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HENRY HARLEY ARNOLD

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8 Jan. & 30 June 1976
By dlw/mm NLC, Date 10/13/76

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AFDMA-2E
10 October 1945

MEMORANDUM FOR: Chief of Air Staff

SUBJECT: Reply to General Giles' Message Concerning B-29 Flying Safety and B-29 Propeller Governor Head Difficulties.

1. Herewith is message prepared for the signature of General H. H. Arnold, in response to USASTAF message No. 6554, concerning flying safety in the Eighth and Twentieth Air Forces and concerning difficulties being experienced with propeller governor heads on B-29 aircraft.

2. Air Technical Service Command has been directed to expedite the shipment of improved propeller governor heads to all B-29 activities, with particular stress on USASTAF organizations. The improved governor heads, which will minimize present difficulties, are available in sufficient quantity to meet re-equipment needs for B-29 aircraft.

Incl -
Cable to
Gen Giles
(For Sig.)

E. M. POWERS
Major General, U. S. A.
Assistant Chief of Air Staff-4

sig
10/13/45
for the AC of S

10/17/45

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DOD Dir. 5 Jan. & 20 June 1974
By AAG/NARA Date 10/18/12

AFAI/24 Sol Emmy/5668/gnh/30Aug45

Subject: Study of Propeller Procurement

AFAI-(70) 4th Ind

HQ, ARMY AIR FORCES, Washington 25, D. C.

TO: Deputy Chief of Staff, U. S. Army.

1. Transmitted herewith is the Inspector General's report, dated 22 January 1945, subject "Study of Propeller Procurement," with five indorsements thereto.

2. Subject report has been reviewed in accordance with the suggestion contained in paragraph 2, 2nd Indorsement, and the release of such report to the Navy Department on a temporary loan basis is approved.

3. Compliance with the suggestion contained in the 5th Indorsement, dated 23 July 1945, has been accomplished; therefore, this Headquarters has no further interest in the report.

FOR THE CONTROLLING GENERAL:

Signed

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

1 Incl -
IG Rpt dtd 22 Jan 45
w/5 Indorsements

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25 AUG 1945

AFAI

COPY TO: OFFICE OF CHIEF OF AIR STAFF

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By AHq/MM NC, Date 10/18/76

AFDAI/Maj Hoag/5600/gnh/[illegible]

AFDAI-(PR)

31 MAY 1945

SUBJECT: Study of Propeller Procurement (Top Secret)

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

1. An examination of the files on subject case discloses that the report was distributed to the interested staff agencies and your Command 6 February 1945, with the request that the reply thereto be as expeditious as to reach the Air Inspector not later than 6 March. By teletype dated 20 March, your Headquarters asked that the suspense date be advanced to 6 April. Thereafter, in response to timely letters, your Headquarters advised first that the report would be forwarded on or before 20 April, and later that it should be forwarded on or before 25 May. It has not thus far been received here.

2. It is requested that a definite date be set for forwarding subject report, with advice to this Headquarters accordingly.

BY COMMAND OF GENERAL ARNOLD:

Signed

RAY L. OWENS,
Brigadier General, U.S.A.,
Deputy Chief of the Air Staff.

DISPATCHED
1 JUN 1945
AFSA

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SECRETARY OF AIR STAFF

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By AL/HH JAG Date 10/18/76

AFDRC-1

9 MAY 1945

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MEMORANDUM FOR THE CHIEF OF AIR STAFF:

Subject: Shortage of Spare Parts for B-29's and C-54's.

1. The following information is submitted in compliance with your request for information on shortage of spare parts for B-29's and C-54's as reported by General LeMay:

a. B-29 Spare Parts

1. The shortage of B-29 spares was caused principally by the unanticipated increase in sortie rate. Contributing factors were the inadequacy of automatic supply tables which provided the initial stock, and the expansion of domestic training stations from approximately 25 to 60 which required additional continental stockage.

2. Procurement of B-29 spares has been increased, and committees have been appointed at Headquarters, ATSC and at the Boeing aircraft factory to expedite computation of requirements and to expedite procurement and supply. The automatic supply tables were revised 15 March and further revision is contemplated upon receipt of consumption data.

3. It is estimated that the spare parts position will be in relatively good condition in approximately 60 days.

b. C-54 Spare Parts

1. The shortage of C-54 spares was caused principally by the rapid expansion of ATC routes equipped with C-54's requiring stockage of parts throughout the world, and the manufacturing difficulties with hydraulic parts which are, with very few exceptions, the only parts in short supply.

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6 Jan. & 30 June 1954
By AFHRA/MSI IC: Date 6/18/96

Written by Col. D.N. Benner/dem 71808
9 May 1945

SECRET

9 MAY 1945

Subject: Shortage of Spare Parts for B-29's and C-54's (continued)

2. A series of meetings have been held with using organizations and the manufacturer. Increased quantities of spares have been ordered and pressure has been brought to bear on the manufacturer to increase the rate of production. Arrangements have been made with the Douglas Aircraft Corporation for the overhaul of those critical hydraulic parts. As a result of these series of meetings and a mission to the Pacific Division, channels of supply have been clarified and the interchange of parts between the Naval Air Transport Service and the Air Transport Command has been arranged.

3. In the absence of additional unexpected projects such as that requiring stockage of spares on new routes, it is contemplated that the parts situation will be relatively good within 90 days.

(Signed) E. M. Powers

E. M. POWERS
Brigadier General, U. S. A.
Acting Asst. Chief of Air Staff,
Materiel and Services

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Written: 4/26/45
L. D. Moreland
Lt. Colonel, A.C.
4300

2 MAY 1945

Copy for Signing Officer

MEMORANDUM FOR THE ASSISTANT CHIEF OF STAFF: (Attention: S-4 Division)

Subject: Distribution of Vehicle Maintenance Parts.

I. Discussion:

1. War Department Circular 240, 1944, "Chart of Responsibilities for Automotive Equipment", provides authorization for the Army Air Forces to carry 45-day's stockage of maintenance parts necessary for performance of third and fourth echelon maintenance on vehicles attached to the Army Air Forces.

2. The Army Service Forces has not provided the spare parts authorized by referenced Circular. As a result, the maintenance operations on the part of the Army Air Forces have been hampered and consequently unsatisfactory in that

a. Delays have been encountered in restoring vehicles to operational status.

b. Production line maintenance and the resulting efficient utilization of manpower cannot be effected unless there is an assured flow of spare parts.

c. Local purchase measures, which are undesirable, have had to be resorted to in order to secure maintenance parts.

3. If an adequate level of spare parts is provided to AAF depots, the storage and distribution facilities existing within the AAF would result in improved vehicle maintenance, in that using activities would be assured prompt receipt of necessary maintenance spares thru the AAF distribution system.

II. Recommendations:

That the Commanding General, Army Service Forces, be directed to immediately comply with the provisions of War Department Circular 240, furnishing the authorized 45-day level of maintenance parts to the AAF - Air Technical Service Command.

For the Commanding General, Army Air Forces:

Signed

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

AFDS-4-A

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AFSA

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Distribution of Vehicle Maintenance Parts

The Chief of Air Staff
Attn: Deputy C/AS, General Timberlake
ACAS, Material and Services.

26 April 1945

4.

Lt. Col. Moreland/abm/4800

1. Attached hereto for signature is a memorandum for the Chief of Staff, prepared in compliance with preceding Comment No. 3.

2. The purpose of this memorandum is to obtain a 45 day stockage of vehicle maintenance parts for vehicles attached to the Army Air Forces.

1 Incl:
Staff Study

JOHN G. MOORE
Colonel, Air Corps
Executive, AC/AS, M&S

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By AHz JC; Date 10/18/76

AC/AS, M&S

COMMENT NO 3
19 Apr 45.

WHY NOT INITIATE ACTION TO OBTAIN APPROVAL OF G-4 IN ORDER THAT WE MIGHT HAVE OUR OWN DISTRIBUTION.

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

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Distribution of Vehicle Maintenance Parts

AC/AS, Materiel & Services

9 April 1945

Chief of the Air Staff

PWT/eva/5265 1

1. The following excerpt from telephone conversation between Major General Jones and Colonel Snyder refers to the indicated shortage of vehicle maintenance parts in Europe:

> "I have an item in connection with Class 19-C parts. We have a copy of a cable from Kane signed Spaatz which says that informal information received from you indicates that Class 19-C items are now an Ordnance responsibility and requests confirmation. We have been told that that is not the case. Information Circular No. 240, War Department 1944, establishes the basic responsibility for motor vehicle maintenance, and it belongs to the Air Forces not to Ordnance."

2. It is my understanding that, whereas the Air Forces have the responsibility for maintenance, they do not have the distribution of maintenance parts. This presents a difficulty to Air Forces in theaters in that they must draw their parts piecemeal from SOS depots.

3. Your comments are requested as to the recommended action necessary to have vehicle maintenance parts distributed through Air Service Command channels.

Signed

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

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9 APR 1945
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By AL4/MM1 NC, Date 10/26/76

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Secret by authority of
Commanding General AAF
12 MAR 1945
Date
Initials

Modifications for Night Force Group in the UK

13 MAR 1945

Asst C/AS, MMS, Material Division

1
Maj Nelson/clj/5692

Asst C/AS, OCR, Requirements Division

1. It is requested that the necessary action be initiated to provide for the following listed equipment for one group of A-26C type aircraft which will perform special night operations in the UK:

a. Gun muzzle flash hiders.

b. Paint entire aircraft surface with black anti-glare paint.

2. These modifications are in accordance with the request contained in cable Nel CM-IN-25295, dated 25 February 1945.

3. Projects of airplanes set up for this unit will be designated as aircraft for Night Force.

4. The order in which these aircraft are allocated will indicate the priority for this work.

Bomb Br _____

A/C Sec _____

AFREQ/M _____

AFHAL _____

C. J. COCHRANE
Lt. Colonel, A.C.

LESLIE C. PETERSON
Colonel, Air Corps
Acting Chief

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Gen Timberlake

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23 MAR 1945

MEMORANDUM FOR THE CHIEF OF AIR STAFF:

SUBJECT: Copilot's Provisions in A-26 Airplanes

1. Reference is made to basic memorandum, subject as above, dated 14 March 1945. Recent developments in this connection may be summarized as follows:

a. General Kenney has agreed to accept his test project of 25 A-26 aircraft minus copilot provisions and indicated that after service test of the aircraft he would indicate if dual controls were still a theater requirement.

b. A cable, CM-IN-18801, dated 18 March 1945, has been received from the Ninth Air Force, St. Germain, France, non-concurring in the necessity for dual controls as an operational requirement for A-26 type aircraft.

c. This cable was brought to the attention of General Kenney and he stated that, because of the nature of his light bomber missions, dual controls were likely to remain an operational requirement for FEAF.

2. This Office will request AC/AS M&S to initiate the development and procurement of a satisfactory dual control installation which will meet the requirements of the FEAF, as well as other theaters. In addition, AC/AS M&S will be requested to substantially better the availability date of this equipment, as indicated in paragraph 4 of basic memorandum, in order that dual controls may be available for the FEAF A-26 aircraft by conversion date. Actual installation of the controls will be withheld pending a decision from General Kenney as indicated in paragraph 1a.

1 Incl
Memo, abv subj to C/AS
dtd 14 Mar 45 frm M&S

Signed
DONALD WILSON
Brigadier General, U. S. Army
Asstt Chief of Air Staff
Operations, Commitments & Requirements

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By Shuter NCI Date 10/18/76

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14 MAR 1945

MEMORANDUM FOR CHIEF OF THE AIR STAFF

SUBJECT: Co-Pilots Provisions in A-26 Airplanes

1. Herewith is status of production possibilities for furnishing co-pilots equipment in A-26 airplanes:

a. Dual controls have been engineered and are being tested for A-26's assigned to training. These controls consist of a single, easily removable control wheel and column, and rudder bar without brakes. Delivery of sets of these controls is scheduled to begin July 1945.

b. Complete co-pilots provisions, including brakes and complete controls, have not been engineered and a long range program with extensive testing will be required to obtain these.

2. On the 25 A-26 airplanes contemplated for modification for General Kenney, it is estimated that dual controls (a above) can be installed in these airplanes during modification although availability of parts will be critical if delivery of these airplanes is required before July 1945 when supply of kits is scheduled to begin as noted above.

3. It is estimated that installation of dual controls (a above) in all gun nosed A-26's in production could begin in September 1945, if a requirement is established at once.

4. The A-26 conversion and cockpit rearrangement to afford permanent, standard co-pilot provisions, as mentioned in paragraph 1 (b) above, could be available about the end of 1945 if a requirement for same is immediately established.

(Signed) O. P. Echols

O. P. ECHOLS
Major General, U.S.A.,
Asst. Chief of Air Staff,
Materiel and Services

cc: General Phillips

Major Lester/pfw/72225

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By A4/Mmy NC, Date 10/18/76

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Special Tools for Erection and Maintenance Equipment for B-32 Airplane

Asst C/AS, MAS

AC/ASOCR

1. At the present time the utilization of the B-32 airplane depends upon the results of performance and accelerated service tests being conducted by the Air Technical Service Command and operational suitability tests being conducted by the Army Air Forces Proving Ground Command. In the meantime the production of the B-32 airplane is proceeding in accordance with the latest estimate from ATSC as shown below:

	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	On Out
San Diego	1	0	1*	2	4	7	11	16	22	29	37	46	50	50
Fort Worth	16	19	20	24	30	35	40*	45	50	55	60	60	60	60

*2nd San Diego, 17lst Fort Worth - improved bombardier visibility.

2. Seven airplanes have been delivered to the various testing agencies and 40 stripped airplanes are scheduled to be delivered to the Training Command for the purpose of conducting pilot transition training for instructor pilots in CTU and RTU bases. Thirty of these aircraft have already been delivered. The A-4 of the Training Command has already been faced with the problem of maintenance of these airplanes. The particular equipment mentioned as being vitally needed were propeller and bombing equipment maintenance tools.

3. It is requested that the following action be taken:

a. Necessary erection, maintenance and handling equipment and spare parts be supplied on a 1A priority basis for 150 B-32 airplanes.

b. A study be made to determine the effect upon the B-29 program of supplying spare parts and special erection, maintenance and handling equipment for the B-32 in phase with production of the airplane. It is further requested that this information be made available to this office prior to 3 March 1945, in order that it may be taken into consideration at the next meeting of the Aircraft Requirements Board.

WILLIAM F. McKEE
Brigadier General, U.S.A.
Acting Asst. [illegible] Staff
Operations, Commitments and Requirements

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C-54 Flap Difficulties

7 Feb 45

The Air Inspector

Chief of Air Staff

FWT/eva/5265

3

For comments as a result of your inspection of C-54's.

Signed

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

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DOD Dir. 5200.9 and 10 June 1954
By [illegible] NC Date 10/6/76

Written 2 February 1945

SUBJECT: SUBJECT: C-54 Flap Difficulties.

TO: Chief of the Air Staff DATE 3 Febr. 1945

Attention: Brig. Gen. P. W. Timberlake

FROM: AC/AS, Material & Services CONCUR NO. 2
IA.Col.Marshall/ing 72176

1. The original wing flap troubles encountered on C-54 airplanes were not reported by formal TR's, but were communicated to the Air Technical Service Command, Procurement Division. They pertained mainly to unsymmetrical operation of the flaps. T. O. 01-40EH-97, dated 15 July 1944, was issued requiring the installation of one (1) pressure operated check valve and an additional check valve in the up line between the flap selector valve and each pair of wing flap cylinders. A rework of the flap selector valves was also prescribed. Douglas was able to demonstrate in flight that, even with this change installed, by violent skidding and other maneuvers it was possible to provide unsymmetrical loads, and thus unsynchronize the two (2) wing flaps. In order to correct this condition a production change was made which incorporated a mechanical linkage bus while designed to prevent flap unsynchronization.

2. Since the issuance of the above T.O., seven (7) TR's on flap droop have been received. These relate to approximately 65 C-54 airplanes. An additional production change has been made which removes the thermal relief valve in the up line as it was causing leaks in the hydraulic system. These two (2) production changes were not accepted for service airplanes. The primary cause for flap droop on the older airplanes was the leakage of the pressure operated check valves. Other contributing

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C-54 Flap Difficulties.

Chief of the Air Staff
Attn: Brig. Gen. F. H. Timberlake

3 Febr. 1945

2 Cmts.

AC/AS, Material & Services

Lt.Col.Marshall/lhg 72176

items were leaky hydraulic flap cylinders and leaky flap selector valves. The pressure operated check valve is a precision valve and the close tolerances required were not maintained in early mass production. Approximately four (4) months ago much closer inspection was given these valves and the tolerances are now being held. As a result, a decline in UR's has been noted. American Airlines replaced the Douglas pressure operated check valve with Adel Leak Valves on one (1) C-54 and flew it 1,600 hours without flap droop. Douglas was then instructed to install the Adel Leak Valve or equivalent. During the past week tests have been conducted which indicate that the present production pressure operated check valves now installed are equivalent to the Adel Leak Valves insofar as leak prevention is concerned. Douglas, however, has designed a new valve which operates on the same principles as the Adel Leak Valve and in addition contains an O ring seal. This valve has been tested and indicates practically no leakage after 2,500 cycles. It is far superior to the Adel Leak Valve. Furthermore, the body of the Douglas valve is exactly the same as the present pressure operated check valve which greatly simplifies changes in airplanes now in service. Present plans are to obtain service change parts for all service airplanes prior to incorporation of the change in production, since recent checks on some of the latest production airplanes have indicated that airplanes with 800 to 1,000 hours have not had flap droop trouble. Douglas estimates that service change parts can be made available within five (5) weeks.

3. With regard to the flap selector valve the contractor has been instructed to change from a vertical slide valve to a rotary slide valve. This type has been used with great success on C-47 airplanes for the past nine months.

4. Practically all C-54 hydraulic spare parts, including flap selector valves, are critical items at present. While additional orders have been placed on schedule for expedited delivery (this includes 80 flap selector valves this month and 40 per month thereafter) there is not a sufficient supply available to permit the stocking of these items at all bases. Consequently, they are obtained through "Zero Stock Requests" for domestic airplanes and "Emergency Request" for overseas airplanes.

5. As the original provisioning of spares was predicated on the maintenance of all C-54 airplanes through four (4) domestic bases, the entire program was thrown out of balance when ATC established more than twice that number of bases. This situation is now clearing up as a result of action taken to expedite increased procurement.

(Signed) JOHN G. MOORE
Colonel, Air Corps

JOHN G. MOORE
Colonel, Air Corps
Executive, AC/AS, M&S

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8 Jan. & 20 June 1974
By [illegible] NC, Date 10/15/76

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C-54 Flap Difficulties

AC/AS, Materiel & Services

30 Jan 45

Chief of the Air Staff

PWT/eva/3373

1

1. It is my understanding that there has been considerable flap difficulty on C-54 airplanes for a period of two years.

2. A report is desired on the action taken by Air Technical Services Command in the correction of these difficulties and the follow-up on Unsatisfactory Reports. I would also like to know if action to maintain a proper supply of wing flap selector valves has been adequate.

Signed
PATRICK W. TIMBERLAKE,
Brigadier General, U.S.A.,
Acting Chief of Air Staff.

31 JAN 1945

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AFRAD/F

Major McKay/4Jn/72673

(Wrtn 25 January 1945)

MEMORANDUM FOR CHIEF OF THE AIR STAFF:

25 JAN 1945

SUBJECT: Rocket Sighting

1. In response to your recent query concerning present methods of sighting rockets on fighter aircraft, the following information is submitted:

a. At the present time, aircraft rockets are sighted with a reflector-type gunsight, using the rings of the reticle to determine the proper range, much the same as for gunnery, the main difference being that the path of flight of the rocket is not the same as that of the .50 caliber projectile and requires a depressed sighting. This necessitates a modified reticle with blips superimposed for rocket firing over the gunnery blips.

b. The Davis-Draper computing sight, now being tested by the Army Air Forces Board, is designed to incorporate .50 caliber, rocket, and bomb ballistics. This sight is expected to greatly improve rocket firing, as well as gunnery and fighter bombing.

c. Another development to improve rocket sighting is under way which incorporates a control unit in the rocket, consisting of two gyros and an accelerometer. This control unit will give the rocket a straight trajectory, thus eliminating the necessity for determining the range, and enabling it to be sighted with a simple reflector-type sight.

d. Also under development is a light-weight radar ranging device, which feeds the correct range into the K-14 gyro computing sight.

2. Of the above sighting devices, the Davis-Draper sight appears the most promising, and every effort is being made to expedite development and procurement for use on all fighters.

WILLIAM F. McKEE
Maj. Gen., U.S.A.
Acting Asst. Chief of Air Staff
Operations, Commitments & Requirements

AFRAD AFRDQ AFRDQ/M

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Sat file

Procurement of Additional Bombardier Noses for A-26

Asst C/AS, MMS, Material Division

NOV 21 1944

Asst C/AS, OCR, Requirements Division

1
Maj Nelson/slj/5692

1. Conversion of three A-20 groups to A-26 type aircraft is currently under way in the 9th Air Force. Prior to the receipt of cable No. CM-IN-18309 dated 19 Nov 44 the desired aircraft ratio has been 2 gun noses to 1 bombardier nose for U.K. and 100 per cent bombardier nose for M.T.O. However, M.T.O. did agree to initially accept a few gun nose aircraft in order to expedite conversion. The number of bombardier nose A-26C aircraft available to U.K. has not been sufficient to meet their requirements in spite of the fact that domestic projects have been cut to a minimum in order to make this type aircraft available to U.K. However, in the above mentioned cable, U.K. theater has raised their requirements to 100 per cent bombardier nose aircraft.

2. It is not believed advisable to attempt to change the present production ratio inasmuch as after the collapse of Germany units which are redeployed to Pacific theaters will probably require a larger gun nose ratio.

3. It is therefore requested that immediate action be initiated to secure additional bombardier noses, and install these noses on gun nose aircraft in the following estimated amounts. This increased number to be over and above presently scheduled bombardier nose production.

Nov	Dec	Jan 1945	Feb	Mar	Apr
58	91	43	65	40	32

4. It is further requested that the replaced 6 gun noses be reworked into 8 gun noses if possible, and that these noses be stored to be immediately available for reinstallation in the event the redeployment program makes this necessary.

5. It is requested that every possible effort be made to comply with the above requests in an effort to assist theater conversion to A-26 type aircraft.

6. A 1A priority is assigned for this project.

7. It is requested that this office be advised of the action taken, and informed if the above schedule can be met as outlined.

C. J. COCHRAN
Lt. Colonel, A.C.

MERVIN E. GROSS
Brigadier General, USA

Comp Br
A/C Sec
Mat Sec
AFRAC
AFRAC

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Gen Timberlake

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GDO Rpt.
By: AUL 1921 Date: 10/14/76

SECRET

Lack of Replacement Parts and Maintenance Kits for Glider Pick-Up Equipment.

