54-666-56~~

Contract No.
Expenditure Order No. 666-206
Purchase Order No.

A. Purpose:

1. To report the results of a conference held January 28, 1943 at the Materiel Center for the purpose of discussing a program to improve the quality of shearling skins and clothing made therefrom, procured by the Army Air Forces.

B. Factual Data:

1. Present at the conference were:

Materiel Center	Others
J. S. Mills, Colonel, Air Corps, Equipment Laboratory, Engineering Division.	George Schifman, War Production Board.
J. R. Schenck, Captain, Air Corps, Equipment Laboratory, Engineering Division.	R. P. Butler, War Production Board.
C. B. Smith, Captain, Air Corps, Production Engineering Section.	C. O. Bonnard, War Production Board.
R. P. Salisbury, Inspection Section.	B. C. Nelson, Winslow Brothers & Smith.
T. H. Pope, Production Engineering Section.	Kenneth E. Bell, A. C. Lawrence Leather Company.
C. J. Cleary, Materials Laboratory, Engineering Division.	David V. Mason, J. Laskin & Sons Corporation.
M. H. Simmons, Contract Division.	Myron Laskin, J. Laskin & Sons Corporation.

2. A general discussion was held in which all interested personnel expressed their views in detail.

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I. P. S.
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Number of pages 3

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3. Although no Navy representatives were present, representatives of the War Production Board stated that the Navy had reported dissatisfaction with shearling skins, all of which are furnished by the Army Air Forces.

4. Army representatives discussed agreements already reached with Navy personnel concerning standardization of flying clothing.

C. Conclusions:

1. Unsatisfactory conditions result from requirements being so large that practically all available shearling skins must be utilized.

2. There is a possibility that some of the tanneries are not producing skins up to the standard obtainable by the best available tanning practice.

3. The design of clothing now on contract is not the best obtainable.

4. The shearling industry, as represented, apparently feels that much of the dissatisfaction was due to clothing manufacturers' methods and basic design of suits.

5. A complete survey of the tanning industries and clothing manufacturers is desirable to see what can be done to improve the general situation.

D. Recommendations:

1. That the Army Air Forces and Bureau of Aeronautics standardize on a suitably designed flying suit as soon as possible and make it effective on all present and future contracts. This is being accomplished by the Equipment Laboratory, Engineering Division and will replace the Type B-3 Jacket and A-3 Trousers.

2. That the Type B-6 medium Flying Jacket and Type A-5 Trousers be cancelled on present contracts and that the requirements for the suit as specified in the proposed AN Specification be increased accordingly.

3. That mechanic's Type D-1 Jacket and Type B-1 Trousers be continued as at present.

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4. That the Army Air Forces and Bureau of Aeronautics call on the industry to help conduct a thorough survey of the tanneries, as well as the clothing manufacturers.

5. That the Army and Navy representatives consider revision of the shearling specifications after the above mentioned survey is made.

J. S. MILLS, Colonel, A. C.
Chief, Para. & Clo. Branches

G. V. HOLLOMAN, Col. A.C.
Equipment Lab.
Engineering Division.

F.C.CARROLL, Brig.Gen. U.S.A.
Chief, Engineering Division.

Chief, Procurement Div.
Chief, Prod. Engr. Sec.
Chief, Inspection Sec.
Chief, Materials Lab.
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A-6 (1/3pp)

AAFMC-226-WF-4-6-43-50M

T.M.O.

File

ARMY AIR FORCES
MATERIEL CENTER
ENGINEERING DIVISION
MEMORANDUM REPORT ON

JRS:mao:54
Date February 8, 1943

SUBJECT: To Report on a Trip to Washington, D. C. for Conference on Clothing with Representatives of the Navy.

~~SECTION~~ Equipment Laboratory

Contract No. .....
Expenditure Order No. 66-208
Purchase Order No. .....

SERIAL No. ~~ENG-M-54-666-56A~~

A. Purpose:

1. To report on a conference held January 18, 19 and 20, 1943 with representatives of the Bureau of Aeronautics, Navy Department, Washington, D. C. in reference to special clothing for Flying Personnel of the United States Armed Forces.

B. Factual Data:

1. Those present at the conference were:

Materiel Center	Bureau of Aeronautics
Captain J. R. Schenck, Clothing Branch, Equipment Laboratory, Engineering Division.	Lieut. E. D. Gerhardt.
Dr. James L. Clark, Clothing Branch, Equipment Laboratory, Engineering Division.	M. T. McCown.
Private Verne Brewer, Clothing Branch, Equipment Laboratory, Engineering Division.	
Captain J. Teres, Materials Laboratory, Engineering Division.	
H. G. Battles, Materials Laboratory, Engineering Division.	

2. A discussion was held on the Army-Navy standardization of specifications for interlocking slide fasteners for use on clothing. It was agreed that Federal Specifications which are being rewritten to include Navy Specification [illegible]-17-C with Amendment No. 2 would be

Number of pages 3

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A-6 (2/3pp)

recommended for adoption as standard AN Specifications for interlocking slide fasteners. It was further agreed that Captain Teres of the Materials Laboratory would make a thorough study of these specifications to determine whether or not any further changes in specifications are necessary in so far as materials used in the manufacture of fasteners is concerned.

3. Both Navy and Army Air Forces representatives were of the opinion that some of the sheep shearling being delivered to garment manufacturers for fabrication into shearling garments is unfit for this purpose. It was recommended that electrified sheep shearling specifications coordinated with the industry and with the War Production Board be standardized in an AN Specification. It was further agreed that recommendations be made for immediate steps to be taken by the responsible departments to improve the condition of all poor quality shearling being delivered to manufacturers for fabricating into garments.

4. The design of a heavyweight shearling flying suit for recommendation as an AN standard was agreed upon and sample suits of this design were ordered from Fried-Osterman Company for both the Navy and Army Air Forces. When the sample garments are approved by the Navy and Army Air Forces, AN Specifications will be written for standardization of an AN standard shearling flying suit.

5. The design and fabric for a one-piece lightweight flying suit were agreed upon for recommendation as an AN standard lightweight flying suit. Sample suits were ordered from the Dri-Bak Company for both the Army and Navy. Upon approval of submitted samples, AN Specifications will be written for recommended adoption as an AN standard lightweight flying suit.

6. The Navy aviator's intermediate leather jacket, Specification M-422 A was examined, and the jacket appears to be an excellent garment for intermediate temperatures.

7. Other clothes examined and discussed included Army Air Forces and Navy electrically-heated clothing, mechanics' suits and aviators' caps.

C. Conclusions:

1. That pending final approval of samples, AN Specifications would be written and the following recommended for adoption as AN standards:

a. Fasteners, interlocking, slide.
b. Shearlings, sheep, electrified.
c. Jacket, shearling, winter, aviator's.

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Engin. Div. Memo. Report No. ENG-W-54-666-56A
February 8, 1943.

d. Trousers, shearling, winter, aviator's.
e. Suit, summer, flying.
f. Jacket, leather, intermediate, aviator's.

2. That necessary action should be taken to improve the quality of shearling being delivered to garment manufacturers for fabrication into garments.

D. Recommendations:

1. That immediate steps be taken to see that all tanned and finished shearling delivered to garment manufacturers for fabrication into garments be of good quality and that fair and equal distribution of shearling to Army Air Forces and Navy contractors of garments be insured.

2. That standardization of items in paragraph C-1 of this report be approved.

3. That the proposed AN standard shearling jacket and trousers, items c. and d., paragraph C-1, replace the following Army Air Forces standard items of clothing:
a. Jacket B-3, Specification 94-3061
b. Trousers A-3, Specification 94-3062
c. Jacket B-6, Specification 94-3097
d. Trousers A-5, Specification 94-3098
Such replacements are to apply on future contracts and present contracts as soon as practical without interference of present production schedules through renegotiation of existing contracts.

4. That the proposed AN standard suit, summer, flying, Item e, paragraph C-1, replace the following Army Air Forces standard items of clothing:
e. Suit, summer, flying, Type A-4, Specification 94-3039.
Such replacement is to apply on present contracts through renegotiation of contracts and to be caught up in production as soon as practical without interference with production schedules.

5. That the revised specifications for electrified sheep shearling coordinated with the industry and the War Production Board be expedited.

J. R. Schenck
Prepared by J. R. SCHENCK, Captain A. C.
(Name)

Concurrence:

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.....

Approved by G. V. HOLLOMAN, Colonel, A.C.
Chief, Equipment Laboratory
Engineering Division

Approved by E. P. CARROLL, Brig. Gen. U.S.A.
Chief, Engineering Division.

Approved by _____

Distribution:
C.G. Mat. Com., Att: Chief of Staff
Dr. of Military Requirements.
Bureau of Aeronautics.
C.G., ASC (2)
Chief, Procurement Division.
Chief, Prod. Engr. Sec.
Chief, Materials Lab.
Central Files.

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c/o Sheep Shearling FB-5 (1)-39 Mat Div WNRC, Wash

NAVY DEPARTMENT
BUREAU OF AERONAUTICS
WASHINGTON, D.C.

Aer-PR-1-BA
L8 (1)
JJ27
JJ34L3 33513

8 March 1943

From: The Chief of Bureau of Aeronautics
To: The Working Committee of Aeronautical Board

Subject: Nylon and Shearling - Procurement under the Cognizance of the Army Air Forces.

Reference:
(a) Aeronautical Board's letter, A.B.No. 520 (Case No. 140-A), dated April 18, 1942.

1. Reference (a) delegated to the Army Air Forces the responsibility for the procurement and allocation of all subject raw materials required by both the Army and the Navy.

2. The centralization of a program of such magnitude has imposed an excessive burden upon the facilities of Wright and Patterson Field, the attempted performance of which has encountered the following obstacles:

(a) Inadequate inspection at source results in acceptance of inferior materials.

(b) Manufacturers escape the responsibility of fabricating with specified material.

(c) Waste due to rejects from incompetent sources.

(d) Delays in delivery due to inadequate scheduling and production difficulties.

(e) Increased cost of finished products.

(f) Excessive administration, accounting, and liaison work.

3. Standardization of flight clothing for the Army Air Forces and Naval Aviation will be effected in the near future. This will result in considerable benefit to the Government so far as procurement, cost, quality, and inspection are concerned. However, if the maximum benefits are to be derived, it is believed necessary that procurement be made of the finished article

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C Smcy Shearling
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Subject: Nylon and Shearling - Procurement under the Cognizance of the Army Air Forces.

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MDAC-5-WF-3-5-42-500M
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82:MHS:JM

TELETYPE MESSAGE

DATE: March 9, 1943
11:00 A.M.

FROM General Proc. Branch
Procurement Division

A. E. JONES
Brig.General, U.S.A.

ATTENTION: COMMANDING GENERAL
HEADQUARTERS, AAF
MATERIEL COMMAND
WASHINGTON, D. C.

PD-T-1252.....RE TELETYPE 4-213, DATED MARCH 5, 1943. REFERENCE SHEEP SHEARLING REQUIREMENTS FOR FISCAL YEAR 1944. THIS INFORMATION FORWARDED IN THIRD WRAPPER INDORSEMENT UNDER DATE OF MARCH 2, 1943, TO YOUR OFFICE. HOWEVER, THE HIGH POINTS OF INFORMATION WERE ARMY AIR FORCES ALONE WILL REQUIRE 30,000,000 FEET. THIS DOES NOT INCLUDE ANY NAVAL REQUIREMENTS. RECOMMEND COMMANDER BECK OR CAPTAIN MEYERS, BUREAU OF AIRCRAFT, NAVY BUILDING, WASHINGTON, D. C., BE CONSULTED FOR THEIR REQUIREMENTS. THEIR REQUIREMENTS WILL BE IN ADDITION TO QUANTITY STIPULATED FOR ARMY AIR FORCES USE.

PROCUREMENT DIVISION

X'd from contract files

427 Sheep Shearling

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423
Textile, Hosiery

WSK:sg:60
Wright Field, Dayton, Ohio.
March 10, 1943.

COM. GEN.
TECH. EXC.
ADM. EXC.
C. O.
BUD. OFF.
EXP. ENG.
CONSTRUCT.
INSP.
PROD. DIV.
PROD. ENG.
PROD. CONT.
I. P. S.
A. S. C.
TECH. DATA
CIV. PERS.
OTHERS

85

Investigation of Government Furnished Shearling.

Inspection, Miscellaneous Control #4.

INSP-M-3E(192)

KH

I. **Purpose.**

a. Report of investigation of Government furnished shearling.

II. **Factual Data.**

a. Visit was made to Chicago, Illinois, on March 1 to 3, 1943, inclusive, for purpose of conference with Eastern Procurement District Representative, Mr. P. J. Crowley, and Mr. George Wilson, Chicago, Illinois Area Office, regarding Government furnished shearling furnished the H. Bernstein and Company, holding contracts for flying clothing. Plants of the Sovereign Manufacturing Company, flying clothing manufacturer, and Weil and Eisendrath, shearling manufacturer, were also visited.

b. Inspection was made of shearling on hand at H. Bernstein and Company and the Sovereign Manufacturing Company from the following concerns: A. C. Lawrence Leather Company, Berlin Tanning and Manufacturing Company, J. Laskin and Sons, Amalgamated Fur Corporation, Seaboard Fur Corporation, Celeste Fur Dressing and Dyeing Corporation, Certified Dressers and Tanners Corporation, Petzold Ltd. Fur Dyeing Corporation, Haerfur Dressing and Dyeing Corporation, and Acme Fur Dressing Company.

c. Complaint against shearling is that leather is weak, evinced by tearing or breaking during sewing operations. Points of failure are generally some location of strain, such as point of attachment of suspenders in back of trousers, snaps in front of jacket, joint at sleeve and body of jacket, etc. Nature of defect is particularly insidious because examination of skins before cutting or sewing fails to reveal weak places, a condition more difficult to detect on account of presence of backing. Rework and insertion of new panels results in considerable extra labor to suit manufacturer.

AAFMC-190-WF-4-30-43-2 M.

CENTRAL FILES

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II. Factual Data.(continued)

d. Considerable variations were noted among the different manufacturers' product, in so far as fiber finish, flexibility and strength of leather, and backing are concerned. Strength of leather was affected on many skins, even though these skins were entirely satisfactory in other respects. As a means of segregating skins with weak leather, inspection had been accomplished on a quantity of material, using the tear test as the criterion. This test was difficult to apply as a governing factor in strength since shearling, as a class, tears easily once a tear is started, and considerable variations may be noted in the same skin. The serged places hold, though the same skin may contain adjacent weak areas. Workmanship, in some instances, on serging was poor since serging was not made to lie flat.

e. Most of the weak skins were received from the following sources: Celeste Fur Dressing and Dyeing Corporation, Certified Dressers and Tanners, Haerfur Dressing and Dyeing Corporation, Acme Fur Dressing Company, Petzold Ltd. Fur Dyeing Corporation and Berlin Tanning and Manufacturing Company. The percentage of weak skins received from Celeste was much higher than from the other manufacturers. The A. C. Lawrence Leather Company and the J. Laskin and Sons Corporation material appeared satisfactory, from standpoint of quality of leather. Some of the A. C. Lawrence No. 2 grade skins had allowable defects so widely spread over the skin as to make effective cutting area practically nil. In addition, this manufacturer, on basis of skins examined, does not make sufficient allowances for defects. A tacky condition of the backing was noted on some of the skins received from Berlin Tanning and Manufacturing Company.

f. Mr. F. Lederer, formerly with Laskin and the Berlin Tanning and, at present, with Weil and Eisendrath as tanner, stated that since the introduction of moth proofing a reduction in tensile strength was noted. His opinion was based on observation only as suitable test facilities were not available upon which to conduct tests. Examination of shearling from same sources, manufactured before and after introduction of moth proofing, indicated non-moth proofed shearling to be superior in strength. Difference in individual skins, or change in tanning procedure, however, may have accounted for this difference.

g. There has been a definite lowering in quality of

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II. Factual Data.(continued)

shearling received. As a result of instructions issued regarding interpretation of numerous revisions on shearling specification and information forwarded as to necessity of conserving shearling and accepting all usable material, some unsatisfactory material has been received. At any rate, there appears to be a wide divergence of opinion among many concerned as to what constitutes suitable tannage.

h. In view of large percentage of Celeste shearling having weak leather, the action of the H. Bernstein and Company in discontinuing the cutting of Celeste material was justified. Cutting of Petzold, Acme, Certified and Berlin shearling was to be continued, providing skins appear of suitable quality. A like decision was made at Sovereign Manufacturing Company regarding shearling on hand, which included various other sources. Further information received from H. Bernstein and Company, however, indicates percentage of weak skins was found to be too high from these sources, and cutting has been discontinued.

i. Action has already been taken to tighten up on inspection at Acme, Certified, Petzold and Celeste, and, in addition, these contractors, as well as the Berlin Tanning Company, have been requested to inform the Materiel Center as to definite steps taken to improve strength of leather and to investigate, first hand, at the H. Bernstein plant, the unsatisfactory performance of the product during sewing operations, before further disposition is made of shearling in question.

III. Conclusions.

a. That difficulties with shearling on account of breaking and tearing during fabrication of suits is due to:

1. Improper tannage.

2. Use of foreign skins which, from certain sources, are thin and not sufficient quality of leather.

3. Effect of moth proofing on leather, (immediate or accumulative).

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IV. **Recommendations.**

a. That close inspection of shearling be accomplished, particularly before application of backing material.

b. That effect of various types of moth-proofing on strength of shearling be investigated.

c. That shearling specification include test on leather, such as tensile, stitch tear, sewing, or other suitable test, to insure procuring skins of suitable strength.

d. That shearling already delivered by Celeste, Acme, Certified, Petzold and Berlin be held at depots and clothing contractors' plants, pending further action as to disposition.

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Cc: Eng. Div. Mat. Lab.
Equipment Lab.
Proc. Div.
Proc. Div. Follow-Up
Prod. Eng. Div.
Air Force Section
Eastern Dist. Supr.
Central Dist. Supr.

W. S. ALEPPER

A. F. HERTZEL, Major, A. C.
Technical Control Branch

F. C. GREULICH, Lt. Col., A. C.,
Chief, Inspection Section.

CENTRAL FILES MDAC-190-WF-3-5-42-1 MIL

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1st Ind. DGL/er 78393

Working Committee, Aeronautical Board, 4848 Navy Bldg., Washington, D. C. March 13, 1943 - To: Commanding General, A. A. F. Materiel Command.

Forwarded for comment and recommendation. This matter was discussed with Colonel Mills of Materiel Center and Commander C. Beck of the Bureau of Aeronautics on February 24, 1943. It seems that the Materiel Center and the Air Service Command are also experiencing difficulties with the present method of procurement.

/s/ D. G. LINGLE,

D. G. LINGLE,
Colonel, Air Corps,
Army Member, Working Committee

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INTER-OFFICE MEMORANDUM
ARMY AIR FORCES
MATERIEL CENTER
Office of The Commanding General

JSM:iej-54

Wright Field, Dayton, Ohio
Date Mar 13, 1943

TO: Chief, Materials Laboratory, Wright Field.

SUBJECT: Revision of Specification No. 8-113.

1. It is requested that U. S. Army Specification No. 8-113 be revised so that only number one skins without seaming will be used.

2. It is further requested that the mothproofing requirement be eliminated. Survey has shown that apparently this process is susceptible to doing more harm to the skins than the benefit which might be gained from the mothproofing.

/s/ LOUIS A. METZELFELD, Lieut. A.C.

G. V. HOLLOMAN,
Colonel, Air Corps,
Chief, Equipment Laboratory,
Engineering Division.

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Carbon
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AF AMC-4A
ADS 106

March 17, 1943

Technical Executive, Materiel Center
Patterson Field, Fairfield, Ohio

Attention: Captain F. M. Wynn

Nylon and Shearling - Procurement under the
Cognisance of the Army Air Forces

1. Forwarded herewith, for appropriate action, is a letter from the Bureau of Aeronautics, Navy Department, above subject, dated March 8, 1943, together with 1st Indorsement thereto dated March 13, 1943 from the Working Committee, Aeronautical Board, which refers to delegation to the Army Air Forces of the responsibility for the procurement and allocation of all subject raw materials required by both the Army and the Navy.

2. In view of the circumstances outlined therein, the Bureau of Aeronautics requests that the above arrangement be reconsidered, granting authority to the Bureau of Aeronautics to return to its former method of procurement based on contractor furnished raw materials. It is further requested that necessary action be taken to assure the contractors of a source of their raw materials.

H. F. VOLANDT
Colonel, Air Corps
Assistant Chief of Staff (C)

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B-4

INTER-OFFICE MEMORANDUM

ARMY AIR FORCES
MATERIEL CENTER
Office of The Commanding General

JSM:pjo-54

Wright Field, Dayton, Ohio

Date [illegible]

TO: Chief, Production Engineering Section, Wright Field
Attention: Aeronautical Equipment Branch.

SUBJECT: Cancellation of Contracts for Sheep Shearling.

1. As the result of a recent survey of sheep shearling furnished by Army Air Forces contractors, it is recommended that your Office take steps to have the Procurement Division, Wright Field, immediately cancel existing contracts for sheep shearling with the following Companies:

a. Acme Fur Dressing Company, Waspeth, L. I., New York.
b. Amalgamated Fur Corporation, New York, New York.
c. Celeste Fur Dressing & Dyeing Co., Newark, New Jersey.
d. Petsold Fur Dyeing Corporation, New York, New York.
e. Certified Dressers & Tanners, Brooklyn, New York.
f. Seaboard Fur Company, New York, New York.
g. Hearfur Dressing & Dyeing Corporation, New York, New York.

2. Without exception, the skins furnished by the above manufacturers have been generally poor in quality. The skins are dry, brittle, tear very easily and in many cases seaming is very poorly accomplished. Clothing manufacturers have refused to put into garments material furnished by these contractors because of its very inferior quality.

3. It is apparent that these contracters are so ignorant of the proper procedure with regard to tanning sheep shearling that they are not able to control the finished article.

4. The quantity of good raw skins as compared to the Army Air Forces requirements is so critical that a waste of such skins by unqualified tanners cannot be tolerated. It is therefore considered a matter of extreme urgency that these contracts be cancelled in order that the continued daily waste of critical materials may be stopped.

5. A survey of this industry has been conducted separately by both the Inspection Section and the Engineering Division with concurrent findings.

O. V. HOLLOMAN,
Colonel, Air Corps,
Chief, Equipment Laboratory,
Engineering Division.

Signature .....

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Shearling file

INTER-OFFICE MEMORANDUM
ARMY AIR FORCES
MATERIEL CENTER
Office of The Commanding General

Ref: THP:bvc-70-54.

Wright Field, Dayton, Ohio
Date March 19, 1943.

TO: Chief, Procurement Division,
Wright Field.

SUBJECT: Cancellation of Contracts for Sheep Shearling.

1. In Inter-Office Memorandum dated March 18, 1943, Engineering Division recommends that steps be taken to cancel existing contracts for sheep shearling with the following companies:

a. Acme Fur Dressing Co., Maspeth, L.I., New York. Contract AC-25057.
b. Amalgamated Fur Corp., N.Y. N.Y. P.O. 42-22417-P and P.O. 42-11913-P.
c. Celesta Fur Dressing & Dyeing Co., Newark, N. J. P. O. 42-22418-P.
d. Petzold Fur Dyeing Corp., Newark, New Jersey, P. O. 42-22420-P.
e. Certified Dressers & Tanners, Brooklyn, New York. P.O. 42-22421-P.
f. Seaboard Fur Company, New York, N. Y. P. O. 42-22422-P.
g. Beerfur Dressing & Dyeing Corp., New York, N. Y. P. O. 42-22423-P.

2. Paragraphs 2, 3, 4 and 5 of Inter-Office Memorandum referred to above are quoted:

"Without exception the skins furnished by the above manufacturers have been generally poor in quality. The skins are dry, brittle, tear very easily and in many cases seaming is very poorly accomplished. Clothing manufacturers have refused to put into garments material furnished by these contractors because of its very inferior quality."

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"It is apparent that these contractor's are so ignorant of the proper procedure with regard to tanning sheep shearling that they are not able to control the finished article."

"The quantity of good raw skins as compared to the Army Air Forces requirements is so critical that most of such skins by unqualified tanners cannot be tolerated. It is therefore considered a matter of extreme urgency that these contracts be cancelled in order that the continued daily waste of critical materials be stopped."

"A survey of this industry has been conducted separately by both the Inspection Section and the Engineering Division with concurrent findings."

Signature .....

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INTER-OFFICE MEMORANDUM

ARMY AIR FORCES
MATERIEL CENTER
Office of The Commanding General

Ref: THP:bvs-70-SQ.

Wright Field, Dayton, Ohio

Page 2

Date March 19, 1943.

TO: Chief, Procurement Division,
Wright Field.

SUBJECT: Cancellation of Contracts for Sheep Shearling.

3. Production Division concurs that immediate steps should be taken for the cancellation of subject contracts.

S. R. BRENTNALL,
Colonel, Air Corps,
Chief, Production
Engineering Section.

Signature .....

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268-WF-8-8-42-200M

ARMY AIR FORCES
MATERIEL CENTER
ENGINEERING DIVISION
MEMORANDUM REPORT ON

WLM:jhs:54:4090

Date March 20, 1943

SUBJECT: Sheep Shearling Skins that do not Meet Government Specifications.

~~DIVISION~~ Equipment Laboratory

SERIAL No. ~~EMO-M-54-666-518~~

Contract No.
Expenditure Order No. 666-205
Purchase Order No.

A. Purpose:

1. To furnish information on tanners name and the condition of skins being furnished clothing manufacturers.

B. Factual Data:

1. The following is a list of names of manufacturers whose factories were visited and of tanners whose skins were inspected by each manufacturer:

a. Monarch Mfg. Co., (Navy Contracts), Milwaukee, Wisconsin.
   (1) A. C. Lawrence Leather Co.
   (2) Amalgamated Fur Corp.
   (3) American Beaver Lamb Corp.
   (4) Anglo American Tanners.
   (5) Celeste Fur Dressing and Dyeing Corp.
   (6) Certified Dressers & Tanners.
   (7) Beerfur Dressing & Dyeing Corp.
   (8) J. Laskin & Sons Corp.
   (9) Petsold Ltd. Fur Dyeing Corp.
   (10) Seaboard Fur Company.
   (11) Winslow Brothers and Smith.
   (12) Workman and Company.

b. Paul Reed Company (AAF Contracts), Milwaukee, Wisconsin.
   (1) J. Laskin and Sons Corp.

c. H. Bernstein and Co. (AAF Contracts), Chicago, Illinois.
   (1) Acme Fur Dressing Co.
   (2) Berlin Tanning & Mfg. Co.

d. Western Leather Clothing Co. (AAF Contracts), St. Louis, Mo.
   (1) A.C. Lawrence Leather Co.
   (2) Muskegon Tanning Company.

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2. The following were present at a conference held at the Monarch Mfg. Company, Milwaukee, Wisconsin:
   a. Mr. E. Mohler, Monarch Mfg. Company.
   b. Mr. Walters, Navy Inspector.
   c. Mr. W. L. Moore, Materiel Center, Wright Field.

3. The following were present at a conference held at the Paul Reed Company, Milwaukee, Wisconsin:
   a. Mr. George Hammerschlag, Paul Reed Company.
   b. Mr. D. McKeon, Army Air Forces Inspector.
   c. Mr. Cook, Army Air Forces Inspector in charge.
   d. Mr. W. L. Moore, Materiel Center, Wright Field.

4. The following were present at a conference held at the H. Bernstein and Company, Chicago, Illinois:
   a. Mr. M. Bernstein, H. Bernstein and Company.
   b. Miss Bernstein, H. Bernstein and Company.
   c. Mr. W. S. Klepper, Wright Field.
   d. Mr. W. L. Moore, Materiel Center, Wright Field.

5. The following were present at a conference held at the Western Leather Clothing Company, St. Louis, Missouri:
   a. Mr. H. Epestein, Western Leather Clothing Company.
   b. Mr. R. Peck, Army Air Forces Inspector.
   c. Mr. W. L. Moore, Materiel Center, Wright Field.

C. Conclusions:

1. The names of the tanners and the condition of their skins as inspected are as follows:

   a. A. C. Lawrence Leather Company - The Number 1 skins were in good condition but the wool was not thoroughly combed over the entire skin. Number 2 skins had an excessive number of holes scattered over the skin.

   b. Acme Fur Dressing Company - The skins with no moth-proofing were good. The skins with moth-proofing were tender and weak. The backing was good but had a grainy appearance.

   c. Amalgamated Fur Corporation - The backing was brittle and would crack otherwise the skins were in good condition.

   d. American Beaver Lamb Corporation - Electrification was not complete, backing was strong but had a grainy appearance, otherwise the skins were in good condition.

   e. Anglo American Tanners - Heavy stiff skins with varying thicknesses, pitted uneven backing and poor electrification.

   f. Berlin Tanning and Manufacturing Company - The skins were unevenly buffed, good electrification, but backing was very oily.

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MDAC-266-WF-3-4-42-30M

Engin. Div. Memo Report No. ENG-M-54-666-51E;
March 20, 1943

g. Celeste Fur Dressing and Dyeing Corporation - Very poor backing, shrunk and tender skins were the general condition.

h. Certified Dressing and Tanners - The condition of all skins examined was poor.

i. Heerfur Dressing and Dyeing Corp. - Good electrification but otherwise the skins were in poor condition.

j. J. Laskin and Sons Corporation - Electrification not complete otherwise the skins are good.

k. Muskegon Tanning Company - Very good.

l. Petzold Limited Fur Dyeing Corp. - Poor skins.

m. Seaboard Fur Company - Poor skins.

n. Winslow Bros and Smith - Sticky and weak backing, otherwise good skins.

o. Workman and Company - Skins in good condition.

D. Recommendations:

1. It is recommended that the following action be taken by the organization designated below:

a. Engineering Division, Materiel Center, Materials Laboratory:

(1) That the Materials Laboratory determine the most effective practical moth-proofing process and the method of application and neutralization which will cause no deterioration to skins and a suitable backing solution which will be uniform in color, strength, pliability and sheen. (Action initiated)

(2) That the Materials Laboratory write into specifications covering these formulas and methods of applications to apply to all sheep shearling skins contracted for by the United States Government. (Action initiated)

(3) That no more skins be accepted from the following tanners until corrective action is taken:
(a) Celeste Fur Dressing and Dyeing Co., Newark, N.J.
(b) Petzold Fur Dyeing Corporation, New York, N. Y.
(c) Heerfur Dressing and Dyeing Corp, New York, N.Y.
(d) Amalgamated Fur Corp, New York, N. Y.
(e) Certified Dressers and Tanners, Brooklyn, New York.
(f) Seaboard Fur Company, New York, N. Y. (Action initiated)

Prepared by M. L. Moore
(Name)

Approved by G.V. HOLLOMAN, Col. A. C.
Chief, Equipment Lab.,
Engineering Div.

Concurrence:

Approved by F.O. CARROLL, Brig. Gen. USA,
Chief, Engineering Div.

Distribution: Chief, Mat. Lab.
Chief, Inspection Section.
Chief, Prod. Eng. Sec.
Org. and Equip. Brn.
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MINUTES OF CONFERENCE HELD MARCH 20, 1943

A conference was held at 10:15 A.M. on March 20, 1943 in Aeronautical Equipment Branch, Production Engineering Section, with the following personnel present:

Mrs. Schmidt, Follow-Up Production Control Section, A.S.C.
Mr. H. G. Ohmer, Follow-Up Production Control Section, A.S.C.
Maj. H. F. Marshall, Follow-Up Production Control Section, A.S.C.
Mr. M. H. Simmons, Production Division
Capt. C. B. Smith, Organizational Equipment Unit, Aeronautical Equipment Branch, Production Engrg. Section

1. The purpose of the conference was to take action by way of approving or disapproving the cancellation of contracts for sheep shearling, as stated in the attached copy of Inter-Office Memorandum dated March 13, 1943, addressed to Chief, Production Engineering Section, Wright Field.

2. The current situation appears to be that due to the heavy demand for shearling, such skins as are available to the Army Air Forces must be tanned with the greatest skill, and only by those tanners who are best qualified by experience to produce the highest quality.

3. It was shown that the tanners whose contracts are recommended for cancellation are incapable of quality tanning, and that their products are the cause of unnecessary rejections, together with a slowing down in garment manufacture.

4. The combined production of the tanners in question amount to six per cent of the total requirements, which could easily be absorbed by the remaining approved tanners without delay in delivery of the required garments.

5. It was stated that flying suits are now being cut in smaller sizes, i. e., 36, 38, 40, and 42, instead of larger sizes; there being a sufficient quantity of large sizes on hand for the present.

6. Requirements of critical shearling items, A-3 and B-3 suits, were submitted for consideration by Production Control Section.

7. The cancellation of the contracts in question was approved.

cc: Maj. H. F. Marshall
Mr. M. H. Simmons
Capt. C. B. Smith

CALVIN B. SMITH,
Captain, Air Corps.

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Memo.
written By Demuth & Simmons

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80-4 RMD:ds

Wright Field, Dayton, Ohio
March 22, 1943

Sale of Government-owned
Shearling Scrap.

District Supervisor
Central Procurement District ? Eastern one
AAF Materiel Command
6505 W. Warren Ave.,
Detroit, Michigan.

1. It is understood that the disposal of Government-owned shearling scrap has been creating some difficulties by reason of the large number of different manufacturers who have such scrap to dispose of and the relatively small amount for sale at each plant.

2. It is suggested that consideration be given to the feasibility of requesting bids for the purchase of all of the Government-owned shearling scrap which may be available for sale by the Government within your District within a six months period. If satisfactory bids are received, an over-all contract could be written to provide for the sale of all such scrap to the Contractor within the designated period and all manufacturers within your District could be notified that all scrap at their plants should be shipped to such contractors.

3. Your comments are requested.

A. E. JONES,
Brig. Gen., U.S.A.
Chief, Procurement Division

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ARMY AIR FORCES
MATERIEL CENTER
ENGINEERING DIVISION

MEMORANDUM REPORT ON

MP:jhs:54:3349

Date March 23, 1943

SUBJECT: To Report on Conditions of Sheep Shearling Skins on AAF Contracts.

~~XXXXXXX~~ Equipment Laboratory

Contract No.
Expenditure Order No. 666-205
Purchase Order No.

SERIAL NO. ENG-M-54-666-51F

A. Purpose:

1. To report on quality of sheep shearling skins delivered to the following manufacturers:

a. H.L.B. Manufacturing Company, New York, New York.
b. Perry Sportswear Company, Newburgh, New York.
c. Aero Leather Manufacturing Company, Beacon, New York.
d. Werber Sportswear Company, Newburgh, New York.
e. Arnoff Shoe Company, Bristol, Rhode Island.

2. To check tanners who are delivering inferior shearlings unsuitable for manufacture of Army Air Forces garments.

B. Factual Data:

1. Discussions were held with Mr. Glasser, H. L. B. Manufacturing Company, Mr. Lou Kraemer and Mr. Liebman, Aero Leather Company, Mr. Werber, Werber Sportswear Company, Mr. Brannock, Perry Sportswear Company, and Mr. Arnoff, Arnoff Shoe Company, regarding the quality of their deliveries.

2. After examination of skins, it was the opinion of the manufacturers that several tanners were delivering a very poor product, resulting in many skins not fit to be used in clothing for the Army Air Forces.

a. The H.L.B. Manufacturing Company had 40,000 feet of poor quality shearling laid aside from different tanners.

b. The Aero Leather Company held fifty boxes of shearlings too poor for manufacturing. They also have 200 suits which are falling apart which were made from this quality shearling.

C. Conclusions:

1. After examining many bales of skins of different manufacturers, the following discrepancies were found:

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Engin. Div. Memo. Report No. EMD-M-42-666-51F
March 23, 1943

a. Skins tore easily.
b. There is evidence of bad brushing, poor electrification and faulty finish.
c. Many stiff boardy skins make garments unwearable.

2. The following tanners have delivered very poor shearlings to the above listed manufacturers and are producing products which should not be used in Army Air Forces flying suits:
a. Acme Fur Dressing Company.
b. Coleate Fur Dressing and Dyeing Corporation.
c. Beerfur Dressing and Dyeing Corporation.

3. Too many different tanners are supplying materials to one manufacturer causing the lots to be badly mixed in quality and finish making production more difficult.

4. Several of the skins from the A. C. Lawrence Leather Company had the wrong footage mark. (Should be 8' when 4')(Should be 7' when 4')

D. Recommendations:

1. It is recommended that the following action be taken by the organization designated below:

a. Inspection Section, Materiel Center:
(1) That inspection of skins should be improved.
(a) Skins should be inspected after tanning and before poly-acrylate finish is applied in order that holes, cracks and damages could be visible.(Action initiated)

b. Production Division, Materiel Center:
(1) Stop production of the following tanners inasmuch as they are producing unsuitable skins: (Action initiated)
(a) Acme Fur Dressing Company.
(b) Coleate Fur Dressing and Dyeing Corporation.
(c) Beerfur Dressing and Dyeing Corporation.

c. Engineering Division, Materiel Center, Equipment Laboratory:
(1) That Number 2 skins should not be used in flying suits, but may be used in mechanics suits, helmets and shoes. (Action initiated)

Prepared by HERBERT DAVIDSON, Pvt. A.C.
(Name)

Approved by C. V. HOLLOMAN, Col., A.C.
Chief Equip.Lab., Engr.Div.

Concurrence:

Approved by F. O. CARROLL, Brig.Gen. U.S.A.
Chief, Engr. Div.

Distribution: Chief, Inspection Section
CG, Air Service Command (2)
Chief, Prod. Engr. Sec.
Chief, Proc. Division
Chief, Materials Lab.
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RPS:mbe:CO

March 30, 1943

Chief, Procurement Division
(Contract Section, Legal Branch,
Attention: Capt. W. L. Marcy)

Shearling.

1. Reference is made to recent discussion with Captain W. L. Marcy of the Legal Branch of Procurement Division, Contract Section, concerning a memorandum dated March 13, 1943 from Chief, Equipment Laboratory, Engineering Division, recommending that certain contracts for sheep shearling be cancelled. While it is admitted that a considerable percentage of the deliveries from the tanners referred to in the memorandum of March 13, 1943 are unsatisfactory for use in flying clothing, it must be considered that the tanners are only obligated to furnish their skins to the requirements of the applicable specification.

2. The main fault with the percentage of shearlings furnished by these tanners appears to be in the tannage as the stitching tears when the skins are sewn into flying clothing. This office fully agrees that a percentage of the deliveries are not satisfactory for flying clothing and is of the opinion that one of the following listed items, or perhaps a combination of same, is the cause of the difficulties:

a. Tannage. (Note) Specification 8-113-C, par. D-2 on Tannage, reads as follows: "The skins shall be properly and fully tanned with a suitable tannage to conform to the requirements of this specification."

Miscellaneous Materials Inspectors who are responsible for acceptance of this class of material are not generally experienced tanners and acceptance for tannage is usually made on certified test reports from a reputable test laboratory showing conformance with specification requirements. It is believed that these test reports are available in the Eastern District Supervisor's files. Individual skins are examined for flexibility, skin imperfections and finish, and acceptance is made on this basis.

b. Mothproofing.

Paragraph E-2 of Specification 8-113-C requires the skins to be mothproofed. Several tanners have contended that the mothproofing compound being used causes a latent damage to the skins. This contention cannot be verified unless laboratory tests are conducted; however, it is understood that action is now being

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CENTRAL FILES

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RPC:mbe:60

March 30, 1943

Chief, Procurement Division
(Contract Section, Legal Branch,
Attention: Capt. W. L. Marcy)

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To: Chief, Proc. Div.
March 30, 1943

taken to eliminate the mothproofing requirement from the specifications to eliminate this factor as a possible cause of the trouble.

c. Stitch Tear Requirement.

The present specification does not provide for a stitch tear test and a recommendation has been made by this office that such a requirement be added to correct a difficulty encountered as follows: A skin appears to be satisfactory on tannage and strength, as it stands the strain of pulling in various directions with the hands, which is one of the tests used by inspectors; however, the same skin may not satisfactorily hold the stitches when incorporated into a flying suit.

3. It appears to this office that, at the time, acceptance of material was reasonably justified in the absence of any knowledge on the part of inspectors that leather would become weak after a period of time due to indeterminate reasons. This office cannot concur fully in the contention that shearling was accepted at the plant in present state. The Eastern District Office has had considerable experience with sheepskins. As an instance, in June, 1942 the Seaboard Fur Corporation was required to replace 369 bales of [redacted] (rotted leather). This does not mean that inspection at the [redacted] was inadequate, or cannot, or has not been improved.

4. Paragraph 4 of Chief, Equipment Laboratory memorandum of March 13, 1943 advises that a waste of shearling skins by unqualified tanners cannot be tolerated, and this office is entirely in accord with this statement; however, it is believed from the contentions already made by some of the shearling suppliers that serious protests will arise upon cancellation of contracts unless it can be definitely shown that tannage has been improperly accomplished, and it is not felt that the inspectors concerned have the necessary qualifications on tanning technique to definitely prove this point. As soon as reports were received as to unsatisfactory performance of shearling, corrective action was taken, and in the Eastern District where these tanners are located, practically 100% inspection on skins is now being accomplished.

5. There are various other complicating factors not mentioned, such as W. P. B. allotments of raw skins, availability of domestic and select foreign skins to a few of the more established tanners, which may have some bearing on the cancellation of shearling contracts.

6. This office is quite sure that action already taken has resulted in acceptance of only suitable shearling from sources mentioned insofar as inspection at source is able to judge in view of enlightened information. Records available indicate small shipments from these contractors are being continued, and there is every reason to believe material received is satisfactory. Action has been initiated to obtain average run skins from these

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To: Chief, Proc. Div.
March 30, 1943.

as well as all other shearling sources for inspection and test by the Materials Laboratory, for the purpose of obtaining data for the new shearling specification. It is recommended cancellation action be deferred until these tests are completed. This data will prove whether contractors are capable of meeting Air Force requirements on shearling, and will supplement information already available in event cancellation action is taken.

7. Information available to this office regarding Seaboard Fur Corporation and Amalgamated Fur Company shearling is contradictory, since both good and bad reports have been received.

8. Previous remarks have been confined to wool leather, but difficulties have been encountered with backing, particularly with shearling from Winslow Brothers and Smith, and Berlin Tanning.

cc

W. C. GRETLICH,
Lt. Colonel, Air Corps,
Chief, Inspection Section.

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AAFMC-265-A-WF-8-28-42-150M

S-3(1/200)

INTER-OFFICE MEMORANDUM

ARMY AIR FORCES
MATERIEL CENTER
Office of The Commanding General

CJC:hmr:56

Wright Field, Dayton, Ohio

Date March 31, 1943

TO: Chief, Procurement Division,
Wright Field.

SUBJECT: Shearling.

1. U.S. Army Specification 8-113-C covers the requirements for sheep shearling. This is the wool skin which is subsequently coated and made into flying garments of various types. This specification originated more than 10 years ago, and was the direct result of technical conferences and development between personnel of the Material Center and the tanners and manufacturers of this item.

2. At no time during the existence of the specification were physical properties included, due to the fact that with the different types of tannage which existed and subsequent improvements in tannage which were developed by the manufacturer, variations in the physical properties were such that no definite limits could be indicated or were suggested.

3. The general requirement reference workmanship was considered adequate over the entire time in indicating quality and performance of the material involved. This requirement is listed as Paragraph C-2 of the above-mentioned specification, and states that the workmanship shall be in accordance with high-grade commercial practice, and the finished skin shall be free from grain cracks, and other defects which may affect the appearance or serviceability.

4. With reference to the mothproofing requirement in this specification, this was introduced at the request of Air Service Command, and was stated to be necessary because the only alternative was the building of low temperature storage facilities as against the application of mothproofing treatment to these wool skins. In so far as the records disclose, there has been no complaint reference moth damage of sheep shearling before or since the introduction of the mothproofing requirement. An additional complication reference the mothproofing requirement was that originally the mothproofing treatment was applied to the fiber during the dyeing operation. With the elimination of the requirement for color or shade, the mothproofing was subsequently applied in the tanning bath. This treatment required much closer technical control, and is more apt to produce damage when applied this way than when formerly applied as an added element in the dye bath. There is no doubt that mothproofing can be controlled properly, as the larger

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companies having adequate control seemed to have no great difficulty in presenting suitable skins.

5. The stitch tear requirement was not included in the original specification, and, while the addition of this requirement may have some merit, and will be added to future specifications, the requirements of this test, per se, are not a guarantee of superior quality. The condition is emphasized by failure of the material when it is sewed or stitched, and is due to one of two causes, either a papery skin or improperly tanned leather. It is the opinion of the Materials Laboratory that both of these conditions are apparent at the time of their delivery from the tannery.

6. Considerable emphasis has been placed on the fact that a large percentage of sheep shearling is unsatisfactory because of faulty tanning, and, while this is undoubtedly a fact, it is believed that the chief cause of unsatisfactory shearling is that the requirements are greater than the supply of available skins of suitable quality.

7. Considerable part of the unsatisfactory performance of sheep shearling is due to the use of imported skins of certain types. Some imported skins themselves are subject to grain cracking and the development of other defects during the tanning process because of the method of presentation of the green skins to the tanning trade.

8. Another contributing factor to the general unsatisfactory condition reference sheep shearling is due to the fact that in storage at Army Air Forces depots, the segregation of No. 1, 2, and 3 skins is apparently not fully accomplished, so that in the delivery of of finished skins to garment manufacturers, improper skins were supplied in a number of cases.

9. There is little doubt that some of the tanners are inadequate with reference to producing the material specified in U.S. Army Specification S-113-C. This is substantiated by information obtained by Equipment Laboratory during a course of inspection of these plants as well as by additional data supplied by Inspection Section. It is the opinion of the Materials Laboratory that the elimination of unsatisfactory sources of supply would be to the general advantage of the Army Air Forces with reference to obtaining suitable skins to produce a first quality garment for the Army Air Forces.

F. O. CARROLL,
Brig. General, U.S.A.,
Chief, Engineering Division.

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April 15, 1943

Captain J. B. Schenck
Wright Field
Dayton, Ohio

Dear Captain Schenck:

I am just taking over the work in the Pile Fabric Unit, previously done by Mr. Charles Merefee, and Mr. Milling Krook, and have the alpaca [illegible] for the cold climate clothing under my direction for the War Production Board.

I find that on March 17th, Mr. Krook, and Mr. Amen Stevens had a conversation with you, in which it was indicated that Wright Field would be soon interested in purchasing 250,000 yards of 50 per cent alpaca and 50 per cent wool blend; that the procurement would be placed by the Contract Section, Wright Field, and that Mr. Simmons would get in touch with the Wool Branch before placing any procurements.

We now have received a ~~memorandum sent out April 13th by Mr. Simmons, of estimated requirements by Commanding General, Material Center, Army Air Forces, Requirements Branch, Production Resources Section, Wright Field,~~ in which he mentions that from April to December 1943, they would require 994,000 yards of alpaca or wool pile fabrics and others.

We have today been called up by a weaver who wants to bid on a 30,000 yard order for the Air Force made of double faced all wool pile.

Could you possibly let me know the status of the orders about to be placed, both in regard to quantity and specifications, as we must make the necessary provisions for the raw materials going into these fabrics. We should be greatly obliged if you could let us have this information.

Yours very truly,

5-11-43

Charles B. Rockwell
Chief, Upholstery & Pile Fabric Unit
Textile, Clothing & Leather Division

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INTER-OFFICE MEMORANDUM
WAR DEPARTMENT, AIR CORPS
Office, Assistant Chief
Materiel Division

RPC:sg:fC
Wright Field, Dayton, Ohio
Date April 22, 1943.

TO: Chief, General Procurement Branch,
Contract Section,
Wright Field, Dayton, Ohio.
Attention: Lt. Col. C. V. Meuath

SUBJECT: Shearling and Clothing Contracts.

1. With reference to a discussion in your office on April 22, 1943 relative to inspection procedure on sheep shearling and aircraft clothing contracts, it is recommended that the clause "A", substantially as follows, be incorporated in all contracts for sheep shearling:

> "A" Inspection shall be accomplished at the contractor's plant by an A. A. F. Inspector, however, a final inspection shall be made at the clothing manufacturer's plant to determine that the shearling is entirely suitable for fabrication into first-class flying clothing. Any material having latent defects or found unsatisfactory for flying clothing shall be subject either to replacement without additional cost to the Government, or refund of the purchase price and cancellation of the order, as decided by the Contracting Officer.

2. It is, also, recommended that clause "I", substantially as follows, be incorporated in all contracts for aircraft clothing:

> "I" The Government shall furnish to the contractor a sufficient amount of shearling for use in the fabrication of the articles called for in the order. The suit manufacturer shall specify the quantity of shearling required for each article. Should any of the shearling furnished by the Government to the contractor be unsatisfactory for use in flying clothing, it will be the responsibility of the clothing manufacturer to segregate such skins which have weak leather or are otherwise unsatisfactory, so that only those skins suitable for first-class flying clothing are used.

Signature.....

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C O P Y

I. O. M. April 22, 1943
To: Chief, General Procurement Branch,
Contract Section.

Subject: Shearling and Clothing Contracts.

Clause "b" continued.

"b" All unsatisfactory skins shall be laid aside for verification by the A. A. F. Inspector assigned, and the Contracting Officer shall be notified by the contractor as to the footage for replacement and disposition. The A. A. F. Inspector assigned shall sign a statement, attached to the contractor's letter, showing his agreement with the contractor's findings.

A. B. WENTZEL,
Major, Air Corps,
Chief, Technical Control Branch,
Inspection Section.

Cc: Contr. Sect. Legal Branch, Att: Capt. R. I. Perry
" " " Follow-up Branch, Att: Mr. D. F. Little
Exp. Eng. Sect., Mat. Lab, Att: Mr. C. Cleary
" " " Equip. Lab, Att: Col. J. S. Mills
Air Service Command, Class 1%.

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B-

ARMY AIR FORCES
MATERIEL CENTER
ENGINEERING DIVISION
MEMORANDUM REPORT ON

CJC:hmr:56

Date April 23, 1943

SUBJECT: Conference Reference Sheep Shearling in Stock.

SECTION Materials Laboratory

Contract No.
Expenditure Order No. 602-1
Purchase Order No.

SERIAL No. ENG-56-4477

A. Purpose.

1. A conference was held to obtain information with reference to the suitability of sheep shearling in Army Air Forces stock relative to its application to garments and clothing.

B. Factual Data.

1. This conference was held April 22, 1943, in the office of Captain W. L. Marcy, Legal Branch, Procurement Division, and was attended by the following:

Captain W. L. Marcy, Legal Branch, Procurement Division.
Captain C. B. Smith, Aeronautical Equipment Branch, Production Engineering Section.
Captain E. B. Lyon, Equipment Laboratory, Engineering Division.
Lt. Schaaf, Procurement Division, Legal Branch.
Mr. R. P. Salisbury, Inspection Section.
Mr. D. R. Little, Follow-Up Branch, Procurement Division.
Mr. C. D. Carey, Clothing & Equipment Branch, Air Service Command.
Mr. E. J. Weber, Manufacturing Methods Section, Production Division.
Mr. C. J. Cleary, Materials Laboratory, Engineering Division.

2. The majority of shearling in stock is at the air depot at Syracuse, New York. Complete classification reference grade, quality, and amount was not available. A representative of Air Service Command was to take necessary action to get a complete inventory of this material which will be supplied to Engineering Division and Inspection Section.

3. It will be necessary to inspect the shearling at the depot, particularly the product of the manufacturers with which difficulty was experienced.

4. New specifications were to be supplied to the several tanners involved in order to permit of their operation to the new requirements.

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Engineering Division Memorandum
Report No. EMO-56-4477
April 23, 1943.

C. Conclusions.

1. Any action reference the grading and classification of shearlings on hand in Army Air Forces stock must be delayed pending receipt of the inventory of the materisl.

D. Recommendations.

1. Air Service Command is advised that the following action is suggested by the Materials Laboratory, Engineering Division:
a. Obtain the complete inventory of stock on hand by grade, class, type, and quantity.

2. The Inspection Section is advised that the following action is suggested by the Materials Laboratory, Engineering Division:
a. Necessary steps should be taken to reclassify stock on hand by quality and suitability, and this reclassification should be accomplished at the Syracuse Air Depot.

3. The Materials Laboratory, Engineering Division, will assist in this reclassification.

Concurrence:

Prepared by C. J. CLEARY
(Navy)

Approved by J. B. JOHNSON,
Chief, Materials Laboratory

Approved by F. O. CARROLL,
Brig. General, U.S.A.,
Chief, Engineering Division.

Distribution:
Procurement Div., Att: Capt. Marcy, Legal Br.
Prod. Eng. Sect., Att: Capt. C.B. Smith, Aero. Equip. Br.
Equipment Lab., Att: Capt. E.B. Lyon
Inspection Sect., Att: Mr. R.P. Salisbury
Air Service Command, Att: Mr. C.D. Carey, Clothing & Equipment Br.
Manufacturing Methods Sec.
Central Files

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April 2?, 1943

...and Bearing - ... under the
Cognizance of the Army Air Forces

...ing, Committee, Aeronautical Board
...
Washington, D. C.

1. In connection with 1st Indorsement from your office to the Commanding ..., Aeronautical Board, ... (Par 7503), dated March 13, 1943, the following information is furnished.

2. It ... that the Army Air Forces that it would be desirable to ... nylon cloth and ... shearling Contractor-Furnished rather than Government-Furnished, and that Case Number 140 should be reopened to allow adoption of this method of procurement.

3. If this procedure is authorized, it is believed that adequate arrangements can be made to assure contractors of a source for their raw materials.

For the Commanding General, Army Air Forces:

...
Colonel, ... Corps
Chief, Procurement Branch
Office, Assistant Chief of Air Staff
Materiel, Maintenance and Distribution

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RETURN TO CONTRACT SECTION
MATERIEL ... A. A. F.

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TO BE RETURNED
TO THE ARCHIVES
OF THE AAF
HISTORICAL [redacted]

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EO 11652

CLASSIFICATION CHANGED TO
[redacted]
Commanding General, [redacted]
By [redacted]
Date 6 Nov 56.
Title 14 Nov 1956

EB Stevenson
Lt Col USAF

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Skep Skerling

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CASE HISTORY

of

SHUEY SHEARLING

This case history consists of (1) digest of significant documents available from the files of Materiel Command, Wright Field, and Headquarters, Army Air Forces, Washington, D.C.; (2) copies of the digested documents.

Vol ~~Part~~ II - [redacted] Docs. 101-236

Compiled by
Historical Office
Materiel Command
Wright Field

[redacted]

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Original
Shear Shearling
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MAT Div.
M.M.O. Wash

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PROCUREMENT BRANCH

MATERIEL DIVISION

LT. COL. F.I. WORKUM

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RE PROCUREMENT OF NYLON AND SHEARLING. REQUEST FOR REOPENING OF CASE 140 ORIGINATED WITH COL. MILLS AND HAS HIS COMPLETE APPROVAL.

IF CASE 140 IS REOPENED, REQUIREMENTS FOR SHEARLING WILL BE DETERMINED BY AIR SERVICE COMMAND AND TRANSMITTED TO W.P.B. BY MATERIEL COMMAND WITH NAMES OF CONTRACTORS, QUANTITIES, AND DATES REQUIRED. PROCUREMENTS WOULD BE PLACED WITH LARGE MANUFACTURERS HAVING ADEQUATE FACILITIES AND EXPERIENCE IN THE SEWING AND ASSEMBLY OF SKINS. NAVY WOULD BE REQUESTED TO MAKE ITS PROCUREMENTS COINCIDE WITH AAF PROCUREMENTS SO THAT W.P.B. COULD MAKE SIMULTANEOUS ALLOCATIONS.

ON NYLON, AIR SERVICE COMMAND WOULD DETERMINE REQUIREMENTS AND MATERIEL COMMAND WOULD TRANSMIT NAMES OF CONTRACTORS, QUANTITIES, AND DATES REQUIRED TO NYLON ALLOCATION COMMITTEE. LIST OF APPROVED MANUFACTURERS WOULD BE ESTABLISHED HERE. NAVY WOULD BE ASKED TO MAKE ITS PROCUREMENTS COINCIDE WITH AAF PROCUREMENTS.

REQUEST ACTION AT EARLY DATE SINCE FURTHER PROCUREMENTS ARE CONTEMPLATED.

EXECUTIVE FOR PROCUREMENT

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AAFMC-ICG-WT-8-8-42-200M

ARMY AIR FORCES
MATERIEL [redacted]
ENGINEERING DIVISION
MEMORANDUM REPORT ON 38:jhs:54

Date May 1, 1943

SUBJECT: Winter Clothing Tests Conducted in Alaska from December 7, 1942 to January 27, 1943.

[redacted] Equipment Laboratory.

Contract No.
Expenditure Order No. 666-210
Purchase Order No.

SERIAL No. ENG-M-54-666-39 J

A. Purpose:

1. To test the durability, flexibility, practicability, comfort, health properties and appearance of Army Air Forces clothing, sleeping bags and other equipment under conditions of travel, work, wind and extreme cold.

B. Factual Data:

1. Members of the Wright Field test party were:
   a. T. A. Mahan, 1st Lt. A.C., Equipment Laboratory.
   b. Mr. Belmore Browne, Equipment Laboratory.
   c. D. M. Clark, Captain, Air Corps, Aero Medical Laboratory.
   d. Harold Speert, 1st Lt. Air Corps, Aero Medical Laboratory.
   e. Kenneth E. Penrod, 2nd Lt. A.C., Aero Medical Laboratory.

2. Clothing and equipment used in tests consisted of:
   a. Flying clothes, assorted.
   b. Separate parka hoods.
   c. Pilot's footgear.
   d. Pilot's socks and insole assemblies.
   e. Pilot's fur hats.
   f. Assorted gloves.
   g. Mufflers.
   h. Underclothes.
   i. Sleeping bags.

3. Data relative to winter clothing in actual use was secured while flying and during the various stops by contacts with ground and flying personnel and consultations with the supply officers of the Gore and Edmonton Air Fields.

4. Miscellaneous tests were inaugurated at Ladd Field from December 6 to 16, 1942, among all branches of the Army Air Forces. A preliminary outdoor four-day field test was conducted from December 16 to 20, 1942, and the average temperature for four days was -41°.

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5. A combination flight and ground test of clothing and sleeping bags was conducted from December 24 to 28, 1942, between Ladd Field and Nome.

6. Special ground force tests were held in the Fairbanks sector from December 20, 1942 to January 22, 1943. Eight records of winter clothing were made in temperatures ranging from -40°F to -72°F.

7. A ten day outdoor test was held from January 3 to 12, 1943. The test was carried out on foot with snowshoes. Three Army Air Forces dog teams hauled the equipment driven by Technical Sergeant C. Adams, Jefferson John (Kotzengue Sound Eskimo) and Andrew Cook, a native Alaskan. The party traveled from Ladd Field on the Steese Highway to a point fourteen miles east of Chatanika. Camps were made in the snow and shelter was furnished by two 8' X 10' balloon silk tents, weighing eight pounds and one 5' X 7' tent. Heating and cooking facilities were furnished in the larger tents by two Yukon type wood burning stoves. The temperature ranged from -6°F to -41°F.

8. Local tests were continued from January 13 to 22, 1943, with special attention given to the protection of the hands of pilots and mechanics working with metal in extreme cold temperatures. On January 22, a program was formulated to complete the test series with a comprehensive airplane test covering the cold and exposure factors in every type of airplane available with special reference to the individual requirements of each crew member. In order to expedite test returns, shipments of experimental clothing and mukluks were forwarded to Major E. F. King, 42nd Troop Carrying Squadron, Elmendorf Field, for issue to pilots flying the Aleutian sector.

C. Conclusions:

1. A combination of garments of a warm material such as wool or alpaca with wind resistant alternates, covered with a hooded wind breaker, proved to be the warmest and most flexible body covering for severe temperatures. The dry tanned shearling suits, Types A-6 pants, B-7 coat and A-10 high boots, were tested under ground service conditions. It was found that for its weight, the suit was less warm than the layer fabric suits and less flexible and more cumbersome. The boots were too heavy and stiff for distant walking. Experimental designs of a one-piece flying suit arrived too late for the coldest weather or a prolonged test. This type suit has always been popular with mechanics and pilots. Easily adjusted and close fitting, it appears to answer every requirement. In actual use many faults appear and for extreme cold it lacks the air and fabric layers necessary to repel frost and also the adjustability to changing conditions possessed by multiple layer clothing.

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2. The Type A-6 boot is in no sense of the word a shoe for work or travel; nor in relation to its weight does it furnish as much heat as the mukluk type, tested experimentally as the MK-1, but the extreme ease with which it can be put on and taken off has made it popular as a pull-over on all northern flying fields where constant moving from heated buildings into snow and cold is necessary.

3. Two mukluk type cold resistant boots were tested in temperatures as low as -68°F with very satisfactory results. The tests covered all branches of the Army Air Forces within the dry Alaskan Section.

4. The "buck" leather-soled mukluk proved satisfactory as a cold resistant shoe, but was more oil and gasoline absorbant than the rubber type and more slippery on smooth surfaces.

5. A rubber-coated mukluk type boot for the coastal or humid regions was tested and produced good reports from the Aleutian Sector.

6. Parka hoods of several types were subjected to tests. The parka hood being intended for protection from actual blizzard conditions should be either detachable or superseded by a zipper convertible parka collar. Pilot's object, almost without exception to the reduction in the vision field by the fur-lined parka hood, but admit the need for the protection afforded.

7. A fur cap of an improved design was tested with excellent results. While fulfilling the functions of the fur-edged parka hood, it was less cumbersome and did not interfere with the field of vision. During extreme cold spells this heat is essential for all branches of the Army Air Forces personnel.

8. Tests confirmed the need for six units for Army Air Forces handgear; consisting of a high grade wool inner glove, a highly flexible leather glove for pilots, navigators, etc., a strong well-designed leather glove for heavy work, a well constructed wool mitten, and shunlined outside windbreak gauntlet type mitten. These units should form an assembly or be combined into several different assemblies to fit varying conditions.

9. In the very severe temperatures of the past winter the skin of mechanics' hands was torn and broken by contact with cold metal. A special glove of nylon and cotton was issued which, in a series of tests, protected the hands with little or no loss in efficiency. Improvements in the quality and design of these gloves has been made subsequently. Adequate pocket construction and lining proved a most valuable adjunct to hand protection and has been carefully planned with this result in view.

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Engrg. Div. Memo Report No. ENG-W-SL-466-50J
May 1, 1943

D. Recommendations:

1. It is recommended that the following action be taken by the organization designated below:

a. Engineering Division, Materiel Command, Equipment Laboratory:

(1) Standardization of a layer principle flying suit for extreme cold. (action initiated)
(2) Standardization of a winter mechanics one piece suit. (action initiated)
(3) Standardization of shoes, flying, rubber surface, mukluk type. (action initiated)
(4) Standardization of shoe, flying, canvas and rubber (mukluk type). (accomplished)
(5) Glove assembly, winter flying, standardized. (accomplished)
(6) Standardization of helmet, winter flying (low temperature) combat and maintenance. (action initiated)
(7) A two piece under clothing suit of wool or equally satisfactory material, standardized. (action initiated)

Prepared by BELMORE BROWNE
(Name)

Approved by C. V. HOLLOMAN, Colonel, A. C.
Chief, Equip. Lab., Eng. Div.

Concurrence:

Approved by P. O. CARROLL, Brig. General, USA
Chief, Engineering Division.

Distribution:
Central Files.

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C-5 (1/44)

16

L. LAWRENCE LEATHER CO. Peabody, Massachusetts, U.S.A.

BOSTON • PEABODY • NEW YORK • ST. LOUIS • COLUMBUS • CAMDEN • MILWAUKEE • GLOVERSVILLE • GREENVILLE

WCA:mcm

11 May, 1943

Subject: Contract W535ac28776 - Sheep Shearling

To: Commanding General
Army Air Forces, Materiel Command
Wright Field
Dayton, Ohio

Attention: Lt. Col. Claude P. Rowan

Coordinated: Army Air Forces Area Representative, Boston, Mass.

Reference: Materiel Center letter April 24, 1943 - Ref: THP;bvo-70-5Q

1. We have received copies of Amendment No. 1 dated April 20, 1943 to Specification 8-113C.

2. According to the second paragraph of your letter of April 24 the final inspection at the clothing manufacturer's plant is left to the judgment of the clothing manufacturer as to whether or not skins are suitable for fabrication of flying clothing. This is not in accordance with the understanding had at meetings held by Colonel Mills at Wright Field March 25 and 26.

3. We suggest that this second paragraph should read:

"When the changes are made applicable to the subject contract the tanner's inspected and shipped shearling will be subjected to a final inspection at the clothing manufacturer's plant. Any skins found not meeting Specification 8-113C including Amendment No. 1 dated April 20, 1943 shall be set aside and tanner of origin must be notified within thirty days of date of shipment from tannery. Any skins not meeting above specifications shall, after inspection by tanner, and by agreement with him, be returned to tanner for replacement. Only whole and uncut skins may be returned. In case of disagreement AAF Inspection Service to decide. (Clothing manufacturers shall not determine whether or not leather will stand up under tests outlined under paragraphs D-6, D-6a, D-6b, D-6c, E-6e, F-9, F-11, F-11a, F-11b, F-12a, F-12b, and F-12c.")

Case 5-19

103

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C-5(2/2pp

17

WCA:mcm

11 May, 1943

To: Commanding General
AAF, Materiel Command
Wright Field, Dayton, Ohio

Attention: Lt. Col. Claude P. Rowan

- page 2 -

4. Although we are at present reasonably certain that our leather will pass many of the physical tests, we request a deviation exempting us from the following paragraphs: D-6, D-6a, D-6b, D-6c, D-6e, F-9, F-11, F-11a, F-11b, F-12a, F-12b, and F-12c, until such time as a finish has been developed and proved to be satisfactory in volume, meeting above physical tests.

5. Please advise that it is satisfactory for us to continue production pending outcome of tests showing that volume production will meet specifications.

6. Upon advice from you approving these corrections and granting deviation we can then advise that there will be no change in cost or delivery on our present commitments to the Army Air Forces.

Very truly yours,

A. C. LAWRENCE LEATHER CO.

W. C. Abbott

W. C. Abbott
Shearling Department

CC: AAF Area Representative
Boston, Mass. (2)

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Sheepshearling
PB-56(1-5991

WAR PRODUCTION BOARD
WASHINGTON, D.C.

May 18, 1943

Lt. Com. A. M. Blamphin
Working Committee of
Aeronautical Board
Room 4840, Navy Building
Washington, D. C.

Dear Commander Blamphin:

We refer to telephone conversation of May 13, 1943, on the subject of the procurement of processed shearlings to be used in the manufacture of flying clothing for the Bureau of Aeronautics and for the Army Air Forces.

It is our understanding that action by your Board is impending which would permit alteration, under certain conditions, of the existing methods of procurement of processed shearlings to a basis upon which prime contracts could be granted for flying clothing, the contractors to furnish the material.

For reasons which we shall endeavor to outline below, it is our opinion that such action as regards processed shearlings would not be beneficial to either of the services and, in view of the announced intention of the Navy Bureau of Aeronautics to initiate a change to a "contractor furnished" basis as soon as possible, it might be detrimental to the shearling supply program.

Early in 1942, after the action of the Joint Aeronautical Board to direct the combined purchase of the total requirements of processed shearling through the Army Air Forces, extensive plans were made and subsequently implemented by the War Production Board to assure the supply of raw shearlings for the tremendously enlarged program which required, roughly, four times the pre-war production of shearlings, and to channel such supplies directly into use against military contracts.

Actual procurement and administration of the contracts was left, quite properly, to the Material Division of the Army Air Forces. Unfortunately, in the early part of this year it became apparent that, while the program was proceeding on paper in accordance with all plans and expectations, some deliveries had been made which were unsatisfactory; some had been poorly stored, and others had not been correctly scheduled from tanner to garment maker. In our opinion the principal reason for the unsatisfactory deliveries was the wholly inadequate inspection by the Government at the tanneries, which permitted, by unquestioning acceptance of some poor merchandise, a substantial cumulative result of what might have been relatively minor discrepancies at the start.

After a conference at Wright Field on March 26, attended by representatives of the Army Air Forces, the Navy Bureau of Aeronautics, the War Production Board, shearling tanners, and flying clothing manufacturers, steps were taken

COPY
ENCLOSURE (A)

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Sheep Shearing
M/S - 3 (3/5/43)

towards eliminating the causes of the unsatisfactory deliveries, including a joint revision of the specifications, and the establishment of final inspection of the processed shearlings at the plant of the flying clothing manufacturers, so that there would remain no necessity on the part of the latter to put any unsatisfactory skin into a flying garment. Thereafter, the garment manufacturer could be called upon to warrant the quality of the finished garment without qualification, as much as ever he could on a "contractor furnished" basis. Unsatisfactory skins could be rejected and returned to the shearling tanner. Under these modifications, which have been accepted in principle by both shearling tanners and garment manufacturers, the services could enjoy all the advantages of a "contractor furnished" basis, without interruption of the existing arrangements for the continued supply of shearlings and the adequate controls which have been functioning so well in all other respects.

Also in line with the efforts to improve the quality level of future deliveries, the Army Air Forces have terminated the contracts of some seven of the smaller shearling tanners, whose deliveries were suspected of containing a large proportion of unsuitable skins.

In addition there are several other shearling tanners who have not had contracts from the Army Air Forces, but who have been persistently trying to obtain orders.

It is submitted that a change to a "contractor furnished" basis eventually would put the procurement of processed shearlings entirely into the hands of the flying clothing manufacturers, thereby increasing the risks of diversion of suitable material into uses other than for flying clothing; of the incorporation of lower grade material into military clothing at the same cost to the Government as if Class A skins were used; and of unnecessary diffusion of suitable raw material into more numerous tanning sources, possibly including some of the producers who have been found to be less reliable. Adequate controls of production by individual tanners for correct use of suitable raw material and the conservation of suitable processed shearlings for military purposes would become tremendously complicated if not physically impossible. Attempts to restrict the clothing manufacturers to an approved list of tanners appear to be predestined to failure, if the clothing manufacturers are called upon to furnish the material and guarantee the finished garment.

We understand that the Navy plans include an arrangement whereby the termination clause in the prime contract will extend to the sub-contractor. This may prove to be adequate for the limited Navy requirements, but it will tend to restrict the operation of the larger shearling tanners if it becomes general, because they will be unwilling to stock the necessary raw materials for which segregation for each sub-contract would be necessary in order to maintain production under sever indirect termination agreements.

This leads to the crux of the matter, which is the maintenance of an adequate supply of raw shearlings.

The combined requirements for shearlings as now set up call for a gross supply of 11,000,000 raw shearling skins per annum, of which only 5,000,000 skins can be produced within the United States, the bulk of which come into

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Sheep Shearling
PB-56(4/5 08)

supply during a short three month season. The remainder are to come from South America, South Africa and Australia. Shipping opportunities and eventual arrivals being uncertain it is necessary that these skins be bought four to six months ahead of contemplated use, and accordingly shearling tanners need stocks and commitments amounting to several months supply on hand at all times.

In order to stimulate the necessary supply, which has increased four fold since 1941, prices have been permitted to rise, and ceilings are now fixed at record levels. Past history of shearling prices show most extraordinary fluctuations, all the way from 7¢ per skin as the record low to $1.75 in 1942 and subsequently No. 1 domestic skins were fixed at a maximum of $2.15 per skin. It seems entirely within reason to suppose that upon withdrawal of the military demand for shearlings, prices for the remaining increased supply might drop to a minor fraction of today's levels.

Under these circumstances, it is a little suprising that we have been able to get some of the larger tanners (who must carry raw inventories amounting to several millions of dollars each) to continue along for the past year, and we feel sure that it could not have been possible if they had not been dealing with a central Government buying agency for the bulk of their production. It does not seem reasonable to expect that they will continue buying high priced skins under the uncertain protection afforded by subcontractual termination clauses which would be subject to the prime contractor remaining in good standing. Even if the Government guarantee extended to commitments made in good faith regardless of the performance of the prime contractor, the shearling tanner would find it necessary to prove exactly which skins were bought against each contract, thereby resluting in untold confusion of records and in arranging purchases, etc.

Finally, the change over would be tremendously complicated and would bring some of these troubles into immediate focus in the partitioning of the contracts now in process.

To sum up, in exchange for no real advantage, a change over to a "contractor furnished" basis would result at best in some confusion and hesitancy in production and it would risk a complete bogging down of the entire program.

Accordingly, it is respectively submitted that no advantage will accrue to the Services through the proposed change in method of procurement and that best results would be obtained through a continuance of the present methods, modified in accordance with the findings at the conferences at Wright Field of March 25 and 26, 1943.

Yours very truly

/s/ R. P. Butler
R. P. Butler
Chief, Leather Section
Textile, Clothing and Leather Division

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C-4

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Address Reply To -
Commanding General,
Army Air Forces,
Materiel Command.

xxxxxx Command

Ref.: CBS:rew - 70-54.

Wright Field, Dayton, Ohio.
May 19, 1943

105

Contract W 535 AC-26776,
Sheep Shearling.

A. C. Lawrence Leather Company,
Peabody, Massachusetts.

Ref.: Contractor's Letter dated
May 11, 1943, WTA:mcm.

1. With reference to Paragraph 2 of Contractor's letter dated May 11, 1943, the Contractor has misunderstood a decision rendered in the Wright Field meetings of March 25 and 26, 1943.

2. A final inspection will be accomplished by the clothing manufacturer at the clothing manufacturer's plant under the supervision of an Army Air Forces Inspector, and the tanner will be advised of any skins not accepted for use. The tanner may inspect these skins before return of same for replacement or refund, and in the event of a difference of opinion, final decision will be the responsibility of and rendered by the Army Air Forces Inspector.

3. In Paragraph 3 of reference letter, a limit of thirty (30) days for inspection has been suggested. There is, at present, no limitation as to when the above-mentioned final inspection can be effected. The Materiel Command is initiating measures to limit final inspection to a year from time of shipment by the tanner; also, that only whole and uncut skins will be considered for return.

4. Relative to Paragraph 4 of reference letter, no deviations in general to cover physical properties and requirements of the leather can be allowed. These values were discussed with the shearling tanners in the presence of A. C. Lawrence Leather Company's Representative who took no exception to the proposed specification. Objections to Paragraphs F-12, a, b, and c concerning backed skins may be covered temporarily by deviations until the contractor can have a finish approved that will conform to specifications.

For the Chief of Production Division:

for S. R. BRENTNALL,
Colonel, Air Corps,
Chief, Production
Engineering Section.

cc: AAF E. Dist. Sup.
AAF Area Sup., Boston, Mass.
Insp. Sect.

COM. GEN.
TECH. EXC.
ADM. EXC.
C. O.
BUD. OFF.
EXP. ENG.
CONTRACT
INSP. MC
PROD. DIV.
PROD. ENG.
PROD. CONT.
A. S. C.
TECH. DATA
CIV. PERS.
OTHERS

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AAFMC-190-WF-8-20-42-2 Mil. CENTRAL FILES

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Carbon
Sheep Shearling
P.D.-55(1/40)
Mat. Div.
M.M.L. Wash.

Refer to Initials and No.

NAVY DEPARTMENT
BUREAU OF AERONAUTICS
WASHINGTON

Aer-PR-4-LH
L8(1)
JJ 27
JJ 34L3 76783

may 21 43

From: The Chief of the Bureau of Aeronautics.
To: The Commanding General, Army Air Forces, ATTENTION: Contract Section, Procurement Branch, M.M.&D., for the Commanding General, Army Air Forces.

Subject: Nylon and Shearling Requirements.

1. Under Case No. 140 of the Aeronautical Board, the Army Air Forces now provides requirements of the Bureau of Aeronautics contractors for raw commodity components for parachutes and flight clothing.

2. In order to control more effectively the quality and deliveries of parachutes and winter flight clothing required by the Bureau of Aeronautics, it has been determined that contractors shall furnish and be responsible for all the materials used in their manufacture, effective approximately July 1, 1943. By agreement with the Army Air Forces, the Bureau of Aeronautics is returning to a contractor furnished basis for raw commodity components and existing contracts will be amended accordingly.

3. Since each parachute requires 12 pounds of nylon yarn and each winter flying suit requires 62 square feet of sheep shearling, there is listed below a detailed schedule of these requirements. It is requested that the Army Air Forces make arrangements to relinquish capacity, now under its control, to Navy contractors at the rates specified:

Contractor	Parachutes BuAero Contract	Pounds Nylon Yarn Monthly	No. of Months
Eagle Parachute Co. Lancaster, Pa.	NXs 1517	6,000	18
Irving Air Chute Co. Buffalo, N. Y.	NXs 1518	18,000	18

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Shrg Shearling
PB-55(2/4/43)

Aer-PR-4-LH
L8(1)
JJ 27
JJ 34L3

Subject: Nylon and Shearling Requirements.

Parachutes

Contractor	BuAero Contract	Pounds Nylon Yarn Monthly	Number of Months
Pioneer Parachute Corp. Manchester, Conn.	NXs 1504	60,000	18
Standard Parachute Corp. San Diego, Calif.	NXs 110	12,000	18
Switlik Parachute Co. Trenton, N. J.	NXs 500	36,000	18

Winter Flying Suits

Tanneries	Contractor	BuAero Contract	Square Feet Shearling Monthly	Number of Months
J. Laskin & Sons, Milwaukee, Wis.	Monarch Mfg. Co. Milwaukee, Wis.	NXsa 12497	155,000	12
"	Fried Ostermann Co. Milwaukee, Wis.	NXs 1405	130,000	12
"	Gordon & Ferguson St. Paul, Minn.	NXsa 2366	50,000	12
Loyal Fur Mfg. Co. 242 W. 30th St. New York, N.Y.	Willis & Geiger, Inc. New York City	NXs 290	130,000	12
A. C. Lawrence Leather Co. Peabody, Mass.	M. L. B. Corp. New York City	NOs-98192	130,000	12

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Sheep Shearling
PB-5513/4991

Aer-PR-4-LH
L8(1)
JJ 27
JJ 34L3

Subject: Nylon and Shearling Requirements.

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4. The Bureau of Aeronautics has calculated the quantities of nylon and shearling materials used to date and to be used as of approximately July 1, 1943, as follows:

Nylon

Requisition Aero-1864-Bu43

S&A Purchase Order #01888 of 20 Nov. 1942

Cloth, Nylon	Ordered	25,225,000 yds at $.49		
" "	Used	2,515,275 yds at .49		$ 1,232,484.75
Cord, Nylon 550#	Ordered	84,675,000 yds at $.057		
" "	Used	4,891,457 yds at .057		278,813.05
Cord, Nylon 100#	Ordered	4,615,000 yds at $.018		
" "	Used	396,604 yds at .018		7,138.87
Tape, Nylon	Ordered	11,435,000 yds at $.023		
" "	Used	997,799 yds at $.023		22,949.38
Thread, Nylon	Ordered	177,500 lbs at $3.50		
" "	Used	29,707 lbs at 3.50		103,974.50
				$1,645,360.55

Total Funds Transferred	$18,154,050.00
Used	1,645,360.55
Refund Due BuAero	$16,508,689.45

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Shrg Shearling
RB-55(4/1001

Aer-PR-4-LH
LB(1)
JJ 27
JJ 34LB

Subject: Nylon and Shearling Requirements.

- -

Shearling

Requisition Aero-850-Bu-43
S&A Purchase Order #09564 of 8 July 1942

Shearling, 1/4" pile	Ordered	193,875 sq. ft. at	$.57	
" " "	Used	37,055 sq. ft. at	.57	$1,121.35
Shearling, 1/2" Pile	Ordered	6,074,750 sq. ft. at	$.60	
" " "	Used	1,098,390 sq. ft. at	.60	659,034.00
Shearling, 3/4" pile	Ordered	2,455,750 sq. ft. at	$.65	
" " "	Used	444,030 sq. ft. at	.65	288,619.50
				$968,774.85

Total Funds Transferred	$ 5,351,596.25
Used	968,774.85
Refund Due BuAero	$ 4,382,821.40

5. By separate correspondence, the Bureau of Supplies and Accounts is being requested to obtain refunds from the Army Air Forces in the amounts of $16,508,689.45 under Purchase Order 01888 and $4,382.821.40 under Purchase Order 09564, a total refund of $20,891,510.85.

6. The above procedure is in accordance with the directive contained in Aeronautical Board Case No. 172 dated May 18, 1943. In accordance with paragraph 3 of this case, Commander E.C.Beck,USN, is named as the representative of the Bureau of Aeronautics.

Copy to:
BuAer Representative,
Aircraft Scheduling Unit,
Steel High Building,
Dayton, Ohio.

14/ J. L. Ramsburg
Lt Commander, USN

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PB-54(1)(88)
MAT DIV
MMD, WASH

May 22, 1943

Requirements, Procurement and Equitable Division
of Silk, Nylon and Shearling

Commanding General, Materiel Command
Wright Field, Dayton, Ohio

Attention: Technical Executive

1. **With reference to Case No. 172 of the Aeronautical Board, which** provides that silk and nylon parachute materials and sheep shearling shall be handled as contractor-furnished materials, there are forwarded herewith, two (2) copies of a letter from the Aeronautical Board, dated May 18, 1943, **together with Inclosures** (a) and (b) thereto.

2. In accordance with the directive contained in Paragraph 3 of the above case, Captain A. C. Scharmerhorn, Army Air Forces, has been appointed as the representative of the Procurement Branch, Office, Assistant Chief of Air Staff, Materiel, Maintenance and Distribution.

By Command of General ARNOLD:

W. F. VOLANDT
Colonel, Air Corps
Chief, Procurement Branch
Office, Assistant Chief of Air Staff
Materiel, Maintenance and Distribution

Incls:
Aero.Board ltr.
4. 5-18-43 (2)
(Copies)

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Silk, Shearling
AG 334(2-7-43)

SECRETARY
ROOM [illegible]
NAVY DEPARTMENT BUILDING
ATD

A.B.No. 520
(Case No. 172)

THE AERONAUTICAL BOARD

WASHINGTON

May 18, 1943

To: Assistant Chief of Air Staff, Materiel, Maintenance and Distribution.
Chief of Bureau of Aeronautics.

SUBJECT: Requirements, Procurement and Equitable Division of Silk, Nylon and Shearling.

References: (a) Bureau of Aeronautics letter Aer-PR-1-BA, L8(1), JJ27, JJ34L3 of Mar. 8, 1943, addressed to the Working Committee, Aeronautical Board.
(b) Commanding General AAF letter APDMA-5A, AU:ios of April 29, 1943, addressed to the Working Committee, Aeronautical Board.
(c) Aeronautical Board letter A.B.No. 520 (Case No. 172) dated March 12, 1942 - Quoting Minutes of Meeting March 7, 1942.
(d) Aeronautical Board letter A.B.No. 520 (Case No. 140-A), dated April 18, 1942.

Enclosures: Copies of References (a) and (b).

As desired by the Bureau of Aeronautics and concurred in by the Army Air Forces, the Aeronautical Board has given further consideration to its action of March 7, 1942 (reference "c") and April 18, 1942 (reference "d").

2. Reference (c) is amended by deleting sub-paragraph (b) and substituting therefor:

"(b) That silk and nylon parachute materials and sheepskin shearling shall be handled as contractor-furnished materials."

3. Reference (d) is amended by deleting the last sentence of sub-paragraph 4(c) and all of sub-paragraph 4(d) and substituting for the latter:

"(d) That joint action be taken by the Services, through a committee consisting of one representative each from the Procurement Branch, Materiel Division, Assistant Chief of Air Staff, M. M. & D., Army Air Forces, and the Procurement Branch, Bureau of Aeronautics, to coordinate contractors' requirements for nylon, silk and sheepskin shearling in order to assure the contractors a source of these materials and an equitable division of available supply in accordance with the agreements contained in this case."

(SGD) O. P. SCHOLL,
Major General, A. C.,
Senior Army Member Present.

(SGD) RALPH DAVISON,
Rear Admiral, U.S. Navy,
Senior Navy Member Present.

Chief, Bureau of Supplies & Accounts.

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Sheep, Shearling
AID - 5 6/3/43

SECRETARY
ROOM 4848
NAVY DEPARTMENT BUILDING

THE AERONAUTICAL BOARD
WASHINGTON

May 24, 1943

From: Working Committee of the Aeronautical Board, Room 4840 Navy Building, Washington, D. C.

To: War Production Board.
Attention: Mr. L. P. Butler, Chief, Leather Section, Textile, Clothing and Leather Division.

SUBJECT: Sheep Shearling for Aviators Flight Clothing.

Reference: (a) Your letter dated May 18, 1943.

1. Receipt of your letter, reference (a), concerning procurement of sheep shearling is hereby acknolwedged.

2. The Aeronautical Board has approved the change in status of sheep shearling for aviators clothing from government furnished material to contractor furnished material. The Aeronautical Board also approved a recommendation that the Services should take joint action to coordinate contractors requirements, assure adequate supplies, and provide equitable distribution. Your letter, reference (a), has been referred to the Army Air Forces and the Bureau of Aeronautics for consideration.

E. R. GAILLARD
Major, Air Corps,
Army Member, Working Committee.

A. D. BAMBIN,
Lt. Commander, U.S.N.R.,
Navy Member, Working Committee.

INCLOSURE (B)

108

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Original
Subj: Shearling
A.D. - 5-6(1)-APP
Navy Dept.
Main, Wash

SECRETARY
ROOM 4848
NAVY DEPARTMENT BUILDING

THE AERONAUTICAL BOARD

WASHINGTON

May 24, 1943

From: Working Committee of the Aeronautical Board
Room 4848 Navy Building, Washington, D. C.

To: Assistant Chief of Air Staff, M&D, Materiel Division.
Attention: Captain A. C. Schermerhorn
Procurement Branch.

Chief of the Bureau of Aeronautics.
Attention: Commander S. C. Beck, Procurement Branch.

SUBJECT: Sheep Shearling - Procurement of.

Inclosure: (Herewith)
(A) Copy of WPB ltr. dated May 18, 1943.
(B) Copy of WCAB ltr. of even date to WPB.

1. Inclosure (A) is forwarded for consideration. Receipt of Inclosure (A) by the Working Committee of the Aeronautical Board has been acknowledged as indicated in Inclosure (B).

2. On the occasion of the telephone call referred to in Inclosure (A), the WPB was informed that the essential feature of the proposed Aeronautical Board case, i.e., changing the status of silk, nylon, and shearling from government furnished to contractor furnished, had already been approved in principle by the Procurement Branches of both Services. No indication that the case would be delayed was given. It was further pointed out however, that the case contained a recommended directive to the effect that the Services should take action to coordinate contractor requirements, assure adequate supply, and provide for equitable allocation.

G. R. GAILLARD
Major, Air Corps
Army Member, Working Committee.

A. W. BLANDIN,
Lt. Commander, U.S.N.R.,
Navy Member, Working Committee.

CC:
Sec. Aero. Board, w/Incl. (A) and (B).

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c/o
Sheila Shearing
P.O. - 79[illegible]
Mail Div.
N.M.C., Wash

COPY

AAF EQUIPMENT BOARD
ARMY AIR FORCES SCHOOL OF APPLIED TACTICS
Orlando, Florida

May 31, 1943.

SUBJECT: Recommended Program for Army Air Forces Flying Clothing.

TO: Commanding General, Army Air Forces, O.A.C.A.S. O.C. & R.
(Attn: Requirements Liaison Branch)
Washington, D. C.
THRU: Army Air Forces Board, AAFSAT, Orlando, Florida.

1. As a result of conferences held by the AAF Equipment Board and attended by representatives of the Fighter Bombardment and Air Support Departments of AAFSAT and Capt. J. R. Schenk, Clothing Branch, Equipment Laboratory, Materiel Command, Wright Field, Ohio, recommendations are made herein for the flying clothing program to be adopted by the Army Air Forces.

2. DISCUSSION:

a. The many unfavorable reports on flying clothing of which the Equipment Board became cognizant led to a request that a limited quantity of each new or experimental article of flying clothing be sent to the Equipment Board together with a representative of the Clothing Branch to explain the clothing. Capt. Schenk accordingly visited the Equipment Board and brought with him the requested articles of clothing.

b. The clothing was arranged in a display and representatives of the combat Departments of AAFSAT who had previous experience in overseas theaters assembled; and their comments and recommendations were received by the Equipment Board.

c. The display was also visited by Brigadier General Gordon A. Saville, and his personal opinions were expressed to the Equipment Board.

d. The Equipment Board compiled the various recommendations which are presented herein from the recommendations made by the qualified personnel commenting on the display.

3. GUIDING POLICIES:

The following policies were considered:

a. The equipment should be the minimum consistent with efficient combat operations.

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b. Suitable clothing should be provided to meet the needs of all types of combat crew positions, and for all climatic conditions.

c. Clothing should present the least possible interference with the performance of combat crew duties.

4. CONCLUSIONS:

It was concluded:

a. That the new flying clothing being developed by the Clothing Branch of the Equipment Laboratory, Materiel Command:

(1) Is vastly superior to previous flying clothing.

(2) Consists of too great a variety of clothing for efficient use by the Army Air Forces.

(3) Does not present a proper graduation of weight of flying clothing.

(4) Is not entirely suitable for use in all types of aircraft because of:

(a) Minor features of shape.

(b) Probabilities of catching on portions of an aircraft.

(c) Improper type of material in some cases.

b. That the recommendations in paragraph 5 herein, if approved and put into effect, will result in supplying the Army Air Forces with a selection of flying clothing that will meet requirements for all combat crew positions under all climatic conditions.

5. RECOMMENDATIONS FOR TYPES OF CLOTHING:

It is recommended:

a. Suit, Winter Flying: - Quilted type (buoyancy) Spec. No. 3156

(1) Jacket, winter flying

That a jacket, winter flying be immediately developed and procured similar to the jacket, flying, quilted type (buoyancy) Spec. #3156 except as following:

(a) Outer cloth be grenfell cloth or similar.

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Sheeg Sheepling
AB-79(3/10/43)

Recommended Program for Army Air Forces Flying Clothing - (Continued).

(b) The jacket back and pockets to be of the same general design as the outer jacket of the suit, winter flying, type B-12 (Multiple), Spec. #3157.

(c) The fur hood over the head to be mouton.

(2) Trousers, Winter Flying:

That trousers, winter flying, be immediately developed and procured similar to the trousers, flying, quilted type (buoyancy), Spec. #3155 except that the outer cloth to be Gremfell cloth or similar. * * *

NOTE: Alternate Type -See 2nd Indorsement hereto - Paragraph 1b.

b. Suit, Intermediate Flying: - Type B-10, Spec. No. 3157.

(1) Jacket, intermediate flying:

That this jacket be of the same general design as the jacket, aviator's intermediate, Spec. #AN-S-3 except that:

(a) The jacket to be of the same outer and lining material as used in the outer jacket of the suit, winter flying, type B-12 (Multiple), Spec. #3157.

(b) The collar to be the same as for the jacket, aviator's intermediate AN-S-3.