The Air Inspector.

1

Deputy Chief of Air Staff.

1. Cable dated 22 October 1944 from the Commanding General, 1st Allied Airborne Army to the Commanding General, Army Air Forces, reports that replacement parts and maintenance kits for Model 80 glider pick-up equipment were requisitioned in May, 1944 and that such parts and kits were not available until September, 1944.

2. It is requested that an investigation be conducted by The Air Inspector through which there may be assembled all data and information concerning the glider and pick-up project, all circumstances concerning procurement, manufacture, shipment, and future source of supply of replacement parts and maintenance kits, Model 80 and Model 160 glider pick-up equipment, and that report be made concerning result of this investigation.

Signed

RAY L. OWENS,
Brigadier General, U. S. ARMY,
Deputy Chief of Air Staff.

TO: Deputy Chief of Air Staff (General Owens)

DATE 22 Jan 1945
Comment No. 2
TJVtaJ 70464

FROM: The Air Inspector

1. The investigation requested in comment No. 1 is attached herewith.

2. There appears to have been no avoidable delay in furnishing subject parts to the theatre and for this reason it is recommended that the matter be closed.

3. It will be noted that the investigation was confined to the Model 80 unit. This was caused by the fact that the requirement for the Model 160 unit was reduced to provide only sufficient quantities of this equipment for service test.

[redacted],
Brigadier General, U. S. Army,
Asst Air Inspector

1 Incl
Rpt of Inv 8 Jan 45

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SAS 452.11 (352)

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RESTRICTED

Lack of Replacement Parts and Maintenance Kits for Glider Pick-up Equipment

The Air Inspector 23 Jan 45

Deputy Chief of the Air Staff, General Ouens 5

RLO/ee/3246

Recommendation contained in paragraph 2, comment 2 is approved.

Signed

RAY L. OUENS
Brigadier General, U. S. A.
Deputy Chief of the Air Staff

Encls:
n/e

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23 JAN 1945

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Lack of Replacement Parts and Maintenance Kits for Glider Pick-Up Equipment.

The Air Inspector. 19 Nov. 44

1

Deputy Chief of Air Staff.

1. Cable dated 22 October 1944 from the Commanding General, 1st Allied Airborne Army to the Commanding General, Army Air Forces, reports that replacement parts and maintenance kits for Model 80 glider pick-up equipment were requisitioned in May, 1944 and that such parts and kits were not available until September, 1944.

2. It is requested that an investigation be conducted by The Air Inspector through which there may be assembled all data and information concerning the glider and pick-up project, all circumstances concerning procurement, manufacture, shipment, and future source of supply of replacement parts and maintenance kits, Model 80 and Model 160 glider pick-up equipment, and that report be made concerning result of this investigation.

Signed

RAY L. OWENS,
Brigadier General, U. S. Army,
Deputy Chief of Air Staff.

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[illegible] 20 NOV 1944 AAG

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By Alm/Hrs JAC, Date 10/6/76

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B-29 Horizontal Stabiliser Failures

AC/AS, Materiel & Services

23 Nov 44

Chief of the Air Staff

PWT/eva/5265 2

When may we expect the change outlined in paragraph 1 a. of Comment No. 1?

Signed

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

24 NOV 1944

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AAAFMC-812-WF-11-27-43-50M

ADDRESS REPLY TO COMMANDING GENERAL, AAF MATERIEL COMMAND

ARMY AIR FORCES
~~MATERIEL COMMAND~~
~~OFFICE OF THE COMMANDING GENERAL~~
HEADQUARTERS, AIR TECHNICAL SERVICE COMMAND
WRIGHT FIELD, DAYTON, OHIO

24 October 1944

MEMORANDUM for Major General B. E. Meyers.

Attached are copies of my reply to General Kenney's letter to General Arnold with reference to the installation of V-G recorders in General Kenney's airplanes. I think the attached letter will explain how I stand on the matter and perhaps assure General Kenney that we have no intention whatever of reducing the strength of any class of our airplanes.

At various times there has been a great deal of pressure brought to bear on the Air Technical Service Command to reduce the weight empty of airplanes, particularly fighter aircraft, in order to increase performance, and much of this pressure was toward reducing the structural strength since many of the fighter people insisted that they believed fighter aircraft would be strong enough at maneuver load factors as low as 6. However, we must understand what we are talking about when we speak of design gross weight. Under the old system the design gross weight was usually a ceiling weight which the manufacturer wanted to build his airplane to and would naturally give him very nice performance under a very light load condition; so, in order to make it a combat airplane we were usually forced to determine alternate loads which in general meant that the airplane would fly with all of the guns for which provision had been made, and all of the ammunition which the boxes could carry and with all of the internal gas for which tank capacity was available. The airplane under combat conditions then was an entirely different airplane than the airplane which we bought at the manufacturer's "design gross weight" condition. Our present system which will apply to all of our new fighters insists upon all of this alternate loading to be figured as part of the design gross weight and under those conditions our maneuver load factor is set at +7.33. We have chosen +7.33 in that it represents almost exactly the condition of the P-47 with all of its internal fuel, all of its guns and ammunition, less external droppable fuel tanks.

It is requested that one of the inclosed copies be sent to General Arnold for his information and his assurance that we are not reducing the strength of our aircraft.

F. O. CARROLL,
Brig. General, U.S.A.

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DOD Dirs.
8 Jan. & 20 June 1974
By AL/mj I.C. Date 12/6/76

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:OC:lmf

HEADQUARTERS, AIR TECHNICAL SERVICE COMMAND

24 October 1944

Lt. General George C. Kenney,
A. P. O. #925,
c/o Postmaster,
San Francisco, California.

Dear George:

There has just arrived a copy of your letter to General Arnold, dated 12 September 1944, in which you refer to the V-G recorder project being conducted by Captain Rohn. You expressed concern over the possibility that the results from this project might be used to substantiate a reduction in design strength requirements for our airplanes.

First of all, let me assure you that there is no intention of using the data from this or any other project to justify a reduction in aircraft strength requirements. On the contrary, it is expected that such data will be of great value to the Air Technical Service Command in its determined effort to resist the sometimes heavy pressure from certain sections of the aircraft industry, and from the service itself, for such a reduction.

There is one recent change in design requirements which at first notice might appear to effect a reduction of strength, but which actually maintains the former strength standards in a more realistic and practical way. The limit positive maneuver load factor for fighter airplanes is now established at +7.33, whereas all fighters formerly were designed for a limit value of +8.00. However, the new load factor is required to be used in analysis of the structure for a high gross weight that closely approximates the heavy combat conditions to which you refer. The higher factor of +8.00, on the other hand, formerly was applied to a somewhat arbitrary "design gross weight" which was often far below the actual gross weight for combat missions. The following table shows, by comparison of the product nW (load factor times gross weight) for certain fighter airplanes, that the factor of +7.33 is as severe a requirement as was the factor of +8.00:

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Lt. General George C. Kenney
24 October 1944

Airplane Model	Old Requirement (n = +6.00) V	nW	New Requirement (n = +7.33) *V	nW
P-38J	15,500	124,000	17,375	127,200
P-47D	12,500	100,000	14,305	105,000
P-51D	8,000	64,000	10,110	74,100

*Estimated. These values are presented for illustration only and have not been used in design of these particular airplanes, but all new fighter airplanes will meet or better the +7.33 value.

In a little simpler terms we are doing just what you proposed; that is, alternate loads, except external droppable tanks are eliminated. All the internal gas, all guns and all ammunition are included as part of the "design gross" weight on our fighters. I do not think anyone has considered the factors of bombers as subject to reduction, all realizing how the bombers have been overloaded.

In conclusion, I wish to mention that the V-G recorder studies, which have been conducted in Europe for the past twenty months, as well as those now being initiated in the Southwest Pacific, are solely for the purpose of collecting valuable statistical information on war-time operation of military aircraft. I realize that maneuvering speeds and accelerations do not alone define the necessary design strength for effective combat service, and I assure you that the general ruggedness which you find so valuable in our present airplanes will be maintained.

Sincerely,

F. O. CARROLL,
Brig. General, U.S.A.

cc: General H. H. Arnold

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12th September 1944.

Dear General Arnold:

A Captain Rohn from Wright Field has just reported in to me carrying instructions from Frank Carroll to get information on stresses encountered out here on our aircraft during combat missions and during exposure to weather conditions in this area. He brought with him two hundred VG recorders which he wants to install on our airplanes, and from which he will take the records periodically and send them back to Wright Field for analysis.

While I am heartily in favour of finding out what stresses we are encountering, particularly under the bad weather conditions through which we have to fly, and have instructed all my combat units to cooperate in the installation of the recorders and the collection of the information, I am quite concerned with the purpose back of Carroll's instructions. I understand that there is a school of thought in the United States that our airplanes are built with strength factors considerably in excess of those actually required for combat or for the weather conditions encountered enroute to and from the objective. This same school of thought believes that we should reduce our factors, thereby saving weight and increasing the performance of our military airplanes. I am practically certain that the records we get from the VG recorders will show that our combat pilots seldom, if ever, approach the maximum stresses that our combat airplanes are built to withstand. In other words, the results of the investigation now being conducted will substantiate the theories of the school of thought I have referred to.

On the other hand, it should be realized that no pilot is going to take a chance on blacking himself out or even approach the black-out stage during a combat if he values his life. Formations will always climb over or go around thunder-heads not only on account of the unusual stresses to be encountered but primarily to keep the formation together and ensure the success of the mission.

There are several other considerations which are of far more importance that make it essential that our present strength factors remain as is. In the first place, the total weight saving to be gained by a reduction in strength factors is negligible in a twelve to fifteen thousand pound fighter or a sixty to one hundred and thirty thousand pound bomber. The gain in performance to be expected is mm also negligible. In the second place, our airplanes are coming back home almost daily shot up so badly that they are beyond economical repair. The amount of punishment that our aircraft can take from ackack fire and 20 mm cannon shells is almost unbelievable. You have only to look at the condition of some of our airplanes when they return from missions to see this. On the other hand, the average Jap airplane falls apart if it is tapped by a .50 calibre bullet.

At the present time our crews are confident that their aircraft can meet the enemy, slug it out with them and still get back home, while their adversary is shot down. Morale is correspondingly high. It would certainly suffer if our aircraft disintegrated under fire like the Nip airplanes do in combat.

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A third point which we have found to be especially important is that because of our strength factors we can overload our airplanes with safety. Our story has been a continuous one of loading on more guns, more ammunition, more gasoline, in order to carry the war deeper and deeper into enemy territory. Our airplanes have met this requirement and it has been of tremendous advantage to us throughout the campaign.

As you know, I have many times strenuously objected to our classifications or "normal load", "military load" and "overload" conditions, particularly when the strength factors are based on the normal load. Actually in war-time the military load is every pound that the airplane will stagger off the runway with. At short ranges the saving in fuel is compensated for by carrying maximum bomb load. On the longer missions the tanks are filled to capacity and the only limitation on bomb load is whether or not the airplane will leave the ground. It stands to reason that if our factors are reduced we will fly shorter distances and carry a smaller tonnage of bombs that we do now. A very important advantage over our enemy will be lost.

In conclusion, I beg of you not to let any of your engineering enthusiasts tamper with our aircraft strength factors, which have been thoroughly tested and proven in this war. I sent you a story the other day about a B-24 that was shot up in an encounter with a night fighter over Davao and in spite of a subsequent collision with that fighter returned to base. The night fither was lost and the B.24 is now being salvaged, but eleven of my kids are still alive. If the factors on that B.24 had been reduced one perdent, the crew would not be carried on the rolls as "missing-in-action". (w)

Sincerely,

GEORGE C. KENNEY,
Lieutenant General, U.S.A.
Commander.

General H. H. Arnold,
Commanding General,
Army Air Forces,
Washington, D. C.

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8 Jan. & 20 June 1974
By [illegible] NC, Date 10/8/74

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PRIORITY

EXECUTIVE, AC/AS, Materiel & Services, AAF 3365

27 September 1944.

Commander in Chief
Southwest Pacific Area
Brisbane Australia.

Number WAR 37595

Your letter on Frank Carroll's man installing VG Recorders in your aircraft dated September 12th is subject of this message. To Kenney personally from Arnold. My opinion on this subject is as expressed in your letter and no compromises will be tolerated without express approval of this office. This information has been transmitted to all agencies of my staff involved.

END

CM-OUT 37595 (27 Sept 44)

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By Alg/mlj NC; Date 10/15/76

CONFIDENTIAL

12

DAS

A-26 Modifications for the Twelfth Air Force

Asst C/AS, M&S, Materiel Division — NOV 4 1944

Asst C/AS, OC&R, Requirements Division — Maj.Nelson/vcj/5692 — 1

1. It is requested that necessary action be initiated to provide for the following listed equipment in all A-26 aircraft destined for the Twelfth Air Force MTO:

a. Radio equipment to be comparable to that required by the Twelfth Air Force in A-20 type aircraft and to include -

SCR 274
Transmitters - BC 459
BC 459
Receivers - BC 453
454
456
SCR 522
SCR 269 Automatic Radio Compass
SCR 695 IFF
BC 36 Interphone
BC 198 Filter
AN/APQ-9 Group A Parts

b. Standard bomb bay ferry tank.

c. Complete provisions for ferrying, to include astrocompass and drift-meter accessible to navigator in pilot's compartment.

(1) Navigator's seat

(2) Navigator's chart board.

d. Sufficient wing guns to equip 25% of the aircraft.

e. Wing bomb and gun racks

f. Pilot's bulletproof glass

g. Install Sutton type harness in aircraft.

h. Install dust excluders where applicable.

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Ben Irwin Lake

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A-36 Modifications for the Twelfth Air Force

Asst C/AS, MAS, Materiel Division

NOV 4 1944

1 cent.

Asst C/AS, OCAR, Requirements Division

2. It is understood that the following listed items are now factory installed in all production aircraft:

a. 128 gallon self-sealing bomb bay tank

b. Pilot's magnetic compass

c. Provisions for M-1 fragmentation bomb racks

CLARE W. BUNCH
Colonel, A. C.

KENNETH B. CROSS
Brigadier General, USA

Bomb Dr. _____

A/C Sec. _____

AFHQ /M _____

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By AFHRA/MSM JC; Date 12/6/76

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AFOCR/Col Roberts/br
wrtn 6 Nov 1944

9 NOV 1944

MEMORANDUM FOR GENERAL ECHOLS:

Subject: Automatic Pilot for Fighter Aircraft.

1. An automatic pilot in fighter airplanes is an absolute necessity for our very long-range fighter escort program. I am informed that Grumman has developed a light-weight automatic pilot which could very easily be installed in the P-51. I want you to have our fighter people at Wright Field get busy and get this pilot for P-51 airplanes immediately. The fact that it does not operate above 25,000 feet or in very cold weather is of minor importance. It can be used cruising to and from the target. I also want you to give this matter your personal attention and keep me informed.

Signed

BARNEY M. GILES,
Lieutenant General, U. S. Army,
Deputy Commander, Army Air Forces and
Chief of Air Staff

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9 NOV 1944
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C-1 Auto-pilot for A-26 Bombardier Nose Aircraft.

OCT 27 1944

AC/AS, MSS, Material Division, Production Branch

AC/AS, OCAR, Requirements Division

1
Capt Nelson/dr/5692

1. It is requested that immediate action be initiated to install the C-1 auto-pilot in all A-26 bombardier nose aircraft. This equipment was requested by the Ninth Air Force U. K., in their Report of A-26 Combat Suitability Missions, 20 October 1944.

2. While this auto-pilot is not required by all theaters at the present time, it is believed that increased use of this equipment to improve bombing accuracy will be made.

3. Inasmuch as the center of gravity of the A-26C is somewhat to the rear, it is requested that this equipment be placed to improve this situation, if possible.

4. It is considered necessary that this equipment be installed as a modification item until at such time as it can be carried as a production change. Care must be exercised, however, that no loss in production of aircraft will result.

5. This office wishes to be informed of the estimated availability date of this equipment as a modification and production item. A priority of 2A is assigned for this project.

CLARE W. BUNCH
Colonel, A. C.
MERVIN E. GROSS
Brigadier General, USA

Bomb Br._____

A/C Sec._____

CEF_____

AFREQ/M_____

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Hds. Mpk

file.

Relocating the Intervalometer in A-36 Type Aircraft.

DECLASSIFIED OCT 28 1944

AC/AS, M&S, Material Division, Production Br.

1

AC/AS, OC&R, Requirements Division

Capt. Nelson/vcj/8692

1. It is requested that immediate action be initiated to relocate the intervalometer in A-36 type aircraft as requested by the Ninth Air Force.

a. It is believed a suitable position for the intervalometer in the gun nose aircraft would be on the right hand side of the fuselage. The Ninth Air Force in their report states that a suitable position would be to install it in the vertical position with its larger axis perpendicular to the floor between fuselage member 5123404-402 and 5123406-401 and 14 inches above the floor line.

b. The Ninth Air Force report indicates that a suitable location for the intervalometer in the bombardier nose version would be on the left side of the bombardier's compartment just aft of the bombardier's control panel.

2. It is requested that this change be accomplished as a modification item as soon as possible until such time as it is changed in the production line. No loss in production of the aircraft can be accepted.

3. A priority of 2-A is assigned to this project, and this office requests to be informed of the availability date of this equipment both in modification and production.

C. J. COCHRANE
Lt. Colonel, A
MERVIN E. GROSS
Brigadier General, USA

Bomb Br. _____

A/C Sec. _____

AFREQ/M _____

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QUARTERS AAF

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TO	OFFICE & INDIVIDUAL	DATE FORWARDED
1.	Secretary of Air Staff	17 Oct 44
2.	Navig AFDAS -	
3.	Secretary Air Staff	18 Oct 44
4.		
5.		

FOR ➡ FOLLOWING ACTION(S) AS CHECKED

COORDINATION	NOTE AND RETURN	INFORMATION
NECESSARY ACTION	RECOMMENDATION	FILE
SEE OR PHONE ME	APPROVAL	SIGNATURE

COMMENT

Ref: SAS Case No. 436, attached copy of R/R is forwarded for your information. A representative of this office is at the present time conducting a further investigation of the matter, which will take approximately three weeks. Complete report will be furnished as soon as completed.

JMP

FROM ➡	OFFICE & INDIVIDUAL	PHONE
	AFTAI SECRET	74364

3-218. AF Rev. 1 Aug 1944

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6 Jan. & 20 June 1974
By AIG/MH NC; Date 10/18/76

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Repair Parts for Oxygen Generators

AC/AS-M & S, General Powers

12 Oct 1944

The Air Inspector

1

(6B)DMO/pdh/74364

1. A recent investigation conducted by a representative of this office, directed by the Air Staff, into the question of delay of requisitions for parts for mobile oxygen generators, disclosed as one of the prime deficiencies the lack of any plan of procurement for such parts. A letter dated 11 August 1944 from the Air Service Command and Material Command, requesting priority in the delivery of certain parts, shows in a number of instances a greater number of parts obligated than are on order. At the time of this investigation no satisfactory plan of procurement was in effect.

2. The supply of these parts will present increasingly serious problems as operations become more extensive in the Pacific and in my opinion delays in the supply of these parts will be inevitable unless a comprehensive plan of procurement be instituted at once.

3. It is recommended that all necessary steps be taken within the Air Technical Service Command to insure that some comprehensive plan of procurement, if not now in effect, is instituted at once.

JUNIUS W. JONES,
Major General, U. S. Army,
The Air Inspector.

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8 Jan. & 20 June 1974
By 41c/mg AC; Date 8/4/74

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Windshield and Window Deicing Project

AC/AS, Material & Services

13 Oct 44

Chief of the Air Staff

PHT/eva/5265 1

1. General Arnold is dissatisfied with the progress made on the problem of windshield and window deicing in aircraft, the B-29 particularly.

2. He desires, therefore, that a special group be organized immediately to intensely study this problem. This group is to consist of three or more people, including such personnel as Mr. Littlewood of American Airlines and Mr. Rodert of N.A.C.A., and any other Army or civilian experts which are considered particularly qualified. The facilities of the Army Air Forces, civilian institutions or firms are to be put at their disposal in order that this problem may be quickly solved.

3. It is desired that this office be kept informed as to the progress being made on this project.

Signed

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

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By [illegible] NLC, Date 10/16/76

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Head Committee-Inquiry Relative to Kretsmier Process for Stamping Airplane Parts.

Deputy Chief of Air Staff. 9 Oct 1944

Chief, Legislative Services

1
HGH/jrp 74480

Annexed is memorandum for Julius H. Amberg, Esq., Special Assistant to the Secretary of War, which is responsive to his memorandum dated 8 September 1944.

Signed

WARREN S. HGH
Colonel, Air Corps
Chief, Legislative Services

1 Incl.-
Memo.

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DOD Dir.
6 Jan. & 20 June 1958
By [illegible] D.C. Date 12/16/76

CONFIDENTIAL

AFCLS Lt Col Rosenblein
HGR/jrp 74480 3D 978
Written 9 Oct 44 (1:10)

11 OCT 1944

MEMORANDUM FOR JULIUS H. AMBER, ESQ., Special Assistant to the Secretary of War.

Subject: Mead Committee Inquiry Relative to Krutzmeier Process for Stamping Airplane Parts.

1. Reference is made to your memorandum addressed to the Chief, Legislative Services, Headquarters, Army Air Forces, subject as above, dated 8 September 1944, transmitting copy of a letter from George Meader, Esq., Executive Assistant to the Chief Counsel, Senate Special Committee Investigating the National Defense Program, dated 5 September 1944, making certain inquiries regarding the above subject.

2. As to the specific statements made in Mr. Meader's letter regarding the course of negotiation and dealing between Mr. Paul Krutzmeier, President of the Efficiency Engineering Company of Kansas City, Missouri, and the Army Air Forces, you are advised that:

a. Mr. Krutzmeier was not assured by officers of the Army Air Forces that they were extremely interested in the subject process nor was any assurance given as to belief in its possibilities in reducing the cost of production of aircraft parts.

b. Assurance was not given Mr. Krutzmeier that a letter over the signature of General O. R. Cook, Chief of the Production Division, AAF Materiel Command (now Air Technical Service Command) would be addressed to the President of Glenn L. Martin Nebraska Company making inquiry as to why the process had not been adopted.

c. Mr. Krutzmeier was not assured that he would be informed within two weeks as to the outcome of such inquiry as the Army Air Forces decided to make.

3. Careful investigation discloses that proper action was taken by the Army Air Forces in making inquiry as to whether the advantages from the subject process were sufficient to warrant its adoption in current production. It was decided that it would be inadvisable to introduce the process on any appreciable scale in present airplane plants because —

a. Many millions of dollars are invested in tooling which would necessarily have to be scrapped.

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b. In joint enterprises such as B-17, B-29, B-24, P-38 and similar production, interchangeability of parts is a prime necessity. If a new stamping process were to be introduced it would entail the duplication of expensive installations and the scrapping of existing tooling. Further, it is believed that it would be unwise to have a single tool responsible for as many operations as is claimed by the Efficiency Engineering Company to be possible for one die. Breakdown would result in a general delay in production.

3. The hazard of installing a comparatively untried and unproved process at this stage of the war program is unjustified.

4. Investigation, employing recognized rating agencies, as to the past activity, manufacturing equipment, productive capacity and financial standing of the Efficiency Engineering Company, disclosed an unfavorable reputation on the part of the Efficiency Engineering Company and of its President, Mr. Kretzmier, both professionally and financially.

5. This memorandum is classified Confidential only with respect to paragraph 4 hereof.

For the Commanding General, Army Air Forces:

Signed

RAY L. OWENS,
Brigadier General, U.S.A.,
Deputy Chief of the Air Staff.

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11 OCT 1944

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By [illegible] NSC, Date 12/15/76

Automatic Bomb Release Equipment for GHI.

IN TURN: (1) Asst C/AS, A&R, Communications Equipment Officer 28 September 44
(2) Asst C/AS, A&R, Modification Division
Asst C/AS, OMR, Requirements Division

Maj.Tronic/nlb/71000

The B-24 aircraft on the following projects are to be notified with the AN/ARN-8 automatic bomb release transmitter and the AN/ARN-10, the automatic bomb release receiver:

Project 90000-E
Project 91004-E

AFUNR_____

E & C Section_____

for KENNETH N. CHORD
Brigadier General, U.S.A.

C J Cochrane

452.11

SC5142

Gen Lumberlake

CONFIDENTIAL

-2-

452.11

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DOD Dir.
By [illegible] NLC, Date 10/18/72

CONFIDENTIAL

Re Timberlake
Type

Bonner Flow Meters

Asst C/AS, MAS

Asst C/AS, OCR, Requirements Division

SEP 9 1944

Lt Col Bailey/ajj/73485

1. A requirement is hereby established for Pioneer Type B-3 or equally suitable flow meter installation on all B-29 aircraft. This is a basic modification and should be put in production as soon as possible.

2. MAS should take necessary action to have proper technical orders distributed to all VHB units to familiarize them with the maintenance and use of this instrument.

3. Request necessary action to have adequate information published in technical orders and to supply conversion charts to VHB units to convert pounds of gasoline to gallons in the simplest form possible for the use of flight engineers on B-29 aircraft.

Numb Br_____

A/C Sec_____

/s/ S F B
KENNETH B. GROSS
Brigadier General, USA

Auto Pilot

452.11 (241)

SECRETARY OF WAR
RECEIVED

CONFIDENTIAL

File

28b

Ben Timberlake SC-4475

SAS 452.11 (241)

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DOD dir.
8 Jan. & 22 June 1978
By [illegible] Date 8/8/76

SECRET

AFDAO
H V Jones Cpt 712339

2 SEP 1944

MEMORANDUM FOR THE CHIEF OF THE AIR STAFF:
attn: Deputy Chief of Air Staff. Gen. T. [illegible]
Subject: Supply of Automotive Spare Parts.

I. Discussion

1. This Headquarters directed a memorandum to the Chief of Staff, G-4 Division, on 29 March 1944, outlining the very critical shortages of automotive spare parts in Air Forces activities in overseas theaters, and in the Continental United States.

a. It was stated that little, if any, improvement had been noted in this very unsatisfactory condition over a period of eighteen (18) months.

b. It was recommended that the Commanding General, Army Service Forces be directed to initiate a study with a view to correcting the untimely and inadequate supply of automotive spare parts to the Army Air Forces, and that this Headquarters be advised of corrective action taken.

2. On 23 May 1944, this Headquarters received a Disposition Form from the Chief of Staff, G-4 Division, which transmitted a memorandum from the Headquarters, Army Service Forces, outlining corrective action being taken by that Headquarters to correct the unsatisfactory supply of automotive spare parts to the AAF.

a. The G-4 Division indicated that marked improvement in this condition could be expected, due to recently installed stock control procedures, and an investigation of the spare parts situation by the War Department.

b. The G-4 Division further advised that it was the intention of the War Department to maintain a constant check on this program, therefore it was directed that further remark and recommendation be submitted by the Headquarters Army Air Forces, within sixty (60) to ninety (90) days.

3. In order to comply with the directive from the G-4 Division, War Department General Staff, this Headquarters has received monthly reports from all Air Forces on the subject of automotive parts supply, and has prepared a memorandum to the Chief of Staff on this subject, indicating improvement of automotive parts supply to the Army Air Force, during the last three (3) months.

(12) 11-2-5

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II. Action recommended

It is recommended that the attached memorandum for the Chief of Staff be authenticated and forwarded.

[Signed]

J. W. SESSUMS, JR.,
Colonel, Air Corps,
Executive, AC/AS,
Materiel & Services

1 Incl
Memo for Chief of Staff.

SECRET

452.11 (240)

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DOD Dir
E.O. 12/18/74

CONFIDENTIAL

B-24

Chief of Air Staff

SEP 5 1944

Asst C/AS, OCR

2

Lt Col McElroy/alj/5692

1. Action has been taken to correct the deficiencies in the B-24 airplane mentioned in Comment No. 1 above.

a. The operational ceiling has been increased by improving the aerodynamic characteristics of the airplane itself, and by reducing weight and improving the CG location. The principal changes to effect this increase in operational altitude are listed below:

(1) Replacement of the present nose turret with the Emerson Model 120.

(2) Removal of the Dash 5 tail turret and incorporation of the SAO-7 which is approximately 250 pounds lighter.

(3) Intended removal of lower ball turret and installation of hand held or power mount guns.

(4) Installation of R-1830-75 engines.

(5) Incorporation of the single fin and rudder.

452.11

b. Considerable attention has been given to improving the ditching characteristics of the airplane. The principal developments are listed below:

(1) Incorporation of a ditching station with an emergency escape hatch over the rear bomb bay.

(2) Strengthening the support frame for the Martin upper turret.

(3) Development of reinforcing struts to prevent collapse of the bomb bay doors when the airplane is ditched.

(4) The actual ditching of a B-24 airplane is scheduled to take place at Langley Field, Virginia, on or about 15 September 1944, and the results obtained from these actual ditching tests will govern future ditching practice procedures, recommended ditching stations, special safety equipment, and so forth.

Signed
WILLIAM F. McKEE
Colonel, A.C.,
Deputy Asst. Chief of Air Staff,
Operations, Commitments & Requirements

Bomb Dr _____

A/C Sec _____

AFHRC _____

CONFIDENTIAL

452.11 (239)

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Reply attached

B-24

AG/AS CGAR

Chief of Air Staff

1

1. In discussing the B-24 with the Group Commander at Darwin (who has been with the Group for 16 months in the Southwest Pacific) the following points of interest arose:

a. The B-24 is a good airplane except:

(1) Inability to operate effectively at high altitudes (above 22,000 feet)

(2) There should be a safety belt at an appropriate place in the airplane for each crew member. This is especially important when the airplane must be landed on the water since the B-24 breaks up much more easily on a water landing than a B-17.

(3) When landing on water the top turret has a tendency to pull loose from the mountings and fall forward, thus preventing the pilot and co-pilot from escaping and usually injuring or killing anyone who happens to be on the flight deck. In this connection the group commander stated that he has never seen a water landing made in a B-24 when some member of the crew was not killed and often times three or four members of the crew.

2. Let me know what action you have taken to correct the deficiencies outlined above.

Signed

BARNEY M. GILES,
Lieutenant General, U. S. Army
Chief of the Air Staff.

(9)

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E.O. 12958
By [illegible] NARA Date 6/18/76

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B-24

2 SEP 1944

AC/AS OCAR

Chief of Air Staff

1

1. In discussing the B-24 with the Group Commander at Darwin (who has been with the Group for 16 months in the Southwest Pacific) the following points of interest arose:

a. The B-24 is a good airplane except:

(1) Inability to operate effectively at high altitudes (above 22,000 feet)

(2) There should be a safety belt at an appropriate place in the airplane for each crew member. This is especially important when the airplane must be landed on the water since the B-24 breaks up much more easily on a water landing than a B-17.

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452.11 (239)

2. Let me know what action you have taken to correct the deficiencies outlined above.

[Signed]

BARNEY M. GILES,
Lieutenant General, U. S. Army
Chief of the Air Staff.

CONFIDENTIAL
SEP 1944
AAG

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Reply attached

P-47 Tires.

AC/AS MMS

Chief of Air Staff

1

1. General Kenney reported to me on my recent visit that he was having considerable difficulty with P-47 tires and that he had lost a number of P-47's on that account. General Bertrandis believes that the answer is instituting a better inspection system, i.e. pull out a few tires from each batch and static test them.

2. Our policy of manufacturing some tires in Australia has not been satisfactory. General Kenney states that it would be wiser to have all tires manufactured here particularly since all the materials for manufacture had to be shipped to Australia anyway.

3. Let me know hereon what you can do about this.

Signed

BARNEY M. GILES,
Lieutenant General, U. S. Army
Chief of the Air Staff.

452.11 (23)

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DOD Dir.
By dtn/447 NLC Date 12/15/76

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TO: Chief of Air Staff Date 7 Sept 1944

FROM: AC/AS, M & S Comment No. 2

1. Production of airplane tires in various foreign theatres was instituted to take advantage of the following factors:

(a) Main limitation on production of airplane tires in U. S. is shortage of manpower. Some relief can be obtained by utilizing labor and facilities in foreign theatres.

(b) There are appreciable saving in shipping space by shipping some of the raw materials in bulk as compared with shipment of fabricated tires. Crude rubber is more readily available to Australia than to the U. S.

(c) Logistical problems are simplified in that emergency requests from theatres of operation can be handled more expeditiously due to shorter distance involved.

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DOD Dirs.
8 Jan. & 20 June 1974
By JC; Date 10/18/74

P-47 Tires

Chief of Air Staff

AC/AS, M & S

7 Sept 1944

2

2. Production of tires in other areas such as Great Britian, South Africa and India has proven beneficial to the overall AAF Tire Program. Requirements for domestic production are decreased as foreign production becomes available. This is reflected in the requisitions, received from various theatres, which adjust for any local production that may beavailable.

3. The production difficulties that are being encountered by the factory in Australia can best be relieved by arranging for the parent factory (Goodyear Tire and Rubber Company in this case) to furnish necessary technical information and personnel. The Office of Rubber Coordinator at Air Technical Service Command, has indicated that immediate contact will be made with Goodyear in Akron, to expedite solution of this problem.

4. Air Technical Service Command has been directed to investigate and improve on the inspection system the theatre concerned.

(Signed) O. P. Echols

O. P. ECHOLS
Major General, U.S.A.,
Asst. Chief of Air Staff
Materiel and Services

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DOD Dirs.
8 Jan. & 29 June 1964
By OAI/HH JC, Date 6/18/76

DECLASSIFIED

P-47 Tires.

AG/AS 9865

Chief of Air Staff

1

1. General Kenney reported to me on my recent visit that he was having considerable difficulty with P-47 tires and that he had lost a number of P-47(s on that account. General Bertrandis believes that the answer is instituting a better inspection system, i.e. pull out a few tires from each batch and static test them.

2. Our policy of manufacturing some tires in Australia has not been satisfactory. General Kenney states that it would be wiser to have all tires manufactured here particularly since all the materials for manufacture had to be shipped to Australia anyway.

3. Let me know hereon what you can do about this.

452.11 (238)

Signed

BARNEY M. GILES,
Lieutenant General, U. S. Army
Chief of the Air Staff.

Dispatched
1 SEP 1944
AAG

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HEADQUARTERS AAF

ROUTING SLIP

TO ➡ OFFICE & INDIVIDUAL IN TURN	DATE FORWARDED
1. Secretary of Air Staff	30 Aug 1944
2.	
3.	
4.	
5.	

FOR ➡ FOLLOWING ACTION(S) AS CHECKED

	COORDINATION		NOTE AND RETURN		INFORMATION
	NECESSARY ACTION		RECOMMENDATION		FILE
	SEE OR PHONE ME		APPROVAL		SIGNATURE

COMMENT

1. Noted.

2. Please file.

FROM ➡ [illegible] PHONE

Brigadier General, U. S. A.

Deputy Chief of Air Staff

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DOD Dirs.
8 Jan. & 30 June 1976
By AH-1/41 JC; Date 10/18/76

Shipment of two 8 gun nose kits to Far East Air Service Command.

AC/AS, MMS, Modification Division

AUG 26 1944

AC/AS, OCAR, Requirements Division

1

Major Puckett/dr/72936

1. Cablegram from Commanding General, FEAF advises that the Far East Air Service Command desires two complete 8 caliber 50 gun nose kits and installation data shipped to them immediately under their requisition No. DK33-45.

2. This office is sending a cablegram this date which is being coordinated with your office and with AC/AS, MMS, Production Branch, to Commanding General FEAF, informing that headquarters of the availability of these two kits and giving them pertinent weight and space data. It is also being directed that the Far East Air Service Command furnish Materiel Command, Production Engineering Division, Wright Field, Ohio, with the necessary priority authorizations.

3. It is requested that your office issue instructions to the Materiel Command to accomplish the shipment of these items. The request from the theater indicated shipment by air.

for MERVIN E. GROSS
Brigadier General, USA

Bomb Br._____

A/C Sec._____

SC-4127

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DOD ltrs
6 Jan & 20 June 1974
By ALC/MM JC, Date 10/18/76

AFATC/OPS/Flt Ops/EMR/jjr

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Noted

ARMY AIR FORCES
HEADQUARTERS AIR TRANSPORT COMMAND

WASHINGTON 25, D. C.

24 August 1944

SUBJECT: Request for High Priority Supply Channel on B-29 Critical Parts

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

Attn: AC/AS, Material & Services, Col. S. R. Brentnall

1. In order that the B-29 test aircraft, now at Miami and later to be tested at Eglin Field, may have a minimum of delay, it is requested that this Headquarters be informed of the most direct channels by which critical maintenance parts may be obtained.

2. This test aircraft should be handled as a high priority grounded aircraft. At present, supply through regular channels grounds the test work for periods of two to four days each time a booster pump or fuel valve is required. As of this date we still have not received exhaust shrouds requested over seven days ago.

3. We request a channel by which we can file a requisition at WIAD and contact a specific authority in the Pentagon, such as Major H. R. Brown, B-29 Supply Officer of AAS, or Major D. K. Hawkenson, B-29 Supply Liaison at Wright Field. These officers could then set up an immediate supply by telephone request and air priority.

4. Approval of this request will greatly facilitate the expeditious completion of current tests.

For the Commanding General:

GEORGE E. GARDNER
Colonel, G.S.C.
Asst. Chief of Staff
Operations

cc: Brig. Gen. H. S. Hansell

452.11 (23)

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E.O. 13526
Sec. 3.3(b)(1) June 2006
NARA, Date 10/8/12

8 August 1944

MEMORANDUM FOR CABLE SECRETARY:

Subject: Cable M26701

1. With reference to the above mentioned cable, information is furnished that this was transmitted to the Headquarters, Air Service Command by mail on Saturday Night August 5, 1944. It did not reach the proper office at the Headquarters, Air Service Command until Monday morning August 7. Major Wallace of the Theater Branch has prepared a reply to the cable which is being answered direct to Baker with an information copy being dropped off to the Headquarters, Army Air Forces. The reply is being transmitted today. The reply is a lengthy discussion as to the action being taken and includes information that the 30 requisitions mentioned in the cable were all replied to showing the action taken. The replies were dated December 30, April 5, May 1, May 2, May 3, May 5, May 9, May 15, etc. All replies were by air mail and most of them must have reached the theater by this time. There is evidently some lack of coordination in the theater that the replies are not arriving at the proper office.

2. An emergency request was issued for 30 units for the repair of oxygen equipment to be furnished at the rate of approximately three per week. The first shipment went out three weeks ago and other shipments have followed each week thereafter. The port has been asked to expedite these shipments. It is the belief of the Air Service Command that the theater is requesting an amount far in excess of their needs as judged by requests from other theaters.

3. The Headquarters, Air Service Command has no record of any correspondence on the subject of repair parts for oxygen generating plants other than the receipts of the requisitions.

4. Complications have been encountered in obtaining spare parts for the oxygen generating plants partially due to the fact that the original contract for the units did not include a suitable group of spare parts and complications have also been encountered in forcing the contractor to furnish spare parts due to the fact that he has insisted on using all available parts for the production of complete units. An officer from the Headquarters, Air Service Command is in conference with the Contract Officer of the Material Command, this

- 1 -

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Memo for Cable Secretary
Subj: Cable M26701

8 August 1944

date in an effort to force the contractor to furnish a range of spares.

J. A. WILSON,
Colonel, Air Corps,
Chief, ASC Liaison Sec.,
Air Services Div., AC/AS, M&S.

1 Incl:
Form Memo to Gen. Timberlake
frm Cable Sec. 6 Aug 44, subj:
Message No. M-26701.

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8 Jan. & 20 June 1974
By: ALu/4H JC; Date: 5/15/76

SECRET

Repair Parts for Oxygen Generators

The Air Inspector

3 March 45

Deputy Chief of the Air Staff, General Owens

JRB/ee/72141 2

The recommendations contained in paragraph 5, comment #1 are approved.

Signed

RAY L. OWENS
Brigadier General, U. S. A.
Deputy Chief of the Air Staff

Incls: n/c

3 MAR 1945

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DOD Dirs.
8 Jan. & 20 June 1974
By AL-144 NC Date 10/16/76

15 July 1944

Given to Col Dean
15 Jul for HHA
wa

MEMORANDUM FOR GENERAL ARNOLD:

1. Reference is made to your comment, "Why this shortage? Get action without delay" in this morning's log on a message from General Giles regarding the critical shortage of C-47 spare parts in the North African ATC Wing.

2. The shortage at Casablanca is due to distribution within the theater. At the present time, all C-47 spares go to Naples and the Air Service Command reships to Casablanca. Arrangements have been made and agreed by General Bartron that spares for ATC will be shipped directly to Casablanca and Cairo.

3. ATC has received no special requests and their report from the North African Wing of 9 July indicates that no C-47's are grounded for lack of spare parts. A cable has been dispatched by ATC to their North African Wing to confirm the above report.

Syd.

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

1 Incl
Memo to Gen.T. frm Cable
Sec'y 15 Jul re above comment on MX-24686.

CANCELLED

Rec. 452.11 (252) SHS.

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Col.J.C.Vaughan,Jr./MM
Rm 5C880, Ext.3618
AFDRE-1

19 JUL 1944

AAF Ltr 65-25

Preventive Maintenance of Tires

Commanding Generals,
All Air Forces
All Independent and Subordinate Commands
~~Army Air Forces Tactical Center~~
Commanding Officers,
All ~~Army Air Forces~~ Bases
All Exempted ~~Army Air Forces~~ Stations
All ~~Army Air Forces~~ Installations
(In Zone of Interior)

1. All indications point toward the Third and Fourth Quarters, 1944, being the most difficult period in the production of airplane and truck tires in the United States. The requirements of all the Armed Forces for tires, especially in the large sizes, have increased sharply during the past year because of the expansion in tactical operations all over the world. The limitation in the tire productive facilities will be most acute for the next six (6) months or longer.

2. The most direct approach to the solution of this supply problem is to increase preventive maintenance activities of all tires to obtain longer service life from each tire.

3. A project is now underway to procure experienced and technical personnel for assignment to the various Air Forces and Commands to carry out a program designed to insure that the proper care is taken of all airplane, truck, and passenger tires. Details pertaining to the assignment of these trained personnel will be worked out with each Air Force and Command.

4. Numerous reports have been received that aircraft tires are being needlessly damaged due to stones, cartridge clips, metal scraps, etc., on runways, taxi strips and parking aprons. Immediate action will be taken to clear all runways and parking areas from all debris that might cause damage to tire casings. Under inflation also is responsible for much tire damage.

Copy for: Commanding General, Army Air Forces

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Rew/Gen Powers/lw-3153
AFMMD-2

Sub: Preventive Maintenance of Tires

Page 2.

5. The seriousness of the situation cannot be overemphasized. We cannot produce more tires so we must get maximum use out of those we have. Commanding Officers are directed to take all possible action to attain this objective.

[redacted]

H. H. ARNOLD,
General, U. S. Army,
Commanding General, Army Air Forces.

Distribution:
As Indicated

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DOD ltrs.
8 Jan. & 20 June 1974
By AG/44 UC, Date 10/18/76

Shortage of Airplane Casings

AC/AS, Materiel, Maintenance and Distribution
Attn: GENERAL ECHOLS

15 July 44

Deputy Chief of Air Staff

3

PWT/eva/5265

1. General Arnold is heartily in accord with the conservation program and approves the action you recommend. It is assumed that you will initiate all necessary action.

2. He has talked to General Knudsen who states that the tire situation is not critical. He would like a memorandum prepared to General Knudsen for his signature stating that we are taking steps to conserve tires to the maximum because the tire situation is critical.

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

1 Incl n/c

DISPATCHED
15 JUL 1944
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DOD Ltr.
8 Jan. & 20 June 1946
By AG/144 10 Date 8/18/76

CONFIDENTIAL

Shortage of Airplane Casings.

30 June '44

General Echols

1

General Giles.

1. General Arnold informed me that he had received reports to the effect that we would very probably have a shortage of airplane casings in the very near future. He gave definite instructions that this should be avoided at all costs.

2. Request that you have this matter looked into and submit a report giving the essential facts on this subject.

[Signed]

BARNEY M. GILES,
Lieutenant General, U. S. A.
Chief of the Air Staff.

SAS 452.11(32)

1 JUL 1944
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DECLASSIFIED DOD Dir
By AGA/MH Date 3/16/76

~~CONFIDENTIAL~~

Defective Shaft, D-49103, Eclipse B-17 Landing Gear Retraction Unit

TO: AC/AS, Materiel, Maintenance and Distribution DATE 7 July 44

FROM: Deputy Chief of the Air Staff, General Owens COMMENT NO. 4
RHE/ee/72141

For Comment and return.

(Signed)

RAY L. OWENS
Brigadier General, U. S. A.
Deputy Chief of the Air Staff

Encl:
n/c

SAF 452.11 (329)

Dispatched
8 JUL 1944
AAG

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DOD ltrs.
8 Jan. & 20 June 1974
By: AL/MH LC; Date: 10/8/76

CONFIDENTIAL

Defective Shaft, D-49103, Eclipse B-17 Landing Gear Retraction Unit

22 June 1944

Deputy Chief of Air Staff (General Timberlake)

1

The Air Inspector

(6C)JEH/els 74364

1. The attached report of investigation was conducted for the purpose of determining the responsibility for delivery of defective shafts, part No. D-49103, Eclipse Landing Gear Retracting Unit for B-17 aircraft.