(c) The back of the jacket to be the same general type as the back of the outer jacket of the suit, winter, flying, type B-12 (multiple), Spec. #3157. (This eliminates the pleats in back of the jacket which catch on parts of the airplane).

(2) Trousers, Intermediate Flying: Type A-9, Spec. No. 3177

That the trousers, intermediate flying, be the same as the outer trousers of the suit, winter flying, type B-12 (Multiple), Spec. #3157, except to have less breadth because of being worn directly over slacks.

c. Suit, Summer Flying: - Spec. No. AN-S-31.

(1) This suit to be the same as the suit, pilot's summer, Spec. #AN-S-31, except that 50% of production to be of heavy gabardine cloth, but of the AN-S-31 design.

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Sheep Shearling
AB-79(4/1099)

Recommended Program for Army Air Forces Flying Clothing -- (Continued).

d. Suit, Electrically Heated, Flying: - Type F-2, Spec. No. X-3160

That this suit:

(1) Be a one piece suit.

(2) Have a lining of the same general construction as the lining in the electrically heated suit, Spec. #2160, type F-2.

(3) Have outer cloth of the same frictionaless type material as the outer cloth of the inner jacket of the suit, winter flying, ty e B-12 (multiple), Spec. #3157.

(4) Have wiring separate for the upper and lower portions of the body (above the waist and below waist) with two circuits for each portion, each circuit covering the entire area of the portion. (Failure of one circuit will thus not eliminate all heat from any portion of the suit.)

(5) Have conductor leads direct from the main plug down through the trousers legs and sleeves to the ankles and waists and connect to the shoe and glove elements so that a failure in the heating wires of the suit will not automatically cause a failure in the shoes and gloves as is the case with present flying suits.

e. Shoes, Electrically Heated: - Type D-2, Spec. No. 3159

(1) That the shoes, electrically heated, flying consist of wiring and felt lining only, similar to the lining in the shoes, flying electrically heated, Spec. #3159, type D-2, with sufficiently long electrical leads to be used with knee-length boots. The shoes should also have two separate wiring circuits to prevent total loses of heat with failure of one circuit.

f. Gloves, Electrically Heated, Flying:

(1) That electrically heated flying gloves be developed and pro ured having wiring elements covering both the front and the back of the hands and fingers and having as little bulk as possible.

g. Gloves, Winter Flying:

(1) That the gloves, winter flying, consist of a silk glove, a knitted glove, a leather glove, and an outer mitten similar to the gloves, pilots, winter, type A-11 Spec. #3134 and type A-12, Spec. #3144.

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h. Gloves, Summer flying: - Type B-3, Silk inter glove Spec. No. 3145
Outer fine leather, Spec. No. 3176

(1) That the gloves, summer flying , consist of a silk glove and an outer fine leather glove of chamois or other soft leather with six inch cuffs of moderate flare. The gloves should fit as snugly as possible without binding, and present an absolute minimum of interference with use of the fingers.

i. Helmet, Flying: - Spec. AN-H-14.

(1) Helmet, leather:

That the helmet, leather, be the helmet, aviator's leather, Spec. #AN-H-14 as modified by separate recommendations of this Board. (Report No. (H-4) (46).

(2) Helmet, Summer: Spec. AN-H-15

That this helmet be the helmet, aviator's summer, Spec. #AN-H-15.

j. Shoes, Flying:

(1) Shoes, Winter Flying:

That these shoes be the same as the shoe, pilot's type A-14 (mukluk), Spec. #3151; and arctic assembly socks and innersoles, Spec. #3152.

(2) Shoes Flying Intermediate: Type A-15, Spec. No. 3180

Samples of various flying boots are being sent to this board to be used by qualified personnel in a display in compiling recommendations for a flying shoe for other-than-winter and arctic wear. Recommendations for this shoe will be forwarded as soon as prepared.

k. Bag, Sleeping, Type A03, Spec. #3140:

(1) That this bag together with a standard air matteress be procured for issue to personnel of air echelons.

l. Helmet, Steel Flying:

(1) That development work continue toward the standardization of a steel flying helmet which can be worn over the flying helmets type AN-H-14 and AN-H-15.

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Sheep Shearing
P.13 - 79(6/1933)

Recommended Program for Army Air Forces Flying Clothing - (Continued)

6. RECOMMENDATIONS FOR ISSUE OF CLOTHING:

It is recommended as a general policy:

a. That the new recommended clothing be procured as quickly as possible and be issued immediately upon procurement to all combat crew personnel now overseas or destined for overseas theaters in the future.

b. That the present stock of flying clothing be issued to individuals for training in the continental limits of the United States until the present supply is exhausted.

c. That upon the exhaustion of the supply of present type flying clothing, the new flying clothing be issued to individuals in the continental limits of the United States as well as in overseas theaters.

7. RECOMMENDATIONS FOR USE OF CLOTHING:

It is recommended:

a. That technical orders be published which explain both the proper care and the proper use of each article of flying clothing to secure efficient service from the clothing.

b. That copies of such technical orders be made available to all personnel authorized to draw flying clothing.

GEORGE W. McGREGOR,
Colonel, Air Corps
President, AAF Equipment Board.

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Sheg Shearling
P13 - 79 (7/1099)

Recommended Program for Army Air Forces Flying Clothing - (Continued)

Prepared by:

D. B. BRUNKEL
Lt. Colonel, Air Corps
OIC, Air Defense Section.

CONCURRENCES:

S. A. MORGAN
Lt. Col., Air Corps
OIC, Air Support Section

ADOLPHE J. GADLER
Major, Air Corps
OIC, Bombardment Section

GLEN R. JOHNSON
Major, Air Corps
Reqpresntative, Air Service Command,

(D.S. at Wright Field)
DALE E. THOMAS
Capt., Air Corps
Represnetative, Mat. Com.

DISTRIBUTION:

6 cys - CG, AAF, O.A.C.A.S., O. E. & R., Washington, D. C.
(Attn: Requirements Liaison Branch)
THRU: Army Air Forces Board, AAFSAT, Orlando, Fla.
1 cy. - CG, AAF Materiel Command, Wright Field, Dayton, O.
(Attn: Dept 54)
1 cy. - CG, Air Service Command, Patterson Field, O.
(Attn: ASCMM-1)
1 cy - CG, Air Service Command, Patterson Field, O.
(Attn: ASCSP5D-1)
1 cy - CG, Army Air Forces Proving Ground Command, Eglin Field, Fla.
1 cy - Reference Library, AAFSAT, Orlando, Fla.
1 cy - AAF Board, AAFSAT, Orlando, Fla. - File.
1 cy - AAF Equipment Board, AAFSAT, Orlando, Fla. - F le.

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Sheep Shearling
P.G. - 79 (5/1077)

Ltr. dtd 5-31-43, to CG/AAF, O.A.C.A.S., O.C.&R. (Attn: Req. Liaison Branch), Thru: AAF Board, AAFSAT, Orlando, Florida. Subj: "Recommended Program for Army Air Forces Flying Clothing.

(May 31, 1943.) 1st Ind. AH/mfo-C

OFFICE OF ARMY AIR FORCES BOARD, Army Air Forces School of Applied Tactics, Orlando, Florida. June 3, 1943.

TO: Commanding General, Army Air Forces, Washington, D. C.
ATTN: A.C.A.S., O. C. & R., Requirements Liaison Branch).

The Army Air Forces Board approves of recommendations of the A. A. F. Equipment Board in basic letter on "Recommended Program for Army Air Forces Flying Clothing."

For the Army Air Forces Board:

ANDREW HUGHES
Captain, Air Corps,
Secretary to the Army Air Forces Board.

32

2nd Ind.

War Dept., Hdqs. Army Air Forces, Assistant Chief of Air Staff, Operations, Commitments and Requirements, Washington, D. C.
To: Assistant Chief of Air Staff, Materiel, Maintenance and Distribution, Supply and Services Division, Washington, D. C.

1. The recommendations made in basic letter by the Army Air Forces Equipment Board and approved by the Army Air Forces Board as indicated in 1st Ind. are concurred in with the following exceptions:

a. Nomenclature and specification numbers omitted from the recommendations have been included and indicated in red as corrections to recommendations made, and are to be considered a part hereof.

b. To provide an alternate winter flying suit which will be more flexible and comfortable to wear in zones of interior and where flights over water are not necessary, an alternate type of winter flying suit is approved for standardization.

Jacket, winter flying, Type B-11, Spec. No. 3178
Trousers, winter flying, Type A-10, Spec. No. 3179.

c. The color of all winter clothing to be of the olive drab No. 7. All summer clothing to be of standard light tan.

d. Flame proofing will not be required in any of the clothing listed herein

e. No further need for sheep shearling for flying clothing will be required and it is requested that the Air Service Command be so notified. 43

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Subj. Ltr - Recommended Program for Army Air Forces Flying Clothing, dtd 5-31-43, to CG/AAF, O.A.C.A.S., O.C. & R. (Attn: Req. Liaison Branch) Thru: Army Air Forces Board, AAFSAT, Orlando, Fla.

(Cont'd)

2nd Ind.

2. With reference to the inclusion of alternate type of winter flying suit, it is requested that procurement of winter flying suits be on a basis of 50% for the quilted type and 50% for the alternate type. Proper distribution facilities, should be initiated to assure the proper issuance of the correct type of winter flying suits to personnel assigned to stations where airplanes will normally engage in flights over water and personnel assigned to stations within zones of interior where airplanes based will not normallyengage in over water flights.

3. The introduction of this program for Army Air Forces flying clothing will necessarily create various problems of procurement and distribution. While it is desirable to provide the issuance of the new type clothing to the service with the least possible delay, it is believed that the quantity procured should be held to a minimum, but with assurance that all requirements will be met. Arrangements should be made to provide prompt issuance of this new type clothing to theaters outside the continental limits of the United States, and with the Alaskan theater receiving 1st priority in so far as winter clothing is concerned. Provisions should also be made that wherever this new clothing is issued, all old type clothing should be immediately turned in and immediate steps be taken to return such items to the Air Service Command for reissuance to personnel within the continental limits of the United States.

4. Immediate steps should be taken to make the necessary changes to all Technical Orders Instructions, T/BA's, T/A's, and T/E's to provide for the proper issuance of these new items and that facilities for distribution be provided for with the least practicable delay in order that the services may receive the benefit of this new clothing at an early date.

By command of General ARNOLD:

BARNEY M. GILES,
Major General, U.S. Army

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Sheerlin Position - As of May 31 [illegible]

Unfilled AAF Contracts for Processed Sheerlines, including Navy. [illegible] sq. ft.

Plus 20% rejections - - - - [illegible] "

Total sq. ft. Raw Sheerlines required - - - [illegible] sq. ft.

@ 7.2 sq. ft. - - - - [illegible] raw skins

	Foreign	Domestic	Total
Raw Stock on Hand 5/31/43	[illegible]	[illegible]	[illegible]
Unfilled Contracts for Raw Stock 5/31/43	[illegible]	147,151	[illegible]
Total Skins Bought 5/31/43 against open AAF Contracts - -	4,384,880	401,31	[illegible]
Total Raw Requirements - - - - - -			5,[illegible],36 skins
Total " Purchases - - - - - -			4,[illegible],371 "
Raw Requirements 5/31/43 - - - - -			834,965 skins
Estimated purchases June - - - - - -			1,[illegible],00 "
Overbought 6/30/43 - - -			765,735 skins

Note: Engineer received from Mr Durand 6-5-43

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Raw Domestic Shearlings

Estimated Crop Jan. 1, 1943 to Dec. 31, 1943 - -	5,000,000	skins
Purchased by tanners 1/1/43 to 5/31/43 - - -	1,975,148	"
Estimated remainder 5/31/43 - - - - -	3,024,852	skins
" purchases June - - - - - -	800,000	"
Estimated Remainder June 30	2,224,852	skins
Plus overpurchases by tanners	765,735	"
Total Supply (exclusive foreigns) Uncovered by present procurement - - - -	2,990,587	skins
Equivalent to (8 ft. @ 85% - 6.8 ft.) - -	20,335,892	sq. ft. suitable shearlings

---

Undelivered Finished Shearlings AAF Contracts as of 5/31/43 - - - - -	30,543,813	sq. ft.
Estimated Deliveries June - - - - - -	4,543,813	" "
Estimate undelivered June 30 - - - - - -	26,000,000	sq. ft.

for which 100% of the raw stock on hand or bought

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C-3 (PHP)

A.C. LAWRENCE LEATHER CO. *Peabody, Massachusetts, U.S.A.*

BOSTON • PEABODY • NEW YORK • ST. LOUIS • COLUMBUS • CAMDEN • MILWAUKEE • GLOVERSVILLE • GREENVILLE

WCA:mcm

2 June, 1943

115

Subject: Contract W535ac28776 — ~~Sheep Shearlings~~

To: Commanding General
Army Air Forces, Materiel Command
Wright Field
Dayton, Ohio

ac 28 776

Attention: Colonel S. R. Brentnall, Chief, Production Engineering Section

Coordinated: Army Air Forces Area Representative, Boston, Mass..

Reference: Materiel Command letter May 19, 1943 - CBS:rew-70-SQ

1. We have your letter of May 19 with reference to our letter of May 11, which replied to Materiel Center letter datdd April 24. (Reference THP;bvo-70-SQ.) Paragraph 3 of your letter of May 19 refers to the fact that there is at present no limitation as to when final inspection of sheep shearlings in the garment manufacturer's hands would be effected. Note your statement that the Materiel Command is taking measures to limit final inspection to a year from date of shipment by the tanner.

2. We must take acceptance ~~or make~~ time limit. Obviously, we cannot leave deliveries open over such an extended period without knowing whether or not they are acceptable. At the meetings with Colonel Mills at Wright Field March 25 and 26 a program was outlined so that certain tanners would ship direct to certain manufacturers, thereby eliminating the necessity of shipping through storage depots. This plan seems feasible, and if put into operation should allow for final inspection of any tanner's material by the garment manufacturer to whom it is shipped, within a 30 day period.

3. Other points regarding final inspection at the clothing manufacturer's plant are, we believe, understood and acceptable, as agreed at the March meeting with Colonel Mills and as outlined in our letter of May 11, Paragraph 3.

6-18

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C-3 (2/44)

19

WCA:mcm

2 June, 1943

Subject: Contract W535ac28776 - Sheep Shearlings

To: AAF Materiel Command
Wright Field, Dayton, Ohio

- page 2 -

4. Paragraph 4 of your letter of May 19 states that there can be no deviations in general to cover physical properties. This being the case, we request herewith deviations on the following Paragraphs:

P-9	Low temperature test
P-12	Qualification test
P-12a	Accelerated Aging test
P-12b	Tackiness of finish
P-12c	Low temperature test
D-6c	Low temperature test
E-6e	Finish 2. Reference substituting temperature of minus 60 degrees F.;

these deviations to apply until a finish is developed and approved that will conform to the specifications as written.

5. Paragraphs F-11, F-11a, F-11b, D-6, D-6a, and D-6b, questioned in our letter of May 11, are satisfactory as written.

Very truly yours,

A. C. LAWRENCE LEATHER CO.

W. C. Abbott
Shearling Department

CC: AAF Area Representative
Boston, Mass. (2)

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ARMY AIR FORCES
MATERIEL COMMAND
OFFICE OF THE COMMANDING GENERAL

F.O.M. #

Wright Field, Dayton, Ohio

Subject: Procurement of Parachutes and Shearling Winter Flying Clothing.

1. The Aeronautical Board, in Case No. 172, dated May 18, 1943, has reopened Case No. 140, dated March 12, 1943, and has directed that silk and nylon parachute materials and sheep shearling shall be handled as contractor-furnished materials on procurements by the Army Air Forces and the Navy Department. Case No. 172 further provides that joint action shall be taken by the Services, through a committee consisting of one representative each from the Procurement Branch, Materiel Division, Office of Assistant Chief of Air Staff, Materiel, Maintenance and Distribution, Army Air Forces, and the Procurement Branch, Bureau of Aeronautics, to coordinate contractors' requirements for nylon, silk and sheep shearlings in order to assure contractors a source of these materials and an equitable division of available supply.

2. Pursuant to Case No. 172, the following procedure will be followed in the procurement of parachutes:

a. An approved list of sources will be established by Production Division, Materiel Command, after coordination with Engineering Division, Procurement Division and Air Service Command. Such list shall consist of manufacturers which have delivered satisfactory parachutes to the Army Air Forces on previous contracts, plus manufacturers which have submitted sample parachutes, known to have been manufactured by them, which have been tested by Engineering Division and found to be satisfactory.

1/6

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b. The number of each type of parachute to be procured will be determined by Air Service Command, after coordination with Engineering Division, Materiel Command, as to the types which are to be procured, and after coordination with Aircraft Scheduling Unit as to the availability of the necessary nylon. Air Service Command will submit an Authority or Authorities for Purchase to the Materiel Command and will notify Aircraft Scheduling Unit of the number of parachutes to be procured.

c. Aircraft Scheduling Unit, in coordination with Production Division and Engineering Division, will determine the quantity of yarn required for fabrication of the number of parachutes to be procured and will submit this figure to the Nylon Allocation Committee through Materiel Division, Office of Assistant Chief of Air Staff, Materiel, Maintenance and Distribution.

d. Upon notification from Aircraft Scheduling Unit that an allocation of nylon has been obtained, Procurement Division will negotiate contracts with manufacturers on the approved list and will furnish Aircraft Scheduling Unit with a list of successful contractors and the number of parachutes awarded to each. In awarding contracts, the Procurement Division will determine that the proposed contractor is financially responsible and able to carry the necessary outlay for materials. Where necessary, means will be provided for financial assistance to contractors.

e. Aircraft Scheduling Unit will be responsible for assuring that each prime contractor and its subcontractors secure the necessary allocated nylon to perform the contract.

f. Engineering Division, Materiel Command, will establish specifications for the physical requirements of materials, for the assembly thereof

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and for performance.

g. Prime contractors will be held solely responsible for delivering parachutes precisely in accordance with specifications. Production Division and Inspection Section will establish a procedure for inspection of parachutes which will permit constant supervision of manufacture and proper tests to insure that articles are satisfactory before they are accepted by the Government.

h. All contracts for human parachutes will contain a provision that no subcontract for any unit assembly will be made until the subcontractor selected by the prime contractor is approved by the contracting officer and that such approval will not be granted until samples of the articles to be supplied by the subcontractor have been submitted to the Government at Wright Field and have satisfactorily passed experimental tests conducted by Engineering Division.

i. All contracts for parachutes will also contain a requirement that the prime contractor and its subcontractors shall purchase all cotton duck and webbing from the Jeffersonville Quartermaster Depot, Jeffersonville, Indiana, or its approved representatives.

3. Pursuant to Case No. 172, the following procedure will be followed in the procurement of shearling winter flying clothing:

a. An approved list of sources will be established by Production Division, Materiel Command, after coordination with Engineering and Procurement Divisions and Air Service Command. Such list shall consist of manufacturers which have delivered satisfactory shearling winter flying clothing to the Army Air Forces on previous contracts, plus manufacturers which have submitted sample articles of shearling winter flying clothing, known to have been manufactured by them, which have been tested by Engineering Division and found to be

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Sheep Shearling
R.13-6-(6/7/41)

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NO.)

satisfactory.

b. The number of articles of shearling winter flying clothing to be procured will be determined by Air Service Command, after coordination with the Engineering Division, Materiel Command, as to the types which are to be procured and after coordination with Aircraft Scheduling Unit as to the availability of the necessary skins. Air Service Command will submit an Authority or Authorities for Purchase to Procurement Division, Materiel Command, and will notify Aircraft Scheduling Unit of the number of garments to be procured.

c. Aircraft Scheduling Unit, in coordination with Production Division and Engineering Division, will determine the square footage of shearling required for fabrication of the number of garments to be procured and will submit this figure to the War Production Board through Materiel Division, Office of Assistant Chief of Air Staff, Materiel, Maintenance and Distribution.

d. Upon notification from Aircraft Scheduling Unit that the necessary number of skins are available, Procurement Division will negotiate contracts with manufacturers on the approved list and will furnish Aircraft Scheduling Unit with a list of successful contractors and the number of garments awarded to each. Aircraft Scheduling Unit will furnish this information to the War Production Board. In awarding contracts, the Procurement Division will determine that the proposed contractor is financially responsible and able to carry the necessary outlay for materials. Where necessary, means will be provided for financial assistance to contractors.

e. Engineering Division will establish specifications to insure use of satisfactory skins, grades of skins to be used for particular purposes,

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character of treatment, type of stitching required to secure assembly of garments, and the like.

f. Production Division will inspect the facilities of each proposed prime contractor to insure that such facilities are adequate before a contract is awarded and contracts shall provide that no part of the work shall be sublet until the facilities of the subcontractor have been inspected and approved. Production Division and Inspection Section will establish a procedure for inspection of the garments which will permit constant supervision of manufacture and proper tests to insure that garments are satisfactory before they are accepted by the Government. Prime contractors will be held solely responsible for delivering garments precisely in accordance with specifications.

By Command of Brigadier General BRANSHAW:

A. E. HOWSE
Colonel, Air Corps
Executive for Procurement

Distribution:
All Division, Section, Branch & Unit Chiefs
All AAF Procurement Districts

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Original
Shearling
RB: 6-4/708
MAT. DIV.
M.M.D. Wash

AFDMA-3F

AIRCRAFT PRODUCTION BOARD
RESOURCES CONTROL OFFICE

PENTAGON BUILDING
WASHINGTON, D.C.

June 10, 1943

IN REPLY REFER TO:

MEMORANDUM FOR: Captain Schemerhorn

SUBJECT : Procurement of Parachutes and Shearling Winter Flying Clothing

1. Reference is made to proposed PO memorandum, above subject.

2. It is the opinion of this office that the new procurement procedure for parachutes and shearling winter flying clothing will place these materials on a similar basis to airplanes or other items regularly procured by the Army Air Forces and the same general procedure for obtaining material will apply.

3. The referenced memorandum will be satisfactory to this office if the following changes are made:

a. If it is essential to establish the Committee described in paragraph 1, it is suggested that the following sentence be added to this paragraph: "This Committee will act through the Aircraft Scheduling Unit"

b. It is suggested that paragraph 2 c be amended to read as follows: "Aircraft Scheduling Unit, in coordination with Production Division and Engineering Division will determine the quantity of yarn required for the fabrication of the number of parachutes to be procured and will submit this figure to the nylon allocation committee through the Aircraft Resources Control Office."

c. Paragraph 3c should be amended to read "to War Production Board through the Aircraft Resources Control Office" rather than "to War Production Board through Materiel Division, Assistant Chief of Air Staff, M.M.&D"

d. The second sentence of paragraph 3d should be amended to read "Aircraft Scheduling Unit will furnish this information to War Production Board through the Aircraft Resources Control Office."

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Sheep Shearing
DIB - 6-6-1944

b. In each case from the directed schedules that [illegible] as to the wire contractors involved, the Chief Scheduling Unit will contact these contractors to determine their current stocks of [illegible] cloth and tunnel shearlines and to determine the required amounts of [illegible] cloth and shearlines which must be scheduled to their plants. The Chief Scheduling Unit will then take the necessary action through the Area Resources Control Office with the War Production Board to schedule [illegible] and shearlines to the wire contractors involved.

W. Jeff Montgomery
Captain, Ord Dept
Chief, Ammunition Materiel Division
Resources Division

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c/o
Sheep Shearling
K13-34
Mail Div.
M M L, Wash.

C
O
P
Y

June 11, 1943

Commanding General
Army Air Force
Room 5E, 970 Pentagon Building
Washington, D. C.

Attention of Col. W. F. Volandt:

Dear Sir:

We refer to conversation our Mr. Nelson had with you in your office yesterday.

In regard to the contemplated change in method of contracting so that tanners like ourselves furnishing shearlings to be made into flying suits will no longer be given a direct prime contract but will be expected to become a sub-contractor to the coat manufacturer, we wish to confirm our position with which we understand your department is familiar and is prepared to recognize.

Although we as tanners would much prefer the old arrangement and feel that the new method is almost certain to be disadvantageous to us in some respects, nevertheless, if your department is willing, as we understand it is, to provide the tanner with a termination contract giving him direct protection by the Army equivalent to that which was given him as a holder of a prime contract and adequate credit protection as to the prime contractor, we believe it will be possible to do business under the new method, and, if we receive these safeguards, we shall be glad to cooperate in every way.

We feel, however, that these two requisites mentioned are fundamental and that we should not be expected to enter into contracts upon the new basis without them. The manner in which you propose to take care of these safeguards for the sub-contractor is of such importance that we hope that we may receive in the very near future advice as to the form which you plan to use for these purposes.

Yours very truly,

WINSLOW BROS. & SMITH CO.

By:

G. A. Butts Comptroller

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Copy - by mail

June 11, 1943

Commanding General
U. S. Army Air Forces
Pentagon Building
Washington, D. C.

Attention: Colonel W. R. Volandt
5-E, Room 933

Gentlemen:

During our conversation yesterday, you gave us to understand that a new general policy has been established of Contractor Furnished Equipment rather than Government Furnished Equipment. It is our opinion that this will not result to the advantage of the Air Forces in the case of shearling flight clothing. One of the most important objections to such a change is the delay at this particular time.

I. At this moment, and extending through July, the packer production of the most suitable raw skins for Air Force requirements is at its peak.

A. Tanners have already purchased sufficient raw skins to cover completion of present contracts with the Army Air Forces.

B. Without definite assurance of continuation of the program, we are reluctant to purchases these high-priced domestic skins, which are essential to the continuation of the supply of shearling leather to fulfill the requirements.

C. Even though there is definite assurance of a continuation of the program, the change to C.F.E. procurement will cause much delay before firm orders are placed with the tanners, because of lengthy negotiations necessary between tanners and suit manufacturers.

The reason why tanners are reluctant to purchase is because of the very high price which has been artificially placed on domestic shearlings. The price is now established

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Commanding General
U. S. Army Air Forces

June 11, 1943

by the Department of Agriculture in conjunction with WPB on the basis of $2.15 per skin for the largest grade. This compares with a normal average of perhaps $.75 per skin, and a low price in 1932 of $.10 per skin.

At present artificially high levels, raw skin cost counts for approximately 80% of the tanner's leather cost, and approximately 60% of the completed suit cost.

(1) This artificial high level was placed on these skins to induce increased production. This program of the Department of Agriculture has been very successful, and it is imperative that it continue at the same high level to insure obtaining sufficient quantities of suitable skins to meet Air requirements. If these skins are not immediately purchased by tanners, and packers are obliged to hold them, these prices might drop very radically. This would immediately jeopardize the production program as evolved by the Department of Agriculture, and the necessarily reduced supply of domestic skins might result in lack of sufficient leather to meet Air Force requirements.

We wish to emphasize, however, that with the continuation of present C.P.E. procurement, there is no doubt but tanners will be able to supply Air Force requirements unless they are radically increased from the present.

With the above as a background, we present the following reasons why C.P.E. procurement is ill-advised in connection with the shearling clothing program.

I. The clothing manufacturers are mostly small, with very inadequate capital, and in many cases have no good credit standing. On the other hand, the shearling tanners are, for the most part, large firms, with adequate financial backing and fully responsible.

A. As sub-contractors, the tanners would supply 75% of the final cost of the suit, whereas the suit manufacturer as the prime contractor would only be supplying 25% comprised mainly of labor costs.

II. As far as we know, there has not been developed a termination clause applicable to sub-contractors which would properly protect the sub-contractor in case of cancellations.

A. The sub-contractors' position with regard to claims developing on account of termination is understood

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to be that all claims would be settled through the prime contractor. As pointed out, in this cases the prime contractor would not, in most cases, be capable of carrying through these negotiations in a satisfactory manner.

B. In these sub-contractors' termination clause does not adequately protect the tanner, he might become bankrupt over night, because of the sudden drop in shearling prices from artificially high levels to normal levels or less.

III. The storage problem under C.F.E. plan would undoubtedly be very acute, in that neither tanners nor suit manufacturers possess adequate storage facilities to accumulate the excess necessary to keep the program flowing evenly.

A. Should the suit manufacturer be slowed down for any reason, he then could not take any leather. This would back up in our hands, and because of our lack of storage space, we might have to curtail production.

IV. We know that several suit manufacturers are not in favor of the C.F.E. plan because of the added burden it involves as compared with the present C.F.E. procurement.

V. Cost of the completed suit might well be considerably higher under C.F.E. as compared with C.F.E.

A. Increased risk to the suit manufacturer might necessitate higher percentage of profit.

B. The suit manufacturer would assume the total burden and would, therefore, have to increase his dollar margin.

C. The tanner would have greater risk and might feel he had to increase his price.

VI. There exists the possibility of deterioration in suit quality because some manufacturers might employ re-graded, secondary, or substandard skins. This use of inferior or substandard skins actually took place before the present C.F.E. procurement was established. There is no reason to assume that it could not happen again.

At a meeting of Army and Navy Air Corps officials, together with tanners and suit manufacturers at Wright Field in March, the shortcomings of some of the details of the present C.F.E. plan were eliminated. These were briefly:

(1) Elimination of incompetent tanners.

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June 11, 1943

Commanding General
U. S. Army Air Forces

(2) Supplementing present inspection by final inspection at suit manufacturers' plants.

(3) Improvement in design of suit.

(4) Tightening up in specifications covering suits and shearling leather.

On the basis of the above, we believe that G.F.E. procurement will insure the Air Forces a larger and steadier supply of better suits, than by transferring to a C.F.E. basis at this time.

We cannot emphasize too strongly the necessity of an Air Corps decision within the next few days in order to insure against breakdown of the raw skin supply in this country. Producers of raw skins cannot hold them for more than a short period because of spoilage. Also, they, too, have an exaggerated risk at these artificially high prices which they probably are not willing to assume.

J. Lasdin & Sons Company, and Winslow Bros. & Smith Company, who, together with the A. C. Lawrence Leather Company produce approximately 80% of this material, concur in the above opinion, and you will no doubt receive similar communications from them.

Yours very truly,

A. C. LAWRENCE LEATHER CO.

Stephen Palmer
Vice President

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BRANCH OFFICE
NEW YORK

CABLE ADDRESS
LAKSONS

J·LASKIN & SONS·CORP.

Lambskin Tanners and Dyers

PLANT AT 3728 NORTH FRATNEY ST·MILWAUKEE·WIS·

June 14, 1943

Commanding General
U. S. Army Air Forces
Pentagon Building
Washington, D. C.

Attention: Col. W. F. Volandt
5 E - Room 933

120

Dear Sir,

With reference to contemplated change in method of procurement of shearling flying suits from G.F.E. to C.F.E., we wish to make the following remarks and deductions therefrom:

Such a change now, after machinery has been put in motion to facilitate the original G.F.E. program, is not in the interest of all concerned. A very factual presentation follows.

A finished flying suit represents an investment of 75% by the tanner and 25% of the total cost by the manufacturer. Therefore, a change making the suit manufacturer the prime contractor results in placing the responsibility of the contract on one who has a minor interest. By eliminating the weakness in previous G.F.E. contracts and making the manufacturer responsible for the quality of tanners' deliveries, the Air Corps will end up with the maximum possible quality without disturbing the existing machinery which moves the raw shearlings to market in an orderly way, in sufficient numbers and on time. This necessitates two procurements but does guarantee the utmost in quality without interruption and economic disturbance, whereas the contemplated change risks an immediate price disturbance in raw material with a possible result that supplies will be seriously reduced. There is nothing to gain in the C.F.E. procurement - except one procurement effort, yet much to lose.

The faults of the past are now well known. The Navy got good suits because it had good manufacturers use good tanners' material. Experience exists to effectually weed out unqualified operators, tanners or suitmakers. You cannot improve the quality of existing material or workmanship by the method of procurement, but you can stall the program from lack of coordinated mutual confidence in its form and implementation. It is not generally known that tanners have to anticipate their requirements up to six months' production because of the seasonality of the product. Currently, tanners are completing their buying, or have completed it, for the needs of contracts that will be completed before the end of the year. Meanwhile, domestic raw material

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of a highly perishable nature is being produced for this program under stimulation of the Department of Agriculture at a high rate, which shearlings - under a normal continuous program, would move to market at $2.15 each. Under the contemplated changes they cannot be absorbed by tanners unless the tanners are willing to assume the early receipt of new contracts which are satisfactory to them. Contracts, wherein the majority interest is in control, of inadequately financed minor interests can hardly justify blind buying by tanners who know their customers from experience. The program will surely stall as far as the domestic price range and supply is concerned unless letters of intent or contracts can be made promptly available, but a letter of intent to the prime contractor, who is the suit manufacturer, is of little use to the tanner who is to be the subcontractor doing all the financing.

The important thing involved is the risk. Profit motive or incentive is not an issue. A shearling is normally worth about $ .75 each and has been as cheap as $ .07½ each. It is now $2.00 approximately each. Of that $2.00, approximately $ .75 is a deliberately added price inducement to encourage domestic production. The risk, therefore, is large. The continuity of the program depends upon forward buying up to six months in advance of use. Obviously, if we are to finance the movement of raw skins from packing house to the suitmaker, we cannot afford to do so as a subcontractor to an under-financed industry. If we are going to finance the show, we want a box seat, with a satisfactory direct termination clause.

What little the Navy needs could be taken care of on a C.F.E. basis without prejudice to the interest of the Air Corps. In other words, the tanners can accept some risk,as on the Navy business, but we cannot afford to put our whole business on this basis. There is no substance in the belief that the Navy will get the better material. Manufacturers' acceptance of the shearlings, plus suit inspection, will take care of this.

Much has been said about extension of termination clause benefits to subcontractors. We doubt if any termination clause, fair to both buyer and seller, can be written wherein the subcontractors' claims can be settled without prejudice to the prime contractor. How would you like to be put in the hands of the suit manufacturers for a judicial examination of the facts? Whom do you think they would take care of first?

The shearling tanners have a problem not like that of any other manufacturer. Our raw material costs were deliberately inflated to induce a larger supply. Our inventory position has to be elastic to enable taking all raw shearlings off the market as produced. The entire available crop of high quality skins is required.

The continuity of your shearling suit program at or near its current rate depends upon a prompt (practically immediate) letter of intent to tanners on your 1944 program, with contracts following soon after. Unfortunately, time is not available, as raw shearlings to cover your current program are in the hands of tanners, with new supplies coming on the market daily in substantial quantities which will not move to

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Shipp, Shearling
FID 600.4/2.37

tanners at established prices in the face of an undetermined policy or a policy impractical for implementation, such as a C.F.E. method of procurement.

Very truly yours,

J. LASKIN & SONS CORP.

David V. Nason

DVN/ms
copy, under separate cover, to Col.W.F.Volandt

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C-2

Address Reply To - - 22
Commanding General,
Army Air Forces,
Materiel Command.

Ref: TMP:bvh-70-58.

Wright Field, Dayton,
June 18, 1943.

Contract W 535 AC-08776,
Sheep Shearling.

A. C. Lawrence Leather Co.,
Peabody, Massachusetts.

Ref: A. C. Lawrence Leather Company's letter by Mr. W. C. Abbott, dated June 8, 1943.

1. In connection with the reference letter, the procedure of the inspection of Sheep Shearling is as follows: Inspection shall be accomplished at the Contractor's plant by an Army Air Forces Inspector; however, a final inspection will be made at the Clothing Manufacturer's plant to determine that the Shearling is entirely suitable for fabrication into first-class Flying Clothing. Any material having latent defects or found unsatisfactory for Flying Clothing, that was shipped by the Shearling Contractor within one (1) year of the date of rejection, shall be subject either to replacement without additional cost to the Government, or refund of the purchase price.

2. The Army Air Forces Inspector assigned to the Clothing Manufacturer's plant shall sign a statement of agreement with the manufacturer's findings.

3. Shearling shipped to the Army Air Forces Depot with latent defects or found unsatisfactory for Flying Clothing that was shipped by the Shearling Contractor within one (1) year of the date of rejection shall be subject either to replacement without cost to the Government, or refund of the purchase price. Should the Shearling become defective while stored in Army Air Forces Depots, because of poor storage conditions, the Shearling Contractor will not be liable to the Government for the material defective by this cause.

4. The finish as specified in Paragraphs P-9, P-12, P-13a, P-13b, P-13c, D-6c and D-6c, shall be waived on subject Contract until such time as a suitable finish in accordance with the specification is approved by the Materiel Command.

For the Chief of Production Division:

John Prentice, Capt. AC
C. R. BENNEHALL,
Colonel, Air Corps,
Chief, Production
Engineering Section.

cc: AAF Eastern Dist. Supv.
AAF Area Supervisor,
(Boston Area Office.)
Inspection Section.

AAFMC-190-WF-8-30-42-1 M.

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INTER-OFFICE MEMORANDUM

WAR DEPARTMENT, AIR CORPS
Office, Assistant Chief
Materiel Division

52-F:WFS;bk

Wright Field, Dayton, Ohio
Date 19 June 1943

TO: Chief, Procurement Division

SUBJECT:

1. Pursuant to Special Orders No. 155, Paragraph 1, dated June 15, 1943, Lt. W. F. Spalding of General Procurement Branch, attended the meeting held in the office of Colonel W. F. Volandt, Assistant Chief of Air Staff, Washington, D. C. on June 16, 1943.

2. The following were present:

Colonel W. F. Volandt,	Asst. Chief of Air Staff, AAF
Commander E. C. Beck	Bureau of Aeronautics
Capt. A.C. Schermerhorn	Materiel, Maintenance & Distribution
Mr. Leo Bonnard	War Production Board
Mr. Geo. A. Butts	Winslow Bros. & Smith
Mr. Philip Reed	Winslow Bros. & Smith
Mr. B. Nelson	Winslow Bros. & Smith
Mr. Myron Laskin	J. Laskin & Sons
Mr. K. Bell	A. C. Lawrence Leather Co.
Mr. S. Palmer	A. C. Lawrence Leather Co.
Lt. W.F. Spalding	General Procurement Branch

3. The purpose of this meeting was to discuss with the tanners the change of future procurement of winter flying clothing, making the shearling contractually furnished instead of Government furnished to the contractor.

4. The point made by the tanners was to the effect that the financial structure of all garment manufacturers who would make this type of clothing is such that they would be unable to purchase the quantity of shearling required for the production because of not having the working capital. Colonel Volandt answered this to the effect that through advance payments or V-loans, the manufacturer would have the money to meet current bills. Therefore, this should not be a problem.

5. The real reason for the tanners concern was then brought out, that is, in the event of termination of contracts, how could they be assured of proper representation in the negotiation, as the tanners would have far more at stake than the garment manufacturers. A plan was suggested and is being immediately investigated by Colonel Volandt to see, if, in the event of termination, the subcontractor would file his claim

Signature .....

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through the prime contractor, as regular procedure requires. After this is done the prime contractor, by mutual agreement, would waive his right to negotiate the whole claim, and thus allow subcontractor to do his own negotiating directly with the Government. Colonel Volandt expects to have a decision on this within a few days at which time it will be submitted by teletype to authorities at Wright Field.

6. The tanners also asked the question of the time element after termination until completed settlement. It was pointed out that as high as 75% of a claim could be paid pending the Government audit of the claim.

7. It was also brought out that the present contracts with the tanners will be completed in October, whereas, the clothing manufacturers would not complete their present contracts for approximately 60 days after this date, which would mean that the tanners would continue production, which is necessary, but would not be able to make shipments as the garment manufacturers would not be ready to receive skins for their new orders and tanners would not have storage space to take care of production.

8. The question was asked could present contracts held by the garment manufacturers be run on the basis of 1/3 of the material being used be G.F.E. or Government furnished, and have the contractor take in 2/3 of requirements of the contractually furnished skins. This could take up the lag period and eliminate the necessity for storage. This was left open for a decision to be made by Procurement Division, Wright Field.

9. In view of Commander Beck's statement that he felt there were excessive stocks of shearling at the present time in clothing manufacturer's plants, it was decided to have inventories of manufacturer's stocks made immediately, as to the number of weeks supply manufacturers have ahead of their production and total number of suits to be delivered. This information with amount of shearlings still to be delivered to the Government should clarify this point.

10. Tanners seemed satisfied with the C.F.E. arrangement, if the plan of termination, which Colonel Volandt is having studied, is cleaned up, and also an answer must be given them regarding the storage problem due to the time lag between the completion of their present contracts and the completion of the garment manufacturers' contracts.

William F. Spalding 1st Lt. A.C.

WILLIAM F. SPALDING
1st Lt., Air Corps

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ASCSE7A

23 June 1943

Winter Flying Suits and Sheep Shearling

Commanding General, Army Air Forces
Office of the Asst. C/AS M. M. & D.
Washington, 25 D.C.

1. Confirming telephone conversation June 21, 1943, answering the questions telephoned to the Air Service Command Control Section.

a. How long will the present stock on hand last? At the present rate of issue, stock on hand will last approximately 90 days. Undelivered banances on current contracts will last about 6 months. The total on hand and undelivered is approximately 9 months supply.

b. Will cancellation of contracts for shearling and the fabrication of winter clothing cost the Government an appreciable amount? Clothing cancellations would be small if any, as it is estimated that it will required 6 to 8 months before the new program could be completely in effect. In the meantime, all requirements would have to be met with shearling clothing with the exception of the arctic requirements which will be supplied by October 1, 1943.

c. If present contracts are cancelled, what would be the effect of present stock on hand? There will not be enough stock on hand to meet requirements until the new type clothing is available. See a. above.

d. What will be the impact on the economic structure of production of these sheep shearling? We cannot tell what the impact on the economic structure for production of sheep shearling will be, as we do not know enough about it to comment.

e. Will there be enough sheep shearling required in fabrication of ground winter flying clothing to absorb commitments made in the past for these shearlings? There is 24,000,000 sq. ft. of shearling undelivered on present contracts and 6,000,000 sq. ft. on hand uncut at the suit manufacturers, the total of which is 30,000,000 sq. ft. in stock and undelivered on contract. Six million (6,000,000) sq. ft. is obligated to the Navy. Between 19,000,000 and 20,000,000 sq. ft. will be required to fabricate suits now on order. The balance of shearlings due under contract, not needed for flying clothing requirements, could be used to fabricate ground crew winter clothing and the new intermediate flying shoes type AN-15 contained in the recommended program for the Army Air Forces flying clothing.

For the Commanding General:

H. PAUL DELLINGER
Colonel, Air Corps
Chief, Equipment Section
Supply Division

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copy

EXHIBIT NO. III

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COPY

WAR PRODUCTION BOARD

WASHINGTON, D.C.

In Reply Refer To

May 28, 1943

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Mr. H.G. Battles
Material Laboratory
Wright Field
Dayton, Ohio

Dear Mr. Battles:

The writer was delighted to be able to get you on the phone this morning, and go over the alpaca situation with you. While I would, of course, like to see that the Air Corps used the same specification as the Quartermaster, there are undoubtedly good and sufficient reasons why you would rather stick/your own specifications. These specifications include, as far as the pile yarn content is concerned, 50% of 56's and finer wool, in which we of course concur.

Regarding the alpaca content you wish to use the best commercial grade of alpaca and have specified No. 1 Arequipa fleece, in which we concur. We are very pleased that you are willing to specify a fineness quality of 56's or finer. We believe that Arequipa fleece equal to No. 1 will consistently run 56/56's and that the manufacturer should have no trouble in passing the government tests for 56's quality.

The alpaca situation has eased up somewhat since early in March when the requirements for the armed services were being discussed, and we therefore feel that the placing of an order of approximately 500,000 yards for the Air Corps divided into the two classes, I and II, as by your classification of March 15, will only require approximately 350,000 pounds of No. 1 Arequipa alpaca fleece, which can be taken from the market without undue dislocation of the supply situation.

If however, you were to increase this order by an equal amount, or greater, we feel that it would be very difficult to adjust the situation in order to take out of the market the finest commercial grade which would make it very difficult for the Quartermaster to secure his proper blend. Were this contemplated, the writer would very much appreciate it if you could notify him, and he would be delighted to contact you at your convenience at Dayton, or any other convenient place, and discuss this situation, with the idea of simply being helpful.

Very truly yours,

JUN 3 - 1943

Charles B. Rockwell, Chief
Floorcovering and Upholstery Section
Textile, Clothing and Leather Division

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PATTERSON FLD

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JUNE Z23, 1943

ASCBO-1-6-328

AFBFO WASH DC

THE EQUIPMENT BOARD, AFSAT, HAS RECOMMENDED DRASTIC CHANGES IN FLYING CLOTHING INVOLVING REPLACEMENT OF EXISTING WINTER CLOTHING MADE WITH SHEEP SHEARLING BY NEW MORE FLEXIBLE GARMENTS. SINCE COMPLETE REQUIREMENTS FOR 224 GROUP PROGRAM HAVE ALREADY BEEN ORDERED AND DELIVERIES ARE NOW APPROXIMATELY 80 PERCENT COMPLETE THIS NEW CLOTHING PROGRAM WILL PROBABLY INVOLVE AN EXPENDITURE OF BETWEEN 25 AND 50 MILLION DOLLARS TO REPLACE CLOTHING NOW ON HAND. IT IS ALSO PROPOSED THAT EXISTING CLOTHING BE USED FOR TRAINING ACTIVITIES AND IN NON-COMBAT AREAS. 11
THIS RECOMMENDATIO HAS BEEN APPROVED BY ASSISTANT CHIEF OF STAFF, OPERATIONS, COMMITMENTS AND REQUIREMENTS, AND IS NOW UNDER CONSIDERATION BY MM&D. MEETING WILL BE HELD IN LT. COL. BENEDICT,S OFFICE, PENTAGON BLDG, 2.00 P.M., JUNE 24, 1943, ATTENDED BY REPRESENTATIVES OF SUPPLY DIVISION ASC. SINCE SUCH A PROPOSED EXPENDITURE WAS NOT CONTEMPLATED IN ESTIMATES, F.Y. 1944, IT IS SUGGESTED THAT A REPRESENTATIVE OF BUDGET & FISCAL OFFICE, AAF., ATTEND MEETING. NECESSARY FUNDS CAN BE MADE AVAILABLE FROM 1943 FUNDS BEING CARRIED OVER.

FRANK ASC

END

MFF

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Col Volandt

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AFBFO WASH DC

THE EQUIPMENT BOARD, AFSAT, HAS RECOMMENDED DRASTIC CHANGES IN FLYING CLOTHING INVOLVING REPLACEMENT OF EXISTING WINTER CLOTHING MADE WITH SHEEP SHEARLING BY NEW MORE FLEXIBLE GARMENTS. SINCE COMPLETE REQUIREMENTS FOR 224 GROUP PROGRAM HAVE ALREADY BEEN ORDERED AND DELIVERIES ARE NOW APPROXIMATELY 80 PERCENT COMPLETE THIS NEW CLOTHING PROGRAM WILL PROBABLY INVOLVE AN EXPENDITURE OF BETWEEN 25 AND 50 MILLION DOLLARS TO REPLACE CLOTHING NOW ON HAND. IT IS ALSO PROPOSED THAT EXISTING CLOTHING BE USED FOR TRAINING ACTIVITIES AND IN NON-COMBAT AREAS. 11
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FRANK ASC

END

MFF

2413022

Col Volandt

1. No carry over (see Page 20 June 1944)

2. How can [illegible] H.H.A. replace [illegible]

[illegible]

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20

A.C. LAWRENCE LEATHER CO. Peabody, Massachusetts, U.S.A.

BOSTON • PEABODY • NEW YORK • ST. LOUIS • COLUMBUS • CAMDEN • MILWAUKEE • GLOVERSVILLE • GREENVILLE

Chemist Reel - A.C. Lawrence Leather Co.

WCA:mcm

25 June, 1943

Subject: Contract W535ac28776 - Sheep Shearlings

To: Commanding General
Army Air Forces, Materiel Command
Wright Field
Dayton, Ohio

Attention: Colonel S. R. Brentnall, Chief, Production Engineering Section

Coordinated: Army Air Forces Area Representative, Boston, Mass.

Reference: Materiel Command letter June 18, 1943 - THP:bvh-70-5Q

115

1. With reference to the new procedure for the inspection of sheep shearlings, we seem to be in agreement on all points except for the length of time allowed for rejection of skins not meeting specifications.

2. In Paragraph 3 of your letter of June 18 you emphasized the question of latent defects which might show up over the period of a year. We have emphasized repeatedly that there is no question in our minds but that our shearlings will, if properly stored, be just as suitable a year from date of shipment as on the date of shipment. However, we have no way of knowing what the storage conditions might be during a year's period, when the skins would be in the hands of either the government or some garment manufacturer, or both. It is conceivable that some damage might occur, and it would be difficult to prove where this damage originated.

3. However, our main objection is on a strictly business basis. It certainly is not good business to leave the inspection and possible rejection of such extremely large quantities of stock open over so long a period. We cannot see why it is necessary for you to require this length of time, particularly when our shearlings have had one inspection by an Air Force inspector before shipment from our plant.

4. We would appreciate your further reaction on this subject.

A. C. LAWRENCE LEATHER CO.

W. C. Abbott
Shearling Department

see supplemental agreement of aug 3, 1943. 025-70-5Q / THP:bvh

CC: AAF Area Representative
Boston, Mass. (2)

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Carbon
Shearling
11.13 - 68 (1/3/44)
Mail Div.
Navy, Nash.

AFDAA-5A
ACS/dmb

25 June 1943

Aeronautical Board Case 172 - Nylon and Shearling

Commanding General, Air Service Command
Patterson Field, Fairfield, Ohio

Attention: Class Z1, Major N. H. Josephs

1. Forwarded herewith, for appropriate action, is a Memorandum from Captain A. C. Miles, Head of Procurement Branch, Bureau Aeronautics to Colonel W. F. Volandt, Chief, Procurement Branch, M&D. D. dated 14 June 1943, above subject, together with Inclosure (A) thereto.

2. It will be noted that paragraph one (1) A and B have been covered by Bureau of Aeronautics letter dated 21 May 1943.

3. Paragraph one (1) C covers initial request that the Army Air Forces take up for its own account surplus subject materials remaining in the plants of Bureau of Aeronautics contractors on 1 July 1943.

4. Paragraph two (2) requests that 120,000 square feet of shearling be released monthly from Winslow Bros. This has been check with Commander E. C. Peck, Bureau of Aeronautics who states that Winslow Bros. should be substituted for A. C. Lawrence & Company as outlined in Inclosure (A).

By command of General ARNOLD:

W. F. VOLANDT
Colonel, Air Corps
Chief, Procurement Branch
Office, Assistant Chief of Air Staff
Materiel, Maintenance and Distribution

Incls:
Bu Aer. Memo. 6-14-43
W/Incl.(A)

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NAVY DEPARTMENT
BUREAU OF AERONAUTICS
WASHINGTON

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M E M O R A N D U M

June 14, 1943

From: Captain A. C. Miles, U.S.N.
To: Colonel W. F. Volandt, U.S.A.

Subject: Aeronautical Board Case 172 - Nylon and Shearling.

Enclosure: (herewith)
(A) BuAer Letter of 21 May 1943.

1. In order to implement the subject case to permit the Bureau to return to the basis of C.F.E. procurement of equipment involving the subject materials it is requested that the AAF

A. Release to BuAer contractors tannage capacity as follows: From J. Laskin & Sons 315,500 sq.ft. of shearling monthly.

B. Terminate and account for as of 1 July 1943 joint operations under Case No. 140, in accordance with Enclosure (A).

C. AAF take up for its own account surplus subject materials remaining in the plants of BuAer contractors on 1 July 1943. These materials having been laid down greatly in excess of purchase order terms and contractors requirements, in one case a ten months advance supply.

2. Tannage capacity monthly of the three major shearling tanners, Laskin - 1,500,000 sq.ft; Lawrence - 1,750,000 sq.ft., and Winslow Bros. - 1,000,000 sq.ft., totals 4,250,000. Of this total BuAer is requesting for its suit contractors 315,500 sq.ft. from Laskin and 120,000 from Winslow Bros. or a total of 435,500 sq.ft. monthly. This request is based on proximity of suit manufacturers to tanners and their former business relations prior to the AAF purchasing shearling. It is

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Shearling
PO-6x10/999

Aer-PR-1-MJ
L8 (1)
JJ 27
JJ 34L3

M E M O R A N D U M (Cont.)

Subject: Aeronautical Board Case 172 - Nylon and Shearling.

---

understood that AAF monthly requirements for shearling for pilot suits totals 1,800,000 sq.ft. and the Buaer requirements total 550,000 sq.ft. monthly.

/s/ A.C. Miles
A. C. Miles
Captain, U.S.N.

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ORIGINAL
Sheep Shearing
P 12-67
MAT. DIV
M.M.D, WASH

AFDMA-5A
ACS:os

25 June 1943

MEMORANDUM FOR: ASSISTANT CHIEF OF AIR STAFF, M.M. & D.
THRU: Supply and Service Division
SUBJECT: Requirements for Distribution of Winter Flying Suits During Calendar Year 1944, and Sheep Shearling Requirements for Fiscal Year 1944 to Meet above Program

At a meeting held in the Office of the Chief, Procurement Branch, M.M. & D., 24 June 1943, to determine sheep shearling requirements for the fiscal year 1944, there were present representatives of the Procurement Branch and Supply and Maintenance Branch, Office of the Assistant Chief of Air Staff, M.M. & D., Air Service Command, Materiel Command, and Aircraft Resources Control Office.

It was recommended that the number of winter flying suits to be distributed during the calendar year 1944 be apportioned as follows: 200,000 pilot suits, sheep shearling; 200,000 mechanic suits, sheep shearling; 100,000 new type alpaca and buoyancy suits, amount of each type to be determined by Commanding General, Air Service Command.

It was determined after review of present commitments for sheep shearling that the Army Air Forces would need approximately 12,500,000 square feet to complete the above mentioned program, in addition to present commitments. It was also pointed out that the Navy requirements for the 1944 fiscal year were 6,500,000 square feet.

The above program can be covered by the supply of domestic sheep shearling now coming on the market. In order to prevent deterioration of the green skins now available, it is recommended, due to the urgency, that immediate action be taken.

W. F. VOLANDT
Colonel, Air Corps
Chief, Procurement Branch
Office, Assistant Chief of Air Staff
Materiel, Maintenance and Distribution

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original
Sheep Shearling
P.B.—69
MAT. Div.
M.M.D. Wash.

HEADQ ERS ARMY AIR FORCES

ROUTING AND RECORD SHEET

TALLY NO.	
FILE NO.	

SUBJECT: Requirements for Distribution of Winter Flying Suits During Calendar Year 1944, and Sheep Shearling Requirements for Fiscal Year 1944 to Meet Above Program.

TO: Assistant Chief of Air Staff, M.M. & D. DATE 26 June 1943

FROM: Supply & Services Division. COMMENT NO. 1
ArTBS-4-A/HBB:mw/71594

1. Concur in Colonel Volandt's recommendations.

2. A directive is being sent to the Commanding General, Air Service Command, to initiate procurement of shearling, alpaca and buoyancy suits.

C. B. STONE, III
Colonel, Air Corps
Chief, Supply & Maintenance Branch.

128

1 Incl.
Memo, 25 June 1943,
same subj. as abv.

To: Chief, Procurement Branch Date: June 29,1943

From: Assistant Chief of Air Staff, M. M. & D. Comment No. 2 130
TAB:nlf 72743

1. Approved.

Donald F. Fritch
Colonel, Air Corps
Executive, Office Asst.
Chief of Air Staff, MM & D.

Incl. n/c

130

PAGE 3-1109 A.F.

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Sheep Shearling
H.B. - 94 (12/14/42)

C
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MRL:Wjd;90-2-5
Special Order No. 163
Paragraph No. 45
June 24, 1943

Visit to Washington, D. C. on
Procurement and availability of sheep shearlings

Resources Control 28 June 1943

MB-Non-Met-M-295

A. Purpose

1. Under special order number 163 paragraph number 45, dated 25 June, 1943, 2nd Lt. M. R. Lutmerding attended a meeting in the office of Colonel W. F. Volandt, Procurement Branch, M. M. & D. regarding the availability and procurement of sheep shearlings.

B. Factual Data

1. The following persons attended the meeting:

Colonel W. F. Volandt, Procurement Branch, M. M. & D
Lt. Colonel H. B. Benedict, M. M. & D
Major T. G. Hewell, A.F.B.F.C.
Major E. H. Josephs, Air Service Command
Captain J. R. Shank, Materiel Command, Equipment Laboratory
Captain A. C. Schermerhorn, M. M. & D
Lt. W. F. Spalding, Materiel Command, Procurement Division
Lt. T. G. Baptist, ARGO
Lt. J. D. Maloney, M. M. & D.
Lt. M. R. Lutmerding, Materiel Command, Resources Control Section
Mr. M. R. Wynn, Air Service Command
Mr. B. A. Helgate, Materiel Command, Materials Laboratory
Mr. Roy Statzer, M. M. & D
Mr. C. W. Fairall, M. M. & D

2. It was pointed out by Colonel Volandt that there was an apparent shortage of sheep shearlings approximately 1-½ years ago. After War Production Board had determined the out-put of shearlings was insufficient, the Department of Agriculture was called upon to line-up the small slaughter houses and get their shearlings on the market. If their out-put is not taken, many of these small slaughter houses will face financial loss or ruin.

3. Major Josephs and Mr. Wynn, of Air Service Command, stated that a total of 25,000 flyer's and mechanic's suits are being issued per month in ratio of approximately 1 to 1. There are about 300,000 of these suits due on present contracts and an additional 400,000 will be purchased. These are winter suits to be made of shearlings and fabric. Air Service Command will also purchase 100,000 winter suits, half of which will be made from alpaca and fabric and the other half of quilted chicken feathers.

EXHIBIT "Y" -1-

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Sheep Shearling
P.B.-94 (13/1943)

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Procurement and availability of sheep shearlings.

4. Based on requirements of 55 square feet per flyer's and mechanic's suits, and total requirements of 300,000 suits now on contract plus 400,000 additional suits to be purchased, 12,500,000 square feet of sheep shearlings must be purchase during the fiscal year of 1944. This quantity plus the carry-over from 1943 fiscal year requirements and Navy 1944 fiscal year requirements, will total 33,800,000 square feet requirements compared to 35,000,000 square feet estimated production from the new kill.

4. The following figures were given by Lt. Spalding to show requirements and availability of shearlings:

24,000,000 sq. ft. remaining due on contracts for Army and Navy.
6,000,000 sq. ft. inventory at suit contractors
30,000,000 sq. ft. total on contract or in stock
16,500,000 sq. ft. required for 300,000 units at 55 sq. ft. per suit, now on contr.
13,500,000 sq. ft. balance
4,000,000 sq. ft. for Navy, to be cancelled
9,500,000 sq. ft. surplus on contract.

22,000,000 sq. ft. required for 400,000 additional suits, at 55 sq. ft. per unit, to be put on contract.
9,500,000 sq. ft. surplus on contract
12,500,000 sq. ft. to be put on contract

35,000,000 sq. ft. estimated production from new kill
15,000,000 sq. ft. on present contracts to be taken from new kill
20,000,000 sq. ft. excess production
18,500,000 sq. ft. additional requirements (12,500,000 sq. ft. Army
6,000,000 sq. ft. Navy)

1,500,000 sq. ft. surplus on market

* Change to 13,500,000 sq. ft. if 4,000,000 sq. ft. on contract for Navy not cancelled
** Change to 8,500,000 sq. ft. if 4,000,000 sq. ft. on contract for Navy not cancelled

Conclusions:

1. Colonel Volandt stated that notwithstanding other recommendations as to the type of material to be used in these suits, there will be a directive issued by General Echols for the use of sheep shearlings.

-8-

EXHIBIT "F"

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Procurement and availability of sheep shearlings.

D. **Recommendations**

1. It is recommended that a further study be made by the Aircraft Scheduling Unit to obtain a detailed status of all present contracts for sheep shearlings and flyer's and mechanics clothing on order to be fully prepared to carry on its function in the proposed scheduling and allocations of sheep shearlings. This study is now being made.

/s/
2nd Lt. M. R. Lutmerding
/s/
A. M. R. Peterka, Lt. Col. A.C.
Materials Branch

/s/ C. D. Backus for
R. RAWLINGS,
COlonel, Air Corps
Chief, Resources Control Section

J. T. Howk, Major, A. C.

Chief, Mat. Dist. Branch
Executive, Office, PCS
Army Member, AUS

Captain Montgomery

EXHIBIT "F"

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Carbon
Sheet Shearling
P.B. - 70
M.A.T. Div.
N.M.C., Wash

ASCSE7B EMC:mac
29 June 1945

Supply Division (ASCSE7B)

AAF, Eq., ASC, Patterson Field, Fairfield, Ohio

Commanding General
AAF Material, Maintenance & Distribution
Washington, D.C.
Attn: Procurement Branch, M.M.& D.
Room 5E-865, Pentagon.

ASCSE7B-6-1020CFE

JOSEPH M. MEYER
1st Lt., Air Corps
Asst., Equipment Section
Supply Division

CLASS 21. RE ARL-450 AAF MATERIEL MAINTENANCE & DISTRIBUTION, WASHN DC JUNE 1945 2221502 LG. MATERIEL COMMAND, WRIGHT FIELD, HAS BEEN INSTRUCTED BY LETTER THIS DATE TO RELEASE SHEARLING TO NAVY DEPARTMENT, PER LETTER FROM BUREAU OF AERONAUTICS DATED MAY 21, 1943.

FRANK, ASC

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c/o Sheep Shearing
PB - 71
Nat'l Div
Nat'l Capt. Wash.

COPY

TELEGRAM

WP030 59/57 2 EXTRA NL (TEN)

WUT MS SANFRANCISCO CALIF JUNE 29 1943

MR C G RANDELL

IN CHARGE LIVESTOCK & WOOL DIVISION FARM CREDIT ADMINISTRATION

WASHN DC

PRODUCERS OF THREE HUNDRED AND FIFTY THOUSAND SHEARLINGS NOW IN CALIFORNIA WILL TAKE LOSS OF $350,000 IF GOVERNMENT WELCHES ON ITS PROMISES TO SHEEPMEN TO GET THEM TO INCREASE SHEARLING PRODUCTION. PACKERS ALREADY DECREASING PRICES ON SHEARLINGS. WE VIGOROUSLY PROTEST PLEASE TELEPHONE LONG DISTANCE COLLECT FULL PARTICULARS MY OFFICE SUTTER 6967 HOME PHONE SKYLINE 4393

CALIFORNIA WOOL GROWERS ASSOCIATION BY WP WING SECRETARY

JUNE 30 1943 654AM

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Shearling WA
MAT DIV
WASS

KMVAUEE

WOV V WARA DE LG GOVT

WASHINGTON DC JUNE 30 1337P

COLONEL W F VOLANDT

PENTAGON BLDG RM 5E933

87

FOR YOUR INFORMATION AND EARLIEST RELIEF POSSIBLE I QUOTE FROM TELEGRAM RECEIVED TODAY FROM W P WING SECRETARY CALIFORNIA WOOLGROWERS ASSOCIATION SANFRANCISCO. QUOTE UNTIL LAST SATURDAY AIR CORPS BUYING SHEARLING LEATHER DIRECT FROM TANNERS AT CEILINGS FIXED BY OPA DESIGNED TO ENCOURAGE SHEARLING PRODUCTION BY LAMB PRODUCERS. NOW REPORTED AIR CORPS PROPOSES NOT TO BUY LEATHER ANY LONGER BU TO BUY GARMENTS FROM GARMENT MANUFACTURERS RESULTING IN TANNERS REFUSING TO BUY SHEARLINGS ANY LONGER UNDER PRESENT SITUATION ESTIMATED REDUCTION IN PRICE WILL BE FROM $1.90 EACH FORK NUMBER TWOS TO $1.00 OR APPROXIMATELY $7.00 LESS PER HEAD THERE ARE 350'000 SHEARLINGS NOW ON FEED IN CALIFORNIA

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Sheep Shearing
D.B. — 7-(7-00)

WOV V WARA 83...SHEET TWO...

ALONG THEREFORE PRODUCERS HERE WILL LOSE $350'000 UNQUOTE
I UNDERSTAND THAT HAD THE FARMER NOT CHANGED HIS
NORMAL PROGRAM TO MEET THE REQUIREMENTS OF THE AIR FORCES HE
WOULD NOW SUFFER NO LOSS BUT HAVING SHEARED HIS LAMBS TO
CONFORM TO THE SPECIAL REQUIREMENTS OF THE AIR FORCES HE
HAS IN PART SACRIFICED THE INCOME THAT HE WOULD NORMALLY
SECURE. IN OTHER WORDS THE FARMER HAS RELIED UPON THE
GOVERNMENT PROGRAM TO HIS DISADVANTAGE UNLESS IT NOW BE
CARRIED OUT

CLARENCE F LEA M C

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Carbon
Sheed Shearling
P.B. - 75
MAT. DIV.
M.M.D, Wash.

HEADQUARTERS ARMY AIR FORCES
WASHINGTON, D.C.

AFDSA-5A
AGS:cc

OUTGOING MESSAGE

PRECEDENCE	CLASSIFICATION	FROM:
ROUTINE		AC/AS, HEAD, PROCUREMENT BRANCH Name of Office of Origin
DATE: 2 JULY 1943 TO: A. G. LAWRENCE RUBBER COMPANY FRAMBY, MASSACHUSETTS		I certify that the following message is on official business and is necessary in the military service. W. F. WELANDT, Colonel, Air Corps Chief, Procurement Branch Name and Rank

EXACT TEXT:

AFDSA-5A ....41....PERIOD

REFERRING TO YOUR LETTER OF ONE EIGHT JUNE ONE NINE FOUR THREE COMMA THIS WILL ADVISE YOU THAT THE ARMY AIR FORCES WILL RETURN TO THE C F E METHOD OF PROCUREMENT OF SHEARLING FOR THE FISCAL YEAR ONE NINE FOUR FOUR PERIOD THE MATERIEL COMMAND WRIGHT FIELD WILL BE CONTACTED FOR THE NEGOTIATION OF THE CONTRACTS PERIOD

ARNOLD COMMANDING GENERAL ARMY AIR FORCES

CONFIDENTIAL

W-7454, AF

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c/o Sheep Shearing
P 13 - 76
Mat. Div
W. M. C. Wash.

COPY

July 1, 1943

Following wire sent to Chairman of State Shearing Committees

Army Air Corps officials adopted program today making it possible for tanners to continue as active bidders for shearling pelts thus helping support live values for shorn lambs during next three months when lambs and yearlings already shorn are marketed. Air Corps has made heavy reduction in requirements for shearling pelts from figures given us which were quoted in letter sent you in April. Suggest you discontinue your efforts from now on to have lambs shorn for shearling program and advise producers accordingly. As you know shearlings have been frozen for flying suits. WPB planning to remove such restrictions thus reopening market for civilian demands.

C. C. Randell and C. D. Lowe

135

Copy to:
Col. W. R. Volandt
Army Air Corps

Harold Connett, WPB
Leo Bonnard, WPB
Randolph Butler, WPB
Tudor Bowen, WPB

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Sheep Shearing
AG - 79
MAY - Dec
M.R.C. Wash D.C.

T E L E G R A M

P R I O R I T Y

Headquarters, Army Air Forces

Supply & Maintenance Branch

AFDBS-4-A/HBB:mw

H. B. BENEDICT
LIEUT. COL., AIR CORPS

1 JULY 1943

COMMANDING GENERAL AIR SERVICE COMMAND
PATTERSON FIELD FAIRFIELD OHIO

ATTN MR. WINN CLASS 13

AFDBS-4-A LETTER ON RECOMMENDED CLOTHING PROGRAM BEING SENT YOU CONFIRMING AMOUNTS DISCUSSED AT MEETING LAST WEEK PERIOD IN ADDITION TO PRESENT CONTRACTS SHEEP SHEARLING ELEVEN MILLION SQUARE FEET WILL BE PROCURED PERIOD PLEASE CONTACT LT SPALDING MATERIEL COMMAND REFERENCE TO THIS IMMEDIATELY

ARNOLD

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MDAC-5-WF-12-12-41-500M

AFDMA-5A
ACS:os

Carbon
Sheep Shearling
P.B. 78(1-30)
MAT Div
M.N.D., Wash

TELETYPE MESSAGE

DATE: 2 July 1943

FROM W. F. VOLANDT
Colonel, Air Corps
Chief, Procurement Branch

ATTENTION: COMMANDING GENERAL, MATERIEL COMMAND

ATTENTION: PROCUREMENT DIVISION

AFDMA-5A-642. . .AT A MEETING HELD IN THE OFFICE OF THE CHIEF, PROCUREMENT BRANCH, MMSD 1 JULY 1943, TO DETERMINE THE BEST METHOD OF PROCURING SHEEP SHEARLING NOW COMING ON THE MARKET IN LARGE QUANTITIES, THERE WERE PRESENT REPRESENTATIVES OF THE WAR PRODUCTION BOARD, DEPARTMENT OF AGRICULTURE, WAR MEAT BOARD, AND ARMY AIR FORCES. IT WAS DISCLOSED THAT OWING TO PREVIOUS ESTIMATES MADE BY THE ARMY AIR FORCES, THE DEPARTMENT OF AGRICULTUR HAD ENCOURAGED THE SHEEP RAISERS TO INCREASE THEIR SHEARED STOCK IN ACCORDANCE WITH AIR CORPS SPECIFICATIONS, AND THESE SKINS WERE NOW COMING ON THE MARKET IN LARGE AMOUNTS DAILY WITH NO BUYERS. THERE HAS BEEN CONSIDERABLE DELAY IN TRANSFERRING FROM G.F.E. TO C.F.E. AND THE TANNERS HAVE BEEN UNWILLING TO MAKE FURTHER COMMITMENTS IN ANTICIPATION OF BUSINESS NOT UNDER CONTRACT. IN VIEW OF THE NECESSITY OF MEETING ARMY AIR FORCES REQUIREMENTS AND TO PREVENT A CHAOTIC MARKET WHICH WOULD DEVELOP WITH FURTHER DELAY, IT WAS DECIDED BY THE ARMY AIR FORCES TO RETURN TO THE G.F.E. METHOD OF PROCUREMENT, FOR FISCAL YEAR 1944.

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NDAC-5-WP-12-12-41-300M

AFDMA-5A
ACS:ros

Sheep Shearling
DB-78(2/1/00)

TELETYPE MESSAGE

DATE: 2 July 1943

FROM W. F. VOLANDT
Colonel, Air Corps
Chief, Procurement Branch

ATTENTION: COMMANDING GENERAL, MATERIEL COMMAND

ATTENTION: PROCUREMENT DIVISION

AFDMA-5A-642. . .(CONTINUED). .IT WAS ALSO FOUND THAT AN IMMEDIATE COMMITMENT FOR FIFTEEN MILLION SQUARE FEET OF MEN SKINS WOULD COVER THE ARMY AIR FORCES REQUIREMENTS FOR THE FISCAL YEAR 1944 AND RESTORE THE MARKET TO A NORMAL CONDITION. THE ARMY AIR FORCES THEN ANNOUNCED ITS INTENTION TO PROCURE FIFTEEN MILLION SQUARE FEET OF MEN DOMESTIC SHEARLING IN ORDER TO ENABLE THE TANNERS TO TAKE A LIKE AMOUNT OF DOMESTIC SHEARLING OFF THE MARKET. A DIRECTIVE IS BEING PREPARED FOR THE AIR SERVICE COMMAND TO MAKE THE ABOVE DECISION EFFECTIVE.

VOLANDT

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WAR DEPARTMENT
ARMY AIR FORCES
MATERIEL COMMAND
Office of the Area Supervisor
Chicago Area
20 North Wacker Drive
CHICAGO, ILLINOIS

Address Reply to Area
Supervisor
Attention:

Inspection Section
GHW:mjw

2 July 1943

SUBJECT: Sheep Shearling Investigation -
St. Paul & Minneapolis, Minnesota

TO: Commanding General
AAF Materiel Command
Wright Field
Dayton, Ohio

Attn: Chief, Inspection Section

1. In accordance with instructions of Major W. A. Oswalt, a representative of your office, the writer proceeded to St. Paul and Minneapolis, Minnesota and visited the AAF contractors and subcontractor involved in the matter of defective sheep shearlings.

2. The writer first contacted the plant of the Western Fur Dressing & Dyeing Works, St. Paul, Minnesota and a conference was held concerning approximately 9,000 South African sheep hides which were the property of the Master Industries, Inc., St. Paul, Minnesota. These hides were originally intended for tanning and incorporation into Flying Suits being furnished on AAF contracts and are now being disposed of commercially by Master Industries, Inc. Those attending this conference were:

Joseph Givis, Jr., Manager
Frank Gibis, Superintendent
J. F. Schouvelin, Mfg. Methods Br., Wright Field
J. F. Shaling, Inspector in Charge, Minneapolis Area Office
G. H. Wilson, Acting District Supervising Inspector

3. It was determined during this conference that approximately 22,000 South African hides had been tanned and delivered to the Master Industries, Inc., where they were processed and finished and then shipped to the United Garment Company, Minneapolis, Minnesota and also to various AAF depots. These shipments apparently contained quantities of defective skins and were the origin and cause of most of the misunderstandings and disputes between the companies involved. However, examination of the skins being tanned by the Western Fur Dressing & Dyeing Works at the present time showed the skins to be satisfactory for use on AAF contracts.

4. The writer then visited the plant of the Master Industries, Inc., and a conference was held in connection with the disputes which have arisen. Those present at the conference were:

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Chief, Inspection Section

H. B. Dizik, President
O. B. Berries, General Manager
J. P. Schouvelin, Mfg. Methods Br., Wright Field
J. F. Shaling, Inspector in Charge, Minneapolis Area Office
G. H. Wilson, Acting District Supervising Inspector

5. During this conference the officials of the Master Industries, Inc., stated that the hides that they had been shipping to the United Garment Company on shipping instructions from Wright Field had been unreasonably inspected and destroyed and were made unfit for commercial disposal; that the hides had been torn from the edges in various places on the hides and that the tears were of considerable depth. They further stated that had the hides been returned after reasonable inspection, the hides would have been replaced without charge. The officials of the Master Industries, Inc. further felt that possibly someone at the United Garment Company had something against their company and that the destruction of the hides was wilful. They further stated that they believed that there would be no further difficulty inasmuch as shipping instructions had been altered so that they were making no further shipments to the United Garment Company. It was further understood that the destructive inspection practices which had been resorted to by the United Garment Company in order to detect defective hides had been eliminated, and the officials of the Master Industries, Inc. stated that they bore no animosity towards the officials of the United Garment Company. Further, the sheep shearling hides examined at the plant of the Master Industries, Inc. were found to be quite satisfactory and it is believed that the South African hides heretofore referred to have been practically used up.

6. The officials of the Master Industries, Inc. further stated that in the past they had had considerable difficulty in procuring sufficient quantities of skins and had, therefore, bought up some South African, South American, and other hides from possibly unreliable sources in order to try to keep abreast of their contract commitments. They now realize that this was an improper procedure, as they were previously informed by the writer that all matters pertaining to contract material should have been processed through the proper authorities at Wright Field before attempting to procure material of a doubtful nature. In view of the experience which has been gained by the Master Industries, Inc., it is felt that greater care is now being taken in procuring raw skins, and only domestic, packers, and good grade South American hides are being used.

7. The writer then visited the plant of the United Garment Company, Minneapolis, Minnesota and a conference was held. Those present were:

A. Maslon, President
B. Tankel, Manager
Walter Broeker, Foreman
J. P. Schouvelin, Mfg. Methods Br., Wright Field
J. F. Shaling, Inspector in Charge, Minneapolis Area Office
G. H. Wilson, Acting District Supervising Inspector

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COPY 7

Chief, Inspection Secti

8. The matter of mutilation of the sheep shearling hides was discussed. The company officials stated that they were unable to determine whether a hide was satisfactory until after it was fabricated into a Flying Suit and was presented for AAF inspection, at which times the material was often found to be defective and would break at the seams and in certain weakened areas of the fabricated suit. This condition caused considerable repairs to be necessary and further tended to interfere with their production. This company felt that the drastic inspection measures were necessary at the time. However, this practice has since been discontinued and no animosity exists on the part of the United Garment Company towards the Master Industries, Inc.

9. Further, the destructive practise in question was initiated by Mr. Walter Broeker, foreman of the United Garment Company, and the AAF Inspector stationed at that plant was also involved in this practise. During the writer's last visit to this facility in May, 1943, the matter of the defective hides was brought to the writer's attention. The writer instructed the AAF Inspector, as well as the foreman, that the recommended method was not to tear the hide from the edge but to grasp the hide in any suspected area between the forefingers and thumbs of both hands and attempt to break the hide, instead of attempting to tear it from the edges, thus mutilating the hide and rendering it useless for any other purpose. Apparently the writer's suggestion was ignored.

10. In conclusion, it is the writer's belief that the problems of defective material and the disputes between the companies involved have been satisfactorily settled. The practise of mutilation of the skins has been discontinued and it is felt that no further action is necessary at this time.

For the Area Representative:

/s/ Geo. H. Wilson

G. H. WILSON
AAF Inspector in Charge

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Carbon
Sheep Shearing
PB - 80
MAT. Div.
M.M.C. Wash

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5E933

PD-T-1564 7-5-43

OFFICE OF THE ASST CHIEF OF AIR STAFF, MMAD

ATTENTION: COLONEL W. F. VOLANDT

THIS OFFICE JUST IN CONVERSATION WITH CLASS 21 AIR SERVICE COMMAND AND WAS ADVISED THAT AUTHORITY FOR PURCAHSE FOR SHEEP SHEARLING CANNOT BE ISSUED IMMEDIATELY AS REQUIREMENTS REGARDING PILE LENGTH on hand ARE NOT KNOWN. CLASS 13 AIR SERVICE COMMAND COULD NOT GIVE THIS INFORMATION TO CLASS 21. UNDERSTANDING HERE IS THEY ARE WAITING FOR SIGNED DIRECTIVE FROM WASHINGTON REGARDING THIS. CAN ANYTHONG BE DONE TO EXPEDITE AUTHORITIES FOR PURCHASE ON SHEEP SHEARLING. END AFAMC.

BRANSHAW, MATERIEL COMMAND

ET

1445Z

CORR: 6TH LN 7TH WD ANTHING RPT ANTHING

Col L phoned ASC and was informed they were waiting for info from Mat Com. Advised Spalding of this by phone. He promised a phone all concerned in Mat Com.

Capt Spalding advised that the matter will be expedited - 7-6-43 ACS

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Carbon
Sheep Shearling
P.B.-31
Mat. Div.
W.D.M.U. Wash.

AFDMA-5A
ACS/dmb

6 July 1943

Navy Nylon and Shearling Requirements

Chief, Bureau of Aeronautics
Navy Department
Washington, D. C.

1. Reference is made to Bureau of Aeronautics letter (Aer-PR-4-LH) dated 21 May 1943. This is to advise that Tanneries under contract have been instructed to release shearling to Navy Contractors in accordance with request in referenced letter and memorandum of Captain A. C. Miles, U.S.N. dated 14 June 1943.

2. Inasmuch as parachute contractors supplied both the Army Air Forces and the Navy Department and stocks of raw materials were handled at the contractor's plant without discrimination to supply either an Army or Navy contract, it is the belief of the Army Air Forces that no degree of accuracy can be obtained by determining yardage delivered. Therefore, settlement by the Navy Department must necessarily be based on finished parachutes delivered.

3. In the event t is plan is accepted by the Navy Department, any excess materials on hand at contractors' plants will be absorbed by the Army Air Forces.

4. In the matter of shearling contracts, it is acceptable to the Army Air Forces to absorb any excess stock remaining in the plants of the contractors.

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For the Commanding General, Army Air Forces:

W. F. VOLANT
Colonel, Air Corps
Chief, Procurement Branch
Office, Assistant Chief of Air Staff
Materiel, Maintenance and Distribution

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AFDMA-5A
ACS:os

Garbon
Sheep Shearling
P.B - 8v
Mat. Div.
M.M.D, Wash.

TELETYPE MESSAGE

DATE: 7 July 1943

FROM W. F. VOLANDT
Colonel, Air Corps
Chief, Procurement Branch

ATTENTION: COMMANDING GENERAL, MATERIEL COMMAND

ATTENTION: PROCUREMENT DIVISION, GENERAL PROCUREMENT BRANCH
LT. W. F. SPAULDING

AFDMA-5A-607. . .MR. WINN WAS VERBALLY ADVISED 6 JULY 1943 BY LT. CO.H.B. BENEDICT SUPPLY AND MAINTENANCE BRANCH, MMAD, THAT EXISTING SHEARLING CONTRACTS SHOULD BE EXTENDED SO THAT FOUR MILLION SQUARE FEET RELEASED TO NAVY CONTRACTORS MAY BE REPLACED AT SUBSEQUENT DATE WHEN AVAILABLE FROM NEW SKINS COMING ON MARKET. IN CONNECTION WITH PROCUREMENT BEING INITIATED FOR ELEVEN million SQUARE FEET OF ADDITIONAL SHEARLING, IT WAS REQUESTED THAT INSTRUCTIONS BE INCLUDED IN AUTHORITY FOR PURCHASE THAT NEW DOMESTIC SHEARLING PROCURED MAY BE MADE INTERCHANGEABLE WITH SHEARLING APPLICABLE TO EXISTING CONTRACTS IN ORDER THAT IMPORTED SHEARLING NOW UNDER CONTRACT CAN BE USED AT LATER DATE OWING TO LOWER LASTING POWERS. THE ABOVE WILL MAKE IT POSSIBLE FOR THE TANNERS TO TAKE UP FIFTEEN MILLION SQUARE FEET OF NEW DOMESTIC SHEARLING FROM THE MARKET.

VOLANDT

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C c/o Shoog Shearling
O P13-86
P MAT. DIV
Y N.M.C. WASH

NAVY DEPARTMENT
BUREAU OF AERONAUTICS
WASHINGTON

Aer-PR-1-MJ
L8-(1)
J7 27
JJ 34 L 3

7 July 1943

104534

From: The Chief of Bureau of Aeronautics
To: The Commanding General, Army Air Forces
Attention: Chief, Procurement Branch
Materiel, Maintenance and Distribution

Subject: Nylon and Shearling Requirements.

References:
(a) AAF letter AFDMA-5A-ACS/dmb of 6 July 1943.
(b) BuAer letter 76783 of 21 May 1943

1. The procedure set forth in reference (a), relative to a settlement of the subject materials account under the Army Air Forces government furnished equipment system wherein the Army Air Forces will absorb for its own use the surplus materials is concurred in by the Bureau. Every effort should be made to minimize the physical movement of these stocks.

2. Accordingly an accurate accounting of all completed parachutes and winter flying suits manufactured from government furnished equipment up to the point of change-over to contractor furnished equipment will be made. This information will be furnished immediately it is available.

/s/ A. C. MILES

A. C. MILES
Captain, U.S.N.
By direction Chief of Bureau

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Original
Shearling
File 83
Misc. Div
NARS, Navy

WAR PRODUCTION BOARD

WASHINGTON, D. C.

July 7, 1943

IN REPLY REFER TO

Colonel W. F. Volandt
Material Division, Army Air Forces
Room 5E-933 Pentagon Building
Washington, D. C.

Dear Colonel Volandt:

In the first place, may I convey our thanks for the extremely interesting meeting in your office regarding the shearling program. We understand that the Air Forces will procure on the G.F.E. basis a further quantity of shearlings for flying suits over and above present contracts which will be sufficient to relieve domestic producers of the skins which are in course of preparation in response to the program as heretofore developed.

In view of the fact that no procurement of shearlings is now contemplated by the Air Forces for the fiscal year 1945, immediate steps are being taken by ourselves and by the Department of Agriculture to terminate a promotional program designed to secure the maximum quantity of shearlings for flying suits.

In this connection, we should like to repeat our statement at the meeting to the effect that if a largeneed for shearlings should again develop at a later date, we are extremely doubtful that it would be possible to regain the production levels heretofore built up. In the first place, tannery operations will in the meantime be curtailed in view of the smaller market for the product. Tannery labor will necessarily be dissipated in other directions and re-employment of that labor would be practically impossible once it has been relinquished. In the second place, it is most improbable that sheep growers would again change their normal marketing habits in view of recent developments.

Needless to say, should such a renewed demand eventuate, we would do everything in our power to assist the program, but in view of the foregoing, we must specifically disclaim the responsibility of building up a second successful program along the lines of that now being terminated. We are quite sure that you already realize the implications of this shift in procurement and the possible consequences as outlined above and that this has been taken into consideration in determining yourpolicies, but we did not want to let the matter drop without making our position unmistakably clear.

Assuring you of our desire to be of service to the Air Forces in any procurement problem involving leather, we remain

Very truly yours,

R. P. Butler, Chief
Leather Section
Textile, Clothing and Leather Division

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Original
Sheep Shearling
P.O. - 44
Mail Div.
M.M.L. Wash.

AFDMA-5A
ACS:os

MEMORANDUM

8 July 1943

SUBJECT: Authority for Purchase for Eleven Million Square Feet of Sheep Shearling

TO: Colonel W. F. Volandt

After talking on the telephone this morning with Lt. J. H. Meyer, Supply Division, Air Service Command and Lt. W.F. Spaulding, General Procurement Branch, Materiel Command, two reasons are indicated for the delay in the issuance of an Authority for Purchase for the procurement of eleven million square feet of sheep shearling, as requested in teletype AFDBS-4-A dated 1 July 1943, from the Supply and Maintenance Branch, SSD, signed "ARNOLD".

It is understood that the Supply Division, Air Service Command, has been advised that an Authority for Purchase will not be issued from instructions by wire. In this instance the Equipment Section has been instructed to await written directive from AAF Headquarters, Washington, D. C.

There is the possibility of further delay as it is found necessary to await a complete inventory of shearling which has been delivered directly to the contractors by the tanners both for the Army Air Forces and the Navy Department. A portion of the latter will be absorbed by the Army Air Forces. This inventory is supposed to assist the Air Service Command in determining the various pile lengths to be procured.

It would seem possible to issue an Authority for Purchase to procure pile lengths in relation to past procurements and amendments can be issued when the proper specifications can be determined. Delivery instructions can also be included at a later date.

A. C. Schermerhorn

A. C. SCHERMERHORN
Captain, Air Corps

SD 777-7150

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AAFMC-266-WF-5-8-42-2000M

E-6

32 F.

ARMY AIR FORCES

MATERIEL ~~CENTER~~ Command

Engineering Division

MEMORANDUM REPORT ON

CJC:hnr:56

Date 8 July 1943

SUBJECT: Conference Reference Sheep Shearling Specifications.

~~SECTION~~ Materials Laboratory

SERIAL No. ENG-56-M4556

Contract No.

Expenditure Order No. 780-4

Purchase Order No.

A. Purpose

1. The purpose of this meeting was to clarify requirements of the revised specifications, U.S. Army Specification 8-113-C and Amendment 1, dated 20 April 1943, and the tentative Army-Navy Aeronautical specification for sheep shearling (unnumbered). This was necessary in view of pending procurements of this material.

B. Factual Data

1. Conference on the above subject was held in the Materials Laboratory, Engineering Division, on 7 July 1943, and was attended by the following personnel:

Capt. C. B. Smith- Production Engineering Section
Capt. J. R. Schenck - Equipment Laboratory, Engineering Division
Lt. W. F. Spalding - Gen. Proc. Br., Procurement Division
Mr. H. E. Arnold - Gen. Proc. Br., Procurement Division
Mr. T. H. Pope - Production Engineering Section
Mr. W. S. Klepper - Inspection Section
Mr. H. G. Battles - Materials Laboratory, Engineering Division
Mr. C. J. Cleary - Materials Laboratory, Engineering Division

2. In view of the fact that the tentative Army-Navy specification is not numbered as of this date, recommendations were made concerning the requirements of both U.S. Army Specification 8-113-C and Amendment 1 and the tentative Army-Navy specification.

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3. U.S. Army Specification 8-113-C and Amendment 1. - Requirements for low temperature performance and the accelerated aging of the coating on the flesh side of sheep shearling will be waived with reference to performance at -60°F. because of the fact that no suitable finishes are immediately available. These requirements, however, must be met at the earliest date, and manufacturers will be so advised. The tackiness of the finish is a requisite and will be insisted upon.

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Engineering Division Memorandum Report
No. EN1-56-42-56
8 July 1943

B. Factual Data (Cont'd)

4. Tentative Army-Navy Specification. - Paragraph E-2b (6) states that the formula for the backing will be supplied by the procuring agency. This will be changed so that a formula for backing will be included in the section for notes under this specification but will not be a specification requirement. Manufacturers will be required to supply a backing which meets all the physical requirements of the specification.

C. Conclusions.

1. Specification S-113-C and Amendment 1 will be used in the pending procurements if the tentative Army-Navy specification for sheeting has not been made effective when procurements are to be made.

Concurrence:

.....

.....

Prepared by .....C. J. CLEARY.....
(Name)

Approved by .....J. B. JOHNSON.....
Chief, Materials Laboratory

Approved by .....E. O. CARROLL.....
Brig. General, U.S.A.,
Chief, Engineering Division

Distribution:
Prod. Eng. Sect. (Capt. C. B. Smith)
Equipment Lab. (Capt. J. M. Schenck)
Gen. Proc. Br., Proc. Div. (Lt. Spalding)
Inspection Section (W. S. Klepper)
Central Files

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Sheep Shearling
AIB - 9014/11/31

copy ASCSE

9 July 43

Chief, Supply Division

Report of Sheep Shearling and Flying Clothing

1. About 11 February 1943, this Section was requested by Contract Section, Materiel Command, to furnish shearling requirements for the calendar year of 1944. It was understood that the figures were to be passed on to the Agricultural Department through the War Production Board. As activation figures were not available to this Section at that time, we were unable to supply the information when requested. Upon receiving information from the Requirements Branch that the Victory Program procurement was sufficient for the activation and maintenance of two hundred seventy three (273) groups through the calendar year of 1943, figures were arrived at upon which to base requirements. When we were ready to submit figures to be broken down into shearling, we were informed that shearling figures had already been submitted. The figures submitted were not known by this office.

2. A conference was held on 22 February 1943 at Wright Field in which this Section was informed that new types of clothing were being developed and the Air Service Command was requested to make funds available to start procurement of the new items. Correspondence concerning the meeting and the proposed procurement is attached. At this meeting it was brought out that the new clothing would require no shearling, but that since at a prior meeting in Washington, D.C., with the other branches of service, Colonel Mills said that the Air Forces had committed themselves to the use of shearling for flying suits, and therefore, that this new clothing would not do away entirely with shearling, as part of our requirements would continue to be shearling.

3. About ten days later, Colonel Mills called another meeting to talk about quantities of the different types of clothing that would be procured in 1944, using figures compiled on the basis set forth in paragraph one (1). Colonel Mills made the suggestion that one hundred ninety thousand (190,000) of the flying suits and all the mechanic's winter suits to be procured would be in shearling.

4. Several meetings called by Colonel Mills pertaining to shearling were attended, but procurements or committments for shearling were not discussed. All discussions were on technical matters pertaining to specifications for tanning and finishing or pertaining to relative merits of Government Furnished Material versus Contractor Furnished Material.

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Sheep Shearing
AB-40(5/10/43)

5. In the meantime, Materiel Command developed and standardized a new shearling flying suit and requested that all existing contracts on the heavy and intermediate shearling flying suits be changed over to the new type suit. The contractors were called in to Wright Field and the change-over was discussed and they were instructed to submit two (2) sample suits each, along with a break-down of the cost of the change-over. They have been working on that for the past ninety (90) days, and one (1) contractor's suit was approved, and he is now making balance due (7000) to the new specification. This change-over from one type shearling suit to an improved type shearling suit, if applied on all suits under present procurement, would have involved an additional expenditure of approximately three million dollars ($3,000,000). However, when information first reached this office of the proposed complete new program, doing away with shearling flying suits entirely, Wright Field was instructed to holdup all change-overs until approval or disapproval of the new program.

6. A second indorsement to the recommended program for Army Air Forces flying clothing, under the signature of Major General Giles, paragraph 1(e), stated that there would be no further need for sheep shearling for flying clothing. On the other hand, we were told by Wright Field that shearling flying clothing could not and would not be discontinued.

7. On 21 July 1943, Office of Materiel, Maintenance and Distribution asked that we answer the following questions:

a. How long will present stock on hand last?

b. Will cancellation of contract for shearling and the fabrication of winter clothing cost the Government an appreciable amount?

c. If present contract is cancelled, what will be the effect to the present stock on hand?

d. What will be the impact on the economic structure for production of these sheep shearling?

e. Will there be enough shearling required in the fabrication of ground winter flying clothing to absorb commitment made in the past for these shearlings?

These were answered by us in our communication dated 23 June 1943, copy of which is attached.

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8. On 24 June 1943, a conference was called and held in the Office of Colonel W. F. Volandt, Procurement Branch, Materiel, Maintenance and Distribution, at which the following were in attendance:

a. Colonel W. F. Volandt - Procurement Branch, M.M.&D.

b. Lt. Colonel H. B. Benedict - M, M. & D.

c. Major T. O. Newell, A.F.B.F.O.

d. Major N. R. Josephs, A.S.C.

e. Captain J. R. Shank, Materiel Command, Equipment Laboratory

f. Captain A. C. Schermerhorn, M.M. & D.

g. Lt. W. F. Spalding, Materiel Command, Procurement Division.

h. Lt. T. G. Baptist, A.R.C.O.

i. Lt. J. D. Maloney, M.M.&D.

j. Lt. M. R. Lutmerding, Materiel Command, Resources Control Section.

k. Mr. M. R. Winn, A.S.C.

l. Mr. B. A. Holgate, Materiel Command, Materials Laboratory.

m. Mr. Roy Statzer, M. M. & D.

n. Mr. C. W. Fairall, M.M.&D.

It was our understanding when we went to the conference that it was to be on the flying clothing program recommended by the Army Air Forces Equipment Board. Figures were prepared for presentation, showing the Air Service Command position as to stock on hand and under contract. Instead of discussing ways and means for proceeding with the new clothing approved and recommended by the Army Air Forces Equipment Board, we were informed that we are to make an additional purchase of about four hundred thousand (400,000) shearling suits, in order to use up this year's crop of shearling now in the market to make good what was believed to be a moral commitment to sheep growers. We were also told that one hundred thousand (100,000) each of the new clothing, as recommended by the Army Air Forces Equipment Board, were to be purchased just to start the new program. If the additional shearling is bought, as recommended, there will be enough shearling clothing stock on hand to run us to 1 January 1945, making the new program, except for the recommended one hundred thousand (100,000) suits, ineffective.

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Sheep Shearling
MR - 9017/11/331

9. The suggestion of making and issuing only one hundred thousand (100,000) non-shearling lined suits is impractical because as soon as they will appear in the Field, the demand will be so great as to necessitate further procurements of the same type, leaving our Depots filled with hundreds of thousands of shearling lined suits.

10. These arguments were submitted by this Section at the conference in Washington, D.C.

H. PAUL DELLINGER
Colonel, Air Corps
Chief, Equipment Section
Supply Division.

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CAYLON
SHEARLING
R.D. -87
10 P.T. DIV.
A.M.L. WASH.

ASCSE7B

17 July 1943

Supply Division (ASCSE7B)

AAF HQ ASC Patterson Field, Fairfield, Ohio

Commanding General
Army Air Forces
Procurement Section, M M & D
Washington, D.C.
ATTN: Capt. Schermerhorn

JHM:ww

ASCSE7B-7-796

JOSEPH H. MEYER
1st Lt., Air Corps
Asst., Equipment Section
Supply Division

RE AFDBS 4 I 1742, DATED 11 JULY 1943. REFERENCE MESSAGE ACKNOWLEDGED. PURCHASE REQUEST 4696-A, DATED 9 JULY 1943 FOR 11,000,000 SQ. FT. OF SHEARLING HAS BEEN INITIATED. INSTRUCTIONS WERE INCLUDED THAT NEW DOMESTIC SHEARLING PROCUREMENT MAY BE MADE INTERCHANGEABLE WITH SHEARLING APPLICABLE TO EXISTING CONTRACTS. ALSO, MATERIEL COMMAND CONTRACT SECTION HAS BEEN INSTRUCTED TO EXTEND PRESENT SHEARLING CONTRACTS EQUIVALENT of 4,000,000 SQ.FT.

FRANK, CGASC

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B-4 (1/3pp)

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WAR PRODUCTION BOARD

WASHINGTON, D. C.

July 17, 1943.

IN REPLY REFER TO:

Lt. Colonel C. H. McGrath
Materiel Command, A.A.F.
Wright Field

Dear Colonel McGrath:

We refer to the pending new procurement of processed shearlings which has been arranged for in order to provide an outlet for the skins of lamb and sheep shorn in line with the program which was instituted to provide the maximum production of raw shearlings for eventual use in flying clothing.

We understand that a total new procurement of 15,000,000 sq. ft. of suitable finished shearlings will be procured, and to bring this about in the simplest manner, previously placed contracts now in force will not be reduced by the quantityreleased to the Navy Bureau of Aeronautics, but to compensate for such footage released, the new contracts to be placed will total 11,000,000 sq. ft.

It is likewise our understanding that this new procurement will amply cover the A.A.F. needs for shearlings through the fiscal year 1944 (up to June 30, 1944) and that no additional requirements beyond fiscal 1944 can be foreseen at this time.

Consequently, steps have been initiated by the W.P.B. and by the Department of Agriculture towards decelerating the production of raw shearlings from the actual artificially high rates, and these will be followed up and implemented as far as may become desirable. No further authorizations for the importation of foreign shearlings will be recommended until the domestic supply question is clarified.

There existing no longer any problem of raw material supply, we are planning to remove the W.P.B. restrictions on the processing of shearlings.

In the meantime, best available estimates show that there are now in the hands of tanners, packers, and in feed lots the equivalent of 2,000,000 domestic skins (over and above those required to fill presently placed military contracts) which will come to market within the next 60 to 90 days. All these skins are from animals which have been shorn and held in accordance with the shearling program.

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Lt. Colonel C. H. McGrath

July 17, 1943.

Having been instrumental in the building up of this shearling program, we are particularly interested in its orderly termination, and for this reason we take the liberty of making certain suggestions as to the distribution of the new procurement amongst the tanners whom you may choose to have supply it, and the means by which the liquidation of the domestic stocks might be arranged.

As to the distribution of the procurement, we have made certain suggestions orally to Capt. Spalding which were based upon what data was available to us, it being thoroughly understood that they were tentative and subject entirely to your actions in negotiating the contracts. They merely represented a sample of our ideas as to how the procurement might be placed and tied in with a requirement for the tanner to purchase domestic raw stock without including in the contract the apparently impractical condition that the new procurement be filled exclusively with domestic raw stock.

As a practical matter, domestic skins coming into the market now must be tanned promptly to avoid spoilage and the tanners have old contracts to fill. Accordingly, a condition requiring the use of domestic skins for later contracts might defeat the intent of the new procurement.

Regardless of how the new contracts may be distributed, it is suggested that each tanner be required to undertake the purchase, during the period July 1 to September 20, 1943, of a quantity of domestic shearlings (at a reasonably equal weekly rate) corresponding to the square footage awarded to him, plus whatever footage of his Production which has been released to the Navy, divided by the footage factor of 6.8 suitable square feet per skin.

As a simple example: if a tanner is to receive a contract for 680,000 sq. ft., he should be required to have purchased 100,000 raw domestic shearlings during the period July 1 to September 30. In another instance, if 1,500,000 ft. were released to the Navy and your new contract amounts to 1,900,000 ft. the total would be 3,400,000 ft. and the tanner should buy 500,000 domestic skins in the period.

It might be unhandy to include a similar provisions in the actual contract, but it is respectfully submitted that it might be feasible to take care of it in a covering letter which might at the same time put the tanner on notice that if this condition is not fulfilled, the contract may be reduced by the footage represented by any lack in purchases.

Finally, as regards rate of deliveries, we understand that the Air Service Command and the Materiel Command now have a back-log of previously delivered processed shearlings, and that the material represented by the new procurement may not be needed until some time in 1944.

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Lt. Colonel C. H. McGrath: July 17, 1943.

In order to allow all tanners an even chance of securing in whatever civilian business may become available after the modification of the existing restrictions on the manufacture of shearlings, it is suggested that the delivery rates required under the old contracts be modified and that the new contracts be so scheduled as to permit delivery at reduced rates for completion as late as possible in 1944.

At this time, we wish to repeat that we remain at the disposal of your procurement officers whenever we can be helpful to you.

Yours very truly,

Leo Bonnard
Chief, Sheepskin Unit
Textile, Clothing and Leather Division

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INTER-OFFICE MEMORANDUM
ARMY AIR FORCES
MATERIEL CENTER
Office of The Commanding General

62-Procedure

Wright Field, Dayton, Ohio
Date 17 July 1943

TO: Chief, Procurement Division

SUBJECT: Sheep Shearling

1. At a meeting held July 14, 1943, the following were present:

Captain C. A. Smith	Production Engineering Section
Captain J. H. Senechek	Equipment Laboratory Engineering Division
Mr. W. A. Klopper	Inspection Section
Mr. C. J. Geary	Materials Laboratory Engineering Division
Mr. M. C. Battles	Materials Laboratory Engineering Division
Captain J. A. Mougen	Executive Office
Captain W. F. Spalding	General Procurement Branch Procurement Division

2. Consideration was given of the question as to whether or not contractors whose contracts were canceled should participate in the current procurement. The reasons for the cancellations are contained in Engineering Division Interoffice Memorandum dated March 18, 1943, Subject: "Cancelling of Contracts for Sheep Shearling" and Engineering Division Memorandum reports dated March 20, 1943 and March 23, 1943.

3. Samples were submitted by these contractors and their samples did not indicate that the contractors whose contracts were terminated can furnish skins of any better quality than they were furnishing at the time the contracts were cancelled.

4. Accordingly, it is the opinion of this group, in view of recommendations and reports as stated above, that no procurements at this time should be placed with those contractors whose contracts were terminated. However, it is suggested that an investigation be made of the facilities of each of those contractors and a further analysis be made of their production to determine whether any later procurements which may be authorized should be placed in whole or in part with those contractors. In view of the limited quantity to be procured at this time and the necessity for placing the procurements immediately, it is not possible to make the necessary exhaustive investigation within

Signature

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sufficient time, and the capacity offered by other manufacturers is in excess of what is required to cover this procurement.

C. E. Smith, Captain, Air Corps
Production Engineering Section

J. R. Schenck, Captain, Air Corps
Equipment Laboratory
Engineering Division

H. S. Klepper, Inspection Section

C. J. Cleary
Materials Laboratory
Engineering Division

J. G. Hodges, Captain, Air Corps
Executive Office
Procurement Division

H. G. Battles
Materials Laboratory
Engineering Division

William P. Spalding, Captain, Air Corps
General Procurement Branch
Procurement Division

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COPY

Addr reply & Envelope to:

COMMAND

Commanding General,
Army Air Forces,
Materiel Command,
Procurement Division,
Purchase Section,
General Procurement Branch,
Reference: 82:CPM:MLS

Procurement 11,000,000 Square
Feet Shearling

Wright Field, Dayton, Ohio
22 July 1943

Mr. Lee Bonnard,
Chief, Sheepskin Unit,
Textile, Clothing and Leather Division,
War Production Board,
Washington, D.C.

1. In response to your letter of 17 July 1943 above subject:

The major part of the awards were made by letter contract under date of 21 July 1943, in square footage to the following:

a. Winslow Bros. & Smith 4,900,000 -approximately

b. A.C. Lawrence Leather Co. 4,000,000 -approximately

c. J. Laskin & Sons Corp. 1,000,000 -approximately

2. Bids have been asked and will be expected to be received from the following:

a. American Beaver Lamb Corp.
b. Anglo-American Tanning
c. Herlin Tanning & Mfg. Co.
d. Chicago Tanning Co.
e. Weil & Eisendrath
f. Workman & Co.
g. Master Industries
h. Loyal Fur Mfg. Co., Inc.

3. Each contractor is being asked to undertake his purchases of raw skins insofar as it is practical and possible without interference with or interruption to execution of his contract, in accordance with your request contained in the 5th paragraph, page 2 of your letter of 17 July 1943.

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A.E. JONES,
Brig. General, U.S.A.,
Chief, Procurement Division.

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PD-T-1704 7-22-43

ASST CHIEF OF AIR STAFF, MM&D

ATT: PROCUREMENT BRANCH

PURCHASE AUTHORITY FOR SHEARLING HAS BEEN RECEIVED AND IS BEING PROCESSED. ADVICE OF TOTAL QUANTITIES ALL TYPES FLYING AND MECHANICS SUITS AND AUTHORITIES FOR PURCHASE FOR FABRICS AND MANUFACTURE OF SUITS NOT RECEIVED. TIME HAS PASSED WHEN MANUFACTURE CAN BE ARRANGED TO STRICTLY MEET DELIVERY SCHEDULES AND CONTINUED DEFERMENT IN PLACING CONTRACTS WILL FURTHER DISTURB DELIVERY SITUATION. CONFERENCES WITH FABR FABIRC MANUFACTURERSHAVE BEEN ARRANGED TO AVOID, TO EXTENT POSSIBLE, LOSS FABRIC PRODUCTION FACILITIES, BUT THIS ACTION WILL BE VOIDED UNLESS THE QUANTITIES ALL TYPES OF SUITS DETERMINED AND PURCHASE AUTHORITIES FURNISHED IMMEDIATELY. PARACHUTE PROGRAM STILL NOT DETERMINE D, DELIVERIES OF WHICH WILL LIKEWISE BE DISTURBED. DECLINING PRODUCTION PARACHUTES WITHOUT ADDITIONAL CONTRACTS CAUSING RELEASE PERSONNEL WHICH WILL CAUSE DELIVERIES LATER THAN REQUIRED AND CREATE POLITICAL DISTRUBANCES.

PROCUREMENT DIVISION

CORR: 7LN 1ST WD FABRIC RPT FABRIC 10TH LN LST WD DETERMINED "D" IS ON 11 LN

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TELETYPE MESSAGE

PRIORITY

DATE 23 July 1943

FROM Procurement Division

ATTENTION: MATERIEL DIVISION
ATT: Colonel W. P. Yolande, A.C.

U. S. ARMY
Brig. Gen., U.S.A.,
Chief, Procurement Div.

TT-T-240 ... APPROXIMATELY 80% BUILDING REQUIREMENTS PLACED WITH A.C. LAWRENCE LEATHER COMPANY, WINSLOW BROTHERS AND SMITH, AND J. RASKIN. SUGGEST PRECAUTION AGAINST UNSATISFACTORY SKINS SHOULD BE INSPECTION AT FACTORY. INSPECTION BRANCH REPORTS INSUFFICIENT COMPETENT INSPECTORS AVAILABLE TO ACCEPTABLE INSPECTION PROMPTLY TO LIMIT RATE OF PRODUCTION. ENTIRE SHOULD BE STORAGE BY GOVERNMENT WITH INSPECTION UPON RELEASE FROM STORAGE WITHIN PERIOD OF ONE YEAR. INSPECTION SHOULD ALSO BE MADE AT CLOTHING MANUFACTURERS' PLANT. REJECTIONS SHOULD BE BASED ON NON-COMPLIANCE WITH SPECIFICATIONS. ONLY PROTECTION UNDER THIS PROCEDURE WOULD BE WITHHOLDING PAYMENT TO EXTENT OF PRICE 3 TO 10% SELLER'S PROPORTION TO TOTAL VOLUME PLACED WITH EACH CONTRACTOR TO COVER REPLACEMENT OF REJECTIONS. TANNERS STRONGLY RESIST ANY GUARANTY BEYOND 90 DAYS, WHICH IS INSUFFICIENT. DUE TO CONDITIONS STATED, RECOMMEND DISCARD STRICTLY INSPECT AND WITHHOLDING OF FUNDS. PLEASE WIRE INSTRUCTIONS. END AVALC.

PROCUREMENT DIVISION

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E-1

Purchase 15

AFDMA-5A-857 7-26-4 ORIGINAL

PRIORITY

Gen Procurement

HEADQUARTERS MATERIAL CENTER (Z-4) JUL 26 13:51

COMMANDING GENERAL MATERIEL COMMAND

PROCUREMENT DIVISION

REFERENCE PD-T-2400: THIS HEADQUARTERS CONCURS WITH YOUR RECOMMENDATION THAT REMEDY FOR INSUFFICIENT COMPETENT INSPECTORS AVAILABLE TO ACCOMPLISH INSPECTION OF SHEEP SHEARLING AT TANNERY COULD BE STORAGE BY GOVERNMENT WITH MODIFICATION OF RECOMMENDED PROCEDURE TO EXTENT OF ACCOMPLISHING INSPECTION WITHIN PERIOD OF 180 DAYS AT POINT OF STORAGE IN LIEU OF INSPECTION UPON RELEASE FROM STORAGE WITHIN PERIOD OF ONE YEAR. INSPECTION SHOULD ALSO BE MADE AT CLOTHING MANUFACTURERS' PLANT AS OUTLINED IN REFERENCE TELETYPE. IT IS NOT BELIEVED WITHHOLDING PAYMENT TO TANNERS WILL BE NECESSARY IN VIEW OF PAST RECORD IB REPLACEMENT OF REJECTIONS AND WITHHOLDING OF FUNDS CAN BE WAIVED.

VOLANDT

AG

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Procurement Div

HEADQUARTERS
MATERIAL CENTER
(Z-41)
1943 JUL 27
18.13

423

FDRE:11-12 (JJL) 7-27-43

ORIGINAL

MANDING GENERAL, MATERIEL COMMAND

TTN: CAPTAIN AVERY

TELEPHONE CONVERSATION WITH LT COLONEL BONNET OF JULY 26, [illegible]

SHEARLING REJECT IN THE HANDS OF AIR FORCES CONTRACTORS IN [illegible]

PROCUREMENT DISTRICT AREA. THIS OFFICE HAS BEEN INFORMED BY COLONEL [illegible]

OLER OF THE EASTERN DI[illegible]ICT THAT THE DISPOSITION OF [illegible]

SHEEP SHEARLING REJECTS IN THE HANDS OF AIR FORCE CONTRACTORS AND THERE

S NONE AT PRESENT AVAILABLE FOR EITHER REDISTRIBUTION OR SALVAGE.

REDISTRIBUTION & SALVAGE OFFICER

MY AIR FORCES

LB

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PD-T-1772 7-29-43

OFFICE OF THE ASST. CHIEF OF AIR STAFF

MATERIEL, MAINTENANCE AND DISTRIBUTION

WASHINGTON, D. C.

ATTN: COLONEL W. F. VOLANDT

PDT-2400, 23 JULY 1943 REQUEST PROMPT REPLY. TANNERS ADVISE DIFFICULTIES IN SUPPORTING MARKET AND ASK IMMEDIATE RELEASE OF PROCUREMENT. BELIEVE NAVY SHOULD BE ADVISED OF PRICES OFFERED AIR FORCES BY THREE LARGEST TANNERS. TYPE 3/4" - 54 CENTS TO 57 CENTS, 1/2" - 51-1/2 CENTS TO 52 CENTS, 1/4" - 46-1/2 CENTS TO 49-1/2 CENTS END AFAMC.

PROCUREMENT DIVISION

HSM

1237Z

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A-1 Basic Ltr fr AAF ateriel Command, Prod. Eng eering Section, Wright Field, dt 23 July. Subj: Purchase der (856) 43-13617-AF, Flying uits, Type A-5, B-6. 195

1st Ind. AMCSE7A

AAF HQ ASC Patterson Field, Fairfield, Ohio. 29 July 1943

To: Commanding General, AAF Materiel Command, Production Engineering Section, Attn: Mr. T. H. Pope, Wright Field, Dayton, Ohio.

1. Request that necessary action be taken by your office to advise contractor to fabricate remaining balance of 24,227 type A-5, B-6 flying suits due on subject purchase order to the new AN type flying suit.

2. It is further requested that the contractors now manufacturing B-3, A-3 and B-6, A-5 flying suits be instructed to change over balances due on present contracts to the AN suit.

For the Commanding General:

C. J. CHANOSTROM
Captain, Air Corps
Asst., Equip. Section
Supply Division

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1

C O P Y

WAR DEPARTMENT
24th AAF SUPPLY DEPOT
TOPEKA, KANSAS

29 July 1943

INSPECTION OF REJECTED SHEARLING

1. Approximately 79,852 swuare feet of sheep shearling which was rejected by the manufacturer and shipped to this Depot has been inspected for the purpose of segregating material.

a. All this material was inspected to determine it's suitability for maintenance and repair.

b. Physical characteristics found were:

(1) Color of leather unusually dark.

(2) Some variations in the color of fur.

(3) Numerous splits in leather which had been fur-seamed.

(4) Some indication of weakening of leather through improper tanning or bleaching of fur. This was not a general characteristic.

(5) Odor slight and inoffensive.

c. While all the above facts are undesirable, they are not considered sufficient cause for condemning.

2. It is believed the manufacturer had cause to reject these shearlings since all are of low quality, many are small and others are marked No. 2.

3. These inferior skins, though not desirable for original manufacture, are nevertheless suitable for maintenance and repair.

4. It is recommended that all these rejected sheep shearlings be placed in stock.

/s/ Howard Lockhart
HOWARD LOCKHART
Foreman, Leather and Canvas Worker
O. S., Oklahoma City Air Service Command

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ASC-258-WP 9-8-42-400M

Original
Sheep Shearing
D.12 - 40(1)(a)
Mat Div
M.A.C, Wash.

ARMY AIR FORCES
HEADQUARTERS, [redacted]
AIR SERVICE COMMAND

ASCB01

PATTERSON FIELD, FAIRFIELD, OHIO

2 August 1943

Subject: Report on Flying Clothing Program

To: Commanding General
Army Air Forces
Washington, D. C.
Attention: Budget and Fiscal Officer
(Brig. Gen. L. W. Miller)

1. In accordance with verbal request by the Budget and Fiscal Officer July 31, 1943, the following report is submitted.

2. Informal investigation of the need for additional sheep shearling flying clothing has indicated that all requirements for the 273 Group Program have been placed under procurement and are being delivered currently. No further requirements for sheep shearling flying suits exist, particularly in view of the recommended change to the use of quilted and feather material. The attached copy(Exhibit No. 1) of a report to the Chief of Supply Division, dated July 9, 1943, gives a detailed description of the sheep shearling situation. Particular attention is invited to the underscored portions. This report indicates that the Air Service Command made no definite commitments for additional sheep shearling flying clothing requirements. Rather, such additional requirements were suggested to the Air Service Command with a quasi directive that the necessary sheep shearling clothing procurements be made to utilize raw sheep shearling for which commitments had apparently been made by higher authority.

3. Procurement action has been initiated and processed through this office for 11,000,000 sq. ft. of sheep shearling. However, it is the understanding of this office and the Supply Division that such shearling will be stored and disposed of at a later date with the least inconvenience to the Army Air Forces and without disrupting the sheep shearling commercial market. No further sheep shearling flying suits will be ordered.

4. The recommendations of the Army Air Forces Equipment Board of the AAFSAT represent additional requirements over and above the equipment already procured for the 273 Group Program. With minor exceptions,

RECEIVED AUG 27 1943 CONTRACT SECTION MATERIAL COMMAND

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Sheep Shearling
AG - 401/1001

Ltr. Commanding General, AAF 2 Aug 43
Att: Budget and Fiscal Officer
Subj: Report on Flying Clothing Program

complete flying clothing equipment for the 273 Group Program has been delivered or is on order. Recommendations of the Equipment Board, therefore, introduces new requirements for which estimates are not included in the F. Y. 1944 appropriation. The estimated cost of this additional equipment is contained in the attached chart (Exhibit No. 2) and totals $27,055,572.50. The additional cost of shearling estimated at $11,000,000, plus the unknown requirements for the B-29 project approximate $40,000,000 as the cost of carrying out the recommendations of the Equipment Board as directed by the Assistant Chief of Staff, OC&R.

5. The item of 500,000 suits, summer, flying, is occasioned by an increase in allowance per individual flier from one to two suits. This allowance is not yet incorporated in Tables of Basic Allowances but has apparently been approved by OC&R. Items d, e, f and g of 3rd Indorsement, Headquarters, Army Air Forces, Washington, D.C. (basic subject: "Recommended Program for Army Air Forces Flying Clothing", dated 5/31/43) cover the requirements for arctic regions and have been recommended and approved as new equipment for Alaskan and other cold weather theaters.

6. The quantity of 7,698 items over and above those included in the recommendation of the Equipment Board is to cover additional requirements submitted to this Command by the Air Transport Command in a confidential letter from their Headquarters, dated 15 May 1943, subject "Flying Clothing for Flight Personnel for Alaskan and North Atlantic Wings from September, 1943 to April, 1944."

7. Attention is also invited to the attached copy of letter, dated June 23, 1943 (Exhibit No. 3), subject "Winter Flying Suits and Sheep Shearling". This letter is in answer to specific questions put to this Headquarters by the Office, M.M. & D., and is referred to in the report to the Chief of Supply Division (Exhibit No. 1).

8. Attached for your information is copy of letter (Exhibit No.4) from the Materiel Command to this Headquarters with reference to funds requested in February 1943 for the procurement of service test quantities of newly developed flying clothing. Because of the experimental nature of the equipment at that time request for funds was not favorably considered by this Headquarters.

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Sheep Shearling
P B - 90(3/1000)

Ltr. Commanding General, AAF
Att: Budget and Fiscal Officer
Subj: Report on Flying Clothing Program

2 Aug 43

9. The information contained in the above report has been received from personnel of the Supply Division and can be confirmed, if necessary.

For the Commanding General:

E. H. WHITE
Colonel, Air Corps
Budget and Fiscal Officer

Attach.
EX. 1,2,3, &4

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Sheet 9 Shearing
R.B. - 90(8/11/49)

ESTIMATED COST OF FLYING CLOTHING ITEMS
DIRECTED BY ASS'T CHIEF OF S/AFF, G.C. & I. ACCORDANCE
WITH RECOMMENDATIONS OF AAF BOARD, AFSAT

ITEM	EST. UNIT COST (AS OF MAY ICA 194.)	TOTAL COST
A. 57,698 Winter Flying Suit Buoyancy Type	$ 44.20	$ 2,550,251.60
57,698 Winter Flying Suit Alternate Type	38.57	2,225,411.86
B. 107,698 Intermediate Flying Suit	33.00	3,554,034.00
C. 250,000 Summer Flying Suit - Birdcloth	11.73	2,932,500.00
250,000 Summer Flying Suit - Gabardine	17.25	4,312,500.00
D. 50,000 Electrically Heated Suit	67.00	3,350,000.00
E. 50,000 Electrically Heated Shoes	4.00	200,000.00
F. 50,000 Electrically Heated Gloves	4.00	200,000.00
G. 22,698 Winter Flying Gloves	4.75	107,815.50
H. 100,000 Summer Flying Gloves	2.50	250,000.00
I. 207,698 Leather Helmet	10.00	2,076,980.00
207,698 Summer Helmet	2.23	463,176.54
J. 22,698 Winter Flying Shoes	1.50	34,047.00
43,396 Sock Assembly & Inner Sole	8.50	368,866.00
Intermediate Flying Shoes	No Spec.	--
K. 100,000 Sleeping Bag - Type A 3	44.30	4,430,000.00
L. Steel Flying Helmet	No Spec.	--
		$ 27,055,572.50

In addition to the above estimated costs additional quantities of the above items will be furnished for the B-29 Project. These requirements are not yet known but will be added to above quantities at a later date.

EXHIBIT NO. II

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copy/mjr
Memo: Sheep Shearling
Ann R. & C.O. - 23(4-7-00)

ARMY AIR FORCES
Headquarters
Air Service Command

ASCBO

Patterson Field, Fairfield, Ohio

4 August 1943

Subject: Procurement of Sheep Shearling and Flying Clothing

To: Commanding General,
Army Air Forces,
Washington, D. C.

1. It is requested that immediate reconsideration be given to the procurement of additional sheep shearling and new type flying clothing as directed in 3rd Indorsement, Headquarters, Army Air Forces, undated (reference AFDBS-4-A), and teletype AFDBS-4A-185 PD dated 7/1/43, copies of which are attached. (Exhibits No. 1 and No. II).

2. The procurement of additional sheep shearling is not required because:

a. Current orders will meet complete requirements for the activation and maintenance of the 273 Group Program through calendar year 1943.

b. The development of new type clothing eliminates the future use of shearling. Production of such new type clothing will start in time to meet requirements in 1944.

In view of the above no need for additional sheep shearling flying suits exists, and the procurement of 400,000 suits at this time would be a useless waste. Moreover, the procurement of 11,000,000 sq. ft. of raw sheep shearling at an estimated cost of $11,000,000 is unnecessary and will impose a serious storage and disposal problem upon this Command.

3. The basis for the implied obligation of the Air Forces to procure sheep shearling is not clearly understood by this Command since no definite commitments nor requirements were presented by the Air Service Command. Rather, it appears that commitments for shearling were made in Washington at a meeting with other Arms and Services and figures presented were unknown to this Command.

4. The recommendations of the AAF Equipment Board, as approved by the Assistant Chief of Staff, OC&P, eliminate the use of sheep shearling and introduce additional requirements over and above the equipment already procured for the 273 Group Program. With minor exceptions, complete

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Memos Sheep Shearling
AAF R Dr, C C — 23(4) 1)

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ASCBO

Ltr. to CG, AAF
Subj: Procurement of Sheep Shearling and Flying Clothing

flying clothing requirements of standard types have been delivered or are on order. The additional new type clothing recommended will require approximately $27,000,000 for which no estimates have been included in the F. Y. 1944 appropriation. (Table of Costs attached, Exhibit No. III). Furthermore, the new clothing will immediately make obsolete the present equipment which has at least been serviceable to this date. As a result, large quantities of serviceable flying clothing will revert to storage and ultimate disposal.

5. It is not desired to question the advantages of the new equipment over the old from the standpoint of the desirability of furnishing the very best of equipment to combat units. However, the serious problem of disposition of discarded serviceable equipment will no doubt arouse future questions and possible investigation. Therefore, it is desired that the full implications of the flying clothing program be presented to your office for complete understanding and concurrence. In the meantime this Command has initiated the procurement of sheep shearling as directed as well as action to procure the necessary materials for the fabrication of new type flying clothing.

/s/ W. H. Frank

W. H. FRANK
Major General, U.S.A.
Commanding

Attachments
EXH. #I, II & III

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Memos Shr: Shearling
Ann R. Jr, C.L. 23(6/5/41

C O P Y

3rd Ind. (Cont'd)

(2) Shoes, Flying Intermediate - Recommendations for Procurement will be forwarded as soon as standardization is accomplished.

k. One hundred thousand (100,000) each Bag, Sleeping, Type A3.

l. Helmet, Steel Flying. Recommendations for procurement will be forwarded as soon as standardization is accomplished.

3. In view of the fact that it has been decided to continue procurement of the sheep shearling suit, winter flying, it is further requested that procurement of two hundred thousand (200,000) each suit, pilot and two hundred thousand (200,000) each suit, mechanic, be initiated in addition to any present commitments. It is also requested that, to cover this additional procurement and to meet commitments made by this Headquarters, a total of eleven million (11,000,000) sq.ft. of domestic sheep shearling be procured in addition to present contracts.

4. With reference to Paragraph 6 (a) of basic communication, the following percentages to theaters represent that portion of each delivery of each item received from the contractor; such percentages should continue with each delivery until all requirements for each item have been fulfilled. When all requirements for indicated theaters have been fulfilled, distribution to all theaters not listed under each clothing category may be initiated.

Winter Flying Clothing, all items (Buoyancy type):

Alaskan Theater (11th AF)	Greenland & Iceland	U.K. (8th AF)
50%	35%	15%

Winter Flying Clothing, all items (Alternate type):

Alaskan	Greenland & Iceland	U.K.	India & China (10th & 14th AF)	NE & NW Continental (1st & 2nd AF)
30%	25%	25%	10%	10%

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3rd Ind. (Cont'd)

Intermediate Flying Clothing, all items:

Alaskan	Greenland & Iceland	U.K.	India & China (10th & 14th AF)	African (9th & 12th AF)	NEA&NW Continental (1st & 2nd AF)
10%	10%	25%	25%	25%	5%

Summer Flying Suit, all items:

Carribbean (6th AF)	South Pacific (13th AF)	Hawaiian (7th AF)	Australia (5th AF)	African (9th AF & 12th AF)	India & China (10th & 14th AF)
20%	20%	20%	20%	10%	10%

Electrically Heated Clothing (all items), same as indicated for Winter Flying Clothing (alternate type).

Helmet, Flying leather, same as indicated for Winter Flying Clothing (alternate type).

Helmet, Flying Summer, same as indicated for Summer Flying Suit.

5. It is further requested that necessary action be taken to put into effect recommendations contained in Paragraphs 6 (b) & (c) and 7, and a status report made from time to time to this Headquarters on the entire program.

By Command of General ARNOLD:

B. E. MEYERS
Brig. General, U.S.A.
Deputy Asst. Chief of Air Staff
Materiel Maintenance & Distribution.

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Fin - H. A. C. O. - 23(3.7-41)

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Z WASHINGTON DC JUL 1 2303Z GR 46

COMMANDING GENERAL AIR SERVICE COMMAND

PATTERSON FIELD FAIRFIELD OHIO

ATTN MR WINN CLASS 13

AFDBS 4 A 185 PD

LETTER ON RECOMMENDED CLOTHING PROGRAM BEING SENT YOU CONFIRMING AMOUNTS DISCUSSED AT MEETING LAST WEEK PERIOD IN ADDITION TO PRESENT CONTRACTS SHEET SHEARLING ELEVEN MILLION SQUARE FEET WILL BE PROCURED PERIOD PLEASE CONTACT LT SPALDING MATERIEL COMMAND REFERENCE TO THIS IMMEDIATELY

ARNOLD

23102

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EXHIBIT NO. II

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ESTIMATED COST OF FLYING CLOTHING FOR PROGRAM DIRECTED BY ASS'T CHIEF OF STAFF, O.C.&R. IN ACCORDANCE WITH RECOMMENDATIONS OF AAF EQUIPMENT BOARD, AF9AT

ITEM	EST. UNIT COST (MATERIAL & FABRICATION)	TOTAL COST
A. 57,698 Winter Flying Suit Buoyancy Type	$ 44.20	$ 2,550,251.60
57,698 Winter Flying Suit Alternate Type	38.57	2,225,411.86
B. 107,698 Intermediate Flying Suit	33.00	3,554,034.00
C. 250,000 Summer Flying Suit - Birdcloth	11.73	2,932,500.00
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E. 50,000 Electrically Heated Shoes	4.00	200,000.00
F. 50,000 Electrically Heated Gloves	4.00	200,000.00
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207,698 Summer Helmet	2.23	463,166.54
J. 22,698 Winter Flying Shoes	1.50	34,047.00
43,396 Sock Assembly & Inner Sole	8.50	368,866.00
. Intermediate Flying Shoes	No Spec.	--
K. 100,000 Sleeping Bag - Type A 3	44.30	4,430,000.00
L. Steel Flying Helmet	No Spec.	--
		$ 27,055,572.50

In addition to the above estimated costs additional quantities of some of the above items will be furnished for the B-29 Project. These requirements are not yet known but will be added to above quantities at a later date.

EXHIBIT NO. III

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CHMcC:GA 82

12 August 1943

Procurement of Shearling for 1944 fiscal year

160

Commanding General,
Army Air Forces,
Washington, 25, D.C.

Attention: Colonel W. F. Volandt,
Chief, Procurement Branch,
Office, Asst. C/AS, MMD.

1. There is attached a statement of the procedure followed in the negotiation of Shearling for the 1944 fiscal year, which is forwarded to you with request that you advise if it coincides with your understanding.

For the Commanding General:

A. H. JONES,
Brig. Gen., U.S.A.,
Chief, Procurement Division.

Attach:
Statement entitled "Factors that determined the procedure for the procurement of Shearling for 1944"

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Sheep Shearling
File 471.4/331

Factors that determined the procedure for the procurement of Shearling for 1944

1. A meeting was convened in the Office of the Assistant Chief of Air Staff, Washington, D. C., on June 16, 1943 to determine whether the procurement of Shearling for 1944 should be furnished by contractors or by the government. There were present at this meeting, the following:-

Colonel W. F. Volandt,	Asst. Chief of Air Staff, AAF
Commander E. C. Beck	Bureau of Aeronautics
Capt. A. C. Schermerhorn	Material, Maintenance & Distribution
Mr. Leo Bonnard	War Production Board
Mr. Geo. A. Butts	Winslow Bros. & Smith
Mr. Philip Reed	Winslow Bros. & Smith
Mr. B. Nelson	Winslow Bros. & Smith
Mr. Myron Laskin	J. Laskin & Sons
Mr. K. Bell	A. C. Lawrence Leather Co.
Mr. S. Palmer	A. C. Lawrence Leather Co.
Lt. W. F. Spalding	General Procurement Branch

The meeting was terminated without reaching a conclusion as to whether the next procurement of Shearling would be on the basis of government or contractor-furnished.

2. Teletype AFDMA-SA-642 dated 2 July 1943 stated that at a meeting held in the Office of the Chief, Procurement Branch, MMD, 1 July 1943, at which there were present representatives of the War Production Board, Department of Commerce, War Meat Board and Army Air Forces, it was disclosed that from previous estimates made by the Army Air Forces, the Department of Agriculture had encouraged the sheep raisers to increase their sheared stock and that these skins were then (2 July 1943) coming into the market in large amounts daily with no buyers. Further, tanners were unwilling to make further commitments for raw skins in anticipation of Army Air Forces business not as yet placed under contract. To relieve a chaotic market situation, which was then arising, it was decided at the July 1st meeting at Washington, herein referred to, that the G.F.E. method of procurement of Shearling would be followed for the fiscal year 1944. It was further determined that a quantity of fifteen million sq.ft. of new skins would be purchased by the government for the fiscal year 1944 and that this procurement was intended to stabilize the market, and that the procurement would be made on the same basis of the price fixed by the War Production Board for the procurement made for the fiscal year 1943. The price for #1 domestic skins for the fiscal year 1943 was fixed at $2.15 per skin. The division of the fifteen million sq.ft. determined to be purchased for the fiscal year 1944 was eleven million sq.ft. for the Army Air Forces and four million sq.ft. of skins already procured under current contracts were to be released to the Navy and replaced by the purchase of an equivalent amount of new skins coming on the market. This procedure required the extension of contracts now in effect, released for use imported skins, and allowed their replacement with domestic skins, having longer lasting quality, and by all this action permit the taking of

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fifteen million sq.ft. of new domestic skins from the market. The tanners agreed to purchase only domestic skins for the total new procurement of Shearling in amount of fifteen million sq.ft., and by this market support, relieve the burden of the sheep growers, as well as ease the possibility of a radical disruption of the market. The sheep growers were to be informed by the Department of Agriculture of an expected decline in the demand for skins within and beyond the fiscal year, that they might arrange their activities accordingly. Teletype AMDMA-5A-687 dated 7 July 1943 expressed this understanding, as well as the fact that the Air Service Command had been accordingly advised.

3. After some delay the Purchase Authority coinciding with the above Program was received at the Materiel Command, and following the initial negotiations, the Procurement Division, Materiel Command communicated with the Procurement Branch, MMD, stating in effect that 88% of the 1944 fiscal year Shearling requirements were being placed with A. C. Lawrence Leather Company, Winslow Bros. & Smith, and J. Laskin & Sons. Also that the Inspection Branch had reported there were insufficient competent inspectors available to accomplish inspection at the tanneries to meet the rate of production. It was suggested as a remedy that the tanned skins be stored by the government, for inspection upon release from the storage, with a second inspection at clothing manufacturers plant, and that any rejections should be based on non-compliance with specifications. It was further pointed out that the storage should be adequate from the standpoint of protection against harmful temperatures, humidity and contamination. As protection to the government under this arrangement, it was further suggested that the tanners be requested to agree to a guarantee of one year from time of shipment of the skins, and that as further protection against rejections upon release from storage, that payment of from 3 to 10% be withheld. The Procurement Division was requested to include these recommendations in a teletype and ask for approval. This was done in PD-T-2400 dated 23 July 1943. AFDMA-5A-857 dated 26 July 1943 from the Procurement Branch, MMD, stated the above recommendations had its concurrence except modification of guarantee was recommended to be for the extent of 180 days, and that withholding of payment to tanners would be unnecessary in view of past record on replacement of rejections. Under date of 29 July 1943 PD-T-2432 was transmitted to the Procurement Branch, MMD, suggesting that the Air Service Command be suitably directed concerning conditions under which procurement was being effected, and that storage facilities be adequate from standpoint of temperature, humidity or other harmful elements, and that inspection be required at both point of storage and clothing manufacturer's plant.

4. Teletype PD-T-1772 transmitted to the Procurement Branch, MMD, 28 July, advised of the prices agreed upon with the three largest tanners, that the Navy might be informed. These prices are:-

Type 3/4" - 54¢ to 57¢, 1/2" - 51-1/2¢ to 52¢, 1/4" - 46-1/2¢ to 49-1/2¢

5. During the negotiation with the three largest tanners, an agreement to a guarantee of nine months from time of shipment to inspection at point of storage was reached, instead of six months recommended by the Procurement Branch, MMD, in teletype AFDMA-5A-857 dated 26 July 1943.

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Shea & Shearling
P.D. - 9/14/43

Before the final conclusion of the negotiations, J. Laskin & Sons requested that they be relieved of participation in the procurement of the eleven million sq.ft., of which they had been awarded one million sq.ft. Therefore the million sq.ft. originally awarded to J. Laskin & Sons was equally divided among Winslow Bros. & Smith and A. C. Lawrence Leather Company. J. Laskin & Sons finally decided they could not accept the one million additional sq.ft. for the reason that they had accepted 2,500,000 sq.ft. which applied to the Navy procurement of a total of four million sq.ft. herein referred to.

6. The remaining about 12% of the Shearling procurement not accounted for between A. C. Lawrence Leather Company and Winslow Bros. & Smith will be divided over approximately six small tanners.

7. During the entire negotiation this subject has been coordinated with and through the Inspection Branch, Clothing Laboratory, Production Engineering Section and the Air Service Command in respect to specifications, storage and acceptable tanneries.

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A REPORT OF A MEETING HELD IN GENERAL HOPKINS' OFFICE, AUG. 12, 1943, FOR PURPOSE OF DISCUSSING THE SHEARLING SITUATION

Representatives attending the meeting are listed below:

General Hopkins
General Chidlaw
General Whitten
Colonel Volandt
Colonel Benedict
Colonel Bonner
Colonel Silberberg
Major Schermerhorn
Lieutenant Baptist

Mr. Harold Connett (Asst. Director,)
(T.C.L. Div., WPB)

Mr. Leo Bonnard (Chief, Sheep Skin Unit)
(T.C.L. Div., WPB)

1. The meeting was precipitated by a communication from the Commanding General, Air Service Command indicating that a procurement of 11,000,000 square feet of raw sheep shearlings, now initiated, is unnecessary and would be treated as a surplus.

2. Background by Colonel Volandt: It was pointed out by Colonel Volandt that about two years ago the Army Air Forces were faced with a critical shortage of shearlings brought about by the submarine menace to foreign imports and an insufficient domestic production. The Army Air Forces, Navy and War Production Board, cognizant of this fact, called upon the Department of Agriculture to line up small slaughter houses and get their shearlings on the market, and also to launch a program designed to educate the farmer in correct treatment, etc., so that the greatest production of the best skins would result. Colonel Volandt stated that, since January, many conferences and communications have been had and requirements to extend current contracts were stated as being 30,000,000 square feet. (A teletype was also exhibited which stated: "- - - - - - -requirements now definitely stated to be 70,000,000 square feet for the 15 months period from April 1, 1943 to July 1, 1944.") It was stated that at a meeting on June 28, 1943, attended by Materiel, Maintenance and Distribution, Materiel Command and Air Service Command representatives, discussion was had of garment requirements and requirements were translated into terms of material - accord was reached at this meeting.

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3. In the approach to the problem, points brought out by direct questions and discussions are listed below:

a. Mr. Bonnard gave pertinent figures showing domestic production. Raw shearling production increased from normal of 2,000,000 — 2,500,000 to 5,200,000 skins in 1942 and in 1943 a potential production of from 5,500,000 to 5,750,000 was reached.

b. In answer to question raised as to impact on economic structure cancellation would have, Mr. Bonnard sketched effect on sheep growers through the various steps of the stimulating price factor and the sudden cessation or substantial reduction in the military demand. Mr. Bonnard estimated the potential difference in value of domestic raw skins for civilian use as compared to military use as being around 75 cents per skin because of the inclusion of a price incentive to the growers to encourage production for military use.

c. Mr. Bonnard quoted figures from a summary of tanners reports as of June 30, 1943, which showed unfilled Army Air Force contracts of some 24,750,000 square feet and raw stocks on hand and purchased by tanners of 4,750,000 skins which is equivalent to from 26,000,000 to 28,000,000 square feet. The amount of shearlings on hand or purchased exceeded the then contract requirements by from 2,000,000 to 4,000,000 square feet.

d. When asked about effect cancellation would now have on the tanners, Mr. Bonnard gave a rather back hand answer stating that the new procurement being placed (4,000,000 released to Navy and 11,000,000 for the Army Air Forces) would permit the tanners to taper down the inflated production capacity built up on the basis of military demands. Mr. Bonnard further stated that the tanners had already bought, on the anticipation and indication of a new procurement, approximately 50% of the skins required to satisfy the 15,000,000 figure, or possibly more since complete figures were not available at this time. Discussion followed as to amount that could be diverted and inquiry was made as to any special processing or treatment Army Air Force skins undergo, and if skins could be stored before specified Army Air Force treatment was effected and treatment later applied. (Information subsequent to meeting indicates that skins could be tanned and stored and later taken out of storage and "backed" for flying suit use. Backing limits commercial civilian use.)

e. Mr. Connett stated that the War Production Board held no brief for shearlings and the Board had never taken the attitude that the shearling production had to go on; and that at no time was there anything else other than notice required for termination and the orderly reduction of shearling production. Mr. Bonnard indicated that from January to March would have been the time to act and no problem would have arisen.

f. Discussion touching on possible liquidation now or later was explored. Mr. Bonnard made the point that the eventual civilian

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demand (forced out of the market for almost two years by the large military requirements) was now problematical and guessed that from 25 to 30 per cent of the skins might readily find their way into civilian use for coat linings and for furs - dependent on cost factor - although it was believed neither use could support the high cost produced by the large military demand. (Stimulation of civilian demand will depend upon promotion and price incentive.)

g. In answer to question as to whether the Army Air Forces large requirements had adversely affected other claimant agents, statement made by Mr. Bonnard was in the negative as the Army Air Force was practically the only agency interested in this commodity.

(At this point, General Hopkins, who was presiding over the meeting, left for another appointment and turned the meeting over to Generals Chidlaw and Whitten.)

h. Colonel Benedict felt that the 11,000,000 square feet would be required and that the Army Air Forces would not be out of the shearling market because of projected requirements and because of the possibility that the material for the new buoyant type flyers suit may not be available.

i. Reiteration by Mr. Bonnard followed, the gist of which was that a sudden cessation of the shearling program in July, 1943, at the heighth of the raw shearling season when tanners were amply covered in advance with raw stocks for existing contracts, would have caused serious loss to sheep growers, to producers of raw skins and to tanners, with consequent repercussions from all directions.

4. Conclusion: General Chidlaw and General Whitten decided that -

a. Procurement of the 11,000,000 square feet of shearlings would not be interrupted at the present time on the basis of the communication received from the Commanding General, Air Service Command under date of August 4, 1943, and

b. that a long memorandum would be prepared under the direction of Colonel Volandt with the idea of using the data prepared as a basis for answer to the Commanding General, Air Service Command and also to satisfy General Echols on the whole problem. (Investigation of requirements - possible other uses - Ground Forces, Navy, Maritime Commission, and civilian economy to be explored.)

Thomas G. Baptist, 1st Lt., A.C.
Recorder

Aug. 13, 1943

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C O P Y 3-7

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DBS/S4m 420
(13)

Backing Process of Shearlings.

Chief, Procurement Branch, Materiel Division
AC/AS, M. M. & D. Room 5 E 933 Pentagon Bldg.
Redistribution and Salvage Branch, Resources Div.,
AC/AS, M. M & D.

14 Aug. 1943

1

PHB-red-73812

1. Mr. Leo Bonnard, Chief of the Sheep Skin Unit, Textile, Clothing and Leather Division, War Production Board, has reported that the tanners of shearlings advised him that the backing process can be performed at any time and does not necessarily have to be done with the original tanning of the skin. He therefore, advised that the Army Air Forces, as a protection to themselves, should order the tanners to back only those skins which will be made up immediately into clothing. All other skins can be tanned unbacked and held for storage. If at a later time these are to be used for flight clothing they can always be backed. If on the other hand they are eventually declared excess to the Army Air Forces, they would be more saleable in the unbacked condition.

PAUL H. BONNER
Lt. Colonel, AC
Chief, Redistribution and Salvage Branch

TO: Redistribution and Salvage Branch, Resources Div.,
AC/AS, M. M & D.

DATE: 27 August 1943

FROM: AC/AS, M. M & D - Supply & Services Division

COMMENT NO. 2
HJS/abm/71775/AFDBS/4AE

1. Information given in above comment has been referred to the Air Service Command.

2. It is desired this office be furnished information regarding the following:

a. Length of time required by tanners to back skins after they have been held in storage.

b. Arrangements made with the tanners to back skins after they have been held in storage.

L. D. MORELAND
Lt. Colonel, Air Corps
Executive, Supply & Maintenance Branch

1.

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413.53 Spec'g & Clothing
Ans. R.Br, C.O.
ALM.O, WASH.

Winter clothing and shearling procurement, inventories and requirements through 30 June 1944 prep 15 Aug 1943

	Flyers (Jackets)	Flyers (Trousers)	Flyers (Shoes)	Flyers (Caps, Helmets)	Flyers (Buoyancy Suits)	Flyers (Alpine Suits)	Mechanics (Jackets)	Mechanics (Trousers)	Mechanics (Shoes)	(Total Shoes)	Shearling sq. ft. Flyers Type I	Shearling sq. ft. Mechanics Type I
On contract 1/1/43 - 8/15/43	643,249	611,611		617,660	50,000 [3]	57,612 [3]	538,148	539,450		1,307,111		
Delivered	533,133	509,785		617,660	-0-	-0-	522,124	524,046		1,179,891		
Undelivered	110,116	101,826		-0-	50,000	57,612	15,024	15,404		127,220	7,404,908	1,307,353
On hand other than A.S.C	177,961	170,916	____	177,359	____	____	131,554	132,554	____	411,024		
Graduates	176,846	170,546	(176,546)	176,546	-	-	131,554	132,554	(134,675)	411,301		
Organizations	1,098	1,553	(3,399)	30,114			20,634	20,748	(20,400)	63,701		
Land Lease	817	567		917			0	0		0		
Estimated losses (for replacement and re-issue)	33,018	30,945		30,600			19,600	19,843		69,486		
Total Issued	1,753,409											
Balance on hand A.S.C 8/15/43	134,158	126,524	____	125,556	____	____	93,543	94,621	____	294,163		
M.R.'s for operations pools & others	3,426	3,603		3,634	-	-	2,345	2,486		7,358		
M.R.'s for School pools	3,000	894		900	-	-	1,391	1,892		3,000		
Repairable at Central Depots	12,109	6,609		1,760	-	-	10,163	7,315		12,380		
Available for issue at all depots	115,341	115,419	____	119,262	-	-	79,644	83,928	____	271,243		
at Central Storage & Spec Depots	103,907	103,954		106,777	-	-	64,370	131,896		283,943		
at Sub-depots	79,434	71,740		12,485	-	-	28,193	60,596		133,600		
Total Available for Issue and undelivered balances on existing contracts	311,503	303,884		306,815	50,000	57,612	176,564	177,306		748,763		
Total Requirements 8/15/43 - 6/30/44	540,930	530,307	(236,299)	236,993	50,000 [3]	57,612 [3]	67,529	67,567	(67,448)	134,648		
Estimated requirement for issue 8/15/43-6/30/44	376,938	369,194	(56,035) [1]	256,358	50,000	57,612	32,400	32,464	(32,034)	104,830	(11,571,152)	(4,590,367)
Estimated requirement for inventory 6/30/44	163,992	161,113	(180,264)	180,635	-	-	34,129	35,103	(35,414)	30,818		
Additional Procurement required	189,501	189,403		207,158	-0-	-0-	118,964	119,901		381,994	15,360,944	10,380,631
without regard to existing contracts	98,106	96,003		163,503			107,436	96,764		356,903		
G.F.E. Shearing required through 6/30/44											11,769,410	10,569,965
G.F.E. Shearing on hand & undelivered											23,778,195	17,885,006
undelivered on existing contracts											13,600,000	10,900,000
on hand											8,178,195	6,985,006
A.S.C depots											5,665,524	4,403,566
Sub Mfrs											2,965,139	2,581,440
Over & above procurement of G.F.E. shearing without any inventory at 6/30/44											- 537,405	+ 4,679,041 = 10,300,855
											10,833,997	9,468,408

[1] on ADP (without [illegible] requirements)
[3] Special understrength in place of shearing suits

* Overprocurement

Confidential

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CA. Don
Sheep Shearling
KIS - 43(1)(3)(7)
Mat. Div
M.N.C., Wash.

Refer to Initials and No.

NAVY DEPARTMENT
BUREAU OF AERONAUTICS
WASHINGTON

Aer-PR-A1-MAH
L8(1)
JJ 27
JJ 3413
127121

16 AUG 1943

From: The Chief of the Bureau of Aeronautics.
To : Commanding General, Army Air Forces ATTENTION: Contract Section, Procurement Branch, [illegible], Pentagon Building, Arlington, Va.

Subject: Nylon and Shearling - Final accounting of materials used by Bureau of Aeronautics and request for reimbursement from the Army Air Forces for Unused Materials.

Reference:
(a) Buaer ltr. Aer-PR-A-LA, L8(1), JJ 27, JJ 3413, Serial 76703, dated 21 May 1943.

1. In reference (a), this Bureau furnished preliminary data on quantities of Government furnished nylon materials and sheep shearling to be used to the point of change over to the method of contractor furnished equipment.

2. Based on contract amendments and final reports received from the manufacturers, the Bureau's records indicate that the following Army Air Forces furnished materials were used up to the time when the Navy contracts for pilot's and winter flying suits were amended, pursuant to the procedure established in Aeronautical Board Case No. 274, dated May 18, 1943, to provide for contractor furnished materials to be used in lieu of materials furnished by the Army Air Forces:

NYLON

Requisition Aero-1[illegible]-Du-3
[illegible] Purchase Order #1858 of 23 Nov. 1942

Cloth,	Nylon	Ordered	45,[illegible]5,[illegible] yds	@ .49	
"	"	Used	[illegible], 67,-59 yds	@ .49	@ [illegible],185,82[illegible].50
Cor.,55[illegible]	Nylon	Ordered	84,675,[illegible] yds	@ .57	
"	"	Used	12,[illegible]4[illegible],870 yds	@ .57	@ 7[illegible],157.59

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Shearing Shearling
P.13 - 93 (1/1944)

Aer-PR-21-MAH
L8(1)
JJ 27
JJ 3413

Subject: Nylon and Shearling - Final accounting of materials used by Bureau of Aeronautics and request for reimbursement from the Army Air Forces for Unused Materials.

127121

Cord,100#	Nylon	Ordered	4,615,000 yds	@	$.018	
" "	"	Used	845,564 yds	@	$.018	$ 15,220.15
Tape,	Nylon	Ordered	11,435,000 yds	@	$.023	
"	"	Used	2,035,466 yds	@	$.023	$ 46,815.72
Thread,	Nylon	Ordered	177,500 lbs	@	$3.50	
"	"	Used	31,002 lbs	@	$3.50	$ 108,507.00

Total value of nylon used $ 3,265,783.96

Total Funds Transferred		$18,154,050.00
" " Used		3,265,783.96
Refund Due BuAero		$14,888,266.04

Shearling

Requisition Aero-350-Bu-43
S&A Purchase Order #09564 of 8 July 1942

Shearling,	1/4" pile	Ordered	193,875	sq. ft.	@ $.57	
"	" "	Used	56,774	sq. ft.	@ $.57	$ 32,361.18
Shearling,	1/2" pile	Ordered	6,074,750	sq. ft.	@ $.60	
"	" "	Used	1,778,903	sq. ft.	@ $.60	$ 1,067,341.80
Shearling,	3/4" pile	Ordered	2,455,750	sq. ft.	@ $.65	
"	" "	Used	717,131	sq. ft.	@ $.65	$ 467,435.15

Total value of shearling used $1,567,138.13

Total Funds Transferred		$ 5,351,590.25
" " Used		1,567,118.13
Refund Due BuAer		$ 3,784,472.12

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Aer-PR-21-MAR
L8(1)
JJ 27
JJ 3413

Subject: Nylon and Shearling - Final accounting of materials used by Bureau of Aeronautics and request for reimbursement from the Army Air Forces for Unused Materials.

127121

3. Information is requested as to when the Bureau of Aeronautics may expect to receive a refund in the amount of $14,688,266.04 under Purchase Order #01868 and $3,984,472.12 under Purchase Order #09564, a total refund under both Purchase Orders of $18,672,738.16.

4. It is understood that action has been initiated by the Army Air Forces to accomplish the return to the Army Air Forces from the Navy contractors of subject materials furnished in excess of the needs of the Navy.

F. C. BOCK
Comdr, U.S.N.
By direction Chief of Bureau

Copy to:
Commanding General, Army Air Forces,
Material Command
Wright Field, Dayton, Ohio.
Commanding General, Army Air Forces,
Air Service Command
Patterson Field, Ohio.
General Inspector of Naval Aircraft,
Central District, Dayton, Ohio.

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CARBON
Sheep Shearling
P.B - 9-11-3-37
Misc. Div
M.M.C., Wash.

AFTM-Ass&A
ACS/dmb

18 August 1943

MEMORANDUM FOR: ASSISTANT CHIEF OF AIR STAFF M. M. & D.

SUBJECT: Procurement of Sheep Shearling and Flying Clothing

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1. At a meeting held in the Office of the Chief, Resources Division, M. M. & D. 12 August 1943, it was concluded that procurement of 11,000,000 square feet of shearling would not be interrupted and that a memorandum would be prepared under the direction of the Chief, Procurement Branch, M. M. & D. to be used as a basis for reply to the attached letter from the Commanding General, Air Service Command, dated 4 August 1943.

2. As the result of careful review of the circumstances leading to the initiation of the above procurement the following is submitted in sequence concerning each statement in the attached letter:

a. It is not certain that current orders will meet complete requirements for the activation and maintenance of the 273 Group Program through calendar year 1943 due to certain increases in the program as now contemplated.

b. The development of new type clothing does not eliminate the future use of shearling, inasmuch as it was stated by representatives of the Air Service Command at a meeting held in the Office of the Chief, Procurement Branch, M. M. & D. 24 June 1943, there were new requirements for 200,000 mechanics suits to be issued during the calendar year 1944. It is still questionable whether arrangements could be made to produce all new type flying clothing in time to meet requirements in 1944, as the amount of albasa available at this time in South America, has not been determined and negotiation for the procurement of the first 50,000 albasa suits has not yet been consummated.

At the above 24 June 1943 meeting it was also stated by representatives of the Air Service Command that there were new requirements for more than 300,000 winter flying suits which they thought were to be procured as new type clothing. In view of commitments previously made with the War Production Board and Department of Agriculture, it was stated by the Chief, Procurement Branch, M. M. & D. that a directive would be issued by the Assistant Chief of Air Staff, M. M. & D. for the use of sheep shearling in 200,000 of the above winter flying suits, and that a start would be made toward the procurement of new type clothing by authorizing the remaining 100,000 suits known to be required, divided equally between new type albasa and buoyancy suits.

-1-

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Sheep Shearing
Flying Clothing

AFDSS-SA
ACS/dmb

18 August 1943

MEMORANDUM FOR: ASSISTANT CHIEF OF AIR STAFF, M. M. & D
SUBJECT: Procurement of Sheep Shearling and Flying Clothing

In accordance with the requirements as stated by representatives of the Air Service Command at the above meeting it would appear that a need for 300,000 winter flying suits and 200,000 mechanics suits exists and it has been determined that based on approximately 10,000,000 square feet of surplus shearling on hand as of 24 June 1943, as estimated by representatives of the Air Service Command at the above meeting, the procurement of 11,000,000 square feet of shearling will cover by a small margin of approximately 2,800,000 square feet the shearling requirements for the above 400,000 suits.

It is understood that new storage space for shearling has recently become available to the Air Service Command near Syracuse, New York, and arrangements for inspection over a a period of nine months have been consummated with the Tanners.

3. As definite requirements for winter clothing were presented by representatives of the Air Service Command at the meeting held 24 June 1943, outlined above, and as it had been determined that sheep shearling would be used notwithstanding other recommendations as to the type of material desired, procurement of additional sheep shearling and old and new type flying clothing and mechanics suits was directed by 3rd Indorsement Headquarters, Army Air Forces (reference AFDSS-dmA).

4. Notwithstanding recommendations as to the elimination of sheep shearling, the above directive was issued to cover additional requirements introduced by the Air Service Command over and above the equipment already procured for the 278 Program. The balance of paragraph four (4) cannot be commented on, as no figures are given as to the extent of clothing which might become obsolete. In this connection attention is invited to recommendation contained in paragraph six (6) B of Army Air Forces Equipment Board report, dated 31 May 1943, in which it is recommended that the present stock of flying clothing be issued to individuals for training in continental United States until the present supply is exhausted. Note also should be made of the length of time estimated for the consummation of the proposed procurement of alpaca suits and the difficulty of obtaining material for a larger quantity than the proposed procurement of buoyancy suits, in view of which it is questionable whether the new clothing will immediately make obsolete the present equipment.

5. The question whether a serious problem of disposition of discarded serviceable equipment might arise has been covered in the preceding paragraph. This problem will be considerably lessened by the storage of shearling now on order until required for use in the manufacture of winter

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AMC/-SA
AMC/mmb

1 August 1943

[redacted]: ARMY AIR FORCES, W. D. I
SUBJECT: Procurement of Sheep Shearling and Flying Clothing

clothing, the actual requirements can be more closely determined. In the event of the necessity of eventual disposal of part of the shearling now under order, Procurers of shearling have advised that the Army Air Forces, as a protection to themselves, should order the Procurers to head only those skins which will be made up immediately into clothing as they will be of a saleable in the unheaded condition. If at a later time these skins are to be used for winter clothing they can always be headed.

In considering the full implications of the flying clothing program as it applies to the procurement of 11,000,000 square feet of shearling, the length of time and other difficulties involved in changing over to new type clothing might well be cause for future concern and until the actual production schedule can be determined, the present procurement of shearling must be considered in the light of an insurance against possible shortages later on. This is especially the case since the sheep raisers have been advised by the Department of Agriculture to direct their efforts from now on to have lambs ready for the shearling program and it is understood the market will be reopened for civilian demands.

L. D. [redacted]
Brigadier General, U. S. A.
Chief, Material Division
Office, Assistant Chief of Air Staff
Material, Maintenance and Distribution

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S-5 (1/20/00)

171

Sheerling

S2-F:NBA:gjm

20 August 1943

Procurement of Sheep Shearling
A.F.P. 43696-A

Commanding General
Air Service Command
Patterson Field
Fairfield, Ohio
Att: Class 13

1. Subject Authority for purchase provided for the procurement of 11,000,000 sq. ft. of sheep shearling, which was to be purchased in the domestic market prior to September 30, 1943.

2. You are advised that contracts have been placed with the following companies:

Cont. 33-038 AC 114 - S. T. Lawrence Leather Co., Peabody, Mass.
33-038 AC 104 - Winslow Bros. & Smith, Norwood, Mass.
33-038 W-1591 - Berlin Tanning Co., Berlin, Wisc.
33-038 W-1592 - Anglo American Tanning Co., Sheboygan, Wisc.
33-038 W-1593 - Chicago Tanning Co., Chicago, Ill.
33-038 W-1594 - Weil & Eisendrath Co., Chicago, Ill.
33-038 W-1595 - Workman & Co., Philadelphia, Pa.
33-038 W-1596 - Master Industries Inc., St. Paul, Minn.

3. The above contracts and purchase orders will contain a paragraph as per copy attached hereto, which provides for a guarantee of shearling delivered and put in storage by the Army Air Forces. Your especial attention is called to this provision, as it is incumbent upon the Air Service Command to provide proper storage.

For the Commanding General:

A. E. JONES
Brig. General, U.S.A.
Chief, Procurement Division

Attach:
Art. 17, par. b.

cc:
Inspection Section
Materials Laboratory
Equipment Laboratory
Production Mng. Sec.

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MDAC-268-A-WF-12-22-41-500M

3-6

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Shearling file

INTER-OFFICE MEMORANDUM

WAR DEPARTMENT, AIR CORPS
Office, Assistant Chief [illegible] Command
Materiel Division

Wright Field, Dayton, Ohio
Date 24 August, 1943.

TO: Chief, Engineering Division,
Wright Field.
(Attention: Equipment Laboratory)

SUBJECT: Sheep Shearing Backing.

1. Production Division (Production Engineering Section) has been advised by Engineering Division (Materials Laboratory) that Winslow Bros. & Smith are furnishing a sheep shearling backing which will satisfactorily pass the laboratory low temperature requirements cited in Specification X-113-C, Amendment 2.

2. This Division suggests that Engineering Division (Equipment Laboratory) have a sufficient quantity of flying suits of various sizes made up of shearling backed with Winslow Bros. & Smith's current finish, and have these suits shipped to a station for test in actual service.

3. Production Division (Production Engineering Section) should be advised of the disposition of the suggestion offered in Paragraph 2.

S. V. [illegible],
Colonel, Air Corps,
Chief, Production
Engineering Section.

Signature

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c/o
Memphis Army Service Forces
Memphis, Tenn.

CONFIDENTIAL

WLU:jt

1st Ind. AFSCI-48

Headquarters Army Air Forces, [illegible], Control Office, Washington, D. C.

To: Commanding General, Air Service Command, Patterson Field, Fairfield, O.

Subject: Procurement of sheep shearling and winter AAF clothing

1. As requested in your communication, reconsideration has been given to the requirement for, use and disposition of, 11 million additional square feet of shearling, as well as for other shearling already on hand or undelivered against former contracts.

2. Based upon requirements estimated by Major Calhoun, Supply Division, Air Service Command, Tables 1 and 2 attached were prepared by this office.

3. As indicated by these tables, most of the 11,000,000 square feet of shearling in addition to the other available shearling, is needed for the clothing required for issue through June 30, 1944, and required to provide a three months' inventory on June 30, 1944, for depots and subdepots. After providing for such an inventory, there will be a net surplus of shearling of approximately 4 million square feet. These calculations for shearling take into consideration the 107,000 new type alpaca and buoyancy suits, procurement for which was recently begun.

4. In connection with your recommendations based on the possibility of making additional procurements of flyers' suits in the new type clothing, the principal obstacle is the short supply of raw materials necessary for the new type suits.

5. The difficulties encountered in procuring the down for the 50,000 buoyancy suits already being contracted for precludes any serious consideration being given at this time to the manufacture of any additional large number of buoyancy suits and to the consequent substitution of these suits for the shearling type in supplying requirements.

6. In the case of alpaca, there is a very limited quantity available at present. The War Production Board reports, however, that beginning in December, 1943, there will be a substantial quantity of alpaca wool available in Peru suitable for military use. In view of the fact that the wool must be transported to this country, woven into cloth, and then manufactured into clothing, a process which will at best require several months, it appears unsafe to depend on alpaca for the manufacture of flyers' suits for issue and inventory through June 30, 1944. In addition to the above problems, we are informed that there are some difficulties in procuring the necessary cotton-cloth backing for alpaca cloth which must be straightened out.

7. Steps are being taken to determine the quantities of alpaca cloth that can be made available from the new Peruvian crop mentioned above, and the time at which it will be available. You will be informed as to the

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1st Ind. (Continued)

HQ Army Air Forces, [illegible] Control Office, Washington, D. C.

To: Commanding General, Air Service Command, Patterson Field, Fairfield, O.

Subject: Procurement of sheep shearling and winter [illegible] clothing

findings in this connection, at which time you will be able to determine the quantities of alpaca clothing with which substitutions may be made for shearling clothing included in future requirements and for shearling clothing previously issued for which substitution is desirable.

8. The shortages of the new type materials and the fact that sheep shearling may not be readily available for additional procurements makes the disposal of your present shearling appear undesirable. This is especially the case since the sheep raisers have been advised by the Department of Agriculture to discontinue having lambs grown and shorn for the Army shearling program. Your present stocks (on hand and undelivered) should therefore be retained, in the form most easily disposed of (in the event that alpaca cloth can be made available in time to procure additional flyers' suits required by June 30, 1944. The shearling will of course have to be manufactured into suits as additional suits are required to maintain required inventory levels.

9. Tanners of shearling have advised that the Army Air Forces, as a protection to themselves, should order the tanners to back only those skins which will be made up immediately into clothing as they would be more salvable in the unbacked condition.

By Command of General ARNOLD:

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B-1 (1/3pp)

MDAC-266-A-WF-12-22-41-500M

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CRS:rew - 70-54.

INTER-OFFICE MEMORANDUM

WAR DEPARTMENT [redacted] Command
Office, Assistant Chief
Materiel Division

Wright Field, Dayton, Ohio
Date 8 September, 1943.

TO: Chief, Engineering Division,
Wright Field.
(Attention: Materials Laboratory)

SUBJECT: Sheep Shearling.

1. Attached is a sheet illustrating the sheep shearling status as of 24 August, 1943, which indicates that, upon completion of the present clothing contracts, there will be 10,853,950' of backed shearling on hand.

2. Recent Air Service Command Purchase Request 43696-A, dated 9 July, 1943, provides for the procurement of an additional 11,000,000' of shearling with backing.

3. Production Division, Production Engineering Section recommends that the 11,000,000' to be procured be furnished without backing for the following reasons:

a. An improved backing, over that presently used, is in the process of testing.

b. Backing can be applied to shearling at any time subsequent to delivery by the tanner, and need not necessarily be applied at the tannery.

c. Sufficient backed shearling is available for present requirements.

d. Unbacked shearling is more sleable in the event that the Army Air Forces should consider shearling excess material.

e. Unbacked shearling can be used for Air Forces requirements where the backing would prohibit its use.

S. L. BERTRAM,
Colonel, Air Corps,
Chief, Production
Engineering Section.

1 Incl.
Sheep Shearling status

Signature

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(BPP)

SHEARLING STATUS AS OF 6 AUGUST, 1943

Due from tanners on 1943 procurement	13,011,274
In A.A.F. Depots (according to Mrs. Crooks, Class 21, Air Service Command)	6,418,411
To be returned to Depots as overage from clothing manufacturers	603,325
	20,033,010
Required to complete present clothing contracts	3,179,080
	16,853,930

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COPY

ALPACA SITUATION

Requirements placed or being placed

Navy	1,200,000 yds	equals	1,200,000 lbs greasy alpaca
Airforce	516,000 yds	"	313,000 lbs " "
		Total	1,513,000 " " "

Possible requirements in 1944

Navy	1,200,000 yds	equals	1,200,000 lbs greasy alpaca
"	70,000 yds	"	70,000 " " "
Airforce	516,000 yds	"	313,000 " " "
			1,583,000

Based on Navy 8-24-43
Conversation " 8-30-43
Writer's allowance Airforce

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INVENTORY

Letter of June 17th showed) purchased and unsold)	1,922,000
purchased since then	577,000
Total	2,499,000
Census figures 6-26-43	2,610,000
purchased since most of	577,000
	3,187,000

At this time 6-26-43 some of census quantity still to be delivered against " last 2,000,000 order.

Thus there is on hand enough Alpaca to complete all present requirements and have a surplus of 986,000 lbs

Unsold inventory	2,499,000
Requirements	1,513,000
	986,000

There is enough Alpaca on hand to take care of present requirements, plus 1944 estimates, except for 597,000 lbs thus

Requirements	1,513,000
1944	1,583,000
	3,096,000
Inventory	2,499,000
	597,000

But there is more than 600,000 lbs still in Peru and licenses have been granted to bring all of this into this country. So it can be presumed that within 60 days we will have sufficient inventory to take care of 1943 and 1944 requirements

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There will be starting in December, 1943, 5,000,000 lbs more Alpaca sheared in Peru suitable for the armed services and possibly 1,000,000 more suitable for civilian work.

The dealers and manufacturers are now carrying 986,000 lbs of Alpaca for which there will be no orders placed until 1944 and perhaps not even then and of the Alpaca on hand, there is approximately 400,000 lbs too low for the Alpaca being required. This is due to the QM specifications allowing the use of

Skin
Huarizo
Callao
Llama
Seconds
Pieces

which were brought in for this purpose on the supposition that the Airforce and the Navy would use the same specifications. But now that the QM orders are over and the Airforce and the Navy have specified only certain grades of Alpaca, there are left some quantities of the above as well as low sorts made by the Top makers, and some fine white and light fawn held before October, 1942, which could not be used for the Alpaca Lining specified for the armed services.

Therefore, we recommend the freeing for civilian use, the following kinds of Alpaca now held in this country and unsuitable for the armed services:

Low sorts of Alpaca
Fine white sorts of Alpaca
Fine light fawn sorts of Alpaca

held by manufacturers before the freeze order of December 10, 1942

Huarizo
Callao
Llama
Seconds
Pieces

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B-1 (2/3pp)

AK:ak:90-M-3-3

5 September 1943

Chief, Production Division
Production Engineering Section
Aeronautical Equipment Branch
Dept. 70-52 (Attn: Capt. C. B. Smith)

Sheep Shearling

1. The following figures are approximately correct as of 24 August 1943.

Sheep Shearling due from Tanners on 1943 Procurement:

13,011,274 Sq.ft.

To be returned to Depots from Clothing Manufacturers as overage:

607,325 Sq.ft.

Required to complete present Clothing Contracts:

3,179,080 Sq.ft.

E.W. RAWLINGS
Colonel, Air Corps
Chief, Resources
Control Section

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Carbon
Sheep Shearling
PB-95
MAT. Div.
M.M.O, Wash.

WAR DEPARTMENT - ARMY AIR FORCE
Office, Asst. Chi of Air Staff, Materiel, Maintenance, and Distribution

Inter-Desk Memorandum

TO: Colonel Paul H. Penney Date 10 Sept. 1943

SUBJECT: Sheep Shearlings

1. Capt. Penman, reclamation Officer, Eastern Procurement District, called this office and advised that several contractors in their district had notified him of excess sheep shearlings they were now accumulating. One contractor, the H.L.B. Co. garment manufacturer reported that there was approximately 600,000 square feet on hand that they could not use due to the fact that the Army Air Forces contracts had run out and new contracts were now calling for alpaca, etc., instead of shearlings for flying suits. Capt. Penman wanted to know what to do with this excess shearling and if the Redistribution and Salvage Branch could handle this excess stock by negotiating a transfer to commercial users. Capt. Penman was advised that this shearling could not be handled as excess material until such time it was declared excess and until the Air Service Command presented the Materiel Command with definite shearling requirements, these shearlings could not be classified as excess. Capt. Smith advised Capt. Penman not to ship these shearlings back to Air Service Command ware houses but to let them remain where they are until Wright Field could be informed of this situation so that they could issue the proper instructions as to disposition. Capt. Penman was asked if any of the above mentioned shearlings could be rejects and he stated that they were not, however, his office had recently disposed of approximately 96,000 square feet of rejected shearling. These rejects occurred through improper storage by the Air Service Command and he had been informed that the shearling had been in storage from 8 to 14 months before transfer to the contractors.

2. Capt. Smith prior to the above conversation called Major Schwarzhorn regarding what action had been taken by his office to secure requirement figures on shearlings. Major Schwarzhorn stated that he was waiting for a report from the Air Service Command and that they were now working on these requirements but could not state when they could be released. Major Schwarzhorn also stated that an order had been issued to discontinue the backing processes these shearlings until such time as requirements called for them.

3. Capt. Smith called Capt. Cashbrell, Wright Field and reviewed the situation concerning the 600,000# of shearling at H.L.B. Co. and Capt. Cashbrell stated that Air Service Command wanted these shearlings shipped to Air Service Command Depot at Pauline, Kansas. Capt. Cashbrell said that a directive is being issued today authorizing this shipment.

From [illegible]

THIS FORM WILL NOT BE USED OUTSIDE THE AC/AS, [illegible]

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Table 1

Winter Clothing Requirements 1/

	Not requiring shearling	Requiring Type I Shearling			Requiring Type II Shearling
	Flyer's Suits		Caps & Helmets	Shoes	Mechanics Suits
	Hav types	Shearling types			
On Hand - A. A. C.	-0-	214,000	387,000	722,000	215,000
Undel'd existing contracts	107,000	118,200	0	27,000	45,000
Total	107,000	332,200	387,000	749,000	260,000
		439,700			
Total required for issue to 6/30/44	477,700		550,000	804,000	380,000
Add'l procurement req'd For issue - 6/30/44	37,800		163,000	275,000	130,000
Add'l procurement reqld for 3 months inventory as of 6/30/44	154,000		184,000	307,000	80,000
Total Add'l procurement req'd for issue to & inventory as of 6/30/44	191,800		347,000	582,000	210,000

1/ All figures for suits are rounded. Inventories and requirements for trousers differ slightly for those for jackets. Exact figures for each are given in attached Exhibit I.

2/ Alpaca and Buoyance (down) suits.

Analysis and Reports
Control Office, MM&D
September 10, 1943

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Type I Sheep Shearing Requirements
(square feet)

	Sq. Ft. For Flyers' suits	Type I shearling For accessories	Total	Type II	Total I & II
On hand A.A.F.			5,662,856	1,423,866	7,086,722
On hand suit manufacturers			2,965,339	1,124,140	4,089,479
On hand total			8,628,195	2,548,006	11,176,201
Undel'd existing contracts			11,000,000	14,980,000	28,560,000
Total	18,487,919 1/	3,740,276 2/	22,226,195	17,448,006	39,676,201 3/
Req'd to complete existing clothing contracts	7,268,808	136,100	7,404,908	2,307,354	9,712,262
Remainder available for add'l procurement	11,219,111 3/	3,604,176	14,823,287	15,140,652	29,963,939
Add'l procurement req'd for issue - 6/30/44	2,288,154	1,701,186	3,989,340	5,672,244	9,661,584
Remainder available without providing inventory	8,930,957	1,902,990	10,833,947	9,468,408	20,302,355
Add'l procurement req'd for 3 mo. inventory as of 6/30/44	9,468,162	1,902,990	11,371,152	4,590,387	15,961,539
Remainder available after all Add'l procurement	537,205*	- 0 -	537,205*	4,878,021	4,340,816

1/ Type I shearling available for flyers' suits is estimated by subtracting requirements of Type I shearling for accessories from total Type I shearling available.
2/ Includes the 11,000,000 sq. ft. recently contracted for.
3/ Type I excess if all new procurements of flyers' suits are of new type.

* Shortage.

Analysis and Reports
Control Office, M&D
10 September 1943

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AN-S-35
16 September 1943

ARMY-NAVY AERONAUTICAL SPECIFICATION
SHEARLING; SHEEP

This specification was approved on the above date by joint action of the War and Navy Departments for use in the procurement of aeronautical supplies and shall become effective not later than 16 March 1944. It may be put into effect, however, at any earlier date after promulgation.

A. APPLICABLE SPECIFICATIONS.

A-1. The following specifications of the issue in effect on date of invitation for bids shall form a part of this specification.

A-1a. AN Aeronautical Specifications.-

AN-VV-F-756	Fuel; Aircraft-Engine, Grade 65.
AN-O-6	Oil; General Purpose, Low Temperature, Lubricating.

A-1b. Federal Specification.-

CCC-T-191	Textiles; General Specifications, Test Methods.

A-1c. Other Government Specifications.-

100-14 (39P16)	Packaging and Packing for Overseas Shipment; Army-Navy General Specification for.

A-2. Special requirements of the individual Departments of the Government are noted under section H.

B. TYPES, GRADES, CLASSES, AND FINISHES.

B-1. This specification covers sheep skins of the following types, grades, classes, and finishes:

Type I	Electrified
Type II	Leveled
Type III	Weatherproof
Grade A	Flying Suit Grade
Grade B	Mechanics Suit Grade
Grade C	Boot Grade

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Class A	50's Grade wool fiber
Class B	58's Grade wool fiber
Class C	64's Grade wool fiber
Finish 1	Tanned and buffed finish
Finish 2	Plastic resin base finish on the flesh side.

C. MATERIAL AND WORKMANSHIP.

C-1. Material.- The skins used for this material shall be wool skins, Packer's Take-off, or equivalent quality. The quality of the wool shall be not lower than that specified and shall be in accordance with the official standards for grades of wool top as issued by the U. S. Department of Agriculture.

C-1a. Unless otherwise specified by the Procuring Agency, Type I and Type II skins shall be furnished in Class A.

C-2. Workmanship.- The workmanship shall be in accordance with high grade commercial practice and the finished skins shall be free from grain cracks, loose open wool, bony necks, greasy leather, open ribs, and other defects which may affect appearance or serviceability, or substantially increase the cutting losses.

D. GENERAL REQUIREMENTS.

D-1. Shape and Trim.-

D-1a. The desired shape and allowable trim of the finished skin shall be in accordance with Figure 1. Necks, flanks, and butts are to be trimmed when the finished fiber does not extend to the edge, or when wool density of skin defects affect the quality of the finished skin. The skins shall be so trimmed as to avoid unreasonable cutting losses.

D-1b. The footage allowance for all grades shall be in accordance with standard commercial practice for this class of goods.

D-2. Tannage.- The skins shall be properly and fully tanned with a suitable tannage to conform to the requirements of this specification.

D-3. Leather.- The flesh side of the skin shall be uniformly buffed to produce an even suede surface. The leather before proofing shall be uncolored except for the color which may be absorbed in tanning the skin and in dyeing the wool.

D-3a. Acidity.- The pH value of the tanned, sheared leather shall be not less than 3.0.

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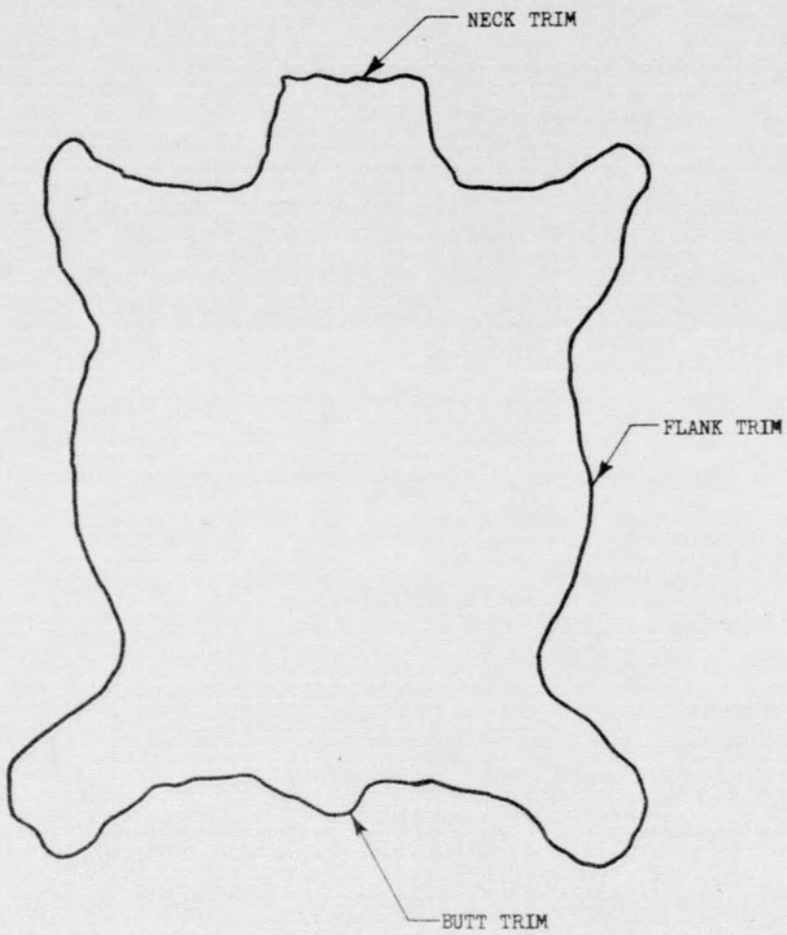

Figure 1. Desired Shape of Finished Skin

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D-4. Wool.- The fiber length of the wool shall be 1/4 inch, 3/8 inch, 1/2 inch, 5/8 inch, 3/4 inch or 1 inch, all ±1/16 inch, as specified, and the pile shall be uniform throughout the skin.

D-4a. Color.- The color of the wool shall be cream in accordance with the approved sample. The wool fiber shall be uniformly and evenly dyed with a fast color dye which shall show no signs of crocking or color transfer when rubbed with a wet or dry cloth.

D-5. Physical Properties.-

D-5a. Tensile Strength.- Tensile strength shall be not less than 1000 pounds per square inch in the backbone to belly direction.

D-5b. Seam Strength.- The breaking strength of seams shall be not less than 50 percent of the breaking strength of the leather.

D-5c. Low Temperature Flexibility.- Low temperature flexibility shall be not less than that of the approved sample.

D-5d. Grease Content.- The skins, before proofing, shall contain not more than 20 percent nor less than 10 percent by weight of material soluable in carbontetrachloride.

D-5e. Weight.- The weight of unproofed skins shall be as shown in Table I.

TABLE I
Weight of Unproofed Skins

Fiber Length	Maximum Average Weight per Dozen Skins	Maximum Weight of Single Skin
Inch	Oz. per Square foot	Oz. per Square foot
1/4 to 3/8	3.50	4.00
1/2 to 3/4	4.25	5.00
1	5.00	5.50

D-5f. Curl.- The finished skins shall not curl or be appreciably affected when subjected to the curling test.

D-5g. Pliability.- The finished skins shall be soft and flexible and when subjected to test for pliability shall at least be equal to the approved sample tested under the same conditions.

D-6. Dimensions.- Unless otherwise specified herein, the cuttable area of each skin shall be not less than five square feet.

D-7. Marking.- Each skin shall be legibly marked or stamped on a bare spot near one edge of the wool sides to show the number of square feet of the skin minus allowances. No other marking shall be permitted.

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E. DETAIL REQUIREMENTS.

E-1. Skin Grading.-

E-1a. Grade A Skins.- Grade A skins shall be suitable for cutting into large patterns, and shall have not less than 5 square feet of cuttable area. Minor defects, such as slight imperfections in the leather and wool, which do not constitute either a hole or an obvious bare spot are permitted. Defects within 1-1/2 inches from the edge may be permitted, provided that such defects are not more than three per skin, and provided furthermore, that they are not close together, that is, within five inches of each other so as to call for removal by trimming. No allowances will be required for these three defects.

E-1a(1). Fifty percent of the Grade A skins on any order may contain up to three bare spots not to exceed 1-1/2 inches in diameter, provided that the spots occur within eight inches of the edge of the skin. Twenty percent of the above fifty percent may contain one or two holes not to exceed 1-1/2 inches in diameter, provided that the holes occur within eight inches from the edge of the skin. An allowance shall be made by the manufacturer for the loss in cutting due to the presence of these bare spots and holes.

E-1a(2). Skins shall be repaired to eliminate grain cracks or other damage by the process known as serging. There will be not more than three seams in a Grade A skin, not more than one of which shall extend from edge to edge. Skins with one brand mark, hard spot, hole, or bald spot, so located in the skin that it will not interfere with patterning and which constitutes the only defect in the skin, and of not more than four inches in diameter, can be classed as a Grade A skin, and will not be repaired. Serging shall be accomplished by fur seaming on an over-stitch machine, and the finished seam shall lie flat and shall not interfere with patterning or cutting. Not more than one-third of the total delivery of the Grade A skins shall be repaired skins.

E-1b. Grade B Skins.- Grade B skins shall conform to the Grade A skins with the following exceptions:

1. Each skin may have four seams, only one of which shall extend from edge to edge.

2. Serged skins in the amount of 50 percent are allowable in any delivery.

3. Under this classification, ten percent of any delivery may consist of skins of not less than four square feet of cuttable area.

E-1c. Grade C Skins.- Grade C skins shall be any skin having an area large enough to permit cutting to boot patterns and of not less than four square feet of cuttable area.

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E-2. Wool Finish.-

E-2a. Type I.- The wool fiber shall be lustered and sheared to a finish commercially known as electrified. The finish shall produce a clean fiber, free from foreign matter, and the degree and depth of finish on the fiber shall be uniform and shall extend to a minimum depth of 80 percent of the total pile length.

E-2b. Type II.- The wool fiber shall be in its original unstraightened condition and clipped or sheared to a uniform height all over the skin, as specified. This condition is commercially known as leveled.

E-2c. Type III.- The wool fiber shall be chemically treated and processed to produce a weatherproof finish. The wool fibers shall show no shortening, dulling or kinking or change in surface appearance when subjected to test for weatherproofness.

E-3. Flesh Side Finish.-

E-3a. Finish 1.- The flesh side of the skin shall be uniformly buffed to produce a smooth suede finish.

E-3b. Finish 2.- Unless otherwise specified,the flesh side of the skins shall be coated with a resin base plastic, with brown pigment incorporated, to seal the pores and give the same appearence as the approved sample.

E-3b(1). Accelerated Aging.- When subjected to the accelerated aging test, there shall be no indication of cracking or flaking of the finishing material.

E-3b(2). Resistance to Water, Gasoline and Oil.- The proofed skin shall show good resistance to water, gasoline and oil.

E-3b(3). Low Temperature.- When exposed to a temperature of minus 54°C. (-65°F.) the coating shall not crack when the skin is bent back on itself 180° or when it is pulled by hand at an approximate loading of 5 pounds per inch in the same plane.