2. The report discloses that the shafts in question were manufactured by the Maytag Company as subcontractor of Eclipse Aviation Company. The machine equipment of subcontractor did not permit test for induction hardening at the full limit of the part to be hardened. Eclipse authorized test at a point short of full limit and the shafts were passed by Mr. Herbert L. Bailey, AAF inspector, without proper inspection. In February 1944, it was determined that approximately 5000 shafts had thus been made which were defective because of being soft at the upper limit of the section required to be hardened. Shafts in B-17's sheared in 67 known instances and 54 crash landings resulted with damage to Government property in the sum of $1,890,000.

3. It is recommended that Mr. Herbert L. Bailey be discharged and that a copy of this report be transmitted to the Department of Justice to enable civil procedure by the Attorney General for recovery of $1,890,000 from the Eclipse Aviation Company.

4. If you approve these recommendations, it is requested that the report be returned to this office for necessary action.

MAX F. SCHNEIDER
Colonel, Air Corps
Acting The Air Inspector

1 Incl
Rpt of Inv.

TO: The Air Judge Advocate

23 June 1944
Comment No. 2
WDG/lmg/5791

FROM: Secretary, Air Staff

For comment or concurrence.

T. A. FITZPATRICK
Colonel, G. S. C.
Secretary, Air Staff

Incl. n/c

24 JUN 1944
ARMY

CONFIDENTIAL

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DOD ltrs.
8 Jun. & 20 June 1974
By AL/HRJC, Date 10/8/76

~~CONFIDENTIAL~~

TAF/lmg/5789
AFSAS

21 June 1944

SUBJECT: Special Investigation by Major Charles M. Beeghly, A.C.

TO: Commanding General, Air Transport Command.

1. Attention is invited to inclosed directive assigning Major Charles M. Beeghly, AC, to conduct an investigation concerning the pilferage of personal baggage.

2. It is desired that you issue positive instructions to all concerned within your command which will insure that every facility is extended Major Beeghly which will insure the successful accomplishment of his mission.

BARNEY M. GILES,
Lieutenant General, U. S. Army,
Deputy Commander, Army Air Forces.

1 Incl.
Directive dtd 20 June

AAF 452.11 (22 8)

22 JUN 1944

DECLASSIFIED

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COPY FOR SECRETARY, AIR STAFF

AAS 452.11 (22 8)

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DOD dirs.
8 Jan. & 20 June 1974
By: AL/MMC Date: 10/18/76

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Directive to Major Charles M. Beeghly, A. C.

Chief of the Air Staff Att: Col. Libby, Executive

19 June 1944

The Air Inspector

1
(6A)JFRS/pdh/74364

It is understood that your office proposes to put an indorsement on the inclosed directive to the Commanding General, Air Transport Command, which will facilitate Major Beeghly's travel and investigation.

MAX F. SCHNEIDER,
Colonel, A. C.,
Acting, The Air Inspector.

1 Incl
Directive to Maj Beeghly.

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8 Jan. & 20 June 1974
By: AHG/MM JC; Date 10/5/76

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TAF/lmg/5789
AFSAS

21 June 1944

SUBJECT: Special Investigation by Major Charles M. Beeghly, A.C.

TO: Commanding General, Air Transport Command.

1. Attention is invited to inclosed directive assigning Major Charles M. Beeghly, AC, to conduct an investigation concerning the pilferage of personal baggage.

2. It is desired that you issue positive instructions to all concerned within your command which will insure that every facility is extended Major Beeghly which will insure the successful accomplishment of his mission.

Signed

BARNEY M. GILES,
Lieutenant General, U. S. Army,
Deputy Commander, Army Air Forces.

1 Incl.
Directive dtd 20 June

AAF 452.11 (228)

22 JUN 19[illegible]
AAG

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8 Jan. & 20 June 1974
By AG/MM DG. Date 10/8/76

SECRET

Ceramic Spark Plugs

General Giles

General Echols 2 cont.

together with the AC Spark Plug Company (presently making spark plugs for P-51 airplanes), adequate production will be available with approximately thirty days to meet all A.A.F. requirements in the U.K.

3. Following is paraphrase of cable which has been forwarded through General Spaatz for Air Chief Marshal Portal:

"Spark plugs is subject. Reference recent secret aide memoire, subject, "Sparking Plugs (14 mm and 18 mm Ceramic)", prepared by Air Chief Marshal Portal, bearing comments by theCommanding General, Army Air Forces, to Lt. Gen. B. M. Giles, directing that same be investigated. Production of most critical spark plugs for use in P-51 and B-17 series airplanes is presently being accelerated to where it will fully meet all Army Air Forces requirements in the United Kingdom. Spark plug requirements for all other Army Air Forces aircraft in the United Kingdom are presently being fulfilled by the Air Service Command from United States sources. Immediate increase of United States spark plug production has been discussed with Lt. Colonel Blanton and agreement has been reached relative action to be taken. All activities concerned are presently taking action to accelerate same. Air Shipment of spark plugs will be undertaken immediately to enable building up of depleted supplies in the United Kingdom."

4. Air Service Command has been directed to arrange air shipment of spark plugs for B-17's and P-51's to U.K. until stock is built up to the position where the AAF will be self-supporting.

O. P. ECHOLS,
Maj. General, U.S.A.,
AC/AS, MM&D.

Incl. n/c

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DOD Dirs
8 Sec. & 20 June 1972
By A/cs/MM 2C Date 12/8/76

SECRET
RESTRICTED

TO: General Giles

Date: 21 JUN 1944

FROM: General Echols

Comment No. 2
CDG/epc/3350

1. The reason why spark plugs have been obtained by A.A.F. activities from the British (particularly for P-51 and B-17 airplanes) is due to the fact that British manufactured RS-19R plugs (used in B-17's) and RS5/3, RS5/5, RC5/3, and RC5/5 plugs (used IN P-51's) have given better service than the best American plugs in the particular airplanes referred to. Overhaul and re-conditioning of the above British spark plugs is also outstanding because of demountable features.

2. Several months ago, arrangements were made to manufacture British plugs (built to British specifications) in this country. The BG Spark Plug Company and Simmonds Aerocessories Company undertook this job and are just now getting into production. BG manufactures both the RS-19R and RC5/3, and Simmonds manufactures the RS5/3. Every possible effort is presently being made to accelerate production by both BG and Simmonds, and it is expected that,

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8 Jan. & 20 June 1974
By AG/AG UC: Date 12/8/76

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Ceramic Spark Plugs

General Echols

General Giles

19 June '44

1

1. Attached hereto is a letter with General Arnold's comments - "Giles. Look into this, see if a prodding is needed - Prepare cable for Portal HHA"

2. It is desired that you investigate our production facilities for Ceramic spark plugs as soon as possible and prepare a cable for Air Chief Marshal Portal.

3. If we do not have the facilities to make sufficient spark plugs of this type, I am of the opinion that our facilities should be expanded at once. Insofar as I know, these Ceramic spark plugs for the Packard and Merlin engines, as well as the Pratt & Whitney and Wright engines are proving very satisfactory.

4. When you have made a study of this problem, see me.

[Signed]

BARNEY M. GILES,
Lieutenant General, U. S. A.
Chief of the Air Staff.

Att.
Aide Memoire, abv. subj 6/14/44 (SECRET)

AAF 452.11 (227)

19 JUN 1944

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DOD Rtr.
8 Jan. & 20 June 1974
By AGA/MM NC, Date 12/8/76

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Loss of equipment in bombardment planes.

Asst. Chief of Air Staff, OC&R (Bombardment Branch) 3 July 1944
THROUGH: Air Inspector 1
Secretary, Air Staff
ND:JB 5790

For necessary action.

N. DEUTSCH,
Lt. Col., A.G.D.,
Asst. Secy., Air Staff.

1 Incl.
Ltr to CG AARATC and Cl.,
dtd 25 Jun 44 w/1
ind & 3 Incls.

DISPATCHED
3 JUL 1944
AAG

SAS 452.11 (226)

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

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DOD Dirs.
E.O. 12356 & 20 June 1974
By Alan 7/44 NARS, Date 10/6/82

CONFIDENTIAL

Subject: Loss of Equipment in Bombardment Airplanes Basic d. 26 June

1st Ind AFATC/OPS/REF/JEM/rro 71334

HQ AAF AIR TRANSPORT COMMAND, Washington, D.C. 29 June 1944

TO: Commanding General, Army Air Forces, Washington, D.C. (Attn: Chief of the Air Staff)

1. Basic communication is first report to be brought to the attention of this Command of shortage of equipment on aircraft delivered to China-Burma-India Theatre. Immediate action has been taken as per attached paraphrase of radio to ATC Wings involved (Inclosure #2). In addition to this radio a follow-up letter directing that an active psychological campaign against stealing by the use of "Stop Pilfering" posters will be inaugurated at all stations of this Command, as suggested in basic communication (Inclosure #3).

2. This Command has been confronted for over a year with the problem of missing equipment and many steps have been taken in the past including the following:

a. Spot showdown inspection of a representative number of aircraft at stations along the route. These inspections have indicated that aircraft in general have all equipment aboard while enroute.

b. Inspection of baggage of returning ferry crews.

c. Instructions to ATC Divisions and Wings with regard to education and briefing of crews as to importance of equipment and also equipment lists.

3. Field studies conducted by this Command have indicated that the majority of reports of missing equipment made by recipient Air Forces are due to:

a. Inaccurate check of the aircraft whereby items are reported as missing which are actually authorized shortages or which are overlooked in checking the aircraft.

b. Delay in checking aircraft after delivery.

c. Ultimate delivery of aircraft by other than ATC personnel. In many instances ferrying from initial delivery point to accepting air depot may be accomplished by ASC pilots or combat pilots not under control of AFC.

4. It is general practice for recipients to sign aircraft receipt, which covers equipment, upon delivery without checking aircraft until sometime later. Losses occurring after delivery by ferrying crew cannot be held the responsibility of this Command. It is strongly recommended that recipients of tactical aircraft be required to accomplish immediate showdown inspections at time aircraft is received at least with respect to certain items of equipment most frequently found missing. If immediate inspections are conducted

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covering a limited list of items, it should be possible to have the crew present at such inspections. However, it would be undesirable to delay departure of the crew, whether ferry or combat, if inspection cannot be made within a reasonable number of hours.

5. With reference to loss of octant and watches, these are items of personal issue. This Command cannot in practice assume responsibility for losses of such equipment, but statement of charges will be made and indicated disciplinary action taken when losses are discovered at stations under ATC jurisdiction.

By the Commanding General:

BOB E. NOWLAND
Brig. Gen., U. S. Army
Chief of Staff

3 Incls:
Incl #1 - Status chart from A-3 Natal
Incl #2 - Cpy of wire d. 6-29-44 to ATC Wings ref Missing Equip.
Incl #3 - Cpy of ltr to all ATC Wings d. 6-29-44

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Col.Summerfelt/mw/2960
Rewritten AFSAS/CJM/lmg/5789

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DOD ltrs.
8 Jan. & 20 June 1974
By: AL/HH JC. Date: 12/8/76

(25)

25 JUN 1944 AFHDB

SUBJECT: Loss of Equipment in Bombardment Airplanes

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

1. A recent inspection made of all B-24 and B-25 airplanes arriving in the China-Burma-India Theater discloses that approximately fifty per cent of the critical equipment in these airplanes on their departure from the United States is not in the airplanes upon arrival in the theater. Included in these shortages are such items as tools, tool kits (crew chief's, armorer's and radio operator's kits), maintenance handbooks, Technical Orders, octants and watches. It appears that the main reasons for such losses are insufficient indoctrination and briefing of crews in the importance of delivering the airplane in the same condition in which received in the United States; pilfering of critical equipment; jettisoning of equipment to extend the range where there is concern as to sufficient fuel; and the removal of tools and tool kits by base maintenance personnel.

2. Efforts made in training bases and along ferry routes to correct these conditions have not produced the desired results. Broader distribution of "Stop Pilfering" posters should be made in all briefing rooms, operations offices and base maintenance shops, and a psychological campaign inaugurated immediately stressing the serious consequences in the combat areas resulting from the receipt of aircraft minus the necessary manuals, fighting gear and maintenance equipment. New crews should be thoroughly briefed on the safety record of the Air Transport Command stressing the fact that all flights are planned to allow for maximum reserves of fuel. In this connection, willful and unnecessary violations of briefed flight plans should be summarily dealt with and those cases resulting in trial by court martial properly publicised.

3. It is directed that positive and immediate action be taken to correct the conditions outlined above which are the responsibilities of your command.

By command of General ARNOLD:

Dispatched
25 JUN 1944
AAG

Signed

1 Incl.
Status Chart
from A-3 Natal

BARNEY M. GILES,
Lieutenant General, U. S. Army
Chief of the Air Staff.

COPY FOR O[illegible] OF SIGNATURE

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6 Jan. & 20 June 1974
By [illegible] NC, Date 10/15/76

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Bomb Bay Doors for B-29

General Giles

AC/AS, MM&D

28 MAY 1944

RWG/emw/72225 2

1. In addition to the present project to immediately install snap-opening bomb bay doors in B-29 airplanes, the Materiel Command was directed on 1 April 1944 to produce a flying mock-up of the double-hinge folding type bomb bay door for test at Eglin Field. This directive was based upon a request by the Assistant Chief of Air Staff, OC&R, following a review of fourteen studies of various types of doors, including the B-24 roller type doors which are not considered feasible for use on the B-29.

2. To date and for the next ten to fourteen days, concentrated efforts to complete the higher priority snap-opening doors project will preclude appreciable progress on the development of folding doors other than preliminary drawing layouts which have been completed. In view of the problems presented by the folding door design, namely, (1) the structural strength requirements of long, narrow door sections, (2) necessary strength of doors in ditching, and (3) the necessary modification of the airplane structure to incorporate entirely new parts to be manufactured; the Boeing Company estimates that at least three months will be required to provide an airplane for test at Eglin Field. Installation of the proposed folding type doors can be made only at the factory or modification center due to airplane structural changes involved.

3. In the course of proof testing the snap-open doors at Eglin Field, the Assistant Chief of Air Staff, OC&R, has been requested to check the effect of bomb bay door opening at various airplane speeds. It is believed that a greater increase in drag results from open bomb bay doors at low air speeds at high angle of attack than at high speeds with the airplane in level flight attitude. Attached for your information is a memorandum covering results of a typical bombing test conducted in September 1943 by the Materiel Command and the 20th Bomber Command at Pratt, Kansas

(Signed) B. E. Meyers

1 Incl
Memo - Bombing Test Results

B. E. MEYERS
Major General, U. S. A.
Deputy AC/AS, MM&D

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By AL/MM NC; Date 10/8/74

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Landing Gear Failures, B-17 Aircraft

Flying Safety 16 May 44

Deputy Chief of the Air Staff, General Hall

3

RHH/ee/72141

Your attention is invited to Comment #2.

ROBERT H. HARPER
Lt. Colonel, Air Corps
Executive Assistant
Deputy Chief of the Air Staff

Incl:
n/c

Library Copy
10 MAY 1944
AAFIC

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DOD ltrs.
8 Jan & 20 June 1974
By ALG/MM LC, Date 8/5/74

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Landing Gear Failures, B-17 Aircraft

Office of Flying Safety

2 May 44

Deputy Chief of the Air Staff

1

RHH/ee/72141

The suggested R&R to AC/AS, MMAD has been signed and dispatched.

WILLIAM E. HALL
Brigadier General, U. S. A.
Deputy Chief of the Air Staff

Incl:
Memo for DAS (3 incls)

Manuscript
3 MAY 1944
AAG

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DOD Dir
8 Jan. & 20 June 1974
By AL4/HM JC, Date 12/8/76

~~SECRET~~

Secret by CG AAF
30 Apr 44 Initials
Date

Capt Ingram/dg/72676

AFRAB/ANC

30 APR 1944

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

Subject: Status of Fighter Tail Warning Program

1. Reference is made to RAR, dated 26 November 1943, Subject: "Tail Warning Devices for Airplanes," from General Giles to General Perrin, and to succeeding Comment No. 2, dated 27 November 1943, from the Deputy Chief of Air Staff, to Assistant Chief of Air Staff, Operations, Commitments and Requirements. This correspondence directed that a report be submitted at two week intervals, recently informally changed to monthly intervals, giving the status of the tail warning project.

2. In compliance with the above directive, the following information is submitted regarding program status changes which have occurred during the past month:

a. Air mail letters were sent to the Fifth, Seventh, Eighth, Ninth, Tenth, Eleventh, Twelfth, Thirteenth, Fourteenth, and Fifteenth Air Forces with descriptive material and information on the current status of the tail warning program. The purpose of these letters is to obtain up to date information on theater requirements, especially with respect to the percentage of planes in squadrons to be equipped with tail warning devices.

b. Twenty (20) AN/APS-13 equipments on Aircraft Radio Laboratory contract are to be produced by General Electric Company on a model shop basis and are expected to be available by the end of May. It is expected that General Electric will go into production of this equipment in July. Radio Corporation of America is expected to produce equipments as follows:

10 - April
50 - May
100 - June
800 - July
1500 - August
3000 - September

Allocation of equipments is being accomplished to enable completion of mock-ups and to provide sets to interested agencies for training and tests.

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e. Mock-ups on P-51 and P-61 have now been completed. Remaining mock-ups to be made are on the Mosquito, P-40, and P-39/63.

d. Report received from Army Air Forces Board, Subject: "Staff Study of Maintenance Personnel for Tail Warning Device in Fighter Squadron." The report recommended five (5) each additional personnel per Single Engine and Twin Engine Fighter Squadrons: no additional personnel in Night Fighter Squadrons. The report was based on all planes in fighter squadrons being equipped with tail warning devices.

e. Effort is being made to expedite production of test equipment which is currently lagging behind estimated production schedule of AN/APS-13.

f. Personnel being trained as IFF mechanics at Boca Raton, Florida will be given additional training in maintenance of AN/APS-13. Training courses lasting approximately two weeks will begin upon arrival of the necessary equipment.

For the Commanding General, Army Air Forces:

WILLIAM F. McKEE
Colonel, Air Corps
Acting, Asst Chief of Air Staff,
Operations, Commitments & Requirements

- 2 -

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DOD Dir. 5200.9
By NARA, Date 10/8/76

~~SECRET~~

German Attempt to Place Order in Switzerland for Small Parts

AG/AS, Intelligence 21 April 44

Deputy Chief of the Air Staff, General Hall

RHH/ee/72141

1

1. General Hall has questioned the advisability of referring this problem to the Asst Secretary of War for Air.

2. It is my understanding that your division feels that Dr. Bowles should give this question some thought. Should this be the case, it might probably be referred to Dr. Bowles from your division since he is under the jurisdiction of the Commanding General, Army Air Forces rather than the Asst Secretary of war for Air.

ROBERT H. HARPER
Lt. Colonel, Air Corps
Asst Secretary, Air Staff

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21 APR 1944
AAG

AAG 452.11 (21-7)

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DOD Dir. 5 Jan. & 30 June 1954
By AGO/MM HQ, Date 6/8/76

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Airplane [redacted] Parts Program.

Deputy Chief of Air Staff (Brig. Gen. Wm. E. Hall) 18 March 1944

Chief, Legislative Services.

1

HGR:jrp 74489 30978

Annexed is memorandum for transmittal to Julius H. Amberg, Esq., Special Assistant to the Secretary of War. This memorandum does not contain information to be transmitted to the Truman Committee but is merely given to Mr. Amberg for his information.

WARREN S. HGE
Colonel, Air Corps
Chief, Legislative Services.

1 Incl.-
Memo subj as above
to Mr. Amberg.

AAG 452.11 (3-2)

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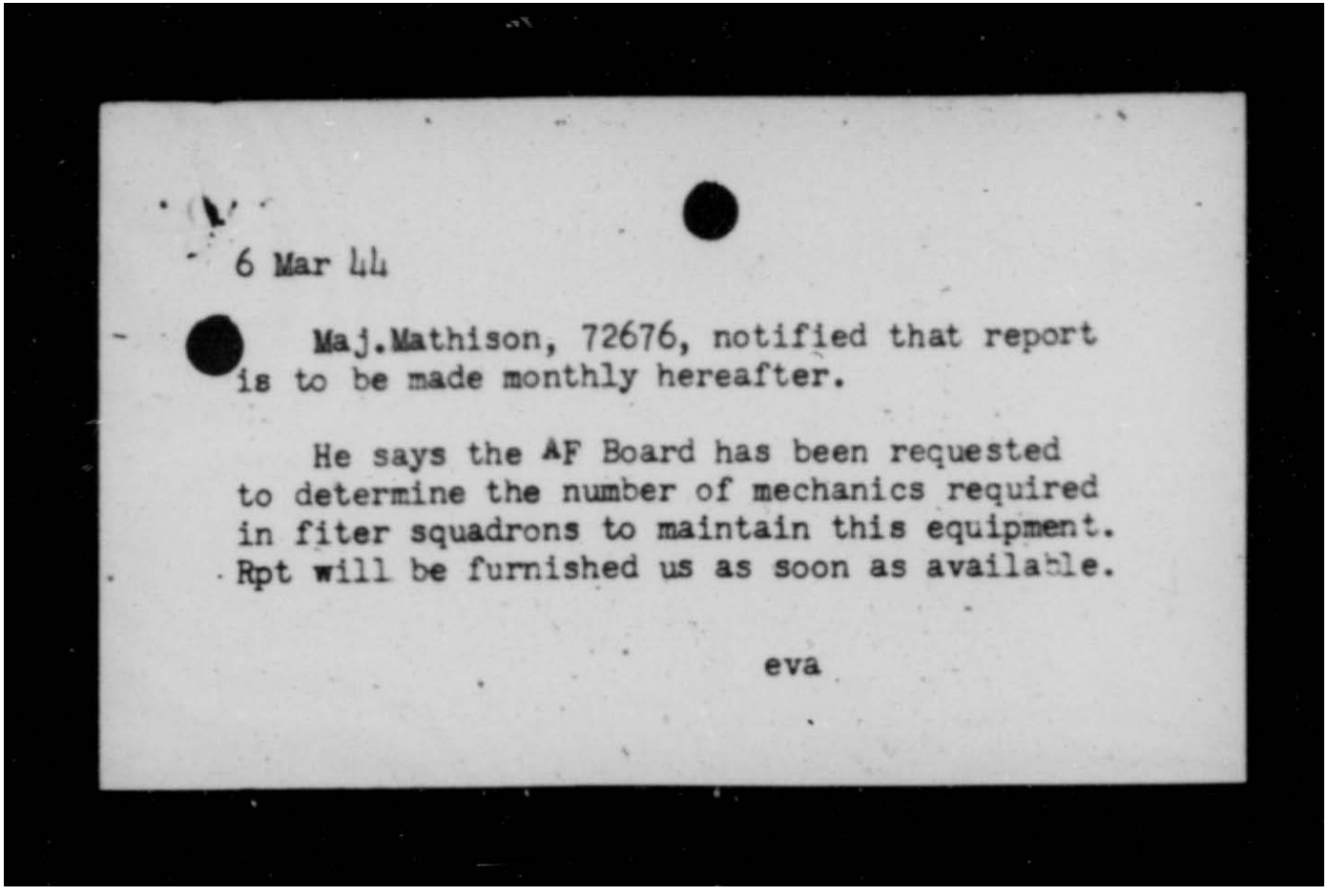

6 Mar 44

Maj.Mathison, 72676, notified that report is to be made monthly hereafter.