E-3b(4). Tackiness of Finish.- When subjected to the test for tackiness of finish there shall be no sign of the finish adhering to itself or of any disturbance of the integrity of the coating.

E-3b(5). Color.- The color of the finish shall match an approved sample and shall be fast to wet and dry crocking.

E-3b(6). Application.- The finish may be applied by any method which will produce a coating which meets the requirements of this specification and is acceptable to the Procuring Agency.

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F. METHODS OF SAMPLING, INSPECTION, AND TESTS.

F-1. Classification.- The inspection and testing of the skins shall be classified as follows:

(A) Qualification Tests.- Qualification tests are made on samples submitted for qualification as a product satisfactory to the Procuring Agency.

(B) Inspection Tests.- Inspection tests are made on material submitted for acceptance under contract.

F-1a. Qualification Tests.-

F-1a(1). Tests of the skins will be conducted by the Army Air Forces, Materiel Command, Wright Field, Dayton, Ohio.

F-1a(2). The qualification tests shall consist of all tests of this specification.

F-1b. Inspection Tests.-

F-1b(1). When inspection is conducted at the contractor's plant, the tests specified herein shall be accomplished under the supervision of the Inspector.

F-1b(2). Contractors not having laboratory facilities satisfactory to the Inspector shall engage the services of a commercial testing laboratory acceptable to the Inspector.

F-1b(3). Acceptance or approval of material during course of manufacture shall in no case be construed as a guaranty of the acceptance of the finished product.

F-2. Reports of Tests.- The contractor shall furnish test reports, in duplicate, certified by affidavit, showing quantitative results for all tests and analyses required by this specification and signed by the Director, or his authorized assistant, of the laboratory in which the tests were conducted. When inspection is conducted at the contractor's plant, these reports shall be furnished to the Inspector.

F-2a. Examination of Product.- Each skin shall be carefully examined to determine conformance with this specification with respect to Dimensions, Material and Workmanship.

F-3. Sampling.-

F-3a. Qualification Test Samples.- The qualification test samples shall consist of four skins of each type, grade, class, and finish to be manufactured. Except when samples are submitted for skins with Finish 1, two of the skins shall be unbacked and two finished with the

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approved resin base plastic. Samples shall be forwarded to the Army Air Forces, Materiel Command, Wright Field, Dayton, Ohio, plainly identified by securely attached durable tags marked with the following information:

"Sample for Qualification Test"
"SHEARLING; SHEEP"
Type, Grade, Class, and Finish
Name of manufacturer
"Submitted by (name)(date) for qualification test in accordance with the requirements of Specification AN-S-35 under authorization (reference authorizing letter)"

F-3b. Inspection Test Samples.- Not less than six skins representative of the quantity on order shall be selected at random for the tests specified herein.

F-3b(1). Samples shall be in addition to the quantity specified in the contract or order, and shall be furnished without increasing the cost of the contract to the Procuring Agency.

F-4. Laboratory Conditions.- The temperature of the laboratory shall be maintained at 21.1 ±1.1°C. (70 ±2°F.) and the relative humidity shall be held at 65 percent plus or minus 5 percent.

F-5. Rejection and Retest.- Failure of any skin to conform to any one of the requirements of this specification shall be cause for rejection of the lot represented. Skins which have been rejected may be reworked or replaced to correct the defects and resubmitted for acceptance. Before resubmitting, full particulars concerning previous rejection and the action taken to correct the defects found in the original shall be furnished the Inspector. Skins rejected after retest shall not be resubmitted without the specific approval of the Procuring Agency.

F-6. Test Methods.-

F-6a. Acidity.- A specimen of unbacked leather shall be sheared and 10 grams ±0.001 grams of the specimen placed in a Soxhlet extractor. One hundred milliliters of distilled water shall be placed in the flask and extraction carried on for a period of two hours. The extract shall then be diluted with recently boiled distilled water to a volume of 250 milliliters and the pH value determined with a glass electrode.

F-6b. Tensile Strength.-

F-6b(1). Five specimens 6 inches by one inch shall be taken, the long dimension in the backbone to belly direction.

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F-6b(2). The specimen shall be placed in a suitable tensile strength testing machine and broken. The breaking load shall be noted and the strength of the specimen in pounds per square inch computed. The average of all five specimens will be used.

F-6c. Seam Strength.-

F-6c(1). Five 6 by 6 inch specimens are taken across a seam, so that the seam is approximately centered on the specimen, and 5 specimens adjacent to the seam and in the same direction as the seam test specimen.

F-6c(2). All 10 specimens shall be tested in accordance with the grab breaking method in Specification CCC-T-191 and the strength of the seamed specimens computed as a percentage of the strength of the unseamed specimens.

F-6d. Grease Content.- Extract the grease from an accurately weighed sample of sheared skin by boiling for four hours in commercial carbontetrachloride, using a reflux condenser. Condition and reweigh and calculate the loss as a percentage of the original weight of the shearling as received.

F-6e. Curl.- This test shall be accomplished on an unbacked skin from which samples of leather two inches square shall be cut and the wool sheared off in a suitable manner so the skin is not damaged, after which the specimens shall be placed in a beaker containing approximately 400 milliliters of distilled water. The water shall be heated to a temperature of 65 $\pm$1.1°C. (149 $\pm$2°F.) and the prepared specimen immersed for three minutes. The sample is then removed and air dried at room temperature.

F-6f. Pliability.- A small sample of the shearling, approximately four inches square, shall be immersed for 30 seconds in distilled water at a temperature of 65.6°C. (150°F.), removed and permitted to air dry after shaking out the excess water.

F-6g. Weatherproofness.- Sprinkle water at room temperature on the wool side of the shearling under test. Allow drops to remain for 15 minutes and then shake sample to remove the excess water and allow to dry thoroughly until there is no feeling of dampness apparent to the touch. The drying time shall not be less than 5 hours in still air nor less than 1 hour in circulating air under normal atmosphere conditions.

F-6h. Accelerated Aging.- A sample shall be exposed for a period of 80 hours to an accelerated weather unit with sunshine carbons and a corex D filter at an approximate temperature of 57.2°C. (135°F.). No water shall be used.

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F-6i. Water Resistance.- Prepare a bag from a portion of the skin with the wool outside, and pour approximately one liter of water in the pocket created. The backing shall not be affected after contact with the water for a period of one hour.

F-6j. Gasoline Resistance.- Spot the proofed back of the skin with several drops of gasoline conforming to Specification AN-VV-F-756. There shall be only a very slow penetration of the fluid, and after the fluid is removed either by wiping or evaporation, there shall be no discoloration of the backing.

F-6k. Oil Resistance.- Spot the proofed back of the skin with several drops of lubricating oil conforming to Specification AN-O-6 and allow to remain for four hours. There shall be no evidence of penetration or discoloration after the oil is removed from the surface.

F-6m. Low Temperature.- The skin shall be exposed to a temperature of -54°C. (65°F.) for a period of 24 hours.

F-6n. Tackiness of Finish.- A finished skin shall be folded upon itself back to back and loaded to approximately 10 pounds per square foot, and subjected to a temperature of 70°C. (158°F.) for 48 hours.

G. PACKAGING, PACKING, AND MARKING FOR SHIPMENT.

G-1. General.- The packaging, packing, and marking requirements specified herein apply only to direct purchases by the Government.

G-2. Interior Packaging.- The skins shall be bundled and wrapped in accordance with standard commercial practice. Individual bundles shall contain skins of a single type, grade, class, and finish.

G-3. Exterior Packing.- Unless otherwise specified, all items shall be packed for domestic shipment. Each shipping container, insofar as possible, shall contain the identical number of articles, shall be of a uniform size and shall be designed to enclose the contents in a snug, tight fitting manner. The gross weight of the exterior shipping container when packed for shipment shall not exceed approximately 200 pounds.

G-3a. Domestic Shipment.- Unless otherwise specified, for domestic shipment, interior packages shall be packed in substantial commercial exterior shipping containers so constructed as to insure acceptance by common or other carrier for safe transportation, at the lowest rate, to the point of delivery. Except as specified herein, the container shall conform to the requirements of Consolidated Freight Classification Rules in effect at the time of shipment, except that the use of corrugated or solid fiberboard having a minimum Mullen Test of less than 200 pounds is prohibited. Containers shall be able to withstand storage, rehandling, and reshipment without the necessity of repacking.

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G-3b. Export Shipment.- Unless otherwise specified, for export shipment, the interior packages shall be packed in exterior shipping containers in accordance with Specification 100-14 (39P16).

G-4. Marking.-

G-4a. Interior Packages.- Each interior package shall be durably and legibly marked with the following information:

"SHEARLING; SHEEP"
Specification AN-S-35
Type, Grade, Class, and Finish
Quantity of skins contained and total square feet minus allowances.
Name of contractor (and name of manufacturer if not the same)
Government order number (or contract number if order number is not assigned)

H. REQUIREMENTS APPLICABLE TO INDIVIDUAL DEPARTMENTS.

H-1. The following departmental specifications of the issue in effect on date of invitation for bids shall form a part of this specification, applicable to purchases by the agency indicated.

H-1a. Army.- U. S. Army Specification 94-40645, Marking; Shipment (Domestic and Export). Copies of U. S. Army specifications may be obtained upon application to the Army Air Forces, Material Command, Wright Field, Dayton, Ohio.

H-1b. Navy.- Navy Shipment Marking Handbook. Copies of this handbook may be obtained upon application to the Bureau of Supplies and Accounts, Navy Department, Washington, D. C.

I. NOTES.

I-1. Use.- The shearling covered by this specification is intended for the following uses: Grade A, flying suits; Grade B, mechanics suits; and Grade C, boots and like items.

I-2. Approved Samples.- Approved samples shall consist of samples taken from the skins submitted by the manufacturer for Qualification tests and found satisfactory. Samples will be divided into three groups, those retained by the Procuring Agency for use in inspection, those returned to the manufacturer, and those bonded for use in case of dispute.

I-3. This specification supersedes the currect issue of U. S. Army Specification No. 8-113, and Navy Aeronautical Specification M379 for Army and Navy aeronautical use.

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I-4. Ordering Data.- Requisitions, contracts, and orders should state type, grade, class, finish, and pile length.

I-5. Resin Base Plastic Finish.- Formulas of the resin base plastic finish, which have proven satisfactory for skins of Finish 2 may be obtained from the Army Air Forces, Materiel Command, Wright Field, Dayton, Ohio.

I-6. Qualification Tests.- The right is reserved to reject any bids on skins which have not been subjected to the required tests and found satisfactory. The attention of manufacturers is called to this provision, and they are urged to request authorization for tests of the skins which they propose to offer to the Army or Navy under this specification. Requests for authorization of tests, and for information as to the test fees involved, should be addressed to the Army Air Forces, Materiel Command, Wright Field, Dayton, Ohio. It is to be understood that the manufacturer shall pay all transportation charges to and from the point where tests are made. In the case of failure of the sample or samples submitted, consideration will be given to the request of the manufacturer for additional tests only after it has been clearly shown that changes have been made in the product which the Government considers sufficient to warrant additional tests.

I-7. Specifications.- When requesting specifications, refer to both title and number.

I-7a. Copies of this specification and other Army-Navy Aeronautical specifications may be obtained upon application to either the Army Air Forces, Materiel Command, Wright Field, Dayton, Ohio, or to the Bureau of Aeronautics, Navy Department, Washington, D. C. Naval activities should make application to the Manager, Naval Aircraft Factory, U. S. Navy Yard, Philadelphia, Pa.

I-7b. Federal Specification CCC-T-191 may be obtained upon application, accompanied by money order or coupon, or cash, to the Superintendent of Documents, Government Printing Office, Washington, D. C.

NOTICE: When Government drawings, specifications, or other data are used for any purpose other than in connection with a definitely related Government procurement operation, the United States Government thereby incurs no responsibility nor any obligation whatsoever; and the fact that the Government may have formulated, furnished, or in any way supplied the said drawings, specifications, or other data is not to be regarded by implication or otherwise as in any manner licensing the holder or any other person or corporation, or conveying any rights or permission to manufacture, use or sell any patented invention that may in any way be related thereto.

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AN-S-35
AMENDMENT-1
4 November 1943

ARMY-NAVY AERONAUTICAL SPECIFICATION
SHEARLING; SHEEP

This amendment, approved on the above date by joint action of the War and Navy Departments, forms a part of and should be attached to AN Aeronautical Specification AN-S-35, dated 16 September 1943. It shall become effective immediately upon issue.

Paragraph A-1b. Amended by addition of the following:

"O-E-751 Ether; Petroleum"

Paragraph D-5d. Amended by deleting the word "carbontetrachloride" in the last line and inserting "petroleum ether in accordance with Specification O-E-751".

Paragraph F-6d: Amended by deleting the words "commercial carbontetrachloride" in the first sentence and inserting "petroleum ether in accordance with Specification O-E-751".

Paragraph G-4b: Add new paragraph to read as follows:

"G-4b. Exterior Shipping Containers.- Each exterior shipping container shall be marked as specified in section H."

Paragraph I-7b: Amended by deletion, in the first line, of "Specification CCC-T-191" and insertion of "specifications".

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OFFICE OF WAR INFORMATION
WAR PRODUCTION BOARD

WPB-4272-c

For Immediate Release
Tuesday, September 21, 1943

All restrictions on the purchase and processing of shearlings were removed today by the War Production Board as a result of the reduced demand of the Army Air Forces for the sheepskin materials used in manufacture of flying suits.

The previous requirement that sale of shearlings be limited to the Army Air Forces is revoked. This means that future production in excess of military contracts will be freed for distribution to the civilian market. Normally, shearlings are used primarily as linings for winter clothing and in the manufacture of imitation furs. Practically the entire output had been reserved for military use for almost two years.

However, the present operating plan for the importation of foreign raw shearlings will continue without change until such time as the raw material supply for presently placed military contracts is fully covered. Officials said it may become possible within a few weeks to announce a more liberal plan and to resume recommendation of applications to import shearlings.

Shearling tanners must continue to file PD-421 (now number WPB-894) forms with WPB.

By the same action (amendment of Order M-310--Hides, Skins, and Leather), WPB narrowed the types of vegetable tanned cattlehide leather under 3½ ounces exempt from restrictions of the order. Henceforth the grain and middle split of such types of leather are subject to the provision that prohibits their use in any product except for military orders or in accordance with Schedule A of the order. Only flesh splits of vegetable tanned cattlehide leather under 3½ ounces, and cattlehide, calfskin or kip leather scrap are exempt.

Officials stressed the importance of hunters directing into war production as large a part as possible of deerskins taken by them, even though the amended order now permits hunters to have deerskins taken by them processed for their own personal use or for gifts. It also was emphasized that all deerskins--unless used for personal or gift purposes--remain subject to the requirement that they be sold for military purposes.

At the same time, the officials expressed their appreciation to hunters who have aided the war effort by making deerskins available for military use, and said they were confident that large numbers of skins will continue to be directed to channels which will process them for military purposes. Deerskins, because of the special insulating qualities, are now being used by the Army for cold climate clothing.

Other changes in the order are:

1. All vegetable tanned sole leather must now be processed to meet Federal specifications. This is intended to prevent processing of inferior quality leather and should result in good-quality leather being made for military and civilian needs.

2. The order incorporates two provisions to prevent cutting of bellies and shoulders in sizes so small as to be uneconomical.

3. A definition of "cattlehide, calfskin or kip leather" is incorporated into the order.

(over)

X-20716

File - Shearlings (leather)

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4. Added to Schedule A of the order--which specifies permitted civilian products which may be made from specified leathers--are rawhide hammers and hammer faces, certain functional leather parts of luggage and functional parts of musical instruments. Cattlehide leather can be used for the first two; both cattlehide and goatskin leather are permitted for the last. Material used for luggage must be in conformance with provisions of Order L-284 (luggage).

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Memo - Sheep Shearing
from D. C.O. - 11/1/43

HEADQUARTERS ARMY AIR FORCES CONFIDENTIAL

ROUTING AND RECORD SHEET

TALLY NO.	
FILE NO.	

SUBJECT: Excessive Supplies and Procurement of Sheep Shearling for Flying Clothing

TO: Chief of the Air Staff

DATE 24 Sept 1943

FROM: The Air Inspector

COMMENT NO. 1

AKB/rn 74564

1. The Commanding General, Army Air Forces, recently directed the Air Inspector to make an inspection of the Air Service Command. More recently, the Deputy Chief of Air Staff directed an inspection of the Clothing Branch, Equipment Laboratory, Materiel Command. Both inspections have revealed what appears to be a program for procurement of sheep shearling in quantities considerably in excess of expected requirements.

2. During the course of the inspection of Air Service Command, it was observed that stocks of sheep shearling appeared to be considerably in excess of requirements. It was also disclosed that procurement of large additional quantities of sheep shearling is still being undertaken although requirements are expected to decrease rather than increase.

3. Brig. Gen. L. P. Whitten, Supply & Services Division, MMAD, was interviewed by an investigating officer, Office of the Air Inspector, regarding the directive which was recently issued by him to Air Service Command directing procurement this year of an additional 11,000,000 square feet of shearling. General Whitten stated that this procurement is necessary at this time for three reasons:

a. Arrangements were made months ago by the Army Air Forces with the Department of Agriculture and the War Production Board under the terms of which it was agreed that shearling of a certain quality and quantity would be made available to the Army Air Forces. It was stated that there is therefore a moral obligation on the part of the Army Air Forces to purchase this material even if it is not now fully required.

b. It was pointed out by General Whitten that the shearling market would be adversely affected if this material were dumped on the market at this time.

c. It was also stated that some of this shearling would be employed in the manufacture of flying clothing and that material now on hand or under procurement which will not be so employed will be stored for future disposition.

4. During the inspection of the Clothing Branch, Equipment Laboratory, Materiel Command, it was learned that shearling flying clothing is not satisfactory and that it would not continue to be manufactured for Army Air Forces use if it were not necessary to use the shearling now on hand or under procurement. Shearling flying clothing has not proved satisfactory and experience with it has proven it to be impracticable.

(cont'd)

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Memo: Sheep Shearling Flying Clothing - 8/27/43

HEADQUARTERS ARMY AIR FORCES

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ROUTING AND RECORD SHEET

TALLY NO.	
FILE NO.	

SUBJECT: Excessive Supplies and Procurement of Sheep Shearling for Flying Clothing

TO: CONT'D
Chief of the Air Staff

DATE 24 Sept 1943

FROM: The Air Inspector

COMMENT NO. 1
CAB/rn 74364

5. In view of the fact that shearling supplies now on hand and under procurement far exceed any reasonable expected use, and considering the fact that shearling flying clothing for which this material is intended is not satisfactory or desired by flying personnel, it is believed that the question of additional procurement recently undertaken should be reconsidered and arrangements made to cancel contracts or otherwise dispose of this material.

JUNIUS W. JONES
Brigadier General, U. S. Army

TO: AC/AS, Materiel, Maintenance & Distribution.

DATE 26 Sept. 43

FROM: Chief of the Air Staff.

COMMENT NO. 2
MAL/mdg/5265

1. General Giles has very carefully noted the comments of the Air Inspector and is of the opinion that if we have made a mistake in purchasing this material we should not perpetuate the situation by entering into further contracts. He discounted the moral obligation on the part of the Army Air Forces as stated by General Whitten and sees no good reason for continuing to purchase this material simply for the purpose of storing it.

2. For comment.

MAL

MILLARD A. LIBBY,
Colonel, G. S. C.,
Secretary of the Air Staff.

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Col Coyne

HEADQUARTERS
MATERIAL CENTER
12-41

ORIGINAL RECEIVED 27 SEP 9:38

AFDRE-11-46 (PHB) 9-27-43

CG MC

REDISTRIBUTION AND SALVAGE OFFICER

EXTRA PRIORITY

THE FOLLOWING TELETYPENHAS BEEN SENT TO THE REDISTRIBUTION AND SALVAGE OFFICE, EASTERN PROCUREMENT DISTRICT:

WORD HAS JUST BEEN RECEIVED FROM AIR SERVICE COMMAND, PATTERSON FIELD THAT AFTER REVIEW OF THE FLYING CLOTHING SITUATION FOR 1944 IT IS THEIR OPINION THAT THE 600,000 SQUARE FEET OF SHEARLING NOW BEING HELD IN CONTRACTORS PLANTS IN YOUR DISTRICT SHOULD BE SHIPPED TO AIR SERVICE COMMAND DEPOT, PAULINE, KANSAS. CAPTAIN J H SMITH OF THIS OFFICE WILL BE IN NEW YORK MONDAY, 27 SEPTEMBER 1943, TO DISCUSS THIS MATTER WITH CAPTAIN PENMAN AND CAPTAIN DAVIS OF REDISTRIBUTION AND SALVAGE OFFICE, MATERIEL COMMAND. END ACAS MM&D

ARNOLD

HM

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Mated 2nd

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AFDRE-11

EXTRA PRIORITY

27 Sept 1943

EASTERN DISTRICT SUPERVISOR
AAF EASTERN PROCUREMENT DISTRICT
67 BROAD STREET
NEW YORK CITY
REDISTRIBUTION AND SALVAGE OFFICER

F. M. Hopkins, Jr.
Brigadier General, USA

AFDRE-11-48 (PHB).....THE FOLLOWING TELEGRAM RECEIVED IN THIS OFFICE THIS DATE FROM THE COMMANDING GENERAL, AIR SERVICE COMMAND, ADDRESSED TO THE ATTENTION OF LT. COLONEL BONNER, OFFICE OF THE AC OF AS, WW&D, IS QUOTED FOR YOUR INFORMATION:

"CONFIRMING TELEPHONE CONVERSATION THIS DATE BETWEEN LT. COLONEL THOMPSON, CHIEF, EQUIPMENT SECTION, RE DISPOSAL OF 600,000 SQ. FT. STARLING, IT IS THE DECISION OF THIS HQS THAT WE DO NOT DESIRE TO DISPOSE OF THIS AT THE PRESENT TIME."

ARNOLD

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U-2(1300)

AAFMC-666-WP-8-8-42-200M

Clothing Br 5-9 Branch

ARMY AIR FORCES
MATERIEL [redacted] Command
ENGINEERING DIVISION
MEMORANDUM REPORT ON JRS:jhs:54

Clothing Gen'l w/Field Shelter Equipment

Date 29 September 1943

SUBJECT: Report on Visit to Quartermaster Corps in Washington, D. C.

[redacted] Equipment Laboratory

Contract No. .....
Expenditure Order No. 666-209
Purchase Order No. .....

SERIAL No. ENG-54-666-83D

A. Purpose:

1. To report on a meeting held at the Quartermaster Corps, Washington, D. C., on Army Air Forces immediate requirements of down and feathers for clothing and sleeping bags, a discussion of possible substitutes for down and feathers; and future policy of distribution of down and feathers among the branches of the Armed Forces.

Coordinate JRS SWS with others

B. Factual Data:

1. Those present at the meeting were as follows:

a. Lt. Col. S. J. Kennedy, Research & Development Br., OQMG.
b. Lt. Col. Peter Van der Lugt, Hdqs., Army Air Forces.
c. Capt. L. W. Hem, Aircraft Resource Control Office.
d. Lt. T. G. Baptist, Aircraft Resource Control Office.
e. Mr. Herbert C. Normile, Phildelphia Quartermaster Depot.
f. Maj. Robert H. Bates, Research and Development Branch, OQMG.
g. Capt. George D. Simon, Storage and Distribution.
h. Mr. Harvey W. Smith, Procurement Division, OQMG.
i. Maj. A. C. Schermerhorn, Procurement Branch, M&D.
j. Capt. M. D. McKeehan, Philadelphia Quartermaster Depot.
k. Mr. Ralph A. Butland, Procurement Division, OQMG
l. Mr. Maurice D. Frasee, Research & Development Branch, OQMG.
m. Mr. T. Leigh Williams, Research & Development Branch, OQMG.
n. Mr. Maurice R. Cooper, Research & Development Branch, OQMG.
o. Wing Comdr. P. W. Webb, Research & Development Branch, OQMG.
p. Mr. J. A. Ford, Research and Development Branch, OQMG.
q. Mr. M. R. Lutmerding, Resources Control Section, Materiel Command.
r. Mr. M. R. Winn, Headquarters Air Service Command,
s. Maj. John R. Schenck, Engineering Division, Material Command.
t. Mr. P. Foster, War Production Board.
u. Maj. D. B. Hardin, Production Division, ASF.

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2. The present supply of down and feathers is insufficient for the demands of all branches of the Service.

3. Available substitutes are being studied by both the Quartermaster Corps and the Army Air Forces.

Number of pages - 3.

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U-(7400) 60

4. Army Air Forces requirements in clothing are flexibility, light weight and warmth, buoyancy of down and feathers being an added feature.

5. The Type A-3 sleeping bag was designed to meet all requirements for Army Air Forces flight personnel, including casualty cases.

6. Army Air Forces immediate emergency requirements is for 18,000 sleeping bags and the immediate requirements of the AAF is for 82,000 additional bags.

7. The Quartermaster has a directive to develop a sleeping bag for casualty cases made of non-strategic material.

8. The Quartermaster has a requirement of 57,000 bags for the Army Air Forces which are now under contract and are to be used in the United States for a specific purpose only.

9. That efforts are being made to obtain additional sources of supply of down and feathers.

C. Conclusions:

1. That the Quartermaster Corps and the War Production Board will make available to the Army Air Forces immediately, sufficient 40/60 down and feathers for 18,000 sleeping bags.

2. That the down and feathers stock of Arctic Feather & Down Co. be checked immediately against Quartermaster orders held by this Company and any excess be made available to the Army Air Forces for immediate manufacture of flying suits.

3. That work will be expedited on the cleaning and mixing of used down and feathers from Army Air Forces old sleeping bags for use in Army Air Forces clothing.

4. That Army Air Forces sleeping bag requirements be re-checked at once, as well as anticipated future flight clothing requirements.

5. A meeting will be held by the Army Air Forces, Navy and Quartermaster to determine a policy to be followed in the division of available supplies of down and feathers, when requirements are determined by branches of the Armed Forces other than the Quartermaster, who have already determined their requirements.

6. That representatives of the Army Air Forces and the Quartermaster meet regularly to coordinate development work in clothing and related equipment.

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MDAC-266-WF-3-4-42-80M

Engin. Div. Memo Report TSC-54-666-830
29 September 1943

D. Recommendations:

1. It is recommended that the following action be taken by the organizations designated below:

a. Procurement Division, Materiel Command: (1) That procurement and manufacture of 18,000 sleeping bags be expedited. (action initiated)

b. Production Division, Materiel Command, Production Engineering Section: (1) That the Arctic Feather & Down Company be notified to proceed immediately to manufacture suits on contract with that Company using 40/60 down and feathers in excess of Quartermaster orders on hand by that Company as soon as the excess, if any, is determined by the War Production Board and the Quartermaster. (action initiated)

c. Engineering Division, Materiel Command, Equipment Laboratory: (1) That study and tests of available substitutes for down and feathers be continued. (action initiated)

d. Air Service Command, Patterson Field, Fairfield, Ohio: (1) That Air Service Command expedite a check on AAF sleeping bag and quilted suit requirements for the calendar year of 1944, in order that AAF requirements can be considered in the distribution of down and feathers for the calendar year of 1944. (action initiated)

(2) That representatives from Air Service Command be appointed to attend meetings mentioned in paragraph D-1e below. (action initiated)

e. Engineering Division, Materiel Command: (1) That representatives from the Aero Medical Laboratory, Materials Laboratory and Equipment Laboratory be appointed to meet regularly with representatives of the Quartermaster Corps for the purpose of coordinating developmental and research work. (action initiated)

f. Resources Control Section, Materiel Command, Production Division: (1) That representatives of Resources Control Section be appointed to attend meetings mentioned in Paragraph D-1e above (action initiated)

Prepared by J. R. SCHENCK, Maj., A.C.
(Name)

Approved by E.E. HOLLOMAN, Colonel, A.C.,
Chief, Equip.Lab., Eng.Div.

Concurrence:

Approved by R.O. CARROLL, Brig.Gen., U.S.A.,
Chief, Engin. Division.

Distribution: Ch, Prod.Div.AT; Res.Cont.Sec.
Ch, Proc. Division
CO, ASC, ATI: Class 13 (2)
CO, ASC, ATI: Class 21 (2)
Ch, Aero Med. Lab.
Ch, Mat'ls. Lab.
Affc. Resources Cont. Off, Pent. Bldg, Wash.
DC, AAF

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HEADQUARTERS ARMY AIR FORCES

ROUTING AND RECORD SHEET

TALLY NO.	
FILE NO.	

SUBJECT: Excessive Supplies and Procurement of Sheep Shearling for Flying Clothing.

TO: Chief of the Air Staff

DATE 1 October 1943

FROM: ACAS, MM&D

COMMENT NO. 3

1. The facts with respect to the procurement of sheep shearling have not been clearly presented by the Air Inspector in Comment No. 1. It is misleading in the following respects:

a. "Quantities of sheep shearling far exceed any expected use".

Comment: As indicated in the tables attached hereto most of the 11,000,000 square feet of shearling (the procurement in question) in addition to that on hand is needed for the clothing required for issue to 30 June 1944 and to provide a three months' inventory. There will remain a net surplus of approximately 4,000,000 square feet. These calculations take into consideration the 107,000 new type alpaca and buoyancy suits for which procurement has been initiated. The attached tables showing requirements are based upon data furnished by the Air Service Command.

b. "General Whitten stated there was a moral obligation to purchase this material even if it is not now fully required".

Comment: It is inferred that this was one of the major reasons for procurement, which is not the case. General Whitten explained that this was one of the factors which had to be given proper consideration in view of commitments made by the Army Air Forces over a year ago to WPB which resulted in that agency and the Department of Agriculture making special efforts with the sheep growers all over the country to insure an adequate supply of shearling considerably in excess of the then visible supplies.

c. "General Whitten pointed out that the shearling market would be adversely affected if this material were now dumped on the market".

Comment: General Whitten stated that when the question first arose as to discontinuance of shearling for flying clothing, the matter of disposing of the quantities to which we were committed was thoroughly discussed with the WPB and Department of Agriculture, and it was pointed out by those agencies that the civilian market was extremely limited and that for civilian use it would have to be sold at considerably less than cost. In the opinions of these agencies, therefore, it appeared doubtful that favorable disposition of the shearling could have been made even if it had been found desirable to do so. It was not a question of "adversely affecting the shearling market".

d. "During the inspection of Clothing Branch it was learned that shearling flying clothing would not be continued to be manufactured if it was not necessary to use the shearling now on hand or on procurement".

Comment: Attention is invited to comment under a above. These require- 181

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Memo: Sheep Shearling
From A.C.S., O.C. - 7(b)/1199

HEADQUARTERS ARMY AIR FORCES

ROUTING AND RECORD SHEET

TALLY NO.	
FILE NO.	

SUBJECT: Excessive Supplies and Procurement of Sheep Shearling for Flying Clothing.

TO: Chief of the Air Staff.

DATE 1 October 1943

FROM: ACAS, M&D

COMMENT NO. 3 Cont.
AFDRS-1 LPW/dk/deb 71808

ments for shearling flying clothing include mechanics suits and certain other items of equipment which will continue to be manufactured of shearling regardless of the new type flyers suits. However, additional shearling flying clothing to meet immediate requirements must be manufactured because of the impossibility of obtaining sufficient quantities of the new type suits in time to meet requirements. The principal obstacle is the short supply of materials necessary for the new type suit.

The difficulties encountered in procuring the down for the 50,000 buoyancy suits already being contracted for precludes any serious consideration being given at this time to the manufacture of any additional large number of buoyancy suits and to the consequent substitution of these suits for the sheepling type in supplying requirements.

In the case of alpaca, there is a very limited quantity available at present. Although it is understood that beginning in December alpaca wool will be available in Peru, consideration has to be given to the fact that the wool must be transported into this country, woven into cloth and then manufactured into clothing, a process requiring several months, which indicates that no dependency can be placed on having alpaca flyers suits available for issue before 30 June 1944. There are further difficulties in procuring the necessary cotton-cloth backing for alpaca cloth.

2. In addition to the Tables of Requirements, there is also attached a copy of the correspondence with the Air Service Command which covers this subject in detail.

No

3. In view of the foregoing it would appear that the amount of shearling now under procurement is entirely justified and that disposition of any considerable quantities should not be undertaken until it is possible to determine with some assurance the availability of the new type flying clothing.

B. M. MEYERS,
Brig. Gen., U.S.A.

3 Incls.
#1 - Table 1
#2 - Table 2
#3 - Cy ltr frm ASC to CG,AAF
8/4/43 w/cy 1st ind

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Lt. Col. Hudson
Mr. Silverman
Lt. Ullman

AFDRE-11
JHS/MMH

2 October 1943

Frederick M. Hopkins, Jr.
Brigadier General, USA

EASTERN DISTRICT SUPERVISOR
AAF EASTERN PROCUREMENT DISTRICT
67 BROAD STREET, NEW YORK, NY
REDISTRIBUTION & SALVAGE OFFICER

AFDRE-11-50 (JHS).....IN ACCORDANCE WITH TELEPHONE CONVERSATION BETWEEN CAPT. SMITH OF THIS OFFICE AND CAPT. PENMAN EASTERN PROCUREMENT DISTRICT MATERIEL COMMAND - TELETYPE AFDRE-11-48 DATED 27 SEPTEMBER 1943 IS HEREBY RESCINDED AND SUPERSEDED - THIS IS TO AUTHORIZE YOU TO SELL 600,000 SQ. FT. SHEEP SHEARLING NOW IN STORAGE AT H. L. B. COMPANY WARE HOUSE.

ARNOLD.

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COPY

WAR PRODUCTION BOARD

WASHINGTON, D.C. (25)

October 6, 1943

Lt. Thomas G. Baptist
Airforce Resource Control
Resource Division
Controlled Materials Section
Room 5C-861, Pentagon Building
Arlington, Virginia

Subject: Alpaca Situation

Dear Lt. Baptist:

This is in answer to your telephone request of this morning.

We are very pleased to give you the following information in regard to the alpaca situation as we see it at the present moment.

We are listing below the amount of unsold alpaca in the country at the present moment; the amount of unsold alpaca either in Peru or on the water, and the estimated new clip which comes to market in December of this year and which would be suitable for Army, Navy or Air Force requirements. The total of these three amounts should be available as indicated below and as the new clip should start arriving in this country in January and could be secured ready for manufacturing during the first six months of 1944, we feel that the total amount could be used as 1944 inventory and prorated over the twelve months.

If this alpaca were used in the Quartermaster specifications and the Navy specifications it should make approximately 6,586,000 yards. If it were all used in the Air Force specifications it should make approximately 10,000,000 yards or 850,000 yards per month. Any combination of these requirements between the three services could be easily figured out in yardage.

Stock of unsold alpaca on hand	986,000 pounds
Stock of alpaca unsold in Peru and on the water	600,000 "
Estimated new clip	5,000,000 "
Total	6,586,000 "

Very truly yours,

/s/ Charles B. Rockwell

Charles B. Rockwell
Chief, Floorcovering & Upholstery Section
Textile, Clothing & Leather Division

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Winter Clothing
Gen. Wolfe File

Col. Crawford
"What do you think about sending this? I don't think so. Comment."
B.

Wright Field, Dayton, Ohio
6 October 1943

Army Air Forces Winter Clothing

Major General Barney M. Giles, U.S.A.,
Chief of the Air Staff,
Headquarters, Army Air Forces,
Washington 25, D. C.

1. Reference is made to numerous investigations and derogatory statements regarding the Clothing Branch of the Equipment Laboratory, Engineering Division. On 3 and 4 September 1943, the Clothing Branch was investigated by the Air Inspector in connection with numerous complaints that had been made regarding Army Air Forces flight clothing. One of the complaints which was recorded in the Inspection Report was that sheep shearling clothing was being procured and that this type clothing was not considered satisfactory. This Office concurs in the fact that the sheep shearling clothing is not as satisfactory as the new types now standardized. However, due to the economic situation regarding sheep shearling, higher authority has found it necessary to continue procurement of this type of clothing for use within the continental limits of the United States. The newly standardized clothing will be used in the theaters of operations outside of the United States.

2. During September 1943, personnel of the Office, Assistant Chief of Air Staff, Material, Maintenance and Distribution, called personnel of the Equipment Laboratory by telephone and stated that it had been reported to General Arnold that none of the new items of Army Air Forces flight clothing recently standardized had been tested in Cold Chambers. These statements made to General Arnold are untrue. The development of new clothing was accomplished with the full coordination of personnel who had been actively engaged in combat operations and numerous clothing manufacturers. Each item was thoroughly tested, using every available facility, including the Harvard Fatigue Laboratory, Yale University, General Electric Company, Cold Chambers at Wright Field, and the Cold Weather Test Detachment at Ladd Field, Alaska.

3. Upon entry by the United States in the present conflict, procurement was made of Army Air Forces flight clothing of the design in effect at that time, and as a result repeated criticism and unsatisfactory reports have continued to be directed at the Material Command.

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Winter Clothing
Kerr, Wolfe
B-(73)

Maj. Gen. B. M. Giles, U.S.A.,
"Army Air Forces Winter Clothing"
6 October 1943

4. When the need for improved Army Air Forces flight clothing became apparent, the Clothing Branch of the Equipment Laboratory was reorganized, and the services of personnel successful in the textile industry and those having knowledge of the clothing requirements in foreign theaters were obtained.

5. Since reorganization of the Clothing Branch on 15 October 1942, the ultimate requirements of Army Air Forces flight clothing have been determined and every item has either been redesigned or discarded and new items have been developed and standardized. (See Exhibit 1).

6. The procurement and delivery of equipment to the Service is not a function of the Engineering Division; however, the Clothing Branch personnel have worked diligently and untiringly in an effort to expedite the procurement and distribution of new items of clothing. Delay has been due to the many and various procedures and channels required for release and procurement of items.

7. While criticism of Army Air Forces flight clothing has been extreme and sometimes irrational, it is realized that these criticisms are as the result of the use of old style clothing. Continued criticism and investigations instigated by those not aware of the improvements and additions made to Army Air Forces flight clothing, have a demoralizing effect on personnel directly responsible and take considerable time away from important work.

8. All new items of Army Air Forces flight clothing have been approved by higher authority and have been enthusiastically accepted by representatives of the using activities, such as the Alaskan theater and the VIII Air Force. Further, the new items of clothing were examined and found satisfactory by a committee appointed especially by General Arnold, which met in Washington, D. C. on 10 September 1943.

9. The foregoing facts indicate that certain individuals, either because of insufficient information or with malicious intent to discredit this Command, have made false statements to those in authority which have resulted in these investigations. It is therefore respectfully requested that a thorough investigation be made by your office to determine the identity of these individuals with a view to questioning them as to their motives in making these statements. It is further requested that the originator or originators of the false information that caused the report to be made to General Arnold to the effect that most of the new items of Army Air Forces flight clothing had been tested in Cold Chambers, be apprehended and questioned at length as to his or their motives in making this statement.

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Winter Clothing
Maj. Wolfe
1 C. (P/3)

Maj. Gen. D. M. Olive, U.S.A.,
"Army Air Forces Winter Clothing"
6 October 1943

10. Information as to action taken by your Office on these matters would be appreciated.

CHAS. L. BRANSHAW,
Major General, U.S.A.,
Commanding.

1 Incl.
Exhibit 1

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185 R&D Comment 4 7 October 1943 AC/AS, MM&D from Chief of Air Staff

See Document 193

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Carbon
413.53 Sheep Shearling
Gen'l Corr. File - 14
AFMMD, Wash

AFMMD-2
BEM:lw

8 OCTOBER 1943

B. E. MEYERS, Brig. Gen., USA
Acting AC/AS, MMAD

MAJ. GEN. W. H. FRANK
COMMANDING GENERAL, AIR SERVICE COMMAND
PATTERSON FIELD, FAIRFIELD, OHIO

AFMMD-2. 114. IT IS REQUESTED THAT YOU AND GENERAL BRANSHAW PERSONALLY REVIEW THE SHEEP SHEARLING SITUATION WITH PARTICULAR REGARD TO THE QUANTITIES ON HAND AND NOW UNDER PROCUREMENT WITH A VIEW OF MAKING SPECIFIC RECOMMENDATIONS TO THIS OFFICE AS TO WHETHER ANY QUANTITY OF THE SHEEP SHEARLING NOW ON HAND OR UNDER CONTRACT SHOULD BE DISPOSED OF. CONSIDERATION SHOULD BE GIVEN TO THE AVAILABILITY OR NON AVAILABILITY OF ALPACA AND DOWN.

LT. ULLMANN OF THIS OFFICE IS THOROUGHLY FAMILIAR WITH THE CASE HISTORY AND WILL BE IMMEDIATELY MADE AVAILABLE TO YOU IF YOU SO DESIRE. THIS HAS BEEN A MATTER OF GREAT CONCERN TO THE COMMANDING GENERAL, ARMY AIR FORCES, CHIEF OF AIR STAFF AND AIR INSPECTOR AND, ACCORDINGLY, IMMEDIATE ACTION IS DESIRED.

ARNOLD

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AFHRD-4B

13 October 1943

TO: Brig. Gen. B. E. Meyers

SUBJECT: Sheep Shearling; Conference at Wright Field, October 11 and 12.

1. Conclusions

a. Retain for the present the sheep shearling on hand and on order.

b. Determine whether or not there is any shearling on hand that is unsuitable for Air Corps use, and dispose of any such shearling.

c. Take steps to determine definitely when material for new type suits, alpaca or down, can be made available. When delivery of large quantities of new materials is begun, reconsider the possible disposition of shearling.

The reason for this caution is that alpaca cloth for the first 57,000 alpaca suits has not yet been delivered.

2. These conclusions have been concurred in by Lt. Col. C. H. Leurath, Lt. Col. N. D. Mooers and Capt. W. F. Spalding of Materiel Command; and by Maj. D. E. Calhoun and Mr. F. A. McIntosh of Air Service Command.

3. The Air Service Command has recently re-calculated its estimates of requirements for shearling clothing, sharply lowering its estimates of the number of flyers' suits required from 50,000 to 30,000 suits per month and determining that shearling will not be used for helmets and shoes. Revised requirements point to a possible surplus of 15 million feet.

There are indications that this much shearling may be unsuitable for Air Corps use, since large quantities of "boot stock" are on hand and since there are reports of several million feet of sub-standard skins in one depot. When definite quantities of unsuitable shearling are determined, they can be disposed of. It would be dangerous to dispose of it before such a determination is made, however, since otherwise good shearling might be sold first, and a possible shortage develop before new materials become available.

4. Requirements of new type materials have been calculated.

William L. Ullmann
1st Lt., Air Corps,
Control Office, Analysis & Reports

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ADDRESS REPLY TO
HEADQUARTERS OF THE ARMY AIR FORCES
WAR DEPARTMENT
WASHINGTON, D. C.

Original Memos Sheep Shearling Final to Br. C.C. — 18 Nov. D. Wash.

A:DRB-11

WAR DEPARTMENT
HEADQUARTERS OF THE ARMY AIR FORCES
WASHINGTON

13 October 1943

SUBJECT: 2,640,000 Sq. Ft. of Defective Sheep Shearling at AAF Depot, Syracuse, N.Y.

TO: Brig. Gen. F. M. Hopkins, Jr.

1. Capt. Smith called Lt. J. H. Meyer, Air Service Command, Patterson Field regarding what action had been taken to secure an accurate inventory of sheep shearling by contract at the Syracuse Depot.

2. Lt. Meyer said that he had called the Syracuse Depot and asked for such an inventory but they informed him that the shearlings were not stored orderly and were disarranged to such an extent it would take two weeks to make an inventory report.

3. Lt. Meyer told Capt. Smith to disregard the 2,640,000 sq. ft. he had previously reported to this office as being defective because he had no way of substantiating such a figure since Syracuse Depot stated that part of the contracts of the six contractors involved has been cancelled and some had been shipped out of the Depot. Until such time as the Depot could furnish him with an accurate up-to-date inventory he could not say definitely what the amount of rejects were at Syracuse.

F. H. Smith Jr. Capt A.C.

for PAUL R. BONNER
Lt. Col., Air Corps

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413.53 Sheep Shearling
Proc. Br., C.G. 12(2/44)

ADDRESS REPLY TO
CHIEF OF THE ARMY AIR FORCES
WASHINGTON, D. C.

AFMSD-4B

WAR DEPARTMENT
HEADQUARTERS OF THE ARMY AIR FORCES
WASHINGTON, D. C.

16 October 1943

TO: Commanding General, Air Service Command

SUBJECT: Sheep Shearling

1. Reference is made to recent conferences and discussions about sheep shearling which is on hand or on order, and to the fact that certain undetermined quantities of the shearling is unsuitable for AAF use.

2. In order that definite decisions may be made in regard to the AAF supply of shearling, it is requested that your office immediately take steps to determine the following:

a. The amounts of shearling on hand in the ASC that has deteriorated or is below standards required for use in AAF clothing.

b. The amounts of shearling on hand in the ASC that are of types which cannot be used in AAF clothing, because of specifications which cannot be changed or because of discontinuance of use. For example, boot stock may no longer be suitable for use, or certain pile lengths may no longer be of use.

c. The amounts of shearling on contract, but undelivered, that are of types which cannot be used in AAF clothing.

3. It is suggested that you consult with the Materiel Command regarding the question of types that cannot be used.

4. It is requested that your reply with the above information be forwarded to this office by 29 October 1943, in order that it may be incorporated in a report requested of this office by the Chief of Air Staff.

By command of General ARNOLD:

[illegible]
[illegible] A
[illegible] Air

FOR VICTORY BUY UNITED STATES WAR BONDS AND STAMPS

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10/1943

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Basic: Ltr. frm. Wash. [illegible] 16 Oct. 45, Subj. Sheep Shearing

ASC 400 [illegible] 1st Ind.

AAF HQRS., ASC, Patterson Fld., Fairfield, Ohio. 30 October 1945

TO: Commanding General, Army Air Forces, Washington, D.C. Attn: Deputy Asst. Chief of Air Staff, Materiel, Maintenance & Distribution.

1. In accordance with request as contained in the basic communication, the following information and data is submitted.

2. The following figures are based upon the most accurate information available at the present time and in the opinion of this office the quantities shown are minimum as there are indications that the quantities listed under (a) and (b) below will upon further investigation and completion of accurate inventories be increased. However, definite substantiation for greater quantities is not available at the present time.

(a) The amounts of Shearling on hand that are considered below specification standards for use in AAF Flying Clothing are as follows:

Type I, Electrified	1/4" P.L.	245,345 Sq.ft.
" "	3/8" " "	7,765 " "
" "	1/2" " "	213,235 " "
" "	5/8" " "	46,125 " "
" "	3/4" " "	81,676 " "
" "	1" " "	81,685 " "
Type II, Natural	1/4 to 3/8"	5,000 " "
	Total	680,831 Sq.ft.

(b) The amounts of Shearling on hand that have become obsolete because of revised Shearling Clothing specification changes are as follows:

Type I, Electrified	3/8" P.L.	1,186,696 Sq.ft.
" "	5/8" P.L.	661,342 " "
" "	1" P.L.	184,784 " "
	Total	2,032,752 Sq.ft.

(c) All current shearling contracts have been amended to eliminate further production of obsolete pile lengths in conformance with new Shearling Clothing specifications.

3. The Materiel Command has been consulted regarding the obsolete pile lengths that cannot be used.

4. The above information in terms of total quantities has been furnished your office in advance by telephone, 29 October 1945.

For the Commanding General:

John W. Vaga Maj A.C.

JOSEPH A. AGUADO
Major, Air Corps
Asst., Equipment Section
Supply Division

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HQP-273 10-27-43

BRIG. GEN. B. E. MEYERS

ACTING, ASSISTANT CHIEF OF AIR STAFF

MATERIEL, MAINTENANCE AND DISTRIBUTION

IN REPLY TO YOUR TELETYPE DATED 8 OCTOBER, 1943 REGARDING SHEEP SHEARLING SITUATION, THE FOLLOWING RECOMMENDATIONS ARE SUBMITTED:

1. SHEARLING NOW ON HAND AND UNDER CONTRACT SHOULD NOT BE DISPOSED OF AT THE PRESENT TIME.

2. IT IS RECOMMENDED THAT ALL FUTURE REQUIREMENTS OF WINTER FLYING SUITS BE MADE OF FABRIC AND ALL SHEARLING FLYING SUITS ISSUED OUTSIDE THE CONTINENTAL LIMITS OF THE UNITED STATES BE REPLACED BY FABRIC WINTER FLYING SUITS AND PROCUREMENT BE INITIATED ACCORDINGLY.

3. UPON INITIATION OF PROCUREMENT PROGRAM TO CARRY OUT PROVISIONS OF PARAGRAPH TWO FOR FABRIC WINTER FLYING SUITS AND DETERMINATION OF DELIVERY SCHEDULES, SURPLUS SHEARLING OVER AND ABOVE REQUIREMENTS FOR SHOES AND MECHANICS' SUITS SHOULD BE DISPOSED OF. DELXXX DETAILED REPORT WILL FOLLOW. END AFAMC

FRANK A BRANSHAW

HSV

1815Z

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Original
41&5, Sheep Shearing
Ann R. & C.O. - 11/14/43
NARA, Wash.

ARMY AIR FORCES
~~MATERIEL CENTER~~
MATERIEL COMMAND
MEMORANDUM REPORT ON

Date 27 October 1943

SUBJECT: Disposal of Surplus Sheep Shearling

SECTION

SERIAL No. 666-89

Contract No.
Expenditure Order No. 666
Purchase Order No.

A Purpose:

1. To report on AAF sheep shearling condition and advisability of disposing of surplus sheep shearling.

B Factual Data:

1. The following were present and helped supply information in the preparation of this report:

Lt. Col. N. D. Mooers	-	General Procurement Branch
Major J. R. Schenck	-	Equipment Lab., Engineering Division
Major D. E. Calhoun	-	Requirements Office, Equip. Sec., ASC
Captain W. F. Spalding	-	General Procurement Branch
Lt. R. L. Mansfield	-	Resources Control
Lt. M. R. Lutmerding	-	Resources Control
Lt. W. L. Ullmann	-	Control Office, ACAS, M&D
Mr. P. A. McIntosh	-	Requirements Office, Supply Div., ASC

2. The status of sheep shearling on hand and under contract according to figures supplied by the Air Service Command, and concurred in by a representative of ACAS, M&D is as follows:

Shearling skins on hand and under contract	39,676,201 sq.ft.
Shearling needed for 118,200 flyers' suits under contract.....	7,268,808
Shearling needed for 45,000 mechanics' suits under contract.....	2,475,000
Shearling needed for 184,099 mechanics' suits to be purchased for issue and provide a 3 mo. inventory as of 30 June 1944.....	10,125,445
Shearling required for estimated requirements to 30 June 1944, as above detailed.....	19,869,253 sq.ft.

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4133.3 Shop Shearling
Am. & N. Br. C.G. - 111 Hqgs

Reserve shearling available as of 1 July 1944 for which definite purpose has not been determined, but which it is recommended be held available at least until such time as materials for new type suits have been definitely provided..... 19,806,948 sq.ft.

Shearling needed for 176,698 mechanics' suits, estimated by ASC to be required 1 July 1944 to 30 December 1944 (any fluctuation in this estimate as to number of suits required would proportionately change the quantity of shearling designated as "reserve")..... 9,718,390 sq.ft.

Shearling on hand 1 January 1945..... 10,088,558 sq.ft.

10,088,558 sq.ft. includes boot stock and other skins which may not be acceptable for clothing.

3. The number of winter flying suits required per month, beginning currently and extending thru June 1944 has been estimated by ASC as 30,600. This estimate has been accepted by Lt. Ullmann of Control Office, ACAS, MM&D.

4. Bill of materials required for the production of the alpaca and wool pile suit, which includes the outer and intermediate garment, and on the basis of 30,600 per month:

Alpaca and wool pile 54" Type I	200,000 yd.
Byrd Cloth or equal 36"	475,000 yd.
Mouton	184,000 sq.ft.
Tackle Twill or equal	31,000 yd.
Wool Flannel 18 oz.	31,000 yd.
Elastic 1" Type I	11,000 yd.
Suspenders 1-1/2" Type II	102,000 yd.
Knitted Wool	31,000 lb.

5. On the basis of 50% production of the Down and Waterfowl suit and 50% alpaca and wool pile winter suit, the bill of materials required on the basis of 30,600 is as follows:

Alpaca and wool pile 54" Type I	145,000 yd.
Byrd Cloth or equal 36"	475,000 yd.
Mouton	185,000 sq.ft.
Tackle Twill or equal	23,000 yd.
Wool Flannel 18 oz.	35,000 yd.
Elastic 1" Type I	5,100 yd.
Knitted Wool	34,000 lb.
Down & Feathers 40/60	61,200 lb.
Element Cloth or equal	54,000 yd.
Rayon Satin	46,000 yd.
Cotton Cambrie 96 x 100	146,000 yd.
Cotton Flannel	8,000 yd.
Suspenders 1-1/2" Type II	76,000 yd.

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6. The beginning of production of either or both types of suits, the number of each in turn is dependent upon the materials allocated by War Production Board.

7. The supply of alpaca does not present a serious problem inasmuch as present requirements call for 50% alpaca and 50% wool pile, and, if necessary, a 100% wool pile fabric could be utilized as a satisfactory substitute.

8. The availability of 40/60 Down and Waterfowl feathers does present a serious problem for this type of suit.

9. Facilities for actual fabricating of the suits do not present a problem, however, manufacturing facilities of the fabrics themselves would require a high priority.

10. Flyers' shearling suits replaced by either of the two new designs could be used for ground crews.

11. The number of sheep shearling flying suits and sheep shearling mechanics' suits on hand and under contract, according to estimates furnished by ASC and concurred in by Lt. Ullmann of Control Office, ACAS, M&D, are as follows:

Shearling flying suits on hand	214,000
Shearling flying suits under contract	118,200
Total flying suits on hand and under contract.....	332,200
Shearling mechanic suits on hand	215,000
Shearling mechanic suits under contract	45,000
Total mechanic suits on hand and under contract.....	260,000

a. The stock of shearling flying suits on hand represents estimated requirements to February 1944.

b. The shearling flying suits under contract are sufficient to extend requirements for issue thru June 1944.

c. Mechanics' shearling suits on hand are estimated to cover requirements thru December 1943, and the Mechanics' shearling suits under contract will extend requirements to February 1944.

12. There are 107,698 wool and alpaca-lined cloth intermediate and winter flying suits under contract for delivery beginning in November 1943, and to be completed by February 1944. These suits in addition to the shearling flying suits now on hand and under contract are estimated to meet requirements to 30 June 1944 and provide in addition, a three months inventory.

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[redacted]

13. New standardized fabric clothing items for Army Air Forces have been thoroughly tested in cold chambers and flight tests and approved by the AAF Board of Applied Tactics, Equipment Board, Army Air Forces Board, OCAR, Air Transport Command, Arctic Wing and by General Grow of the VIII Air Force.

C Conclusions:

1. The date at which new standardized fabric clothing could replace sheep shearling flying clothing is dependent upon the availability of raw materials and schedules of manufacture. It is estimated, on the basis of present raw material facilities that delivery of fabric suits could begin four months after a directive to procure such suits is received.

2. The scarcity of 40/60 Down and Waterfowl feathers will limit the available quantity of this type of clothing, and the recommended ratio of purchase of flying suits (50% Down type Alpaca type) would necessarily depend upon the Down available.

3. There is an indicated surplus of 10,088,5[illegible] sq. ft. of shearling as of 1 January 1945 which would be increased to 60,000,000 sq. ft. as of 30 June 1945 completing all winter flying and mechanics' suit requirements up to 30 June 1945.

D Recommendations:

1. Shearling now on hand and under contract should not be disposed of at the present time.

2. It is recommended that all future requirements of winter flying suits be made of fabric, and all shearling flying suits in excess of the operational limits of the United States be replaced by fabric winter flying suits, and procurement be initiated accordingly.

3. Upon initiation of procurement program to correct knowledge of [illegible] for fabric winter flying suits and determination of delivery schedules surplus shearling over and above requirements for shoes and mechanics' suits should be disposed of.

[illegible]

Concurrence:

Prepared by [illegible] (Name)

Approved by [illegible] Chief, [illegible]

Distribution:

Approved by Chas E Branshaw
CHAS. E. BRANSHAW,
Major General, U.S.A.
Commanding.

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ADDRESS REPLY TO
COMMANDING GENERAL, ARMY AIR FORCE
WASHINGTON, D. C.

WAR DEPARTMENT
HEADQUARTERS OF THE ARMY AIR FORCES
WASHINGTON, D. C.

OCT 3 0 194

TO: The Chief of the Air Staff

Subject: Winter Flying Suits

1. Major Generals Frank and Branshaw were directed to investigate and report on the sheep shearing situation. The following is a preliminary report on the results of their studies. They recommend:

a. Shearling now on hand and under contract should not be disposed of at the present time.

b. It is recommended that all future requirements of winter flying suits be made of fabric and all shearling flying suits issued outside the continental limits of the United States be replaced by fabric winter flying suits as procurement is initiated accordingly.

c. Upon initiation of procurement program to carry out provisions of paragraph b. for fabric winter flying suits and determination of delivery schedules, surplus shearling over and above requirements for shoes and assembled suits should be disposed of.

2. They are submitting a detailed report on the above. Your office will be kept informed of developments.

[illegible]
Brig. General, U.S.A.,
Actg. Asst. Chief of Air Staff,
Materiel, Maintenance &
Distribution.

Ben Perrin perhaps I would like to see this

FOR VICTORY BUY UNITED STATES WAR BONDS AND STAMPS

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ROUTING AND RECORD SHEET

TO: Chief of Air Staff

DATE 5 November 1943

FROM: ACAS/M&D

COMMENT NO. 5

WLU:teb:2885

1. As reported in my memorandum of 29 October 1943, Major Generals Frank and Branshaw, Commanding Generals of the Air Service Command and Materiel Command respectively, were directed to investigate and make specific recommendations on the sheep shearling situation, and made the following recommendations by teletype:

a. Shearling now on hand and under contract should not be disposed of.

b. That all future requirements of winter flying suits be made of fabric and all shearling flying suits issued outside the continental limits of the United States be replaced by fabric winter flying suits and procurement be initiated accordingly.

c. Upon initiation of procurement program to carry out provisions of Paragraph b for fabric winter flying suits and upon determination of delivery schedules, surplus shearling over and above requirements for shoes and mechanics' suits should be disposed of.

2. The teletyped recommendations have now been followed by a detailed report, concurred in by the two Commands, and transmitted on 30 October 1943, copy of which is attached.

3. In addition to the investigation of the over-all shearling situation, the Air Service Command was directed to report the amount of AAF shearling inventories that are unsuitable for AAF clothing. That command has reported that at least

3-1109 A.F.

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HEADQUARTERS ARMY AIR FORCES

ROUTING AND RECORD SHEET

SYMBOL NO.	
FILE NO.	

SUBJECT: Excessive Supplies and Procurement of Sheep Shearling for Flying Clothing.

TO: Chief of the Air Staff

DATE: 5 Nov. 1943

FROM: [illegible]

COMMENT NO. 2 OCAT. WAR:OCB:2365

4,713,563 square feet of our shearling inventories are unsuitable, and additional quantities may be disclosed by further investigation:

[illegible],631 sq. ft. below specification standards
2,[illegible],752 sq. ft. are obsolete because of specification changes -
4,713,563 sq. ft. unsuitable for use.

4. The Russian Purchasing Mission has expressed an interest in obtaining shearling, and has expressed a desire to inspect ALL types. This office has obtained samples of ALL shearling, including the above "unsuitable" types, which may satisfy Russian requirements as to quality and type.

5. This office is following the procedure and taking the action outlined below:

a. Retaining, for the present, shearling now on hand or on order, except such shearling as is unsuitable for ANY use.

b. Steps have been taken to dispose of the unsuitable shearling.

c. A directive has been issued to the Air Service Command, copy attached, to initiate procurement to meet future requirements of winter flying clothing with fabric suits, as recommended by Maj. Generals Frank and Branshaw. It is felt that such a directive is properly authorized by the recommendations of the Air Equipment Board in paragraph 6 of its letter to OCAR, dated 31 May 1943, recommending that shearling clothing be discontinued for overseas use, which recommendations were concurred in by 2nd Indorsement, dated 11 June 1943, by AAF OCAR, signed by Maj. General Giles, and recommending fabric suits as well as down suits.

d. Steps have been taken to expedite the procurement program, so that delivery schedules may be determined and surplus shearling be disposed of if possible before the end of winter.

Previous encls: n/c
4 add'l encls.

B. B. MEYERS
Brig. General, U.S.A.

3-1109 A.F.

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Carbon
Miss Shay Shearling
Asst Br. CO - 9
M.M.D. Wash.

AFMD-4B 406

CONFIDENTIAL

5 November 1943

Winter Flying Clothing

Commanding General, Air Service Command
Patterson Field, Fairfield, Ohio

1. In accordance with the recommendations in teletype of 27 October 1943 from you and the Commanding General, Materiel Command, and the recommendations in the Memorandum Report, dated 27 October 1943, on "The Use of Surplus Sheep Shearling", it is directed that a procurement program be initiated to meet future requirements of winter flying clothing, with the suits, to be issued first as replacements for shearling flying suits in use outside the continental United States.

2. The Resources Division, [illegible], is taking steps to investigate the availability of materials as listed in your Memorandum Report.

By Command of General [illegible]:

[illegible]
Brigadier General, [illegible]
Deputy

HQ AAF
NOV 1943

AFMMD-4B
WLU:jt

Return to Room 4B-882

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Orig for
Hist's Sheep Shearling
Fin & R Br, C.G. - 8
M.M.D., WDASH

AFDRS-11

November 1 43

Sample surplus sheep shearling for inspection by the Soviet Government.

Government Purchasing Commission
of the Soviet Unit in the U.S.A.
1710 Park Road N.W.
Attn: Mr. N. Zoyarny
Chief, Quartermaster Supply Depot.

1. As requested by Mr. N. Zoyarny, forwarded under separate cover for inspect or by the Soviet Unit, are three (3) samples shearling. One (1) 5/8 inch pile, one (1) 1/2 inch pile, one (1) 1/4 inch pile.

2. The sample with 5/8 inch pile represents types that will be available due to changes in the Army Air Forces specifications concerning pile length. The sample with the 1/2 inch and 1/4 inch pile represents types that will be available due to minor defects which fail to meet the strict Army Air Forces specifications.

3. At this time an exact inventory of the above types shearling is not available, however, inspection is now being made at all storage depots to determine the exact quantity which will be available for disposition. These inspections should be completed withing thirty (30) days.

For the Commanding General, Army Air Forces:

FREDERICK C. HOPKINS, JR.
Brigadier General, U.S.A.
Redistribution & Salvage
Officer, AAF

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AFDRE-41
JRS mmh

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Basic: Ltr. frm. Mat. Comm dtd. 3 Nov. 43, Subj. Distribution of Government-Furnished Textiles.

ASC 1st Ind. ASCSE

AAF HQRS., ASC, Patterson Field, Fairfield, Ohio. 9 November 1943

TO: Commanding General, AAF Materiel Command, Wright Field, Dayton, Ohio.

1. Recommendations in basic communication are concurred in with the exception of paragraph 2c. Exception is taken to granting authority to contact ASC Storage Depots direct, since existing regulations preclude circumventing channels of command in issuance of orders of this nature. Further, the advantages set forth in paragraph 3 would not be effected if ASC Storage facilities were used.

2. It is understood by this Command that the Materiel Command will accept responsibility for the initiation of Purchase Requests, storage, deliveries to parachute and clothing manufacturers and all pertinent and necessary records of the Government Furnished Equipment listed below.

Nylon - cloth, cord, tape, webbing and thread
Sheep Shearling
Cloth, cotton twill
Alpaca & Wool pile
Chicken Feathers and Down
Cloth, flannel, wool
Any additional textile items which of necessity are required to become Government Furnished.

3. It is requested your Command notify Class 21, this Command, date on which material is to start being transferred from ASC depots to GFE depots. Records will be dropped by this Command and picked up by Materiel Command concurrently as shipments move from the control of Air Service Command to control of Materiel Command.

For the Commanding General:

O. D. THOMPSON
Lt. Col. Air Corps
Chief, Equipment Section
Supply Division

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HEADQUARTERS ARMY AIR FORCES

ROUTING AND RECORD SHEET

TALLY NO.	
FILE NO.	

SUBJECT: Excessive Supplies and Procurement of Sheep Shearling for Flying Clothing.

TO: AC/AS, Materiel, Maintenance & Distribution - ATTENTION: General Echols.

DATE 11 November 43

FROM: Chief of the Air Staff

COMMENT NO. 6

MAL/mdf/5-65

The Chief of the Air Staff still is not satisfied with the action being taken and desires that you give this project your personal attention and report your views to General Giles.

MILLARD F. LIBBY,
Colonel, G. S. C.,
Secretary of the Air Staff.

Incl. n/c

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3-1109 A.F.

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HEADQUARTERS ARMY AIR FORCES

ROUTING AND RECORD SHEET

TALLY NO.	
FILE NO.	

SUBJECT:

TO:

FROM:

DATE 9 Aug 44

COMMENT NO. 1

OPD chief

It is more in the best interests that [illegible] be made available than the [illegible]

[illegible]

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3-1109-1

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2c

AFDRE-8
CCS:ph

18 November 1943

Frederick M. Hopkins, Jr.
Brig. General, U.S.A.

COMMANDING GENERAL
MATERIEL COMMAND
ATTENTION: TECHNICAL EXECUTIVE

EXTRA PRIORITY

AFDRE-8-459(CCS).....THE DEPUTY CHIEF OF AIR STAFF, M. M. & D., HAS REQUESTED THAT ANSWERS TO THE FOLLOWING QUESTIONS REGARDING SHEEP SHEARLINGS BE DETERMINED AND FORWARDED TO THIS OFFICE IMMEDIATELY. IT IS REALIZED THAT SOME OF THIS INFORMATION MAY NOT BE AVAILABLE IN MATERIEL COMMAND AND IT IS, THEREFORE, REQUESTED THAT THE MATTER BE COORDINATED WITH THE PROPER PERSONNEL OF THE AIR SERVICE COMMAND AT PATTERSON FIELD.

(1) WHAT IS INVENTORY OF UNSUITABLE SHEEP SHEARLINGS?

(2) WHAT IS THE TOTAL INVENTORY SUITABLE AND UNSUITABLE?

(3) HAVE THERE BEEN ANY CHANGES IN SHEARLING SPECIFICATIONS WHICH HAVE MADE PRESENT STOCKS OF SHEEP SHEARLINGS UNSUITABLE.

IT IS REQUESTED THAT THIS OFFICE BE INFORMED WHAT FACTORS, IF ANY, HAVE NECESSITATED CHANGES IN SPECIFICATION FOR FLIERS' CLOTHING FROM SHEEP SHEARLING TO OTHER TYPES.

THIS MATTER WAS DISCUSSED WITH CAPTAIN HOPPENSTAND OF THE EQUIPMENT LABORATORY ON HIS VISIT TO WASHINGTON 18 NOVEMBER. REQUEST THAT THE INFORMATION BE EXPEDITED. (HOPKINS)

RESOURCES DIVISION, ARCO

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HQP-345 ~~11/0/XXXXX~~ 11/22/43

OFFICE ASSISTANT CHIEF OF AIR STAFF

~~WAD~~

ATTN: ~~RSOUXX~~ RESOURCES DIVISION

REFERENCE TELETYPE AFDRE-8-459(CCS) DATED 18 NOVEMBER 1943,

THE FOLLOWING INFORMATION IS SUBMITTED:

1. PENDING NEW INVENTORIES WITHIN APPROXIMATELY ONE (1) MONTH, MINIMUM SHEALXX SHEARLING ON HAND UNSUITABLE FOR USE IN CLOTHING OR SHOES 680,831 SQUARE FEET.

2. TOTAL INVENTORY OF SUITABLE AND UNSUITABLE SHEARLING 1, XX 11, XXX 11,176,201 SQUARE FEET. SHEARLING STILL DUE ON CONTRACTS 28,500,000 SQUARE FEET.

3. CHANGES IN SPECIFICATIONS HAVE ELIMINATED THE USE OF 3/8 INCH, 5/8 INCH AND ONE INCH PILE ENXX ELNGTHS FOR CLOTHING IN A TOTAL AMOUNT OF 2,032,752 SQUARE FEET OVER AND ABOVE QUANTITY LISTED IN PARAGRAPH 1 ABOVE.

4. THE FOLLOWING FACTS HAVE NECESSITATED CHANGES IN SPECIFICATIONS FOR FLYERS' CLOTHING:

A. SHEARLING BECOMES STIFF AT LOW TEMPERATURES.

B. ~~SHEALXX~~ SHEARLING IS BULKY AND HINDERS FREE MOVEMENT BY NOT BEING AS ~~FLEXIBXX~~ FLEXIBLE AS THE NEW TYPES OF CLOTHING DEVELOPED.

C. SHEARLING CLOTHING IS NOT DESIRED BY ARMY AIR FORCE FIGHTING PERSONNEL AS REVEALED BY ~~REPRESENTAIXX~~ REPRESENTATIVE FLYERS BOTH FIGHTERS AND BOMBARDMENT FROM VARIOUS COMBAT ~~RAX~~ AREAS AND ASSEMBLED BY THE ARMY AIR FORCE SCHOOL OF APPLIED TACTICS.

D. TESTS HAVE PROVED THAT SHEEP SHEARLING CLOTHING IS NOT AS ~~SATISFACORXX~~ SATISFACTORY AS FABRIC COMBINATIONS OF CLOTHING UNDER EXTREME COLD CONDITIONS. END AFAMC

TECHNICAL EXECUTIVE

RJE

1400"

15YH LINE FROM END RDS

ONE INCH PILE LENGHTS RPT LENGTHS

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WAR DEPARTMENT
HEADQUARTERS OF THE ARMY AIR FORCES
WASHINGTON, D. C.

25 NOV [illegible]

[illegible]: The Chief of Air Staff

Subject: Procurement of New Type Flying Suits

1. Referring to [illegible] from this office, subject: "Excessive Supplies and Procurement of Sheep Shearling for Flying Clothing", dated November 19, the meeting with [illegible] November 24 at 4:30 p.m. According to [illegible], who had consulted manufacturers, materials for the new suits can be made available beginning in January. A few minor items have shortages, but substitutes are being arranged. Both alpaca and down suits will be made.

2. The Washington phase of the meeting adjourned, and Materiel Command representatives have gone to New York where they will resume conferences with cloth weavers. Contracts will be placed this week for the various types of cloth. Only at that time can an accurate estimate of cloth delivery be made.

3. After cloth deliveries are determined, contracts will be placed with clothing manufacturers, at which time a delivery schedule for clothing can be determined.

4. It will take approximately two or three weeks to complete all the conferences and contracts and arrange the necessary manufacturing priorities. Only then will it be possible to learn with any fair degree of accuracy when actual delivery of suits will begin. At that time the shearling situation will be reviewed with the objective of disposal of surplus.

O P Echols

O P ECHOLS
Maj. Gen. U.S.A.
Asst. Chief of Air Staff, M M & D

Encl #6

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Original
Memos Sheep Shearling
AAF Bx, Ca-7
(1 pp)
MMD, Wash

CONFIDENTIAL

HEADQUARTERS ARMY AIR FORCES

ROUTING AND RECORD SHEET

TALLY NO.	
FILE NO.	

SUBJECT: Excessive Supplies and Procurement of Sheep Shearling for Flying Clothing

TO: AC/AS, MM&D

DATE 25 Nov 43

FROM: Deputy Chief of Air Staff

COMMENT NO. 8
ESP/eva/6371

1. General Giles has noted.

2. It will be satisfactory to delay disposition plans until conferences have been completed. He feels, however, that action should be taken now to cancel procurement of additional shearling (if such action has not already been taken).

5 Incls n/c
Added: Incl #6--CONF memo to CAS frm Gen. Echols, "Procurement of New Type Flying Suits" dtd 23 Nov 43.

EDWIN S. PERRIN,
Brigadier General, U.S.A.,
Deputy Chief of Air Staff.

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Carbon
Misc 33 Sheep Shearlings
Aer-R & R. C 6-5(1-39)
NMO, Wash

AFDRB-11

2 December 1943

Surplus Sheep Shearlings

Government Purchasing Commission
of the Soviet Union in the U.S.A.
1610 Park Road N.W.
Attention: Mr. I. Zoyarny
Chief, Quartermaster Supply Depot

1. Supplementing letter dated 5 November 1943, subject: Sample surplus sheep shearling for inspection by the Soviet Government.

2. The following is a list showing estimated quantities of sheep shearling on hand in the Army Air Forces:

(a) The amounts of shearling on hand that are considered below specification standards for use in AAF Flying Clothing are as follows:

Type I, Electrified	1/4" P.L.	245,345 Sq.Ft.
" "	3/8" " "	7,765 " "
" "	1/2" " "	213,235 " "
" "	5/8" " "	46,125 " "
" "	3/4" " "	81,676 " "
" "	1" " "	81,685 " "
Type II, Natural	1/4 to 3/8"	5,000 " "
	Total	680,831 Sq.Ft.

(b) The amounts of shearling on hand that have become obsolete because of revised Shearling Clothing specification changes are as follows:

Type I, Electrified	3/8" P.L.	1,186,656 Sq.Ft.
" "	5/8" P.L.	661,342 " "
" "	1" P.L.	184,754 " "
	Total	2,032,752 Sq.Ft.

3. In addition to the samples submitted to your office 5 November 1943 for inspection you will note that shearling with a 3/8" pile is now available due to a revision in shearling clothing specification. The 5/8" pile sample forwarded you previously is a represented sample of this type shearling.

JHS:rw
AFDRB-11

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[illegible]

4. Inasmuch as there is continual pressure on the Army Air Forces to dispose of this shearling through civilian economy, it is suggested that the U.S.S.R submit their requirements to this office as soon as possible.

For the Commanding General, Army Air Forces:

FREDERICK L. HOPKINS, JR.
Brigadier General, U.S.A.
Redistribution & Salvage Officer, AAF.

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AFDMA-5A
AC3:os

3 December 1943

Nylon, Shearling and Silk

Commanding General, Materiel Command
Wright Field, Dayton, Ohio

Attention: Technical Executive

1. Reference is made to letter dated 10 August 1943 to Technical Executive, subject: "Nylon and Shearling - Final Accounting of Materials Used by Bureau of Aeronautics and Request for Reimbursement from the Army Air Forces for Unused Materials", and letter from the Air Service Command, (ASCSE-7B), dated 2 July 1943, in which it was stated that it was acceptable to the Army Air Forces to absorb excess stock of the above materials remaining in the Contractors' Plants.

2. In connection with the above, there is forwarded herewith a breakdown of silk and nylon used by the Navy and a breakdown of sheep shearling used by the Navy Department. The above breakdowns can be used as a comparison in computing the amount of funds to be reimbursed by the Army Air Forces at such time as formal request is received from the Navy Department.

By command of General ARNOLD:

W. F. VOLANDT
Colonel, Air Corps
Chief, Procurement Branch
Office, Assistant Chief of Air Staff
Materiel, Maintenance and Distribution

2 Incls:
Brkdwn. of Nylon & Silk
Brkdwn. on Sheep Shearling

cc: Lt. Joseph H. Meyer, Unit ASCSE-7a, Air Service Command

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11-29-43

TOTAL WINTER FLYING SUITS MFR. FROM AAF ▲ GFE DELIVERED TO BUAERO.

Covering Entire Period of Army Furnished Sheep Shearling

Dec. 1941 to July 1943

	QUANTITY	Sq.Ft. 3/4" Pile at 19¢ per suit	Sq.Ft. ½" Pile at 47¢ per suit	Sq.Ft. ¼" Pile at 12¢ per suit
HLB Corp. NOs-98192	15,600	296,400	733,200	23,400
Monarch Mfg. Co. NXsa-12497	12,900	245,100	606,300	19,350
Fried Ostermann Co. NXsa-1405	6,000	114,000	282,000	9,000
Gordon & Ferguson NXsa-2366	3,349	63,631	157,403	5,024
Totals	37,849	719,131	1,778,903	56,0774
		65¢	60¢	57¢
Total Value Shearling Used		$467,435.15	$1,067,341.80	$32,361.18

From
Commander [illegible]
Room 2N68
Navy Dept.

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CA:Doc
413.52 Sheep Shearling
Ass't A. Br. CA - All (1943)
M.M.D. WASH

JHS:rw

Lt. Col. P. H. Bonner

4 December 1943

Excess Sheep Shearling

1. Capt. J. H. Smith called on Mr. E. I. King, Asst. Chief Property Utilization Branch, U.S. Treasury Department, Procurement Division, to discuss the proposed sale of excess sheep shearling to the Soviet Union. Details of previous contacts with Mr. Zoynary, Chief Quartermaster Supply Depot, Government Purchasing Commission of the Soviet Union in United States, were reviewed to Mr. King also the fact that this office had submitted samples of shearling for the Soviet Union to inspect.

2. An incomplete inventory of obsolete and rejected Army Air Force shearling now available was submitted to Mr. King and he was informed that due to a change in flying clothing specifications it was probable that approximately 5,000,000 additional good shearling would also be excess within 60 days.

3. Mr. King told Capt. Smith that the Treasury Department would be willing to handle the Soviet Union deal and would also take all excess and obsolete shearling off the Air Corps hands. He stated that upon receipt of a complete inventory showing locations of these shearling his office would advise their regional offices to issue shipping instructions to the warehouses located in their respective districts now storing these shearling.

4. If such a deal can be made with the Treasury Department to take over all Army Air Forces inventories of excess and obsolete shearling (Mr. King assured Capt. Smith that the Treasury Department would do this) it will be an ideal way of clearing our inventories of excess shearling and since the Treasury Department is willing to take them over at once it will provide means of clearing immediately the Syracuse Depot which has recently been set up as a specialized Depot for engines.

5. As requested by Mr. King, Captain Smith will prepare a letter showing detailed inventories and location of all AAF shearling now available for sale.

J. H. SMITH
Captain, Air Corps

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JBS:RH

Lt. Col. P. H. Bonner

4 Dec. 1943

Excess Sheep Shearling

1. Capt. Smith called Lt. J. H. Meyers, A.S.C., Patterson Field, and requested a complete breakdown of all excess and obsolete shearling showing the locations and the amounts on hand that are considered below specification standards, and amounts on hand that have become obsolete because of revised shearling clothing specification changes as to pile length.

2. Lt. Meyers stated that he could furnish this office figures on the Syracuse and Memphis Depots but a complete inventory at other Depots such as Topeka had not been completed due to certain difficulties encountered in the storage methods at this Depot.

J. H. SMITH
Captain, Air Corps

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[illegible]

(Written 12/3/43)

-1

4 December 194[illegible]

Subject: Sheepskin, Termination of Contracts.

Commanding General,
Materiel Command,
Wright Field, Dayton, Ohio.

1. It is directed that you immediately undertake a study of the extent to which existing contracts for sheepskin can be terminated with minimum cost to the Government.

2. The objective of this study is to enable the Army Air Forces to be in a position to expeditiously move on cancellation of contracts for any amounts of sheepskin that may be in excess of requirements to 31 December 1944, when and as the requirements for sheepskin are recalculated because of the procurement of new type flying clothing which is now pending.

By command of General ARNOLD:

[illegible],
Brig. General, U. S. A.,
Deputy Asst. Chief of Air Staff,
Materiel, Maintenance & Distribution.

cc: General Meyers
AFMMD-43

WLD/BWC/ah/71500
AFMMA-1

Return to Room 5B 714 - Lt. Ullmann

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AAFMC-261-WP-2-26-43-500M

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INTER-OFFICE MEMORANDUM

ARMY AIR FORCES
MATERIEL [redacted] COMMAND
Office of The Commanding General

HBW:iv:HQC
Wright Field, Dayton, Ohio
Date 6 December 1943

TO: Commanding General,
Materiel Command.

SUBJECT: Adequacy of New AAF Flying Clothing.

1. As requested in memorandum of 29 November 1943, a detailed report on the adequacy of new clothing items is being prepared. A preliminary review of basic problems is submitted herewith.

2. The new AAF flying clothing is considered to be a notable improvement over the clothing of a year ago.

3. The main factor contributing to this improvement is the change from the use of shearling (sheepskin) to pile fabrics, quilted down and sturdy cotton twills as the basic materials from which new AAF garments are made.

4. The use of these new materials has resulted in a marked increase in flexibility and consequently in much additional comfort. The porosity of these fabrics has done a great deal to eliminate internal condensation of moisture, which was one of the chief disadvantages of the old shearling clothing.

5. From the style standpoint, the new clothing is particularly practical for use in the Arctic, but presents definite drawbacks when viewed in light of the requirements of other theatres of operation. It is doubtful whether the heavy furlined hood, the long jacket and the complete absence of exit zippers in the trousers are features which aptly meet the requirements of high altitude combat flyers in the temperate or tropical theatres. Lack of trouser zippers presents a truly serious hazard from the first aid standpoint. Lack of these same zippers makes it impossible to cope satisfactorily with the ventilation problem of the extreme temperature ranges often encountered in warm or hot weather between the ground and operational altitudes.

6. Various important features of the new garments do not conform with the established principles of modern clothing construction. A notable absence of uniformity is apparent in the placement, size and number of pockets, the use of zippers, the height of rise in trousers, the design of cuffs and collars and the size-grading of patterns.

Signature .....

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7. Indecision as to exact field requirements or lack of confidence in the new clothing is apparent in view of the fact that this program includes three separate and distinct winter flying outfits:- the shearling suit, the down suit and the alpaca suit. There is no specific relationship between the choice of materials in these three suits and their basis of issue.

8. The two-piece (F-2) electrical suit represents a distinct improvement over the old F-1 electric coverall from the point of view of electrical engineering. However, there obviously has been but little correlation between this suit and the other articles of the new AAF clothing program. The advisability of supplying a separate and additional woolen uniform to be worn over and attached to the electrical undersuit is questioned. With a more versatile system of heat control, separately governing the temperature of the electrical suit, the gloves and the shoes, this outfit could be worn most effictively as an auxiliary garment underneath specified items of outer clothing available for other purposes as well. The regulation OD color of the F-2 suit at present on procurement will certainly result in a great increase in the speed with which these garments are expended, as they can now be worn indiscriminately on the ground.

9. Auxiliary clothing in the present program may be evaluated briefly as follows:

a. Headgear: The new helmets are considered a great improvement over old types. Their size and fit has been closely coordinated with the Aero Medical Lab. for two months and they have been successfully coordinated with goggles and oxygen masks of latest design. It is understood that a temporary shortage of the right sort of materials is being overcome by the Production Division.

b. Handgear: The new layered winter glove assembly is a great improvement over the old AAF glove and mitten. However, certain minor changes in design and materials will effect a marked improvement in both durability and comfort. This part of the AAF clothing program must be closely coordinated with the Quartermaster General and the Navy.

c. Footgear: In view of the large quantity of A-6 winter flying boots (465,000) already procured, little development has been carried out along new lines in AAF footgear. The mukluk must be improved at once and the socks and insole included in the "mukluk assembly" should be coordinated with Quartermaster General. Thorough consideration should also be given the possible need for an intermediate flying boot. No article of this sort is now in existence.

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10. The new Flying Clothing Program should be based on a study of clothing requirements from the skin out. A "battle-dress" type of combat uniform with warm woolen trousers and short informal blouse-jacket should be considered the basic flying garment for use in theatres of operation, both on the ground and in the air. Layering systems of clothing to be worn over this combat uniform should consist of versatile component parts, which may be employed interchangeably or alone, and which will not depend entirely upon one another for their usefulness.

11. Recommended action is as follows:

a. A detailed analysis should be made of each article in the new clothing program (action already initiated) to determine improvements which can be made at once and which will neither seriously interfere with production nor alter the basic design characteristics already agreed upon by the AAF Equipment Board and Headquarters AAF. It should be understood that these changes will result not only in simplification from a production standpoint, but also in greater uniformity of design.

b. Engineering Change Orders should be issued to bring about the desired production modifications and subsequent specification changes at the earliest practicable moment.

c. Simultaneously, further design and field tests must be conducted in order to develop fully modified garments which will approach, as nearly as practicable, the basic principles outlined in this report. It is expected that these new designs can be completed and tested before the termination of present clothing contracts.

d. All action taken must be coordinated in the closest possible way with the Aero Medical Lab., the Production Division and the Air Service Command. In order to effect Action No. 3 it will also be necessary to coordinate with the AAF Equipment Board and Headquarters AAF.

H. B. WASHBURN, Jr.
Special Assistant.

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4 U-5(1/700) 64

Subj: Adequacy of New AAF Flying Clothing

1st Ind. TAS:ru:MQC

Deputy Chief of Staff, Materiel Command, Wright Field, 9 December 1943.
To: Capt. D. Hoppenstand, Acting Chief, Clothing Branch.

1. The study and recommendations of Mr. Washburn as set forth in basic communication appear to be sound. Direct that you take action to put them in effect, unless you have other evidence to the contrary in which case you will submit such recommendation to me in writing.

CHAS. E. BRANSHAW,
Major General, U.S.A.
Commanding.

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2nd Ind. DH:hs:46

Flying Clothing Branch, Materiel Command, Wright Field. 13 December 1943.

To: Deputy Chief of Staff, Materiel Command, Wright Field.

1. The following comments and recommendations are submitted as directed concerning basic communication.

a. Paragraph 1 of basic communication - no comments.

b. Paragraph 2 of basic communication - no comments.

c. Paragraph 3 of basic communication - no comments.

d. Paragraph 4 of basic communication - no comments.

e. Paragraph 5 of basic communication - No drawbacks from a style standpoint for theatres other than the Arctic were presented; therefore, it is not known what reference is made here. The styles as developed when presented to a representative group of fifteen fighter plane and fifteen bomber plane personnel selected from all combat theatres were received enthusiastically as being just what they needed. Minor changes can be made subject to comments on the new clothing from the field. The styling of the new clothing was coordinated with the foremost sport clothing designers in the United States and in collaboration with the United States Navy.

The fur lined collar of the winter suits was extended into a fur lined hood, accepting the suggestion of Wing Commander Webb, Mr. Ford and Mr. Washburn of the Quartermaster Corps when these suits were shown to these gentlemen in Washington during the Spring of 1943 for the purpose of obtaining comments on the new clothing developments of Wright Field from the Quartermaster Corps. The length of the winter jackets was established as being the maximum length for cold weather protection that would satisfactorily fit

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2nd Ind. to Deputy Chief of Staff, Mat. Com.,
Adequacy of New AAF Flying Clothing
13 December 1943.

with a parachute. These jackets were tested at both Eglin Field and Orlando, Florida by experienced flight personnel. Additional zippers have been contemplated on the new clothing; however, it is deemed advisable to obtain the minor changes from theatres of operation without jumping to conclusions. Major Schenck had planned to expedite this information when his trip to the combat theatre was cancelled.

It has not been established that lack of zippers in the trousers present a hazard from the first aid standpoint. A fragment going through a zipper and carrying small metal zipper parts into a wound presents a more serious hazard. It is recommended that follow-up of new clothing items in theatres of combat be made and the average recommendations of the fighting forces who actually wear the items be consolidated and incorporated into the new clothing.

f. Paragraph 6 of basic communication - Features of the new clothing are a result of consolidated opinions of the best sport clothing designers in the United States and years of experience by the designers of Navy flight clothing. Minor changes in pockets, zippers, height of trousers, design of cuffs and collars and sizes may be desirable; however, the Flying Clothing Branch knows no one who is qualified to determine these changes prior to combat reports since the present clothing is the combined product of experienced fighter and bomber personnel, some of America's best designers and tried experience of the Navy.

g. Paragraph 7 of basic communication - There is no indecision or lack of confidence in the new clothing on the part of the Army Air Forces personnel who know the true picture of the new developments. An outsider who does not know the facts may wonder why there are three winter flying outfits but there is a reason for every new item of clothing.

The winter shearling flying suit while rapidly being replaced could not be immediately cut off because it would upset the economic situation in the country and sufficient raw materials in new types of clothing materials were not readily available to supply Army Air Forces clothing requirements. The program has to be changed gradually and the new design of shearling flying suits is considered reasonably satisfactory where extreme cold temperatures are not encountered. Sufficient raw materials were not available to have only one winter flying suit of the down type as selected by the Equipment Board; therefore, it was necessary to supplement this with an alpaca winter flying suit.

-5-

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4-5(3-700)

70

2nd Ind. to Deputy Chief of Staff, Mat. Com.,
Adequacy of New AAF Flying Clothing
13 December 1943.

h. Paragraph 8 of basic communication - The type F-2 electric suit is considered satisfactory; however, in an effort to obtain still more flexibility and comfort the Flying Clothing Branch developed an uninsulated electric suit in accordance with General Grow's views which can be worn in conjunction with other new clothing items. Tests indicate this to be an excellent suit which could be rushed into production.

i. Paragraph 9 of basic communication - (Sub-paragraph b - Handgear) The handgear as developed was the result of tests and the combined opinion of America's foremost glove manufacturers in joint sessions in Gloversville, N. Y. Improvement in design and materials of the inner rayon glove is underway in the Flying Clothing Branch. No gloves considered superior to the Army Air Forces new gloves have been seen and since the Flying Clothing Branch has constantly tried to improve this item, it is recommended that the Flying Clothing Branch be given the name of the authority on gloves capable of improving this important item.

Sub-paragraph c - Footgear - Operations, Commitments & Requirements has definitely on two recent occasions stated that there is no Army Air Forces requirement for an intermediate boot; however, the Flying Clothing Branch intends to continue study on this should a requirement be presented.

j. Paragraph 10 of basic communication - The Flying Clothing Branch has always desired to furnish a battle dress; however, this has been definitely established as a Quartermaster Corps item. The layer system has been definitely followed in all new Army Air Forces clothing developments and new items of clothing can be employed interchangeably or alone and they do not depend entirely upon one another for their usefulness.

k. Paragraph 11 of basic communication (sub-paragraph a) - This work has been underway in the Flying Clothing Branch and was an established principle.

Sub-paragraph b - This work has always been done on apparent improvements.

Sub-paragraph c - The basic principles of present Army Air Forces clothing have been coordinated with the Navy, foremost American designers, Eglin Field, Alaskan Theatre, other theatres through representative fighter and bomber pilots, the Equipment Board, Army Air Forces Board, Air Transport Command, Operations, Commitments & Requirements and at a special session at Army Air Forces Headquarters. No specific basic principle not already apparent in Army Air Forces new clothing are understood from the subject report.

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71

2nd Ind. to Deputy Chief of Staff, Mat. Com.,
Adequacy of New AAF Flying Clothing,
13 December 1943.

Sub-paragraph d - The Flying Clothing Branch has already established a close liaison and coordinated relationship with all Units involved in the clothing program.

2. It is to be noted that due to shortage of personnel and work created by outside influences, study of minor details relative to the new clothing has not been completed. It is recognized that improvements and/or changes can constantly be made in clothing. It is recommended that the following Army Air Forces clothing items be presented at once to an assembled court of representative fighter and bomber pilots in conjunction with the Equipment Board and representatives from Operations, Commitments & Requirements together with an assemblage of Quartermaster, English, Canadian and Navy clothing for the purpose of direct comparison and evaluation by qualified personnel.

3. The Flying Clothing Branch considers the following clothing will satisfy Army Air Forces needs:

a. Summer flying suit and helmet.

b. Light weight leather jacket.

c. Intermediate flying suit and helmet.

d. Alestric flying suit (latest Flying Clothing Branch development)

e. Winter flying coverall (alpaca lined)

f. Quilted winter flying suit (alpaca optional, depending on raw material)

g. Winter helmet

This equipment is believed to be the best in the world today for Army Air Forces use and a chance to prove it is highly desirable.

DAVID HOFFSTAND,
Captain, Air Corps,
Acting Chief,
Flying Clothing Branch.

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WFS:agf

6 December 1943

MEETING FOR COORDINATION OF DELIVERY SCHEDULES OF MATERIALS REQUIRED FOR NEW WINTER FLYING SUIT PROCUREMENT.

1. Action was taken this date regarding raw materials on New Winter Flying Program in accordance with letter dated 5 November 1943, regarding New Winter Flying Clothing from the Deputy ACAS, MM & D

The following were present at this meeting:

Major D. E. Calhoun, Chief, Requirements Office, Equipment Section.
Major J. A. Aquado, Executive Photographic, Clothing and Office Equipment Branch.
Captain D. Hoppenstard, Acting Chief, Clothing Branch, Materials Laboratory.
Captain H. A. Webb, Resources Control Section
Captain W. F. Spalding, Procurement Division, General Procurement Branch
2nd Lt. M. R. Lutmerding, Resources Control Section.
W/O A. A. Barcelona, Unit Chief, Requisition, Class 13.
Mr. J.E. Cooper, Unit Supervisor, Distribution, Class 13.
Mr. B.A. Holgate, Materials Laboratory, Materiel Command
Ann Koben, Resources Control, 90-M-3-3.

2. Boat Cloth: 1,918,500 yd.

Delivery schedule including additional fabric on order as follows:

January	125,000 yds.
February	244,100
March	827,000
April	817,000
May	787,000
June	552,000
TOTAL	3,332,100 yds.

3. Alpaca and Wool Cloth Type I:

January	104,500 yds
February	111,500
March	117,500
April	116,500
TOTAL REQUIREMENTS	415,000 yds.

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4. Alpaca and Wool Cloth Type I:

January	123,000 yds
February	183,000
March	199,000
April	145,000
TOTAL	650,000 yds

5. Parker Wilder Wool Fabric: 275,000 yds

This item to be cancelled from the Authority for Purchase and Air Service Command is to contact Major Bagnall, OQMG, Washington, D. C. to obtain this yardage in U.S. Army Specification 8-133, Type II.

6. Down Proof Lawn: 1,300,000 yds

Delivery as follows:

January	433,000
February	433,000
March	434,000
TOTAL	1,300,000

7. Element Cloth: 300,000 yds.

Army Air Forces have purchased 100,000 yards. The delivery will be 25,000 yards per month. It is being recommended to Air Service Command that the balance of 200,000 yards required should be secured from Quartermaster in either this fabric or type II poplin. It has been confirmed with Major Aquado this will meet approval and immediate action is to be taken. Delivery of 25,000 yds monthly start in January.

8. Mouton:

It has been suggested to Air Service Command to obtain 1,200,000 sq. ft. of Mouton, necessary for this program by changing present shearling contracts to allow this delivery in place of shearling. Materials Laboratory will prepare necessary specification for the Mouton.

9. Down and Feathers: 275,000 lb.

This mixture is now 30%, 45% Winter Foul Feathers, 25% Chicken Feathers. It was agreed by War Production Board and concurred in by the Requirements Committee that the first 16,000 lbs. per week will be for Air Corps use. The Quartermaster will furnish this to the Army Air Forces and it will be necessary for Air Service Command to arrange immediately transfer of funds to cover this project.

10. 8% Pocketing Twill, Outing Flannel, Elastic Webbing and Cowhide Strip Leather:

These items are to be furnished by the Clothing Manufacturer. After a meeting with the various branches of War Production Board,

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67

Washington, D. C., 17, 18, 19 November 1943, it was stated by them that the contractors would find no difficulty in purchasing these materials. The item of Elastic Webbing will be put into production by Quartermaster and will be available to the contractor thru Jeffersonville Quartermaster Pool.

11. From these schedules of raw materials, Air Service Command will immediately initiate an Authority for Purchase to cover the project of New Type Winter Flying Suits on schedules that can be met based on the availability of the component parts. It is agreed that the Purchase Request is to call for delivery of 20,000 suits in March and 95,000 suits per month during April, May, June and July. These figures are based on 100,000 Alpaca Winter Flying Suits, 100,000 Quilted Flying Suits and 200,000 Intermediate Flying Suits making 400,000 Garments. The monthly delivery is to be proportioned according to above distribution.

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Ken Wolfe
S.S. Situation
43-1/3)

7

written by
Capt Mullin
signed out
1/10

6 January, 1944

Sheep Shearling - Termination of Contracts

Commanding General, Army Air Forces
Office, Assistant Chief of Air Staff
Material, Maintenance and Distribution
Washington, D.C.

Attn: Deputy Asst. Chief of Air Staff
Brig. General B. E. Meyers

1. Reference is made to your letter dated 4 December, 1943 AFMMA-1, Subject: Sheep Shearling - Termination of Contracts and directive contained therein that a study be made immediately of the extent to which existing contracts for sheep shearling can be terminated with minimum cost to the Government.

2. The action taken to obtain necessary information upon which to base recommendations is as follows:

a. The Air Service Command conducted a physical inventory at all depots to determine the amount of usable sheep shearling stock on hand.

b. The Air Service Command made a recalculation of the requirements for clothing manufactured from sheep shearling and the availability of the new type fabric winter flying suits.

c. The Materiel Command made a survey of all tanners with open contracts to determine the percentage of raw materials which they had purchased against these contracts as well as the percentage of undelivered raw materials.

d. The Materiel Command conducted a survey of all clothing manufacturers to determine the amount of usable sheep shearling on hand and the additional quantity needed to complete the present clothing contracts.

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Ben. Wolfe
S.S. Silverstein
48-(2/3)

Ltr. to [illegible]
[illegible] January, 1944
Page Two.

3. As a result of the foregoing action, factual information relative to the quantities of sheep shearling on hand and under contract is as follows:

Usable stock on hand in Air Service Command Depots	14,787,952 sq. ft.	
Shearling on hand at clothing manufacturers (over and above contract requirements)	1,960,010 " "	
Total Shearling on hand		16,747,962 sq. ft.
Undelivered shearling on open contract as of 30 November, 1943		18,058,450 " "
Total shearling on hand and on contracts		34,806,412 " "

4. Requirements for sheep shearling based on recalculated clothing requirements which considers the availability of cloth winter flying suits is as follows:

Mechanics suits through 31 December, 1944 and three months inventory	6,460,700 sq. ft.
Boot requirements	750,000 " "
To complete Flying Clothing on Contract	330,000 " "
Maintenance	5,000,000 " "
Newton for new clothing program	1,200,000 " "
Total Requirements	13,740,700 " "

5. Surplus sheep shearling available on the basis of the above data:

Total Shearling on hand	16,747,962 sq. ft.	
Total Requirements	13,740,700 " "	
Surplus on hand in Depots and at clothing manufacturers		3,007,262 sq. ft
Surplus as a result of undelivered amounts on contract as of 30 Nov.		18,058,450 " "
Total Surplus		21,065,712 " "

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Gen. Wolfe
U.S. Senator
48-(3)

9

6. It should be noted that as of 30 November, 1943, there is an indicated surplus of 3,007,262 square feet of usable shearling on hand in Air Service Command Depots and at clothing manufacturers and all undelivered shearling in the quantity of 15,058,480 square feet is surplus. Of the undelivered quantity as of 30 November, 1943, approximately 750,000 square feet is estimated to have been delivered during the month of December, 1943 which rate of delivery can reasonably be expected to continue to the completion of open contracts. It is desired to point out that for all practical purposes all undelivered shearling can be considered to be "green" or untanned skins. These "green" skins are perishable and can not be stored.

7. The average cost to the Government of tanned hides is approximately fifty cents per square foot. It is estimated that the cost to the Government would be approximately thirty cents per square foot if the Government took over the green (perishable) hide from the tanners.

8. It is recommended that the open contracts for undelivered sheep shearling be terminated and that the officer in charge of termination proceedings in the disposal of these materials be granted the power to either have said articles completed or sold in the raw state. It is also recommended that the surplus quantity of 3,007,262 square feet on hand in the Air Service Command Depots and at clothing manufacturers, plus such additional shearling as has been delivered to the date of termination of open contracts, be disposed of.

CHAS. E. BRANSHAW,
Major Gen., U. S. A.
Commanding

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Gen. Wolfe
S.S. Situation
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1st Ind.

AFMCD-43

Ltr. fr. Hdq MC 6 January 1944

Hq. AAF, AC/AS/M&D, Control Office, Washington 25, D.C. 12 January 1944

To: Commanding General, Material Command, Wright Field, Dayton, Ohio.

1. In accordance with recommendations in your letter, it is directed that you take steps to dispose of the sheep shearling, estimated at approximately 17,000,000 square feet, that are undelivered against present contracts and which are estimated to be surplus in the light of Air Service Command's most recent calculations of requirements.

2. In connection with the possible disposition, your attention is called to the fact that the Treasury Procurement Division's facilities may be used in the event that termination of contracts is considered excessively costly to the Army Air Forces and to the Government. There is attached a copy of a letter, dated 7 January 1944, from the Treasury Department on this subject. In addition to the letter, the Treasury Department has expressed its opinion that it is in a position to dispose of surplus shearling with the least possible cost to the Government. It is suggested that you get in touch with AC/AS/M&D, Resources Division, Redistribution and Salvage Branch for further information on use of the Treasury facilities.

3. In disposing of the shearling mentioned above, consideration should be given to (a) termination of contracts without cost, including possible sale of green skins to tanners and (b) completion of contracts with deliveries direct to the Treasury Procurement Division. These methods of disposal should be used in such a combination as to result in the least cost to the Government and to the Army Air Forces, and the most effective combination can best be determined by your Command.

4. In connection with the 3,000,000 square feet of surplus shearling reported in the hands of the Air Service Command as of 30 November 1943, and the 1,000,000 square feet estimated to have been delivered since 30 November, a commitment has already been made by this headquarters to deliver to the Treasury approximately 2,500,000 square feet formerly reported as "obsolete" by the Air Service Command. The Air Service Command is being instructed to take steps to transfer this shearling, in accordance with the commitment. This would leave approximately 1,500,000 square feet of surplus in the Air Service Command. In this connection, your letter points to the requirement of 6,460,700 feet of shearling for mechanics' suits for issue and inventory to 31 December 1944, which would approximately manufacture 242,000 suits (less present inventories) reported as required by the Air Service Command in an indorsement dated 30 December 1943. Subsequently, however, the Air Service Command has revised its requirement estimate by telephone to a quantity of [illegible] suits. It is not clear that the revised and higher estimate of suit requirements has been relayed to you and included in your estimates of shearling requirements. The difference in suit requirements would use the 1,500,000 square feet of shearling in question. It is felt that this contingency plus the chance that additional quantities of Air Service Command stock are of reject quality necessitates taking no action on this 1,500,000 square feet for the present.

GENERAL CRAWFORD
"This still seems to be SNAFU and quite contradictory.
[illegible] do we do now? B."

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Sheep Shearling

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5. The above directive to dispose of the entire undelivered balance is contingent upon your being assured of being able to obtain materials for the flyers clothing, new type, that will be required in the last half of 1944. Steps should be taken immediately to procure cloth as required for suits to be issued in the last half of the year, and it is assumed that you are obtaining the necessary requirements estimates and A for P's from the Air Service Command.

By Command of General ARNOLD:

(Signed) B. E. Meyers

B. E. MEYERS
Brig. General, U.S.A.
Deputy Asst. Chief of Air Staff
Materiel, Maintenance & Distribution

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Gen. Wolfe
S. S. Stimson
AB - (1)

C O P Y

AFMMD-4B
WLU:bw

12 January 1944

SUBJECT: Disposal of Obsolete Pile Lengths of Sheep Shearling.

TO: Commanding General, Air Service Command
Patterson Field, Fairfield, Ohio

1. Reference is made to our letter of 6 December 1943, subject: Sheep Shearling: Status of Stocks and Requirements, and to your 1st indorsement, dated 30 December 1943, recalled by your teletype request of 4 January 1944, and corrected by telephone conversation of 7 January 1944.

2. You report 2,510,933 square feet of obsolete pile lengths of sheep shearling, and state: "At present no action has been taken for disposal of obsolete pile lengths".

3. As pointed out in teletype to you, dated 11 December 1943, and in numerous telephone conversations, arrangements have been made by this office for the Procurement Division, U. S. Treasury Department, to take over all reject and obsolete sheep shearling.

4. Commitments have been made to the Treasury Department that the obsolete types of sheep shearling would be transferred to the Procurement Division and the Chief of the Air Staff was advised on 16 December 1943 that such action would be taken.

5. According to information concurred in by your Command, and submitted by the Materiel Command in a letter of 8 January to this Headquarters, it was estimated that the Air Service Command's stocks on hand andwith clothing manufacturers as of November 30 were adequate to provide all requirements to 31 December 1944, including 5,000,000 square feet for maintenance, and leave a surplus of approximately 3,000,000 square feet. In addition, since 30 November it is estimated that shearling has been delivered at the rate of 750,000 square feet per month, or about 1,000,000 square feet in the interim period.

6. In view of the commitments mentioned above and of the fact that adequate shearling appears to be on hand, it is directed that steps be taken to transfer to the Treasury Department the obsolete pile lengths now in the hands of your command.

By command of General ARNOLD:

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Ken Wolfe
2B-(12)
S.J. Sutherlin

COPY

13 January 1944

Status of winter clothing and of surplus sheep shearling

Commanding General, Air Service Command
Patterson Field, Fairfield, Ohio

215

1. A review of sheep shearling information submitted by your Command and by the Materiel Command, and concurred in by representatives of your Command, indicates the following:

Sheep Shearling on hand and with clothing manufacturers, 30 Nov.	16,700,000 sq. ft.	
Estimated delivered 30 Nov.-15 Jan.	1,000,000 sq. ft.	
Shearling on hand. 15 Jan.	17,700,000 sq. ft.	
Shearling undelivered against contracts	17,000,000 sq. ft.	
Total on hand or on order		34,700,000 sq. ft.
Requirements for cal. year 1944		
140,000 mechanics suits	7,700,000 sq. ft.	
Maintenance	5,000,000 sq. ft.	
Mouton for new suits	1,200,000 sq. ft.	
150,000 pr. shoes	750,000 sq. ft.	
For suits being manufactured	330,000 sq. ft.	
Total required		14,980,000 sq. ft.
Surplus		19,720,000 sq. ft.
Committed to Treasury - obsolete		2,500,000 sq. ft.
Balance to be disposed of		17,220,000 sq. ft.

2. The Materiel Command is being directed to dispose of undelivered contracts, estimated at 17,000,000 sq. ft., and the responsibility of effecting most economical disposition or termination is being placed with the Materiel Command. Copy of instructions to that Command is enclosed.

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Incl 3

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Gen Wolfe
a B-(2/2)
S.S Section

5. It is directed that you take steps to transfer to the Treasury Procurement Division the 2,510,953 sq. ft. reported as obsolete, in accordance with commitments to the Treasury Department as related to you in teletype of 11 December 1943, copy attached.

4. As for winter flying clothing, information received here and approved by representatives of your Command, requirements for flyers suits 1 January 1944-30 June 1944 amount to some 307,000 suits, approximately as follows:

For issue in U.S.	184,000 suits
Forissue overseas	123,000 suits
Total Requirements	307,000 suits

5. Against these requirements, procurement has been initiated for 307,000 new type suits and is expected to be completed by 31 July.

6. In addition to new-type suits under procurement, your Command has on hand or on order approximately 173,000 shearling flyers suits, as follows:

On hand 30 Nov. 1943	111,000 suits	
Less estimated December issues	30,000 suits	
Estimated on hand 1 Jan. 1944		81,000 suits
On order 30 Nov. 1943		92,000 suits
		173,000 suits

7. It appears from the above facts that requirements for flyers suits are adequately provided for, insofar as the first half of 1944 is concerned.

8. It is requested that you confirm the facts as outlined above if they agree with information in your Command, and that you advise this headquarters of what action has been taken to provide the flyers clothing required in the last half of 1944.

By command of General ARNOLD:

2 Incl:
ltr,CG,MC,12Jan.
teletype CG, ASC,11Dec.

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Gen. Wolfe
D. S. Stratton
673-(1/1)

2nd Ind. TAS:vl:MJG

Deputy Chief of Staff, Material Command, Wright Field. 26 January 1944.

To: Chief, Procurement Division, Wright Field.

1. Forwarded for compliance with first indorsement. Note particularly paragraphs 4 and 5. The termination of open contracts for undelivered sheep shearling can proceed now, however, before making disposition of the completed shearling, the first indorsement requires an analysis of all flight clothing requirements for the remainder of calendar year 1944, together with a study of availability of the new materials such as Byrd cloth, alpaca pile, down, mouton, etc.

2. If it is indicated that there will be on hand insufficient quantities of the new materials to take care of 1944 requirements of flyer's clothing, new type, then Air Service Command may wish to use more of the shearling than the quantity indicated in paragraph 4.

3. Direct this entire matter be closely coordinated with Air Service Command and with Resources Control, and that a reply be prepared to General Meyers for signature in these Headquarters stating that we are doing, and progress being made.

T. A. SIMS,
Colonel, Air Corps,
Deputy Chief of Staff.

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Address reply & ENVELOPE to

Commanding General
AAF Materiel Command
Engineering Division
Materials Laboratory
Reference: CJC:hmr:56
Wright Field, Dayton, Ohio

xxxxxx Command

A. C. Lawrence Leather Company,
Peabody, Massachusetts.
Attention: Mr. K. E. Bell.

Gentlemen:

Reference your letter of 27 January 1944 concerning the revision of Army-Navy Aeronautical Specification AN-S-35, you are advised that the tensile requirement for the Type III skin has been reduced to 900 pounds per square inch minimum.

Test values obtained on available skins at the Materiel Command indicated values of 1250 to 1500 pounds per square inch, and the 900 pound minimum is believed to be adequate. Tests were accomplished on a specimen 6 inches long by 1 inch wide, and the determinations made after shearing the wool on the specimen.

Very truly yours,

J. B. JOHNSON,
Chief, Materials Laboratory,
Engineering Division.

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AAFMC-265-A-WF-2-26-43-500M

INTER-OFFICE MEMORANDUM

ARMY AIR FORCES

MATERIEL ~~COMMAND~~ COMMAND CJC:hmr:56

Office of The Commanding General

Wright Field, Dayton, Ohio

Date 3 February 1944

TO: Chief, Resources Control Section,
Production Division,
Wright Field.

SUBJECT: Mouton Samples from Tanners.

1. Mouton samples have been received from J. Laskin & Sons, Winslow Bros. & Smith, Loyal Fur, Workman Bros., and American Beaver Lamb.

2. The samples submitted by Laskin and Winslow Bros. & Smith comply with the requirements of Specification AN-S-35, Type III, Grade B, Class B, Finish 1. The samples submitted by Loyal Fur, Workman Bros., and American Beaver Lamb are unsatisfactory with particular reference to the fiber finish of the samples submitted. In all cases, the fiber has not been converted sufficiently to produce a suitable mouton appearance. When folded sharply with the fur outside, the pile "breaks" and the fiber has the conventional appearance of wool. This defeats the purpose of the specification for mouton, and the separate manufacturers should be advised at the earliest possible moment that the skins which they submitted are not considered satisfactory for the purpose.

3. In view of the fact that there is some confusion with reference to contracts for this material because of the change-over from shearling to mouton in some cases, and because some mouton manufacturers were not supplying shearling previous to the demand for mouton, it is believed that your office should clarify the problem with reference to acceptance or rejection of the material involved.

J. B. JOHNSON,
Chief, Materials Laboratory,
Engineering Division.

Copies to:
Flying Clothing Br.
Procurement Div., Gen. Proc. Br.
Prod. Eng. Sect., Aero. Equip. Br.

Signature .....

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27-a
Sheep Shearing
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ARL 459 AAF ACAS MW&D WASHNDC 85C 111900 Z LW

CG ASC
ATTN LT. J. H. MEYER

AFDRE-11-105 JHS..... CONFIRMING PHONE CONVERSATION DECEMBER 10, 1943 WITH MAJOR J. W. PAPE, ARRANGEMENTS HAVE BEEN MADE BY THIS OFFICE WITH PROCUREMENT DIVISION, U. S. TREASURY DEPARTMENT TO TAKE OVER ALL REJECTED AND OBSOLETE ARMY AIR FORCES SHEEP SHEARLING NOW AVAILABLE AND ADDITIONAL QUANTITIES OF SHEARLING THAT MAY BECOME AVAILABLE IN THE NEAR FUTURE. THE U. S. TREASURY DEPARTMENT ADVISES THAT SYRACUSE, TOPEKA AND MEMPHIS DEPOTS SHOULD ISSUE PROPERTY DECLARATIONS FORM 812 TO THE U. S. TREASURY DEPARTMENT REGIONAL OFFICES. THE SYRACUSE DEPOT WILL ISSUE FORM 812 PROPERTY DECLARATION TO MR. F. S. ALBRECHT, REGIONAL DIRECTOR, PROCUREMENT DIVISION, U. S. TREASURY DEPARTMENT, 76TH-9TH AVENUE, NEW YORK, 11, NEW YORK. THE TOPEKA DEPOT WILL ISSUE FORM 812 TO MR. W. B. EDGAR, REGIONAL DIRECTOR, PROCUREMENT DIVISION, U. S. TREASURY DEPARTMENT, 6TH FLOOR, PORTER BLDG., KANSAS CITY, 2, MISSOURI. THE MEMPHIS DEPOT WILL ISSUE FORM 812 TO MR. JOHN D. TOMPKINS, REGIONAL DIRECTOR, PROCUREMENT DIVISION, U. S. TREASURY DEPARTMENT, 10 FORSYTHE STREET BUILDING, ATLANTA, 3, GEORGIA. THE U. S. TREASURY DEPARTMENT ADVISES THAT THE SHEARLING AT THE SYRACUSE DEPOT CAN BE TRANSFERRED IMMEDIATELY UPON RECEIPT OF PROPERTY DECLARATION.

ARNOLD

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47-a
Sheep Shearling
3 (1)

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BASIC: Ltr. Hqs. AAF (AFMMD-4B), 12 Jan. 44, subj: "Disposal of Obsolete Pile Lengths of Sheep Shearling."

423 1st Ind. ASCSR

HQS ASC, PATTERSON FIELD, Ohio. 8 February 1944.

TO: Commanding General, Army Air Forces, Washington, D. C. ATTN: Deputy Asst. Chief of Air Staff, Materiel, Maintenance & Distribution.

1. In addition to the basic communication, reference is made to letter, 13 January 1944, subject, "Status of Winter Clothing and of Surplus Sheep Shearling," and our 1st indorsement, 7 February 1944, wherein it is contemplated terminating contracts on which there is still due approximately 15,600,000 ft. of shearling. There is, in addition, approximately 2,500,000 ft. of shearling in depots for disposal (exclusive of the obsolete shearling).

2. This headquarters believes that the disposal of shearling should be considered in its entirety in order that the best interests of the Government will be protected and to prevent a disruption of the sheep shearling industry as a whole. If sheep shearling is partially placed under the supervision of the Treasury Procurement Division and partially under the Materiel Command and the Air Service Command, it will result in a competitive situation which will, in the opinion of this headquarters, be disastrous to the best interests of the Government and the shearling industry.

3. The Materiel Command has advised that the tanners have been ordered to stop all future deliveries of shearling, but the contracts have not been terminated.

4. It is, therefore, recommended that the directive set forth in paragraph 6 of the basic communication be reconsidered; that the Materiel Command be directed to terminate existing contracts at the earliest possible date; and that the disposal of all surplus shearling (both serviceable and obsolete) be effected through one agency of the Army Air Forces in accordance with the established procedures involving the 830th Specialized Depot at Memphis, Tennessee. This recommended plan has been formulated as a result of several meetings with representatives of the Materiel Command.

5. Final disposal action on the obsolete shearling is being held in abeyance pending the receipt of a reply to this indorsement.

For the Commanding General:

L. T. MILLER,
Major General, U.S.A.,
Chief, Supply Division.

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INTER-OFFICE MEMORANDUM

ARMY AIR FORCES
MATERIEL ~~COMMAND~~ Command
Office of The Commanding General

Capt.H.A.Webb
mpr:90-M-3 Tel. 3-0204

Wright Field, Dayton, Ohio
Date 10 February 1944

TO: Chief, Engineering Division
Wright Field, Dayton, Ohio
Attention: Materials Laboratory

SUBJECT: Mouton Samples from Tanners

1. Reference is made to your IOM dated 3 February 1944 to this office. For your information, the following are the contract numbers on which Mouton is being procured:

J. Laskin & Sons	W535-AC-28773
A. C. Lawrence	W33-038-AC-114
Winslow Bros. & Smith	W33-038-AC-104
Workman Bros.	W33-038-44-1595
American Beaver Lamb	W535-43-24051
Loyal Fur Co.	W535-43-24056

2. It is requested that your office contact at the earliest date those companies whose samples have not been approved, and advise them of their deficiencies in order that approval and subsequent production may be obtained for the accelerated Flying Clothing Program.

W. R. HEROD
Colonel, Air Corps
Acting Chief
Resources Control Section

Signature

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Gen Wolfe
AA Section
7B-(h)

13

Not digested

Col. McGrath

11 February 1944

Sheep Shearing - Termination of Contracts

Commanding General, Army Air Forces
Office, Assistant Chief of Air Staff
Materiel, Maintenance and Distribution
Washington, D. C.

Attn: Deputy Asst. Chief of Air Staff
Brig. General B. E. Hayes

1. The following is submitted to indicate progress to date of action taken toward the disposition of excess sheep shearing in accordance with 1st Indorsement 12 January 1944 to basic communication 6 January 1944.

2. Agreement has been reached through Asst. [redacted], Secretary Civilian, Distribution and Salvage Board thereby Treasury Department has agreed to accept shearing under contract directly from farmers as well as excess shearing in dip warehouses and elevators in the hands of clothing manufacturers in excess of their needs to complete clothing contracts. Treasury will accept either tanned skins (not tanned) or green hides.

3. The following figures, indicating extent of excess shearing, have been submitted by the Air Service Command under date of 10 February 1944:

Sheep shearing on hand and with clothing manufacturers, 30 Nov.	14,747,952 sq. ft.
Estimated delivered 30 Nov-22 Jan.	[redacted] sq. ft.
Shearling on hand, 22 Jan.	10,165,345 sq. ft.
Shearling undelivered against contracts	[redacted] sq. ft.
Total on hand or on order	[redacted] sq. ft.
Requirements for cal. year 1944	
139,648 Mechanic's suits at 50 ft. per suit	6,982,400 sq. ft.
Maintenance	[redacted] sq. ft.
Spares	[redacted] sq. ft.
150,000 pr. shoes	[redacted] sq. ft.
Per cents being manufactured	[redacted] sq. ft.

(Continued on Page 2)

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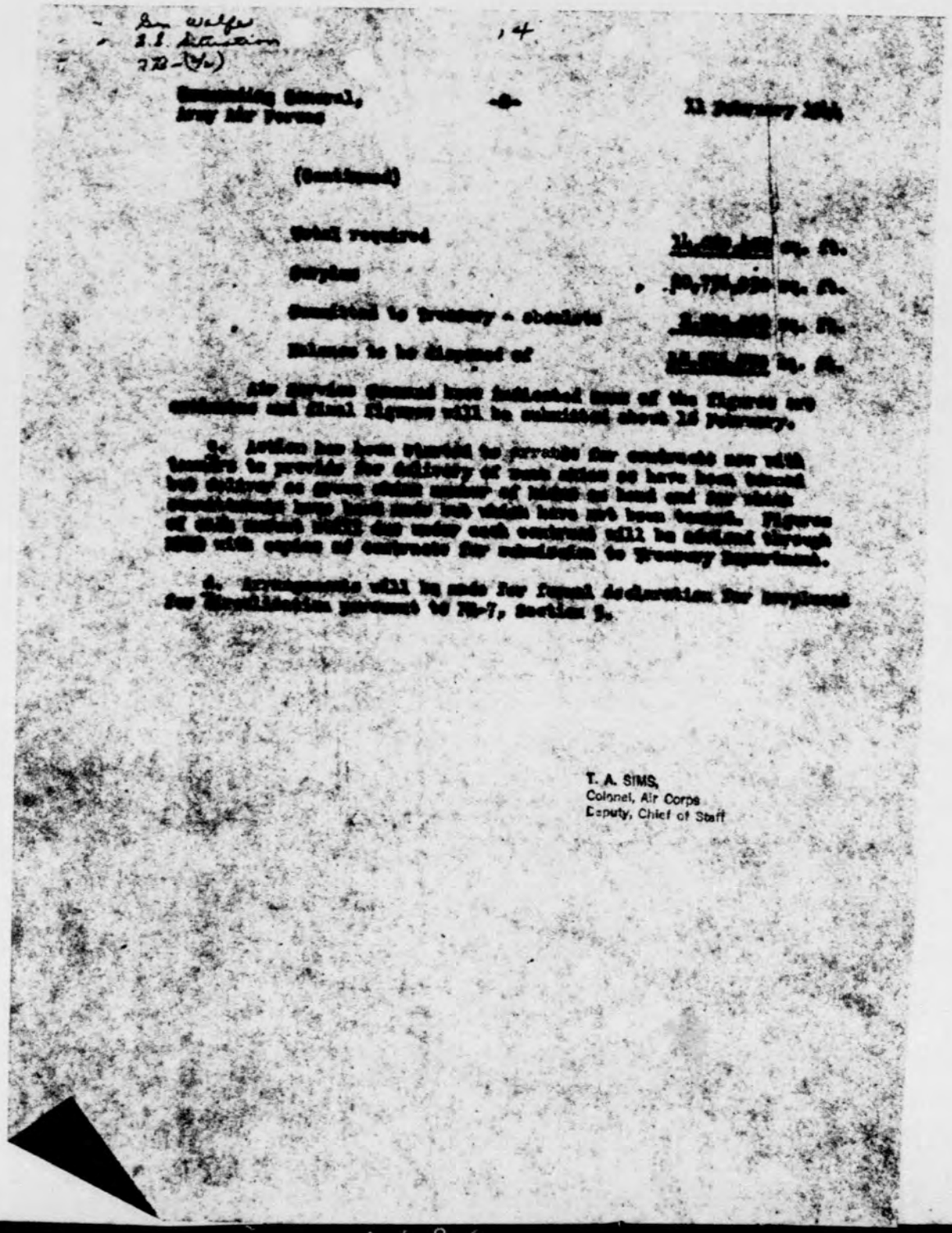

Gen Wolfe
S.S. Division
370-(Va)

14

[redacted], Chief,
Army Air Forces

12 February 194[redacted]

(Continued)

Shell required [redacted] sq. ft.

Surplus [redacted] sq. ft.

Transferred to Treasury - shortage [redacted] sq. ft.

Glasses to be dumped at [redacted] sq. ft.

The attached figures have indicated those of the figures are estimates and final figures will be submitted about 15 February.

2. Action has been started to provide for contracts now with vendors to provide for delivery of such glass as have been ordered but delivery at given dates cannot be made. Number of blocks on hand and the number of blocks now being made are also being investigated. Figures of this number will be sent with contracts will be effected through [redacted] with copies of contracts for submission to Treasury Department.

3. Arrangements will be made for Signal Corps destruction [redacted] in accordance with paragraph 4d 70-7, Section 5.

T. A. SIMS,
Colonel, Air Corps
Deputy, Chief of Staff

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C7 - a
Shearling
4-(1/1)

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JHW:ww

ASCSRMS-10

18 February 1944

Memorandum For: Commanding General, AAF Materiel Command, Production Engineering Section, Department 70-50, Wright Field, Dayton, Ohio.

Subject: Change From Backed to Unbacked Shearling

1. In view of recent developments in the Sheep Shearling situation wherein disposition of Shearling in excess of requirements is intended, it is recommended that Shearling undelivered on contracts be changed to provide for unbacked Shearling instead of backed.

For the Commanding General:

D. E. CLUXTON
Lt. Colonel, Air Corps
Asst., Supply Division
Requirements

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AAFMC-265-A-WF-2-26-43-500M

INTER-OFFICE MEMORANDUM
ARMY AIR FORCES
MATERIEL ~~CENTER~~ Command
Office of The Commanding General

CJC:hmr:56
Wright Field, Dayton, Ohio
Date 22 February 1944

TO: Chief, Production Engineering Section,
Production Division,
Wright Field.

SUBJECT: Specification for Mouton.

1. Specification for the procurement of mouton for use in current contracts for flying clothing is covered by AN-S-35 and Amendment No. 1 with the following exceptions:

a. Mouton finish shall be of the following description: Type III, Grade B, Class B, Finish 1.

b. Acidity.- For Type III (Mouton), the pH value of the tanned sheared leather shall not be less than 4.0 nor more than 6.0.

c. Color.- The color of the wool shall be cream, and for Type III (Mouton) shall be Logwood Brown in accordance with an approved sample available at the procuring agency. The wool fiber shall be uniformly and evenly dyed with a fast color dye which shall show no signs of crocking or color transfer when rubbed with a wet or dry cloth.

d. Tensile Strength.- Tensile strength of the Type III (Mouton) skins shall be not less than 900 pounds per square inch in the backbone to belly direction.

e. Grease Content.- The grease content of the Type III (Mouton) skins before proofing shall be not more than 22% nor less than 10% by weight of material soluble in petroleum ether.

f. Skin Size.- Type III (Mouton) skins shall have a suitable area of not less than 4 square feet nor more than 9 square feet.

J. B. JOHNSON,
Chief, Materials Laboratory,
Engineering Division.

Copies to:
Resources Control Sect.
Procurement Div.
Inspection Div.
Flying Clothing Br.

Signature _____

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Address reply & ENVELOPE to:

Commanding General
AAF Materiel Command
Engineering Division
Materials Laboratory
Reference: HGB:lev:56
Wright Field, Dayton, Ohio

XXXXXXXX XXXX

XXXXXX COMMAND

Loyal Fur Manufacturing Company, Inc.
346 Church Street
Danville, Penna.
Attention: Mr. Philip Benzbach

Gentlemen:

Acknowledgment is made of your letter dated 17 January 1944 and additional Mouton skin.

Tests have been accomplished on this sample and a copy of Materiel Command Memorandum Report No. ENG-56-T44-4 is included for your information.

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Army-Navy Aeronautical Specification AN-S-35 is being revised to make provisions for Mouton. The following are the added requirements that are being incorporated in this Specification:

a. Mouton shall be Type III, Grade B, Class B and finish 1.
b. The pH value shall be not less than 4.0 nor more than 6.0.
c. The color shall be Logwood Brown.
d. The area of the finished skin shall be not less than four square feet nor more than nine square feet.

Very truly yours,

J. B. JOHNSON,
Chief, Materials Laboratory,
Engineering Division.

1 Incl.
Memo. Report No.
ENG-56-T44-4.

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Sheep Shearing Situation
Hon. Wolfe file
5B - (1/3)

15
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(not dispatched not to be put in file)

Col. D. C. Swatland
82:jm Tel. 2-6116

24 February 1944

Signed by Gen. Crawford—
Read by Gen. Branshaw
Mailing list 2/28/44

Sheep Shearing

Commanding General
Office, Assistant Chief of Air Staff
M&D, Washington, D.C.

Attention: B. E. Meyers
Brig. General, U.S.A.

1. Reference is made to Material Command basic communication dated 8 January 1944, Subject: Sheep Shearling - Termination of Contracts and 1st Indorsement thereto from AFMMD-4B dated 12 January 1944.

2. Air Service Command has determined it has, in excess of requirements, approximately 5,979,579 square feet predicated on inventory of 17 February 1944. In addition there are undelivered against current contracts approximately 10,845,137 1/2 square feet which causes the grand total of excess shearling to be approximately 16,824,716 1/2 square feet. The figure 10,845,137 1/2 square feet is after giving effect to cut backs on current contracts now being accomplished totalling 2,056,840 square feet. Of the total cut back, 1,395,840 square feet was accomplished on no cost basis in view of assurances that same contractors would receive new procurements covering 1,014,000 square feet of Mouton. The balance of 663,000 square feet was previously arranged for on no cost basis due to prior Mouton requirement. The above mentioned figure of 5,979,579 square feet includes 2,256,218 square feet of obsolete pile lengths being a revision of 2,510,953 square feet reported 2 February 1944 by Requirements Section, Air Service Command to their Disposal Section.

3. Reference AFDRE-4, 1217, dated 4 February 1944 confirms agreement through ACAS/M&D Resources Division, Redistribution and Salvage with Procurement Division US Treasury to assume custody and possession of Air Service Command surplus shearling and also shearling direct from tanners as it is accumulated in their plants following receipt of formal declaration of surplus on Form 812. All excess shearling will be reported to Treasury Department on Form 812 by Air Service Command after circularization pursuant to PR-7, Section V. It is understood Treasury's agreement includes obsolete pile mentioned in paragraph 1.

4. There is on hand with tanners and included in above mentioned 10,845,137 1/2 square feet approximately 1,225,000 square feet of shearling which has been backed, which backing was accomplished previous to the elimination of this requirement. Balance of shearling undelivered against current contracts will not be backed. Understanding has been made with Major J. H. Smith, Resources Division, that Treasury will accept such shearling that has already been backed.

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Ben Wolfe
88-(0/3)

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Subj: Sheep Shearling
To: M&D, Washington, D.C. (continued)

24 February 1944

5. In arriving at the conclusion that it would be preferable to have the Treasury take over the shearling under existing contracts rather than to terminate such contracts, consideration has been given to labor and community situations, adverse market reactions, and industry conditions. The current ceiling price of first grade hides is $2.15 each. WPB advises actual current market quotation is $1.40 to $1.60 and that OPA has considered review of ceiling prices after market has settled down. Termination of contracts could cause dumping and a chaotic market. In view of the fact that the tanners have largely already acquired the skins at ceiling prices, the cost of termination would reflect not only the lower current market values as compared with the cost of the skins to the tanners, but also the probability that this market price would go lower and of course, cost of labor, etc. on skins being processed and other cancellation charges. Accordingly, the cost of termination would be relatively high as compared with the cost of completion. In arriving at the conclusion that the tanners should deliver tanned hides rather than green skins to the Treasury, consideration has been given to the greater perishability of green skins versus tanned hides and the fact that the Treasury has expressed preference for the receipt of tanned hides rather than green skins. It is understood that these conclusions are concurred in by Assistant Chief of Air Staff, M.M.&D, Resources Division. It is believed that the combination of the cut backs referred to in paragraph 1., plus delivery of hides on contract to Treasury represents most effective combination of procedures for undelivered balances.

6. Air Service Command advises that its figures of excess shearling are those assembled after consideration of anticipated requirements for mechanic suits, provision for possible unexpected future needs and other contingencies expressed in paragraph 4. of First Indorsement.

7. It was determined in Resources Division, M.M.&D, that AAF funds would be used for payment of any hides delivered to the Treasury and that the proceeds of any sales by the Treasury would be converted into miscellaneous receipts of Treasury Department. This would mean that on the maximum total of 16,824,716 1/2 square feet of shearling at an approximate average price of .52 per square foot, AAF would lose the benefit of approximately $8,748,852 of which approximately 1/3 represents Air Service Command surplus and 2/3 the balance undelivered on contracts. Overall costs to the Government would be reduced by the proceeds received by the Treasury as a result of sales. No informed opinion can be expressed as to what the Treasury may be able to realize on these sales, as it is not known to what use the Treasury will put the shearling. However, it is believed that the money cost of termination of the approximately 10,845,137 1/2 square feet remaining undelivered on contracts would amount to a major portion of the loss to the Air Forces involved in delivering such shearlings to the Treasury and might equal the net loss to the Government after taking into account the proceeds which the Treasury may receive.

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Gen. Wolfe
88-(1/3)

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Subj: Sheep Shearing
To: MM&D, Washington, D.C. (continued)

24 February, 1944

8. Request has been made by Treasury Department for copies of contracts. Advise is requested as to whom these contracts should be sent.

9. Attention is invited to the fact that all shipments of shearling have been stopped, which fact requires early release of shearling from tanners by Treasury Department to avoid repercussions from that industry.

10. All included herein has been coordinated with Air Service Command.

For the Commanding General:

ALDEN R. CRAWFORD
Brig. General, U.S.A.
Chief of Staff

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Request for Specification

HGB:hmr:56

1st Ind.

Hq., Materiel Command, Wright Field, Dayton, Ohio. 3 March 1944.

To: Commanding General, Air Service Command, Patterson Field, Fairfield, Ohio.

1. Specification is being prepared to provide for suitable material for the refinishing of sheep shearling flying suits.

2. Due to the fact that there are two different types of plastic resin finishes that have been approved by the Materials Laboratory, Engineering Division, as conforming with the detail requirements of Army-Navy Aeronautical Specification AN-S-35, it will be necessary to revise the title for these compounds. The above-mentioned specification makes no reference to the type of finish but states it shall be a "plastic resin base finish on the flesh side." Specification S-113-C, which has been superseded by the present Specification AN-S-35, did call for a polyacrylate finish.

3. The specification for the refinishing materials will be captioned "Compounds, Shearling Refinishing".

4. Reference is made to Paragraph 2 of basic communication. The only two approved sources to date are:

a. United Finish Company, Peabody, Mass.

b. Rohm & Haas Company, Philadelphia, Pa.

For the Commanding General:

F. O. CARROLL,
Brig. General, U.S.A.,
Chief, Engineering Division.

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AAFMC-265-A-WF-2-26-43-500M

INTER-OFFICE MEMORANDUM

ARMY AIR FORCES
MATERIEL CENTER
Office of The Commanding General

CJC:hmr:56

Wright Field, Dayton, Ohio
Date 22 March 1944

TO: Chief, Flying Clothing Branch,
Wright Field.

SUBJECT: Shearling, Electrified (Not Mouton)

1. Six skins of the subject material are being forwarded for your attention. This finish is the straight electrified finish covered by Specification AN-S-35, Type I. The standard mouton finish is Type III.

2. These samples were prepared from unbacked skins now being delivered under contract or on hand in Government warehouses in the 3/4" pile length without backing. The skins were sheared to the pile length of the samples, and the color and finish were applied after shearing. These skins are not shower proof and will be slightly heavier than the present mouton.

3. In view of the fact that large quantities of these skins are now owned by the Government, it is suggested that they be considered as a substitute for mouton in case of a shortage of mouton. There should be a considerable saving in the use of this material, as the shearlings are already owned by the Government, and for a relatively small additional amount could be refinished as per these samples.

J. B. JOHNSON,
Chief, Materials Laboratory,
Engineering Division.

Signature 228

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/////// Command Capt. W. F. Mullins
mjo;mfp 2-8155

22 APR 1943

22 April, 1943

Colonel T. A. Sims

Sheep Shearling

1. In compliance with your request on 20 April, 1943, herewith are submitted the approximate figures on the amount of shearling which may be available for use in manufacturing the new type shearling flying suit with with cloth shell.

2. It was found that the various offices having statistics on the quantities of sheep shearling, maintained records showing the production by type, finish and pile length. Therefore the figures given herein are of Finish I (new spec AAS 35), Type 1, 1/2 inch pile length which is the particular type, finish and pile length required for the new type suit.

3. Although all shearling skins are inspected prior to shipment it should be recognized that in all probability a part of shearling represented as being of the appropriate type may be found unsuitable upon reinspection since it is understood that only the finest shearling would be used in the new type suit.

4. Air Service Command reports that none of the approximately 6,000,000 square feet declared surplus and turned over to the Treasury was of the desired type. Air Service Command does have approximately 100,000 square feet of shearling of the desired type which is being held for aviation requirements for the intermediate flying suit program.

5. Resources Control Section reports that shearling of Finish I (unbacked), Type 1, 1/2 pile length has been declared surplus and title transferred to the Treasury Department but is being stored in U.S. . . . as follows:

Rochester G.F.E. Depot	91050	sq. ft.
Tyrie G.F.E. Depot	23880	sq. ft.
Total	114930	sq. ft.

COM. GEN.
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ADM. EXC.
C. O.
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EXP. ENG.
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PROD. ENG.
PROD. CONT.
A. S. C.
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CIV. PERS.
OTHERS

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AAFHC-106-WP-18-17-43-500M

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Resources Control Section also furnished information that as of 31 March tanners reported a quantity of 304,490 square feet of this particular finish type and pile length on hand and ready for shipment, which still belongs to the Army Air Forces.

The above quantities result in a total of 419,490 square feet of shearling of the appropriate type which may be obtained without additional procurement for use in the manufacture of suits.

6. The Procurement Division has informed this office that it would only be necessary to request the Treasury Department, through Materiel, Maintenance and Distribution to return to the Army Air Forces any quantity of shearling the Army Air Forces desired to use. This procedure would apply to the above-mentioned quantity of 114,000 square feet. The remainder in the quantity of 304,490 plus any additional shearling of the appropriate type and finish processed by tanners since 31 March which is believed to be about 150,000 square feet, is still the property of the Army Air Forces although steps are being taken to dispose of all surplus shearling.

H. F. MILLER
Capt., Air Corps
Asst. Technical Executive

COM. GEN.
TECH. EXC.
ADM. EXC.
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BUD. OFF.
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CONTRACT
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Mr. Wolfe
O.D. Simmons
373-(11/3)

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Not dispatched

Sheep Shearing

mailed
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RTH:mah:EQP

29 June 1944

Summary of Disposal Action on
Sheep Shearling

Commanding General, Army Air Forces
Office, Assistant Chief of Air Staff
Materiel, Maintenance and Distribution
Washington 25, D. C.

1. Reference is made to previous Materiel Command letter on above subject dated 26 May 1944 which summarized the disposal action on sheep shearling to date of letter. Following is a summary of disposal action taken to date.

2. As stated in above referenced letter, Air Service Command reported 5,979,579 square feet of sheep shearling in excess of requirements which quantity was declared surplus under date of 15 March 1944.

3. As previously reported, the figure 11,062,690 square feet of shearling, undelivered against contracts as of date of termination of surplus, was reduced to 10,718,426 3/4 square feet as a result of contractors submitting amended figures for shearling completed and shipped prior to 2 March 1944 in an amount of 156,134 1/4 square feet and as a result of a quantity of 188,129 square feet being allocated and shipped for use on the current flying clothing program after 2 March 1944, date of termination and surplus.

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4. A total quantity of 3,129,509 1/4 square feet was declared surplus to the Treasury under date of 30 May 1944. This declaration superseded and amended the two previous declarations of 2,053,584 1/2 square feet and 586,438 square feet made under dates of 10 March 1944 and 12 April 1944 respectively and included an additional quantity necessary to bring the total to the above figure of 3,129,509 1/2 square feet. The balance after the declaration of 30 May 1944 was 7,588,917 1/2 square feet of surplus shearling.

5. Completed termination action has eliminated a quantity of 7,433,016 1/4 square feet leaving a balance of 155,901 1/4 square feet yet to be disposed of. The latter figure of 155,901 1/4 square feet is subject to some variation dependent upon the final settlement of termination proceedings which are still pending.

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Maj Wolfe
O.D. Extension
9 May (43)

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Subj: Summary of Disposal Action on Sheep Shearling

6. Shearling was furnished to clothing manufacturers for use in the manufacture of flying clothing. Over the period of the last several months excess shearling has accumulated in the hands of such manufacturers in an amount of 1,069,766 square feet due to changes in the clothing program resulting in contract cancellations, changes in the type of shearling required, etc. This quantity of 1,069,766 square feet of shearling was declared surplus to the Treasury under date of 30 May 1944, and is in addition to the above mentioned declaration under the same date, of 3,129,509 1/4 square feet. This quantity of 1,069,766 square feet of shearling was not reflected in any previous figures for total amount of surplus and did not enter into any previous declarations or terminations and has the effect of increasing the total amount of surplus shearling disposed of by the Army Air Forces by this amount.

7. A summary of the above figures is tabulated below:

Total Surplus sheep shearling		17,042,269 sq.ft.
Air Service Command excess declared surplus to Treasury Department under date of 15 March, 1944		5,979,579
Total undelivered against contracts		11,062,690
Completed shearling shipped prior to 3/2/44 and represents amended figures submitted by contractors	156,134 1/4 sq.ft.	
Completed shearling shipped and allocated to current flying clothing program after amounts due were reported 3/2/44	188,129	
Total	344,263 1/4	
Balance of surplus under contracts after above adjustments		10,718,426 3/4
Surplus shearling declared excess to Treasury Department under dates of 3/10/44, 4/12/44 and 5/30/44		3,129,509 1/4
Balance of surplus under contracts after above adjustments and declarations		7,588,917 1/2
Amount of surplus shearling under contract which has been definitely eliminated through termination agreements and from which the Government has been relieved		7,433,016 1/4
Balance of surplus under contracts after above terminations		* 155,901 1/4

* This approximate quantity of surplus shearling is on American Beaver Lamb contract W 535 ac-38080 which has been cancelled, but for which final termination proceedings are still pending.

Shearling, not reflected in the above figures, which was accumulated in the hands of clothing manufacturers and which was determined to be excess to the clothing program and declared surplus to the Treasury under date of 30 May 1944 - - - - - - 1,069,766

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Hon. Walker
S.S Situation
9 B.(B/g)

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Subj: Summary of Disposal Action on Sheep Shearling

5. In view of the completion of the action to dispose of surplus sheep shearling except for the above mentioned quantity of 135,901 1/4 square feet on which termination proceedings are pending, no further reports will be forwarded on this subject. Unless requested

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MBB:aw-50-7

Shearling; Sheep - Proposed Army-Navy Aeronautical Bulletin for (Specification AN-S-35).

1	Chief, Materials Lab., Engineering Division.	Chief, AN Standards Br., Engineering Division.	8 July 1944. Lt.M.B.Boisseair 2-8297

1. In order that subject bulletin, listing names of manufacturers' products which have been approved under the qualification tests of Specification AN-S-35, can be prepared by this office, it is requested that the necessary information be forwarded.

Distr:
Aero. Equip. Br., PES.
Matls. Lab., E.D.

C. J. ROWE,
Acting Chief, AN St'ds. Br.,
Engineering Division.

2	Chief, AN Standards Br. Engineering Division	Chief, Materials Lab. Engineering Division	24 July 1944 C. J. Cleary 2-7141

1. The following manufacturers have been approved under the qualification test of Specification AN-S-35:

Muskegon Tanning Company, Muskegon, Michigan
Winslow Bros. & Smith, Norwood, Mass.
A. C. Lawrence Leather Co., Peabody, Mass.
Workman Bros., Philadelphia, Pa.
Chicago Tanning Co., Chicago, Ills.
Weil & Eisendrath, Chicago, Ills.
Berlin Tanning Co., Berlin, Wisconsin
Anglo-American Tanning Co., Sheboygan Falls, Wisconsin
American Beaver Lamb Co., Johnstown, N. Y.
Loyal Fur Company, Danville, Pa.
Laskin Bros., Milwaukee, Wisconsin

J. B. JOHNSON,
Chief, Materials Laboratory,
Engineering Division.

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Sheep Wool

D.A. Holgate:hmr:56-3
Ext. 2-7111

1st Ind.

Hq., Material Command, Wright Field, Dayton, Ohio. 16 August 1944.

To: Commanding General, Philadelphia Quartermaster Depot, Army Service Forces, 2800 South 20th Street, Philadelphia 45, Pa.

1. The fur material being used in the construction of Intermediate flying garments at the present time is mouton. This is used only in the collar, and the remainder of the garment is constructed of fabric.

2. The tannage and finishing of mouton renders the material waterproof; however, no mothproofing agent is added due to the possibility of tendering the leather.

3. An investigation is being conducted at the present time on the treatment of various types of fabric with a milamine resin produced by the Monsanto Chemical Company.

4. At the present time this resin shows great possibilities in the treatment of both wool and cotton fabrics. It reduces the shrinkage but its waterproofing and mothproofing characteristics have not been sufficiently investigated to indicate any positive results.

5. If further information is desired regarding the above treatments, it is recommended that the Monsanto Chemical Company be contacted relative to the resin finish, and the Laskin Company, Milwaukee, Wisconsin, or Winslow Bros. & Smith, Norwood, Mass. be contacted relative to the mouton finish of sheep shearling.

For the Commanding General:

F. O. CARROLL,
Brig. General, U.S.A.,
Chief, Engineering Division.

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Permission for Deviation from Shearling Refinishing Material Specification.

TSELA Attn: Mr. Cleary TSMME4C 3 Oct 44 1.
Materials Laboratory.

1. Difficulties with shearling garment finishing materials are being experienced at Mobile and San Bernardino Air Service Command. The unsatisfactory condition of garments being refinished at these activities has necessitated suspending cleaning and refinishing operations.

2. Subject refinishing materials are being supplied under contract and applicable specification by Rohm & Haas Company, Philadelphia, Pennsylvania. Representatives of this company had been informed of the above condition and in visits to San Bernardino have been unable to alleviate the difficulty.

3. Prior to obtaining refinishing materials from Rohm & Haas Company materials for this purpose were furnished by Eaton Clark Company, Detroit, Michigan. No unsatisfactory reports were received while materials from this company were used, however, their use was discontinued because of more rigid specification requirements. Since materials in order to be acceptable are now subjected to a temperature of -67°F. whereas the Eaton Clark Product is not considered satisfactory below -50°F. Your office, however, is acquainted with these facts.

4. It is requested that in view of the above and because of the urgent demand for the garments involved, permission be granted by your office to deviate from the -67°F. requirement of the specification and permit the emergency use of Eaton Clark materials until samples can be obtained for tests of materials now in use at Mobile Air Service Command and San Bernardino Air Service Command and the cause of the difficulties being encountered are determined.

5. Further request that the reply from your office be expedited in view of the foregoing facts.

WALTER W. WISE,
Colonel, Air Corps,
Chief,
Misc. Equip. Maint. Sec.,
Maint. Div.

HAG:mmw 5-4149
Post 130-J
Bldg 262-A 233

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12

Permission for Deviation from Shearling Refinishing Material Specification.

TSEATW (TSEMEAC) TSEAA-2C13 4 October 1944
Att: Mr. Goldsmith C. J. Cleary
2-7141

2

1. Reference the use of Eaton Clark Company's shearling refinishing material, it is suggested that this material be used pending solution of the difficulties encountered at Mobile and San Bernardino Air Service Command.

2. The fact that several other stations have used the specification material successfully indicates faulty technique at the two stations mentioned.

3. It is requested that samples of the unsuitable refinishing material at these stations be forwarded to the Materials Laboratory (TSEAA-2C) for check tests with particular reference to the conformance with specification requirements.

J. B. JOHNSON,
Chief, Materials Laboratory,
Engineering Division.

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Defective Material Report No. 45-5.

TSEAL-4G TSBCC50-4

8 February 1945
C.E. Holgate/mll
Ext. 2-1294

1

1. Attached is copy of Subject, dated 26 Jan. '45, forwarded to your office for info. on discrepancies outlined in reference report.

2. Since this office is maintaining a file of open correspondence regarding the above matters, it is requested that info. relative to discrepancies be furnished this office on or before 13 Feb. '45.

W. L. WINSTON
Lt. Col., A.C.
Chief, Aero Equip. Sub-Sec.,
Quality Control Sec., Proc. Div.

1 Incl.
IMR #45-5, dtd 2[illegible] Jan. '45.

#2. TSBCC50-4 TSEAL-4G

13 February 1945
C. J. Cleary/lev
Ext. 2-7141

1. Visual inspection was made of skins described in the attached Defective Material Report No. 45-5. This was accomplished in the Materials Laboratory (TSEAL-4). The following comments are made reference the skins examined:

a. The skins are not moldy but are slightly greasy, and due to the apparent heavy grease content the impression is given that the tannage is faulty.

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b. The skins are of adequate quality for the manufacture of mouton.

c. The ribby, spotty, and wavy appearance mentioned is often considered desirable in commercial garments and are not necessarily defects.

d. The seam as shown in one skin was not faulty.

2. If the skins examined in the Materials Laboratory (TSEAL-4) are representative of the total skins of this contract, it is recommended that complete specification tests be accomplished on not less than 10 skins taken at random from the lot involved.

2 4

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1 Incl.
As above.

J. B. JOHNSON,
Chief, Materials Laboratory,
Aircraft and Physical Requirements
Section, Engineering Division.

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OKLAHOMA CITY AIR TECHNICAL SERVICE COMMAND OCMSX
TINKER FIELD
OKLAHOMA CITY, OKLAHOMA

In Reply to:

26 July 1945

SUBJECT: Poly-Acrylate Refinishing Compound for Aircraft Clothing

TO: Commanding General
Air Technical Service Command
Wright Field, Dayton, Ohio

ATTN: TSEAL

1. Dye brought to this station for testing by [illegible] G. Battles, your office, and Alfred White, United Finish Company, Peabody, Massachusetts, proved unsatisfactory because it had a tendency to run and become slightly tacky and caused the garments, when completed, to stick together. This fault was observed by the above on their visit here and the opinion was expressed that this condition could be remedied.

2. In approximately two weeks this station received five gallons of dye which had been modified. This dye, although better, still had some of the faults of the original finish. Mr. White telephoned regarding the results of the testing of this five gallons of dye and was informed that it had a tendency to stick after drying because the finish did not dry out hard enough and that the dye was a little too heavy to spray and brush on perfectly.

3. Mr. White then changed the formula and sent five gallons of dye (No. 3114 Hand Renovator) on 10 July 1945. This dye was tested and found to be far superior to any other dye used by this station. It incorporates into one finish a complete operation. It is no longer necessary to first dye the garment then, after it is thoroughly dry, lacquer it, as had to be done in the past with the old finish. The new dye, No. 3114, also seems to have better adhesive properties than any other dye furnished this station previously.

4. If this dye could be furnished, it is felt that it would prove satisfactory for horsehide and shearling type garments. The use of this dye would reduce man-hours considerably as it would be necessary to spray the garment only once and would reduce handling of the garment by one half. Further, this dye does not have a tendency to build up at the bottom of a garment where the clothing

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clamps are put on to keep the dye off the fur cuffs and skirts, but leaves a dry line there which makes it very easy to touch up with a brush. The dye works equally well with a brush or spray gun, thus making it a good all-purpose finish.

FOR THE COMMANDING GENERAL:

(Signed) Douglas G. R. Lord

DOUGLAS G. R. LORD
Lt Col, AIR CORPS
Chief, Maintenance Division

"This is a true copy:"

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HARDEWARE - WAREHOUSING

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CASE HISTORY

of

AIRCRAFT HARDWARE WAREHOUSING

Program to assure availability of hardware to meet emergency demands of aircraft industry, and to provide for redistribution of surplus material accumulated in plants of aircraft contractors.

Documents in this case history were obtained from the files of Air Technical Service Command, Wright Field, and Headquarters, Army Air Forces, Washington, D. C.

Compiled by
Historical Office
Air Technical Service Command
Wright Field
December 1944

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AIRCRAFT HARDWARE WAREHOUSING PROGRAM

On 13 October 1942 Non-Metallic Materials Unit, Wright Field, reported that there were critical shortages in aircraft hardware. Many Aero Supply houses had ceased to function as legitimate jobbers, (1) and had become mere commission merchants that placed orders as they (2) received them. Failure to fulfill fantastic delivery promises had stopped the flow of materials to prime contractors, and held airplanes on the ground for lack of hardware. Stock was so inadequate that (6) maintenance difficulties were being experienced with airplanes operating under the Civil Air Patrol and Civilian Pilot Training Program. Due to the fact that distributors of aircraft hardware had been concerned with supplying commercial and private plants, only a small quantity of hardware had been available for war time aircraft (4) production.

The difficulties in the procurement of aircraft hardware were due to several factors. These parts, though vital, were often small and orders were relatively small. Provision had to be made for supplying small emergency needs on short notice. There was lack of standardization in that many different articles were being made that served the same purposes. Prime contractors placed their orders late, expected immediate delivery, and often over-ordered, leaving large idle (2) reserves at their plants. Aircraft manufacturing plants were often shut down for parts of each month, sometimes for a lack of a steady flow of orders, and sometimes for lack of materials.

(1) On 13 October 1942 Non-Metallic Unit, Wright Field, suggested (2) measures to correct these difficulties, and one week later the Industrial Planning Section, Wright Field, submitted a plan which would provide aircraft contractors with a steady flow of necessary materials. At about the same time the official aircraft hardware (47) warehouses were established, pursuant to verbal orders of Maj. Gen. O.P. Echols, Commanding General, Materiel Command, Washington, and Rear Admiral Ralph Davison, Asst. Chief, Bureau of Aeronautics, Washington.

The purpose in establishing these warehouses was twofold: (1) to provide minimum stocks of critical aircraft hardware items and keep them always available to fill small and short notice orders, and (2) to redistribute idle stocks. Since the warehouses had been established the function of redistribution had grown in importance, due to discovery of large idle stocks of aircraft hardware around (38) the country.

The Aircraft Scheduling Unit, WPB, tentatively suggested on 3 December 1942 that certain master stocks be housed in three warehouses which were in strategic locations--one in the East, one in the

* The numbers placed in parentheses in the margin refer to the documents found in the Document File attached.

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Los Angeles district, and one in the Central States. These warehouses were to be selected by a vote taken among aircraft manufacturers. (6)

At meetings held in Washington from 19 through 21 December 1942, between personnel of Wright Field, War Production Board, and Metal Reserve Co., it was decided to put the following plan in operation: Steel Recovery Corp. was to tabulate all surplus stocks and report them to Aircraft Scheduling Unit, WPB, for disposition; material which was desired for redistribution through warehouses was to be purchased from the owners by Steel Recovery Corp., at cost price, and resold to the warehouse at the market price less the usual warehouse discount. This would usually involve a financial loss. Earlier in December WPB had approved the subsidizing of selected warehouses to the extent of the usual discount allowed by the producer, and the approval was to be submitted to Metals Reserve Co. for their concurrence. (8)

TI-1413 issued by Materiel Command, Washington, 13 January 1943, initiated action for the allocation of $1,800,000 to establish stockpiles of aircraft hardware. Each of the three warehouses selected was to stock material that would at no time exceed $600,000 in value. (10) Aircraft manufacturers had been informed of the Aircraft Warehousing program on 15 December 1942, and had been requested to suggest two jobbers in their district who might be selected as authorized agents to handle all aircraft hardware in that district. The voting was closed as of 9 January 1943, and the following warehouses were chosen: (9) Los Angeles District, Ducommun Metals and Supply Co.; Mid-Western District, Supply Division, Robertson, Missouri; and Eastern District, Aircraft Hardware Mfg. Co., New York City. (11) (11)

On 24 February 1943 representatives of the three warehouses met with WPB, ASU, Metals Reserve Co., and Steel Recovery Corp., and discussed details of warehousing--items to be stocked, initial stocks, replacements of stock, redistribution of surplus stocks, sales limitations, protection against loss, and reports. An outline dated 24 March 1943 gave procedures for filing reports with ASU, Dayton, and a tentative pricing policy. (13) (14)

On 31 March 1943 Authorities for Purchase were issued to each of the three warehouses, authorizing the "Establishment and maintenance of stocks and aircraft hardware in accordance with TI-1413" at a total cost of $600,000 each. (15,16, 17)

WPB Limitation Order L-296, Directive 1, was approved by The Army and Navy Munitions Board at a meeting held in Washington on or about 30 April 1943. The Limitation Order prescribed the manner of acquisition, of warehousing, and of delivery of certain types of aircraft hardware. It also directed that each warehouse should file reports and questionnaires with WPB, or some designated unit. The Clearance Committee (Wash.) objected to the fact that the Order contained no restriction on quantities of items to be stored, and added a clause limiting the Government's liability in each warehouse to $600,000. On 1 June 1943, WPB appointed Col. E.M. Powers, Administrator, ASU, Dayton, to direct the execution of the Limitation Order. (21) (27) (25) (28)

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Under existing arrangements, ASU was unable to obtain all the necessary material to maintain minimum stocks for hardware warehouses. WPB had authorized Capt. A.F. Hitchiner, ASU, Dayton, and Warrant (44) Officer R.E. Black, Warehouse Sub-Unit, Resources Control Section, Wright Field, to sign for the WPB PD-1X and PDL-2033-a Certificates. Up to Nov. 1943, Certificates amounting to $397,000 had been approved by the Warehouse Sub-Unit for the purchase from producers of hardware (45) to be placed in warehouse stock. In order to assure a continuous flow, the warehouses would have to stock six times their monthly sales, and in case of cessation of aircraft production, they would be left with large liabilities. ASU suggested, therefore, that an AAA rating be approved, which would permit the obtaining of deliveries in two or three months, and which would allow the warehouses to operate within (33) the amount of the aircraft guarantee. ASU expressed the belief that the warehouses would object to the program unless either the rating or additional funds were forthcoming.

The establishment of these minimum stocks had originally been considered to be the prime function of the warehouses. It had been expected that purchases from manufacturers would be the important source for replenishment of minimum stocks in warehouses. The discovery of unexpectedly large idle stocks made it apparent that redistribution was as important as seeking production of new aircraft hardware.

Preliminary reports on idle and excessive inventories of hardware in the plants of aircraft contractors revealed quantities available for redistribution far in excess of those originally estimated. Downward revision of producers' prices had created a large spread between the prices that had been paid for materials on hand and the prices (26) that prevailed at the time of writing (20 May 1943). ASU, Dayton, requested that Metals Reserve Co. provide approximately $4,000,000 in subsidies for the first year of operation, to cover the transfer of these excessive inventories.

It became apparent that there would be difficulties in this plan and in June 1943 ASU and Metals Reserve Co. agreed to drop negotiations in favor of a substitute plan to be put into effect by the Army Air Forces whereby that branch of the service would enter into contract with certain warehouses. Lt. Col. A.E.R. Peterka, Chief, Materials (36) Branch, Resources Control Section, Wright Field, discussed the matter (38) with Mr. H.H. Batchelder, Director of Steel Division, WPB, Washington, and obtained his approval for writing a letter to Metals Reserve Co., over signature of Maj. Gen. C.E. Branshaw, Commanding General, Materiel Command, Wright Field, pointing out that the program had progressed too far to back down. Mr. Nichols, Vice-Pres., Metals Reserve Co., Washington, stated in reply to Col. Peterka's objections that the Reconstruction Finance Corp. was questioning the profits permissible under the subsidizing arrangement. He stated further that the Metals

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(39) Reserve Co. had indicated its willingness to subsidize, but its Board had not officially approved the plan.

The failure of Metals Reserve Co. to complete negotiations to subsidize redistribution of hardware was followed by the substitute plan whereby special directives issued by the AAF Procurement Division, Wright Field, authorized Contracting Officers to sell material purchased
(43) on Cost-Plus-a-Fixed-Fee contracts to warehouses approved by ASU, at a price that would allow the warehouses to handle material and resell it on a competitive basis.

In reviewing the Aircraft Hardware Warehousing Program on 9
(46) February 1944, Col. Peterka stated that too little material had been moved, and too slowly. Warehouses had been set up originally to carry minimum stocks, a satisfactory arrangement at the time, but with the necessity for distributing large quantities of surplus stock, the $600,000 value limit had proved inadequate. Three plans were suggested for putting warehouses on a working basis: (1) WPB had already been requested to increase the guarantee to $1,500,000 for each of the three warehouses. (2) Cancel existing contracts, giving the Government ownership of stocks, and place materials on consignment, with a
(47) commission of 20% of gross sales. (3) Put the hardware houses on a management fee basis, the Government paying a flat fee based on the volume of goods distributed.

Col. Peterka added that unless action was taken at once, some materials would become obsolete before they could be distributed, and the AAF would "surely get stuck badly..." If adequate action was taken at once material could be diverted from surplus stocks into production in 1944. This material if left in stocks would become scrap the next
(47) year through obsolescence.

The Comptroller, Wright Field, advised on 28 February 1944, that the proposal made by Col. Peterka for consignment of materials to AAF warehouses had been discussed at a meeting held at Wright Field. Consensus at the time of the meeting was that AAF could not consign property to private warehouses for resale by warehouse operators and also AAF could not purchase contractors' surplus property on Fixed-Price Supply
(50) Contracts which were not in process of termination.

The functions of the warehouses were changing due to increased production capacity, resulting in declining prices and in increasing surplus stocks which must be redistributed to insure maximum utilization of stocks. General Branshaw suggested in a letter to Chief, Resources Division, Washington, 10 March 1944, that eventually the proposed National Recoveries Corp. might be the logical agency to
(51) administer warehouses. However the problem was an immediate one, and the only feasible method of handling it was to revise existing contracts and provide a guarantee of $3,000,000 ($1,500,000 each to two remaining

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(50) warehouses) against contract terminations. In reply Brig. Gen. F.M. Hopkins, Jr., Redistribution and Salvage Officer, Washington, advised that Surplus War Property Administration and Reconstruction Finance Corp. had agreed in principle to undertake financing of this program, accepting accountability and responsibility for the hardware which
(52) would be furnished the warehouses on a consignment basis.

A committee had been appointed to study the entire warehousing method of redistribution, and as a result of several meetings a
(52,53) Memorandum of Understanding was published, 3 May 1944. This constituted an agreement between AAF, Bureau of Aeronautics, Aircraft Scheduling Unit and Metals Reserve Co. AAF would terminate their contracts with subject warehouses while Metals Reserve Co. would enter into Agency Agreements with these warehouses. In contract termination proceedings AAF would purchase all material, within limitation of the contract, from the warehouse and immediately transfer title to Metals Reserve Co., who would consign the material to the warehouse. The warehouse, acting in capacity of an agent to Metals Reserve Co., would
(52,55) then be responsible to this company for material turned over to it.

A credit AAF, dated 6 January 1944, provided for the entire cancellation of contract W 535 ac-40097 with Ducommun Metals & Supply
(56) Co. at no cost to the Government. As a result of the Memorandum of Understanding, 3 May 1944, contract W 535 ac-40098 with Aircraft Hardware Mfg. Co. was terminated 7 July 1944 and Supply Division, Inc., holders of contract W 535 ac-40099, was notified 21 July 1944 of the
(56,57) intention of the Government to terminate their contract.

A report by Metals Reserve Co. on progress made in consummating contracts with distribution agents disclosed that as of 28 July 1944, the company had executed contracts with 16 agents operating approximately 35 warehouses and 7 more contracts were being processed. Metals Reserve Co. had offered to its distribution agents approximately 3,000,000 lbs. of aluminum, 2,500,000 lbs. of steel and 70,000,000
(56) pieces of hardware.

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1. (U) IDC 13 Oct. 1942
Fr: Maj.F.W. LaVista
Chief, Non-Metallic
Materials Unit, WF
To: Chief, Materials Br., WF
(File: MM&D)

Non-Metallic Mat. Unit (WF) advised on 13 Oct. 1942 that many Aero Supply Houses had deteriorated into commission merchants who merely received orders and placed them with a manufacturer. If the legitimate jobbers could be separated from commission merchants, the jobber could handle more materials, consolidate orders and follow up delivery schedules which would assure prime contractors a continual flow of materials and relieve critical shortages thereby aiding mass production and increasing its efficiency. Raw materials would be allocated in one lump rather than in many allocations. Major LaVista, Chief, Non-Metallic Materials Unit (WF) submitted a plan which would put the above into effect.

2. (U) IOM 20 Oct. 1942
Fr: Col. E.W. Rawlings
Chief, Ind. Plan. Sect.,
Mat.Center, WF
To: Tech. Exec., WF
Attn: Capt. J.M. Delaney
(File: MM&D)

A survey of the conditions existing in the procurement of aircraft hardware indicated as of 20 Oct. 1942: (1) Lack of standardization; (2) Late orders; (3) Item capacity: several manufacturers had to shut down a good portion of each month for lack of orders; (4) Lack of materials; (5) Critical shortages: shortages which held planes on the ground for lack of aircraft hardware; (6) Use of jobbers: some jobbers did a legitimate redistribution business, others merely accepted orders and made fantastic delivery promises. Ind. Plan. Sect. (WF) stated that it was possible to remedy this situation and submitted the following plan to supply aircraft contractors with necessary materials: (1) Standardization of items; (2) Schedule deliveries in relation to need; (3) Provide a bank of items allowing a sufficient bank for flow time; (4) Concentrate manufacture of items in few plants and shift excess plants to other operations. It was suggested that the plan be coordinated with Prod. Eng. and Prod. Cont. Sections, and if approved, tested on a dozen critical items, adding other items as required.

3. (U) Dec. 1942 Statement by
Capt. A.F. Hitchiner,
Warehousing Sub-Unit, WF
to ELM, at WF Approved by
Capt. A.F. Hitchiner
7 Dec. 1943
(File: Warehousing Sub-Unit,
Res. Cont. Sect.)

"A reorganization of the War Production Board was made and the Wholesale Retail Trade Division was establis making it necessary again to contact all War Product Board officials and restart negotiations. Followin several meetings with Mr. T.P. Wright, Director AW W.L. Jack Wilson, Chief Priorities, ARCO, Mr. John Burley, Chief Wholesale Retail Trade Division, WP Mr. Simons, Chief Industrial Hardware Branch, WPB, it was determined that the best policy would be to have Mr. Maurice Heckscher, Assistant General Counsel of the War Production Board, prepare a limitation order and the necessary directives to put the program into operation." [Document not included in case history. Original signed statement retained in Historical Office, WF.]

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4. (U) Dec. 1942 Statement by Capt. A.F. Hitchiner, Warehousing Sub-Unit, WF to KLM dated 8 Nov. 1943 at WF Approved by Capt. A.F. Hitchiner 7 Dec. 1943 (File: Warehousing Sub-Unit, Res. Cont. Sect.)

"In December 1942, Captain Hitchiner contacted in Washington several officials of the War Production Board concerning the establishing of Aircraft Hardware Warehousing Program similar to that established for aircraft steels. Due to the fact that distributors of aircraft hardware have in the past carried stocks of this material primarily for the maintenance of commercial and private plants, only a very small quantity was available for aircraft production. With the tremendous increase of plane production no provisions had been made to supply the demands of this industry for its small and emergency requirements. Because aircraft hardware was one of the most critical items, it was found necessary to limit the number of inventories to a comparatively few and to start the program with only three distributors. At this meeting the matter was favorably received and action was contemplated by that Board in order to issue the necessary directives. Present at the meeting were: W.L. White, Chief, Distributor's Branch, P.B. Pattison, Ass't. Chief, Distributor's Branch, Jack Wilson and A.L. Lewis of Aircraft Priority Branch, WPB (Wash.)." (Document not included in case history. Original signed statement retained in Historical Office, WF.)

5. (U) IDC 2 Dec. 1942
Fr: Capt. A.F. Hitchiner
Mat. Distrib. Br.
Prod.Res. Sect.,WF
To: Maj. A.E.R. Peterka
Chief, Mat. Distrib. Br.,
Prod. Res.Sect.,WF
(File: MM&D)

Plans of Material Coordinator (WF) to utilize surplus stocks in aircraft plants had been considered and Mat.Distrib. Br. (WF) stated official aircraft warehouses could greatly assist Material Coordinator in converting surplus stocks into production channels. As warehouses were familiar with requirements of all aircraft companies they could easily handle redistribution of materials regardless of quantities. Since sale of distressed and surplus materials were governed by WPB, this Board must give permission for any sale by owner to a warehouse. Arrangements had to be made with OPA to allow subject sale to a warehouse without loss to owner but permit warehouse a legitimate profit. Surplus materials which warehouse purchased should be within maximum quantity of that product allowed.

6. (U) Ltr. 3 Dec. 1942
Fr: Capt. H.W. Hammond
ASU, WPB, Dayton
To: Chief, Airc.Prod.Div.
WPB, Wash.
Attn: Mr. H.B. Talbott
(File: MM&D)

Aircraft hardware stock had been found inadequate to maintain and repair planes operating under the Civil Air Patrol and Civilian Pilot Training Program. The Aircraft Scheduling Unit (hereinafter referred to as ASU) (Dayton) had received from the aircraft manufacturers and the National Aviation Training Assoc. many complaints of the inability of the present distribution system to take care of their small and

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emergency requirements. The ASU found it advisable to establish certain master stocks which would be maintained in designated warehouses in strategic locations. It was tentatively suggested that three stocks be established--one in the East, one in the Los Angeles district and one in the Central states. It was intended that these stocks be guaranteed against financial loss due to the large quantities involved and the loss that might be incurred at the cessation of production. ASU requested that the Airc.Prod.Div.(Wash.) give its approval to the program and assist its passage through other depts. of the WPB.

7. (U) Memo Rpt. PRS-M-73
15 Dec. 1942
(File: MM&D)

Report of a visit made Dec. 9, 10, 11, 1942 by Capt. Hammond, Chief, Aircraft Hardware Unit (Dayton) and Capt. Hitchner, Mat.Distrib. Br.(WP) to WPB and to Col. Rosenblatt, Special Advisory Group, MM&D (Wash.) "for the purpose of discussing and setting up warehouses to earmark aircraft hardware". The warehousing plan which had previously been approved by ASU was approved in all basic features by WPB. In order to select the warehouses who would handle redistribution under subject program, a vote would be taken among various aircraft manufacturers. Determination of materials and quantity to be stocked by the 3 selected warehouses would be based on availability of these in normal stocks and demand of the industry in general, however only most critical items would be stocked at the inauguration of program, but additions could be made to this list as necessary. Also outlined were methods by which initial stocks would be acquired by warehouses and provisions for replacing these hardware stocks. ASU (Dayton) would determine maximum quantity of any one product and specification which warehouses could sell to any one manufacturer without special permission from this unit. Once a month records would be filed by Warehouses with ASU, which might cause quantity of materials stocked by warehouses to vary from month to month. Col. Rosenblatt assured ASU that some form of contract would be arranged to prevent any serious loss to the warehouses and the guarantee would offer protection up to $600,000.00.

8. (U) Memo Rpt. PRS-M-75
23 Dec. 1942
(File: MM&D)

A report of a visit made Dec. 19, 20, 21, 1942 to WPB and the Metals Reserve Corp.,(Wash.) for the purpose of completing arrangements for redistribution of surplus stocks of aircraft hardware by official warehouses. WPB had approved the subsidizing of selected warehouses to the extent of the usual discount allowed by the producer, and this was to be submitted to Metals Reserve Corp. for their concurrence. As a result of

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the discussion a very simple and practical plan had been approved; the details were to be worked out between the Materials Coordinator, WPB, and the Steel Recovery Corp. and the actual machinery for operation set up.

9. (U) Ltr. 15 Dec. 1942
Fr: Admr. ASU, WPB, Dayton
To: North American Aviation, Inc.
Inglewood, Calif.
Attn: Pur. Agent
(File: Warehousing Sub-Unit, Res.Contr.Sect.)

Aircraft manufacturers were informed of the Aircraft Hardware Warehousing program on 15 Dec. 1942 and were requested to suggest two jobbers in their district who might be considered for selection as an authorized jobber to handle all aircraft hardware items in that district. It was stated that authorized jobbers would not replace existing jobbers, but would be subject to supervision by the ASU (Dayton) whose responsibility was to see that the authorized jobbers maintained proper stocks. It was also stated that these stocks would not replace but would supplement present inventories carried by distributors.

10. (U) TI-1413, 13 Jan.1943
Fr: Lt.Col. C.H. Dyson
Budget Officer, Mat.Com., Wash.
To: CG, Mat.Center, WF
(File: Warehousing Sub-Unit Res. Cont. Sect.)

TI-1413, dated 13 Jan. 1943, initiated action for the allocation of $1,800,000 in funds appropriated to the AAC and allotted to the Mat.Center (WF) for use in the establishment and maintenance of stockpiles of aircraft hardware. ASU (Dayton) had proposed that 3 privately-operated warehouses be established for aircraft hardware to prevent critical procurement bottlenecks. The selection of these warehouses and the direction of subject plan would be left to ASU. The value of material that would be stocked would at no time exceed $600,000 for each of these participating warehouses; therefore the Govt's potential liability would be limited to $1,800,000.

11. (U) IDC 16 Jan. 1943
Fr: Capt. A.F. Hitchner
Warehousing Unit, WPB
Dayton
To: Maj. A.E.R. Peterka,
Chief, Mat.Distrib.Br.,
Prod.Res. Sect., WF
(File: Warehousing Sub-Unit
Res. Cont. Sect.)

The voting by aircraft manufacturers for selection of 3 aircraft hardware warehouses to handle stockpiles had been closed as of 9 Jan. 1943. The results of this voting had been tabulated and is listed in this document. Capt. Hitchner suggested that the following warehouses be chosen in their sections:

Los Angeles District	Ducommun Metals and Supply Co
Mid-Western District	Supply Division, Robertson, Missouri
Eastern District	Aircraft Hardware Mfg. Co., New York City

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12. (U) Memo Rpt. MDB-MC-150
20 Feb. 1943
(File: Warehousing Sub-Unit Res. Cont. Sect.)

Capt. Hitchiner reported on a visit made to WPB, (Wash.) 11 Feb. 1943 "for the purpose of continuing discussions of procedure for handling warehouse orders for aircraft hardware". Long discussions were held with Mr. John A. Burley, Director of the Wholesale and Retail Trade Division, WPB (Wash.), and Mr. Simons, Industrial Hardware Br. of the same division. It was decided that the mechanics of the hardware plan could be set up, but that the Division would require a formal request by the Aircraft Production Board (Wash.) to have this program placed in operation.

13. (U) Rpt. 24 Feb. 1943
By: Capt. A.F. Hitchiner
Warehousing Sub-Unit, WPB, Dayton
(File: Warehousing Sub-Unit, Res. Cont. Sect.)

A summary of the Aircraft Hardware Warehouse meeting held Feb. 24, 1943 "to outline the plan and to obtain suggestions from the warehouses to assist in drawing up the final form that the program will take". This meeting was attended by various representatives from the 3 warehouses, the WPB, ASU, Metals Reserve Corp., and the Steel Recovery Corp. This document included a detailed discussion of the following subjects: items to be stocked, initial stocks, replacement of stocks, redistribution of surplus stocks, sales limitations, protection against loss, and reports.

14. (U) Outline (24 March 1943)
Warehouse Procedure
(File: MB&D)

A step by step outline of the procedures for the filing of reports by Warehouses with ASU (Dayton) to procure aircraft hardware. A method for a pricing policy was tentatively proposed.

15. (U) AFP #341219
31 March 1943
(File: Contract Files)

AFP dated 31 March 1943 entered into with Ducommun Metals and Supply Co., authorized the "Establishment and maintenance of stocks and aircraft hardware in accordance with TI-1413" at a total actual cost of $600,000.00. This AFP was confirmed by Contract W 535 ac-40097.

16. (U) AFP #341220
31 March 1943
(File: Contract Files)

AFP dated 31 March 1943 entered into with Supply Div. Inc., authorized the "Establishment and maintenance of stocks and aircraft hardware in accordance with TI-1413 dated 13 January 1943", at a total actual cost of $600,000.00. This AFP was confirmed by Contract W 535 ac-40099.

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17. (U) AFP #341221
31 March 1943
(File: Contract Files)

AFP dated 31 March 1943 entered into with Aircraft Hardware Mfg. Co., authorized the "Establishment and maintenance of stocks and aircraft hardware in accordance with TI-1413" at a total actual cost of $600,000.00. This AFP was confirmed by Contract W 535 ac-40098.

18. (U) Ltr. 6 April 1943
Fr: Capt. H.W. Hammond
Redistrib. Div., WPB, Wash.
To: ASU, WPB, Dayton
Attn: Capt. A.F. Hitchiner
(File: MD&D)

Capt. Hammond had submitted to members of the Program Planning Br. of the Redistribution Div., WPB (Wash.) a copy of the procedure that the Warehouse Sub-Unit (Dayton) had worked up for operating the official aircraft hardware warehouses. Enclosed with this letter to ASU was a memo dated 30 March 1943 from Mr. Catlin, Chief of the Program Planning Br. (Wash.) in which he stated that the method of pricing set forth in the above procedure had apparently been changed from that accepted at the meeting in Dayton on 24 Feb. which was to base the net price on the largest single shipment during 1942 and base the railroad freight on this same shipment. WPB felt if this pricing procedure was to be changed, it should be checked with Metals Reserve Corp.

19. (U) Memo 15 April 1943
Fr: Malcolm Catlin, Chief
Program Planning Br., WPB, Wash.
To: Capt. H.W. Hammond
Redistr. Div., WPB, Wash.
(File: MD&D)

Memo from Mr. Catlin stated that the pricing policy in the tentative procedural outline submitted by ASU on 24 March 1943 was not in accord with the Program Planning Br., WPB agreement reached in conference held in Dayton 24 Feb. Mr. Catlin felt that the pricing policy as used by Steel Recovery Corp., outlined in this Memo, was correct. Capt. Hammond stated in a ltr, dated 17 April 1943, (attached) that he believed this policy could be adopted as a basis for the Aircraft Hardware Warehousing Program.

20. (U) Ltr. 21 April 1943
Fr: Capt. A.F. Hitchiner
Warehousing Sub-Unit,
Prod.Cont.Sect., WP
To: ASU Representative, Wash.
Attn: Capt.H.W. Hammond
(File: MD&D)

Capt. Hitchiner stated the tentative procedure, as outlined in Memo dated 15 April 1943, for the pricing of aircraft hardware to be redistributed through warehouses was not practical, and suggested the following: The price that was to be paid for material purchased by the Steel Recovery Corp. (Wash.) under the program was to be the net price of the material plus railroad freight. The price at which the Steel Recovery Corp. would sell the material to the warehouses would be the list price plus standard extras and less current consumer discount and an additional discount of 20%. The ASU (Dayton) in conjunction with the Steel Recovery Corp., was to establish the warehouse purchase prices based upon the most recent published price list. These prices were to be changed from time to time to conform with industry price changes.

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21. (U) 30 April 1943
Statement by Capt. A.F. Hitchiner to KLM
Approved by Capt. A.F. Hitchiner, Warehousing Sub-Unit, 7 Dec. 1943
(File: Warehousing Sub-Unit Res. Cont. Sect.)

"Following completion of the final draft of Limitation Order L-296, Captain Hitchiner presented a complete outline of the Warehousing Program to the Army and Navy Munitions Board at a meeting held in Washington on or about 30 April 1943. Approval of that board was obtained to the Limitation Order L-296, Directive No. 1 to that Order, and the instruction to be issued by the Aircraft Scheduling Unit." [Document not included in case history. Original signed statement retained in Historical Office, WF.]

22. (U) Memo 30 April 1943
Fr: Maurice Heckscher
Asst. General Counsel, WPB Wash.
To: Mr. T.P. Wright, Dir., ARCO, Wash.
(File: MM&D)

A memo from Mr. Heckscher, Asst. General Counsel, WPB (Wash.) assured Mr. Wright, Director ARCO (Wash.) that he was proceeding at once with the clearance and issuance of the Limitation Order and Directive No. 1 which would cover warehouses handling aircraft hardware and components. However, it would take several days to get the Order and Directive approved and issued.

23. (U) Memo 5 May 1943
Fr: Maurice Heckscher
Asst. General Counsel, WPB Wash.
To: Mr. T.P. Wright, Dir., ARCO, Wash.
(File: MM&D)

The proposed Limitation Order L-296 which was to serve as the basis for various Directives and under which the proposed Directive No. 1 covering valves and fittings had been prepared, was in circulation in accordance with WPB procedure. The 5 day period before clearance was to expire on 8 May 1943, and unless some objections to the plan were raised, the Order should come before the Clearance Committee by the first of the next week. If no substantial objections were raised there, it was expected that the Order and Directive No. 1 would be issued, published and generally distributed May 12th.

24. (U) IDC 11 May 1943
Fr: Lt. D.K. Barnes
Prod.Cont. Sect., WF
To: Chief, GFE Components Unit, Prod.Cont.Sect., WF
(File: Warehousing Sub-Unit Res.Cont.Sect.)

All sub-units of GFE Components Unit, Prod.Cont.Sect. (WF) had been canvassed to determine advisability of establishing warehouses to handle component parts of aircraft hardware. Engine, Propeller, Landing Gear, Armament, Instrument, Radio, Photographic and Miscellaneous Units had been contacted and expressed interest in having certain items available through the warehouse system. Components Unit (WF) suggested that a conference be called to discuss the advantages and disadvantages of warehouses for these parts; and to see if further preliminary investigation was necessary.

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25. (U) Memo 18 May 1943
Fr: Maurice Heckscher
Asst. Gen.Counsel, WPB
Wash.
To: T.P. Wright, Dir.,ARCO,
Wash.
(File: Warehousing Sub-Unit
Res.Cont. Sect.)

The Clearance Committee (Wash.) had objected to the fact that the aircraft warehousing plan contained no restriction on quantities of items to be stored, and therefore the following was to be included at the end of paragraph (a) of Directive No. 1: "At no time, however, may the inventory of such aircraft hardware, valves and fittings of an aircraft warehouse include items acquired by it or by another aircraft warehouse from a producer having a total cost to the aircraft warehouse of more than $600,000." It was stated that Order L-296 and Directive No. 1 were ready for issuance, but were to be held until the necessary papers could be coordinated prior to putting the warehousing plan into effect. Mr. Heckscher assumed that Col. Powers, ASU, (Dayton) would act as Administrator of subject Order.

26. (U) Ltr. 20 May 1943
Fr: Capt. A.F. Hitchiner
ASU, WPB, Dayton
To: ASU, Representative, Wash.
Attn: Capt. Hugh Hammond
(File: MM&D)

ASU (Dayton) stated that from preliminary results of the reports of idle and excessive inventories in the plants of aircraft contractors which had been tabulated, quantities far in excess of those originally estimated under the program had been found. Warehousing Program would be the best means of quickly moving these stocks. Downward revision of producers' prices had created a greater spread between the prices previously paid and the latest prices. ASU requested that Metals Reserve Co. (Wash.) provide funds of approximately $4,000,000 to arrange a transfer of the large quantities of idle and excessive materials which would cover the first year of operation.

27. (U) WPB Directive L-296
22 May 1943
(File: Warehousing Sub-Unit
Res.Cont. Sect.)

WPB Limitation Order L-296 prescribed the manner of acquisition, warehousing and delivery of certain types of aircraft hardware and components by certain warehouses. This directive included definitions of terms used in the hardware program; and directed that each warehouse should file with the WPB, or some designated place, reports and questionnaires, subject to the approval of the Bureau of the Budget (Wash.) pursuant to the Federal Reports Act of 1942. Schedule A in this document listed aircraft hardware valves and fittings which would be redistributed under Warehousing program.