He says the AF Board has been requested to determine the number of mechanics required in fiter squadrons to maintain this equipment. Rpt will be furnished us as soon as available.

eva

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

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DOD ltrs.
8 Jan. & 20 June 1974
By AGO 1/44 IC; Date 10/15/76

WAR DEPARTMENT
HEADQUARTERS OF THE ARMY AIR FORCES
WASHINGTON, D. C.

AFRAD/AWC

FEB 27 1944

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

Subject: Status of Fighter Tail Warning Program

1. Reference is made to R&R, dated 26 November 1943, subject "Tail Warning Devices for Airplanes," from General Giles to General Perrin, and to succeeding Comment No. 2, dated 27 November 1943, from the Deputy Chief of Air Staff, to Asst C/AS, OC&R. This correspondence directed that a report be submitted at two week intervals, giving the status of the tail warning equipment project.

2. In compliance with the above directive, the following information is submitted regarding program status changes which have occurred during the past two weeks:

a. An investigation is now being conducted by the Aircraft Radio Laboratory to determine the most advantageous method of aural warning for the AN/APS-13 equipment. This is a result of complaints that the present bell is not loud enough. Trials have been made with a warning horn, which appears to be satisfactory, although some means of introducing a tone in the earphone is also being investigated.

b. Several weeks ago it was found that present production estimates of the 2D21 type tubes would not be sufficient to keep up with the demands of the AN/APS-13 production. However, the War Production Board has authorized an increase in production facilities, so that sufficient tubes will be made available.

c. No appreciable progress has been made on the mock-up of this equipment since the last report.

d. Tentative plans are now being made by the Aircraft Radio Maintenance Division to train Air Service Command personnel in May 1944. Two of the twenty equipments to be produced by General Electric, on a model shop basis, are expected to be diverted for this training program.

AAG 452.11 (210)

Ea Mouth
OC

Kenneth P. Bergquist
Colonel

for H. A. CRAIG
Brigadier General, USA
Asst. Chief of Air Staff
Operations, Commitments & Requirements

FOR VICTORY BUY UNITED STATES WAR BONDS AND STAMPS

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

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DOD Dirs
8 Jan. & 20 June 1974
By 9m/dg MG Date 10/15/76

WAR DEPARTMENT
HEADQUARTERS OF THE ARMY AIR FORCES
WASHINGTON, D. C.

AFRAD/AWC
7 February 1944

MEMORANDUM FOR THE DEPUTY CHIEF OF AIR STAFF:

Subject: Status of Fighter Tail Warning Program

1. Reference is made to R&R, dated 26 November 1943, subject "Tail Warning Devices for Airplanes," from General Giles to General Perrin, and to succeeding Comment No. 2, dated 27 November 1943, from the Deputy Chief of Air Staff to Asst C/AS, OC&R. This correspondence directed that a report be submitted at two week intervals, giving the status of the tail warning equipment project.

2. In compliance with the above directive, the following information is submitted regarding program status changes which have occurred during the past two weeks:

a. At present one P-70 type aircraft equipped with the AN/APS-13 equipment is still being flight tested at Boca Raton Field, Florida. Also a P-38 type aircraft is now being equipped with the AN/APS-13 at Boca Raton Field, and is expected to be flight tested shortly.

b. Two AN/APS-13 equipments are to be flown by air to the British by 10 February 1944.

c. The Aircraft Radio Laboratory has been requested to mock-up a P-51 type aircraft as soon as possible in as much as difficulty in installation is anticipated. In the event that this equipment cannot be installed in the P-51, steps will be taken to reduce the number of AN/APS-13 equipments on order.

Noted B.M.E.
11 Feb 44

William F McKee

WILLIAM F. McKEE
Colonel, Air Corps
Deputy Asst. Chief of Air Staff
Operations, Commitments & Requirements

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DOD 5200
By AL-/R M LC. Date 10/8/76

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AFRAD/ANC

FEB 27 1944

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

Subject: Status of Fighter Tail Warning Program

1. Reference is made to R&R, dated 26 November 1943, subject "Tail Warning Devices for Airplanes," from General Giles to General Perrin, and to succeeding Comment No. 2, dated 27 November 1943, from the Deputy Chief of Air Staff, to Asst C/AS, OC&R. This correspondence directed that a report be submitted at two week intervals, giving the status of the tail warning equipment project.

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b. Several weeks ago it was found that present production estimates of the 2021 type tubes would not be sufficient to keep up with the demands of the AN/APS-13 production. However, the War Production Board has authorized an increase in production facilities, so that sufficient tubes will be made available.

c. No appreciable progress has been made on the mock-up of this equipment since the last report.

d. Tentative plans are now being made by the Aircraft Radio Maintenance Division to train Air Service Command personnel in May 1944. Two of the twenty equipments to be produced by General Electric, on a model shop basis, are expected to be diverted for this training program.

H. A. CRAIG
Brigadier General, USA
Asst. Chief of Air Staff
Operations, Commitments & Requirements

Noted

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DOD Dirs
8 Jan. & 30 June 1976
By AFHRA MO Date 10/6/76

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SECURITY

AFRAD/ANC
7 February 1944

MEMORANDUM FOR THE DEPUTY CHIEF OF AIR STAFF:

Subject: Status of Fighter Tail Warning Program

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a. At present one P-70 type aircraft equipped with the AN/APS-13 equipment is still being flight tested at Boca Raton Field, Florida. Also a P-38 type aircraft is now being equipped with the AN/APS-13 at Boca Raton Field, and is expected to be flight tested shortly.

b. Two AN/APS-13 equipments are to be flown by air to the British by 10 February 1944.

c. The Aircraft Radio Laboratory has been requested to mock-up a P-51 type aircraft as soon as possible in as much as difficulty in installation is anticipated. In the event that this equipment cannot be installed in the P-51, steps will be taken to reduce the number of AN/APS-13 equipments on order.

WILLIAM F. McKEE
Colonel, Air Corps
Deputy Asst. Chief of Air Staff
Operations, Commitments & Requirements

file 21/1-44

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SECURITY

Air Hq 452.11 (209)

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AFMAG
WDG/hm/2246

DECLASSIFIED
DOD ltrs
6 Jan. & 20 June 1974
By [illegible] NC, Date 10/18/76

22 January 1944.

SUBJECT: Rebecca-Eureka Navigational Equipment.

TO: Commanding General,
I Troop Carrier Command,
Stout Field, Indianapolis, Ind.

1. This will introduce Major H. F. Henderson of the New Developments Division, Office of the Chief of Staff.

2. By direction of the Chief of Staff, the New Developments Division is preparing a final report for the Chief of Staff covering the development, production, and employment of Rebecca-Eureka navigational equipment.

3. It is desired that every assistance be given Major Henderson in compiling data for this report.

By command of General ARNOLD:

S/L.S. Kuter

L. S. KUTER,
Brigadier General, U. S. Army,
Acting Chief of the Air Staff.

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

DECLASSIFIED
DOD ltrs.
8 Jan. & 20 June 1974
By AFM NC Date 10/15/76

WAR DEPARTMENT
HEADQUARTERS OF THE ARMY AIR FORCES
WASHINGTON, D. C.

2 FEB 1944

CONFIDENTIAL

MEMORANDUM FOR CHIEF OF AIR STAFF:

Subject: Additional Cockpit Heat - P-38 Airplanes.

1. Pursuant to General Perrin's request on cable comment sheet dated 26 January 1944, covering message H-5154R dated 24 January 1944 from Eighth Air Force, to expedite the additional P-38 cockpit heat it is advised that since late December, production articles have been coming off the line with twice as much cockpit heat as formerly. Approximately 330 articles have been delivered with this change.

2. Kits to accomplish this change on theater and service airplanes are under procurement.

3. In compliance with reference cable, paragraph 1, above, complete instructions and drawings were air mailed to Eighth Air Force on 27 January 1944.

O. P. ECHOLS
Maj. General, U. S. A.
Asst. Chief of Air Staff
Materiel, Maintenance & Distribution

FOR VICTORY BUY UNITED STATES WAR BONDS AND STAMPS

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WASHINGTON, D. C.

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DOD ltrs.
8 Jan. & 20 June 1974
By: AL/MM LC; Date: 10/18/76

WAR DEPARTMENT
HEADQUARTERS OF THE ARMY AIR FORCES
WASHINGTON, D. C.

AFRAD/AWC
18 January 1944

MEMORANDUM FOR THE DEPUTY CHIEF OF AIR STAFF:

Subject: Status of Fighter Tail Warning Program

1. Reference is made to R&R, dated 26 November 1943, subject "Tail Warning Devices for Airplanes," from General Giles to General Perrin, and to succeeding Comment No. 2, dated 27 November 1943, from the Deputy Chief of Air Staff to Asst C/AS, OC&R. This correspondence directed that a report be submitted at two week intervals, giving the status of the tail warning equipment project.

2. In compliance with the above directive, the following information is submitted regarding program status changes which have occurred during the past two weeks:

a. The mock-up of the tail warning equipment has been completed in the P-47 and the P-70. The P-70 aircraft is to be flown to Boca Raton Field, Florida for extensive flight tests. The progress of the P-51 mock-up is satisfactory.

b. Information obtained from the Army Air Forces Technical Training Command indicates that maintenance of the tail warning equipment can best be accomplished by squadron IFF mechanics. A revision in the IFF training program to include instruction on the AN/APS-13 is being initiated.

c. Additional development model sets are now becoming available from RCA to complete mock-ups as required for further technical and operational tests.

/s/ H. A. Craig

H. A. Craig
Brigadier General, U. S. Army
Asst. Chief of Air Staff
Operations, Commitments & Requirements

Have we a report on the sets sent to UK? What is their status?

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

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6 Jan. & 20 June 1974
By [illegible] NC; Date 10/18/76

WAR DEPARTMENT
HEADQUARTERS OF THE ARMY AIR FORCES
WASHINGTON, D. C.

AFRAD/AWC
28 December 1943

MEMORANDUM FOR THE DEPUTY CHIEF OF AIR STAFF: (Gen Vandenberg)

Subject: Status of Fighter Tail Warning Program

Noted by Gen Van
File

1. Reference is made to R&R dated 26 November 1943, subject "Tail Warning Devices for Airplanes," from General Giles to General Perrin, and to succeeding Comment No. 2, dated 27 November 1943, from the Deputy Chief of Air Staff to Asst. C/AS, OC&R. This correspondence directed that a report be submitted at two week intervals, giving the status of the tail warning equipment project.

2. In compliance with the above directive, the following information is submitted regarding program status changes which have occurred during the past two weeks:

a. Production of the ten development models of the AN/APS-13 has been delayed due to a Navy submarine sound device which carries an A-1 precedence and is also being developed by RCA. To date a total of four AN/APS-13 sets have been delivered to the Army Air Forces. Allocation of these four sets is as follows:

2 sets to the Aircraft Radio Laboratory
1 set retained by RCA
1 set to the General Electric Company

The remaining six development model sets are now scheduled for delivery by 15 January 1944.

b. An additional twenty sets have been placed on contract with the General Electric Company and are expected to be produced on a model shop basis by March 1944.

c. At present the following types of aircraft are available at Wright Field for mock-up of the AN/APS-13:

1 P-47
1 P-51
1 P-70

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Three sets of group "A" parts for the AN/APS-13 have been made available for installation in the above aircraft and are now being installed. This will permit immediate installation of the group "B" parts when made available by the manufacturer.

/s/ H. A. Craig

H. A. CRAIG
Brigadier General, U. S. A.,
Assistant Chief of Air Staff,
Operations, Commitments and
Requirements.

File Ops & Jan 44

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DECLASSIFIED
DOD Ltr
8 Jan. & 20 June 1974
By Alw/NM NC, Date 10/8/76

AFRAD/ARC
28 December 1943

MEMORANDUM FOR THE DEPUTY CHIEF OF AIR STAFF:

Subject: Status of Fighter Tail Warning Program

1. Reference is made to R&R, dated 26 November 1943, subject "Tail Warning Devices for Airplanes," from General Giles to General Perrin, and to succeeding Comment No. 2, dated 27 November 1943, from the Deputy Chief of Air Staff to Asst C/AS, OC&R. This correspondence directed that a report be submitted at two week intervals, giving the status of the tail warning equipment project.

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1 P-47
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1 P-70

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SECRET

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H. A. CRAIG
Brigadier General, U. S. A.,
Assistant Chief of Air Staff,
Operations, Commitments and
Requirements.

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ADDRESS REPLY TO
HEADQUARTERS OF THE ARMY AIR FORCES
WAR DEPARTMENT
WASHINGTON, D. C.

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WAR DEPARTMENT
HEADQUARTERS OF THE ARMY AIR FORCES
WASHINGTON

AFRAD/AWC
16 Dec 1943

DECLASSIFIED
DOD Rtr.
8 Jan. & 30 June 1954
By AL-IVM JC. Date 10/18/76

MEMORANDUM FOR THE DEPUTY CHIEF OF AIR STAFF:

Subject: Status of Fighter Tail Warning Program

attached

1. Reference is made to R&R, dated 26 November 1943, subject "Tail Warning Devices for Airplanes," from General Giles to General Perrin, and to succeeding Comment No. 2, dated 27 November 1943, from the Deputy Chief of Air Staff to Asst C/AS, OC&R. This correspondence directed that a report be submitted at two week intervals, giving the status of the tail warning equipment project.

2. In compliance with above referenced directive, the following information is submitted regarding program status changes which have occurred during the past fifteen days:

a. The first three of ten development models of the fighter tail warning device have been completed and delivered to the Army Air Forces. One of these sets is being held by the Aircraft Radio Laboratory for mock-up in a P-38 type aircraft and the remaining two sets have been temporarily allocated to the Radio Corporation of America for further development work on test equipment.

Air 452.11 (203)

b. The remaining seven development equipments are scheduled for completion and delivery by the end of 1943. Three of these seven equipments will be shipped to England for operational test under combat conditions.

a total of 6000 test equipments

c. A quantity of 5,000 AN/APM-14 squadron test equipments for the tail warning device have been placed on order.

d. A quantity of 1,000 AN/APM-29 depot test equipments for the tail warning device have been placed on order.

3. It is anticipated that the tail warning program will begin to accelerate early in January when all ten development equipments are available for mockup and operational test. The present shortage of prototype equipments is limiting activities to completion of research and development and to the initial stages of planning for mockup, test, and employment.

4. Another report will be submitted in two weeks' time, outlining changes which occur during the remainder of 1943.

William F. McKee

WILLIAM F. McKEE
Colonel, Air Corps
Deputy Asst Chief of Air Staff
Operations, Commitments and Requirements

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DOD ltrs
8 Jan. & 20 June 1974
By AGAM NO. Date 12/16/76

~~CONFIDENTIAL~~

SUBJECT: Narrow Blade Propellers for P-47 Airplanes.

27 Dec. 1943
AFMMA-4E JRO'C:aa 71230
COMMENT NO. 2

TO: Deputy Chief of the AirStaff

FROM: Asst. Chief of Air Staff, MM&D.

1. The Air Service Command has been requested to ascertain how many propellers with narrow blades and also how many spare narrow blades can be made available as a result of the change-over to wide blade propellers on P-47 airplanes.

2. When the quantity has been determined, a decision will be made concerning their use as installation propellers or spares for either P-61 airplanes or Navy SB2C-3 airplanes, as these are the only airplanes now scheduled to have the narrow blade propellers.

Incls: 2
n/c

B. W. CHIDLAW,
Brig. Gen., U.S.A.,
Chief, Material Division.

File a 14 Jan 44

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DOD ltrs
8 Jan. & 20 June 1974
By SAF/AAM LC, Date 04876

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Narrow Blade Propellers for P-47 Airplanes

AC/AS - Materiel, Maintenance & Distribution

18 Dec 1943

Deputy Chief of the Air Staff

1

WMK/is/72487

The attached memorandum, subject "Narrow Blade Propellers for P-47 Airplanes", dated 17 Dec 1943, is forwarded for comments and recommendations by your office.

2 Incls:
Memo to Gen. Perrin, 17 Dec 1943, frm Col. McKee.
Memo to Gen.Craig, 7 Dec 1943, frm Col. McKee.

EDWIN S. PERRIN
Brigadier General, U. S. A.
Deputy Chief of Air Staff

Declassified
19 DEC 1943
AAG

AAG 452.11 (20)

12/20/43

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ADDRESS REPLY TO:
COMMANDING GENERAL
AAF AIR TRANSPORT COMMAND
WAR DEPARTMENT
WASHINGTON, D. C.

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ARMY AIR FORCES
HEADQUARTERS AIR TRANSPORT COMMAND
OFFICE OF THE COMMANDING GENERAL
WASHINGTON

DECLASSIFIED
DOD ltrs
8 Jan. & 20 June 1974
By AL-/NM NC. Date 10/18/76

29 November 1943

MEMORANDUM FOR GENERAL GILES.

Subject: Movement of B-29 parts to India.

1. I have just been advised by Colonel Ireland, Chief of Priorities and Traffic, Air Transport Command, that he called Colonel Dana at Patterson Field concerning movement of B-29 parts to India in C-46 planes that are being ferried to that area. You may remember, either you or General Craig showed me a wire a few days ago from General Arnold to the effect that we were to fill every nook and cranny on water and air transports to be sure that B-29 parts were gotten to India without delay. Colonel Dana advised Colonel Ireland that they were able to move all B-29 parts at present available to India by water, and that he would let us know if he needed assistance from the Air Transport Command in this project.

2. For your information, I wish to state that no C-46 goes to India carrying a load less than the total gross permissible. Initially, this load consists of essential operating spares for C-46's. However, if there exists any spare capacity on these airplanes, it will be used for B-29 spares if Colonel Dana requests such allocation.

H. L. GEORGE,
Major General, USA,
Commanding.

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DOD ltrs
6 Jan. & 20 June 1974
By AL MM LC; Date 10/15/76

TO: Chief of Air Staff

10 December 1943

FROM: Asst. C/AS, MMAD, (Material Division)

COMMENT NO. 2
WM:ihg 3573

1. This office realized from your RAR dated 6 November, that the MZX project carried a very high priority. However, as indicated in the report of Captain Smithies, dated 23 November, a copy of which Lt. Turney of Col. Maxwell's office received, the modification center was confused as to the priority of this project versus the F-7 photo ships also being done at St. Paul, since Col. Hudeau of OCAR had advised the modification center that the F-7 ships carried highest priority. The relative priority of these (2) projects was finally settled in an RAR dated 23 November, copy of which is attached, and the modification centers were advised immediately by teletype. (MZX has priority)

2. The mock-up airplanes have been completed. The B-17 is being held at Denver due to compliance with T.O's. The B-24 at St. Paul and will depart shortly for Langley Field.

3. Group A parts for the first project of ten (10) B-17's and five (5) B-24's are already at modification centers and are being installed in the airplanes. Due to the failure of the Navy and the manufacturer to meet their production schedule, it has not been possible to get Group B parts to the modification centers in time to meet the production schedule. Therefore, sufficient Group B parts are being diverted directly from

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H2X Projects.

Chief of Air Staff 10 Dec. 1943

Asst. C/AS, MR&D, (Materiel Division) 2 CONT'D.

WM:ihg 3563

Philco to Langley Field where arrangements have been made to install them under the supervision of Dr. Merrill of MIT.

c. According to the latest production information from Philco, and the Navy, Group A and B parts of the H2X will be available at modification centers in time to support the December and January projects which follow the airplanes mentioned in Paragraph 2b above. AC/AS, MR&D will continue to make every effort to see that modification centers meet their schedule, but this is wholly dependent upon Philco production which is being followed closely by Air Communications Officer and the Navy.

S. R. HINKNALL
Colonel, Air Corps
Chief, Production Branch

To: AC/AS, Operations, Commitments and Requirements. Date: 12 Dec. 1943

From: Chief of the Air Staff. Comment No. 3
HAC/gwd/3373

1. Action must be taken to eliminate conflicts such as that cited in paragraph 1 of Comment No. 2.

2. With reference to paragraph 2 of Comment No. 1, the Chief of the Air Staff has recommended that, due to the fact that H2X equipment is currently being used in active operations, it must have first priority. However, he is anxious that the B-29 Project receive sufficient of this equipment to carry on training. Can this be arranged?

3. The Chief of the Air Staff has also designated Colonel Stewart Wright as the H2X Project Officer for this Headquarters, with the responsibility of coordinating and following through the delivery of H2X equipped airplanes and the training of crews.

4. Please forward your comments reference Comment No. 2 above to the AC/AS, Materiel, Maintenance and Distribution, and the Air Communications Officer.

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H. A. CRAIG,
Brig. General, U. S. A.,
Acting Chief of Air Staff.

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DOD ltrs
8 Jan. & 20 June 1974
By AL/HH LC: Date 10/15/76

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H2X Projects.

To: AC/AS, Operations, Commitments and Requirements. Date: 12 Dec. 1943

From: Chief of the Air Staff. Comment No. 3
HAC/gwd/3373

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Dispatched
12 DEC 1943
AAG

H. A. CRAIG,
Brig. General, U. S. A.,
Acting Chief of Air Staff.

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Copy for Wm. Leyens

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8 Jan & 20 June 1974
By AL/HM NC, Date 3/18/76

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HZX Projects

Asst C/AS, Materiel, Maintenance and Distribution — 4 Dec 1945

Chief of Air Staff — 1
Col Maxwell/ek/3080

1. I wish to re-emphasize the importance of expediting the production, delivery and installation of HZX equipment in B-17 and B-24 airplanes allocated to the Eighth and Fifteenth Air Forces.

2. In addition to making this project top priority for bombardment airplanes except B-29, I believe that you should assign an officer to the project to insure that all agencies under your command have all the information and help necessary to prevent or overcome bottlenecks in this program.

3. Colonel Roberts, Bombardment Branch of Requirements Division, is designated as the project officer for OCR.

H. A. CRAIG
Brigadier General, U. S. A.

Asst C/AS, OCR _____

Dispatched
7 [illegible] 1943
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DOD Dir 5
5 Jan. & 30 June 1976
By [illegible] NLC, Date 10/15/74

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Equipment

Tail Warning Devices for Airplanes.

General Perrin 11/26/43

General Giles 1

Sometime back an order was placed to purchase a number of tail warning devices for airplanes. Preliminary tests at AAFSAT and Eglin have proved these devices to be valuable equipment.

It is directed that this project be given high priority and one of these sets flown to England as soon as possible and installed in our fighter type, then a report obtained as to whether it is desirable to place this equipment in all fighters.