28. (U) Memo 1 June 1943
Fr: J.A. Krug,
Program Vice-Chairman, WPB
Wash.
To: Col. E.M. Powers, Admr.
ASU, Dayton.
(File: Warehousing Sub-Unit,
Res.Cont.Sect.)

Memo from J.A. Krug, Program Vice-Chairman, WPB, appointed Col. Powers, Administrator ASU (Dayton) to direct the execution of WPB Limitation Order L-296.

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29. (U) Ltr. 1 June 1943
Fr: Col. E.M. Powers, Admr. ASU, Dayton
To: Ducommun Metals & Supply Co., Los Angeles, Calif.
(File: Warehousing Sub-Unit, Res.Cont. Sect.)

Instructions in detail were issued to aircraft warehouses by the Administrator of the ASU (Dayton) to prescribe limitations upon inventories and deliveries of aircraft hardware and components listed on Schedule A of Limitation Order No. L-296, and to prescribe the correct use of preference rating certificates.

30. (U) Ltr. 2 June 1943
Fr: Maurice Heckscher Asst.General Counsel, WPB Wash.
To: Capt. A.F. Hitchiner ASU, Dayton
(File: Warehousing Sub-Unit Res.Contr.Sect.)

Mr. Heckscher stated that he had received certified copies of delegations of authority to Col. Powers which covered: (1) Right to approve certificates for the transfer of"aircraft earmarked hardware and components";(2) Right to approve and issue preference rating certificates in name of WPB for delivery to warehouses of materials listed on Schedule A, Limitation Order L-296; (3) Right to issue instructions to aircraft warehouses.

31. (U) Ltr. 8 June 1943
Fr: James Jones, Secy. of Commerce, Wash.
To: D.M. Nelson, Chairman, WPB Wash.
(File: MM&D)

James Jones, Secy. of Commerce (Wash.) had received a letter from Mr. Davis, Vice-Chairman, WPB (Wash.) which requested the Metals Reserve Co. (Wash.) to put into effect the program developed by the WPB and the AAF, for directing into essential warehouse idle and excessive inventories of aircraft hardware held by large manufacturing concerns. This matter was referred by Secy. Jones to the Metals Reserve Co. for consideration.

32. (U) WPB Limitation Order L-296 Directive No. 1 (8 June 1943)
(File: Warehousing Sub-Unit Res.Cont.Sect.)

WPB Limitation Order L-296 Directive No. 1 issued to 3 selected aircraft warehouses covered the following items: (1) Selected warehouses were authorized to maintain in their possession a well balanced stock of aircraft hardware as included in Schedule A of WPB Directive, 22 May 1943. This stock would at no time exceed $600,000; (2) Aircraft hardware valves and fittings should be procured, maintained and delivered as"aircraft earmarked hardware and components" as directed by Limitation Order L-296. A discussion is included on limitations on deliveries and certification necessary for warehouses to redistribute hardware to a customer.

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33. (U) IDC 11 June 1943
Fr: Capt. A.F. Hitchiner
Warehousing Sub-Unit
Prod.Cont.Sect.,WF
To: Lt.Col. A.E.R. Peterka
Prod.Contr.Sect.,WF
(File: Warehousing Sub-Unit
Res.Cont.Sect.)

Capt. Hitchiner stated that ASU (Dayton) would not be able to obtain all the needed material for the warehouses out of surplus stock, so it was necessary for the contractors to file applications for preference ratings. The warehouses were to have on hand an amount equal to six times its estimated monthly sales. He also advised that $600,000 as guaranteed was not enough to cover this material and therefore suggested that an AAA rating be approved to permit delivery to the warehouses in 2 or 3 months, cutting down the amount of material the warehouse would be responsible for at the end of the war. If this AAA rating was not approved it was thought the Warehousing Sub-Unit (Dayton) would object to the program unless additional funds were provided as a guarantee.

34. (U) IDC 18 June 1943
Fr: Lt.D.K. Barnes, Admr.
Asst., Components Follow-
Up Unit, Prod.Cont.
Sect.,WF
To: Lt.Col. E.L. Love
Chief, Follow-Up Br.
Prod.Control Sect., WF
(File: Warehousing Sub-Unit
Res.Cont.Sect.)

Following a discussion on the proposals which had been made for warehousing of aircraft components, Lt. Barnes, Adm. Asst., Components Follow-Up Unit (WF) stated that one important obstacle appeared to be in the way of giving components treatment similar to that given to steel, aluminum, copper, and hardware. These four programs received their financial support from the Metals Reserve Corp. which provided funds to cover losses involved. Maj. Baehr of Prod.Res. Sect. (WF) believed that the Metals Reserve Corp. wouldn't be able to make similar appropriations for components, but that the same end result might be obtained without financial backing of Metals Reserve Corp. (Wash.) if the aircraft industries could be induced to accept some loss in the redistribution of component. It was agreed that the next step would be to conduct a survey of aircraft manufacturers for the purpose of locating surplus stocks of components.

35. (U) Ltr. 21 June 1943
Fr: Capt. A.F. Hitchiner
ASU, Dayton
To: Office of Survey
Standards, Wash.
Attn: M.W. Brethourer
(File: M&D)

Capt. Hitchiner stated that the Form to be used in request for surplus stock had been revised. The 3 major changes made in this Form are listed in this letter from Capt. Hitchiner to Office of Survey Standards (Wash.), one of which provided for inspection by the Army and Navy Inspection Office for compliance with A-N specifications. Office of Survey Standards and Bureau of Budget (Wash.) had approved this corrected Form, a copy of which is attached to this document.

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36. (U) June 1943 Statement by Capt. A.F. Hitchiner, Warehousing Sub-Unit, WF to KRW, at WF Approved by Capt. A.F. Hitchiner 12 April 1944 (File: Warehousing Sub-Unit, Res.Cont. Sect.)

"In a telephone conversation it was mutually agreed by Aircraft Scheduling Unit and Metal Reserves Corp. to completely drop negotiations in the early part of June 1943 in favor of a substitute plan to be put into effect by the Army Air Forces whereby that branch of the service would enter into contract with certain warehouses. Contracts were issued by the Army Air Forces approximately 7 June 1943." [Document not included in case history. Original signed statement retained in Historical Office, WF.]

37. (U) Del. of Auth. No. 4026, 3 July 1943
Fr: J.A. Krug, Program Vice-Chairman, WPB, Wash.
To: Capt. A.F. Hitchiner Chief, Warehousing Sub-Unit, Res.Cont.Sect, WF
(File: Warehousing Sub-Unit, Res.Cont.Sect.)

Mr. Krug authorized Chief of Warehousing Sub-Unit (WF) and Assistant in charge of Warehousing to countersign and approve the issuance of Certificates for transfer of "aircraft earmarked hardware and components".

38. (U) Tel. Conv. 3 July 1943
H.G. Batcheller, Dir. Steel Div.,WPB, Wash.
and Lt.Col. A.E.R. Peterka, Chief, Mat.Br.,Res.Cont. Sect., WF
(File: MM&D)

Col. Peterka, Chief, Materials Br.,Res.Cont.Sect.(WF) stated in a telephone conversation with Mr. Batcheller, Director of Steel Division, WPB (Wash.) that at the suggestion of Gen. Echols, AC/AS, MM&D (Wash.) warehouses had been set up for handling earmarked aircraft hardware. Metals Reserve Corp. (Wash.) had agreed to subsidize the program to cover the difference in price paid by the jobber for surplus materials and the original price paid by the contractor. Based on this approval, the pgogram had advanced to the point where warehouses had been established, buildings constructed and redistribution started. On 1 July 1943 Metals Reserve Corp. at a meeting of the Directors had informally turned down the subsidizing of these warehouses. Col. Peterka feared that "some Congressman is going to find these stocks and then 'view with alarm' our lack of activity in the matter". Mr. Batcheller approved Col. Peterka's plan for writing a letter to Metals Reserve Corp. over the signature of Gen. Branshaw, CG, Mat.Com. (WF) pointing out that the program had progressed too far to back down, and it was absolutely necessary to redistribute the surplus stocks.

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39. (U) Tel. Conv. 6 July 1943
Lt.Col. A.E.R. Peterka
Chief, Mat.Br., Res.Cont. Sect.,WF and
C.W. Nichols, Vice-Pres., Metals Reserve Corp.,Wash.
(File: MM&D)

Mr. Nichols, Vice-Pres., Metals Reserve Corp. (Wash.) stated in reply to Col. Peterka's objections to the delay in the Aircraft Hardware Warehousing Program caused by the policy of Metals Reserve Corp.(as discussed above) that the Reconstruction Finance Corp. was questioning the profits permissible under the subsidizing arrangement. Mr. Nichols further stated that the Metals Reserve Corp. had indicated its willingness to subsidize but its Board had not officially approved the plan and he pointed out the danger in going ahead with procedures before receipt of firm committments. However there was going to be a new understanding in the program which should be settled in a few days. He also stated the Recovery Corporations were going to be "washed up" but the Metals Reserve Corp. would take over the redistribution work.

40. (U) Del. of Auth. No. 4129
12 July 1943
Fr: J.A. Krug, Program Vice-Chairman, WPB, Wash.
To: Capt. A.F. Hitchiner, Chief, Warehouse Sub-Unit, Res.Cont.Sect.,WF
(File: Warehousing Sub-Unit Res.Cont.Sect.)

Mr. Krug authorized Chief of Warehousing Sub-Unit and Asst. in charge of Warehousing to approve and issue Preference Rating Certificates for deliveries to aircraft warehouses of materials listed on Schedule A of Limitation Order L-296 provided that (1) all necessary clearance had been obtained and(2) assignment of ratings should be no higher than AA-1.

41. (U) Ltr. 7 Aug. 1943
Fr: Brig.Gen. A.E. Jones
Chief, Proc.Div., WF
To: Chief, Legal Br., Purchases Div., ASF, Wash.
(File: MM&D)

Many Cost-Plus-a-Fixed-Fee (hereinafter referred to as CPFF) contractors had on hand surplus hardware which had been purchased at OPA ceiling prices that were in many instances higher than current OPA prices. In order for warehouses to purchase material from contractors, pay freight, inspection and other charges and make a profit, it was necessary for them to purchase this material at a 15 to 20% discount from present OPA ceiling prices. Proc. Div. (WF) had been requested to issue a directive to Contracting Officers at the plants to the effect that the 15 to 20% discount would be justified. Advice of the Legal Br., Purchases Div., ASF, (Wash.) was requested.

42. (U) Memo 21 Aug. 1943
Fr: W.L. Marbury, Chief Counsel Purchase Div., ASF, Wash.
To: Chief, Proc. Div., Mat.Com., WF
Attn: Col. P.C. Swatland
(File: MM&D)

Chief Counsel, Purchase Div. (Wash.), considered that the sale of Govt. owned property by CPFF contractors to warehouses, whose sales were regulated by ASU at discounts up to 20% in the case of aircraft hardware, was reasonable, and that the proposed action would facilitate the prosecution of the war. "It is assumed that it will have been determined in the case of each class of property which will be sold that the applicable discount is no more than is necessary to cover

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the cost of the services rendered by the warehouse, plus a reasonable profit". The proposed sales might be legally made when the CPFF contract contained authorization under Proc. Regulations. A proposed revision of the Proc. Regulation authorizing the subject sales is attached.

43. (U) Ltr. 20 Sept. 1943
Fr: Capt. A.F. Hitchiner
Warehouse Sub-Unit, Res. Cont. Sect., WF
To: Asst. General Counsel, WPB, Wash.
Attn: Maurice Hexscher
(File: Warehousing Sub-Unit, Res. Cont. Sect.)

Capt. Hitchiner stated the delay in getting the Aire. Hardware Warehousing Program started was due to difficulties encountered in obtaining preference ratings for small improvements necessary to the warehouses, so that they might maintain earmarked stocks segregated from their other materials. As of 20 Dec. 1943 only one preference rating had been issued although two more were in process. The failure of the Metals Reserve Corp. to complete negotiations to subsidize redistribution of aircraft hardware had been overcome somewhat by special directives issued by the AAF Proc. Div. (WF) authorizing Contracting Officers to sell material purchased on CPFF contracts to warehouses approved by ASU at a price that would allow the warehouses to handle the material and resell it on a competitive basis. In spite of the difficulties encountered in getting the program started, it was on its way as materials were beginning to move into the Warehouses, and no cause for delay could be seen.

44. (U) 8 Nov. 1943, Statement by Capt. A.F. Hitchiner to KLM at Wright Field Approved by Capt. A.F. Hitchiner, 7 Dec. 1943 (File: Warehousing Sub-Unit, Res.Cont. Sect.)

"Following issuance of Limitation Order L-296, the WPB issued formal delegations appointing the Administrator of ASU as Administrator of Limitation Order L-296 and giving him the authority to issue all instructions provided for in Directive No. 1 of that order. They also issued delegations of authority to the Administrator Captain Hitchiner and Warrant Officer R.E. Black to sign for the War Production Board the PD-1X and PDL-2033-a Certificates." (Document not included in case history. Original signed statement retained in Historical Office, WF.)

45. (U) 8 Nov. 1943, Statement by Capt. A.F. Hitchiner, Warehousing Sub-Unit, WF to KLM at WF Approved by Capt. A.F. Hitchiner 7 Dec. 1943

"Since the start of the program, eleven PD-1X applications totaling $397,000.00 have been approved by the Warehouse Sub-Unit for the purchase from producers of aircraft hardware to be placed in hardware stock; however, the warehouses have been instructed to hold up placing orders for approximately 80 percent of this material, due to surpluses which are available in air-

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craft contractors' plants. Large quantities of this surplus material are being moved. During the month of October, 13,200,000 pieces valued at approximately $250,000.00 were purchased by these warehouses. No PD-1X is approved if surplus material is available." Document not included in Case History. Original signed statement retained in Historical Office, WF.

46. (U) AFP 332081
6 Jan. 1944
(File: Termination Records Unit, Readj. Div.)

Credit AFP 332081, dated 6 Jan. 1944, provided for the cancellation of Contract W535 ac-40097 with Ducommun Metals & Supply Co. Entire cancellation of subject contract at no cost to Govt. was requested by Res. Cont. Sect. (WF) and consented to by contractor 10 Dec. 1943. This Credit AFP was issued for a Change Order to accomplish the cancellation.

47. (U) Rpt. 9 Feb. 1944
By: Lt. Col. A.E.R. Peterka
Chief, Mat. Dist. Br.,
Res. Cont. Sect., WF
(File: MM&D)

A report, including a general summary of the Warehousing Program, was drawn up by Col. Peterka which stated that too little material had been moved and too slowly. In the redistribution of aircraft material the ASU had set itself up to go into the business of selling commodities in surplus stocks. They could have followed two courses: competition or partnership with industry, partnership being the most desirable. When material was scarce the contractor would sell his surplus in part or whole to another contractor who needed it. To the layman this seemed satisfactory, yet it was inefficient, and difficult to buy and sell the materials in this manner because the aircraft industry had a poor knowledge of its true physical inventory. Almost every contractor had to start from "scratch," and pressure was placed upon them to produce better airplanes and to forget about keeping records and inventories. "Inventory-wise they do not know what they have or where they have it"—as shown in Appendix I attached. Col. Peterka realized ASU must sell or dispose materials in competition with the producing mills, and it was more difficult to do business with ASU than with the mills or its distributors. Col. Peterka's summation was that a system of reservoirs must be established immediately to which contractors' surpluses might be moved, inspected, inventoried, and distributed to established commercial distribution channels. These storage reservoirs might be the ASU depots, or if necessary, storehouses operated on a management-fee basis by experienced commercial warehouse organizations. These would make it possible to remove

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surplus materials and then control their flow back into production. He urged that "(1) That surplus material from contractor's plants be removed to storage reservoirs; (2) That it be made available to ASC and ASO; (3) That all usable material be diverted to existing commercial distribution channels on attractive terms; (4) That the material declared undistributable be turned back into remelt or refabrication into such forms as are currently usable. That authority and latitude be given to the Materials Distribution Branch to carry out the distribution as outlined." Minutes of a meeting held 2 Feb. 1944 at Mat. Dist. Br., Res. Cont. Sect., (WF) which set forth a plan of redistribution of aluminum as an example of partnership operation are included as Appendix 3.

48. (U) IOM 9 Feb. 1944
Fr: It. Col. A.E.R. Peterka
Chief, Mat. Dist. Br.,
Res. Cont. Sect., WF
To: Col. W.R. Herod, Acting
Chief, Res. Cont. Sect.,
WF
(File: MMD)

Col Peterka reviewed the Aircraft Hardware Warehousing Program, and the revisions of existing contracts as of 9 Feb. 1944. The Ducommun Metals & Supply Co., Los Angeles, one of the 3 selected warehouses cancelled its contracts by mutual agreement and Union Hardware & Metals Co., Los Angeles, was being considered to replace it. Due to economic conditions, the original purpose of the warehouses had changed and instead of carrying minimum stocks they were now expected to redistribute huge surplus stocks. Under the present contracts the warehouses carried inventory for more than $600,000, which was at one time satisfactory; and the Proc. Div. (WF) had been requested to increase the contracts from $600,000 to $1,500,000 to meet the changes. In addition to this sum the warehouse distributors could be made competitive in the event of a market drop and credit used against future purchases. A second alternative would be to cancel existing contracts, thereby gaining ownership of existing stocks, and place them on consignment basis of 20% on gross sales. A third alternative would be to place them on a management fee basis. Under the new program a Resident Army or Navy Inspector would exam material upon receipt and upon shipment, and it would be their duty to make this material "stick." The warehouses would make a periodical check and after a given period of time would declare "slow moving" material scrap upon the recommendation of the warehouse management, and concurrence of the Mat. Distribution Br., (WF). Col. Peterka stated some type of action was needed immediately, or "the AAF will surely get stuck badly and material which can be diverted into production this year will become scrap."

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49. (U) Ltr. 16 Feb. 1944
Fr: Aircraft Hardware Mfg. Co., Inc. Los Angeles, Calif.
To: Col. E. W. Rawlings ASU, WF
(File: Recorder, ASU)

Aircraft Hardware Mfg. Co., Inc. pointed out that the outlook of the warehousing program had changed due to effort of ASU (WF) in educating aircraft manufacturers to buy from surplus stock whenever possible. Inquiries were currently coming in for items to fill large basic contracts rather than for small critical shortages. Due to decreasing prices of aircraft hardware, this company recommended that official warehouses be authorized to carry surplus stocks on a consignment basis, and opposed plan to increase contracts to $1,500,000. Latter plan necessitated private financing which was often impossible to obtain.

50. (U) IOM 28 Feb. 1944
Fr: Lt. Col. J. M. Delaney Comptroller, WF
To: Brig. Gen. A.R. Crawford C/S Mat. Com., WF
(File: Hardware & Components Unit, Readj. Div.)

Proposals by Col. Peterka for disposal of surplus aircraft hardware were reviewed at a conference with Proc. Div. (WF) and Judge Advocate General (WF), 28 Feb. 1944, at which time consensus of opinion was that AAF could not consign property to private warehouses for resale by warehouses operators. Further disclosed that AAF had no method of purchasing contractors' surplus property on Fixed Price Supply Contracts which were not in process of termination. Such purchases would result in AAF "bailing out the Fixed Price Supply Contractor on over-purchases, either as to purchases beyond contractural requirements or purchases beyond immediate production requirements." Conclusion was that only feasible method of handling the problem was to revise existing contracts and provide a guarantee of $3,000,000 ($1,500,000 each to two remaining warehouses) against contract termination.

51. (U) Ltr. 10 March 1944
Fr: Maj. Gen. C.E. Branshaw, CG, Mat. Com., WF
To: Chief, Res. Div., Wash.
(File: Steel Sub-Unit, Readj. Div.)

Gen. Branshaw reviewed the development of the hardware warehousing program and advised that functions of these warehouses were undergoing changes due to increased production capacity and existing surplus stocks. Increased productive capacity was resulting in declining market prices and in increasing surplus stocks which must be redistributed to insure maximum utilization of stocks. Two plans for operation were presented (1) warehouse operator would purchase govt.-owned surplus stocks at current market prices less trade discounts and redistribute at current prices established by ASU (2) AAF would consign govt.-owned property to warehouses for redistribution and then agents would be paid a monthly management fee. Plan 1 had been cleared by Judge Advocate, Mat. Com. (WF) from a legal standpoint. Gen. Branshaw suggested that the proposed National Recoveries Corp. might

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eventually be the logical agency to administer warehouses, but problem was an immediate one and would justify no appreciable delay.

52. (U) Ltr. 21 April 1944
Fr: Brig. Gen. F.M. Hopkins, Jr., Redistribution & Salvage Officer, Wash.
To: CG, Mat. Com., WF
(File: M&S)

In reply to Gen. Branshaw's letter of 10 March 1944, Gen. Hopkins, Redistribution & Salvage Officer (Wash.), advised that "it is understood that the Surplus War Property Administration and the Reconstruction Finance Corporation have agreed in principle to undertake the financing of this program." They would accept accountability and responsibility for the hardware and would furnish it to the warehouses on a consignment basis. A committee had been appointed to study the entire warehouse method of redistribution. If Reconstruction Finance Corporation assumed responsibility, it would preclude the necessity for any action on part of AAF which as a matter of general policy was believed desirable.

53. (U) Memorandum of Understanding 3 May 1944
Fr: W. L. Clayton, Surplus War Property Administrator, Wash.
(File: M&S)

Memorandum of Understanding, dated 3 May 1944, with the signatures of Gen. Meyers, Dep. AC/AS, M&D (Wash.), Col. Rawlings, Admin., ASU (WF), Rear Admiral Richardson, BuAero (Wash.) and Mr. Cornell, Asst. Vice-Pres., Metals Reserve Co. (Wash.) indicating approval of their agencies was approved by Mr. Clayton, Surplus War Property Administrator (Wash.). This constituted an agreement between AAF, BuAero, Aircraft Scheduling Unit and Metals Reserve Co. AAF and BuAero would arrange for their contractors to segregate certain government-owned material (items listed in Exhibit A attached) which was in excess to their contractual requirements. Upon segregation, AAF and BuAero would determine which part of this government-owned property was usable and which should be disposed of as scrap. Usable portion would be reported to Aircraft Scheduling Unit where requirements of Air Service Command and Aviation Supply Office would be screened against subject reports. Material not desired by Air Service Command or Aviation Supply Office would then be reported to Murray Cook, Agent for Metals Reserve Co. This company would enter into appropriate Agency Agreements with industry distribution channels, through which such materials usually flowed, for handling and sale of this surplus. All sales were to be made in accordance with applicable orders and regulations of OPA and WPB. Agency Agreements would provide for compensation to Distribution Agents based on services rendered and these Agents would be authorized by Metals Reserve Co. to issue

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shipping and packing instructions and would invoice and collect for materials sold. Murray Cook, Agent of Metals Reserve Co. would allot to Distribution Agents such material as it was possible for these Agents to accept. All net proceeds derived from sale of materials, title of which was vested in Metals Reserve Co., should be held by Metals Reserve Co. in appropriate accounts.

A sample form of subject Agency Agreement, mentioned above, providing for Distribution Agents to act as authorized representatives of Metals Reserve Co., and giving detailed instructions to be followed by these Agents is included.

54. (U) IOM 22 June 1944
Fr: Col. E. W. Rawlings, Chief, Res. Control Sect., WF
To: Maj. I. C. Orr, Termination Sect., WF
(File: Steel Sub-Unit, Readj. Div.)

Col. Rawlings, Chief, Res. Cont. Sect. (WF) stated, on 22 June 1944, that immediately upon termination of Contract ac-40098 with Aircraft Hardware Mfg. Co. and acquisition of material by AAF, subject items would be turned over to Metals Reserve Co. in accordance with provisions of the Memorandum of Understanding. Contractor was an Agent of Metals Reserve Co. and upon termination of AAF contract he would be accountable to Metals Reserve Co. for full amount purchased by AAF. A similar IOM was forwarded, 13 July 1944, to Termination Sect. (WF) regarding termination of Contract ac-40099 with Supply Division, Inc.

55. (U) Ltr. 6 July 1944
Fr: Col. E. W. Rawlings, Chief, Readj. Div., Wash.
To: Aircraft Hardware Mfg. Co., Los Angeles, Calif.
(File: Steel Sub-Unit, Readj. Div.)

Col. Rawlings, Chief, Readj. Div. (WF) notified Aircraft Hardware Mfg. Co. on 6 July 1944 and Supply Division, Inc. on 28 July 1944 of procedure for transfer of stocks to Metals Reserve Co. In contract termination proceedings AAF would purchase all material, within limitation of subject contract, from the warehouse and immediately transfer title to Metals Reserve Co., who would assign the material to the warehouse. Warehouse acting in capacity of an agent to Metals Reserve Co. would then be responsible to this Company for material turned over to it.

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56. (U) Ltr. 7 July 1944
Fr: Lt. C. M. Graff, Contracting Officer Proc. Div., WF
To: Aircraft Hardware Mfg. Co., New York, N. Y.
(File: Termination Records, Readj. Div.)

Official notice of termination of Contract ac-40098 was forward Aircraft Hardware Mfg. Co. on 7 July 1944. Termination was effective as of 26 June 1944. Accepted by subject company 11 July 1944.

57. (U) TT 21 July 1944
Fr: Lt. C. M. Graff, Contracting Officer, Proc. Div., WF
To: Supply Division, Inc., Robertson, Mo.
(File: Termination Records, Readj. Div.)

Supply Division, Inc. was notified on 21 July 1944 of intention of Government to terminate Contract ac-40099 as of 31 July 1944.

58. (U) Memo 28 July 1944
Fr: Brig. Gen. F. M. Hopkins, Jr., Redistribution & Salvage Officer, Wash.
To: Charlton MacVeagh, Dep. Director Readj. Div. OUSW, Wash.
(File: M&S)

Gen. Hopkins forwarded to OUSW information obtained from Reconstruction Finance Corporation concerning progress made by Metals Reserve Co. in consummating contracts with its distribution agents. As of 28 July 1944 Metals Reserve Co. had executed contracts with 16 agents operating approximately 35 warehouses and 7 more contracts were being processed. Metals Reserve Co. had offered to its distribution agents approximately 3,000,000 lbs. of aluminum; 2,500,000 lbs. of steel and 70,000,000 pieces of hardware.

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Dir. Hdw. Warehousing
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M M+D Wash.
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FWL:cj:90-5-3-4

INTER-DESK CORRESPONDENCE

TO: Chief, Materials Branch DATE: October 13, 1942

PLAN TO USE THE FACILITIES OF LEADING

AERO SUPPLY HOUSES

1. In submitting the following report, it is to be kept in mind that there should be a marked distinction between the legitimate jobbing houses and the broker. A large number of Aero Supply Houses have deteriorated into commission merchants who merely get the orders and then place them with some legitimate manufacturer. In doing this, there is evidence that in a large number of cases, the broker made the promises to the ultimate consumer that could not be kept and there was evidence in some cases the broker promised the ultimate consumer to make delivery on a certain date when he knew that he had been advised by the prime manufacturers that he would not get these articles for at least 60 days later. This is deliberate lying but sometimes it is done in order to get the order and keep himself in business. Assuming that the legitimate jobber can be separated from the commission merchants, the jobber could be used as a great aid for storing AN Standard Parts, consolidating orders for small quantities into a large order, keeping orders flowing into the prime manufacturers so that he could have quantities that would be condusive to mass production. He could also take care of a lot of follow-up work which is now turned over to this office.

2. The following plan will be to:

a. Ascertain the total number of AN Parts used by the industry per month.

b. Ascertain the maximum production capacity for this item per month.

c. Ascertain the amount of these items required per month by Air Service Command.

d. Designate the jobbing houses conveniently located that will be handling these items for dispensing to the airplane manufacturers.

e. Arrange with War Production Board to release the amount of material necessary per month to manufacture these items.

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Chief, Materials Branch
October 13, 1942

f. Ascertain the flow time required between placing of the orders, delivery of material to the manufacturers, and delivering of the complete items to the jobbing house center.

g. Have all shipments certified by Scheduling Unit.

3. If the above plan were followed, the jobber will be handling more materials than he is handling now and by placing his orders on time, consolidating the orders and following up the delivery schedules, it will eliminate the necessity for submitting the large number of critical shortages which are now received by this office. It would also increase the production efficiency of the manufacturers because they then could depend on a continual flow of raw material into their plants and would be dealing only with a few customers (the large jobbing houses) instead of all the airplane and airplane accessory manufacturers that they are now dealing with. Another advantage would be that the raw material would be handled in one lump allocation instead of 100 small allocations as is now the case.

Frank W. La Vista

FRANK W. LA VISTA
Major, Air Corps
Chief, Non-Metallic Materials Unit

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INTER-OFFICE MEMORANDU

ARMY AIR FORCES
MATERIEL CENTER
Office of The Commanding General

GLH:ear-90-1

Steele High Building
~~Wright Field~~, Dayton, Ohio
Date October 20, 1942

TO: Technical Executive
Wright Field
Attention: Capt. J. M. DeLaney

SUBJECT: Procurement of Aircraft Hardware

1. A survey of the conditions existing in the procurement of Aircraft hardware indicates the following:

a. Lack of Standardization - Many different articles are being produced to serve the same purpose where a reduction in number of types might be affected by standardization.

b. Late Orders - Prime contractors are all too frequently placing orders for hardware for immediate delivery without due consideration to the contract requirements.

c. Item Capacity - Many manufacturers of Aircraft hardware have their plants shut down during a good portion of each month for lack of orders.

d. Lack of Materials - Many aircraft manufacturers plants are shutdown from time to time for lack of materials. The manufacturers have indicated that all too frequently materials cannot be obtained in time to make delivery within the delivery time desired by the prime contractors.

e. Critical Shortages - Many critical shortages are developing, and hold planes on the ground for lack of Aircraft hardware.

f. Use of Jobbers - Many prime contractors prefer to place their Aircraft hardware orders through jobbers. Some jobbers do a legitimate job in redistributing orders among manufacturers and maintain a stock of parts; other jobbers merely accept orders and make fantastic delivery promises.

2. The conditions existing in the Aircraft hardware fields, as outlined in Paragraph 1 above, indicate that action can be taken to remedy the situation. It appears that there exist all the necessary elements for procuring Aircraft hardware if these elements are properly brought together. The primary purpose of any plan should be to supply the Aircraft contractors with their necessary materials.

Signature .....

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INTER-OFFICE MEMORANDUM
ARMY AIR FORCES
MATERIEL CENTER
Office of The Commanding General

GLHteer-30-1

Steele High Building
Dayton, Ohio
Date October 20, 1942

TO: Technical Executive
Wright Field
Attention: Capt. J. M. DeLaney

SUBJECT: Procurement of Aircraft Hardware

3. It is suggested that the following plan be initiated:

a. Standardize the items of Aircraft hardware.

b. Schedule the delivery of Aircraft hardware to the prime contractors in direct relation to their needs. (Black Book)

c. Maintain a stock or bank of items with the jobbers, or the manufacturers, allowing a sufficient bank for flow-time.

d. Concentrate the manufacture of items in as few plants as possible in order to permit most efficient manufacturing operations and the shifting of excess plants to other operations.

4. It is suggested that the plan outlined in Paragraph 3. above be initiated with approximately a dozen critical items. These critical items would serve as test cases for the development of the suggested plan and could be tied into the present test on the Black Book. A survey requiring approximately two weeks to complete could very easily be made to obtain the necessary data for initiating a trial plan among these few critical items. The results of the survey and the trial could then be extended to other items as required.

5. It is requested that the plan suggested above be discussed with Production Engineering Section and Production Control Section, and, if generally approved, be initiated at the earliest practicable date.

E. W. RAWLINGS
Colonel, Air Corps
Chief, Industrial
Planning Section.

cc: Production Engineering Section
Production Control Section
Major LaVista
Capt. Hammond

Signature

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CASE HISTORY AIRCRAFT HARDWARE RATIONING

Wright Field
7 December 1943

TO: Historical Officer, Material Command

SUBMITTED BY: (Name) Capt. A. F. Hitchiner

(Title) Warehousing Sub-Unit, Res. Cont. Sect.

COPY

"A reorganization of the War Production Board was made and the Wholesale Retail Trade Division was established making it necessary again to contact all War Production Board officials and restart negotiations. Following several meetings with Mr. T. F. Wright, Director AFCO, Mr. L. Jack Wilson, Chief Priorities, AFCO, Mr. John A. Burley, Chief, Wholesale Retail Trade Division, WPB, Mr. Simons, Chief Industrial Hardware Branch, WPB, it was determined that the best policy would be to have Mr. Maurice Heckscher, Assistant General Counsel of the War Production Board, prepare a limitation order and the necessary directives to put the program into operation."

(Signature) t/ A. F. Hitchiner, Capt. A.C.

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CASE HISTORY AIRCRAFT HARDWARE AGREEMENT

Wright Field
7 December 1943

TO: Historical Officer, Materiel Command.

SUBMITTED BY: (Name) Capt. A. F. Hitchiner

(Title) Warehousing Sub-Unit, Res. Cont. Sect.

COPY

"In December 1942, Captain Hitchiner contacted in Washington several officials of the War Production Board concerning the establishing of Aircraft Hardware Warehousing Program similar to that established for aircraft steels. Due to the fact that distributors of aircraft hardware have in the past carried stocks of this material primarily for the maintenance of commercial and private plants, only a very small quantity was available for aircraft production. With the tremendous increase of plane production no provisions had been made to supply the demands of this industry for its small and emergency requirements. Because aircraft hardware was one of the most critical items, it was found necessary to limit the number of inventories to a comparatively few and to start the program with only three distributors. At this meeting the matter was favorable received and action was contemplated by that Board in order to issue the necessary directives. Present at the meeting were: W. L. White, Chief, Distributor's Branch, F. B. Patticon, Ass't Chief, Distributor's Branch, Jack Wilson and A. L. Lewis of Aircraft Priority Branch, WPB."

(Signature) t/s A. F. Hitchiner, Capt. A.C.

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Alic. Copper Co. Warehousing
Hdlg A, R&E, RD, MMaP
Wash. 3, (Hoff) 5

AFM:lm-30-42

INTER-DESK CORRESPONDENCE

TO: Major A. H. R. Fortescue

December 2, 1942

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SUBJECT: Disposal of Distressed and Surplus Aircraft Materials through Warehouse Channels.

1. On December 1, Lt. J. B. Davis and the writer discussed generally the plans of the Material Coordinator to utilize the stocks of distressed and surplus materials in the hands of the various aircraft manufacturers.

2. There is a very definite place for the Official Aircraft Warehouses to assist the Material Coordinator in moving certain of these materials into immediate production uses. The materials which the warehouses can handle include those items for which the manufacturer has a surplus over a normal three or four months inventory and those items which are left in stock due to production changes or are excess from a production schedule.

3. These distressed or surplus stocks vary from very small lots to items of a considerable quantity of a specification. Many of these quantities are in odd size and shape making it difficult to move the material directly to another manufacturer. Also it is often impossible to know which companies could make immediate use of these materials unless a shortage is reported without circularizing all prime and sub-contractors.

4. An important function of the warehouse is to be familiar with the requirements of all companies engaged in aircraft production within the territory covered by it. Therefore, it is in an excellent position to take into stock and re-distribute certain items regardless of the quantities involved. The distribution will reach not only the prime contractor but down to the company manufacturing only a small part for the plane.

5. The sale of distressed or surplus raw material by a company is regulated by Priorities Regulation No. 13 of the War Production Board and by various price regulations established by the Office of Price Administration. Permission to make the sale must be granted the owner by the War Production Board or the agencies set up by that board for that purpose. In the case of steel, it is the Steel Recovery Corporation, Pittsburgh, Pennsylvania. For copper, it is the Copper Recovery Corporation, New York City. The price set up by the O. P. A. for most raw materials makes it possible for a sale to a warehouse in which the owner takes no loss and the warehouse can make a fair profit.

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Aviation. Hdqrs. Warehousing
Hdqrs A. R+S RD
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Major A. L. H. Peterkin
December 2, 1942

4. No provisions have been made to include hardware items under these regulations. At the present time the owner may sell these products to any person desirous of purchasing the material, regardless of the use and priority. The price factor is a matter which may prevent the warehouse from handling this product. Therefore, some arrangement must be made with the O.P.A. to permit a sale to a warehouse without loss to the owner and yet permit the warehouse a legitimate profit.

5. The surplus materials which the warehouses purchase should be within the maximum quantity of these products which they are permitted to carry. This would reduce the amount they can obtain from the producer or manufacturer of the products, leaving a greater production capacity for direct orders from the aircraft manufacturers.

6. Your comments on this matter will be greatly appreciated.

A. P. MITCHELL,
Captain, Air Corps

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Confer re: Warehousing
Ltr A, Re 2, RD, WPB
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3.

December 3, 1942

In reply
refer to:
[illegible] Capt. Hammond, Hugh S.

SUBJECT: Warehoused Stocks of Aircraft Hardware.

TO: Chief, Aircraft Production Division, WPB
Washington, D. C.
Attention: Mr. Harold H. Talbott

1. The present stocks of aircraft hardware have been found to be inadequate to take care of the demands of the increased aircraft production and for the maintenance and repair of the planes operating under the C.A.P. and the C.P.T.P. The Aircraft Scheduling Unit has received from the aircraft manufacturers and from the National Aviation Training Association a great many complaints of the inability of the present distribution system to take care of their small and emergency requirements.

2. This situation has become extremely critical with very serious shortages developing on an average of over ten a day. Many times that number of less serious shortages have been reported and many of these will become serious unless prompt action is taken to correct this condition.

3. The Aircraft Scheduling Unit has made a study of the situation and has found that it is advisable to establish certain master stocks which will be maintained in designated warehouses in strategic locations. Tentatively, it is suggested to establish only three stocks, one in the East, one in the central states, and one in the Los Angeles district. The selection of these warehouses is to be made on the basis of a vote by aircraft manufacturers in each section.

4. In reaching this conclusion many factors were considered:

a. In the past most distributors of aircraft hardware have carried stocks primarily for the maintenance of commercial and private planes. Only about 10% of the distributors supplied, to any extent, the requirements of the aircraft manufacturers and then their facilities and inventories were limited to peace time production.

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Chief, Aircraft Production Div., WPB
December 3, 1942

b. The location of many of the distributors is not in aircraft production centers.

c. Most of the distributors are unable to increase their inventories without a considerable investment in capital equipment.

d. The quantity of material involved is too great for most distributors to finance.

5. While the ability to finance this program will be a requirement in the selection of a warehouse, it is intended to have these stocks guaranteed against loss. This guarantee is necessary due to the large quantity of material involved and the fact that the cessation of production may incur considerable loss.

6. It is therefore requested that the Aircraft Production Division of the War Production Board give its approval to this program and assist in its passage through the other departments in the War Production Board.

[illegible] the Aircraft Scheduling Unit, WPB:

BY:

Administrator

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AFH:lw-90-2
December 15, 1942

Visit of Hugh W. Hammond, Captain, Air Corps and Albert F. Hitchiner, Captain, Air Corps to War Production Board, Washington, and to Col. Rosenblatt, A.A.F., Washington, December 9th, 10th, and 11th, 1942.
Production Resources

PRS-M-73

A. Purpose

1. As directed in Special Orders #314 paragraphs 2 and 3 dated December 3, 1942, Captain Hugh W. Hammond, Chief, Aircraft Hardware Unit, Material Distribution Branch, Production Resources Section and Captain Albert F. Hitchiner, Material Distribution Branch, Production Resources Section, reported to General Hopkins, Resources Division, Washington, D. C., for the purpose of discussing and setting up warehouses to earmark Aircraft Hardware.

B. Factual Data

1. The plan to stock aircraft hardware in certain warehouses earmarked for the aircraft industry has been approved by the Aircraft Scheduling Unit. However, in order to arrange for War Production Board approval and to prepare the necessary machinery to put the plan into operation, several conferences were arranged with officials of that Board and of the Army Air Forces in Washington.

2. There were three main points under consideration, each of which may set a precedence and, therefore, very careful consideration was given to every detail. The points are:

(a) The plan itself and proper method of operation.

(b) The arrangement of a method to guarantee the warehouses against loss at the cessation of hostilities.

(c) The acquisition and redistribution of distressed and surplus stocks by the warehouses.

3. In order to secure approval of the plan and to make arrangements for the proper method of operating, a meeting was held with Mr. L. C. White, Chief, Distributors Division; Mr. Perry B. Patterson, Asst. Chief, Distributors Division; Mr. Jack Nelson, Chief of Priorities, Aircraft Production Division and Mr. A. W. Lewis, Aircraft Production Division. After discussion, all basic features of the plan were approved. Certain minor points were adjusted to simplify the method of operation, the main change being the authorizing of the Aircraft Scheduling Unit to rate orders for the replacement of inventories.

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Mr. White cleared the plan with Mr. Oberstat's office. This completed all necessary W.P.B. approval to the establishment of this plan. Attached as Exhibit "A" is a copy of the plan revised to include the changes requested. Also attached as Exhibit "B" is a copy of the suggested directive providing the authority for the warehouses to operate.

4. The quantities of material involved may run to a considerable figure and in order to prevent a substantial loss to the warehouses at the cessation of hostilities, it was necessary to guarantee the warehouses against this loss. A conference was held with Colonel Rosenblatt, Lt. Col. Chas. H. Dyson and Captain S. S. Fuller of the Army Air Forces. After a discussion of the plan, definite assurance was given that some form of contract would be arranged. Lt. Col. Dyson will go into this matter with other officials to determine the exact form to use. The maximum value of the stocks at any time was stated to be not more than $600,000.00 in any one warehouse. The guarantee is to offer protection against loss up to that amount.

5. In order not to place too great a load on the producers of aircraft hardware in establishing the initial inventories, it was intended to utilize as much as possible distressed and surplus stock now available in aircraft plants. A conference was held with Mr. Malcolm Catlin, Chief, Program Planning, Mr. Albert Carr and Mr. Bruce Crawford, all of the Materials Redistribution Branch, W.P.B. No formal agreement could be reached without the Aircraft Scheduling Unit being represented by an official representative of General Hopkins. However, in order to expedite the matter, the details of the plan were thoroughly discussed. It will be necessary for Mr. Catlin to submit a recommendation to the Metals Reserve Corporation to provide the necessary machinery. In using the warehouses to redistribute the hardware, a loss will be sustained by the warehouse unless the Metals Reserve Corporation will absorb that loss. Provisions have been made to take care of similar contingencies, but the exact form to use in this case will differ. Details should be completed within a few days.

C. Conclusion

1. Except for the above mentioned details, the way has been cleared to put this plan into operation. A letter is being sent by the Aircraft Scheduling Unit to the aircraft manufacturers requesting their votes to determine the warehouses to be selected.

D. Recommendations

1. It is recommended that as soon as the warehouses are selected, a meeting be held of the representatives of the warehouses, the Distributors Division, W.P.B., and the Aircraft Scheduling Unit. At this meeting all of the details of the plan can be thoroughly discussed. Following this meeting the Distributors Division of the W.P.B. will issue the necessary directives to put the plan in operation.

2. It is also recommended that the Material Coordinator secure official permission to represent General Hopkins in arranging the details of distribution

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of distressed and surplus inventories through warehouses when advisable.

3. General Remarks

1. Captain Hammond returned to Dayton, 8:00 A. M. December 11, 1942. Captain Hitchiner returned to Dayton, 8:00 A. M. December 12, 1942.

Att:
Exhibit A
Exhibit B

Hugh W. Hammond
HUGH W. HAMMOND, Captain, Air Corps

Albert F. Hitchiner
ALBERT F. HITCHINER, Captain, Air Corps

A. M. R. PETERKA, Major, Air Corps
Chief, Material Distribution Branch

for F. W. Rawlings
F. W. RAWLINGS, Colonel, Air Corps
Chief, Production Resources Section

Chief, Material Distribution Branch

Chief, Production Resources Section

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EXHIBIT "A"

PLAN FOR MAINTAINING STOCK OF AIRCRAFT HARDWARE IN
DISTRIBUTORS' WAREHOUSES FOR EMERGENCY AIRCRAFT
PRODUCTION

LOCATION: In the past distributors of aircraft hardware have carried stocks primarily for the maintenance of commercial and private planes. Only about 10% of the distributors supplied, to any extent, the requirements of the manufacturer and then their inventories and facilities were limited to peace time production. With the tremendous increase in plane production no provisions have been made to meet the needs of aircraft manufacturers and therefore bottlenecks are occurring in aircraft production because certain items of aircraft hardware have not been available to take care of the small and emergency requirements of this industry. The situation has become extremely critical and for this reason it is deemed necessary to provide tentatively three master stocks which will be maintained in certain designated warehouses to assure relief from this situation. These stocks are not intended to replace the present inventories now carried by distributors, but are to supplement them with items for which insufficient provisions have been made or could be made considering the changing requirements of this industry. Many of the items necessary to be carried are in too great a quantity for the average distributor considering the fact that a sudden change in aircraft design or the cessation of production would incur great loss. It is therefore intended that these three earmarked stocks shall be guaranteed against loss.

LOCATION OF STOCKS: It is felt advisable to establish three stocks, one on the east coast, one in the central section, and one on the west coast. In order to determine which warehouse should be designated, a vote will be taken of the various aircraft manufacturers to determine the warehouse best able to service the industry, based on its previous experience in handling these products and its ability to finance the program. It must be considered that a great many items must be carried in a semi-finished form, and the distributor or warehouse to maintain this earmarked stock must be capable without additional capital equipment, of performing all necessary finishing operations, such as threading, plating, etc. The companies able to perform these functions are extremely limited in number, and no company will be selected unless it can meet all or most of the necessary conditions.

ITEMS TO BE CARRIED: Items of which the stocks will consist will include nuts, bolts, turnbuckles, terminals, etc. The exact products which will be carried must be determined based on the availability of that in normal stocks and the demand of the industry in general. Only those which are most critical will be included at the present time. Additions to the particular products will be made from time to time, if necessary.

QUANTITY TO BE CARRIED: The quantity of each product to be carried will depend on the normal inventories of that product, plus the demand due to increased aircraft production. The quantity may vary from month to month based upon reports sent in by these warehouses of their sales and the demand.

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6 (3/7pp)

INITIAL ORDERS: In order to provide initial stocks of these items, each of the distributors is to provide a list of their requirements. The requirements will be checked against the distressed and surplus stocks now available, and as far as possible, the initial requirements will be filled from those stocks. For the material which is not available in distressed or surplus stocks, each warehouse will submit Form-1-X applications to the Aircraft Scheduling Unit, Dayton, Ohio. The War Production Board will provide the necessary authority to rate these initial orders AA-1.

REPLACEMENT ORDERS: To provide for the replacement of these hardware stocks, each warehouse will submit to the Aircraft Scheduling Unit, Dayton, Ohio, their requirements on form PD-1-X in duplicate sufficiently far in advance, and the name of the manufacturer from whom they desire to purchase these items. The Aircraft Scheduling Unit will check these requirements against sales and demands as recorded by the distributor and determine whether or not the full amount should be permitted. The War Production Board will give the Aircraft Scheduling Unit the necessary authority to rate these orders AA-1 or such other rating as the aircraft industries may command.

SPECIAL LIMITATIONS: This earmarked stock is to be sold only on properly rated orders from manufacturers engaged in aircraft production or for the maintenance and repair of aircraft for which proper priority assistance is available and certification will be required of the purchaser to the effect that the material will only be used for aircraft purposes. Because of the intent of the plan is to supply only the small and emergency requirements of the Aircraft Industry, it will be necessary for each of these distributors to discourage excess shipments out of stock. The Aircraft Scheduling Unit will determine a maximum quantity of any one product and specification which a warehouse may sell to any one manufacturer without special permission from that Unit. This plan only concerns the stocks which these warehouses are to earmark. It is in no way intended to interfere with the normal function of the distributor acting as an agent for a manufacturer in accepting direct shipments or in maintaining stocks of these items for other purposes.

REPORTS: Each of these warehouses must keep a separate record of all stock carried by them under this program and these records must be open for inspection at all times. Once a month a report of sales, receipts, and inventory of these earmarked materials must be furnished to the Aircraft Scheduling Unit and to the Distributors Branch of the War Production Board, Washington, D. C. This report shall be separate from and in addition to any other reports required by the War Production Board.

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Dir. Hdw. Warehousing
Hdw. A. R. & S. RD
6.(7/7/42) 17

EXHIBIT "B"

Date

TO: NAME OF WAREHOUSE
STREET
CITY

Your company has been designated by the War Production Board to maintain stocks of certain aircraft hardware for sale exclusively to the aircraft manufacturers and their sub-contractors in accordance with the instructions given in this directive. The object of this plan is to provide sufficient reserve stocks of these items to take care of all small and emergency requirements of that industry.

1. STOCK

In addition to your regular stock which you normally sell to industries other than the aircraft industry, you are directed to maintain in _____ a well balanced stock of the products listed below and within the quantities shown. The approximate quantity of each product which you are to maintain may be changed, based on the analysis of your monthly report on Form PD___ which you are required to furnish. This change to be made by the Aircraft Scheduling Unit, Dayton, Ohio.

(Maximum quantity of each item to be carried)

2. [illegible] OF EARMARKED STOCK

Each month you are to submit to the Aircraft Scheduling Unit, Dayton, Ohio on Form PD-1-X, your requirements for earmarked stock. That Unit will provide proper priority ratings for you to obtain the necessary material. Preference ratings received from the sale of earmarked stock may not be extended. At no time are you to receive into stock material if it brings your inventory of any product in excess of the above quantities, without the specific approval of the Aircraft Scheduling Unit.

3. LIMITATION ON SHIPMENTS

This material is for the use of aircraft approved by the Joint Aircraft Committee for construction, maintenance, or repair.

The material is to be sold only direct to the manufacturers of aircraft parts, to the stock of any other warehouse approved by the War Production Board to handle the same product or for maintenance and repair of aircraft or airborne equipment, provided the order is accompanied by a preference rating of A-1-A or higher.

In no case are you to ship to any one customer within a months period any one size and specification in quantities equal to or greater than those listed below, except in the case of emergency.

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Qiss. Hdw. Warehousing
Hdw A, R & S, RD
6 (4/7/47)

EXHIBIT "B"
Page 2

Date

Before any emergency shipment can be made permission must be granted by the Aircraft Scheduling Unit, Dayton, Ohio.

(List maximum quantity of each product which may be shipped within a three months period.)

4. CERTIFICATION REQUIRED

Except in the case of the sale of any one of the other distributors included in this program or upon the specific instructions of the Aircraft Scheduling Unit, it will be necessary to have all orders endorsed by the purchaser as follows:

"Material covered by this purchase order is for use in the production or maintenance and repair of aircraft. Purchase from one or more warehouse has not exceeded the maximum quantity limitations."

_____
(Name of Customer)

_____
(Signature of Authorized Officials)

_____
(Title)

This form is in addition to the form of certification required by Priorities Regulation No. 3 as amended to apply or extend a preference rating or any other form of certification required by the War Production Board.

5. REPORTS

You are to file with the Aircraft Scheduling Unit, Dayton, Ohio on or before the 10th of each month a report in duplicate on Form PD___ or such other form as may be prescribed from time to time. Receipts, deliveries and inventories relating to this earmarked stock are not to be included in other regular reports submitted except upon special request.

_____
Ernest Kanzler
Director General for Operations

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Air. Hdw. Warehousing
Hdw. A. R & S, R.D. M.M. & P
Wash. 7 (1 app) 18

AFH:ek

December 23, 1942

Visit of Albert F. Hitchiner, Captain, Air Corps, to the War Production Board and the Metal Reserve Corp., Washington, D. C., December 19th, 20th and 21st, 1942.

P.R.S.-M-75

A. Purpose

1. As directed in Special Order #328, paragraph 51, dated December 18, 1942, Captain Albert F. Hitchiner, Materials Distribution Branch, Production Resources Section, reported to General Hopkins, Resources Division, Washington, D. C., for the purpose of completing arrangements for the acquisition and redistribution of distressed and surplus stocks of aircraft hardware by official warehouses.

B. Factual Data

1. At the time of the visit of Captain Hugh W. Hammond and Captain Albert F. Hitchiner on December 11, 1942, a meeting was held with officials of the Materials Redistribution Division of the War Production Board in order to arrive at a plan to permit the acquisition by certain warehouses of distressed and surplus aircraft hardware. This was necessary to reduce to a minimum the load on producers of aircraft hardware in establishing the initial inventories and to use these warehouses as much as possible to redistribute within the industry, distressed and surplus hardware which is available from time to time and cannot be immediately transferred to some other aircraft manufacturers.

2. In a transaction in which this type of material is redistributed through warehouses, it is necessary for the government to subsidize the warehouse to the extent of the usual discount allowed by the producer. The War Production Board had approved the subsidy and submitted a plan to the Metals Reserve Corp., for their approval and action. Tentative approval was given subject to another meeting between representatives of W.P.B. Metals Reserve Corp., Steel Recovery Corp., and Aircraft Scheduling Unit at which time all basic problems could be discussed and settled.

3. These meetings were held on December 19th and 21st and were attended by Mr. Herschel Wilson, Chief Recovery Operations and Mr. Albert Carr, Chief Investigations, representing the Materials Redistribution Division of the War Production Board; Mr. George Steward, President, Steel Recovery Corp.; Mr. C. S. Nichols, Vice-President and Mr. Walter O'Donnell, Chief Counsel, representing Metals Reserve Corp., and Captain Albert F. Hitchiner, Materials Distribution Branch, Production Resources Section, representing the Aircraft Scheduling Unit.

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Gen. Hdw. Warehousing
Hdw. A, R & S, RD
7 (2½ pp)

4. As a result of the discussions a very simple and practical plan was approved. The Steel Recovery Corp., will not be necessary to tabulate all surplus and distressed stocks of aircraft hardware currently shown on the aircraft scheduling and for their disposition. That material which it is desired to relinquish through warehouses will be reported to the Steel Recovery Corp., the warehouses notified and instructed to place orders for it with the Steel Recovery Corp. Upon receipt of the requisitions the Steel Recovery Corp., will invoice the material from the project owner at cost price and resell to the warehouse at the present market price less the usual warehouse discount.

5. The War Production Board and the Metals Reserve Corp., are very much interested in this plan because it is the most practical yet submitted and it will set a precedent for the government subsidizing this type of transaction. Therefore, they are anxious to have it placed in operation as soon as possible.

C. Conclusion

1. The way has now been cleared to put this plan into operation. The details will have to be worked out between the Materials Coordinator, the War Production Board and the Steel Recovery Corp. As the Material Coordinator was not represented, Captain Hitchiner did not wish to enter into a discussion of these details.

D. Recommendations

1. It is recommended that as soon as possible the Materials Coordinator, Major Peterka, Captain Harmond and Captain Hitchiner discuss this plan and the details, following which, the Materials Coordinator arrange a meeting with the Materials Redistribution Division, W.P.B., and the Steel Recovery Corp., to set up the actual machinery and put the plan into operation.

ALBERT F. HITCHINER, Captain, A.

A.A.R. PETERKA, Major, A. C.
Chief, Materials Distribution Branch

S. W. RAWLINGS, Colonel, A. C.
Chief, Production Resources Section

Chief, Materials Distribution Branch

Chief, Production Resources Section

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HWH;ek

Dec. 15, 1942

In reply
refer to:
90-2-2, Capt. H.W. Hammond

SUBJECT: Selection of Warehouses for
Earmarked Aircraft Hardware

TO: North American Aviation, Inc.
Inglewood, California
Attention: Purchasing Agent

1. Due to the tremendous increase in aircraft production the present stocks of aircraft hardware have been found inadequate to supply all of the small and emergency requirements of the aircraft industry. Therefore, it may be advisable to establish, tentatively, three master stocks, one in the east, one in the mid-west, and one in the Los Angeles district. These stocks are not intended to replace present inventories now carried by distributors, but are to supplement them with items for which insufficient provisions have been made under the present distribution set-up.

2. In order to determine the distributor best able to serve in your section of the country, we are asking your opinion as to which jobber can best handle these products.

3. We will appreciate your giving us the name of your first and second choice with your reasons for same. In determining the jobber to handle these stocks the following should be considered:

a. Only one authorized jobber in each section will be appointed and will be required to handle all items of aircraft hardware. To start with, these items will consist of nuts, bolts, screws, turnbuckles, swaged cable terminals, tie rods, and steel aircraft control cable.

b. The knowledge of and ability to handle all items.

c. The past performance in serving you.

d. Please do not be influenced in your selection by the fact that some jobber is enjoying your business simply because you are compelled to deal with him because he is the only one carrying the line.

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4. Please understand that the appointment of "authorized" jobbers will not eliminate any existing jobbers of these products nor prevent others from going into business. The difference between an authorized jobber and the other jobber would lie in the fact that this office would assume responsibility to see that the authorized jobber maintained proper stocks.

5. Your cooperation in assisting this office in determining the proper jobber to serve your section of the country will be greatly appreciated by this office. Please address your reply to Aircraft Hardware Unit, Materials Distribution Branch, Aircraft Scheduling Unit, Steele High Building, Dayton, Ohio.

Aircraft Scheduling Unit, WPB:

BY: [illegible]
Administrator

Copy to:
AAFRR, North American
West. Dist. Sup.

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Army Air Forces
HEADQUARTERS OF THE MATERIEL COMMAND
Washington D.C.

AFAMC-3C
Jan 13 1943

TECHNICAL INSTRUCTIONS

Serial No: TI-1413

Subject: Allocation of Funds for Aircraft Hardware Stockpiles

To: Commanding General
Materiel Center, Wright Field
Dayton, Ohio

1. Objective:

a. The allocation of $1,800,000 in funds appropriated to the Army Air Corps for use in the establishment and maintenance of stockpiles of aircraft hardware as described below.

2. Factual Data:

a. Aircraft hardware procurement has been carried on in the past by aircraft manufacturers (a) by the placing of contracts directly with the hardware manufacturers, and (b) by their purchase from distributors' stocks. Certain small orders or emergency orders, however, for items which would either be uneconomical to contract separately for, or which cover types or quantities not carried by distributors, have caused critical procurement bottlenecks. It is therefore proposed to establish in three privately-operated warehouses stockpiles of such items, to insure their prompt availability when other sources cannot quickly meet the need. These stockpiles are not intended to replace present sources of supply, but merely to supplement them in necessary cases.

b. The three companies to stockpile the hardware will be selected by the Aircraft Scheduling Unit of the War Production Board, Dayton, Ohio. It is contemplated that one such warehouse will be on the East Coast, one in the Central States, and one on the West Coast.

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TI-1413
To:CG/Mat. Center
Subj: Allocation of Funds for Aircraft Hardware Stockpiles

c. The initial stocking and subsequent replacing of items will be carried on by the three warehouses chosen to participate in the plan, under the supervision of the Aircraft Scheduling Unit. The kinds and quantities of products to be stocked will be determined by that Unit, based upon availability of such products from normal sources and foreseeable needs of the aircraft industry.

d. Sales out of these stocks will also be made by the three designated warehouses only to aircraft manufacturers or for repair or maintenance of military aircraft, and aircraft used at established aviation schools maintained for the training of military personnel, as contemplated in the appropriation to the Air Corps in the Military Appropriation Act, 1943, on orders holding A-1-A or higher priority ratings, all pursuant to directives issued by the Aircraft Scheduling Unit.

e. The warehouses participating in the plan will be required to maintain stocks of many items greatly in excess of their normal inventories. The risk of loss through sudden changes in aircraft design or cessation of aircraft production would therefore be greater than they could be called upon to assume without financial assistance. It is therefore necessary that funds equal to the value of the materials to be acquired and maintained be set aside for the purchase of any materials not sold by the warehouses at the termination of the plan. The value of materials to be stocked will at no time exceed $6000,000 for each of the three participating warehouses. The Government's potential liability will therefore be limited to $1,800,000.

f. It is not considered feasible for the Army Air Forces to purchase and stockpile this hardware because such a plan would require the procurement of necessary space and personnal, would necessitate active use of Government funds, and could not so quickly be put into operation. The use of existing private facilities already equipped to carry out the program is therefore more practicable.

g. A copy of a memorandum describing the plan prepared by the Materials Branch, Production Division, Material Center, is attached (sub A).

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TI-1413
TO: CG/Met/ Center
Subj: Allocation of Funds for Aircraft Hardware Stockpile

b. A plan for the stockpile of aircraft number, similar in many respects to that propoded here, was recently approved by the Office of the Under Secretary of War, by the Air Judge Advocate and by the Fiscal and Budget Officer, Army Air Forces.

3. Authority:

a. Under Secretary of War.

4. Action Directed:

a. That $1,800,000 in funds appropriated to the Army Air Corps and allotted to the Material Center under Project 110 be made available for the establishment and maintenance of certain stockpiles for aircraft hardware as described above.

b. That the plan for the stockpiling of aircraft hardware described above be carried out pursuant to the direction of the Aircraft Scheduling Unit.

For the Commanding General:

C. H. DIXON
Lt. Colonel, Air Corps
Budget Officer

Attachment.

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AFH:rmb:90-2-M

Major Peterka, Chief
Materials Distribution Branch

Jan. 16, 1943

Selection of Aircraft
Hardware Warehouses

1. Tabulation has been made of the voting for the Aircraft Hardware Warehouses. The voting having been closed as of January 9, 1943, the results show up as follows:

EAST:

Air Associates, Bendix, New Jersey	six first choices
Aero Supply, Gorry, Pennsylvania	1 first choice 5 second choices
Aircraft Hardware Mfg. Co., New York	1 second choice

CENTRAL:

Supply Div., Robertson, Missouri	seven first choices three second choices
Air Associates, Chicago	four first choices six second choices

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C O P Y

AFH:rmb:90-2-M

Major Peterka, Chief
Materials Distribution Branch

Jan. 16, 1943

Selection of Aircraft
Hardware Warehouses

WEST:

Ducommun Metals & Supply Co.	2 first choices no second choice
California Hardware Co.	no first choice two second choices

2. It is therefore suggested that as a result of the poll, that Supply Division, Robertson, Missouri, and Ducommun Metals & Supply Co., Los Angeles, be chosen in those sections. However, in the East, it is recommended that Aircraft Hardware Mfg. Co., New York City, be chosen, due to the fact that they are the only company able to properly stock and process blanks. The ability of one of the warehouses to process small quantities of special sizes from

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AFH:rmb:90-2-M

Jan. 16, 1943

C O P Y

Major Peterka, Chief
Materials Distribution Branch

Selection of Aircraft
Hardware Warehouses

blanks is essential to the Aircraft Warehouse Program. It is for this reason that we recommend this company in spite of the fact that they did not receive the greatest number of votes.

3. Your concurrence in the above selection will be appreciated. As soon as this is received we will arrange to have representatives of the three warehouses common to Dayton, in order that all details of the program may be outlined to them, and a final discussion held to determine all of the exact details.

A. F. HITCHINER
Capt., Air Corps

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Visit of Albert F. Hitchiner, Capt. USA,
A.U.S., to the War Production Board,
Washington, D.C., February 11th, 1943

February 20, 1943

Production Resources

A. [illegible]

1. As directed in Special Order #39, paragraph 10, dated February 9, 1943, Captain Albert F. Hitchiner, Materials Coordinator (Navy), Materials Distribution Branch, Production Resources Section, Reported to General Munitions office, Resources Division, Washington, D.C., for the purpose of continuing discussions of procedure for handling of warehouse orders for aircraft hardware.

B. Personal Visits

1. Conferences were held with Mr. John A. Hurley, Director of the Wholesale and Retail Trade Division, of the War Production Board, and Mr. Simons of the Industrial Hardware Branch of the same division.

2. It was finally decided that the mechanics of the entire plan should be set up, but that that Division would require a formal request by the Aircraft Production Board to have this program placed in operation.

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C. Conclusion

1. That the details of the plan be brought up to date and submitted by the Aircraft Scheduling Unit to the Aircraft Production Board, requesting that that Board take the proper action to have the Wholesale and Retail Trade Division set up the necessary mechanics to place the plan in operation.

Albert M Baehr, Major, A.C.

Albert M Baehr, Major, A.C.

Chief, Material Distribution Branch

Chief, Production Resources Section

Albert M Baehr, Capt., A.C.

A.H.K. Petersen, Major, A.C.
Material Distribution Branch

for W. R. Agatter, Lt. Col., A.C.
Chief, Production Resources Section

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SUMMARY AIRCRAFT HARDWARE WAREHOUSE MEETING

February 24, 1943

An Aircraft Hardware Warehouse meeting was held on February 24, 1943, to outline the plan and to obtain suggestions from the warehouses to assist in drawing up the final form that the program will take. The meeting was attended by various representatives from selected warehouses, the War Production Board, Aircraft Scheduling Unit, Metals Reserve Corporation, and the Steel Recovery Corporation. The list of those attending is shown in Appendix A, attached.

The meeting was opened by Major A.E.R. Peterka, who made the following statement: "No definite decisions will be made at this meeting as such decisions can only be made by the government department concerned, in proper legal form."

It was brought to the attention of those representatives attending the meeting that the outlined program was only tentative.

Capt. A. F. Hutchiner took over the chairmanship of the meeting, and outlined the principal objectives of the program as follows:

1. Provide adequate stock to take care of the small and emergency requirements of critical items of aircraft hardware.
2. Provide a means of redistributing surplus materials.
3. Limit the number of large inventories of these critical materials to a minimum, and to provide proper control by the Aircraft Scheduling Unit over these materials.

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4. Increase production of these products by eliminating the numerous small orders from the producers' schedules.

ITEMS TO BE STOCKED

1. Only certain standard critical items of aircraft hardware will be considered under the program. Items special to one or a limited number of contractors, and items of which sufficient stocks are available are not to be considered. A revised list of items was read at the meeting. This revised list is shown in Appendix B.

2. The particular sizes and specifications and the quantities of each item to be carried will be subject to the demands in the various territories as estimated by the warehouses, but the Aircraft Scheduling Unit will be the final authority to determine these points. In this connection the three warehouses will make a tabulation of their sales for a definite period during 1942. These surveys will be forwarded to the Aircraft Scheduling Unit, who will attempt to arrive at definite sizes and quantities based on the above experience.

INITIAL STOCKS

1. Initial stocks will, as far as possible, be built up from surplus material which is now available in aircraft contractors' plants. Those items which are necessary to be carried, but which are not available in surplus stock, will be purchased by the warehouse from the producer of that particular material.

2. Arrangements are being made whereby it will be possible for the warehouse to place orders for ~~remarked~~ tools on the manufacturers because of a priority issued by the ~~without having to be extend airplane manufacturers priority rating.~~ warehouse by the Aircraft Scheduling Unit.

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REPLACEMENT OF STOCKS

In order to replace the materials sold ~~at~~ the warehouses will send a list of their requirements to the Aircraft Scheduling Unit. These items will be checked against the surplus stock lists. ~~to determine which are available from this source~~. If the material is available from surplus stock, the warehouse will be notified to place their purchase order with Steel Recovery Corporation, who in turn will purchase the surplus material from the aircraft contractor, for direct shipment to the warehouse.

2. The Aircraft Scheduling Unit will arrange ~~for~~ the necessary priority for the purchase of materials for warehouse stock either from the producers or from surplus stock.

RE-DISTRIBUTION OF SURPLUS STOCK

1. Following is a verbatim report of the meeting concerning Steel Recovery Corporation's function in the program.

Capt. Hitchiner:

~~On re-distribution of surplus material, as you know,~~ when ~~you~~ sell material to aircraft contractors, ~~at the~~ you sell it at approximately the same price ~~at which~~ a producer would sell it to the contractor. Consequently, the contractor who has surplus material has probably purchased ~~it~~ at almost the same price ~~at~~ for which ~~the~~ warehouse would sell it to him. For this reason, if ~~you~~ warehouse were to buy it from ~~the Contractor~~ the ~~you~~ couldn't possibly make any money on the transaction.

Arrangements have been made with the Metals Reserve ~~Corporation~~ Company and the Steel Recovery Corporation to have them purchase surplus material from the aircraft contractor at ~~approximately~~ approximately the price ~~that~~ the contractor paid for it, and

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then to re-sell that material to the warehouse. When we locate surplus material through methods we have of obtaining lists of surplus stock, we notify the warehouses that the material they require is available. We also obtain from the owner his cost, etc., All this data is compiled and forwarded to Steel Recovery Corporation.

The warehouse places its purchase order with the Steel Recovery Corporation for the material. The price to be paid for the material by the warehouse will be set up by Steel Recovery Corporation following the pattern of gross lists less normal discount. There are those items which have standard warehouse discounts and those which do not. In the first case, they will follow the gross list less the customary consumer discount, less the standard extra discount to warehouses. Where no standard extra discount to warehouses exists, it will be necessary to set up a normal discount below the net consumer price of the item.

Mr. Stewart:

We have spent several days going over this matter with Major Peterka, Captain Hitchiner, and others. We are acting as a fiscal agent for the Metals Reserve Corporation. As Captain Hitchiner stated, the Aircraft Scheduling Unit will locate these excessive stocks and will contact the warehouses. In the event you wish to purchase, after instructions from the Aircraft Scheduling Unit, you will send your purchase order for the surplus material to the Steel Recovery Corporation. We will arrange to buy the material from the holder. These excessive items are to be shipped direct from the holder to your warehouse, transportation prepaid. Therefore the material will arrive at your warehouse subject to no cost other than the amount for which Steel Recovery Corporation will bill you for the material.

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It has been decided that a fair and equitable plan is to bill the warehouse at the published gross list price, ~~plus~~ less the customary consumer discount, ~~plus~~ less a further deduction of 20%. The 20%, as I understand it, is to cover your normal commission for the warehouse function, which includes the cost of inspection and the cost of re-selling the material.

We are interested in the transaction only as a ~~medium~~ means by which you three warehouses can buy this material at less than the holder sells it. We entered the transaction only as a fiscal agent. We have no responsibility as to the quantity or the quality. We are in and out of the transaction quickly. After the materials are received by the warehouse, we will expect you to advise us at Pittsburgh within a reasonable length of time, just exactly how much material you received. So we in turn, following receipt of certification from you, can pay the contractor.

If the material is not as represented, it is entirely up to the warehouse to backtrack the shipment to the contractor. We have no interest whatsoever in the quality, or any responsibility to you, other than the fact that the material has been received at your warehouse. Therefore it is up to you warehousemen to work out the details with the holder from whom we have purchased the material, and sold it to you. We have in our agency agreement with Metals Reserve Corporation certain provisions which we must recognize to operate.

When we purchase and sell material, the person to whom the sale is to be made must place with us an advance deposit against which sales and shipments apply. That advance deposit comes to us in Pittsburgh. We deposit it at the Federal Reserve Bank, setting it up as an advance deposit by your company. Steel Recovery Corporation invoices go to the Bank and are charged against the advance deposit. The amount of the advance deposit varies.

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Naturally we don't expect any of you three warehouses to put up a tremendous amount of money to lie dormant in Pittsburgh, but can't function without an advance deposit. We can't come to you every week or so; therefore we must have sufficient cash on deposit to cover the sale.

We will arrange for some amount to start the program off, say $25,000.00, then as the volume of one warehouse becomes greater than another, we will go to that warehouse, and ask them to increase the amount of their deposit. This is to be based on the sales made to you during the previous month, and applies only to the surplus stock that you purchase through Steel Recovery Corporation.

We are buying at the direction of the Aircraft Scheduling Unit which comes to us with a directive to purchase from Aircraft Manufacturer A and sell to Warehouse B. That is our only reason for being in the picture. We have no prerogative over which warehouse is to get the material. We do not enter into a contract with Aircraft Scheduling Unit. We are merely the third party.

Mr. Scott:

You have no provision for operation.

Mr. Stewart:

Whether it's aircraft hardware or steel for re-processing, we handle it all alike.

Mr. Draughon:

We are buying sight unseen. What provision is there for our protection if we reject the material after inspection. We will have the material

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and it will already have been paid for.

Mr. Stewart:

We will not pay for the material until after we receive a certificate from you. We never see the material. We are merely the broker in the transaction. We will set up a length of time for you to send to us your certificate of receipt of the material. In each order we will have a sales contract with you. Within a certain number of days, you will inspect and advise us about the material you receive. In the event that you don't, we will assume that the material was satisfactory as shipped, and we in turn will pay the holder.

Mr. Draughon:

We are invoiced for the material the day it is shipped?

Mr. Stewart: You won't get your invoice from us until you receive the shipment and tell us it is alright. It may be four or five weeks before you receive an invoice.

We start out with an advance deposit. Against it goes the value of each sale we make with you. As we send you the invoices, we have a true balance. It must be put on the basis of an approximate balance.

Mr. Hossfield:

What about shortages of goods?

Mr. Stewart:

Report it to us and in turn we will change the contractor's invoice

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and bill you on what you told us you received.

Mr. Draughon:

No other charges in connection with that service?

Mr. Stewart:

No. All charges are born by Metals Reserve Corporation.

Mr. Rising:

Will there be an understanding with the aircraft manufacturers that we will have permission to return the rejected material collect to them, to clear us.

Mr. Stewart:

Our purchase contract will state in it clearly just as it does on the steel purchases, "Payment based upon Acceptance."

Mr. Scott:

If after having certified quantity of material to you and defects previously un-noticed should arise, is it the responsibility of the warehouse to attempt to adjust that defect with the previous holder?

Mr. Stewart:

That is right. It is your responsibility.

Major Peterka:

If you can't find out within stipulated time, it is your loss.

Mr. Stewart:

One other point, we want the three warehouses to cooperate as closely as possible. We don't want you to change your minds about shipment after the material is in transit. We are handling only a few contracts a day, and we are restricted as to the amount of equipment and number of people with which

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to accomplish this work. 7

We want it to run as smoothly as possible, and we will do everything to serve you. Please stick to your order.

Mr. Hossfield:

Are the warehouses going to have permission to effect cancellation?

Major Peterka:

We can't because of the complications it would involve.

Mr. Stewart:

You are in the warehouse business. There is a provision to help you out after the War is over. Therefore the responsibility should rest with you, as you perform the warehouse functions.

Major Peterka:

Since you are not compelled to take the material, and you order and have no outlet, you are predicating. There won't be time for running around and finding customers. Other warehouses can get the material.

Generally speaking, I would rather have the material idle in your warehouse than in the contractor's plant. Other contractors expect you to furnish these items, where they wouldn't expect the aircraft contractor to have them.

SALES LIMITATIONS

1. The materials in the warehouse will be restricted for use within the Continental United States for aircraft production maintenance or repair and for only those parts which are air borne, including the air plane engines, propellers, accessories or other regular equipment of the airplane. The quantity which may be sold by a warehouse within a monthly period will be restricted in order to prevent the contractors from draining the warehouses. Each purchaser

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must certify that the material covered by his purchase order will become a part of the completed airplane, that purchase from one or more warehouses has not exceeded that quantity limitation, and that the material will not increase his inventory of any item beyond the permissible limit.

It was suggested that the limit which might be proposed in any one calendar month be based upon a percentage of the minimum stock of that item required to be carried by the warehouse. It was suggested that this quantity limitation would have to be sufficient to include those quantities which would be undesirable to a manufacturer. The quantity limitation set for sales to an aircraft contractor during any one calendar month will be arrived at from the figures submitted in the survey of their sales by the three selected warehouses.

PROTECTION AGAINST LOSS

Provisions are being made with the Army Air Forces to protect the warehouses against loss due to ~~maintaining~~ being left with excessive stocks at the secession of hostility. This will be in the form of a "Contract to Purchase" up to a certain limit, of that material which is in the warehouse stocks at that time. It will be the right of the warehouses to retire from this program, and it will probably be the privilege of the government to do the same. The government will only take over at the end that which the warehouses do not want. The warehouse does not have to sell any material back to the government. This is merely to protect them against having too much on hand at the end of the War. If they so desire, they can retain a part of a certain quantity of material and just sell to the government the quantity which would bring them back to a normal position at the termination of the contract.

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REPORTS

Warehouses will be required to submit reports each month to the Aircraft Scheduling Unit covering their receipts, sales, and inventories. They will also be required to submit a monthly report listing those items of which they are short in their stock, and those items of which a surplus exists. The purpose of this report is that it will enable the Aircraft Scheduling Unit to expedite delivery of the former and to assist in the disposition of the latter.

FORM OF DIRECTIVE

Mr. W. L. Nelson, Chief of Priorities Division, Aircraft Production Board, WPB, outlined four points regarding the directive.

1. The Distributor Division of WPB will delegate authority for use of the new PD1X forms so that ratings can be given to the manufacturers of aircraft hardware to get material into the warehouse.

2. Form 423 is a blanket form to be used to transfer any commodity from one shop to another, by direction of the Director General for Industry Operations. This form will be used to establish ratings for the transfer of surplus material.

3. The warehouses will be designated by WPB as approved warehouses for aircraft hardware.

4. The limitation order which limits the amount of material those designated warehouses can sell ~~on any order~~ to any one purchaser during a specified period will be issued as soon as these quantities are determined. by ASU

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IDENTIFICATION OF BOLTS BY PAINTING

1. It was brought out that it is the practice of some individual aircraft contractors of identifying aircraft hardware once it is passed by the Inspection Department, they may dip it in dye or paint the head. It was felt advisable to notify the storehouse of any material so identified before transfer of the material takes place. It may be necessary to arrange for the Inspector at the plant of the aircraft contractor to send a letter to the warehouse that the painting is merely an identification mark of inspection. This letter would be for the use of any [illegible] may later receive this [illegible]

The section was adjourned at 4:00 p.m.

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AIRCRAFT HARDWARE WAREHOUSE MEETING

FEBRUARY 24, 1943

WAREHOUSE REPRESENTATIVES	NAME	TITLE
Aircraft Hardware Mfg. Co. 1941 Lafayette St. N. Y. N. Y.	O. Massei L. E. Amann	President Representative
Ducommun Metals & Supply Co. 4890 S. Alameda St. Los Angeles	J. H. Mossfield Wayne Fiehig	Mgr. Supply Dept. Merchandising Director
Supply Division, Inc. Lambert Field Robertson, Missouri	W. F. Scott, Jr. H. M. Brumghon	Vice President President
W.P.B. Representatives	Albert Z Carr	Chief, Materials Sect. Redistribution Division
	W. L. Jack Nelson	Aircraft Production Board, Chief, Priorities Division
A.S.U. Representatives Major Petorka Capt. Hitchiner Robert L. Robinson (Mrs. Shenk)	M. C. Haskell, Lt. Cmdr. R. M. McFarland, 2nd Lt., A. C. R. E. Black, Pvt. J. H. Haysak, Capt., A. C. Hugh M. Hammond, Capt., A. C. J. M. Weldon, Lt. Comdr. USNR	Buaer BUAER ASU
Army Representatives	Davidson Sommers, 1st Lt., A. C.	Procurement Div.
Metals Reserve Corporation	C. A. Nichols Walter J. O'Donnell I. J. Canton	Vice President Counsel Counsel
Steel Recovery Corporation	G. L. Stewart Frederick E. Milligan	President Secretary

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~~SCHEDULE B~~

1. BOLTS, NUTS, PINS, RIVETS AND SCREWS

   a. HEX. HD. BOLTS
   Specifications: AN-3 through AN-16

   b. CLEVIS BOLTS
   Specifications: AN-21 through AN-36

   c. EYE BOLTS
   Specifications: AN-42 through AN-49

   d. DRILLED HEX. HD. BOLTS
   Specifications: AN-73 through AN-81

   e. PHILLIPS HD. BOLTS
   Specifications: NAS-200, NAS-202

   f. NUTS
   Specifications: AN-310, AN-315, AN-316, AN-320
   Air Corps Drawing No. 325, Air Corps Drawing No. 330
   Air Corps Drawing No. 335, AN-340, AN-345, AN-350
   AN-355, AN-360

   g. COTTER PINS
   Specifications: AN-380

   h. TAPER PINS
   Specifications: AN-385, AN-386

   i. CLEVIS PINS
   Specifications: AN-392 through AN-400
   AN-402, AN-404, AN-406

   j. SCREWS
   Specifications: Air Corps Drawing No. 500,
   Air Corps Drawing No. 501, AN-502, Air Corps
   Drawing No. 503, AN-505, AN-510, AN-515, AN-520
   Air Corps Drawing No. 525, AN-526, Air Corps
   Drawing No. 530, Air Corps Drawing No. 531,
   AN-535, Air Corps Drawing No. 540, AN-545, AN-550,
   Air Corps Drawing No. 560, Air Corps Drawing No.
   565, Air Corps Drawing No. 566, Air Corps Drawing
   No. 570, NAF-1164, NAF-1175, NAF-1176, NAF-1177,
   NAF-1178, NAF-1193.

   k. PHILLIPS HD. SCREWS
   Specifications: 42B4937 through 42B4945,
   42A4946, 42A4947, 42B5184

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2. TURNBUCKLE ASSEMBLIES AND PARTS
   Specifications: AN-130, AN-135, AN-140
   Air Corps Drawing No. 150, AN-155, AN-160
   Air Corps Drawing No. 161, AN-165, AN-170, NAF-1084

3. ROD END ADJUSTING CLEVIS
   Specifications: AN-486

4. THREADED CLEVIS TYPE
   TIE ROD TERMINALS
   Specifications: AN-665

5. SWAGED CABLE TERMINALS
   Specifications: AN-666 through AN-669

6. DZUS FASTENERS OR EQUIVALENT
   STANDARD OR EQUIVALENT CATALOG PARTS ONLY
   (No special drawing parts to be incl.)

7. ELASTIC STOP NUTS OR EQUIVALENT
   STANDARD OR EQUIVALENT CATALOG PARTS ONLY
   (No special drawing parts to be incl.)

8. BOOTS SELF-LOCKING NUTS OR EQUIVALENT
   STANDARD OR EQUIVALENT CATALOG PARTS ONLY
   (No special drawing parts to be incl.)

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Warehousing
A., R. S., RD, mm & D
Sect. 8 (Rpt)

OUTLINE OF AIRCRAFT HARDWARE WAREHOUSE PROCEDURE

1. The warehouse files a PD1-X with the Aircraft Scheduling Unit to procure materials that they are out of or will be out of in the near future.

2. The Aircraft Scheduling Unit receives the PD1-X and it is entered in a register and a registered number placed on the PD1-X. This is done by a stenographer or clerk.

3. The PD1-X is analyzed upon receipt from the register by a hardware analyst to see if the request is in order, that is, are the quantities requested proper for the current and anticipated demands? Is the present stock too heavy with the requested quantities? Are the description and part number correct?

4. PD1-X is checked against surplus stock catalogues. Items shown in catalogue are drawn off of PD1-X on to an office work sheet (single copy) in pencil. Several items for different sources may be listed on the same office work sheet. Each item shown, being placed on work sheet, will be ruled off of the PD1-X.

5. Check work sheet against PD1-X for errors in transposition.

6. Work sheet goes to typist for typing of contract freeze order (triplicate).

7. PD1-X is given priority, checked with the register and returned to the warehouse.

8. Typist groups on one freeze order all items for same warehouse and for same contractor, using separate order for separate groups.

9. Check freeze order against work sheets against errors in typing.

10. Send original and duplicate of freeze order to contractor. Triplicate copy goes to hold file.

11. The aircraft contractor fills in all the necessary data on the freeze order and returns it immediately with the inspection approval of the Resident Army Representative shown thereon. The aircraft contractor retains the duplicate copy of this freeze order for his files.

a. This freeze order form shows the complete part number, description and quantity needed. This form requests the aircraft producer to show the actual cost of the material listed or the last invoice price, whichever is lower. It is also requested that he show the freight cost from the producer's plant to his plant, less any freight allowances. One column is left blank by the aircraft contractor, which is used by this office

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Aircraft Hdlg. Warehousing
Hdqtrs, R.A.S. RD. 21 Mo Bdg
Ware 9 (2nd Flr) 21

in listing of todays market price. The contractor is instructed to hold the material listed until receipt of requisition and the instructions covering the material from Steel Recovery Corporation.

12. When the material is partially not available, the original copy of the freeze order goes to the hardware analyst for issuance of a new freeze order to another aircraft contractor, who lists this material in surplus. If any item is still not available from any surplus, this office then requests the warehouse to issue another PD1-X, which is then given priority.

13. All original completed copies of freeze orders are then given to price clerks for checking of the prices.

a. If the aircraft contractor declines to sell, the matter is turned over to the Requisitioning Department for action.

b. If there is a disagreement of the price to be paid, it will be handled by the Pricing Unit and contractor.

14. The triplicate copy of the freeze order is taken out of the hold file and non-available items ruled off of the triplicate.

15. A request to purchase from Steel Recovery is typed on another form (triplicate) and sent to the warehouse.

a. This request to purchase form is filled out complete by the Aircraft Scheduling Unit and shows the date of the warehouse PD1-X and the register number, also shown are the completed part number description on the PD1-X. Also shown is the quantity for which they should place their order and the prices at which the material will be billed to them by the Steel Recovery Corporation.

b. The duplicate copy of this form, when completed, is sent to Steel Recovery Corporation attached to the triplicate form of the completed freeze order.

c. The original copy of freeze order and triplicate copy of the request to purchase are placed in this Units file.

16. Upon receipt of the warehouses purchase order, the Steel Recovery Corporation will issue their purchase order to the aircraft contractor, showing the prices that will be paid to the contractor for the material. This purchase order will also give the contractor shipping instructions.

17. The aircraft contractor, upon receipt of the above purchase order will ship the material to the warehouse designated and will bill the Steel Recovery Corporation for this material, adding the actual freight they paid from the producer to them and enclosing a copy of the Bill of Lading giving the weight of the shipment to the warehouse.

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Gen. Hdqs. Warehousing
Hdqs. A. R+S, RD, NMRD
Sheet 8 (3/5 PP)

12

15. The warehouse upon receipt of the material must inspect same and send a form to Steel Recovery Corporation stating whether the material is satisfactory or unsatisfactory within five days, or the material will be considered as satisfactory.

19. Steel Recovery Corporation, after receiving this set inspection form will compare the invoice prices received from the aircraft contractor with the prices authorized by their purchase order. If there is no discrepancy, Steel Recovery Corporation will mail the contractor a check for the material.

20. Steel Recovery Corporation will then bill the warehouse at the distributors price.

21. Upon receipt of this invoice, the warehouse will pay Steel Recovery Corporation, on the terms which will be set up at an later date.

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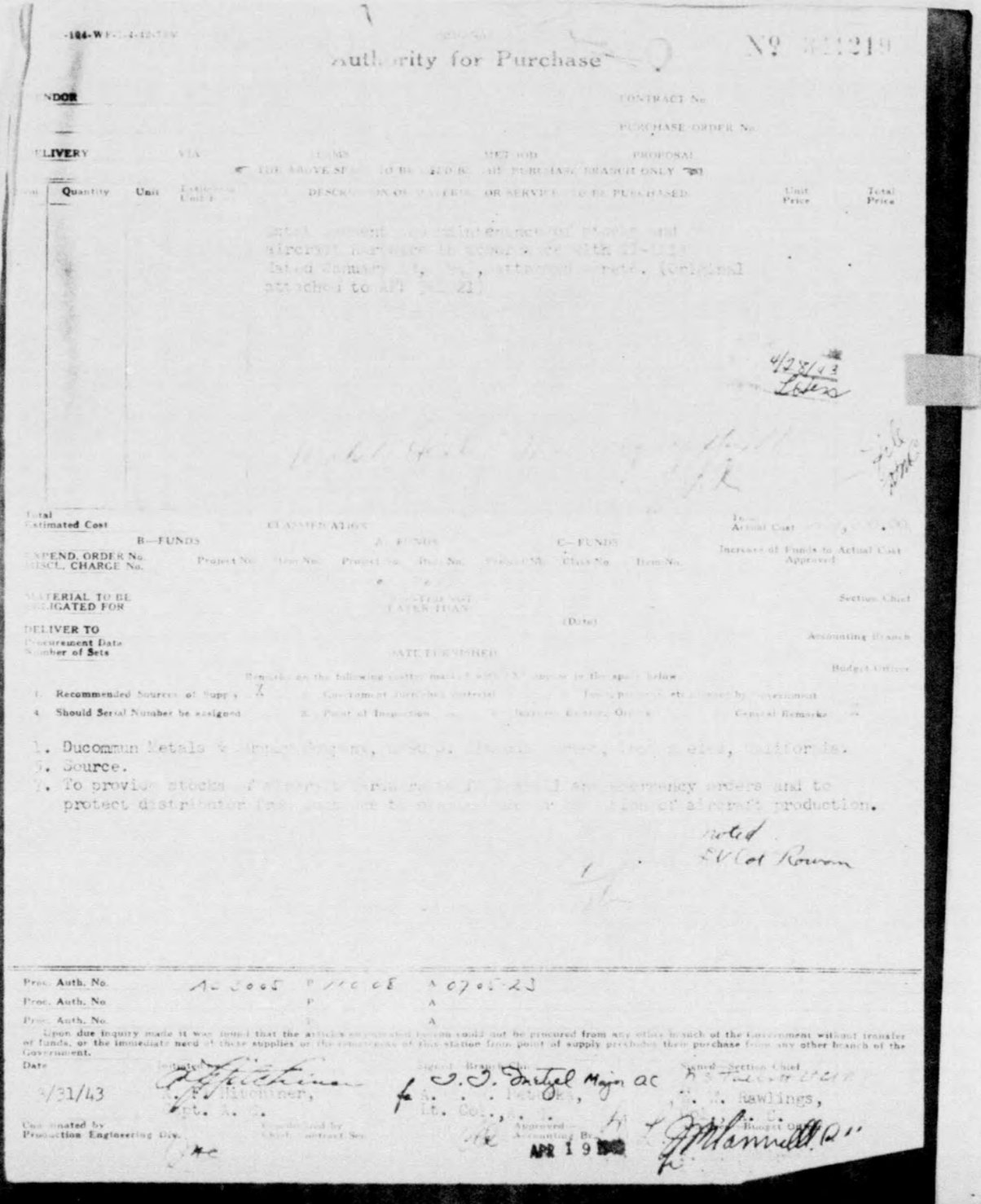

-184-WF-[illegible]-12-43

Authority for Purchase

No. [illegible]

VENDOR

CONTRACT No.

PURCHASE ORDER No.

DELIVERY VIA TERMS METHOD PROPOSAL

(TO BE USED BY PURCHASING BRANCH ONLY)

No.	Quantity	Unit	Estimated Unit Cost	DESCRIPTION OF MATERIAL OR SERVICE TO BE PURCHASED	Unit Price	Total Price
				Actual agreement for maintenance of stocks and aircraft hardware in accordance with AT-1113 dated January [illegible], attached hereto. (Original attached to AFI No. 21)		

4/3/43 Letters

15

Total Estimated Cost

CLASSIFICATION

Total Actual Cost

B—FUNDS A—FUNDS C—FUNDS

EXPEND. ORDER No. / MISCL. CHARGE No. Project No. Item No. Project No. Item No. Project No. Class No. Item No.

Increase of Funds to Actual Cost Approved

MATERIAL TO BE DELIGATED FOR

DELIVERED TO CARRIER AT LATER THAN (Date)

Section Chief

DELIVER TO

Procurement Date

Number of Sets

DATE FURNISHED

Accounting Branch

Remarks on the following matter marked "YES" appear in the space below

Budget Officer

1. Recommended Sources of Supply
2. Government Furnished Material
3. Tooling presently authorized by Government
4. Should Serial Number be assigned
5. Point of Inspection
6. Inspection Factory Only
7. Special Remarks

1. Ducommun Metals & Supply Company, [illegible], Hayward, California.
2. Source.
3. To provide stocks of aircraft hardware for field and emergency orders and to protect distributor [illegible] during [illegible] of aircraft production.

noted
EVC at Rowan

Proc. Auth. No. A-3005 P [illegible] A 0701-23

Proc. Auth. No. P A

Proc. Auth. No. P A

Upon due inquiry made it was found that the articles enumerated herein could not be procured from any other branch of the Government without transfer of funds, or the immediate need of these supplies or the remoteness of this station from point of supply precludes their purchase from any other branch of the Government.

Date 3/31/43

Initiated by [illegible] Chief, Procurement Section

Signed: Branch Chief [illegible] for C. O. Detzel Major AC

Signed—Section Chief [illegible] Lt. Col., AC

Signed [illegible] Lt. Col., AC

Signed [illegible] Lt. Col., AC

Designated by Production Engineering Div.

Checked by Chief, Contract Sec.

Approved Accounting Branch

Approved Budget Officer

APR 1 1943

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AAF MC-104-WF-7-4-42-75M sets of 4

ORIGINAL 37

Authority for Purchase

No 341220

VENDOR

CONTRACT No. W535ac-10099 (10447)

PURCHASE ORDER No.

DELIVERY VIA TERMS METHOD PROPOSAL

☞ THE ABOVE SPACE TO BE USED BY THE PURCHASE BRANCH ONLY ☜

Quantity	Unit	Estimated Unit Price	DESCRIPTION OF MATERIAL OR SERVICES TO BE PURCHASED.	Unit Price	Total Price
			Establishment and maintenance of stocks and aircraft hardware in accordance with TI-1413 dated January 13, 1943, attached hereto. (Original attached to AFP 341221) No attachment 5 6/5-43		

Not on Ratio 4/28/43 Exp

Walsh Healey - Not wage applicable

Total Estimated Cost

Total Actual Cost $600,000.00

CLASSIFICATION

B—FUNDS			A—FUNDS		C—FUNDS			Increase of Funds to Actual Cost Approved
EXPEND. ORDER No. MISCL. CHARGE No.	Project No.	Item No.	Project No.	Item No.	Project No.	Class No.	Item No.	
			110	7042				Section Chief

MATERIAL TO BE OBLIGATED FOR

WANTED NOT LATER THAN (Date)

DELIVER TO

Procurement Data Number of Sets

DATE FURNISHED

Accounting Branch

Budget Officer

Remarks on the following matter marked with "X" appear in the space below:

1. Recommended Sources of Supply X
2. Government furnished material
3. Tools, patterns, etc., loaned by Government
4. Should Serial Number be assigned
5. Point of Inspection X
6. Increase Existing Orders
7. General Remarks: X

1. Supply Division, Incorporated, Lambert Airport, Robertson, Missouri.
5. Source.
7. To provide stocks of aircraft hardware to fill small and emergency orders and to protect distributor from loss due to obsolesence or cessation of aircraft production.

noted Lt Col Rawlings

Proc. Auth. No. AC 7045 P 110-08 A 0705-23

Proc. Auth. No. P A

Proc. Auth. No. P A

Upon due inquiry made it was found that the articles enumerated hereon could not be procured from any other branch of the Government without transfer of funds, or the immediate need of these supplies or the remoteness of this station from point of supply precludes their purchase from any other branch of the Government.

Date 3/31/43

Initialed

Coordinated by Production Engineering Div

Signed—Branch Chief
for C. J. Tuttle Major AC
Lt. Col., A. C.

Coordinated by Chief, Contract Sec

Approved—Accounting Br. APR 19 1943

Signed—Section Chief
W. S. Peterka Lt Col AC
for E. W. Rawlings,
Col., A. C.

Approved—Budget Officer
for L. Kohlrieser,
Lt. Col., A. C.

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ORIGINAL

Authority for Purchase

No. [illegible]

VENDOR

CONTRACT No.

PURCHASE ORDER No.

DELIVERY VIA TERMS METHOD PROPOSAL

THE ABOVE SPACE TO BE USED BY THE PURCHASE BRANCH ONLY

Item	Quantity	Unit	Estimated Unit Price	DESCRIPTION OF MATERIAL OR SERVICES TO BE PURCHASED	Unit Price	Total Price
				Establishment and maintenance of stocks and aircraft hardware in accordance with TI-1413 dated January 13, 1943, attached hereto.		

Rec'd on [illegible]
Date 4/28/43
Signed [illegible]

Walsh Healey - No wage application

Total Estimated Cost

CLASSIFICATION

Total Actual Cost $600,000.00

B—FUNDS			A—FUNDS		C—FUNDS			Increase of Funds to Actual Cost Approved
EXPEND. ORDER No. MISCL. CHARGE No.	Project No.	Item No.	Project No.	Item No.	Project No.	Class No.	Item No.	
			110	7042				

MATERIAL TO BE OBLIGATED FOR

WANTED NOT LATER THAN (Date)

DELIVER TO

Procurement Data Number of Sets

DATE FURNISHED

Section Chief

Accounting Branch

Budget Officer

Remarks on the following matter marked with "X" appear in the space below:

1. Recommended Sources of Supply X
2. Government furnished material
3. Tools, patterns, etc., loaned by Government
4. Should Serial Number be assigned
5. Point of Inspection X
6. Increase Existing Orders
7. General Remarks: X

1. Aircraft Hardware Manufacturing Co., Inc., 1391 Lafayette Street, New York, New York.
5. Source.
7. To provide stocks of aircraft hardware to fill small and emergency orders and to protect distributor from loss due to obsolesence or cessation of aircraft production.

noted
Lt Col Rowan

Proc. Auth. No. AC 3005 P 110-05 A 07005-23

Proc. Auth. No. P A

Proc. Auth. No. P A

Upon due inquiry made it was found that the articles enumerated hereon could not be procured from any other branch of the Government without transfer of funds, or the immediate need of these supplies or the remoteness of this station from point of supply precludes their purchase from any other branch of the Government.

Date 3/31/43

Initiated by A. E. Hitchiner, Capt., A. C.

Coordinated by Production Engineering Div.

Coordinated by Chief, Contract Sec.

Signed—Branch Chief for A. E. R. Perkins, Lt. Col., A. C.

Approved—Accounting Br. APR 19 1943

Signed—Section Chief C. W. Rawlings, Col., A. C.

Budget Officer L. J. Mamull, Capt. A.C.

F. L. Kohlrieser, Lt. Col., A. C.

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Carbon Copy
Asst Chief Wheelmaking Hdqrs A.
R&S, RB, M&M, B Wfare
9 (1½ pp)

April 6, 1943

SUBJECT: Official Aircraft Hardware Warehouse Program Procedure

TO: The Aircraft Scheduling Unit
Steele High School Building
Dayton, Ohio
Attention: Captain A. F. Hitchiner, Chief,
Warehouse Sub-Unit Materials Coordinator Unit

1. Upon returning from Dayton, the undersigned submitted a copy of the procedure which your sub-unit had worked up for operating the official Aircraft Hardware Warehouse to members of the Program Planning Branch of the Redistribution Division.

2. Attached herewith is a copy of the memorandum to me from Mr. Malcolm Catlin, Chief of the Program Planning Branch concerning the prices to be paid for aircraft hardware by the Metals Reserve Company. This is being forwarded in the hope that it will reach your office before you leave for Washington tomorrow night in order that you may be in a better position to answer the questions raised by Mr. Catlin when you arrive here.

For the Aircraft Scheduling Unit:

Hugh W. Hammond
CAPTAIN, A. C.

Attachment

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Original
Asst. Chief Warehousing Hdqs A
R.D., R&R, MM&D Wash
9 (2-2 pp)

WAR PRODUCTION BOARD

WASHINGTON, D. C.

March 30, 1943

IN REPLY REFER TO

MEMORANDUM

To: Captain Hugh W. Hammond

From: Malcolm Catlin

Subject: Official Aircraft Hardware Warehouse Program Procedure

We have reviewed the procedure set up by the Aircraft Scheduling Unit for handling the "Aircraft Hardware" Program. We note that the basis of pricing, however, has been changed from that previously agreed upon.

In the procedure as outlined in the memorandum, price is defined as "net price paid" and railroad freight is defined as "net railroad freight per cwt. paid". This seems to be somewhat ambiguous since the lot may consist of a number of purchases at different prices and from different suppliers and involving different methods of shipment. It would seem to imply that the owner should take the actual total cost of the lot based on the most recent series of purchases necessary to make up the lot and the total cost to ship these lots by railroad freight, and work out a unit price.

The method of pricing accepted at the meeting in Dayton, Ohio, on February 24, attended by representatives of this Division, the ASU, Metals Reserve Company and Steel Recovery Corporation was to base the net price on the largest single shipment during 1942 and base the railroad freight on this same shipment.

We feel that if this pricing procedure is to be changed, it should be checked with Metals Reserve Company. The detailed pricing procedure must be worked out in advance of the program and agreed upon, since requisitioning will have to be made on a set formula and we cannot pay one price for voluntary sales and another for requisition sales.

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Aviation. Hdw. Warehousing
Hdqrs. A R & S Rd.
10 (2/3 PP)

26

WAR PRODUCTION BOARD

WASHINGTON, D. C.

April 15, 1943

IN REPLY REFER TO:

MEMORANDUM

To: Captain Hugh W. Hammond

From: Malcolm Catlin

Subject: Aircraft Hardware Warehouse Program: Tentative Procedural Outline Submitted by A.S.U.

The statement of pricing policy in the tentative procedural outline submitted by A.S.U. on March 24, 1943, does not quite accord with our understanding of the agreement reached in the conference held in Dayton, Ohio, February 24, 1943, and attended by the Aircraft Scheduling Unit, War Production Board, Metals Reserve Company, and Steel Recovery Corporation.

If our understanding, and that of Steel Recovery Corporation is correct, the following conditions were set up at that conference:

1. The price to be paid for material purchased by Steel Recovery Corporation under the program will be the net price of the material plus railroad freight. "Net price" means the list price plus standard extras and less all discounts and deductions received by the holder, and is to be determined on the basis of the largest single shipment received by the holder during the year preceding the filling out of the report form. Railroad freight is the normal cost per cwt of shipping the material by railroad from the supplier's shipping point to the holder.

2. The price at which the Steel Recovery Corporation will sell the material to the warehouses will be the list price of the material plus standard extras and less a discount of 20%.

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Aviation. Hdw. Warehousing
Hdw. A. R+S RD
10 (3/3 PP)

3. The Aircraft Scheduling Unit is to prepare a set of prices giving the maximum net price that a holder would normally pay for each of the items included in the program. This "ceiling" is to be computed on the basis of list price plus standard extras and less standard discounts. Prices reported by holders will be checked against these ceiling prices and accepted only if they are under the ceiling. If holders report prices over the ceiling, they will be asked to sell at the ceiling price; and if they refuse, the requisitioning power of the War Production Board may be exercised.

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Carbon Copy
Dirc. Hdqs. Warehousing
Hdqs. A, R&S, RD, WDC
Wash 10. (1/Bpp)
25

Municipal Center Bldg.
Room #2149
Washington, D. C.

April 17, 1943

TO: The Aircraft Scheduling Unit
Steele High Building
230 North Main Street
Dayton, Ohio
Attention: Captain A. F. Hitchiner,
Chief, Warehouse Sub-unit

SUBJECT: Aircraft Hardware Warehouse Program:
Tentative Procedural Outline submitted by ASU

1. Attached herewith is a copy of a memorandum to the undersigned from Mr. Malcolm Catlin, Chief of the Program Planning Branch, Redistribution Division, WPB, which is self-explanatory.

2. It is believed that the pricing policy as set up by Mr. Catlin will give you the basis on which to plan the Aircraft Hardware Warehousing Program.

3. The undersigned has, up to this date, not received the letter you stated you would write, outlining the help you would have the undersigned give in connection with following the Aircraft Hardware Warehousing Program.

4. It is known, however, that Mr. Maurice Heckscher has been unable, up to this time, to carry out his part of the program as outlined on your last trip to Washington. Now that the bulk of the work in initiating the Redistribution Program is over, the undersigned will attempt to follow Mr. Heckscher in this regard.

5. Please advise if there is any additional help this officer can render in connection with this program in Washington.

For the Aircraft Scheduling Unit:

HUGH W. HAMMOND
CAPTAIN, A.C.

Attachment
HWHammond:HH
cc: Chief
Bernick
Jackson
Heckscher

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In Reply Refer To:
900-M, Hitchiner, A. F. (Capt.)

Carbon Copy
Aire Hdw Warehousing
HdwA, R. S. RD,
WWD. Wash - 1p.
11. (1p)

April 21, 1943

SUBJECT:

TO: Aircraft Scheduling Unit Representative
Municipal Center Building - Room 2149
Washington, D. C.
Attention: Captain Hugh Hammond

1. Reference is made to your letter of April 17, concerning the Aircraft Hardware Warehousing Program and attaching a copy of a memorandum from Mr. Malcom Catlin outlining a tentative procedural for the pricing of aircraft hardware to be redistributed through warehouses.

2. As explained over the telephone, this procedure is not practical for various reasons. This office wishes to suggest the following:

A. The price to be paid for material purchased by the Steel Recovery Corporation under the program will be the net price of the material plus railroad freight.

(1) "Net Price" means the list price plus standard extras and less all discounts and deductions received by the holder and is to be determined on the basis of the most recent shipment received by the holder.

(2) "Railroad Freight" is the normal cost per one hundred pounds of shipping the material by railroad from the producer's plant to the shipping point of the holder and to the shipping point of the warehouse. Less any deductions received by the holder.

(3) The Aircraft Scheduling Unit is to check all prices quoted by the holder to determine if the price is within the "Ceiling Price" in effect at the date of the most recent shipment received by the holder.

B. The price at which the Steel Recovery Corporation will sell the material to the warehouse will be the list price plus standard extras and less current consumer discount and an additional discount of 25%.

(1) The Aircraft Scheduling Unit, in conjunction with the Steel Recovery Corporation, is to establish the warehouse purchase prices based upon the most recent published price list. These prices to be changed from time to time to conform with industry price changes.

A. F. HITCHINER
Captain, Air Corps

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AIRCRAFT HARDWARE PURCHASING

7 December 1943

Historical Officer, Materiel Command

Capt. A. F. Hitchiner

Warehousing Sub-Unit, Res. Cont. Sect.

COPY

"Following completion of the final draft of Limitation Order L-296, Captain Hitchiner presented a complete outline of the Warehousing Program to the Army and Navy Munitions Board at a meeting held in Washington on or about 30 April 1943. Approval of that board was obtained to the Limitation Order L-296, Directive No. 1 to that Order, and the Instruction to be issued by the Aircraft Scheduling Unit."

t/s A. F. Hitchiner, Capt. A.C.

2/

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Carbon Copy
Attn. Hdqs. Warehousing
Hdqs. A, R+S, RD, WMSD
Wash. (2-(1p)

27

April 30, 1943

MEMORANDUM

TO: Mr. T. P. Wright
Director, Aircraft Resources Control Office

FROM: Maurice Hecksher
Assistant General Counsel

SUBJECT: Warehousing of Aircraft Earmarked Hardware and Components

I am proceeding immediately to the clearance and ultimate issuance of the Limitation Order and its Directive No. 1 covering warehousing of aircraft earmarked hardware and components, copies of which were recently sent you.

In discussions with Captain Hitchiner of the Aircraft Scheduling Unit yesterday, changes in paragraph (b)(1)(ii) were developed in the manner now set forth in the copy of the Directive enclosed herewith. Comparable changes have been made in subparagraph (iii).

In other respects the Order and Directive are as submitted to you a few days ago, which you advised me by telephone on Tuesday were satisfactory.

It will take several days to get the Order and Directive approved and issued but if you, Captain Hitchiner, Captain Hammond or Lieutenant Shepley, to whom go copies of this memorandum and of Directive No. 1, have any changes to make, please advise me immediately.

Copy to Captain Hitchiner
Captain Hammond
Lieutenant Shepley

--M. H.

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Aire. Hdqs. Warehouse
Hdqs. A, Re 3, RD. 2214695
Wash. 13 (1p)

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May 5, 1943

MEMORANDUM

TO: Mr. T. P. Wright
Director, Aircraft Resources Control Office

FROM: Maurice Hocksoher
Assistant General Counsel

SUBJECT: Aircraft Hardware and Components--Warehouse Plan, Order L-296

In reply to your inquiry of May 4 in regard to the status of the above, there are no known obstacles in the way of the plan thus far. However, we have not yet reached the point where the plan can be put into active operation.

The proposed Order L-296 which will serve as the basis for various Directives to be issued, and under which the proposed Directive No. 1 covering valves and fittings has been prepared, is now in circulation in accordance with usual WPB procedure. The five-day period before clearance expires on Saturday and therefore, unless substantial objections to the plan are raised by that time, the Order should come before the Clearance Committee the first of next week. If the Clearance Committee raises no substantial objections it can be expected that the Order and the Directive No. 1 will be issued, published and generally distributed the middle of next week.

I estimate therefore that in the absence of unforeseen difficulties, the effective date for the Order, and therefore for institution of operations under the plan, should be about next Wednesday, May 12.

I shall of course keep you, Captain Hitchiner and other persons interested in close touch.

It may be advisable for me to ask you to attend, with me, the meeting of the Clearance Committee when it reviews the Order. I will be able to advise you of that date by the end of this week or the beginning of next.

--M. H.

Copy to Capt. A. F. Hitchiner
Capt. Hugh W. Hammond
Lieut. A. B. Shepley, Jr.

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INTER-DESK CORRESPONDENCE

Ref: DMB:umh-77-B-2
May 11, 1943

TO: Chief, GFE Components Unit
Follow Up Branch, PCS

SUBJECT: "Warehousing" of Component Parts

1. Pursuant to verbal instructions, all Components Sub-Units have been canvassed in an effort to obtain information upon which to base a decision as to the advisability of establishing "warehouses" (i.e., jobbers) for the handling of component parts of aircraft.

2. Engine, Propeller, Landing Gear, Armament, Instrument, Radio, Photographic, and Miscellaneous Units all expressed interest in having small standard electrical parts made available through the warehouse system. Suggested items included circuit breakers, resistors, rheostats, condensers, switches, fractional horse power motors, relays, plugs, and connectors. Several of these Units suggested also aircraft bearings and gears, Schrader valves, Mill valves, Zerk fittings, and similar items. (Zerk fittings should probably be added to the hardware list, rather than being included among the components.)

3. The Instrument and Propeller Units have requested typical manufacturers to submit tentative lists of warehousable purchased parts. These lists are not yet available.

4. The items suggested by the Instrument Unit included bearing jewels, on which, however, no information is yet available as to the number of sizes and types which it would be necessary to stock; dials and radium paint; case screws (for addition to the hardware list); magnets, hair springs, and coil springs (but these are usually made by the instrument manufacturer). Flexible shafts are a possibility, but ordinarily must be made up to specified lengths.

5. Pending receipt of suggestions from the manufacturers, Propeller Unit had little to offer beyond the general suggestions in Paragraph 2 above. The fractional horse power motors and the gears used in Curtiss propellers serve that one application only. Fractional horse power motors used for feathering pumps and for electric control heads may be standard. Most propeller gears and bearings are special, but it is believed that one or two items may be found.

6. The Armament Unit, which handles as well as uses Schrader valves and similar valves, definitely suggests that they be included in the warehouse

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Inter-Desk Memo to Chief, GHQ Components Unit
"Warehousing" of Component Parts
May 11, 1943

list. Consideration might be given to Vickers hydraulic pumps (now under allocation). Flexible shafting and flexible tubing would be eligible provided that it is found practicable to stock appropriate lengths. Bomb shackles, otherwise eligible, are not suggested because they seem plentiful.

7. The Photographic Unit could think of no strictly photographic items which meet the requirements for warehousing. However, they have great interest in the electrical parts mentioned in Paragraph 2, especially fractional horse power motors, one model of which serves most cameras and several other aircraft uses. Prisms and reticules, otherwise eligible, are not suggested because the supply is ample.

8. It seems unlikely that anything will be developed from radio equipment for the warehouse program other than the standard electrical parts above mentioned. Vacuum tubes are a possibility, but there is an unwieldy number of types and sizes, and about 75% of total production is for replacement. Decisions with respect to radio equipment will have to be made by Signal Corps and A.A.F.

9. The engine and engine accessory field has little to offer beyond the electrical parts, bearings, and gears already mentioned. Such items as carburetors and magnetos are probably both too large and too specialized for efficient warehousing. Spark plugs, wire, and piston rings are produced in the ratio of about six replacements to one installation. No trouble has been experienced in the supply of hose. Valves are of special design for each engine. Engine mounts seem the best possibility, each one serving three or four applications, and the supply being extremely critical. In general, it is the belief of the Engine Unit that the warehousing plan would offer no advantage over the present arrangements, which are founded upon filling of temporary needs by borrowing from Air Service Command. It appears, however, that the warehouse might serve a useful purpose in connection with supplying replacement parts to airframe manufacturers at whose plants engines have been damaged.

10. The strongest recommendation received was that of the Schrader valves put forth by the Landing Gear Unit. Very few types and sizes are involved, and there are approximately twenty-five users. Each valve consists of three parts which could be separately stocked-- the case, the cap, and the core. Additional possibilities are brake springs, brake lining, and oil seals, but these items so far seem plentiful. Wheel bearings are a possibility, but in many cases they are not restricted to aircraft uses.

11. The only item handled by Pumps and Fittings Unit which is deemed entirely suitable for warehousing is the Parker valve, which is now included in the hardware list. Pumps are, however, a possibility, and will be further

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investigated.

12. Because of a necessarily different method of operation, the Miscellaneous Unit is in a less favorable position to offer suggestions of this type than the other Units. However, the following possibilities were advanced: hose; hose fittings; flexible shafting; valves; Resistoflex and Aeroquip tubing; universal joints. Cabin heaters are under allocation.

13. The Electrical Unit submitted the following information with respect to items which it handles and which it suggests as likely warehousing prospects: circuit breakers, in almost universal aircraft use, about 15 models and sizes; one standard electric motor of 1/8 horse power, 2,000 r.p.m., used in pumps, etc.; plugs and connectors, 19 prototypes used in 1,700 applications; resistors, condensers, and rheostats in about 500 types and sizes each; switches, especially Micro switches and Mu switches, about 50 types used in 1,200 applications; solenoids and relays (but many of these are GFE). Lamps and lamp sockets are entirely GFE.

14. The Bearings Unit submitted the following list of aircraft bearings which might be eligible for warehousing:

Name of Bearings	No. of Sizes
Rod-end bearings	13
Single throw control	50
Double throw control	25
Track roller	7
Guide roller	2
Needle roller	12
Fairlead	2
Bell crank	7
Extra light "500"	9
Metric metal-shielded	16
Metric felt-sealed	15

Of the foregoing categories the only one now extremely critical is the "500 series". W.P.B. order Z-10 dated April 13, 1943, requires bearing manufacturers to schedule 85% of their production for "production orders" and 15% for "miscellaneous orders." The Bearings Unit considers that compliance with this order will accomplish all that could be accomplished by warehousing.

15. The Production Scheduling Branch is now engaged in conducting a survey of aircraft gears. It is suggested that the outcome of that study be considered in determining the extent, if any, to which gears should be included in the warehouse program.

16. It is suggested that a conference be called to discuss the advantages or disadvantages of the warehousing of component parts; to

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Inter-Desk Memo to Chief, GFE Components Unit
"Warehousing" of Component Parts
May 11, 1943

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determine whether further preliminary investigation is required; and to consider the advisability of asking Captain Hitchiner to address a meeting of Unit Chiefs.

DONALD K. BARNES
2nd Lieut., Air Corps

cc: Lt.Col. E.L. Love, PCS
Capt. Hitchiner, PRS

MAY 1 3 1943

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May 18, 1943

MEMORANDUM

TO: Mr. T. P. Wright
Director, Aircraft Resources Control Office

FROM: Maurice Hecksher
Assistant General Counsel

SUBJECT: Issuance of L-296 and Directive No. 1
Aircraft Warehousing Plan for Hardware, Valves and Fittings

As I advised you by telephone last Saturday the Clearance Committee, and particularly the AWB representatives of that Committee, objected to the fact that the plan contained no restriction on quantities of items to be warehoused.

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On Saturday Captain Hitchiner came down from Dayton, discussed the matter with the AWB representatives, and reached an agreement that the plan should forbid any warehouse from including in its inventory of hardware, valves and fittings, at any one time, more than $600,000 of items procured from a producer.

On Monday I sat again with the Clearance Committee and secured their approval to this compromise proposal. Accordingly, today I worked out the following language to be included at the end of paragraph (a) of Directive No. 1:

"At no time, however, may the inventory of such aircraft hardware, valves and fitting of an aircraft warehouse include items acquired by it or by another aircraft warehouse from a producer having a total cost to the aircraft warehouse of more than $600,000."

Presumably, therefore, the Order and Directive are now in shape for issuance. I have instructed the proper officials to proceed with issuance and publication in the Federal Register of the Order itself, but to withhold issuance of the Directive until your office, the Scheduling Unit and I could coordinate the necessary papers to be prepared to put the plan into effect.

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It has been my assumption that Colonel Powers would act as Administrator of the Order. Accordingly, I have sent out certain forms to him on which his signature is required. These are mere forms and are not effective without the proper delegations from Mr. Krug. Presumably I will receive these forms from Colonel Powers in the next day or so. I now enclose you herewith the following proposed memoranda from you to Mr. Krug which, if satisfactory, should be signed by you and returned to me.

(1) Memorandum re appointment of Administrator of L-296, to which is attached the actual form of appointment which Mr. Krug will sign upon receipt of your request.

(2) Memorandum from you to Mr. Krug re delegations of authority to implement L-296. Accompanying this are the three forms of delegation from Mr. Krug to ASW covering issuance of instructions, authority to approve PDL-2033-A Certificates and authority to approve PD-1X certificates, all of which Mr. Krug will sign upon receipt of your request.

If you will sign the two above memoranda from you to Mr. Krug and return them to me, along with the proposed delegations from Mr. Krug, I will carry the matter further and then coordinate with Captain Hitchiner at Dayton the issuance of Directive No.1

--M. H.

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Original
Aric. Hdlw Warehousing
Hdlw A, R & S, RD, WA Hdlw Wash. 14 (1p)

RCRAFT SCHEDULING UNIT
:RAFT PRODUCTION DIVISION
WAR PRODUCTION BOARD

REPRESENTING
AIR FORCES, U. S. ARMY
BUREAU OF AERONAUTICS, U. S. NAVY
BRITISH AIR COMMISSION
AIRCRAFT PRODUCTION DIVISION, W. P. B.

ADDRESS ALL REPLIES TO
AIRCRAFT SCHEDULING UNIT

REF: AFH:elw

STEELE HIGH BUILDING
232 N. MAIN ST.
DAYTON, OHIO

May 20, 1943

SUBJECT: Warehouse Redistribution
of Aircraft Hardware

TO: Aircraft Scheduling Unit Representative
Municipal Center Building - Room 2149
Washington, D. C.
Attention: Captain Hugh Hammond

1. Since your recent conversation, this office has again checked the amount of material, which it is anticipated will be redistributed through the official aircraft hardware warehouses. From the preliminary results of the reports of idle and excessive inventories in the plants of aircraft contractors which have been tabulated, quantities far in excess of those originally estimated have been reported. It is therefore extremely important that this material be moved as fast as possible, and the Warehouse Program will provide the best means of doing this.

2. Another condition which has come up is the downward revision of producers prices creating a greater spread between the prices previously paid and the latest prices.

3. From the best estimate which can be made, it is anticipated that Metals Reserve Company may be called upon to provide approximately $4,000,000 to arrange a transfer of the large quantities of idle and excessive material, this amount to cover the transfers of material over the first year of operation.

4. It is therefore requested that you make the proper request of the Metals Reserve Company to provide the necessary funds.

For The Aircraft Scheduling Unit:

A. F. HITCHINER
Captain, Air Corps

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L-296
MAY 22 1943

WAR PRODUCTION BOARD

PART 3255—AIRCRAFT EARMARKED HARDWARE AND COMPONENTS

[Limitation Order L-296]

The fulfillment of requirements for the defense of the United States has created a shortage in the supply of aircraft hardware and components for defense, for private account and for export; and the following order is deemed necessary and appropriate in the public interest and to promote the national defense:

§ 3255.1 *Limitation Order L-296.*—(a) *Purpose and scope.* This order and directives issued under it prescribe the manner of acquisition, warehousing and delivery of certain types of aircraft hardware and components by certain warehouses. This order supersedes any provision of Limitation Order L-63, Priorities Regulations No. 1 and 13 and CMP Regulation No. 4, as amended from time to time, which are inconsistent with it or with such directives.

(b) *Definitions.* For the purpose of this order:

(1) "Aircraft warehouse" means a distributor of aircraft earmarked hardware and components to whom a Directive pursuant to paragraph (d) of this order is issued.

(2) "Aircraft earmarked hardware and components" means those items of material, parts, components and equipment for aircraft listed on Schedule A hereof and procured by an aircraft warehouse by a rating assigned on Form PD-1X bearing the identification letters "A. C.", or procured pursuant to Form PDL-2033-A or Form A. S. U. "Permit Authorizing Transfer of Materials."

(c) *Restrictions on aircraft earmarked hardware and components.* No aircraft warehouse shall procure, maintain stock of, or deliver aircraft earmarked hardware and components except in accordance with the provisions of a Directive issued pursuant to paragraph (d) hereof.

(d) *Directives for procurement, maintenance and delivery of aircraft earmarked hardware and components.* Directives may from time to time be issued to prescribe the manner of and procedure for procurement, maintenance and delivery of aircraft earmarked hardware and components by an aircraft warehouse.

(e) *Reports.* Each aircraft warehouse shall execute and file with the War Production Board or such other place as may be designated such reports and questionnaires, subject to the approval of the Bureau of the Budget pursuant to the Federal Reports Act of 1942, as may from time to time be required, but no reports or questionnaires are to be filed until forms therefor have been prescribed by Directives issued pursuant to paragraph (d). Aircraft earmarked hardware and components reported on such forms shall not be reported on other forms prescribed by the War Production Board unless such reports are directed to be filed notwithstanding the provisions of this order.

(f) *Appeals.* Any appeal from the provisions of this order or a Directive issued pursuant to paragraph (d) hereof shall be made by filing a letter in triplicate referring to the particular provisions appealed from and stating fully the grounds for appeal.

(g) *Violations.* Any person who willfully violates any provision of this order or of a Directive issued pursuant to paragraph (d) hereof or who in connection with this Order or such Directive willfully conceals a material fact or furnishes false information to any department or agency of the United States is guilty of a crime and upon conviction may be punished by fine or imprisonment. In addition any such person may be prohibited from making or obtaining further deliveries of, or from processing or using materials under priorities control and may be deprived of priorities assistance.

(h) *Communications.* All communications concerning this order or of a Directive issued pursuant to paragraph (d) hereof or any reports or questionnaires required to be filed shall, unless otherwise directed, be addressed to: Administrator, Aircraft Scheduling Unit, Dayton, Ohio, Ref.: L-296.

Issued this 22d day of May 1943.

WAR PRODUCTION BOARD,
By J. JOSEPH WHELAN,
Recording Secretary.

SCHEDULE A

1. AIRCRAFT HARDWARE VALVES AND FITTINGS

1. Bolts, Nuts, Pins and Screws—a. *Hex. Hd. Bolts.* Specifications: AN-3 through AN-16.

b. *Clevis Bolts.* Specifications: AN-21 through AN-36.

c. *Eye Bolts.* Specifications: AN-42 through AN-49.

d. *Hex. Hd. Bolts.* Specifications: Air Corps Drawing No. 60. Air Corps Drawing No. 65.

e. *Drilled Hex. Hd. Bolts.* Specifications: AN-73 through AN-81.

f. *Close Tolerance Bolts.* Specifications: NAS-53 through NAS-60. NAS-62. NAS-64. NAS-66.

g. *Phillips Hd. Bolts.* Specifications: NAS-200. NAS-202.

h. *Pearson Hd. Bolts.* Specifications: NAS-201. NAS-203.

i. *Nuts.* Specifications: AN-310. AN-315. AN-316. AN-320.

Air Corps Drawing No. 325. Air Corps Drawing No. 330.

Air Corps Drawing No. 335. AN-340. AN-345. AN-350. AN-355. AN-360.

j. *Cotter Pins.* Specifications: AN-380.

k. *Taper Pins.* Specifications: AN-385. AN-386.

l. *Clevis Pins.* Specifications: AN-392 through AN-400. AN-402. AN-404. AN-406.

m. *Screws.* Specifications: Air Corps Drawing No. 500. Air Corps Drawing No. 501. AN-502. Air Corps Drawing No. 503. AN-505. AN-510. AN-515. AN-520. Air Corps Drawing No. 525. AN-526. Air Corps Drawing No. 530. Air Corps Drawing No. 531. AN-535. Air Corps Drawing No. 540. AN-545. AN-550. Air Corps Drawing No. 560. Air Corps Drawing No. 565. Air Corps Drawing No. 566. Air Corps Drawing No. 570. NAF-1164. NAF-1175. NAF-1176. NAF-1177. NAF-1178. NAF-1193.

n. *Phillips Hd. Screws.* Specifications: 42B4937 through 42B4945. 42A4946. 42A4947. 42B5184.

o. *Pearson Hd. Screws.* Specifications: 42A5700. 42A5701. 42B5702 through 42B5711.

2. *Turnbuckle Assemblies and Parts.* Specifications: AN-130. AN-135. AN-140. Air Corps Drawing No. 150. AN-155. AN-160. Air Corps Drawing No. 161. AN-170. NAF-1084. AN-165.

3. *Rod End Adjusting Clevis.* Specifications: AN-486.

4. *Threaded Clevis Type.* Specifications: AN-665.

5. *Swaged Cable Terminals.* Specifications: AN-666 through AN-669.

6. *Daus Fasteners or Equivalent Standard or Equivalent Catalog Parts Only.* (No special drawing parts to be incl.)

7. *Elastic Stop Nuts or Equivalent Standard or Equivalent Catalog Parts Only.* (No special drawing parts to be incl.)

8. *Boots Self-Locking Nuts or Equivalent Standard or Equivalent Catalog Parts Only.* (No special drawing parts to be incl.)

9. *Aircraft valves ("Parker" Type) Standard AN, AC, and NAF Part Numbers Only, But Not Including Oxygen Valves or High Pressure Valves.*

10. *Aircraft Fittings ("Parker" Type) Standard AC 811, AN and NAF Part Numbers Only.*

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MEMORANDUM

TO: Colonel E. M. Powers, Administrator
Aircraft Scheduling Unit
Steele-High Building
Dayton, Ohio

FROM: J. A. Krug
Program Vice Chairman

SUBJECT: Appointment of Administrator of L-296.

Pursuant to Division Administration Order No. 5, you are hereby appointed Administrator of Limitation Order L-296.

Issued this / day of June, 1943

J. A. Krug
Program Vice Chairman

Certified to be a true copy of the Original.

Edge MO
Delegations Section

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In Reply Refer To:
90 [illegible]-M, Hitchiner

AFH:elw

June 1, 1943

SUBJECT: Instructions of Aircraft Scheduling Unit Issued Pursuant to Directive #1, WPB Limitation Order L-296.

TO: Ducommun Metals & Supply Co.
4890 S. Alameda Street
Los Angeles, California
Attention: Mr. Wayne Rising

1. The following instructions are issued to aircraft warehouses by the Administrator of the Aircraft Scheduling Unit to prescribe limitations upon inventories and deliveries of aircraft hardware and components and listed on Schedule A of Limitation Order No. L-296; and to prescribe the proper use of forms PD-1X--"A.C."

A. Limitations upon inventory.

In addition to the limitations on inventory of an aircraft warehouse prescribed in Limitation Order L-296, and Directive No. 1 issued thereunder, no inventory of such aircraft hardware, valves and fittings shall contain quantities of any one size and specification greater than the quantities specified on Table A attached, not including items obtained from surplus stocks procured under Form A.S.U. "Permit Authorizing Transfer of Materials" or under Form PDL-2033-A, or on purchase orders rated by Preference Rating Certificates PD-1X--"A.C." approved for issuance by the Aircraft Scheduling Unit.

B. Limitations on Deliveries.

In addition to the limitations on deliveries of an aircraft warehouse prescribed in Limitation Order L-296 and Directive No. 1 issued thereunder, no deliveries of such aircraft hardware, valves and fittings by an aircraft warehouse to any one customer within a calendar month may exceed the quantities specified on Table B attached, except for items, the inventory of which exceeds the quantities specified on Table A attached.

C. Use of Form PD-1X--"A.C."

Each aircraft warehouse to whom Directive No. 1 is issued shall file with the Aircraft Scheduling Unit Form PD-1X for its requirements for aircraft hardware, valves and fittings. Columns A, B and F on the face of this form shall be filled out. Under Columns C, D and E insert the words

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Ducommun Metals & Supply Co.
Instructions of Aircraft Scheduling
Unit Issued Pursuant to Directive #1,
WPB Limitation Order L-296
June 2, 1943

"see attached sheets." The information on the face of the form shall be a summary by products rather than individual sizes and specifications. The aircraft warehouse shall attach to the form a sheet or sheets listing in detail all items it desires to purchase and give the following information:

(1) Quantity of each size.
(2) Description of each item (AN Number and Dash Number or Manufacturer's Part Number).
(3) Deliveries of each item made during preceding six months.
(4) Quantity of item on order on the date form is filed.
(5) Inventory of each item on the date form is filed.

Aircraft Scheduling Unit:

E. M. POWERS
Colonel, Air Corps
Administrator
Aircraft Scheduling Unit

2 Incls.
#1 - Sched. A
#2 - Sched. B

Copy to:
West. Dist. Supvr.

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WAR PRODUCTION BOARD

WASHINGTON, D. C.

June 2, 1943

OFFICE OF
GENERAL COUNSEL

Captain A. F. Hitchiner
Aircraft Scheduling Unit
Dayton, Ohio

Dear Fred:

I have just received, and enclose herewith for your records, a certified copy of the four delegations issued under L-296, to Colonel E. M. Powers.

1. Delegation of Authority re PDL-2033A.

2. Delegation of Authority re PD-1X.

3. Delegation of Authority to issue instructions.

4. Appointment of Colonel Powers as administrator of L-296.

30

You will note from these papers that instructions are to be issued in the name of the Aircraft Scheduling Unit and that the PD-1X's are to be signed

WAR PRODUCTION BOARD

_____
Title of Authorized Official

As soon as I receive the SEC-24's covering a further delegation to you and your assistant on PD-1X and PDL-2033A, I will arrange these further delegations and send you copies.

Yours very truly,

Maurice Hekscher

Maurice Hekscher

Enclosure

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DELEGATION OF AUTHORITY NO. 6

TO: Colonel E. M. Powers, Administrator
Aircraft Scheduling Unit
Steele High Building
Dayton, Ohio

FROM: J. A. Krug
Program Vice Chairman

SUBJECT: Delegation of Authority to approve PDL-2033A Certificates for the transfer of aircraft earmarked hardware and components

Pursuant to provisions of General Administrative Order 2-88, you are hereby authorized to countersign, approve and issue Form PDL-2033A Certificates in the name of the War Production Board authorizing the deliveries to Aircraft Warehouses (as defined in L-296) of materials, parts, and components listed on Schedule A of L-296, provided that all clearances provided by established procedures are obtained.

Issued this / day of June 1943.

Certified to be a true copy of the Original.

Edgington
Delegations Section

J. A. Krug
Program Vice Chairman

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DELEGATION OF AUTHORITY NO. [redacted]

TO: Colonel E. W. Powers
Aircraft Scheduling Unit
Steele-High Building
Dayton, Ohio

FROM: J. A. Krug
Program Vice Chairman

SUBJECT: Delegation of Authority to approve PD-1X Certificates for Aircraft Forwarded Hardware and Components.

Pursuant to provisions of General Administrative Order No. 2-88, you are hereby authorized to approve and issue PD-1X preference rating certificates in the name of the War Production Board for delivery to aircraft hardware (as defined in L-296) of material, parts, and components listed on Schedule "A" of L-296, provided that:

1. All clearances required by established procedure are obtained, and

2. The rating assigned shall in no instance be higher than AA-1.

Each such certificate shall be issued in the following form:

WAR PRODUCTION BOARD

(signed) _____
Title of Authorized Official

Issued this 1 day of June 1943.

Certified to be a true copy of the Original.

Edge
Delegations Section

_____
J. A. Krug
Program Vice Chairman

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DELEGATION OF AUTHORITY NO. 2518

TO: Colonel E. M. Powers, administrator
Aircraft Scheduling Unit
Steele High Building
Dayton, Ohio

FROM: J. A. Krug
Program Vice Chairman

SUBJECT: Delegation of Authority to issue instructions to Aircraft Warehouses

Pursuant to the provisions of General Administrative Order No. 2-68, you are hereby authorized to issue instructions in the name of the Aircraft Scheduling Unit to those persons receiving directions which have been issued pursuant to Section (d) of L-296, provided:

1. That such instructions are contemplated in the provisions of said directives; and

2. When such instructions constitute data request , they be subject to the approval of the Bureau of the Budget, pursuant to the Federal Reports Act of 1942.

Issued this 1 day of June 1943.

Certified to be a true copy of the Original.

Delegations Section

J. A. Krug
Program Vice Chairman

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THE SECRETARY OF COMMERCE

WASHINGTON

June 8, 1943

Dear Don:

I am in receipt today of Mr. Donald D. Davis' letter of June 7th requesting Metals Reserve Company to put into effect the program developed by the War Production Board and the Army Air Force for directing into essential war use idle and excessive inventories of aircraft hardware now held by large manufacturing concerns.

This matter is being referred to Metals Reserve Company for immediate consideration.

Sincerely yours,

s/ James Jones

Secretary of Commerce

Honorable Donald M. Nelson
Chairman
War Production Board
Washington, D. C.

52498

cc: Mr. Donald D. Davis

024198

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LIMITATION ORDER L-296 DIRECTIVE NO. 1

Aircraft Hardware, Valves and Fittings Specified on Schedule A of War Production Board Limitation Order L-296.

The following Directive is issued to each of the following aircraft warehouses:

Ducommun Metals and Supply Company, Los Angeles, California
Supply Division, Incorporated, Robertson, Missouri
Aircraft Hardware Manufacturing Company, New York, New York

pursuant to paragraph (d) of Limitation Order L-296 of the War Production Board.

(a) Inventory. In addition to your regular warehouse stocks, you are hereby authorized to maintain in your warehouse at the above specified location a well-balanced stock of aircraft hardware, valves and fittings in the types and specifications listed on Schedule A of Limitation Order L-296 but not in excess of those quantities specified in instructions of the Aircraft Scheduling Unit issued from time to time; the same to be procured, maintained and delivered in accordance with the provisions of Limitation Order L-296 as "aircraft earmarked hardware and components," and the provisions of this Directive. At no time, however, may the inventory of such aircraft hardware, valves and fittings of an aircraft warehouse include items acquired by it or by another aircraft warehouse from a producer having a total cost to the aircraft warehouse of more than $600,000.

(b) Procurement, Maintenance and Delivery of Aircraft Earmarked Hardware and Components. These aircraft hardware, valves and fittings shall be procured, maintained and delivered as aircraft earmarked hardware and components in accordance with the provisions of Limitation Order L-296 and such instructions as may be issued from time to time by the Aircraft Scheduling Unit, Dayton, Ohio; and subject further to the following provisions:

(I) Limitations on Deliveries.

(i) Quantity. In no case may you deliver from these aircraft earmarked hardware and components to any one customer within a calendar month any one size and specification in quantities greater than those specified in the aforesaid instructions of the Aircraft Scheduling Unit, except in the case of emergency. Before any emergency delivery can be made permission must be granted by the Aircraft Scheduling Unit, Dayton, Ohio.

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(ii) Purpose. Deliveries shall be made only:

(a) To a manufacturer for use within the United States for construction, maintenance or repair of aircraft or the manufacture of parts, accessories, subassemblies or equipment which will be air borne (but not including any type of ground equipment, even though it will be flown to an advance base); or

(b) To any person for maintenance and repair of aircraft used by (1) an Air Line holding a certificate of Convenience of the Civil Aeronautics Administration, (2) the War Training Service of the Civil Aeronautics Administration, or (3) the Civil Air Patrol in the Class A category; or

(c) To any person for maintenance and repair of other aircraft upon presentation of an authorization of the War Production Board, Aircraft Priorities Branch, on Form PDL-2033 (or such other form as may be prescribed from time to time, subject to the approval of the Bureau of the Budget pursuant to the Federal Reports Act of 1942); or

(d) To an Aircraft Modification Center or Army or Navy Supply Depot; or

(e) As aircraft earmarked hardware and components to any other aircraft warehouse to whom a copy of this Directive has been issued and who is designated to carry the same type and specification of aircraft earmarked hardware and components.

(iii) Certification Required. You may not make delivery as permitted by paragraphs (b) (1) (ii)(a) and (b) above until you obtain from your customer a certification in duplicate in substantially the following form:

"The undersigned certifies to the aircraft warehouse and to the War Production Board that the aircraft earmarked hardware and components covered by this purchase order (or any other purchase order which the undersigned may place with you, and pursuant to which you may make delivery of aircraft earmarked hardware and components under the authority of Directive No. 1 of Limitation Order L-296) will be used by him (1) within the United States and as a

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manufacturer for construction, maintenance or repair of aircraft or the manufacture of parts, accessories, subassemblies or equipment which will be air borne (but not including any type of ground equipment even though it is to be flown to an advance base); or (2) for maintenance and repair of aircraft used by an Air Line holding a Certificate of Convenience of the Civil Aeronautics Administration, the War Training Service of the Civil Aeronautics Administration, or the Civil Air Patrol in the Class A category. Purchases in any calendar month of all aircraft earmarked hardware and components by the undersigned will not exceed amounts permitted by or prescribed under applicable regulations or orders of the War Production Board.

Address of Purchaser _____ Name of Purchaser _____

Date _____ Signature of Authorized Official _____

Title of Authorized Official _____

Once filed with you, this certification will cover all subsequent orders from the same customer that specifically call for delivery of aircraft earmarked hardware and components and require such certification under this Directive, and you may make delivery in reliance thereon unless you know or have reason to believe that it is false.

The duplicate copy of the aforesaid certification shall be forwarded to the Aircraft Scheduling Unit, Dayton, Ohio.

(2) Limitation on Application or Extension of Ratings. You shall not apply or extend any rating received in connection with the procurement by a customer of aircraft earmarked hardware and components.

Issued this _____ day of _____, 1943.

WAR PRODUCTION BOARD

By _____
J. Joseph Whelan, Recording Secretary

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COPY

INTER-OFFICE CORRESPONDENCE Ref: AFH:elw:90-2-M

To Lt. Colonel A. E. R. Peterka Date June 11, 1943

Subject: Hardware Warehousing Program

1. Because of the fact that this office is going to be unable to obtain all of the necessary material for the hardware warehouses out of surplus stock, it will be necessary for the contractors to file applications for preference ratings on Form PD 1-X. The only rating which this office may apply is a AA-1 priority. This means that these warehouse orders will be placed in the regular production schedule of the producers which, in many cases, means that deliveries will average about six months. Therefore, in order that the warehouse may be assured of a continual flow, it must have on order at all times an amount equal to six times its estimated monthly sales.

2. Due to the fact that most of this material cannot be cancelled in case of cessation of aircraft production, the warehouse is going to have a tremendous amount of material flow to its plant for which it must pay the cost. With the size of this program, it is very doubtful if the $600,000.00 guarantee will cover this amount of material. It is therefore suggested that an attempt be made to have Washington approve a AAA rating which should permit the warehouse obtaining delivery in two to three months cutting down the amount of material for which the warehouse will be responsible for at the end of the war and permitting them to operate safely within the amount of the aircraft guarantee. If this AAA is not forthcoming, it is believed by this office that the warehouses will object to the program, unless additional funds are provided as a guarantee.

A. F. HITCHINER
Captain, Air Corps

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INTER-DESK CORRESPONDENCE

Ref:DKB:aa:77-B
18 June 1943

TO: Lt. Col. E. L. Love
Chief, Follow-Up Branch
Production Control Section

Subject: Warehousing of Component Parts.

1. On June 17th, Major Baehr and Capt. Davis of the Materials Coordinators Unit, Production Resources Section, called at this office to discuss proposals which had been made for the warehousing of aircraft components. There appears to be one important obstacle in the way of giving components treatment similar to that now given to steel, aluminum, copper and hardware. The four programs which are under way receive their financial support from the Metals Reserve Corporation, which provides funds to cover the losses involved in recovering materials in the hands of contractors, shipping them into warehouses, and distributing them to other contractors, without loss to any of the contractors, and allowing a small profit to the warehouses. Major Baehr believes that Metals Reserve Corporation cannot make similar appropriations for components. He has not yet exhausted all possibilities along this line and will make further efforts to obtain the necessary funds.

2. It is Major Baehr's opinion that the same end result might be obtained without financial backing of Metals Reserve Corporation if the aircraft industries could be induced to accept some loss in the redistribution of components. Surplus components in the hands of contractors might be returned to the component manufacturer and then re-sold to other contractors. The cost of this procedure apparently would be the freight two ways, plus a ten per cent handling charge to the component manufacturer.

3. It was agreed that in any event the next step is to conduct a survey of aircraft manufacturers for the purpose of locating surplus stocks of components. This may be done by including the components (a list of which has been furnished by this office to the Materials Coordinator) on the form (WPB-41-H) now used by hardware, or preferably on a new form designed especially for components.

4. Capt. Jackson of Major Baehr's office will visit Washington this week and discuss this point with W.P.B. and with the Bureau of Budget.

D. K. BARNES
2nd Lieut., Air Corps
Administrative Assistant
Components Follow-Up Unit
Follow-Up Branch, PCS

CC: Major Baehr
Capt. Hitchiner

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Hdw. A. R+S, R.D. Wilhelm
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File
Reply
Aeroplane Spare Parts Program

21 June 1943

SUBJECT: Changes to ASU Form 35
Budget Bureau Number 12-R1198

TO: Office of Survey Standards
Social Security Building
Washington, D. C.
Attn: Mr. H. W. Brethower

1. Confirming phone conversation of June 17th, this office is attaching a corrected copy of the subject form incorporating the changes requested. These changes are as follows:

(1) The third paragraph on the face of the form has been changed to read "The local Army or Navy Inspection Office will inspect the material for compliance with A-N specifications and indicate its approval by signing the original of this form in the space marked 'Approved'".

(2) An additional column has been added to the face of the form titled "Resale Price F.O.B. Your Plant" together with the explanatory note covering this new column.

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(3) In order to have room for the new column shown in Sub-Paragraph 2 above, it was necessary to drop the column shown on the face of the old form as column (j) titled "Extras". This deletion made it necessary to re-letter the columns and explanatory remarks.

2. This office is in receipt of your teletype of June 17th, approving the subject changes. This extremely prompt approval of your office and the Bureau of the Budget is greatly appreciated and enabled us to proceed in the printing of these forms with little or no loss of time.

For the Aircraft Scheduling Unit:

A. F. FITCHNER
Captain, Air Corps

Incl:
Form ASU-35 - Request for Surplus Stock

Copy to:
Capt. Hugh W. Hammond
Frank Svoboda

35

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ASU-95 (6-5-43) Aire. Hdqs. Warehousing Hdqs A. R. 3, RD MMC, DF 16. (3/3 PP) 54

AIRCRAFT SCHEDULING UNIT
Steele High Building
Dayton, Ohio

Budget Bureau No._____
Approval Expires _____

ASU Reference No._____
Warehouse No._____
Date_____

REQUEST FOR SURPLUS STOCK

TO: Name of Firm
Address
City

It is requested that the following materials as shown on your surplus stock report (Form ASU-41-R) for _____ be reserved for distribution to an official Aircraft Warehouse. Complete the original and duplicate of this form and return to the Aircraft Scheduling Unit, Steele High Building, Dayton, Ohio. Triplicate copy to be retained in your files. If materials are unavailable give brief explanation.

This is not a purchase order. The Steel Recovery Corporation will issue shipping instructions, and a purchase order bearing the above reference number on notification by the Aircraft Scheduling Unit of the receipt of this form.

The local Army or Navy Inspection Office will inspect the material for compliance with A-N specifications and indicate its approval by signing the original of this form in the space marked "Approved".

Before filling in form - PLEASE READ INSTRUCTIONS ON REVERSE SIDE.

(a) ITEM NO.	(b) DESCRIPTION	(c) ARMY-NAVY PART NUMBER	(d) TYPE OF PACKAGING	(e) IDENTIFICATION MARKS	(f) NUMBER OF PIECES	(g) STATUS OF MATERIAL	(h) COST PRICE: LIST PRICE	(i) COST PRICE: DISCOUNT	(j) COST PRICE: DEDUCTIONS	(k) NET COST PRICE PER UNIT	(l) NET FREIGHT PER CWT	(m) RESALE PRICE F.O.B. YOUR PLANT

APPROVED:

SUBMITTED:

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Asst Hdqs Warehousing
Hdqs A.R.S, RD, WMB.
16.(3/3 AP)

EXPLANATORY NOTES ON COLUMNS (e) and (e)

Columns (e) to (f) are filled in by the Aircraft Scheduling Unit. Note that the entry in column (e) will be the Army-Navy part and dash number unless this number is not available, in which case it will be the Air Corps, N.A.F., N.A.S., or A.N.D. number, or the manufacturer's name and drawing number. In column (e) will be shown any identifying marks placed on the material, such as, dyed head, die lettering, etc.

INSTRUCTIONS

g. If the item has been, or is being considered, in any contract settlement between you and the Government, enter an "S". In this case, do not fill in the remaining columns for this item. If the item has not been and is not being so considered, leave this column blank and fill in the remaining columns.
h. Enter the list price of the material. This price is not to include discounts, extras, deductions or freight charges.
i. Enter discount extended by producer or distributor. This discount is to be based on the shipment of the item during the year preceding the holder's receipt of form ASU-41-H for which the lowest net price was paid.
j. Enter deductions per unit for undrilled material; not heat-treated; unplated, etc.
k. Net price per unit is to be the list price less all discounts and deductions and plus extras. It is exclusive of all freight or handling charges.
l. Enter the net railroad freight per unit. This is to be the railroad freight rate per cwt. which you paid (or would have paid if so shipped) from your vendor's shipping point to you, less any freight allowances made by the vendor, based on the shipment of the item received during the year preceding your receipt of form ASU-41-H, for which the lowest net price was paid.
m. Enter the lowest unit selling price, F.O.B. your plant, that you would accept for each item. Enter this figure only if you are willing to accept less than your cost price to further the War Program.

COMPUTATION OF NET PRICE TO WAREHOUSE

(Do not fill in - Warehouse Sub-Unit only)

ITEM NO.	LIST PRICE	TRADE DISCOUNT	FUNCTIONAL DISCOUNT	NET LIST PRICE	EXTRAS	DEDUCTIONS	NET SELLING PRICE TO WAREHOUSE

It is recommended that the above net selling price be used in [illegible]

By _____

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~~CONFIDENTIAL~~ ~~CONFIDENTIAL~~

CASE HISTORY AIRCRAFT HARDWARE WAREHOUSING

12 April 1944 Wright Field

TO: Historical Officer, Materiel Command.

FROM: (Name) Capt. A. F. Hitchiner

(Title) Warehousing Sub-Unit, Proc. Cont. Sect.

"In a telephone conversation it was mutually agreed by Aircraft Scheduling Unit and Metal Reserves Corp. to completely drop negotations in the early part of June 1943 in favor of a substitute plan to be put into effect by the Army Air Forces whereby that branch of the service would enter into contract with certain warehouses. Contracts were issued by the Army Air Forces approximately 7 June 1943."

(Signature) t/s A. F. Hitchiner, Capt. A.C.

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DELEGATION OF AUTHORITY

To: Captain A. F. Hitchiner
Chief of the Warehouse Sub-Unit
Steele High Building
Dayton, Ohio

From: J. A. Krug
Program Vice Chairman

Subject: Delegation of authority to approve PRL-2033-A Certificates for the transfer of aircraft earmarked hardware and components.

Pursuant to Section 4.02, General Administrative Order 2-88, you are hereby authorized to countersign and approve the issuance of PRL-2033-A Certificates in the name of the War Production Board authorizing the deliveries to aircraft warehouses (as defined in L-296) of material, parts, and components listed on Schedule A of L-296, provided that all clearances provided by established procedure are obtained.

JUL 9 1943

J. A. Krug
Program Vice Chairman

Certified to be a true copy of the Original.

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Delegations Section

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DELEGATION OF AUTHORITY 4025

To: General Robert E. Black
Assistant in Charge of Warehousing
Steele High Building
Dayton, Ohio

From: J. A. Krug
Program Vice Chairman

Subject: Delegation of authority to approve PRL-2033-A Certificates for the transfer of aircraft earmarked hardware and components.

Pursuant to Section 4.02, General Administrative Order 2-89, you are hereby authorized to countersign and approve the issuance of PRL-2033-A Certificates in the name of the War Production Board authorizing the deliveries to aircraft warehouses (as defined in L-296) of material, parts, and components listed on Schedule A of L-296, provided that all clearances provided by established procedure are obtained.

JUL 9 1943

J. A. Krug
Program Vice Chairman

Certified to be a true copy of the Original.

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Delegations Section

JWC/mms
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Gen. Hdw. Warehousing
Hdw A, R & S. 111 M+E
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TELEPHONE CONVERSATION BETWEEN H. G. BATCHELLER AND A. E. R. PETERKA, LT. COL. A.C., JULY 3, 1943
11:20 AM.

Mr. Batcheller: How are you?

Col. Peterka: Fine.

Mr. Batcheller: Thank you very much for your congratulatory telegram.

Col. Peterka: We were delighted when we heard the news. I don't know whether you were or not, but we certainly were.

Mr. Batcheller: We came to gamble, didn't we?

Col. Peterka: Well, you're going to get some new headaches, but we're tickled to death down here to hear the news of your new assignment.

Mr. Batcheller: It was very nice of you to think of me, Colonel.

Col. Peterka: I'm in some trouble and I need your advice.

Mr. Batcheller: Certainly.

Col. Peterka: Do you have time to listen to this? Back in November when Gen. Echols, Admiral Davidson and Charles Wilson were here, we discussed various problems; among them, the subject of warehouses and the matter of aircraft hardware came up, such as bolts, nuts, screws, terminals, etc. At that time, General Echols said "Why don't you have some earmarked warehouses for aircraft hardware." So, we immediately started working on that and after eight months of labor we're not much farther than we were. As a matter of fact, we're in some very serious difficulty.

The purpose of these warehouses (three of them, by the way) somewhat similar to your earmarked steel warehouses) their functions are two-fold. Number 1. To provide minimum stocks of designated items of aircraft hardware which are critical over which we will have some control so that if someone gets caught short for an item for certain kind of bolts, screws or nuts, we'll have some place where we can reasonably expect to find that material. And then Number 2, which has developed since, is this matter of redistribution of idle stocks.

As you know, these aircraft companies have, in many cases, ordered far in excess of their needs, with perfectly good intentions. Someone needs 5,000 bolts, so they request a requisition for 6,000 to make sure that an under-shipment won't put them in the crack, and then the man who makes out the requisition adds a little bit and so on up the line until finally the purchasing agent may order 10,000 to fill this requirement for 5,000. Multiply that by many times, other mistakes, engineering changes, and the result is large idle stocks of aircraft hardware around the country.

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Div. Hdq. Warehousing
Hdq. A. R+S,RD
7 (2/13/44) 37

The problem of distributing stocks of aircraft hardware came up and we found, for instance, that a company having a hundred thousand bolts of a given size will list that as surplus for distribution but they're in no position to distribute them piecemeal. They will resell them as a lot but if they have to redistribute in small quantities they have neither the bookkeeping system or the selling force and the packing department, etc., to do that kind of a "warehousing" job. So, a plan that looks theoretically satisfactory is no good, and of course, there is the problem of resale price. Hardware, as you know, is sold at a list and discount, and unlike steel, the warehouses do not sell at a higher price than the manufacturer. They sell at the same price but get a jobbers' discount from the manufacturer. So, let's assume that Glenn Martin at Omaha have 100,000 bolts for which they paid $10.00/M f.o.b. a basing point. When they want to sell them, they want their $10.00/M for them. We have a jobber, let us say, in St. Louis, he would normally pay $8.00 or $8.50 for those same bolts from the manufacturer. Now, how to get these bolts from Glenn Martin to the jobber in St. Louis and pay Glenn Martin their $10.00 and sell them to the jobber in St. Louis for $8.00 and who is going to pay the freight, becomes the problem.

I had meetings with Mr. George Stewart of the Steel Recovery Corporation (President); meetings with Mr. Nichols, Vice-President of the Metals Reserve and all his attorneys; had meetings in New York and had meetings here and I was told everything was under control. The Metals Reserve would subsidize this differential; that they would pay Glenn Martin $10.00 for their bolts; they would pay the freight to St. Louis and then bill St. Louis $8.00 to $8.50, whichever the case might be for those bolts.

Then the warehouse in St. Louis would redistribute these 100,000 bolts which has, of course, been their line of business, they're prepared to handle it and they'll resell them in lots of anything from one piece to any quantity they may be desired. Everything was in the groove; everything was lovely, and after having all these meetings with Mr. Nichols and Mr. Stewart, Herschel Wilson and Col. Baxter and all these people, we went ahead on the premise that everything was under control and approved. We have three warehouses established, they have gone out and built buildings, bought equipment; bought machinery, and hired people and borrowed money. Then day before yesterday we get word that all this has been thrown over; that nothing has been definitely established and that at an informal meeting of the Metals Reserve Directors the matter was brought up and informally turned down, and there we are!

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Area. Hdw. Warehouse
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see what I want to do, subject to your approval, is write a letter over General Brandtner's signature pointing out that we've gone too far to back down; that it is absolutely necessary to redistribute this surplus stock; that this is the quickest way and to the best of our knowledge the most efficient way of handling this redistribution and send such a letter to the President of Metals Reserve, and I would like to route it to you for your approval before it goes to him.

Mr. Batcheller: I don't see anything wrong with that. Send it to me and I know Nichols pretty well, and I'll call him up.

Col. Peterka: I think it is beyond Nichols; Who is Nichols' superior?

Mr. Batcheller: Darned if I know.

Col. Peterka: Well, Nichols is Vice-President.

Mr. Batcheller: Must be Jesse Jones, I guess.

Col. Peterka: That's what I think, too, but /.....

Mr. Batcheller: He's got his mind on other matters just at the present time but let me see what I can do with it.

Col. Peterka: Alright, now, you agree that I'm on the beam on this?

Mr. Batcheller: I can't see anything wrong with it off-hand; I don't see how you could do it any other way.

Col. Peterka: I don't either and it is all out of the same pocket, don't you see? I just must move on this, Mr. Batcheller, and if I don't some Congressman is going to find these stocks and then "view with alarm" our lack of activity in the matter. I've worked on this for eight months and I'm just exactly right back where I was when I started.

Mr. Batcheller: Send it to me, Gus, and I'll see what I can do on it.

Col. Peterka: Fine and dandy.

Mr. Batcheller: OK, my boy, see you soon.

Col. Peterka: Alright, goodbye.

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Carbon Copy
Asst. Hdw. Warehousing
Hdw. A R & S, RD, WSA
Ward 18 (1/4 pp)

TELEPHONE CONVERSATION BETWEEN LT. COL. A. E. M. PETERKA AND MR. NICHOLS, VICE-PRESIDENT OF METALS RESERVE COMPANY, WASHINGTON, D. C. JULY 6, 1943 4:15 P.M.

Mr. Nichols: This is Nichols.

Col. Peterka: I was trying to get you before you went into the conference on the off-chance that you might be discussing the matter in which I am so vitally interested, and that is that subsidizing of the hardware program. I understand, much to my amazement, that after going along on the premise that everything was agreed upon, that we have been told indirectly that your part of the program has not been approved. It seems almost unbelievable to me after the meetings we had in your office with all your people, and your visit here with all your people. We have, as you know, already established the warehouses. They have either bought, are building, or have buildings under construction; they have borrowed money; they have ordered and purchased equipment; hired people and if it is true (which I hope it isn't) that this program is not going through as we planned we certainly are in a terrible fix.

Mr. Nichols: Well I'll tell you, there have been changes of a mild sort, but it just shows how dangerous it is for procedures to go ahead of firm commitments. Of course we indicated our willingness to go ahead on it as outlined at the time, but we found we had to have a letter from the Aircraft Scheduling Unit as well as our own board.

Col. Peterka: You had to have what, Mr. Nichols?

Mr. Nichols: We had to have a clearance from our own board as we always have, you know. We got the clearance from the Aircraft Scheduling Unit, but there were two or three months there that nothing happened. We did not hear from it at all, not even the agencies that were going to operate it, that is, Steel Recovery. Now in the meantime there is lots of water gone over the dam. We find the RFC here is putting some different classes over these programs. And the one point in that particular program that seems to be the question today is the profits permissible under the arrangement.

Col. Peterka: You mean the differential between the selling price and the purchase price?

Mr. Nichols: Yes. Now we don't say at this moment that it is not going to go through but that is one of the stumbling blocks of the moment.

Col. Peterka: Well now let me clarify a few points. You say you had heard nothing from the Steel Recovery Corporation, and obviously you wouldn't. We were taking one step at a time and having received what we felt confident was bona fide assurance from you that you were going along on the first setup subsidizing this differential, then we had to go out and get reports of what was actually in

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Ariz. Hdw Warehousing
Hdw A. R & S. RD
M M & D Wash.
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surplus stocks. Obviously we had to then prepare the necessary reporting forms, get clearances from the Bureau of Budget, send these forms out, educate the districts on how they were to be made out, get that information in; compile it, and all of that takes time.

Then we had to make the necessary final negotiations with the people who were going to distribute this material which included obtaining in some cases money and in some cases equipment, and in some cases we had to expedite the purchase of buildings, breaking of leases and all that sort of thing.

A tremendous amount of work has been done. Obviously the Steel Recovery Corporation could not do anything until after we had the material, knew where it was, how much of it there was, where it was located, and had a place to put it and people who were willing to take it and handle it on that basis. During that time we were doing all this work. Now when we are ready to pop, ready to start moving material, to our amazement we are told "Why, look; this thing has not been settled." And we just cannot believe it.

Mr. Nichols: I think this is only going to be a delay, because I think that the program under which we have been operating will have to be modified. So they were to go ahead with it, ----------
----------(inaudible) to Jesse Jones, as to the work which the Copper Division under Metals Reserve were going to operate. We've let that expand to a point where Mr. Jones feels he wants another talk with Mr. Nelson on this.

Col. Peterka: You mean on this particular program?

Mr. Nichols: No, I don't mean to say that the program is going to be thrown out the window, but there is going to be a new understanding.

Col. Peterka: Now what can I do? Is there anything I can do to help?

Mr. Nichols: Is Col. Baxter going to be there tomorrow?

Col. Peterka: Here in Dayton? If he is it's the first I've heard about it.

Mr. Nichols: Well I thought he was going to get in touch with you tomorrow anyhow. I didn't know whether he was going to be out there or was going to talk with you.

Col. Peterka: I don't know anything about that.

Mr. Nichols: There's only one thing to do and that is to wait a few days until we can get this thing straightened out. You don't know it, but I haven't been down here for a month.

Col. Peterka: I see.

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Alice. Hdlw. Warehousing
Hdlw. A. R+S RB
18.(3/4 PP)

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Mr. Nichols: And know less than nothing of the procedures of the last month. That's the reason I'm down in Washington today, to check up with myself and see whether we can extricate ourselves from these difficulties that are brought up.

Col. Peterka: Well I am sorry that this matter is going along in this manner because I thought that with all your attorneys here if there was something we were supposed to do that we had not done we would have been told to do it and of course we would have been delighted to do anything.

Mr. Nichols: I can appreciate your point of view. I think in a few days we will be able to straighten those things out one way or another; I think it will be favorably; I haven't heard anything that would make me feel that they are going to dilly dally.

Col. Peterka: Well, good Heavens, if it isn't favorably; what are we going to do with these people who have built buildings, bought equipment; and another thing. One of them has already heard that the program was temporarily stopped; on that basis they've stopped building. There we have another delay which, even if it was re-activated tomorrow, and we got your clearance and assurance that everything was under control, why, we've lost another month and this continual delay just drives one frantic.

Mr. Nichols: It has been talked over for a long while and there is a lot of work for you to do, of course, but, as I say -----

Col. Peterka: That's right because we were doing all of the things that had to be done before we could go any further on the redistribution. Now, we are ready to redistribute and we can't.

Mr. Nichols: I hope we can get it settled in a very few days for you before I go back to New York.

Col. Peterka: Fine, how will I know what's been done?

Mr. Nichols: I'll leave word with Mr. Cornell.

Col. Peterka: Fine and dandy.

Mr. Nichols: And we will try to push that one through as soon as we can.

Col. Peterka: Now, one more thing I would like to ask you, Mr. Nichols, and you don't have to answer this if you don't want to. But I understand that the Recovery Corporations are going to be washed up pretty soon!

Mr. Nichols: We're going to try to close them up by the end of the year.

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Asia. Hdqs. Warehousing
Hdqs. A. R+S RD
1r. (Hipp)

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Col. Peterim: Well, then who's going to take over that redistribution work?

Mr. Nichols: We will take that on ourselves, if it stops the Program, we'll issue it through other forms; so you don't have to worry about that because we will carry it through.

Col. Peterim: Alright, you'll let us know anything we can do to help, won't you?

Mr. Nichols: Yes indeed.

Col. Peterim: Fine. Thank you, sir. Goodbye.

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11

July 12, 1943

DELEGATION OF AUTHORITY

To: Captain A. F. Hitchiner
Chief of the Warehouse Sub-Unit
Steele High Building
Dayton, Ohio

From: J. A. Krug
Program Vice Chairman

Subject: Delegation of Authority to approve PD-1X Certificates for Aircraft Earmarked Hardware and Components.

Pursuant to Section 4.02 of General Administrative Order 2-88, you are hereby authorized to approve and issue PD-1X Preference Rating Certificates in the name of the War Production Board for deliveries to aircraft warehouses (as defined in L-296) of material, parts and components listed on Schedule A of L-296, provided that

(1) All clearances required by established procedure are obtained;

(2) The assignment of ratings shall be no higher than AA-1

40

Each such certificate shall appear in the following form:

"War Production Board

(Signed) _____
Title of Authorized Official."

J. A. Krug
Program Vice Chairman

JAC/mms

Certified to be a true copy of the Original.
JUL 12 1943
Delegations Section

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10

July 12, 1943

DELEGATION OF AUTHORITY 4130

To: Corporal Robert B. Black
Assistant in Charge of Warehousing
Steele High Building
Dayton, Ohio

From: J. A. Krug
Program Vice Chairman

Subject: Delegation of Authority to approve PD-1X Certificates for Aircraft Earmarked Hardware and Components.

Pursuant to Section 4.02 of General Administrative Order 2-88, you are hereby authorized to approve and issue PD-1X Preference Rating Certificates in the name of the War Production Board for deliveries to aircraft warehouses (as defined in L-296) of material, parts and components listed on Schedule A of L-296, provided that

(1) All clearances required by established procedure are obtained;

(2) The assignment of ratings shall be no higher than AA-1.

Each such certificate shall appear in the following form:

"War Production Board

(Signed) _____
Title of Authorized Official."

Certified to be a true copy of the Original.
JUL 12 1943
Delegations Section

J. A. Krug
Program Vice Chairman

JAK/mms

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Carton Copy
Asst. Hd. S. Warehousing
Hdqr. A, R+S, RD
M M+D, Wash.
19. (1/2 pp)

80-4 RHD:ds

Wright Field, Dayton, Ohio

7 August 1943

Sale of Government Property

Chief, Legal Branch,
Purchases Division,
Army Service Forces,
Washington, D. C.

THRU: Office, Ass't. C/AS, WM&D
Chief, Procurement Branch.

1. The Aircraft Scheduling Unit has established a system of warehouses whereby certain critical raw materials and parts can be made easily available to aircraft contractors for both the Army Air Forces and the Navy. These warehouses are privately owned and operated, but are subject to strict regulation by the Aircraft Scheduling Unit. Material moving into the warehouses is purchased by the operator of the warehouse and is then sold by such operator to the aircraft contractor needing the material or part in question. Thousands of orders are placed with these warehouses each day.

2. Many Army Air Forces CPFF contractors have on hand excess and idle steel, copper, aluminum, nickel and aircraft hardware which can be most effectively distributed among aircraft contractors by the purchase of such material by the warehouses referred to above and the subsequent sale thereof by the warehouses to the particular contractors needing it. However, most of this material was originally purchased by the CPFF contractors at the OPA ceiling prices, which were in many instances higher than the present day OPA ceiling prices. In order for the warehouses to buy the material from the contractors, pay the freight, inspection and other charges, and to make a profit, it is necessary for them to purchase the material from the CPFF contractors at a 15% to 20% discount from the present day ceiling prices.

3. In order to overcome the reluctance which has been shown by some Contracting Officers at CPFF contractors' plants to making sales at a substantial discount from present day prices, this office has been requested to issue a directive to Contracting Officers that in the case of sales to warehouses approved by Aircraft Scheduling Unit, Contracting Officers will be justified in accepting a 15% to 20% discount from existing OPA ceiling prices. This office believes that the issuance of such a directive would be proper and would facilitate the prosecution of the war.

4. Your advice and comments with respect to this matter are request-

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Air Ndgl 30 unclassified (2/2, 45)

To: Chief, Legal Branch, Purchases Division
Army Service Forces, Washington, D. C.
Subj: Sale of Government Property

ed. Since the matter is of considerable importance, a prompt reply would be appreciated.

For the Commanding General:

A. E. JONES,
Brig. Gen., U.S.A.,
Chief, Procurement Division

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Carbon copy
Asst. Hdqs. Secretary
Hdqs A. R. & S. R.D.
M.M.&D. Wash. D.C.
320 (1-3-44)

(Col) Hollandsworth
Asst

File
Aircraft Hardware
Purchase Program

AFPRE - 400.7

21 August 1943

MEMORANDUM FOR: Chief, Procurement Division
Materiel Command, Army Air Forces
Wright Field, Dayton, Ohio

Attention: Colonel P. C. Sentland.

Thru: Air Force Procurement Liaison Branch, Purchases Division
Attention Colonel Park Holland, Chief

Thru: Procurement Branch, Office of the Assistant Chief of
Air Staff, M M & D, Attention Colonel W. F. Volandt, Chief.

Subject: Sale of government property to warehouses.

1. Reference is made to your Memorandum dated 7 August 1943 on this subject; This office is now advised by conversation with your office (Lieutenant DeWath) that under the course of business followed by these warehouses, the warehouse pays the mill price for steel and aluminum on the basis of the price which the mill would charge for carload lots of these materials, f.o.b. the purchaser's warehouse. In the case of copper, the warehouse would get the same discount from the government that it would get from the mill. In the case of sales of aircraft hardware, the warehouse would have to inspect every item, and there are thousands of different items which they will handle. It is understood that lists have been prepared containing recommended prices for each item, or class of items, and that generally the list prices are approximately 20% below the ceiling price, and that this discount represents largely the cost of inspection and handling by the warehouse. It is understood that the list prices will be minimum and not fixed prices, and that the government will constantly check the warehouse sales to prevent any sales above ceiling prices.

2. It is stated that the proposed arrangement or practice is the only practicable basis for prompt and effective distribution and utilization of materials and parts among the various Air Forces contractors. It is understood that the services of the warehouses are essentially to move material and parts which are now idle in the plants of contractors.

3. Under the circumstances outlined above, it is considered by this office that the sale of government owned property by GFAT contractors to warehouses whose sales are regulated by the Aircraft Scheduling Unit at discounts up to 20% in the case of aircraft hardware and at the estimated discounts referred to in the case of materials is reasonable, and that the proposed action will facilitate the prosecution

Copy for Brigadier General A.M. Hopkins
5 C 888 Pentagon.

HQ. A A F
SEP 4 1943
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Quic. Hdw. Warehousing
Hdrs A R & S. RD
20 (2/3 44) 46

SPPEP 460.7

of the war. It is assumed that it will have been determined in the case of each class of property which will be sold that the applicable discount is no more than is necessary to cover the cost of the services rendered by the warehouse, plus a reasonable profit.

The proposed sales may be legally made where the SPPP contract contains the clause authorized by Paragraph 36B of the Procurement Regulations. This paragraph will shortly be amended to authorize a clause in the form attached, and the new clause may be used in AAF contracts pending formal amendment of the Procurement Regulations.

For the Director, Purchases Division:

WILLIAM L. MARBURY
Chief Counsel
Purchases Division
Army Service Forces

Incl:
#1 Copy of Proposed Revision of P.R. 36B

Jos F Johnston/es/74560
CC:
Purchases M & R
Legal Reading
Colonel Holland
Colonel Velandt

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Asst Hdw Warehousing
Hdw. A, R+S, RD
20. (313pp) 47

PROPOSED REVISION OF PR 363

It is recognized that property (including without limitation machine tool and processing equipment, manufacturing aids, raw, manufactured, scrap and waste materials), title to which is or may hereafter become vested in the Government, will be used by or will be in the care, custody or possession of the Contractor in connection with his performance of this contract. With the approval in writing of the Contracting Officer (whether such approval is given prior to or after the giving of a notice of the termination of this contract for the convenience of the Government), the Contractor may transfer or otherwise dispose of such Government-owned property to such parties and upon such terms and conditions as the Contracting Officer may approve or ratify, or, with like approval by the Contracting Officer, the Contractor may itself acquire title to such property or any of it at a price mutually agreeable. The proceeds of any such transfer or disposition or the agreed price of any property, title to which is so acquired by the Contractor, shall be applied in reduction of any payments to be made by the Government to the Contractor under this contract, or shall otherwise be paid in such manner as the Contracting Officer may direct.

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AFW:elw:3-M-1-1

4 September, 1943

SUBJECT: Limitation Order L-336
Aircraft Hardware Warehousing Program

TO: Assistant General Counsel
War Production Board
Room 471, Social Security Building
Washington, D. C.
Attention: Mr. Maurice Weinrober

1. Your interest in the Aircraft Hardware Warehousing Program is appreciated. At the present time, considerable surplus materials are starting to move into the warehouses. There was delay in getting the program started due to difficulties experienced in obtaining preference ratings for small improvements necessary to the warehouses, in order that they could properly maintain these earmarked stocks segregated from other materials carried in their regular commercial inventories. To date, only one "DO 1-" - "A. C." has been issued, although two more are in process. Before any preference rating is issued, every effort is being made to locate material in surplus stock, and it is believed that it will be possible to limit the amount of material warehoused by warehouses direct from producers to a much smaller amount than originally anticipated.

2. The failure of the Metals Reserve Corporation to complete negotiations to expedite redistribution of aircraft hardware has been partially overcome by some special directives issued by the Army Air Forces Procurement Division authorizing contracting officers to sell to warehouses as agreed by the Aircraft Committee, material purchased on MRC contracts, at a price which will permit the warehouse to handle the material and resell it on a competitive basis.

3. The Board of Governors has not yet approved this policy, but it is anticipated that it will do so shortly. This will make available to the warehouses many critical items of the surplus materials. It is expected that most of the balance can be redistributed between contractors.

4. While there have been a tremendous number of difficulties to overcome in getting this program started, it is now under way, and no cause for further delay can be seen.

For The Aircraft Scheduling Unit:

[illegible]
Captain, Air Corps

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CASE HISTORY AIRCRAFT MATERIAL WAREHOUSING

Wright Field
7 December 1943

TO: Historical Officer, Materiel Command.

STATEMENT BY: (Name) Capt. A. F. Hitchiner

(Title) Warehousing Sub-Unit, Rec. Cont. Sect.

COPY

"Following issuance of Limitation Order L-296, the WPB issued formal delegations appointing the Administrator of ASU as Administrator of Limitation Order L-296 and giving him the authority to issue all instructions provided for in Directive No. 1 of that order. They also issued delegations of authority to the Administrator Captain Hitchiner and Warrant Officer R. B. Black to sign for the War Production Board the PD-1X and PD-1X-033-a Certificates."

(Signature) t/s A. F. Hitchiner, Capt. A.C.

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CASE HISTORY AIRCRAFT HARDWARE WAREHOUSING

Wright Field
7 December 1943

TO: Historical Officer, Materiel Command.

FROM: (Name) Capt. A. F. Hitchiner

(Title) Warehousing Sub-Unit, Res. Cont. Sect.

COPY

"Since the start of the program, eleven PD-1X applications totaling $397,000.00 have been approved by the Warehouse Sub-Unit for the purchase from producers of aircraft hardware to be placed in hardware stock; however, the warehouses have been instructed to hold up placing orders for approximately 80 percent of this material, due to surpluses which are available in aircraft contractors' plants. Large quantities of this surplus material are being moved. During the month of October, 13,200,000 pieces valued at approximately $250,000.00 were purchased by these warehouses. No PD-1X is approved if surplus material is available."

(Signature) t/s A. F. Hitchiner, Capt. A.C.

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E-1

AFMC 178-WP 5-89-45-1008

Authority for Purchase

332081

VENDOR [redacted] CONTRACT No. [redacted]

PURCHASE ORDER No.

DELIVERY VIA TERMS METHOD PROPOSAL

BY THE ABOVE SPACE TO BE USED BY THE PURCHASE BRANCH ONLY

Item No.	Quantity	Unit	Estimated Unit Price	DESCRIPTION OF MATERIAL OR SERVICES TO BE PURCHASED	Estimated Price	Total Price
				[redacted]		
				This Credit A.F.P. is for the entire cancellation of the above contract as follows:		
				Total Estimated Price.....	$[redacted],000.00	
				Unexpended balance for credit.....	$[redacted],000.00	
				TOTAL CREDIT.....		$[redacted],000.00

Total Estimated Cost | CLASSIFICATION | Actual Cost

B—FUNDS			A—FUNDS		C—FUNDS			Increase of Funds to Actual Cost Approved
EXPEND. ORDER No. / STOCK CHARGE No.	Project No.	Item No.	Project No.	Item No.	Project No.	Class No.	Item No.	

MATERIAL TO BE DELIVERED FOR: WANTED NOT LATER THAN (Date) — Section Chief

DELIVER TO — Accounting Branch

Procurement Data: Number of Bids — DATE FURNISHED — Budget Officer

Remarks on the following matter marked with "X" appear in the space below:

1. Recommended Sources of Supply ____ 2. Government furnished material ____ 3. Tools, patterns, etc., loaned by Government ____
4. Should Serial Number be assigned ____ 5. Point of Inspection ____ 6. Increase Existing Orders ____ 7. General Remarks: X

This entire cancellation of Contract No. [redacted] is at no cost to the Government and requested by Procurement Control Section in ICE, AFMC-ix:90-3-1-1, dated 18 December, 1943 and concurred to by Contractor in letter, [redacted], dated 20 December 1943.

This Credit A.F.P. is issued for a Change Order to reconcile the cancellation.

Proc. Auth No. ____ P ____ A ____

Proc. Auth No. ____ P ____ A ____

Proc. Auth No. ____ P ____ A ____

Upon due inquiry made it was found that the articles enumerated hereon could not be procured from any other branch of the Government without transfer of funds, or the immediate need of these supplies or the remoteness of this station from point of supply precludes their purchase from any other branch of the Government.

Date	Initiated by	Signed—Branch Chief	Signed—Section Chief
[redacted]	[redacted]	[redacted]	Procurement

Approved by Production Division — Chief, Contract Br. — Approved — Accounting Br. — [redacted]

[redacted]

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Mines. Dept.
Air. Hdqs. Warehousing
R+S, R.D. Mill+D S
Wash. 21 (1/17pp)

ASRP:nw:90-K
9 February 1944

SUBJECT: Redistribution

FROM: Lt. Colonel [illegible]
Chief, Material Distribution Branch
Resources Control Section
Wright Field, Dayton, Ohio

1. Redistribution as such by ASU became "official" with the issuance of F. O. 38 in October 1942. Since that time innumerable conferences have been held; letters, directives and procedures have been written by the dozen explaining how the job shall be done and by whom. In all fairness it must be stated that all of that was not wasted work. Progress very definitely has been made, yet in spite of the fact that Colonel C. A. Baxter, Chief - Redistribution Branch, PR, and Mr. Herschel Wilson, Chief - Materials Branch, WPB, have gone on record to the effect that ASU has done THE outstanding job in redistribution, the fact remains that too little material has been moved and that too slowly.

2. There are two phases of planning that should be carried on simultaneously:

a. The overall general plan involving general broad policy covering all periods from the present through the end of the hostilities in Europe and the termination of the war. Such general overall plans involve Army, including Ordnance, Navy, Bureau of Ships, etc. This type of planning has been getting practically all of the attention.

b. The other phase that is currently involved has been largely overlooked, and that is the phase involving the actual physical movement of surplus material from the contractor's plant where it is not needed, into productive channels directly or indirectly through remelt or refabrication.

As stated above, these two phases of the redistribution problem can and must be planned simultaneously. The latter phase, if effectively and swiftly carried out, will make the general phase much simpler. The second phase (b) referred to must be carried out in accordance with established fundamental principles for which there is a background established by Industry.

3. It is obvious that in the redistribution of aircraft materials and supplies, ASU has set itself up to go into the business of selling those commodities in surplus aircraft material stocks. In so doing ASU can follow one of two courses. The first course would be to go in competition with the steel industry and its system of distribution, the hardware industry and its system of distribution, the aluminum industry and its distribution channels, and so on through the entire line of materials and supplies. The other alternative is to go in business with these industries and their established distribution channels

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Subject: Redistribut
From: Lt. Colonel A. E. R. Peterka
Date: 9 February 1944

as "partners". There can be no doubt in anyone's mind but that the partnership alternative is by far the most effective and desirable.

4. When materials were exceedingly scarce it was feasible for one contractor to sell his surplus material in whole or part to another contractor who needed it badly. The question of price was not important and contractors were willing to do this on a "you scratch my back and I'll scratch yours" basis. To the layman it appears that the inter-contractor transaction is the most satisfactory. As a matter of fact it is grossly inefficient. Let us assume that contractor "A" has a million aircraft bolts in surplus stock. If he could dispose of these million bolts to not more than four or five other contractors the problem would be comparatively simple, but our experience has shown that that is not what is happening today. Contractor "A" lets it be known that he has a million bolts in his surplus stock. He will get an order from some sub-contractor for 500 pieces, from someone else for 3000 pieces, another for 69,000 pieces, etc., etc., etc. The contractor is not at all set up to weigh or count and package such quantities or arrange such shipments. His bookkeeping system is not set up to bill and keep tract of accounts receivable or prepare the necessary certification. All the foregoing to apply to all conceivable types and kinds of material. It is too difficult to buy and too difficult to sell under such a system.

5. In assuming the job of "selling" the surplus aircraft material it is axiomatic that before one can sell anything he must directly or indirectly have physical possession of it. Recognizing the need for this initial step aircraft contractors were requested to report in accordance with Directive No. 16 their surplus materials on ASU-41 Forms. Unfortunately this has been only partly successful for the following reasons: In too many instances the contractor took the sum of his receipts as shown on his records which was incorrect, subtracted from it the sum of his consumption, which was also incorrect, and we naturally got the wrong answer. Obviously the desired information on ASU-41 Forms would have been a true physical inventory.

Perhaps no industry has a poorer knowledge of its true physical inventory than the aircraft industry, yet it would be most unfair to be critical of that situation. Nearly every aircraft contractor, and most of his subs, started from scratch and every conceivable pressure was put on them to produce more and better airplanes faster, and "to hell with keeping records and inventories". The aircraft industry has done an amazingly splendid job in producing good airplanes, but inventory-wise they do not know what they have or where they have it. (See Appendix I)

6. When a customer is found for surplus material the IBM records drawn off the ASU-41's are consulted. If the material is found in the records its availability is then checked with the holders. The holder is contacted by teletype, telegram, or telephone and asked if he has the material. If he says "yes" he is asked to "freeze" it while the purchaser is notified and prepares his purchase order. However, in too large a number of cases when the purchase order gets to the holder it is found that the material does not exist except on paper, or it may exist but simply cannot be located, or it has deteriorated. It has been suggested that the contractors be required to maintain a running

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physical inventory of their surplus stocks and segregate them. This has not been found practical to date. The management of the airplane companies has been judged by the number of airplanes they turn out, they still have serious manpower problems, and even if they had the inclination they have not had the time nor the manpower to do the inventorying and segregating which would help simplify the redistribution problem.

7. Getting back to ASU's role of "selling" of surplus materials, it must be recognized that they must sell or dispose of materials in competition with the producing mills involved. Price, quality and service being equal, people will still do business with that organization with which it is the easiest and most pleasant to do business. Currently it is much more difficult to do business with us than with a producing mill or its distributors. For example: Let us assume that a contractor wishes to buy 50 tons of material. If he places the order on a mill he places one order on one company. If he wishes deliveries spread out over five months in equal amounts he will get it that way. The company furnishes certifications of quality and backs up its product if declared unsatisfactory.

Let us assume, on the other hand, that they attempt to purchase this 50 tons of material from surplus stock. They will get in touch with the local district office or with the Central Register in Dayton and may be told that surplus stock exists and that its availability has been checked. However, it is in five different contractor's plants, each holding 10 tons. So they must make out five purchase orders instead of one. It is then found that two of the holders actually do have the material, the third one actually has but half of it, and the fourth and fifth do not have it at all. So the contractor must then make out a sixth purchase order on a producing mill for 25 tons. By this time he may have lost his position in the mills production schedule and may not receive the material when required. Furthermore, he may be required to pay a higher price for the 25 tons than he would had he purchased the entire 50 tons from the producing mill. The contractor, for physical or financial reasons, ordered the 50 tons shipped 10 tons per month, but material from surplus stock has to be shipped to him immediately; first, because we cannot depend on the holding contractor that he will keep it until the purchaser requires it; and second, that the holding contractor, once he receives a purchase order, is anxious to get it out of his plant.