It is directed that a report be submitted now and at two week intervals until this project is well under way and a report rendered as to the desirability of these tail warning devices.

B.M.G.

REC'D 11/26/43

BRS

Gen Giles handed to Gen Perrin

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DOD Dir. 5 Jan. & 20 June 1974
By [illegible] NLC, Date 12/8/76

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AFDAS
WMK/ova/72487

3 December 1943

MEMORANDUM FOR MR. LOVETT:

Subject: Tail Warning Devices for Fighter Aircraft

1. Tests have been completed by the Air Forces on the use of tail warning devices for fighter aircraft, and contract has been signed for some 43,000 sets of this equipment to be delivered by the end of 1944. This entire program is being expedited.

2. Production is now going forward on ten prototype models that will be delivered by the end of this month. Three of these sets will be shipped to England for combat testing jointly in AAF and RAF fighter aircraft.

3. The Air Staff is receiving bi-weekly reports on the progress of this entire project.

For the Commanding General, Army Air Forces:

Signed

BARNEY M. GILES,
Major General, U. S. A.,
Chief of the Air Staff.

Dispatched
4 [illegible] 1943
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6 Jan. & 20 June 1972
By AG/441 HQ, Para (2)(6)72

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Tail Warning Devices for Airplanes

AG 452.11 (11-27-43)

TO: AC/AS, OC&R - Attn: Colonel Wise

DATE 27 Nov 43

FROM: Deputy Chief of Air Staff

COMMENT NO. 2
ESP/eva/6371

For necessary Action.

KUWIN S. PERRIN,
Brigadier General, U.S.A.,
Deputy Chief of Air Staff.

Dispatched
27 NOV 1943
AAG

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GK
11/27/43

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AG 452.11 (11-27-43)

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8 Jan & 20 June 1974
By AL-MM NC, Date 10/18/76

HEADQUARTERS ARMY AIR FORCES

ROUTING AND RECORD SHEET

TALLY NO.	
FILE NO.	

SECRET

SUBJECT: Senatorial Committee Investigation.

TO: Deputy Chief of Air Staff

DATE 12 Oct 1943

FROM: Asst C/AS, OC&R, Requirements Division

COMMENT NO. 3
Capt.Mason/cjj/72485

1. The B-5 drift meter, manufactured by the Eastman Kodak Company is admittedly inferior to the B-3 drift meter, of Sperry manufacture. Decision to use the B-5 drift meter was brought about through consideration of weight problems. The B-5 weighs approximately 5 pounds as against 100 pounds for the B-3.

2. This office is compelled to take every step possible to keep the weight of bombardment aircraft within something approaching reasonable limits. In order to ferry B-25 airplanes to Hawaii, it is necessary to off-load a large amount of equipment on the west coast, such equipment being re-installed at the Hawaiian Air Depot. This situation is undesirable but unavoidable.

3. The B-5 drift meter is installed not only in B-25 airplanes, but also in B-26's, B-17's and B-24's.

4. While not as good as the B-3, the B-5 drift meter is considered adequate. With the proper understanding of its use, the navigator can reasonably be expected to employ it satisfactorily. The most significant advantage of the B-3 type is that it is gyro stabilized, whereas the B-5 is not.

5. Considering this item in relation to all others affecting bombardment airplane operation, it is not believed that the advantages to be gained through use of the B-3 drift meter justify the increase in weight.

for MORRIS R. NELSON
Colonel, Air Corps

M & E Section

Bomb. Branch

Noted
Gen Arnold
B.M.S.
Gen Arnold
has been notified of
the above by the Press
Corps

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8 Jan & 20 June 1974
By A/S/MM MC. Date 10/18/76

HEADQUARTERS ARMY AIR FORCES

ROUTING AND RECORD SHEET

TALLY NO.	
FILE NO.	

SECRET

SUBJECT: Senatorial Committee Investigation.

TO: General Perrin

DATE 10/9/43

FROM: Colonel Peterson

COMMENT NO. 1.

The Senatorial Committee reports that B-25 crews much prefer the drift meter manufactured by the Sperry Company to the one manufactured by the Eastman Kodak Company.

General Arnold desires some information on the above.

C. A. P.

TO: AC/AS, OC&R Attn: Colonel Maxwell

DATE 9 Oct 43

FROM: Deputy Chief of Air Staff

COMMENT NO. 2

For immediate reply.

EDWIN S. PERRIN,
Brigadier General, U.S.A.,
Deputy Chief of Air Staff.

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Air AG 452.11 (193)

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DOD Dirs.
6 Jan. & 30 June 1976
By AG/MH NO. Date 10/18/76

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RELASSIFIED

Senatorial Committee Investigation

TO: AC/AS, OC&R Attn: Colonel Maxwell

DATE 9 Oct 43

FROM: Deputy Chief of Air Staff

COMMENT NO. 2

For immediate reply.

EDWIN S. PERRIN,
Brigadier General, U.S.A.,
Deputy Chief of Air Staff.

Air AG 452.11

(193)

DISPATCHED
10 OCT 1943
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DECLASSIFIED
DOD Rts
8 Jan & 20 June 1974
By AU/AA NC Date 10/8/76

~~RESTRICTED~~

Procurement of Consumption Data on Spare Parts and Components of Spare Parts from All Theaters

4 Oct 43

Management Control
Attn: General Gates
Deputy Chief of Air Staff

4

ESP/eva/6371

Let's get going now - not a year from now. Let me know what you do.

2 incls n/c

EDWIN S. PERRIN,
Brigadier General, U.S.A.,
Deputy Chief of Air Staff.

TO: Deputy Chief of Air Staff, Brigadier General Edwin S. Perrin

DATE 6 Oct 43

FROM: Management Control, Statistical Control Division

COMMENT NO. 5
RB/elv/6068

Returned pursuant to your conversation with Lt. Colonel Thornton, Statistical ControlDivision will render monthly reports as to the progress of the project.

BYRON E. GATES
Brigadier General, United States Army
Chief, Management Control

2 Incls: n/c

AAG 452.11 (192)

10/7/43

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AAG 452.11 (192)

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By AL4/NH NC, Date 12/18/76

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Procurement of Consumption Data on Spare Parts and Components of Spare Parts from all Theaters.
IN TURN Management Control.
AC/AS, MMaD.

22 Sept. 1943

Deputy Chief of the Air Staff.

RSP/cmc/6371

1. It is directed that immediate action be taken to procure accurate consumption data on spare parts and components of spare parts from all theaters. This can probably best be obtained by requiring a statistical officer with various groups, depots, etc., to keep an accurate record of all parts and components used. These to be forwarded to this Headquarters and Air Service Command for compilation. Consumption will vary in different theaters.

2. Please advise this office of the action taken.

Dispatched
22 SEP 1943
AMC

EDWIN S. PERRIN,
Brigadier General, U.S.A.,
Deputy Chief of Air Staff.

AAG 452.11 (195)

File AG 235.4/1-43

air AG 452.11 (19-2)

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AL/MM SEC. Date 10/15/76

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Production of Spare Parts.

AC/AS, Materiel, Maintenance & Distribution.

15 September 43

Chief of the Air Staff.

2
MAL/mdg/5265

The Chief of the Air Staff has noted the foregoing comments and desires that an appropriate reply be prepared by you for dispatch to General C. R. Smith over General Giles signature.

MILLARD A. LIBBY,
Colonel, G. S. C.,
Secretary of the Air Staff.

Incl. n/c

Duly 452.11 (191)

Registered
15 SEP 1943
AAG

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Ltr 15 Sept 43

AAG 452.11 (191)

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By AL/JMM NC, Date 9/8/76

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production of Spare Parts.

TO: Chief of the Air Staff

DATE: 14 Sept. 43
Comment No. 2
JPM:dms - 3601

FROM: Asst. Chief of Air Staff, M.M.& D.

1. This office has not been averse to reducing the production of new airplanes when necessary to provide adequate spare parts. Consolidated was recently directed to curtail B-24 production by 200 airplanes in order to attain concurrency in spare deliveries. On 8 April 1943, the date of the Joint Aircraft Committee meeting referred to in Paragraph 2 of General Smith's memorandum, a directive was sent to General Branshaw stating that "Action must be taken to procure the critical items (spares) as soon as possible even at the expense of completed production airplanes." In the immediate case of C-46s and C-54s however a reduction in airplane production does not appear to be the answer for the reason that with few exceptions the parts that are critical are not manufactured by Curtiss or Douglas. They are sub-contractor furnished or purchased parts which are not available because of conditions over which the airplane manufacturers have no direct control. Thirty tail wheel oleo struts could be obtained by not building 30 C-46s, but oleo strut production would not be affected as these items are furnished by Cleveland Pneumatic.

2. Curtiss has been unsatisfactorily slow in delivering spares, but in most instances the fault was found in their failure to place and follow up orders through sub-contractors and vendors, rather than in inadequate production in their own plants. In order to improve this condition, a new Air Force Resident Representative has recently been assigned to Curtiss, Buffalo, and the Eastern District has its best spares man working full time on the C-46. Results are shown by the fact that General Stratemeyer's order for 90 days spares received last week, involving a large quantity of some 243 items, has been filled with the exception of eight items which are being expedited by the Materiel Command and the Air Service Command and will be shipped within 30 days. Spares for six months operations have been provided with each airplane assigned to this project.

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Production of Spare Parts.

Chief of the Air Staff

Asst. Chief of Air Staff, M.M.& D.

2 (Cont'd)
JPM:das - 5601

a. Colonel Fritz, Air Transport Command, approximately three weeks ago stated that the main trouble encountered on the India-China operation was not failure to provide adequate spares but inability to find them after they got there.

3. In April 1943, a C-46 Spare Parts Committee, composed of representatives of the Air Service Command, the Curtiss Company, Eastern and Northwest Airlines, developed a list of 4,380 items which represented estimated requirements for two years' operations. As of 1 September, deliveries have been made against all but 500 items. In a number of these cases, shortages are due to the incapacity of the sub-contractor or vendor to increase production, and consequently new sources of supply must and are being sought out.

4. C-54 spares were critical for a time, but this condition is greatly improved. TWA reports that parts are now being provided and that operations are satisfactory. American Airlines is having difficulty apparently because of the time required to get parts from the depot. This is being investigated.

5. A meeting was held this afternoon attended by Colonel J. W. Sessums, M.M.& D., Lt. Colonel J. W. Stephenson, A.S.C., Lt. Colonel H. E. Hockett, Materiel Division, Major W. M. Krieker, A.S.C., Major John Marshall, Materiel Division, and Captain R. R. Huber, A.T.C., to determine what immediate action should be taken in response to General Smith's memorandum. It was agreed that a daily report will be transmitted to the Washington Air Cargo Depot Detachment covering parts that are needed to keep all C-54s operational. Such parts as are not in stock will be ordered from Douglas immediately. Lt. Colonel Stephenson will expedite these orders. Likewise, the Air Service Command activities concerned will provide Lt. Colonel Stephenson with reports covering C-46s out of commission for lack of parts so that these may also be cleared. If it is found that the curtailment of new airplane production is necessary to the provision of essential spares, this will be done.

1 Incl.
n/c

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Production of Spare Parts.

Asst.Chief of Air Staff, MMAD — 9 Sept.1943

General Giles. — 1

Reference the attached memorandum from General C. E. Smith on the above subject, request information upon which to present this matter to General Arnold.

BARNEY M. GILES,
Major General, U. S. A.
Chief of the Air Staff.

1 Att.
Memo 7 Sept.'43 abv subj

Air AC 452.11 (9)

Dispatched
11 SEP 1943
AMG

File a 11 Sept 43

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Air AC 452.11 (11)

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By AI-/NH NC, Date 10/15/76

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7 September 1943

MEMORANDUM FOR MAJOR GENERAL BARNEY M. GILES, USA.

1. For many months we battled before various allocation boards to have established the policy that the production of an adequate supply of spare parts should be accomplished, even though it directly affected the production of additional aircraft, the premise being that additional aircraft were not too useful to you when an insufficient stock of spare parts was available to maintain in service the airplanes you already had.

2. Finally, about three months ago, the combined allocations board at which there were present representatives of the Army, Navy and British, passed upon this matter and established the principle that production of spare parts should have priority at least equal to aircraft production and, when required, aircraft production should suffer at the expense of an adequate supply of spare parts. At the meeting of this board, General Arnold represented Air Forces and voted in favor of the policy.

3. When this decision had been reached we thought that our difficulties with spare parts would occur less often. To the contrary, we seem to have as much trouble getting spare parts now as we did some months ago. This is especially true with respect to spare parts for C-46 and C-54 aircraft. Avidently something has gone wrong in the application of the policy decided upon.

4. When time will permit, will you discuss this matter with General Arnold. We are quite willing to take fewer airplanes of the C-46 and C-54 types, if that be required, in order to secure an adequate supply of spare parts. Our whole operation is slowing up, due to scarcity of spare parts.

C. R. SMITH,
Brig. Gen., USA,
Deputy Commander.

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8 Jan. & 20 June 1974
By Ahrens NC, Date 6/6/76

SECRET

29 August 1943

Self Sealing Tanks and Crew Armor for Troop Carrier Aircraft.

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

1. With reference to Paragraph 3, Cablegram W 3001, Devers to Marshall for Arnold, the following information is submitted.

a. Requirement for self sealing gas tanks and armor protection for pilot and co-pilot has been established by ETOUSA.

b. Attached report of studies conducted by A-4, Engineering Section, I Troop Carrier Command, establishes the following facts:

(1) Design and engineering of subject equipment has been accomplished.

(2) No major design modification of Troop Carrier aircraft is necessary.

(3) Proposed program has been coordinated with ASC, Material Division, ATC, and manufacturers of subject aircraft and accessories.

(4) Program can be accomplished in prescribed time limits.

c. It is recommended that compliance with the theater requirement be directed, and that adequate priorities for accomplishment within the prescribed time limits be established.

HUBB G. LANDIS
Colonel, Air Corps
Commanding Officer,
I Troop Carrier Command

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8/31/43

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29 August 1945

Self Sealing Fuel Tanks and Armor Protection for Pilot and Co-pilot in C-47 and C-53 Aircraft.

Commanding Officer, I Troop Carrier Command
Stout Field, Indianapolis, Indiana

1. In compliance with verbal instructions the following report is submitted on investigations conducted by the A-4 Engineering Section of this Headquarters on the subject of self sealing tanks and armor for Troop Carrier aircraft.

a. Theater Requirement.

Conversations with the Troop Carrier Project Officer for ETOUSA revealed that, on the basis of projected operations and in the light of recent operational experiences, self sealing tanks and armor protection for pilot and co-pilot of Troop Carrier aircraft are necessary to insure the success of future operations. The type of protection necessary is that which will minimize the effectiveness of small caliber ground fire and low velocity fragments. Operating conditions in the theater will permit a reduction in tactical fuel capacity of not to exceed 150 gallons, and a weight increase in the aircraft not to exceed 900 lbs. The necessary relocation of certain accessory equipment is allowable. Approximately 1000 units are required. All Troop Carrier aircraft scheduled for ETO after 1 December should be equipped before departure, and 350 units for earlier groups and groups from other theaters should arrive in the theater not later than 1 February, 1944.

b. Preliminary Survey of Possibilities.

(1) Contacts made.

(a) Air Service Command
(b) Material Division
(c) Douglas Aircraft Company
(d) Goodrich and Firestone Rubber Companies
(e) Air Transport Command

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e. Results of Survey.

(1) In anticipation of requirements outlined in Paragraph A, as well as previous requests from the theaters of operation, this section has for the past year made a study of these requirements. Due to this pre-planning considerable engineering data concerning these modifications is available.

(2) Self sealing tanks for Troop Carrier aircraft have been engineered and are of the insert tube type which will require no design modification of the aircraft. Loss in fuel capacity will be approximately 120 gals. which is within the limits as set forth by the theater. This fuel reduction will be acceptable to AFC for ferry movements. The additional overall weight, though not definitely known, is not expected to exceed 100 pounds per tank which is within the 900 pound limit of the theater.

(3) It has been indicated by the various fuel cell manufacturers that materials in limited quantities for immediate requirements are available, but the priorities will have to be established to provide for the immediate release of materials in order that the production schedule can be met.

(4) In contacting Air Service Command, it was determined that cockpit armor protection is now available in limited quantities for immediate requirements. The engineering for the C-47 airplane has been completed and a mockup has been installed. This design follows closely that now established as satisfactory for bombardment aircraft and the installation in C-47 airplane requires only minor modifications to present standard cockpit layout. See photos attached. Weight increase in aircraft is 383 lbs. Materials are available though require priorities. In order to compensate for shift of center of gravity, a relocation of some accessories to the rear of the aircraft is necessary. It is recommended that this be accomplished by moving SCR-522 and spare coils. See memo attached.

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e. Results of Survey (Continued)

(5) Informal coordination with the manufacturers of the aircraft and the proposed accessories, the modification centers and Air Service Command depots indicates that this project can be carried out in time to meet the theater requirements provided that immediate approval of the GG AAF is obtained. Close cooperation of all agencies involved is required and has been assured, and the undersigned is prepared to take the necessary steps to effect the coordination of the project.

O. W. GOWLS
Lt. Colonel, Air Corps
A-4 - HHG. -

2 Incls
Incl 1 - Memo dtd 26 Aug 43
Incl 2 - Photo (G-80-41-7709
E-7017) in dup.

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By ALAF/PKC, HQ, Date 10-18-76

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C-46 Spare Parts

General Echols

16 August 1943

Air Transport Division, AC/AS, NMAD

1

CRS:mmm:72090

US 2.11 (187)

1. Reference General C. R. Smith's comment "shortage of C-46 spares still remains critical" appearing in his memorandum of 12 August 1943, subject "Notes on India-China Wing"; based on actual depot repair requirements, a cabled emergency requisition dated 24 July 1943 was received from the Tenth Air Force Service Command for C-46 spares, amounting to approximately 40,000 pounds. This list is being filled by the Air Service Command and will be delivered to Wilmington, Delaware this week for delivery to Chira on C-46 aircraft enroute from factory to India-China Wing.

2. In addition to the above emergency requirements, the Tenth Air Force Service Command is submitting a revised list of C-46 spares based on practical operating experience which will be used in compiling ninety-day supply list.

3. Present critical shortage in the Wing is primarily the result of inexperience in actual operating performance of a new-type aircraft and should be alleviated as soon as supply program can be developed on the basis of experience.

CHARLES W. SULLIVAN,
Colonel, Air Corps.

COPY FOR GENERAL PERRIN - 32-1019 D.A.S.

Noted by Gen Perrin Feb 8/19 Asst

File 19 Aug 43

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Air Ops 452.11 (187)

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8 Jan & 30 June 1974
By AAG/PAC, OC, Dep 10-18-76

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Report of House Military Affairs Committee re Gasoline Fueling Systems

AC/AS, Materiel, Maintenance and Distribution
Buildings and Grounds Section
Chief of the Air Staff

27 Aug 43

MAL/ee/5265

1. The attached brief of subject report and your memorandum to the Chief of the Air Staff outlining the action taken by the Army Air Forces reference the recommendations listed on Page 80 of the subject report have been very carefully noted by General Arnold.

2. General Arnold is very much disturbed about the continual reopening of this matter as it appears that the Army Air Forces have taken all the corrective action indicated. What the House Military Affairs Committee and Mr. Burton in particular do not appear to know is that the entire matter may be classed under "ancient history". They have not discovered anything new and all the old stuff they keep rehashing has been subject of very positive action in the Army Air Forces. Consequently, it is of major importance that we prepare a memorandum to Mr. Burton, which he may in turn give to the Thomason Committee, setting forth in great detail every bit of positive action which General Arnold and the Army Air Forces have taken from March 1942 up to the present time reference this matter. Therefore, the reply which you are directed to prepare for General Arnold's signature should be painstakingly complete and thoroughly supported by every bit of documentary evidence in the nature of directives, etc. which have been issued.

3. General Arnold said that it was of prime importance to mention in his reply the fact that the Army Air Forces have never been given a chance to be heard by the committee. If it is at all possible, a copy of the letter that Judge Patterson wrote to Mr. May, Chairman of the House Military Affairs Committee, pointing out this fact, should be attached as an exhibit. This point is quite important and should be played up in the reply to the fullest.

4. As time is the essence of this matter, this report is being furnished Colonel Newman direct and it is directed that the answer be returned to this office for presentation to General Arnold not later than Monday morning, August 30th, as General Arnold intends to depart from the city on the following day.

5. There is no need to re-emphasize the importance of this matter but it appears to the undersigned that a few hours of careful and thorough work at this time may stop repeated calls on the Army Air Forces for information reference this matter.

M. A. LIBBY
Colonel, G. S. C.
Secretary, Air Staff

5 Incls:
Memo dtd 8/21/43 re Report of Investigation
Memo dtd 21/8/43 re Recom. of HMAB re fuel systems
Report dtd 6/5/42
Report dtd 8/1/43
Memo re conversation between Mr. Burton & Col. Knowles

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File
SK 8/31/43

Delivered by me to Schyler

AAG 452.11 (186) B

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5 Jan. & 20 June 1974
By AUNTAC, JC, Date 10-15-76

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Report of House Military Affairs Committee re Gasoline Fueling Systems

AC/AS, Materiel, Maintenance and Distribution 19 Aug 43

Chief of the Air Staff 1

MAL/ee/5365

1. The attached report has been carefully noted by the Chief of Air Staff personally who considers the substance thereof of extreme importance.

2. It is directed that you have this report carefully analyzed in your division and a very short brief thereof prepared which may be given to General Arnold upon his return.

3. It is further directed that you render a report in detail commenting upon the specific action taken by the Army Air Forces in answer to each of the recommendations stated on page 80 of the attachment.

4. The Chief of the Air Staff has determined that the Under Secretary of War has some helpful data and information reference this subject and it is desired that his office be contacted in the preparation of your reply.

5. The Chief of the Air Staff has directed that he receive this information not later than Saturday, August 21st.

Incl:
Report

Dispatched
19 Aug 43
AAG

M. A. LIBBY
Colonel, G. S. C.
Secretary, Air Staff

452.11 (186) B

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DOD Dirs
5 Mar. & 30 June 1974
By AIAG/PRC, Date 10-15-76

SECRET

Review Report Rendered by General Council

Air Judge Advocate — 18 Aug 43

Chief of the Air Staff — 1

MAL/ee/3265

1. The Chief of the Air Staff directs that you review the attached copy of a report rendered by the General Council of the House Military Affairs Committee reference gasoline, fueling and storage systems of the Army Air Forces.

2. A summary of the report is desired for General Giles and General Arnold's information as well as an indication of what action should be directed to the various staff agencies to comply with the recommendations in the report.

3. Please expedite this matter.

Dispatched
18 AUG.
AAG

M. A. LIBBY
Colonel, G. S. C.
Secretary, Air Staff

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5 Jan. & 20 June 1974
By AFAG/PAC, MG, Date 10-15-76

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AFDAS
ESP/eva/6371

20 August 1943

Two-Speed Engine Installation in C-47's

Commanding General, Air Transport Command

The attached R&R concerning the installation of two-speed engines in C-47's is being forwarded for your information and whatever action you may consider necessary.