8. It all sums up to something like this: That a system of storage reservoirs must be established immediately, to which contractors' surplus inventories may be moved and there inspected, inventoried, and distributed to established commercial distribution channels. These storage reservoirs might well be Air Service Command Depots, or if necessary, storehouses operated on a management-fee basis by experienced commercial warehouse organizations. These reservoirs would make it possible to immediately remove surplus stock from a contractor's plant and then control its flow back into production, either aircraft or other war construction or such civilian production as M and L orders may permit. There is no single method or formula for the distribution or sale of all materials. Over a period of years each industry has evolved a distribution system peculiar to itself and to further confound the uninitiated, there

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Subject: Redistribution
From: Lt. Colonel A. B. R. Peterka
Date: 9 February 1944

are important differences within each industry among the different products within the industry. For example: In what we broadly term "hardware" - bolts, nuts, screws, cotter-pins are distributed under a different financial set-up than fittings. Unless these facts are thoroughly understood and recognized one difficulty after another is encountered in redistributing surplus stocks. That is why it is felt so very important to take the producing industry and its system of distributors with us as partners if we are to redistribute materials in large quantities quickly.

9. Early in November 1943, prior to being assigned to temporary duty with the Petroleum Administration for War, this office was sounding out the feelings of the various producing industries with the thought in mind of enlisting their counsel and cooperation. This work has now been resumed, the hardware problem is outlined in Appendix 2 attached. A suggestion by the aluminum industry is outlined in Appendix 3 attached.

a. Through the splendid cooperation of the copper industry, the Copper Division of WPB, the Copper Unit of the Materials Distribution Branch of RCS, and the aircraft industry, the redistribution problem in brass and copper is of the least magnitude. It is felt that through this continued cooperation the surplus aircraft stocks of brass and copper products will be disposed of without too much difficulty; the most serious problem in this connection being the unearthing of physical inventory and segregating those materials.

b. The redistribution problem of surplus aircraft steel may pose some difficulty. We now have 26 official aircraft steel warehouses as a nucleus in solving this problem. The producing mills have expressed their willingness to cooperate. However, there are a great number of producing mills and aircraft steel is but a small part of the overall steel situation. To further complicate the steel problem, much of the aircraft steel in surplus stock is "tailor-made" and in the category of "specials". Arrangements have been made whereby ASU will receive the advice and counsel of the producing steel mills and the 26 official aircraft steel warehouse managements.

10. The problem of selling or disposing of surplus materials for production should not be divorced from disposal to scrap for remelting or refabricating. There is no strict line of demarkation. Material than can be disposed of for production today, later as conditions change, may be disposed of as scrap only. It requires the same talent and knowledge to distribute material and redistribute if for production or scrap. It is urged therefore:

(1) That surplus material from contractor's plants be removed to storage reservoirs.
(2) That it be made available to ASC and ASO.
(3) That all usable material be diverted to existing commercial distribution channels on attractive terms.
(4) That the material declared undistributable be turned back into remelt or refabrication into such forms as are currently useable.

- 4 -

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Subject: Redistribution
From: Lt. Colonel A. E. R. Peterka
Date: 9 February 1944

(5) That authority and latitude be given to the Materials Distribution Branch to carry out the distribution as outlined, in that lowest echelon of overall distribution plans, taking full recognition of the fact that no complete air-tight procedure can be written out with conditions changing as rapidly as they are; that mistakes will be made but if the same mistakes are not repeated and the objective attained; that the support, assistance and confidence of "top-side" may be depended on.

A. E. R. PETERKA
Lt. Colonel, Air Corps

3 Incls:
#1 - Appendix I
#2 - Appendix 2
#3 - Appendix 3

Copy to:
All officers functionally interested.
Three Official Warehouses

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APPENDIX 1.

JEJ:hwm:90-M-1-2

INTER-DESK CORRESPONDENCE

9 February 1944

To: Lt. Col. A. E. R. Peterka
Chief, Materials Distribution Branch

Subject: Difficulties Encountered in Effecting Transfers of Idle Surplus Stocks.

1. Bell Aircraft - Air Service Command.

(a) Air Service Command furnished Materials Redistribution Unit with a list of aluminum sheet and tubing desired.

(b) Private Shearon 'phoned Bell Aircraft and gave them a list of materials desired by Air Service Command and requested advice as to what, if any, of the desired material Bell could ship from surplus.

(c) Bell called Private Shearon several days later and gave him a list totaling nearly a million pounds of aluminum sheet and tubing that they could sell to Air Service Command.

(d) Private Shearon contacted Mr. Steele at Air Service Command and advised him of what was reported available at Bell Aircraft.

(e) Mr. Steele requested Private Shearon to wire Bell to freeze the surplus they were willing to sell pending receipt of purchase request from Air Service Command.

(f) Three days later, Mr. H. E. Holls of Bell Aircraft called Pvt. Shearon and said he could only ship approximately 360,000 pounds instead of the million pounds initially promised. His reason was that Bell had secured a new contract which would require that the amount initially indicated be deducted for use on the new contract.

(g) Pvt. Shearon called Mr. Steele at ASC and indicated what could be shipped. This was after the "Call Letter" had gone out. By that time, it was too late for Mr. Steele to place a purchase request for the material to be obtained from producers.

(h) Mr. Holls contacted both Mr. Jackson and Mr. May, of Bell, who definitely determined that only 360,000 pounds could be spared. Mr. Steel of ASC also talked to Mr. Holls who was not able to obtain a release from Bell.

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IDC
To: Lt. Col. A. E. R. Peterka
Date: 9 February 1944

(i) Mr. Steele withheld any action with Bell pending a review of the Surplus Register to see what could be located at other sources to replace that which Bell had refused to ship. Pvt. Shearon reports as of today that 67 percent of all deficiencies have been relieved from other sources; however, nothing has been ordered out to date by ASC and orders covering these frozen materials will be issued shortly by ASC.

2. Aviation Supply Office - Boeing, Wichita.

(a) Lieut. Fulton, Liaison Officer between Aircraft Scheduling Unit and Aviation Supply Office, contacted Ensign Lamden at ASU and requested that Boeing, Wichita, be contacted and requested to hold for ASO for overseas shipment all the Cherry rivets which this contractor had in the 23 sizes required by ASO.

(b) Ensign Lamden called Mr. LeCoque in the Midwestern Procurement District Office and advised him that Boeing, Wichita, had some Cherry rivets listed in surplus. It was requested that Mr. LeCoque check with Boeing and ascertain exactly how many Cherry rivets of each size were available for disposition. Mr. LeCoque was then to ask Boeing to hold the rivets which they had for ASO and to call Ensign Lamden back and tell him specifically what was being held.

(c) Mr. LeCoque called the list back the same afternoon. The list was most gratifying for it contained considerable quantities of each size which was requested. While all of the items which Mr. LeCoque said were being held had not been listed on the ASU-41 forms, it was assumed that the items had become idle since the contractors preparation of the last ASU-41.

(d) Boeing, Wichita, listed approximately one and one-fourth million rivets available for shipping. Shipping instructions were sent for all of the specific items. Then the contractor wired ASO, stating that there was an error in their first report and that only one of the 19 items reported available was actually available.

(e) The following list of Cherry rivets was reported available at Boeing Aircraft, Wichita, by Mr. LeCoque of the Midwestern Procurement District, following a telephone request by this office for any Cherry rivets which were available for redistribution:

LS 1126-4-6	4,596	LS 1127-4-4	64,744
LS 1126-4-8	5,870	LS 1127-4-6	39,688
LS 1126-5-4	8,139	LS 1127-4-8	20,750

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To: Lt. Col. A. F. R. Peterka
Date: 9 February 1944

LS 1126-5-6	17,474	LS 1127-5-2	280,399
LS 1126-5-8	103,640	LS 1127-5-4	166,002
LS 1126-5-10	1,718	LS 1127-5-6	35,818
LS 1126-6-4	90,427	LS 1127-5-10	12,698
LS 1126-6-8	175,577	LS 1127-6-4	36,426
LS 1127-4-2	275,765	LS 1127-6-6	4,184
		LS 1127-6-8	33,129

The only item which was shipped when shipping instructions came, was 150,000 LS 1127-5-2.

(f) When Mr. LeCoque checked with Boeing, Wichita, to learn why only 150,000 rivets were shipped, it was explained to him that the Materials Coordinator with whom he consulted at the plant, gave the list of the items which were requested to his secretary and asked her to call the man in charge of inventory control and find out how many of the rivets were available for redistribution. Evidently there was some confusion when the girl talked to the Inventory Control Department for the list of rivets which were given as being available was a list of everything that Boeing had in its inventory and was not a list of rivets available for redistribution. Of course Boeing could not ship rivets which were part of its current stock and required for current production.

3. Aviation Supply Office - Evansville Modification Center.

(a) At the request of Lieut. Fulton, Private Isham called the Mid-central Procurement District and asked them to check for the possible availability of 23 sizes of Cherry rivets.

(b) The District Office was requested to indicate which rivets were actually available and to forward a list of them to this office.

(c) One thousand of each of the following 9 items were reported as available:

LS 1126-4-2	LS 1126-4-4	LS 1126-4-6
LS 1126-4-8	LS 1126-5-4	LS 1126-5-6
LS 1127-4-2	LS 1127-4-4	LS 1127-4-6

(d) When ASO sent shipping instructions for the above 9 items, Mr. Craddock of the Evansville Modification Center, wired back to ASO that the 9,000 items which he had reported as available for redistribution, were no longer available since an emergency at the Modification Center required their use there.

ALBERT M. BLEHR
Major, Air Corps
Chief, Materials Redistribution Unit

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APPENDIX NO. 5

MINUTES OF MEETING ON REDISTRIBUTION OF ALUMINUM
HELD AT
MATERIALS DISTRIBUTION BRANCH, MATERIEL COMMAND
2 FEBRUARY 1944

NOTES: The notes of the above meeting are presented herewith for consideration of all parties concerned; it being expressly understood that no official commitments were made, but that a general "area of agreement" was reached.

AGREEMENT: In order to set up the mechanism to accomplish a substantial redistribution of surplus aluminum, the following informal agreement was reached with the aluminum suppliers (Aluminum Company of America - Reynolds Metals Company).

1. The suppliers intend to cooperate with the ASU on a "partnership" basis in the moving of surplus sheet, tubing, wire, rod and bar into usable channels.

2. The suppliers will make available to the ASU copies of their "re-write of purchase orders" received for mill runs of the commodities listed above.

3. The ASU will "screen" such orders against available surplus stocks. A ten day period, after receipt of orders by ASU, will be allowed the ASU to effect diversion of surplus material and to concurrently arrange for the cancellation by the contractor or warehouse distributor of the mill purchase order.

4. The ASU will handle such order diversions in partnership with the mills so as not to affect their serviceable production for the war effort.

5. Alcoa agreed to furnish the ASU with experienced personnel for a reasonable period of time to aid in setting up within the ASU the procedure for screening orders.

6. Alcoa and Reynolds will prepare letters of concurrence to be submitted to the ASU formalizing this agreement.

7. Re-writes of purchase orders will be forwarded to the ASU one week after concurrence by the suppliers.

ADDENDA TO AGREEMENT: In addition to the above, the following general points of interest were discussed and agreed upon.

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Reynolds may establish certain minimum ordering quantities to be mailed to ASU in lieu of all mill orders. Alcoa now diverts certain minimum orders direct to commercial warehouse distributors. Reynolds' action would, therefore, substantially standardize procedure. Suppliers have the privilege of annotating purchase orders stating maximum amount that may be diverted without injury to production schedules. Cancellations made by contractors of mill orders filled from surplus will be made on a no-charge basis where made within the specified time limit.

Alcoa and Reynolds are to assume that orders are firm if not cancelled within ten days after receipt by ASU. No notification by ASU is required when cancellation is not to be effected. Relaxation of the existing inventory restricting orders on sheet, tubing, wire, rod and bar would be helpful to the whole program. Mr. Batson of the Aluminum and Magnesium Division, WPB, supported the program outlined and felt his office could aid in alleviating the inventory restrictions.

Considerable discussion was held on prices. It was agreed that the cost of buying surplus material, delivered, should be no greater than the contractor would have paid the mill as shown on the extended "purchase order re-write". Contracting officers would be directed to sell and ship material on this basis. Where the entire order, however, cannot be obtained from surplus, the contracting officer must authorize the sale in accordance with directive PD-4 so as to insure that the contractor, in no event, will be financially penalized for purchasing any amount of surplus stock.

It is to be noted that aluminum forgings, castings and extrusions have been expressly omitted from this plan as they are for the most part non-distributable and may generally be considered as a scrap item. It is recognized that other aluminum fabricating companies should be included in this plan as the program advances, and it is contemplated that Bohn Aluminum, Revere Copper & Brass, Lindermer, Wolverine, Fairmont, United Wire & Supply, Sheet Aluminum, Aluminum Sales and others will be brought into the procedure as soon as feasible.

The entire scheme of redistribution is predicated on the establishment of "storage reservoirs" as rapidly as they can be accomplished if full efficiency of the foregoing plan is to be realized. Central storage reservoirs would insure the availability of material, as well as obviate the necessity for "multiplicity of purchase orders" in order to procure sizeable amounts of surplus stocks. They would permit the shipment of material over a period of months or at designated future delivery dates. By providing points of concentration, they would greatly facilitate the inspection problem. Perhaps most important of all, they would insure the prompt removal of excess goods from the contractors' plants, thus freeing the material for use.

GENERAL: This conference between representatives of aluminum producers, commercial warehouse distributors, the War Production Board

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and the Materiel Command was arranged by Lt. Col. A. E. R. Peterka, at the suggestion of the Aluminum Company of America, to survey the problem of redistribution of aluminum commodities and to arrive at a method of operation.

Those Present:

Lt. Col. A.E.R. Peterka, Chief, Mat. Dist. Br., RCS, Wright Field
Maj. H. W. Scott, Mat. Dist. Br., RCS, Wright Field
Maj. W. H. Wilner, ASU, Wright Field
Maj. A. M. Boehr, Mat. Dist. Br., RCS, Wright Field
Capt. R. H. DeMuth, Executive Office, Procurement Div., Wright Fld.
Capt. A. F. Hitchiner, Mat. Dist. Br., RCS, Wright Field
Capt. J. E. Sutherlund, Executive Office, RCS, Wright Field
Capt. J. E. Jackson, Mat. Dist. Br., RCS, Wright Field
Capt. G. H. Volker, Jr., Mat. Dist. Br., RCS, Wright Field
Lt. E. I. Shipley, Mat. Dist. Br., RCS, Wright Field
Lt. (j.g.) W. F. Elliott, USNR, Mat. Dist. Br., RCS, Wright Field
Mr. Hugo Wilder, Alcoa, Washington, D. C.
Mr. Carl Berlund, Alcoa, Washington, D. C.
Mr. Hershel Wilson, Redistribution Division, WPB, Washington, D.C.
Mr. C. B. Batmon, Aluminum & Magnesium Div., WPB, Washington, D.C.
Mr. C. B. Stansbury, Reynolds Metals Company, Dayton, Ohio
Mr. R. P. Strankan, Reynolds Metals Company, Washington, D.C.
Mr. E. W. Silver, Whitehead Metal Products Co., New York, N.Y.
Mr. F. D. Armstrong, Alcoa, Washington, D. C.

Lt. Col. Peterka opened the meeting by outlining the problem and enumerating the steps that had been taken to date. He emphasized that from the long range point of view surpluses were in reality the producers' problem even more than the Air Forces, and that, therefore, the advice and counsel of the industry was sought. Lt. Col. Peterka proposed that the Aircraft Scheduling Unit and the aluminum industry tackle this job as partners and not as competitors. It was acknowledged that, comparatively speaking, surplus stocks reported to date were not sizeable, but it was also pointed out that no one had a concrete idea of what percentage was actually being reported by contractors. Furthermore, it is a foregone conclusion that aluminum surpluses will snowball with the termination of various phases of the war program. All agreed that mechanics should be set up now to start this material flowing back into usable channels. The principal poundage items of redistributable aluminum surpluses will be confined to (1) sheet, (2) tubing, (3) wire, rod and bar; and it was agreed that only these commodities should be considered in the present plan.

General problems that would be encountered in regard to prices, inspection, availability of material, etc., were brought up but Lt. Col. Peterka stated that, while he was both sympathetic with and cognizant of these

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factors, this meeting has been called to evolve a plan that would work and he invited suggestions from industry only to this end.

Mr. Wilder of the Aluminum Company stated that they had given serious consideration to this question, recognized that the problem fundamentally concerned them, and that they were ready and willing to cooperate to get the job done. He outlined the following general proposal.

1. Surplus material must be inventoried, frozen, and thus made available for redistribution.

2. The selling price must be attractive, at least competitive.

3. To help find a market, Alcoa would agree to send copies of mill purchase orders to the ASU for screening, and would accept the cancellation of such orders as could be filled from surplus within a specified time.

Mr. Wilder pointed out that function 3 could be performed by the Aluminum Company but that they much preferred to have ASU handle this phase from a customer relationship standpoint.

It was agreed that, in the event of the adoption of such a plan, the suppliers should furnish to the ASU copies of their re-write of purchase orders rather than have contractors and warehouse distributors send copies direct. In this way errors in specifications, descriptions, etc., would be eliminated, invoices would be extended with delivery, prices, etc.

An alternate proposal was then discussed whereby the commercial warehouse distributors would be employed to handle the complete redistribution job. Lt. Col. Peterka stated he felt the warehouse distributors were preeminently qualified to do this work since it was "down their alley" of "every day" business. He felt that they have an excellent knowledge of markets, and, as new usages were opened up through relaxation of present M and L limitation orders, the warehouses would be "Johnny on the Spot" to get the business. Lt. Col. Peterka exhibited a chart portraying the functions of the commercial warehouse distributors in such a proposed set up. In brief, it envisaged the establishment of government "storage reservoirs" to which all idle surplus material would be moved from contractors' plants. The commercial warehouse distributors (total of 29 including branches) would then draw on these reservoirs as quickly as they could move material into usable channels. They would receive an adequate compensation for such surpluses received from storage reservoirs commensurate with that which they normally receive in established practice. It is contemplated that as many orders as possible will be referred to those commercial warehouse distributors engaged in the redistribution of government-owned property, without upsetting the production facilities of the producing industry.

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Mr. Silver of Whitehead Metals Company stated he felt the warehouse plan as outlined was entirely feasible and workable.

It was pointed out by Captain DeMuth that about ten days ago the Air Service Command had agreed to the use of Air Service Command Depots for storage reservoirs as discussed above.

The concensus of the meeting, however, was that such a plan was incumbent on the establishment of government "storage reservoirs" and that, therefore, it did not meet the desire for a plan that could be put into immediate operation. It was felt that the plan submitted by Mr. Wilder could be inaugurated immediately and should be given a trial with the full recognition that it was in many respects a pioneering effort.

The meeting was adjourned at 4:30 PM.

Lt. Colonel A. E. R. Peterka
Chief, Materials Distribution Branch

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APPENDIX NO. 2

INTER-OFFICE MEMORANDUM

Lt. Colonel A. R. Peterka
mw:90-M Tel. 2-9220

9 February 1944

TO: Colonel W. R. Herod
Acting Chief, Resources Control Section

SUBJECT: Revision of Existing Contracts with Aircraft Hardware Warehouses.

1. In order to effectively redistribute surplus stocks of aircraft hardware it is recommended that the necessary steps be taken to change existing contracts with official aircraft hardware warehouses whereby ASU (Army Air Forces and Bureau of Aeronautics) would sell to them surplus stocks on a consignment basis.

2. The warehouses would resell (redistribute) material at current published market prices and be paid a commission on gross sales of 20%.

3. Arrangements would be made whereby a Resident Army and/or Navy Inspector would be assigned to the official warehouses to assume responsibility for receiving and shipping inspection of material.

4. An explanation of the current contract arrangement may be desirable at this point:

a. The official aircraft hardware warehouses were established pursuant to verbal orders of General Echols and Admiral Davidson about October 1942. At that time the objective was to have strategically located experienced established hardware warehouses that would carry minimum stocks for the relief of critical shortages; ASU to assume the responsibility of helping them secure the minimum stocks. In turn they agreed to sell the material under controls set up by ASU whereby they would not sell more than certain stipulated quantities to any one customer in a given period of time. The Army Air Forces gave each of them a contract, guaranteeing their inventory against loss up to $600,000 in the event of a sudden termination of the war, or sooner by mutual agreement of the parties concerned.

b. Three warehouses were selected by a vote of the aircraft industry, namely:

(1) Aircraft Hardware and Manufacturing Company, Bronx, New York.
(2) Supply Division, Inc., St. Louis, Mo.
(3) Ducommon Metals and Supply Company, Los Angeles, California.

c. Within the last few months the contract with Ducommon Metals and Supply Company has been cancelled by mutual consent and the Union Hardware and Metals Company of Los Angeles is being considered to replace them.

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To: Colonel W. R. Herod
Subject: Revision of Existing Contracts with Aircraft Hardware Warehouses.
Date: 9 February 1944
From: Lt. Colonel A. L. R. Peterka

d. With the change in economic conditions the purpose and objective of the warehouses has changed, resulting in the existing contract being ineffectual for the existing conditions. Where originally it was intended that they carry minimum stocks obtained from producing mills for the relief of critical shortages, they are now expected to redistribute huge surplus stocks in order to dispose of them for production. These warehouse distributors are permanently qualified to do this redistribution job most effectually, having been in that business for many years prior to the war. They know the markets and have the necessary personnel for maintaining stocks and have an effective sales force.

e. Under the present contract they are being asked to carry far in excess of the $600,000 inventory which was satisfactory for "minimum" stocks. A request has gone to the Procurement Division recommending an increase in the contracts from $600,000 to $1,500,000. This in itself, however, does not solve the problem. During the past six months we have entered a period of falling price markets. When the original contracts were consumated the critical materials situation was so severe that availability was the problem, and not price. Today the market price very definitely affects the efficiency of our redistribution system. In our contract arrangement with the official aircraft hardware warehouses it has been arranged by consent of both Army Air Forces and Bureau of Aeronautics that the warehouses shall purchase aircraft hardware from surplus stocks at 20% below current published market prices. However, if the market price drops subsequent to a purchase the warehouse distributor takes a loss on the sale of unsold inventory. For example: If an official warehouse distributor had purchased $600,000 worth of surplus hardware 60 days ago, which the market was $10.00 a thousand he would have purchased the $600,000 worth at $8.00 per thousand ($10.00 less 20%). The market price today is $6.00 a thousand. In order to be competitive he must sell at the same figure as that at which he bought and assume the loss incurred by that amount which it cost him to effect the purchase, receive and unpack the material, inspect, repack, store, sell, ship, bill, etc., etc.

f. The irony of the situation is that if he does not sell the material his contract guarantees that it will be taken off his hands at no loss to him in the event of termination of the war or the cancellation of the contract for other reasons.

g. It is possible to modify the existing contract by increasing the guarantee beyond the present $600,000 to some amount such as $1,500,000. (This is in the works). If, in addition, some provision is made whereby the warehouse distributors can be made competitive in the event of a market drop by a form of credit memorandum adjustment for the drop in market price, such

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To: Colonel T. R. Herod
Subject: Revision of Existing Contracts with Aircraft Hardware Warehouses.
Date: 9 February 1944
From: Lt. Colonel A. E. R. Peterka

a credit could be either in the form of cash or as a credit against future purchases.

It is felt, however, that the simplest means would be to arrange a consignment basis, cancel our existing contract, and in so doing gain ownership of their existing inventory purchased from surplus stocks; their inventory and further shipments of surplus stocks to be on a consignment basis with a commission of 20% paid on gross sales. Obviously any system under which these warehouses operate requires that the inventory of materials obtained from surplus stocks be segregated from those stocks which the warehouse must purchase from producing mills in order to maintain a balanced inventory.

h. A third alternative arrangement would be to put the official hardware warehouses on a "Management Fee" basis, whereby the Government would pay them a flat management fee based on the volume of goods they redistributed.

i. INSPECTION. The matter of inspection is covered by a separate agreement concurred in by both the Army Air Forces and Bureau of Aeronautics. The aircraft hardware warehouses cannot sell hardware to an aircraft contractor unless the shipment is accompanied by an official certification of quality.

The material which has become surplus in a contractor's plant was originally inspected at the producing mill and a certification accompanied the material to the contractor's plant where the material was again inspected. Obviously at the time of receipt of the material the contractor expected to use it, and in many cases unpacked shipments of identical materials from various vendors and consolidated them in his stock bins. In some cases the material may still be in its original packages, permitting identification by producing source; however, even in the latter case it has been found that original certifications are no longer available. The Services recognized that the material had been officially inspected at least twice (at producing mill and at contractor's plant) and arrangements are in effect whereby the cognizant Army and/or Navy Inspector will inspect the material and see that it has not been damaged or spoiled while in storage prior to shipment to an official warehouse distributor and he forwards a blanket certification with the material which the warehouse distributor uses when redistributing the material.

The fact that a shipment of hardware is accompanied by such a certification carries with it no assurance that the receiving contractor's inspection department will accept the material. For example: An official warehouse distributor may have purchased 500,000 bolts from contractor "A"'s surplus stock. He may ship 100,000 of these bolts to Curtiss Wright where it is accepted and

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To: Colonel A. R. Hood
Subject: Revision of Existing Contracts with Aircraft Hardware Warehouses.
Date: 9 February 1944.
From: Lt. Colonel A. E. R. Peterka

another 100,000 to Bell Aircraft where it is accepted, then ship 100,000 to Glenn L. Martin who may reject it. The fact that all shipments were accompanied by a certification does not prevent Glenn L. Martin's receiving inspectors from rejecting the material.

Had the warehouse distributor purchased this material from the producing mill he could return it to the producing mill and receive credit or the producing mill would send their sales engineer to Glenn L. Martin to make the shipment stick, if possible. When the warehouse distributor purchases from surplus stock he is "stuck" with any material that is rejected unless he can reship it to someone else who will accept it. Even then he must bear the shipping cost for the return of the material.

That is why it is proposed that in the large scope of the new program a Resident Army or Navy Inspector be assigned to these official warehouses. These men would then inspect the material upon its receipt and when it is shipped, and assume the responsibility of making it stick.

i. SCRAP DISPOSAL. It is recognized that the warehouses may be asked to accept material which is extremely "slow-moving" or which may become obsolete. In order to keep the warehouses from becoming cluttered up with material of this nature a check would be made periodically and any material which had not moved in "Y" period of time would be declared scrap upon the recommendation of the warehouse management and the concurrence of the Materials Distribution Branch of ASU.

k. ACTION NOW. New prints covering standard AN bolts are being prepared now which will obsolete by January 1945 practically all AN bolts now in stock.

Unless some fast action along one of the above or other similar lines is taken immediately, the AAF will surely get stuck badly and material which can be diverted into production this year will become scrap.

A. E. R. PETERKA
Lt. Colonel, Air Corps
Chief, Materials Distribution Branch

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February 16, 1944

Col. W. E. Rawlings
Aircraft Scheduling Unit,
Dayton, Ohio

Re: A - Redistribution of Surplus Aircraft Material through Prescribed Warehouses.
B - Contemplated revision of existing contracts with aircraft Warehouses.

Dear Sirs:

We have received the February 9th report of the progress of the Aircraft Scheduling Unit program for the redistribution of surplus aircraft material.

This warehouse has been in active operation for the last five months, during which time we have been able to get a fairly accurate picture as to the reactions of the various aircraft manufacturers to this program. Originally this warehouse was set up to take care of the critical shortages of the various aircraft manufacturers. At the outset, sales were small, due to the fact that our customers called us to fill small momentary shortages.

Our experience from the standpoint of the buying up of surplus stocks of various aircraft manufacturers have not be unlike those of our associates. In general, we have found that it has been very difficult to pick up surplus stocks, owing partially to the inaccuracy of such stock lists and partially to the difficulty in arriving at a mutually desirable price.

Today, from our point of view, the outlook has changed greatly. Due to the strenuous merchandising efforts of the Aircraft Scheduling Unit in educating aircraft manufacturers to buy from surplus stock whenever possible, we find that we are now getting inquiries, not for small critical shortages, but for items to fill large basic contracts.

During the last three months, the aircraft hardware industry has been in a period of decreasing prices. On file with the Aircraft Scheduling Unit are records of transfers of stock into this warehouse which have been effected by these price changes. If these price changes continue, the difficulty of straightening out the value of the warehouse stock at the termination of the contract will be almost insurmountable.

This is one of the reasons why we are strongly in favor of the recommendation that the current warehouse contract be revised to the extent that official aircraft hardware warehouses would be authorized to carry surplus stocks on a consignment basis. Under this plan, we believe

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COPY -2- Feb. 16, 1944

Col. E. E. Rawlings --

that all of our current difficulties would be surmounted. We understand that there is a possibility that the contract will be increased to $1,500,000. Our past experience has proven the impossibility of obtaining private financing for this venture, except under prohibitive terms and conditions. The consignment method would obviate the necessity for such financing.

We feel also that the consignment procedure would centralize surplus stocks more completely, thus clearing out existing scattered materials, placing them within convenient reach of the prospective buyer. Our warehouse stock would be larger and more complete, and the problem of pricing would be nonexistent.

Very truly yours
AIRCRAFT HARDWARE MFG. CO., Inc.

(s) O. Mazzei

/t/ O. Mazzei

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AAFMC-265-A-WF-8-28-42-750M

INTER-OFFICE MEMORANDUM

ARMY AIR FORCES
MATERIEL COMMAND
Office of The Commanding General

Lt. Col. J. M. Delaney
wf-
Wright Field, Dayton, Ohio
Date 28 February 1944

TO: Brig. Gen. A. E. Crawford
Chief of Staff
Materiel Command

SUBJECT: Disposal of Surplus Aircraft Hardware

1. The proposals for the disposal of surplus aircraft hardware advanced by Lt. Col. Peterka, Resources Control Section, were reviewed with Procurement Division and Judge Advocate General on Monday, 28 February 1944.

2. The consensus of the conference was that the Army Air Forces cannot consign Government property to private warehouses for resale by the warehouse operator.

3. The conference further developed the point that the Army Air Forces had no method of purchasing contractors' surplus property on Fixed Price Supply Contract which were not in the process of termination as such purchases would, in effect, result in the Army Air Forces bailing out the Fixed Price Supply Contractor on over-purchases, either as to purchases beyond contractural requirements of purchases beyond immediate production requirements.

4. It was therefore concluded that the only feasible method of handling the problem was to revise the present existing contracts to provide a guarantee against contract termination, obsolescence or falling markets of $3,000,000, instead of the present guarantee of $600,000. The provision of the guarantee against falling markets is not covered in present contracts. The increased guarantee is necessary due to the magnitude of the present problem.

5. Lt. Col. Peterka, in collaboration with Capt. Somers, Procurement Division, is drafting an Authority for Purchase covering the proposed method of operation for approval by Chief, Procurement Division, Chief, Production Division, and Judge Advocate General's Office, prior to submission to the Commanding General, Materiel Command, for submission to the Assistant Chief of Air Staff, M.M.&D.

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6. This memorandum was prepared to acquaint you with the progress of this problem.

J. M. DELANEY
Lt. Colonel, A.C.
Comptroller
Wright Field

Signature .....

cc - Lt. Col. A.E.R. Peterka
Capt. E. H. Demuth

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Desk File -
Y-elw
Supply Division, Inc.
Robertson, Mo.

AFOAB:HJB

10 March 1942

Disposal of Surplus Government Owned Aircraft Hardware and Specified Components.

Commanding General, Army Air Forces
Asst. Chief of Air Staff, M&S
Chief, Resources Division
Washington, D. C.

THRU: Asst. Chief of Air Staff, M&S
Control Office
Attn: Lt. Colonel C. H. Dyson

1. The Army Air Forces, during October 1942, established three strategically located official aircraft hardware warehouses, which were given A.A.F. contracts guaranteeing inventories against loss up to $500,000 due to obsolescence or in the event of the termination of the war, or sooner by mutual agreement. These warehouses include:

a. A. C. Contract AC097 - Ducommun Metals & Supply Co., Los Angeles, California

b. A. C. Contract AC098 - Aircraft Hardware Mfg. Co., Bronx, New York

c. A. C. Contract AC099 - Supply Division, Inc. St. Louis, Missouri

2. The warehouses were developed per Major General Echols' verbal instructions to carry minimum stocks for the relief of critical shortages. The Aircraft Scheduling Unit aided in securing minimum stocks and in turn limited the sales to stipulated quantities to any one contractor during a given period of time.

3. The functions of the Aircraft Hardware Warehouses are currently undergoing a change due to increased hardware production capacity and existing surplus stocks.

a. Increased productive capacity is currently resulting in declining market prices.

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[illegible] (13 [illegible])

SUBJECT: Disposal of Surplus Government-Owned Aircraft Hardware and Specified Components.
TO: Ass't Chief of Air Staff, M&D, Chief, Resources Division.
DATE: 10 March 1944.

b. Surplus stocks are increasing and must be redistributed to insure maximum utilization of such surplus in the war effort.

4. The present A.A.F. contractual agreement with the warehouse operators does not protect such operators against declining market prices and also, does not provide sufficient funds to handle the necessarily greater volume necessitated by such surplus stock.

5. Materiel Command personnel, in discussion with Aircraft Hardware Warehouse operating personnel, Aircraft War Councils and the Aircraft Scheduling Unit, have developed two proposed methods of operation.

First Plan: The warehouse operator will purchase Government-owned surplus stocks (Army and Navy, if the latter so desires) at current market price less trade discount, etc., and redistribute at current market price, as established by the Aircraft Scheduling Unit. The A.A.F. will increase the guarantee to warehouse operators against obsolescence and termination loss on inventories from the present $600,000 to $3,000,000 which will provide greater working capital, and the [illegible] will also include a guarantee against declining price markets. Operational details for this plan (proposed to be instituted on an experimental basis on A. A. F. Contract No. 40098) are attached as Appendix No. 1.

Second Plan: The A. A. F. will "consign" Government-owned property to the warehouse operators for redistribution with the warehouse operators paid a monthly management fee or sales commission. The legality and operational procedures for this method, however, are questionable and hence subject to further study. It presently appears, therefore that the plan outlined under "First Plan" is the logical one to be given consideration.

6. Under the above plans, it will be necessary to assign A.A.F. or Navy resident inspectors at each warehouse involved, to inspect incoming surplus stocks and to issue inspection certificates on warehouse sales from such surplus stocks. This requirement will offer no particular difficulty.

7. The proposal listed under "First Plan" above has been cleared

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SUBJECT: Disposal of Surplus Government Owned Aircraft Hardware and Specified Components.
TO: Ass't. Chief of Air Staff, M'&D, Chief, Resources Division.
DATE: 10 March 1944.

by the Judge Advocate of this Command from a legal position. Project 110 funds can be obligated for the increased guarantees if authorized by M&D but the rapidity of withdrawals cannot be estimated with any degree of accuracy. The amount of withdrawals, will, of course, fluctuate with current market prices and volume of hardware moved.

8. It may be that the proposed National Recoveries Corporation will eventually be the logical agency to administer hardware warehouses. The problem, however, is an immediate one and will not justify any appreciable delay in commencement of operations should this problem be referred to the National Recoveries Corporation. It is recommended therefore that the basic problem covering the disposition of surplus aircraft hardware be referred to the Under Secretary through General Echols for a decision as to whether the Secretary's office desires the Air Forces to proceed along the lines proposed in the "First Plan" above.

9. It is highly desirable that a decision be reached on this question at the earliest possible date and this Command informed of the decision agreed upon in order that such plans and actions as are necessary by the Materiel Command in furtherance of the Secretary's decision may be promptly initiated.

CHAS. E. BRERETON
Major General, U.S.A.
Commanding

Att:
Appendix No. 1

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AFDRS-4

FILED
AAF #13

w/18 April 1944
Capt. J. K. Ebbert/jmp/71864

X700.703 Hq

21 APR 1944

SUBJECT: Disposal of Surplus Government Owned Aircraft Hardware and Specified Components

TO: Commanding General
Material Command
Wright Field
Dayton, Ohio

1. Reference is made to your letter dated 10 March 1944, subject as above, to the Commanding General, Army Air Forces, Assistant Chief of Air Staff, M&AB, Chief, Resources Division.

2. It is understood that the Surplus War Property Administration and the Reconstruction Finance Corporation have agreed in principle, to undertake the financing of this program, by accepting accountability and responsibility for the hardware and furnishing it to the warehouses on a "consignment" basis. This is in accordance with the general theory outlined in the "Second Plan" described in paragraph 3 of your letter.

3. Mr. W. L. Clayton, Administrator, Surplus War Property Administration, has appointed a committee representing the AAF, Bureau of Aeronautics, War Production Board and the Reconstruction Finance Corporation to study the entire warehouse method of redistribution. This committee is known as the Rawling's Committee since Colonel W. W. Rawlings is the Chairman, and it has had its first meeting to study the plan and work out the details. Additional meetings are contemplated before the announcement of findings.

4. If the Reconstruction Finance Corporation assumes this responsibility, it will preclude the necessity for any action on the part of the Army Air Forces regarding this matter.

5. It is the opinion of this office that, as a matter of general policy, it would be desirable for the Army Air Forces to have the Reconstruction Finance Corporation assume this responsibility. It is recognized, however, that the Rawling's Committee is established to make recommendations in this connection.

By command of General ARNOLD:

FREDERICK M. HOPKINS, JR.
Redistribution & Salvage Officer
Army Air Forces
Brigadier General U.S.A.

OFFICE SYMBOL	1		3	
SIGNATURE OF RESPONSIBLE OFFICER	Samuel Ebbert			
INTERNAL OFFICE COORDINATION				

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May 3, 1944

The attached Memorandum of Understanding dated May 3, 1944, between the Army Air Forces, Bureau of Aeronautics, Aircraft Scheduling Unit and Metals Reserve Company is hereby approved.

The War and Navy Departments and Metals Reserve Company are hereby authorized to handle all property of the type covered by the attached Memorandum of Understanding, or which may hereafter be covered thereby, in accordance with the procedures therein set forth.

/s/ W. L. Clayton
William L. Clayton
Surplus War Property Administrator

Dated: May 3, 1944
Washington, D. C.

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Report to Surplus War Property Administrator of Committee Appointed to Consider Methods for Redistributing Surplus Government-Owned Material in Aircraft Contractors' Plants.

A large amount of idle aircraft material has accumulated, and will continue to accumulate at an accelerated rate, in aircraft contractors' plants. This material has become idle chiefly by reason of (a) terminations and cut-backs, (b) design and engineering changes, and (c) purchases by the contractors which turn out to be excessive due to increased efficiency, decreased spoilage or for other reasons. A great deal of this material can be put to further use within the aircraft industry if an effective means can be found to redistribute it during the present period of large-scale aircraft production.

In the past, redistribution efforts, conducted under the supervision of the Aircraft Scheduling Unit, have been largely directed to arranging inter-contractor sales or transfers on a retail basis. Experience has indicated, however, that such inter-contractor arrangements provide only a partial solution of the problem, and that effective redistribution within the industry of large amounts of material requires action on a wholesale basis.

Commercial warehouse distributors, which constitute the normal channels of distribution of a large part of the property involved (such as aluminum, steel, copper, aircraft hardware and certain standard components), have indicated their willingness to aid in the redistribution program by stocking their warehouses from idle stocks, if they can secure such stocks from the Government on a basis comparable to the terms upon which they now secure their stocks from producers. Representatives of the major industries producing such materials have indicated their approval of this method of redistribution. The Committee believes that

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such a program would be the most effective possible method of redistributing the idle property in question. It may be necessary to implement the proposed program at a later date by a WPB order directing aircraft contractors to place their orders through necessary channels to effect the redistribution of these surplus materials. The Committee believes, however, that adoption of the program need not await a final decision by WPB as to the time and form of such a directive.

In order to accomplish the foregoing objective, a Memorandum of Understanding between the Army Air Forces, Bureau of Aeronautics, Aircraft Scheduling Unit and Metals Reserve Company has been informally agreed upon, a copy of which is attached hereto. This Memorandum of Understanding contemplates that the Aircraft Scheduling Unit, acting as agent for the Army Air Forces and the Bureau of Aeronautics, will secure lists of aircraft materials of the type covered by the Memorandum of Understanding which are excess to the contractual requirements of the contractors in whose plants the materials are located and to which the Government has either title or a contractual right to acquire title. Any of such material not needed by Air Services Command or Aviation Supply Office and not transferred to another aircraft contractor for some specific productive use will be reported by Aircraft Scheduling Unit to a designated agent of Metals Reserve Company. Metals Reserve Company will enter into Agency Agreements with industry distribution channels to act as its distribution agents. Such distribution agents will agree to handle and sell, as agents for Metals Reserve Company, material allocated to them, in consideration of reasonable compensation based upon the value of the services rendered. When material is reported as surplus by Aircraft Scheduling Unit, as agent of the Army Air Forces and the Bureau of Aeronautics, the agent of Metals Reserve Company to whom

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the report is made will allocate the material to one or more distribution agents, who will then issue shipping instructions therefor. Any materials for which shipping instructions are so issued will be shipped on Government bills of lading issued by the Army Air Forces or the Bureau of Aeronautics to the distribution agent, as agent for Metals Reserve Company, and title to the material will vest in Metals Reserve Company upon delivery thereof to its agent.

In order to put into operation the procedures set forth in the Memorandum of Understanding, it will, of course, be necessary for the Army Air Forces and the Bureau of Aeronautics to have their contractors compile an accurate list and physically segregate the idle material in their plants. In the case of property becoming idle as a result of terminations, which will be an increasingly large part of the problem, this step is necessarily taken as a part of the termination process. In order, however, to reduce the property disposition problem presented on termination, and to get as much idle property as possible back into production at the earliest possible moment, it is essential that action be taken to redistribute idle property prior to termination. To this end, aircraft contractors have been requested by Mr. C. E. Wilson, Chairman of the Aircraft Production Board, to take a physical inventory of the idle property now in their plants and to segregate all such property. The aircraft contractors have expressed their willingness to undertake this task and many of them have already begun to do so.

It will also, of course, be necessary for the Army Air Forces and the Bureau of Aeronautics to determine the ownership of the idle property, since the proposed redistribution program is applicable only to Government-owned property. Title to all of the idle property acquired for the performance of a CPFF contract is, of course, in the Government. Similarly, the

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Government has title, or a contractual right to acquire title, to property bought for the performance of fixed price contracts and made idle by reason of a termination, cut-back, or an engineering or design change, except where the termination settlement or the contractual adjustment reflecting the change was based on the retention of the idle property by the contractor and the allowance to the Government of the salvage value thereof. In the latter case, the property is owned by the contractor. Similarly, property made idle by reason of over-purchases by fixed price contractors is contractor-owned. In a large number of situations, it will not be clear whether the idle property is Government-owned or contractor-owned, and in such cases, a settlement with the contractor will have to be negotiated by the Army Air Forces or the Bureau of Aeronautics, whichever has cognizance of the plant in which the property is located. It is believed that, after such settlements have been negotiated, the amount of idle property determined to be contractor-owned and to which the Government has no immediate right to acquire title, will be so small in relation to the property now known to be, or determined as a result of such settlements to be, Government-owned as not to endanger the success of the redistribution program. Under the redistribution program, no determination of ownership as between the Army and the Navy will be necessary.

If the Surplus War Property Administrator approves the attached Memorandum of Understanding, such Memorandum will be presented to the appropriate officials for signature. The Committee recommends that when such Memorandum of Understanding is so signed, the Surplus War Property Administrator authorize the War and Navy Departments and Metals Reserve Company to handle aircraft material of the type now covered or which may hereafter be covered by the

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Memorandum of Understanding in accordance with the procedures therein set forth. A suggested form of directive for the signature of the Surplus War Property Administrator is attached for this purpose.

Respectfully submitted

/s/ E. W. Rawlings
E. W. Rawlings
Colonel, Air Corps
Chairman

/s/ Robert Stopford
Robert Stopford
Lieutenant Commander, U.S.N.R.

/s/ H. W. Cornell, Jr.
H. W. Cornell, Jr.
Assistant Vice President
Metals Reserve Company

/s/ H. Wilson
Herschel Wilson
Redistribution Division
War Production Board

Dated: May 3, 1944
Washington, D. C.

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MEMORANDUM OF UNDERSTANDING

This Memorandum of Understanding shall constitute an Agreement between Army Air Forces (hereinafter referred to as "A.A.F."); Bureau of Aeronautics (hereinafter referred to as "BuAer"); Aircraft Scheduling Unit (hereinafter referred to as "A.S.U.") and Metals Reserve Company (hereinafter referred to as "M.R.C.") when signed by the authorized representative of each and approved by the Surplus War Property Administrator (hereinafter referred to as "S.W.P.A.").

Wherever reference is made to "Material" herein it shall mean all material of the type listed in Exhibit A hereto which is located in the plants of contractors or sub-contractors of the A.A.F. or BuAer. Additional materials may be added to this list from time to time by mutual agreement of the parties hereto, and without further approval by the S.W.P.A.

A.A.F. and BuAer will proceed as expeditiously as possible to arrange for their contractors physically to segregate Material which is excess to the contractual requirements of the particular contractors involved.

A.A.F. and BuAer, upon such segregation, shall determine to which of said Material the Government has title or a contractual right to acquire title (such portion of the material hereinafter being referred to for convenience as "Government-owned Material"). A.A.F. and BuAer shall further take such steps as may be necessary to determine as to said Government-owned material that portion which may be usable and that portion which is scrap. In this connection, A.A.F. and BuAer may call upon M.R.C. for advice in their determination as to whether certain Material is usable or scrap. A.A.F. and BuAer will cause such Government-owned Material as is determined to be usable pursuant to said inspection to be reported to A.S.U. on appropriate inventory report forms. A.S.U., as Agent for both A.A.F. and BuAer, will then offer such material to the Air Service Command and Aviation Supply Office. Air Service Command and Aviation Supply Office shall be given a limited period from the date of offering to accept any Material desired by them for use. Such Material as may be accepted by Air Service Command or Aviation Supply Office shall be deleted from the inventory report by A.S.U. In addition, if some specific productive use for the Material by some other aircraft contractor is known to A.A.F. or BuAer, a direct arrangement for the sale or transfer of the Material to such other contractor will be made by the A.A.F. or BuAer. The balance of said Material shall be reported as surplus by A.S.U., as Agent for A.A.F. and BuAer, to Murray Cook, Agent for M.R.C., 155 East 44th Street, New York 17, New York. Such report shall be in such form as may be agreed upon between M.R.C. and A.S.U. After such report has been made, A.A.F. and BuAer will not permit any use or movement of the Material reported except in accordance with shipping instructions issued by an Agent of M.R.C. as hereinafter provided, or after clearance from Murray Cook as Agent for M.R.C.

M.R.C. will enter into appropriate Agency Agreements with the industry distribution channels through which such material usually flows (hereinafter referred to as "Distribution Agents") for the handling and sale of the Material, all sales to be made in accordance with applicable orders and regulations of the

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Office of Price Administration and the War Production Board. Such Agency Agreements will provide for compensation to the Distribution Agents based on the services to be rendered. The Distribution Agents will be authorized by M.R.C. to issue shipping and packing instructions on its behalf, and will invoice and collect for Material sold by them.

It shall be the duty of Murray Cook, as Agent for M.R.C. to allot to the aforesaid Distribution Agents such of the Material as it is possible for the Distribution Agents to accept. The Distribution Agents, upon receiving allocations of the Material, will issue appropriate shipping and packing instructions to the A.A.F. or BuAer office or officer designated by A.S.U. to receive such instructions. Distribution Agents may arrange sales and shipments of Material direct from the contractors' plants. Other Material will be moved directly to the Distribution Agents for warehousing and disposal in the ordinary course of the Distribution Agents' business. In either event, shipments will be made from the contractor's plant on Government Bills of Lading, consigned to the Distribution Agent, as Agent for M.R.C., at the address specified in the shipping instructions. Title to Material shipped shall vest in M.R.C. upon delivery of the Material to the consignee. Arrangements for the storage of such Material reported to Murray Cook but not allocated by Murray Cook shall be the responsibility of A.A.F. and BuAer.

Periodic inspections will be made by representatives of M.R.C., and A.A.F. and/or BuAer of all reported surplus Material which has not, within a reasonable time, been allocated to a Distribution Agent, or, if allocated, has not been disposed of by such Distribution Agent, in order to determine whether such Material shall be declared scrap. Whenever it is determined that such Material shall be scrapped, disposition shall be made by the Agency then having title to the Material in accordance with the policies established by the S.W.P.A.

All net proceeds derived from the sale of Material, title to which has vested in M.R.C., shall be held by M.R.C. in appropriate accounts subject to further arrangements between the appropriate Government Agencies.

/s/ B. E. Meyers
B. E. Meyers
Major General, U.S.A.
Deputy Assistant Chief of Air Staff
Material, Maintenance and Distribution

/s/ E. W. Pace, Jr.
(for) Lawrence B. Richardson
Rear Admiral, U.S.N.
Bureau of Aeronautics

/s/ E. W. Rawlings
E. W. Rawlings
Colonel, Air Corps
Aircraft Scheduling Unit
Administrator

/s/ H. W. Cornell, Jr.
H. W. Cornell, Jr.
Assistant Vice President
Metals Reserve Company

Dated: May 3, 1944
Washington, D. C.

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EXHIBIT "A"

LIST OF MATERIALS

A. All primary forms of the following metals:
   1. Aluminum and aluminum base alloys.
   2. Copper and copper base alloys.
   3. Steel (including carbon, alloy, stainless and tool steels).

B. Standard items of aircraft hardware and components as represented by the following list:
   1. Bolts, nuts, pins, and screws.
   a. Hex. hd. bolts. Specifications: AN-3 through AN-10.
   b. Clevis bolts. Specifications: AN-21 through AN-36.
   c. Eye bolts. Specifications: AN-42 through AN-49.
   d. Hex. Hd. bolts. Specifications: Air Corps Drawing No. 60. Air Corps Drawing No. 65.
   e. Drilled Hex. Hd. bolts. Specifications: AN-73 through AN-81.
   f. Close tolerance bolts. Specifications: NAS-53 through NAS-60. NAS-62 NAS-64 NAS-66.
   g. Phillips Hd. bolts. Specifications: NAS-200 NAS-209.
   h. Frearson Hd. Bolts. Specifications: NAS-201 NAS-208.
   i. Nuts Specifications: AN-310. AN-315 AN-316, AN-320 Air Corps Drawing No. 325. Air Corps Drawing No. 330, Air Corps Drawing No. 335. AN-340. An-345. AN-355. AN-360. AN-365.
   j. Cotter pins. Specifications: AN-380.
   k. Taper pins. Specifications: AN-385, AN-386.
   l. Clevis pins. Specifications: AN-392 through AN-400. AN-402. AN-404. AN-408.
   m. Screws. Specifications: Air Corps Drawing No. 500, Air Corps Drawing No. 501. AN-502 Air Corps Drawing No. 503. AN-503. AN-510, AN-515, AN-520 Air Corps Drawing No. 525, AN-526, Air Corps Drawing No. 530, Air Corps Drawing No. 531. AN-535, Air Corps Drawing No. 540, AN-545, AN-550, Air Corps Drawing No. 560, Air Corps Drawing No. 565, Air Corps Drawing No. 566, Air Corps Drawing No. 570, MAF-1164, MAF-1175, MAF-1176, MAF-1177, MAF-1178, MAF-1193.
   n. Phillips Hd. screws, Specifications: 4234937 through 4234945. 4234946, 4234947, 4275184,
   o. Frearson hd. screws. Specifications: 4235700, 4235701, 4235702 through 4235711.
   2. Turnbuckle assemblies and parts. Specifications: AN-130, AN-135, AN-140, Air Corps Drawing No. 150, AN-155, AN-160, Air Corps Drawing No. 160, Air Corps Drawing No. 161, AN-165, AN-170, MAF-1084.
   3. Rod end adjusting clevis. Specifications: AN-665.
   4. Threaded clevis type tie rod terminals. Specifications: AN-665.
   5. Swaged cable terminals. Specifications: AN-666 through AN-669.
   6. Dzus fasteners or equivalent. Standard or Equivalent Catalog Parts Only. (No special drawing parts to be incl.).

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EXHIBIT "L" cont'd.

7. Elastic stop nuts or equivalent. Standard or Equivalent Catalog Parts Only. (No special drawing parts to be incl.).
8. Boots self-locking nuts or equivalent Standard or Equivalent Catalog Parts Only. (No special drawing parts to be incl.).
9. Aircraft valves ("Parker", "Weatherhead", etc.) Standard AN, AC, and NAF part numbers only, but not including oxygen valves or high pressure valves.
10. Aircraft fittings ("Parker", "Weatherhead", etc.). Standard AC 811, AN and NAF part numbers only.
11. Spencer thermostats. Standard NAF and manufacturers catalog numbers, (including specifications).
12. Flexible conduit. Standard AN numbers all sizes.
13. Conduit couplings, Standard AN numbers all sizes.
14. Aircraft switches and circuit breakers. Standard AN numbers or equivalent catalog parts numbers.
15. Plugs (cannon, breeze, amphenol, etc.). Standard AN numbers or equivalent catalog parts numbers only. (No special drawing parts to be included).
16. Connectors, (Cannon, Breeze, Amphenol, etc.). Standard AN or equivalent catalog parts numbers only. (No special drawing parts to be included).
17. Motors (electric). Fractional motors to be $1\frac{1}{2}$ horse. Standard manufacturers catalog numbers.
18. Micro switches, Standard catalog numbers including special drawing parts numbers.
19. Temperature and pressure control bellows. Standard AN, AC and NAF part numbers only.
20. Resisters. Specifications NAF 1099 and standard catalog numbers only. No special drawings to be included.
21. Rheostats and potentiometers. Specifications NAF 1099 and standard catalog parts numbers only. No special drawings to be included.
22. Bearings as listed.
    Guide rollers
    Needle rollers
    Fair-Leads
    Bell cranks
    Rod ends
    A-500
    Metric metal shielded
    Metric felt sealed
    Metric series
    Miscellaneous
    S-K
    S-D
    S-DD
    200S
    Cable and fittings

List Manufacturers name and catalog numbers where AN numbers do not apply.

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23. Tachometer shafts. 2', 4', 5', 7', 8' lengths. Specifications: AN 94-9205 series.
24. Tachometer leads. 10', 15', 35', 40', 50' lengths. Specifications: AN 94 27971.
25. High pressure air valves. "Parker", "Schrader" or "Dill". Specifications: AN 812-1.

DEFINITIONS

1. "Primary form" means those forms in which metals are received from the mill, for example: billets, sheet, tube, bar, wire, standard rivets, standard extruded shapes, etc., (and not including special extruded shapes, castings, or forgings); or mill forms which have been subjected to such fabrication as mills customarily provide upon specification of standard extras (such as cutting to length, tempering, etc.).

2. "Copper base alloy" means any alloy metal in the composition of which the percentage of copper metal by weight equals or exceeds 40% of the total weight of the alloy; for example, brass, bronze, nickel-silver, etc.

3. "Aluminum base alloy" means any alloy metal in the composition of which the percentage of aluminum metal by weight equals or exceeds 50% of the total weight of the alloy; for example, Alcoa alloy No. 3509-2108, etc.

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AGENCY AGREEMENT

This Agreement dated _____, 1944 made and entered into by and between _____ of _____, (hereinafter referred to as "Distributing Agent") and Metals Reserve Company, a corporation created pursuant to Section 5d of the Reconstruction Finance Corporation Act, as amended, of 811 Vermont Avenue, N. W., Washington 25, D. C. (hereinafter referred to as "MRC").

WITNESSETH:

WHEREAS, Army Air Forces, Bureau of Aeronautics and Aircraft Scheduling Unit (hereinafter collectively referred to as "ASU") have entered into an arrangement whereby MRC undertakes to arrange for the redistribution of certain Government owned aircraft material now, and hereafter to become surplus in the plants of aircraft manufacturers; and

WHEREAS, MRC in its efforts to redistribute such material, deems it to be in the best interest of the Government to avail itself of the normal facilities of industry in redistributing such material and the distribution industry is agreeable to assist MRC in such efforts.

WHEREAS, pursuant to the aforesaid arrangement, ASU will cause inventory lists of surplus aircraft material owned by the Government to be collected and submitted to Murray Cook, Agent for MRC, 155 East 44th Street, New York, New York or such other Agent as MRC may designate (hereinafter referred to as "Central Agent"); such lists of material submitted to Central Agent to be classified by Central Agent as to types of material with due regard to geographical regions in relation to the location of material and the location of Distributing Agent, and

WHEREAS, Distributing Agent is regularly engaged in the business of distributing certain of the aforesaid material and has available facilities and personnel to dispose of such and MRC desires to avail itself of the facilities and services of said Distributing Agent in disposing of Government owned surplus aircraft material.

NOW, THEREFORE, in consideration of the premises and the mutual covenants herein contained and of other good and valuable considerations:

I. AGENCY

(a) MRC hereby appoints and makes _____ Distributing Agent for the purposes of receiving, selling, storing, shipping, collecting for sales and paying any adjustment costs in connection with sales, transferring and otherwise dealing with all material handled by Distributing Agent under this Agreement; and _____ hereby accepts such Agency. MRC hereby authorizes Distributing Agent to act on its behalf in all transactions in regard to such Material subject to the terms of this Agreement. MRC hereby represents to all persons dealing with Distributing Agent that it has authority to act as Agent of MRC in all transactions in regard to material covered hereunder.

(b) Distributing Agent agrees to act as Agent of MRC in doing all things necessary in connection with the commercial warehousing, handling and sale of all material received by Distributing Agent under this Agreement and pursuant thereto, and to act, as to such material, with the same care and exercise of diligence and judgment as if the material were Agent's own and to take all necessary and reasonable action with respect to such material to protect the interests of MRC and of the United States Government. In carrying out Distributing Agent's duties and obligations under this Agreement, Distributing Agent agrees to take all reasonable and proper steps to accomplish its express purposes and in all transactions under this Agreement to disclose its Agency. All correspondence and documents in regard to the material handled under this Agreement shall be in the name of Distributing Agent as Agent of MRC.

(c) MRC agrees to hold Distributing Agent harmless from any actions, causes of action, suits, judgments, demands, accountings and claims on account of any matter growing out of or resulting in any way from the discharge of Distributing Agent's duties as Agent pursuant to the provisions of this Agreement which are not the result of negligence or wilful misconduct of Distributing Agent or its employees or representatives. In carrying out the terms of said Agency, Distributing Agent shall

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not be responsible except for negligence or wilful misconduct of its employees, agents or representatives.

(d) It is impossible to detail all the various acts which Distributing Agent may be called upon to perform in discharging the Agency to which MRC appoints Distributing Agent, and, in consequence and without derogating from the authority hereinabove granted, Distributing Agent is authorized generally to do any and all acts, in its name and behalf, which may be deemed by Distributing Agent in its judgment to be reasonably necessary and proper in order to discharge its duties as provided herein, in the course of acting as its Agent for the purpose of receiving, selling, storing, shipping, collecting for sales and paying of any adjustment costs in connection with sales covering the Material hereunder.

(e) Distributing Agent shall keep complete, accurate and detailed records and accounts of all materials handled by this Agreement. Such records and accounts covering transactions involving material handled by Distributing Agent for MRC shall be subject to audit inspection at any time by designated representatives of MRC. With the consent of MRC, an audit by independent public accountants may be made. The cost and expenses in connection with said inspections or audits shall be for the account of MRC.

(f) Distributing Agent agrees that all material received pursuant to this Agreement shall be warehoused by Distributing Agent as Agent for MRC and in the name of MRC and that Distributing Agent will mark and segregate all cases, bundles or packages, keep separate stock records identifying the material as the property of MRC and protect such property in accordance with sound business practice and in accordance with this Agreement, except with reference to the carrying of fire, theft, and other similar insurance which shall be the responsibility of MRC; provided, however, that MRC may instruct Distributing Agent as to the types and kinds of insurance to be carried in this regard, whereupon Distributing Agent agrees to promptly place said coverage in accordance with said instructions and to deduct the premiums therefor in accordance with instructions from MRC and from MRC funds in the custody of Distributing Agent.

II.

In carrying out the terms of said Agency, MRC and Distributing Agent hereby agree on the following procedures which may be modified from time to time by mutual consent of the parties hereto.

A. SHIPMENT OF MATERIAL

(1) MRC will cause Central Agent to furnish Distributing Agent from time to time with appropriate lists of available material adequately described and of the types to be handled by Distributing Agent as described in Exhibit "A" attached hereto (hereinafter referred to as the "Material"). Such lists will describe the Material as to types, sizes, quantities and will contain information concerning the locations thereof. Distributing Agent will examine said lists and select such of the Material as in his opinion may be disposed of by him. It is expected that Distributing Agent will give preference to allotments of such Material in order that the maximum amount of such Material may be moved through these channels.

(2) Distributing Agent, upon receipt of the foregoing lists from Central Agent, may inspect the Material in order to determine whether in his opinion it is acceptable and saleable for distribution. Distributing Agent within ten (10) days of receipt of information as to the availability of the Material agrees to make his selection on the above basis and to issue complete shipping and packing instructions to Central Agent covering the Material so selected. In order that the Government may be in a position to make a decision in respect of Material not so selected by Distributing Agent, it is requested that, as to Material not selected by Distributing Agent, Central Agent be furnished with such information which, in the judgment of Distributing Agent, would be helpful to the Government in deciding on disposition of such unalloted Material.

(3) Central Agent, upon receipt of the aforesaid shipping and packing instructions, will arrange for prompt shipment of the Material covered by the shipping instructions in accordance therewith to the Distributing Agent or its Consignee in accordance with said instructions.

(4) Each shipment of Material will be under Government bill of lading with title vesting in MRC upon receipt thereof by Distributing Agent, therefore, each shipment will be accompanied by Government bill of lading and packing list in triplicate. Said packing list will bear a certification of quality manually signed by an Army or Navy inspector at the point of origin and will contain information as to quantity, nomenclature, types, sizes and applicable Material specifications with serial numbers to assist in the future identification of the shipment. The duties and responsibilities of Distributing Agent with respect

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to Material received under this Agreement shall become effective upon receipt of the Material by Distributing Agent.

B. RECEIPT OF MATERIAL

(1) Upon receipt of the Material by Distributing Agent, Distributing Agent shall inspect the Material and reconcile the aforesaid packing lists and bills of lading with Material actually received, noting on the appropriate document and copies any variations between the Material received and that shown on the bill of lading and/or packing lists. Immediately thereafter, Distributing Agent shall transmit to the shipper one copy of the packing list so receipted with notations (if any) and one copy of said packing list so receipted to the Central Agent.

(2) In the case of shipments direct from shipper to buyer pursuant to Distributing Agent's instructions, Distributing Agent will arrange for said packing lists and bills of lading herein referred to, to be receipted for and on his behalf and in the same manner as required in the case of shipments to Distributing Agent's warehouse.

C. SALES OF MATERIAL

(1) Distributing Agent agrees to use its best efforts to sell for the account of MRC all Material received under this Agreement. MRC represents that it is not liable for sales taxes, storage taxes, purchase taxes, personal property taxes, except Federal transportation taxes, in connection with the transactions covered by this Agency Agreement, and Distributing Agent agrees that it will advise MRC promptly with respect to any attempt to assess or impose such taxes with respect to the Material. All Material hereunder shall be sold by the Distributing Agent in the name of MRC and in accordance with applicable WPB and OPA regulations. Distributing Agent may purchase Material for its own account and such purchases shall be subject to the compensation referred to in Exhibit "B" hereof in lieu of a discount. Distributing Agent shall render an itemized invoice for Material sold to a buyer in the name of MRC and shall forward a copy in duplicate of each such invoice to Central Agent. Material shall be sold at prices authorized by MRC from time to time. Payment for all Material sold shall be collected by Distributing Agent. Distributing Agent may extend credit in accordance with its normal business practice, provided that Distributing Agent assumes all credit risks in connection therewith. Material rejected by customers of Distributing Agent will be disposed of on the recommendation of Distributing Agent, concurred in and approved by Central Agent. In the event of nonconcurrence, disposal of the Material pursuant to instructions from MRC shall be for its account. Copies in duplicate of Credit Memoranda issued customers in connection with rejected Material will be forwarded to Central Agent.

(2) Upon remitting to MRC any amount not collected by Distributing Agent from its customer, Distributing Agent shall be subrogated to the rights of MRC to the extent of the amount paid to MRC by Distributing Agent and not collected by Distributing Agent from its customer.

D. SLOW MOVING OR UNSALEABLE MATERIAL

(1) Distributing Agent shall report to Central Agent from time to time and as he deems it advisable, Material in his custody which is slow moving or which, in his opinion, is unsaleable. Such report shall be accompanied by such comments as he may deem proper together with his recommendations concerning disposition thereof.

(2) Material which Distributing Agent shall deem to be saleable if reworked shall be reported to Central Agent, together with an estimate of the cost of such reworking and, subject to prior written approval of Central Agent, Distributing Agent shall cause such Material to be reworked in accordance with said approval. After reworking MRC will cause the Material to be inspected by an AAF or Navy inspector and upon approval by said inspector, Distributing Agent shall handle the reworked Material as acceptable and saleable Material hereunder. Distributing Agent shall keep an accurate account of Material so reworked and the out-of-pocket expense in connection therewith. All out-of-pocket expense incurred in the reworking of the Material shall be submitted to Central Agent for approval by submitting a supported invoice in triplicate certified by Distributing Agent as to the reasonableness of said expenditure. Upon approval by Central Agent of said invoice, by notation thereon, the original and one copy will be returned to Distributing Agent and such out-of-pocket expense so invoiced and approved may then be deducted from MRC funds in Distributing Agent's custody and reflected in remittances to MRC as hereinafter provided.

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(3) Material which Distributing Agent may deem unsaleable in present form and impossible or economically unsound to rework shall be reported as such to Central Agent and upon concurrence by Central Agent, reclassified by Distributing Agent and disposed of as scrap at the best obtainable prices. Distributing Agent shall keep an accurate account of Material scrapped and so sold and shall be compensated for such sales on the same basis as referred to in Exhibit "B" hereof.

(4) In case of nonconcurrence of Central Agent in Distributing Agent's recommendations RFC agrees to instruct Distributing Agent as to disposal within fifteen (15) days from receipt of a request from Distributing Agent.

E. REMITTANCE FOR MATERIAL

(1) Distributing Agent shall remit to the _____ Loan Agency of Reconstruction Finance Corporation (hereinafter referred to as "RFC Agency") on or before the fifteenth (15) day of each month in full for all Material sold during the preceding calendar month, less:

(a) The amount of all Credit Memoranda issued covering short shipments and Material rejected and returned by customers during the same period.

(b) Compensation due the Distributing Agent as hereinafter described based on the foregoing totals of Invoices as such totals are adjusted by Credit Memoranda.

(c) Costs of reworking or insurance authorized as herein provided or any other expenditures specifically authorized by RFC.

Such remittances shall be accompanied by:

(a) Three copies of a list of Invoices and Credit Memoranda showing Invoice and Memorandum number and amount, the net total amount thereof and the computation of Distributing Agent's compensation.

(b) Two copies of Distributing Agent's Invoice and/or Credit Memorandum covering respectively Material sold and Material which has been rejected and returned to Distributing Agent.

(c) Two copies of Invoice covering costs of reworking, insurance or other expense approved as hereinbefore provided, one copy of which shall bear the approval hereinbefore provided for.

(2) Distributing Agent shall be compensated for its services to be performed hereunder in accordance with the Schedule attached hereto as Exhibit "B" based on the sales price of the Material. Such rate of compensation shall cover a six (6) months' period beginning from the date of this Agreement and shall be subject to review and adjustment as mutually agreed upon with respect to transactions beyond said six (6) months' period. In connection with such review Distributing Agent agrees to furnish RFC with statement of costs of operation for the six (6) months' period covered thereby.

III. CANCELLATION

This Agency may be cancelled by either party, at any time, effective upon receipt of written or telegraphic notice of cancellation by either party, except with respect to Material in transit or in the custody of the Distributing Agent. Material in transit or in the custody of the Distributing Agent upon cancellation will continue to be handled under this Agreement for ninety (90) days after such cancellation. In the event of such cancellation RFC agrees to remove all unsold Material from the premises of Distributing Agent within ninety (90) days of the effective date of such cancellation.

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IV. RENEGOTIATION

This Agreement shall be deemed to contain all of the provisions of subsection (b) of the Renegotiation Act, as amended by Section 701 of the Revenue Act of 1943 (Public Law 235, 78th Congress), enacted February 25, 1944; and in compliance with that subsection Distributing Agent shall insert, in each subcontract (as that term is defined in said Act) entered into by Distributing Agent, a provision that: 'This Contract shall be deemed to contain all of the provisions of subsection (b) of the Renegotiation Act, as amended'.

V. EMPLOYEES

All employees engaged by Distributing Agent in work in connection with this Agreement are to be employees of Distributing Agent and not of MRC and MRC assumes no liability or responsibility whatsoever with respect to said employees. Distributing Agent will observe the requirements of all federal, state and local laws and regulations prescribing the duties and obligations of employers, and neither the United States Employees' Compensation Act, the War Overtime Pay Act nor any federal law which has for its purpose the conferring of benefits on employees of the United States as such shall be considered as applicable to Distributing Agent or to any persons employed by Distributing Agent in connection with services to be performed hereunder.

VI. ASSIGNMENT

(1) Distributing Agent shall not, without the prior written consent of MRC sell, assign or pledge this Contract or any of its rights, powers, privileges, duties or obligations hereunder.

(2) MRC may assign its interest under this Contract to any other branch or agency of the Government of the United States of America, and upon such assignment such assignee shall acquire all the rights, powers and privileges of MRC hereunder and shall be bound by all the duties and obligations of MRC hereunder, and MRC shall thereby cease to have any rights, powers, privileges, duties or obligations hereunder, it being expressly understood that any such assignment by MRC of its interest in this Contract shall be subject to all the rights, powers, and privileges of Distributing Agent hereunder and shall be conditioned upon such assignee's assuming all duties and obligations of MRC hereunder.

VII. NON-WAIVER CLAUSE

The failure of either the Distributing Agent or MRC to insist, in any one or more instances, upon the performance of any of the terms, covenants and conditions of this Contract shall not be construed as a waiver or relinquishment of the future performance of any such term, covenant or condition by the other party hereto, but the obligation of such other party with respect to such future performance shall continue in full force and effect.

VIII. NOTICE

Notice to either party hereto shall be sufficient only if given in writing addressed to such party at the address set forth in the Contract, or to such other address as either party for itself may hereafter specify to the other in writing.

IX. CONTINGENT FEES

Distributing Agent warrants that Distributing Agent has not employed any person to solicit or procure this Contract upon any agreement for a commission, percentage, brokerage or contingent fee. Breach of this warranty shall give MRC the right to deduct from any amounts due Distributing Agent from MRC the amount of such commission, percentage, brokerage, or contingent fee or to recover said amount upon making demand therefor, without prejudice to any other rights of MRC.

X. MEMBERS OF CONGRESS

No Member of or Delegate to the Congress of the United States of America or Resident Commissioner shall be admitted to any share or part of this Contract or

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to any benefit that may arise therefrom, but this provision shall not be construed to extend to this Contract if made with a corporation for its general benefit.

XI. COMPLIANCE WITH APPLICABLE LAWS

In the performance of this Agreement, Distributing Agent shall comply with and give all stipulations and representations required by any applicable Federal, State, Municipal or local laws, or Executive Order, or any applicable rules, orders, regulations or requirements of any Government department or bureau, including the provisions of and regulations under the Walsh-Healey Act (49 Stat. 2036-2039) which are hereby incorporated herein by reference, but nothing herein contained shall be considered as preventing Distributing Agent from contesting in good faith the validity of such law, rule, order, regulation or requirement or any charge that Distributing Agent has not complied therewith. Distributing Agent expressly agrees to comply with the applicable provisions of Executive Order 9301 establishing a minimum wartime work-week of forty-eight (48) hours and any modifications thereof and any regulations issued pursuant thereto. Pursuant to Executive Order No. 8802 dated June 25, 1941 as amended by Executive Order 9346 dated May 27, 1943. Distributing Agent hereby agrees that Distributing Agent will not discriminate against any employee or applicant for employment because of race, creed, color or national origin and that Distributing Agent will include in its subcontracts a similar provision obligating the subcontractor not to discriminate against any employee or applicant for employment because of race, creed, color or national origin.

IN WITNESS WHEREOF, the parties hereto have caused this instrument to be executed as of the date first written above.

METALS RESERVE COMPANY

By_____
DeWitt C. Schieck
Vice President

_____

By_____ (Title)

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EXHIBIT "A" TO AGENCY AGREEMENT

1. Bolts, Nuts, Pins, and Screws.
   - (a) Hexagon Head Bolts, AN-3 through AN-16.
   - (b) Clevis Bolts, AN-21 through AN-36.
   - (c) Eye Bolts, AN-42 through AN-49.
   - (d) Hexagon Head Bolts, Air Corps Drawing No. 60 Air Corps Drawing No. 65.
   - (e) Drilled Hexagon Head Bolts, AN-73 through AN-81.
   - (f) Close Tolerance Bolts, NAS-53 through NAS-60 NAS-62, NAS-64, NAS-65.
   - (g) Phillips Head Bolts, NAS-200, NAS-202.
   - (h) Frearson Head Bolts, NAS-201, NAS 203
   - (i) Nuts Specifications: AN 310, AN-315, AN-316, AN-320, Air Corps Drawing No. 325, Air Corps Drawing No. 330, Air Corps Drawing No. 335, AN-340, AN-345, AN-355, AN-360, AN-365.
   - (j) Cotter Pins, AN-380.
   - (k) Taper Pins, AN-385, AN-386
   - (l) Clevis Pins, AN-392 through AN-400, AN-402, AN-404, AN-406.
   - (m) Screws, Air Corps Drawing No. 500, Air Corps Drawing No. 501, AN-502, Air Corps Drawing No. 501, AN-502, Air Corps Drawing No. 503, AN-505 AN-510, AN-515, AN-520 Air Corps Drawing No. 525, AN-526 Air Corps Drawing No. 530, Air Corps Drawing No. 531, AN-535, Air Corps Drawing No. 540, AN-545, AN-550, Air Corps Drawing No. 560, Air Corps Drawing No. 565, Air Corps Drawing 566, Air Corps Drawing No. 570, NAF-1164, NAF-1175, NAF-1176, NAF-1177, NAF-1178, NAF-1193.
   - (n) Phillips Head Screws, 42B4937 through 42B4945, 42A4946, 42A4947, 42B5184.
   - (o) Pearson Head Screws, 42A5700, 42A5701, 42B5702 through 42B5711.

2. Turnbuckle Assemblies and Parts, AN-130, AN-135, AN-140, Air Corps Drawing No. 150, AN-155, AN-160, Air Corps Drawing No. 160, Air Corps Drawing No. 161, AN-165, AN-170, NAF-1084.

3. Rod and Adjusting Clevis, AN-665.

4. Threaded Clevis Type Tie Rod Terminals, AN-665.

5. Swaged Cable Terminals, AN-666 through AN-669.

6. Dzus Fasteners or Equivalent. Standard or Equivalent Catalog Parts Only. (No special drawing parts to be incl.).

7. Elastic Stop Nuts or Equivalent. Standard or Equivalent Catalog Parts Only. (No special drawing parts to be incl.).

8. Boots Self-locking Nuts or Equivalent Standard or Equivalent Catalog Parts Only. (No special drawing parts to be incl.).

9. Aircraft Valves ("Parker", "Weatherhead", etc.) Standard AN, AC, and NAF part numbers only, but not including oxygen valves or high pressure valves.

10. Aircraft Fittings. ("Parker"), "Weatherhead", etc.). Standard AC 811, AN and NAF part numbers only.

11. Spencer Thermostats. Standard NAF and manufacturers catalog numbers, (including specifications).

12. Flexible Conduit. Standard AN numbers all sizes,

13. Conduit Couplings. Standard AN numbers all sizes.

14. Aircraft Switches and Circuit Breakers. Standard AN numbers or equivalent catalog parts numbers.

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15. Plugs (cannon, breeze, amphenol, etc.). Standard AN numbers or equivalent catalog parts numbers only. (No special drawing parts to be included.)

16. Connectors. (Cannon, breeze, amphenol, etc.) Standard AN or equivalent catalog parts numbers only. (No special drawing parts to be included.)

17. Motors (electric). Fractional motors to be 1-1/4 horse. Standard manufacturers catalog numbers.

18. Micro Switches, Standard catalog numbers including special drawing parts numbers.

19. Resistors, NAF 1099 and Standard catalog numbers only. No special drawings to be included.

20. Rheostats and Potentiometers, NAF 1099 and standard catalog parts numbers only. No special drawings to be included.

21. Bearings as listed.
    Guide rollers.
    Needle rollers.
    Fair-Leads
    Bell cranks
    Rod ends
    A-500
    Metric metal shielded
    Metric felt sealed
    Metric series
    Miscellaneous
    S-K
    S-D
    S-DD
    200S
    Cable and fittings
    List Manufacturers name and catalog numbers where AN numbers do not apply.

22. Hexagon Head Bolts, AN-18-20.

23. Thimbles - Wire Cable, AN-100.

24. Bushings - Cable, AN-100-111.

25. Shackles - Cable, AN-115-116.

26. Grommets, AN-230-231-931.

27. Hook and Buckle, AN-233-235.

28. Eyelet, AN-240.

29. Hinge, AN-250, AN-251.

30. Key - Woodruff, AN-280.

31. Cups - Grease and Oil, AN-290-295.

32. Nails, AC-300-301-302-303.

33. Lock Pins

34. Rivets - Cherry and Explosive.

35. Rivnuts.

36. Clevis - Rod End, AN-481-486-490.

37. Tag - Identification, AC-650

38. Tie Rods, AN-671 thru AN-708.

39. Clamps and Clips, AC 735 thru 755 and Standard Manufacturers Numbers.

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40. Washers, AN-935 thru 975.

41. Aircraft Control Pulleys, AN-210.

42. Packing Rings.

43. Relays and Relay Solenoids.

44. Booster Coils.

45. Lamps.

46. Lamp Assemblies.

47. Capacitors.

48. Pumps (Fuel, Oil).

49. Solderless Terminals.

50. Ignition Switches.

51. Engine Starters.

52. Spark Plug.

53. Fuses.

54. Lord Mounts

55. Insulators.

56. Hose Assemblies.

57. Braid, Tinned Copper.

58. Steel Preformed Flexible Cable.

59. Insulated Copper Wire and Cable.

EXHIBIT " B "

As compensation referred to in the attached Agreement Distributing Agent shall receive in accordance therewith, 30% of the net invoice price for all Material disposed of hereunder, whether sold as aircraft material, commercial material or scrap. This compensation shall not apply to shipments made direct to a buyer from the custody of A.S.U. For such sales Distributing Agent shall receive 5% of the net invoice price for such Material.

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AAFMC-265-A-WF-8-28-42-750M

INTER-OFFICE MEMORANDUM

ARMY AIR FORCES
MATERIEL CENTER
Office of The Commanding General

Capt. A. F. Hitchiner
Tel. Ext. 2-922[illegible]
AFMC:jp:90[illegible]-70

Wright Field, Dayton, Ohio

Date 22 June 1944

TO: Chief, Procurement Division
Termination Section
Attention: Major I. C. Orr

SUBJECT: Termination of Contract # 535 ac 40098
Aircraft Hardware Manufacturing Company

1. Reference is made to recent conversations concerning termination of the subject contract and other contracts of a similar nature. The material covered by this contract, immediately upon acquisition by the Army Air Forces, is to be turned over to the Metals Reserve Company or its agent in accordance with "Memorandum of Understanding" dated May 3, 1944, a copy of which is attached.

2. As the contractor is the agent of the Metals Reserve Company there should be no difficulty in promptly terminating the contract due to the fact that the material will remain in its present location and the contractor will, immediately upon termination, be accountable to the Metals Reserve Company for the full amount purchased by the Army Air Forces. In order to simplify the work of the contracting officer a representative from the Warehouse Unit, Resources Control Section, will be glad to accompany that officer and assist in every way possible. This representative will be thoroughly familiar with all material covered by this contract and with the Aircraft Scheduling Unit Program of Warehousing these materials.

E. W. RAWLINGS
Colonel, Air Corps
Chief, Resources
Control Section

Incl. - 1
Memo of Understanding

Signature .....

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INTER-OFFICE MEMORANDUM
WAR DEPARTMENT, AIR CORPS
Office, Assistant Chief
Materiel Division

Capt. A. F. Hitchiner
Tel. Ext. 2-9226
AFWiSp:lOKD

Wright Field, Dayton, Ohio
Date 13 July 1944

TO: Chief, Termination Section
Attention: Major I. C. Orr

SUBJECT: Termination of Contract W 535-ac-40099
Supply Division, Inc., Robertson, Mo.

1. Reference is made to recent conversation concerning termination of the subject contract and other contracts of a similar nature. The material covered by this contract, immediately upon acquisition by the Army Air Forces, is to be turned over to the Metals Reserve Company or its agent in accordance with "Memorandum of Understanding" dated May 5, 1944.

2. As the contractor is the agent of the Metals Reserve Company there should be no difficulty in promptly terminating the contract due to the fact that the material will remain in its present location and the contractor will, immediately upon termination, be accountable to the Metals Reserve Company for the full amount purchased by the Army Air Forces. In order to simplify the work of the contracting officer a representative from this office will be glad to accompany that officer and assist in every way possible. This representative will be thoroughly familiar with the Aircraft Scheduling Unit Program of Warehousing these materials.

A.A.R. PETERSEN
Lt. Col., Air Corps
Chief, Property Disposal Section

Signature

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AFM:jp:101

Capt. A.F.Hitchiner
Tel. Ext. 2-4928

6 July 1944

Aircraft Hardware Manufacturing Company
Termination Contract No. [illegible] 535 ac 40708
Inspection of Material

District Supervisor
Eastern Procurement District
AAF Materiel Command
67 Broad Street
New York 4, New York
Attention: Lt. Colonel [illegible]

1. In order to permit certain commercial warehouses to maintain inventories of aircraft materials the Army Air Forces has entered into contract with these companies to purchase from them all materials, within the limitation of the contract, contained in their inventory at the time the warehousing program is terminated. It is now to the advantage of the Army Air Forces to completely or partially terminate these contracts because of an arrangement whereby the Metals Reserve Company will assume title and continue the warehousing program.

2. In the termination proceedings the Army Air Forces will purchase this material from the warehouse (contractor) and immediately transfer title to the Metals Reserve Company, which will assign the material to the warehouse. The warehouse acting in the capacity of agent to Metals Reserve Company will then be responsible to that company for the quality, quantity and condition of the material turned over to it.

3. The Aircraft Hardware Manufacturing Company is an agent of the Metals Reserve Company (a government agency) and therefore it is requested that a complete inspection, as called for in the contract, be waived on the items which are transferred to the Metals Reserve Company.

By command of Major General MYERS:

E. E. HARLINGS
Colonel, Air Corps
Chief, Readjustment Division

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AFM:jp:101-D

Capt. A.F.Hitchiner
Tel. Ext. 2-9226

28 July 1944

Supply Division, Inc.
Termination Contract No. W 535 ac 40099
Inspection of Material

District Supervisor
Midwestern Procurement District
AAF Material Command
Municipal Airport, P.O.Box 117
Wichita 1, Kansas

1. In order to permit certain commercial warehouses to maintain inventories of aircraft materials the Army Air Forces has entered into contract with these companies to purchase from them all materials, within the limitation of the contract, contained in their inventory at the time the warehousing program is terminated. It is now to the advantage of the Army Air Forces to completely or partially terminate these contracts because of an arrangement whereby the Metals Reserve Company will assume title and continue the warehousing program.

2. In the termination proceedings the Army Air Forces will purchase this material from the warehouse (contractor) and immediately transfer title to the Metals Reserve Company, which will assign the material to the warehouse. The warehouse acting in the capacity of agent to Metals Reserve Company will then be responsible to that company for the quality, quantity and condition of the material turned over to it.

3. Supply Division, Inc. is an agent of the Metals Reserve Company (a government agency) and therefore it is requested that a complete inspection, as called for in the contract, be waived on the items which are transferred to the Metals Reserve Company.

By command of Brigadier General WOLFE:

M. W. RAWLINGS
Colonel, Air Corps
Chief, Readjustment Division

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ARMY AIR FORCES
Materiel Command

In reply please refer to:
REAJ-101 REO:msa
Docket No. 5921
Wright Field, Dayton, Ohio
7 July 1944

Subject: Notice of Termination and Request for a Negotiated Settlement
Contract No. W 535 ac-40098

Class

To: Aircraft Hardware Manufacturing Company
1391 Lafayette Street
New York, New York

1. The necessity and convenience of the Government require that your Contract No. W 535 ac-40098 be terminated, such termination to be effective at 11:59 o'clock P.M. on 26 June 1944 and that steps be taken immediately to agree with you upon a settlement, if any is necessary, which will properly and justly compensate you in accordance with the provisions of Article 1-E and 12 of said contract for the uncompleted portion thereof. Accordingly, pursuant to the provisions of Article 1-E and 12 of that contract, and in confirmation of telegraphic notice from C. M. Graff, 1st Lt., Air Corps Contracting Officer, dated 24 June 1944 that contract is hereby terminated, effective at 11:59 o'clock P.M. on 26 June 1944.

2. You are hereby instructed immediately (1) to stop all work and the placing of any subcontracts or orders in connection with that contract; and (2) to terminate all existing subcontracts and orders and to cause all work in connection therewith to be stopped at once. A form of termination notice to subcontractors, marked "Exhibit I", is enclosed for use in this connection. To the instructions in (1) and (2), there are the following exceptions:

No exceptions

3. You are also instructed to take the following action with respect to Government property now in your custody:

No instructions

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4. You are requested to submit, as promptly as possible, the following data, to serve as a basis for a settlement of the amount due you by reason of this termination:

(a) A statement of your costs and a proposal for a negotiated settlement (of the amount payable for the uncompleted portion of the contract), in the form and certified as stated in the inclosed "Instructions to Contractors".

(b) An inventory prepared in accordance with the inclosed "Instructions to Contractor". Upon receipt of such inventory, the undersigned will inform you, in writing, as to the disposition to be made of it. You are requested to include in your inventory a statement of your best bid for any of the items there listed, either by items or by groups of items. For any items as to which you make no bid, you are requested to obtain the best available offers. The following items are to be delivered to the Government at once, f.o.b. ; and are to be omitted from your inventory:

Partial inventories should be submitted as soon as possible with respect to articles for which you make bids or for which you may receive offers approved by you.

(c) A statement of costs and a proposal for a negotiated settlement from each of your subcontractors and suppliers in the form and certified by them and by you as stated in the inclosed "Instructions to Contractors". Such statements and proposals may be presented separately. No such statement need be obtained from subcontractors or suppliers who will make no request for payment of any termination charges. Please note that you are required to review each of those statements in accordance with the Instructions, and to state your recommendation, based upon your negotiations with the subcontractor or supplier concerned, as to the amount properly payable thereon. All settlements with subcontractors and suppliers should be submitted for approval by the Contracting Officer.

5. All accounts and other records pertinent to the determination of the amount of the settlement should be carefully preserved by you and your subcontractors and suppliers. They may be audited by the Government.

6. The foregoing data should be sent to Procurement District, Attn: Termination Section, Eastern A.A.F Materiel Command, 67 Broad Street, New York, 4, New York.

Upon receipt of this data, said office will arrange a conference with you for the purpose of negotiating the settlement.

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Fixed Price

7. The instructions contained in this notice may be modified from time to time, except, as to those instructions with respect to which you have previously taken substantial action in reliance thereon.

8. Please acknowledge receipt of this notice by signing the original and one copy and returning them to this Command not later than ten days from the receipt of this notice. The other copy is for your files.

W. M. CRAFF
1st Lt., Air Corps
Contracting Officer

Accepted: July 9 194

AIRCRAFT HARDWARE MANUFACTURING COMPANY
(Contractor)

By J. Grazzi

President
(Official Position)

(CORPORATE SEAL)

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Hardware Mfg. Mfg
Proc Div - 3
mrs

P R I O R I T Y

Cpl. Louise Patterson
101TSR msa Ext. 2-4251

21 July 1944

[illegible] DIVISION, INC.
LAMBERT AIRPORT
[illegible]RTON, MISSOURI

DISTRICT SUPERVISOR
MIDWESTERN PROCUREMENT DISTRICT
ATTENTION: TERMINATION SECTION

E. V. HASTINGS
COLONEL, AIR CORPS
CHIEF, READJUSTMENT DIVISION

AREA RESIDENT REPRESENTATIVE
ROOMS 520-526 ISSOURI PACIFIC BLDG.
634 N. GRAND BLVD.
ST. LOUIS, MISSOURI

W-AAF-4330. . . . SUPPLY DIVISION, INC., LAMBERT AIRPORT, RUPERTSON,
MISSOURI. . . . . .

YOU ARE NOTIFIED THAT THE GOVERNMENT ELECTS TO TERMINATE CONTRACT
NUMBER 535 AC-40094 EFFECTIVE 31 JULY 1944 UNDER THE PROVISIONS OF
ARTICLE 12 OF SAID CONTRACT. THIS TERMINATION HAS BEEN REFERRED TO
MIDWESTERN PROCUREMENT DISTRICT, AAF MATERIEL COMMAND, MUNICIPAL
AIRPORT, P. O. BOX 117, WICHITA #1, KANSAS, ATTENTION DISTRICT TERMINATION
SECTION, FOR DISPOSITION. REQUEST YOU CONTACT THAT AGENCY FOR FURTHER
INSTRUCTIONS. LETTER FOLLOWS. LAMBERT FIELD DOCKET NO. 6614.
END MESSAGE.

C. M. CRAFT
1ST LT., AIR CORPS
CONTRACTING OFFICER

APPROVED

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28 July 1944

MEMORANDUM FOR THE SPECIAL REPRESENTATIVE OF THE UNDER SECRETARY OF WAR:
(ATTN: Mr. Charlton Ravenagh, Deputy Director, Readjustment Division)

SUBJECT: Status of Metals Reserve Corporation Arrangement

1. In response to your request to Colonel Clemente, of this office, concerning the progress being made by the Metals Reserve Company in consummating contracts with its distribution agents, and the amount of property taken over by Metals Reserve distribution agents, the following figures are submitted:

a. Metals Reserve has executed contracts with [illegible] (16) distribution agents operating approximately thirty-five (35) warehouses; in addition, seven (7) more contracts are being processed and will be signed within the next day or two.

b. Metals Reserve has offered to its distribution agents approximately three million (3,000,000) pounds of aluminum; two million five hundred thousand (2,500,000) pounds of steel and seventy million (70,000,000) feet of hardware. To date the distribution agents have accepted [illegible] contracts covering one hundred seventy thousand (170,000) pounds of aluminum. The acceptance of allocations by the distribution agents should accelerate rapidly within the next ten days, as the offerings have only been out in part of the country [illegible] days.

c. This office has been unable to ascertain, as to the amounts or kinds of the [illegible] pounds of aluminum sold from Army or Navy stocks, [illegible] information at hand it is felt that [illegible]

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216	202.2-61	Jan/50	1		VDT Engine.	U	
330	↓	Jan/50	2		↓	U	
616	202.2-61	Jan/50	3		VDT Engine.	U	
960	202.3-1	N.D	1		Sheep Shearling.	U	
1261	202.3-1	N.D	2		Sheep Shearling.	U	
1509	202.3-2	Dec/44			Hardeware-Warehousing.	U	
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