2 incls
Incl 1—CONF R&R #1 & #2, this subj, dtd 14 Aug & 19 Aug.
Incl 2—Inter-Desk Memo to Gen. Perrin frm Maj. Marshall 18 Aug this subj.

EDWIN S. PERRIN,
Brigadier General, U.S.A.,
Deputy Chief of Air Staff.

Dispatched
21 AUG 1943
AAG

Air Ad 453.11

File 21 Aug 43

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8 Jan. & 20 June 1974
By NNDRC, LC; Date 10-11-76

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Two-speed blowers for ATC C-47's

AC/AS, MR&D (Attention: General Chidlaw)

14 August 1943

Deputy Chief of Air Staff

ESP/eva/6371 1

1. Is it possible to equip all C-47's going to the Air Transport Command with two-speed blowers? Also, is it possible to and how long would it take to modify all C-47's that Air Transport Command now has with two-speed blowers?

2. Information is also desired as to what action is being taken to winterise the hydraulic controls on C-46's so that difficulties will not be experienced in cold weather.

EDWIN S. PERRIN,
Brigadier General, U.S.A.,
Deputy Chief of Air Staff.

Telegraphed
14 Aug 1943
AAF

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File
cc 16 Aug '43

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ADDRESS REPLY TO
HEADQUARTERS OF THE ARMY AIR FORCES
WAR DEPARTMENT
WASHINGTON, D. C.

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DOD ltr.
8 Jan. & 20 June 1974
By NARS, Date 10-8-76

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AFDMA-4H

WAR DEPARTMENT
HEADQUARTERS OF THE ARMY AIR FORCES
WASHINGTON

11 August 1943

5112
for file
P Jackson

MEMORANDUM FOR: General Giles

SUBJECT: B-24 Spare Parts

1. The spare parts picture on B-24s from Consolidated, San Diego has become very critical with the Navy as well as with the Air Service Command.

2. The Materiel Command has been ordered to correct this situation at the expense of losing up to two hundred (200) B-24s during the balance of 1943.

OPE ohls

O. P. ECHOLS
Maj. General, U.S.A.
Asst Chief of Air Staff
Materiel, Maintenance &
Distribution

50 Planes

Col Peterkin (OPD)

Col. Peterkin
3601

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DOD Dirs.
8 Jan. & 20 June 1974
By NARS, Date 10-18-76

16 July 1943

MEMORANDUM FOR Lt. Colonel Walter Krueger,
Operations Division, War Department
General Staff.

Subject: Kits of C-46 Spares.

It is requested that a message, substantially as follows, be transmitted to General Stilwell:

"Information reaching AAF Headquarters indicates kits of C-46 spares destined for India China Air Transport Command Wing, Assam, are being removed, classified and pooled in theater supply at Karachi and Agra. It is imperative that the India China Air Transport Command reach maximum operation in minimum time. Therefore, it is desired that until maximum operation this Wing is obtained, all C-46 kits and spares will be retained for exclusive use of India China Air Transport Command and concentrated in location most suitable for support of their operation."

For the Commanding General, Army Air Forces:

Dispatched
16 JUL 1943
AAG

EDWIN S. PERRIN,
Brigadier General, U.S.A.,
Deputy Chief of Air Staff.

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Belly Tanks for P-47's -- and Navy Rescue Boats.

AC/AS, Materiel, Maintenance & Distribution (Attention: Brigadier General B. E. Meyers)
Deputy Chief of the Air Staff.

9 July 1943

1

ESP/cmc/6371

1. Confirming conversation with the undersigned, it is requested that

   a. Several paper belly tanks for P-47 airplanes, together with complete drawings and instructions, be obtained from the 12th Air Force for:

      (1) Review by AC/AS, M&D
      (2) Forwarding to the 5th Air Force.

   b. Commitments and scheduled delivery dates of Navy rescue boats, as promised by Admiral King to General Arnold, be obtained and forwarded to this office.

Dispatched
10 JUL 1943
AAG

EDWIN S. PERRIN,
Brigadier General, U.S.A.,
Deputy Chief of Air Staff.

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ci 10 July 43.

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Air Adm 52. 11 (179)

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6 Jan. & 30 June 1974
By AUTOVON, J.C. Date 11-17-7

~~CONFIDENTIAL~~

Thermo Ice Prevention.

General Giles

30 June 1943

General Stratemeyer

1

CES/hd

1. In a conference with General Arnold this morning he stated that he wanted immediate action taken to have Thermo Ice Prevention placed on all Heavy Bombers which are to fly the North Atlantic next winter.

2. He states that the N.A.C.A. have proved this method of ice prevention and that it is a practical installation.

3. You will follow through and see that every possible action is taken to get this Thermo Ice Prevention installed on our bombardment airplanes which will be flown under icing conditions next winter. The Sacramento Air Depot will be directed to set up a modification center to make these installations.

4. It has been reported to General Arnold that this installation cannot be made until 1944. General Arnold will not accept this. He states that the Material Command will probably attempt to improve the N.A.C.A. installation and if that is the case, then possibly 1944 is the time. General Arnold will not wait this long. He wants this done prior to next winter.

5. General Arnold has written a directive to the Assistant Chief of Air Staff, Material, Maintenance, and Distribution on this subject. You, as Assistant Chief of Air Staff, Operations, Commitments, and Requirements, will follow through and submit a progress report on this weekly (Mondays). General Arnold does not want reasons why it can't be done. He states that it will be done and that the facilities of the Army Air Forces will be made available in order that it can be done.

GEORGE E. STRATEMEYER,
Major General, U.S.A.,
Chief of the Air Staff.

cc - General Echols

Dictated carried
to Gen. Echols per Miss Campbell

File
ci 2 July 43

Returned to Rm 3E 1047
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delivered by special messenger

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Miss Ingram

AR 380-5 VSD 11 (22)

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Thermal Wing De-Icing

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DOD ltrs.
8 Jan. & 20 June 1974
By: NNPMC, NC; Date 10-18-76

TO: AC/AS, OCAR (Requirements Division)

Date 28 July 1943

FROM: Deputy Chief of Air Staff.

Comment No. 3

RSP/cma/6371

1. Directive as suggested in paragraph 3 of Comment No. 2 is approved except to put more "heat" on the "soon as practicable".

2. It is desired that this directive be cleared through me.

Dispatched
29 JUL 1943
AMC

EDWIN S. PERRIN,
Brigadier General, U.S.A.,
Deputy Chief of Air Staff.

Incl: n/c.

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6 Jan. & 20 June 1974
By AUTEC/C.C. Date 12-12-76

DECLASSIFIED

TO: Deputy Chief of Air Staff
Attention: General Perrin

DATE 24 Jul 1943

COMMENT NO. 2
Col Gross/ek 3020

FROM: Asst C/AS, OCR (Requirements Division)

1. I cannot sign the attached proposed directive to the Asst C/AS, MMSD, on the above subject. The meeting with General Arnold was held during my absence from Washington. I have not heard, or have been able to find out, what directive General Arnold gave to General Echols on this subject.

2. During the last two years all aircraft have been excepted from the requirement for wing and empennage de-icers except long-range cargo and heavy bombardment aircraft. The A-20, A-24, A-30, B-25, and B-26 have been specifically excepted from this requirement. Alaska, Greenland, and Iceland are the only places which require wing and empennage de-icers on medium bombardment aircraft.

3. To be consistent with the above related actions and policy, it is believed the directive to the Assistant Chief of Air Staff, MMSD, might well be:

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DOD Dirs
8 Jan. & 30 June 1974
By PAN/PAT J.C. Date 11-18-76

~~SECRET~~ ~~SECRET~~

DECLASSIFIED

Thermal Wing De-Icing

"Thermal de-icing will be provided on heavy bombardment airplanes and and cargo airplanes equivalent to the C-47 in size and range, as soon as practicable such thermal de-icing system to replace the present rubber boot type of de-icers."

If your approve this office will prepare the necessary directive.

MELVIN E. GROSS
Colonel, Air Corps

1 Inal
n/c

~~SECRET~~ DECLASSIFIED

2

Arab 452.11 (177) B

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DOD IDS
8 Jan. & 20 June 1974
By AUAFHC NC. Date 10-18-76

~~CONFIDENTIAL~~
RESTRICTED

Air Cleaners and Ground Transportation.

AC/AS, Operations, Commitments & Requirements. 24 June 43

Deputy Chief of the Air Staff.

MAL/mdg/5265

1. Submitted to your division for consideration of paragraph 4, comment 2 above and paragraph 3, of the attached memo.

2. Remarks and recommendations reference the foregoing are desired with the least practicable delay.

MILLARD A. LIBBY,
Colonel, G. S. C.,
Secretary of the Air Staff.

Incl. n/c

Dispatched
24 JUN 1943
AAG

Ais AS 452.11 (175)

~~CONFIDENTIAL~~
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File ltr 24 June 43

Ais AS 452.11 (175)

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DOD Dir.
By ... J.C. Date ...

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RESTRICTED

Joint Meeting of AAF-RAF held May 5, 1943.

Asst. Chief of Air Staff, Material, Maintenance & Distribution 13 May 43
ATTENTION: Supply & Services Division Project Officer
Deputy Chief of the Air Staff

1.

MAL/mdg/5265

General Hanley had previously noted this report which was delivered to him personally by Lieut. Colonel Diggs of your office.

MILLARD A. LIBBY,
Colonel, G. S. C.,
Secretary of the Air Staff.

Att: Memo for Gen. Hanley fm.
Col. Stone w/1 incl.

Dispatched
MAY 13 1943
AAG

AG 452.11 (174) B

file
cs 5/13/43

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AG 452.11 (174) B

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DOD ltrs.
9 Jan. & 30 June 1974
By AWJ/JCC, JC, Date 10-18-76

RELEASED

RAF - AAF Conference, 5 May 1943.

Asst. Chief of Air Staff, Material, Maintenance & Distribution 12 May 43

Deputy Chief of the Air Staff. 1

MAL/mdg/5265

Noted with interest by General Hanley and returned.

MILLARD A. LIBBY,
Colonel, G. S. C.,
Secretary of the Air Staff.

Att: Cy No. 9
of Conference.

Dispatched
MAY 12 1943
AAG

Air AS 452-1 (174)

file a 5/13/43

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CONFIDENTIAL

Air AS 452-1 (174)

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DECLASSIFIED
DOD Dirs.
5 Jan. & 30 June 1954
By AUNTPRC, HQ, Date 10-18-76

~~SECRET~~

Loan of Wings from ASC Stock to Production Lines.

Deputy Chief of Air Staff

JUL 14 1943

Office, Asst. Chief of Air Staff
Material, Maintenance & Distribution

2
RHB:dms - 3601

1. The return to manufacturers of excess and surplus items of aircraft spares in Air Service Command stocks is in progress. This activity is being coordinated between the Air Service Command and the Materiel Command.

2. With special reference to excess wing assemblies, many of these assemblies were bought on earlier contracts and are not usable on current production airplanes without modification. This is particularly true of B-17 outer wings which now carry provisions for installation of fuel tanks, which provisions were not made in earlier models.

3. Outer wing assemblies are generally fairly easily and rapidly produced and there are no shortages in this category of parts. As a matter of fact, particularly on the B-17 airplane, the Materiel Command is now faced with the problem of holding down the production of outer wings because these assemblies have exceeded the requirements of the airplane manufacturers.

4. The Materiel Command will continue to take advantage of the use of excess aircraft components made available by the Air Service Command whenever it appears that production will be benefited thereby. However, caution will be observed in introducing into production lines parts of earlier design which will need extensive modification before they can be made suitable for current production.

J W SESSUMS, JR., COL., A.C.
Asst. Chief, Materiel Division

TO: AC/AS, Materiel, Maintenance and Distribution.

DATE 15 July 43

FROM: Deputy Chief of the Air Staff.

COMMENT NO. 3
MAL/mdg/5265

Noted and returned.

Dispatched
15 JUL 1943
AAG

MILLARD A. LIBBY,
Colonel, G. S. C.,
Secretary of the Air Staff.

File Ci 15 July 43

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2

Ai AS 452.11 (173)

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DECLASSIFIED
DOD IIT's
8 Jan. & 20 June 1979
By ALN/AXC HQ. Date 10-18-76

Loan of Wings from ASC Stock to Production Lines.

Assistant Chief of Air Staff, Materiel, Maintenance and Distribution. 5 May 1943.

Deputy Chief of Air Staff.

TJH/eva/6371 1

1. The following comment appears in "Weekly Activity Report" of the Air Service Command, dated May 1, 1943:

"(2) Loan of Wings from ASC Stock to Production Lines - The ASC offered to loan 898 wing assemblies covering all types of aircraft which were currently excess stock, to the aircraft manufacturers to bolster current production. A schedule for the return of these loaned items covering the four months, May to August, was also furnished. Materiel Command replied to our recommendations that: "the above excess wing panel assemblies should not be returned to the contractor for installation in production airplanes"; "Boeing Aircraft has no requirements for wing assemblies on a loan basis"; "loan of wing assemblies to the contractor for finished aircraft is impracticable due to the ASC request for return of these items at the rate of two per month, beginning in September". Negotiations for such loans were not consummated by the Materiel Command."

452.11 (173)

2. Two things appear worthy of note in this item. First, if the Air Service Command has 898 wing assemblies in excess of current requirements and ~~these are~~ declared on a concurrent basis, these assemblies can be returned to the factories, not on a loan basis, but on a permanent basis. Second, it does not appear reasonable that the return of finished assemblies will not be of benefit to the airplane factories since they can be utilized to make up shortages from day to day.

Dispatched
MAY 6 1943
AAG

T. J. HANLEY, JR.,
Brigadier General, U.S.A.,
Deputy Chief of Air Staff.

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DECLASSIFIED
DOD Dir 5
8 Jan. & 20 June 1974
By HLN/PKC NARS Date 10-18-76

Spare Parts for B-17's in India

Air A.G.

24 April 1943

Secretary of the Air Staff

MAL/es/5265

1. Noted by General Hanley.

2. For files.

Incl:
Cables w/d

MILLARD A. LIBBY,
Colonel, G. S. C.,
Secretary of the Air Staff.

SECRET

452.11 (17-2)

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DECLASSIFIED
DOD 5200
Sec. 3, 20 June 1974
By [illegible] NARS, Date 10-18-76

Spare Parts for B-17's in India

To: Deputy Chief of the Air Staff

Date: 20 April 1943

From: Asst. C/AS, M M & D.

Comment No. 4
LDM/cad/4300/SS-4

1. The attached radiogram indicates B-17's are being collected at Agra for final pre-flight check preparatory to removal from theater and that on account of the poor condition in which the new engines are being received, special care is being taken before the ships are released for this flight.

2. As of April 14, the following information was obtained from theater on the ten (10) B-17's in that theater:

a. Ready for fly-away as of April 14 -- 2 B-17C's, and 2 B-17E's.

b. Ready as of April 21 -- 3 B-17E's.

c. Ready subsequent to April 21 -- 3 B-17E's.

C. B. STONE, III
Colonel, Air Corps
Chief, Supply & Maintenance Branch

Incl. n/c

[redacted]

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DOD Dir. 5
E.O. 12356 Sec. 3.3
By ALA/AAC NC Date 6/14/12

To : Deputy Chief of the Air Staff

From: Asst. Chief of Air Staff,
Materiel, Maintenance and Distribution

Date: 19 April 1943
WLH/fmv 71-68
Comment No. 4
AFDBS #-D

1. The attached cable from New Delhi (Aquila W 178 P XG, April 13) gives complete information regarding the condition of the B-17's being prepared for flight to the United States.

C. B. STONE, III
Colonel, Air Corps,
Chief, Supply and Maintenance Branch

Incl n/c
1 Incl added
Cable Aquila W178PXG
fm New Delhi 4-13-43

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DOD Itrs
E.O. Sec. 6, 20 June 1974
By ALN/PAC J.C. Date 10/16/74

~~SECRET~~

Spare Parts for B-17's in India.

Asst. Chief of Air Staff, Materiel, Maintenance and Distribution 15 April 43

Deputy Chief of the Air Staff

3

MAL/mdg/5265

General Hanley has noted the foregoing and also cable from New Delhi dated March 31, 1943, #W-30 RXS, which states that all B-17 airplanes now in that theater are being returned to the United States. However, General Hanley desires a positive statement as to whether or not the ten (10) aircraft referred to in General Stratemeyer's memorandum have been placed in Operation. Specifically he desires to be able to state positively to General Arnold that the B-17's which General Arnold reported hasbeing non-operational are now in condition to fly. This information should be obtained by cable direct to General Bissell and report rendered promptly to this office upon receipt of the answer.

MILLARD A. LIBBY,
Colonel, G. S. C.,
Secretary of the Air Staff.

Att: as abv. w/1
additional incl.
(Cable). -W 30 RXS.

~~SECRET~~ Air AG 452.11 (12-22-42)

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DECLASSIFIED
DOD Dirs
8 Nov. & 20 June 1974
By: NARS, Date: 10-15-76

Spare Parts for B-17's in India

Asst. Chief of Air Staff, Materiel, Maintenance and Distribution
Deputy Chief of the Air Staff

Date 30 March 43

1
MAL/mdg/5265

For report at earliest possible date as to what action has been taken.

MILLARD A. LIBBY
Colonel, G. S. C.
Secretary of the Air Staff.

Att: Memo for Gen. Hanley
fm. Gen. Stratemyer, 3-24-43.

TO: Deputy Chief of Air Staff

Date April 10, 1943

From: Assistant Chief of Air Staff, M. M. & D.

Comment No. 2
DFF;etg 5767-

1. Special Project No. 20443, 667 pounds of B-17 parts, was set up at the request of the theater to place the 10 B-17's referred to in General Stratemeyer's memorandum in operational condition. As of 25 March 1943, 100 lbs. were in Accra and 550 lbs. were in Natal, having been shipped by air.

2. On receipt of this report of 550 lbs. awaiting further shipment from Natal, the air priority was raised from 3 to 1 and immediate shipment was made.

3. Upon receipt of the cabled request for these parts, immediate action was taken to fulfill the request.

B. E. MEYERS
Brig. General, U.S.A.

Incls:
n/c

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DOD Dir.
5 Jan. & 20 June 1974
By [illegible] NCS, Date 4/15/74

SECRET

March 24, 1943

MEMORANDUM FOR GENERAL HANLEY:

1. General Arnold came into my office this morning and pointed out that we had some 10 B-17's out in India that had been there as non-operational aircraft since Brereton moved to the Middle East. These airplanes were robbed of parts in order for Brereton to move out, which was all right, however, repeated requests have been made for spare parts in order to put these airplanes back in commission. Apparently our Headquarters has fallen down in not furnishing the parts or directing Bissell what to do with the 10 B-17's.

2. Isn't there some way that sufficient parts can be gotten to India in order that these aircraft can be flown to North Africa and there, if they can't be made operational, they can at least be cannibalized and be used in the operations in that theater.

3. Please put somebody on this and have some definite action taken with a report hereon as to what that action will be in order that I can inform General Arnold.

GEORGE E. STRATEMEYER,
Major General, U.S.A.
Chief of the Air Staff.

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DOD Rfs
5 Jan. & 20 June 1974
By ALNSDW, JCS Date 10/21/74

CONFIDENTIAL

Spare Parts for B-17's in India.

Asst. Chief of Air Staff, Materiel, Maintenance and Distribution

Deputy Chief of the Air Staff

30 March 43

1

MAL/mdg/5265

For report at earliest possible date as to what action has been taken.

Dispatched
30 1943
AAG

MILLARD A. LIBBY,
Colonel, G. S. C.,
Secretary of the Air Staff.

Att: Memo for Gen. Hanley
fm. Gen. Stratemeyer, 3-24-43.

File
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3/30/43

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DOD Dir. 5
E.O. 11652 June 1974
By [illegible] NARS, Date 10/28/76

~~SECRET~~

~~SECRET~~

Spare Parts for B-17's in India.

Asst. Chief of Air Staff, Materiel, Maintenance and Distribution 15 April 43

Deputy Chief of the Air Staff

3
MAL/mdg/5265

General Manley has noted the foregoing and also cable from New Delhi dated March 31, 1943, #W-30 MIS, which states that all B-17 airplanes now in that theater are being returned to the United States. However, General Manley desires a positive statement as to whether or not the ten (10) aircraft referred to in General Stratemeyer's memorandum have been placed in Operation. Specifically he desires to be able to state positively to General Arnold that the B-17's which General Arnold reported beabeing non-operational are now in condition to fly. This information should be obtained by cable direct to General Bissell and report rendered promptly to this office upon receipt of the answer.

452.11 (17)

Dispatched
April 15 1943
AAG

MILLARD A. LIBBY,
Colonel, G. S. C.,
Secretary of the Air Staff.

Att: as abv. w/1
additional incl.
(Cable).

File
Cy 4/15/43

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DOD Dirs
5 Jan. & 30 June 1979
By AUSTOC NC Date 10/26/79

~~SECRET~~

ANC-5-E
JPT/ers

April 13, 1943

Major General A. I. Belyaev Chairman
U.S.S.R. Government Purchasing Commission
7355 - 16th Street, N. W.
Washington, D. C.

Dear General:

Reference is made to your letter dated March 26, 1943, concerning the strengthening of the Soviet Union aviation industry with specific reference to the manufacture of steel propeller blades.

Your request has been given considerable study in connection with our current and future aircraft programs. As a result of this comprehensive investigation, it is indicated that the diversion of the necessary machine tools, equipment, material and personnel necessary to set up for export of an entirely new and complete plant of the capacity desired would complicate the current Army Supply Program.

Based on the experience of one of our leading propeller blade manufacturers, it is estimated that over a year and one-half would be required before blade production could be initiated in the U.S.S.R., and a minimum of two and one-half years would elapse before production could be accomplished in the Soviet Union at the stipulated rate of 75,000 propeller blades per year.

Since final decision on this problem does not rest with the Army Air Forces, it is suggested that your office transmit its request, supplemented with necessary specific schedules and specifications, to the President's Soviet Protocol Committee. If this request does not become a part of Third Russian Protocol now under negotiation, the Protocol Committee will submit this request, if approved, to the Requirements Committee of the War Production Board for action.

Sgd. H. H. Arnold

H. H. ARNOLD,
General, U. S. Army,
Commanding General, Army Air Forces.

Dispatched
APR 15 1943
AAG

File
4/15/43

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452.11 (07-27-42)

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DOD ltrs
6 Nov. & 20 June 1974
By RLN/OSC, J.C. Date 8-18-76

~~SECRET~~

TO: Deputy Chief of the Air Staff

Date 8 April 1943

FROM: Assistant Chief of Air Staff, M. M. & D.

Comment No. 2
WPD/4674 5767

Suggested reply to General Belyaev is attached.

B. E. MEYERS
Brig. General, U. S. A.

~~SECRET~~

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DECLASSIFIED
DOD Dir. 5 Jan. & 30 June 1974
By AGAFOC, J.C. Date 10-15-76

SECRET

Request for Aid to Strengthen Russian Airplane Industry

General Hayes, Assistant Chief of Air Staff, M.M. & D. April 10,1943

Deputy Chief of the Air Staff

WEH:JT 5246

1. General Arnold would not sign the proposed letter to General Bolyaev. He did not take exception to the factual data contained therein but does not desire to go on record as turning down General Bolyaev's request.

2. He desires that the letter be rewritten including the information that machine tools, etc., are critical items, and final decision does not rest with the Army Air Forces, and suggesting that General Bolyaev approach the War Production Board.

2 Incls.
n/c

WILLIAM H. HALL,
Brigadier General, U. S. Army,
Deputy Chief of the Air Staff.

Dispatched
APR 11 1943
AAG

file ea 4/11/43

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DOD Rtr. 5
By AIA/PHC NC, Date 10/21/76

SECRET

Request for Aid to Strengthen Russian Airplane Industry.

Commanding General, Materiel Command, (later, Assistant Chief of Air Staff, Materiel, Maintenance & Distribution) (For the personal attention of General Meyers.)
Deputy Chief of the Air Staff.

26 March 1943

1

TJH/cmc/6371

452.11 (12)

1. General Belyaev came to see General Arnold this morning with the attached request.

2. General Arnold desires an answer be prepared stating whether or not it is possible to comply with this and the method of obtaining approval of the Soviet request if it can be done.

Dispatched
MAR 27 1943
AAG

Incl: SECRET ltr to Gen. Arnold frm Gen. Belyaev dated 3-26-43 re above subject.

T. J. HANLEY, JR.,
Brigadier General, U.S.A.
Deputy Chief of Air Staff

Fib
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3/27/43

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DECLASSIFIED
DOD Dir. 5
5 Jan. & 30 June 1972
By OAI/PSC, J.C. Date 8/8/74

SECRET

Request for Aid to Strengthen Russian Airplane Industry.

Commanding General, Materiel Command, (later, Assistant Chief of Air Staff, Materiel, Maintenance & Distribution) (For the personal attention of General Meyers.)
Deputy Chief of the Air Staff.

26 March 1943

1

TJH/cms/8371

1. General Belyaev came to see General Arnold this morning with the attached request.

2. General Arnold desires an answer be prepared stating whether or not it is possible to comply with this and the method of obtaining approval of the Soviet request if it can be done.

Incl: SECRET ltr to Gen. Arnold frm Gen. Belyaev dated 3-26-43 re above subject.

T. J. HANLEY, JR.,
Brigadier General, U.S.A.
Deputy Chief of Air Staff

Dispatched
MAR 27 1943
AAG

File
GK
3/27/43

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DOD Dirs.
5 Jan. & 30 June 1954
By ALMPAC NO. Date 16 Feb 76

SECRET
RELEASED

AFADS
WDC/gnd
Ext. 6048
Written March 24, 1943.

171

452.11 (169)

Major General A. I. Belyaev, Chairman,
The Government Purchasing Commission
of the Soviet Union in the U.S.A.,
2352 - 16th Street, N. W.,
Washington, D. C.

Dear General:

I have forwarded a copy of your letter of March 19, with my recommendations for the necessary action to accomplish your desires as stated therein, to the Operations Division of the War Department General Staff. This Division exercises War Department authority over shipping to the Alaskan Theater.

I have recommended that steps be taken to make shipping available for the movement of the spare parts, about which you wrote, to the nearest port in Alaska and thence by rail to Fairbanks, where they will be turned over to your mission.

Sincerely yours,

Dispatched
MAR 28 1943
AAG

GEORGE E. STRATEMEYER,
Major General, U.S.A.,
Chief of the Air Staff

file 3/28/43

SECRET

Cy. for General Stratemeyer
Ltr dtd 452.11 (169)

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A-M/1471

Правительственная Закупочная Комиссия
Союза ССР в США

The Government Purchasing Commission
of the Soviet Union in the U.S.A.

Major General A. I. Belyaev
Chairman

3355 16th Street N.W.
Washington, D.C.

March 19, 1943

Major General G.E.Stratemeyer
Chief of the Air Staff
Headquarters of the Army Air Forces
War Department
Pentagon Building,
Arlington, Va.

Dear General:

I have been informed by Colonel Piskounov, Chief of the Aviation Department, that during the period of January to March 15,1943, 150 tons of spare parts on Diversions 216 to 233 and from 246 to 255, were accumulated at Depot No.7,San Francisco. These spare parts were sent to San Francisco, in accordance with directions from Wright Field, for further shipment to Fairbanks and from there to be shipped by air to the Northern bases along the Northern route.

I regret to inform you that Depot No. 7 cannot ship this cargo, probably because there are no ships sailing in this direction. Therefore, may I urgently request that you inquire about the possibility of an immediate shipment for the above mentioned cargo to Fairbanks, as the lack of the spare parts in the Northern bases threatens the schedule for the shipment of planes.

I would also appreciate your issuing instructions that in the future Depot No.7 rush all cargoes destined for Fairbanks.

Our attempts to solve this problem without you, through Wright Field and Colonel Paige, did not prove satisfactory and we, therefore, ask your assistance in this matter.

I trust that you will give this important question your immediate attention.

Sincerely yours,

A. I. Belyaev
Major-General U.S.S.R. Army.

Belyaev

AAG 452.11 (16)

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DOD ltrs.
8 Jan. & 20 June 1974
By ALN/PIKE LC, Date 10/18/74

SECRET

Spare Parts (C-46 and C-54 Aircraft)

TO: Deputy Chief of Air Staff

FROM: Materiel Command

DATE: March 31, 1943
COMMENT NO. 2
JPM:jk 72176

1. Lt. Col. I. W. Stephenson, Air Service Command, Patterson Field, has submitted a list to Curtiss and Douglas providing for increased production of spares for subject airplanes. These manufacturers are to determine whether the desired increase can be obtained without interference with the production of complete airplanes. Lt. Col. Stephenson is expediting this matter and will provide information as to changes, if any, required in existing contracts for complete airplanes.

J. W. SESSUMS, JR.,
Colonel, Air Corps.

Dispatched
APR 2 1943
AAG

Incl. n/c

TO: Air Transport Command

FROM: Chief of the Air Staff

DATE 2 April 43

COMMENT NO. 3
MAL/rds/5265

To note the action being taken by the Materiel Command as

SECRET

MILLARD A. LIB
Colonel, G. S.
Secretary of the A

Incl. n/c

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DOD ltr
By ALN/RAC NARA Date 6/27/96

Spare Parts (C-46 and C-54 Aircraft)

Asst. Chief of Air Staff Material, Maintenance and Distribution.

Deputy Chief of Air Staff.

March 29, 1943

MAL/mdg/5265 1

For necessary action. Distributed
MAR 29 1943
AAG
AAG

MILLARD A. LIBBY,
Lieut. Colonel, G. S. C.,
Secretary of the Air Staff.

Att: Memo for CG, AAF fm.
Gen. Smith, 3/13/43 w/incls.

File a/f 3/29/43

air AG 452.11 (16-8-43)

air AG 452.11

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DOD Dir. 5 200.10 & 20 June 1974
By: ALN/PRC LC, Date: 10/18/76

Aut AG 452.11 (3-20-43)

File
GK
3/20/43

Dispatched
MAR 20, 1943
A.A.G.

TO: Commanding General, Materiel Command

Date: Mar. 20 1943
Comment No. 3
JBC:JB 5789

FROM: Air Adjutant General

For comment with respect to the request contained in paragraph 6 of basic communication.

JOHN B. COOLEY,
Colonel, A.G.D.
Asst. Air A. G.

OFFICE SYMBOL	1	2	3	4	5	6
Signature of Responsible Officer						
Internal Office Coordination						

Aut AG 452.11 (3-20-43)

~~SECRET~~

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DOD ltrs
5 Jan. & 20 June 1974
By RLN/EKC J.C. Date 10/18/74

SECRET

TO: The Air Adjutant General.

DATE March 19, 1943

FROM: Assistant Chief of the Air Staff, A-4.

COMMENT No. 2
HMK/ceh 7A380

1. This office recommends that the Air Transport Command present its requirements for spare parts to General Clements McMullen, Chairman of the Working Sub-Committee on Supply and Maintenance Requirements of the Joint Aircraft Committee.

RICHARD H. BALLARD
Colonel, G.S.C.

Incls: n/c

SECRET

air ab 452-11 (308)

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DOD ltrs
6 Jan. & 20 June 1974
By AIN/Per LIC. Date 1/18/76

CONFIDENTIAL

A-4/1v89

Spare Parts for Transport Aircraft.

Deputy Chief of the Air Staff.

March 10, 1943

Assistant Chief of the Air Staff, A-4.

WMK/ceh 74380

1. Attention is invited to comment 4 above.

RICHARD H. BALLARD
Colonel, G. S. C.

Incls: N/C

AAF CS 452.11 (C)

File
SK
3/12/43

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AAF CS 452.11 (C)

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DOD Dirs.
6 Jan. & 20 June 1954
by AUWERC UC. Date 10/15/76

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Spare Parts (C-46 and C-54 Aircraft)

Assistant Chief of Staff, A-4. March 14, 1943

Air Adjutant General 1

CGS/pep
Ex 71128

For remark and recommendation.

Dispatched
MAR 15 1943
AAG

C. G. STEVENSON
Lt. Col., A. C.
Actg. Asst. Air Adj. General

1 Incl.
Memo 3-13-43 (secret)
fr C.R. Smith, Brig. Gen., U.S.A.,
Chief of Staff, w/4 incls.

AAG 452.11 (3-14-43)

Tde 3/15/43

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

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~~SECRET~~

AG 452.11 (148)

☆ 16—20042-1 U. S. GOVERNMENT PRINTING OFFICE : 1942

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DOD Rts
6 Jan. & 20 June 1974
By ALM/AFC NC. Date 10/6/76

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Spare Parts for Transport Aircraft.

TO: Director of Base Services, THRU: Asst.Chief of Air Staff, A-4. Date:10 Feb. 1943.
Comment No. 2.

FROM: Deputy Chief of Air Staff. TJH/cmc/6371

1. This correspondence is related to a telegram from General Arnold stating that requisitions for spare parts for C-54's had been returned with the comment that they were excessive. General Arnold stated that he had to have commanders who could get things done. The Air Service Command replied, stating that all parts available for the C-54 type had been turned over to the Air Transport Command but that they had not procured luxury items.

2. This is not the time to indulge in a paper war between the two commands. The problem is to get spare parts for the operation of the aircraft. If we have not procured enough, new contracts must be initiated at once. Transport aircraft must be put on the same priority for spares as combat units, in accordance with the Chief of Air Staff's directive. In connection with this, proper distribution of spares within the Air Transport Command must be studied to see whether or not an excess is being demanded.

Dispatched
FEB 10 1943
AAG

Incls: n/c.

T. J. HANLEY, JR.,
Brigadier General, U.S.A.,
Deputy Chief of Air Staff.

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Ai a64.2.11 (167)

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DOD ltrs
8 Jan. & 20 June 1994
By ALN/PKC NC, Date 10/18/96

~~CONFIDENTIAL~~

Spare Parts for Transport Aircraft.

General Hanley

2/8/43

General Stratemeyer

1

The attached is forwarded to you for necessary action.

We must put the Air Transport Command on the same parity with reference to spare parts that we do the combat [illegible].

G.E.S.

Incl: Memo to CG/AAF, 2/8/43 frm
Gen. George re above subj.
/w/ list of spare parts.

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DOD ltrs
6 Jan. & 20 June 1974
by ALN/PRC LC. Date 8/18/74

CONFIDENTIAL
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February 8, 1943

MEMORANDUM TO: Commanding General, Army Air Forces.

SUBJECT : Spare Parts for Transport Aircraft.

1. I have reviewed General Frank's letter of January 23, 1943.

2. In August, 1942, Transcontinental & Western Airlines and Pan American Airways were asked by this Command to make a study of spare parts required for transport operations of C-54 type aircraft. As a result of this study, there was forwarded to Air Service Command on September 11, 1942 a request for procurement of spare parts consisting of 146 pages and including 2388 items. This study was not lightly prepared. It was returned to us on October 27, 1942 by the Air Service Command who rejected the list because they stated that it included some so-called "luxury" items. Thirty-two items were pointed out as horrible examples; the list of these items is attached. The inference in General Frank's letter of January 23rd is that the whole list of 2388 items was permeated with improper procurement requests. An examination of the quantities and types of items ordered in the so-called luxury class fails to reveal any extravagance. The Air Service Command objected to inclusion of a few pieces of leather, linoleum and upholstery cloth which were ordered for repair purposes. If Army transport aircraft are to bring credit to the Service, they must not be allowed to deteriorate to the standards of a tramp steamer.

3. The procurement of spare parts for C-54 type aircraft is only part of a broader problem. On September 19, 1942, representatives of this Command accompanied by representatives of six leading commercial airlines met with the Air Service Command and our views on spare parts required for transport aircraft were presented. Subsequent to this meeting, the Joint Aircraft Committee undertook a revision of spare parts procurement in Case No. 1850 which authorized, in principle, procurement of spares for transport aircraft on a basis much improved over the previous procurement program, but still far from the desired objective. My objections to the present program of procurement of spare parts for transport aircraft are, briefly, as follows:

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9 Jan. & 20 June 1974
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a. Case 1850 was approved as an "ultimate objective" for "maximum spares"; actually it should have been an immediate objective for minimum spares.

b. Official records of the Joint Aircraft Committee state that deliveries of spare parts, even under the prior procurement program have not been received concurrently with deliveries of aircraft and arrearages are increasing.

c. The new procurement program was made subject to completion of the Series 8 program which actually nullifies procurement of many important items.

4. I am fully convinced that we will have many transports grounded in the immediate future because of lack of spare parts. Even now we have been forced to cannibalize C-54 aircraft to keep other planes of this type flying.

5. The Air Service Command is familiar with studies now being made by the major airlines which will produce the operators' estimates of spares required for transport aircraft. Out of these studies will come revised procurement tables.

6. Procurement of spare parts has improved on paper. Unless it improves in fact by giving spare parts a production priority at least equal to the same items going into new aircraft, our operations will be seriously hampered.

Incl:
List Spare Parts

H. L. GEORGE
Major General, U.S.A.
Commanding.

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SPARE PARTS REQUISITIONED
BY PAN AMERICAN AIRWAYS

FOR 32 C-54 TYPE AIRCRAFT.

QUANTITY	NOMENCLATURE
1 sheet	Balloon Cloth Rubberized 2 ply 32" x 296"
2 hide	Pacific Hide and Leather Company #0.54 Green
2 hide	Pacific Hide and Leather Company #0.307 Tan
2 hide	Pacific Hide and Leather Company #0.300 Brown
1 hide	Pacific Hide and Leather Company #0.308 Wine
1 hide	Pacific Hide and Leather Company #0.328 Paris Grey
25 feet	Armstrong Terra Cotta Airflor Linoleum 3 feet width
2 gallon	Gordons White Plastic Paint
2 gallon	Gordons White Lacquer
2 gallon	Dupont #258-38044 Neutral Gray Duco
1 gallon	Filler #6163 Black Baking Enamel
2 gallon	Fuller Spar Varnish
2 gallon	Berry Bros Amberry White
1 gallon	Fuller #7490 Clear Varnish
1 gallon	Gordon Plastics, Deep Buff Plastic Paint
1 quart	General Electric Glyptol Varnish
1 sheet	Commercial Cloth, Curtain End Zone Twill, Old Gold Color
1 sheet	Commercial Cloth, Curtain L-425 Upholstery Brown
50 lbs.	Type "M" Stone Felt sheet 1/4 gauge
50 lbs.	Type "F" Stone Felt Sheet 1/2 gauge
2 pieces	DAC 4110480 Dispenser Assembly, Paper Cup
2 pieces	DAC 5072614 Box, Buffet Cold Storage

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SPARE PARTS REQUISITIONED BY
PAN AMERICAN AIRWAYS

FOR 32 C-54 TYPE AIRCRAFT.

QUANTITY	NOMENCLATURE
6 each	Landers, Frary and Clark #410 Jar Vacuum
6 each	Stanley 5115 Thermos Jug, Type 204 2 qt.
2 each	Stanley 11410 Thermos Jug, Spigot Type 1 gal.
15 each	DAC 141540 Plug, Foot rest rubber
5 each	DAC 1111427 Spring Arm rest push
5 each	DAC 2107011 Spring Assembly, Cabin Seat Ash Tray
2 each	Boeing 41-6059 Coat Hook
2 each	DAC 5107656 Seat Assembly, Toilet
3 each	DAC 1075791-5 Glass Water Gauge

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E Jan. & 20 June 1974
by ALMAC JC Date 10/18/76

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Spare Parts

General Hanley 1/25/43

General Stratemeyer 1.

Attached is a letter from Colonel D. V. Gaffney, reference the question of spare parts, in which he calls attention to the controversy now existing with the Russians on this subject.

It is desired that this be investigated and a reply to Gaffney's letter be prepared for my signature.

G. E. S.

Incl:
Ltr to Gen. Stratemeyer frm
Col. Gaffney, 1/13/43 /w/
Memo to CO, 384th A.B. Hq. &
A.B. Sq., Ladd Fld., Alaska
frm Capt. Mortimer, 1/12/43 /w/
Cpy of Memo to CO, 384th A.B. Hq. &
A.B. Sq., Ladd Fld., Alaska, 1/12/43
and 1st Ind. frm Col. Kitchingman,
1/12/43 to CO, Ladd Fld., Alaska
Memo to Col. Kitchingman, 1/12/43 frm
Capt. Mortimer /w/ Tele. 38 FN AK 63
WD CENWD, 12/27/42 /s/ Arnold C, 1450 Z

TO: Director of Base Services. DATE 1/28/43

FROM: Deputy Chief of Air Staff. COMMENT NO. 2
TJH/eva/6371

1. Attached is a file on spare parts which has been the subject of considerable controversy between the Russians and this Headquarters, particularly since receipt of the cablegram, inclosure #5, stating that no spare parts can be furnished Ladd Field for six months.

2. It is desired that the entire question of spare parts for Russian airplanes in accordance with agreements made by this Headquarters with the Soviet Purchasing Commission be investigated and a report made as to whether or not the Army Air Forces are living up to this agreement. If we are not going to deliver spare parts as promised, General Belyaev must be notified at once. This should be done through A-4.

3. A report of your findings will be submitted as quickly as possible.

Dispatched
JAN 30 1943
AAG

Incls: n/c.
Cpy: Ass't Chief A.S., A-4.

T. J. HANLEY, JR.,
Brigadier General, U.S.A.,
Deputy Chief of Air Staff.

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DOD ltrs
8 Jan. & 20 June 1974
By RLL/PRC NC. Date 10/18/76

RELEASED

TO: Secretary of the Air Staff.

DATE 2/10/43

FROM: Air Transport Command

COMMENT NO. 2
ATC/[illegible]/PNM/hf 5142

1. Comment to January 23 letter from Air Service Command is contained in letter to Commanding General, Army Air Forces from this Command dated February 8, 1943, copy of which is attached.

H. L. GEORGE
Major General, U.S.A.
Commanding.

Incl: ltr to CG, AAF frm. ASC
1/23/43 w/incls.
addtl. att. cy of ltr
2/8/43, to: CG, AAF,
frm. ATC, subj: Spare
Parts for Transport Aircraft.

RELEASED

TO: Air AdjutantGeneral

DATE 22 Feb. 43

FROM: Deputy Chief of the Air Staff

COMMENT NO. 3
MAL/mdg/5265

For files.

MILLARD A. LIBBY,
Lieut. Colonel, G.S.C.

Incl. n/c

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DOD ltrs
8 Jan. & 20 June 1974
By ALN/OSC NC. Date 10/18/76

CLASSIFIED

Items Requisitioned by T.W.A. for C-54 Airplanes.

Air Transport Command. 1/30/43

Secretary of the Air Staff. 1

MAL/mdg/5265

1. Note the attached.

2. For comment.

Dispatched
JAN 31 1943
AAG

MILLARD A. LIBBY,
Lieut. Colonel, G. S. C.

Att: Ltr to CG, AAF fm. ASC
1/23/43 w/incls.

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DOD ltrs
6 Jan. & 20 June 1974
By AUG/NARC NC, Date 10/15/76

CLASSIFIED

Spares for C-54's

Major General H. L. George (Personally) 1-22-43
Air Transport Command
Deputy Chief of the Air Staff

1
WEH:JT 5246

For preparation of reply for General Hanley's signature in accordance with your conversation with him today.

3 Incls.
Cable #153, 1-14-43
Msg to CG, ASC 1-14-43
Reply to same

WILLIAM E. HALL,
Colonel, G. S. C.

Dispatched
JAN 22 1943
AAF

AU Ms 153, 1-14-43

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AU Ms 153, 1-14-43

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DOD ltrs
8 Jan. & 30 June 1974
By: ALL/EKC LC; Date 10/18/76

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AFAMC-2
BEM:dh

January 12, 1943

Major General Ira C. Eaker
Acting Commander, Eighth Air Force
A.P.O. 633, c/o Postmaster
New York, New York

Dear Ira:

I am very much annoyed in regard to what you say about the loss of the B-17 over Lille as well as the possible loss of Asa Duncan's plane. There have been a considerable number of shipments of parts, as indicated by the attached recap. These shipments are being traced by the Air Service Command who will advise you by cable as to the time of arrival of these shipments in England and in Algiers. I have directed that the balance of the shipments required in the United Kingdom and Algiers be shipped immediately by the way of air express.

Copy of the latest Technical Order No. 01-20EF-17, dated December 30, 1942, covering the inspection of propeller governors on B-17 airplanes left by officer courier on January 6, 1943.

With kindest regards, I am

Sincerely,

George E. Stratemeyer,
Major General, U. S. A.
Chief of the Air Staff.

Dispatched
Jan 12, 1943
AAG

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DOD ltrs
8 Jan & 30 June 1974
By: ALL LC; Date 10/18/76

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Air Ops 452.11 (160)

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DOD ltrs
6 Jan. & 20 June 1974
By ALS/DMC JC; Date 12/18/76

Propeller Governors

General Meyers 1/1/43

General Arnold 1

Note the attached and prepare reply for my signature with a special reference to paragraph 5.

Incl: Ltr to Gen. Arnold, 12/11/42 H.H.A.
frm Gen. Baker.

G. Rinkead

1/12/42 — Gen Baker sgd Gen Stratemeyer

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SECURITY INFORMATION

DECLASSIFIED
DOD Hrs
8 Jan. & 20 June 1974
By ALAFPC, JC; Date 10/14/76

RECAP

Shipments of Propeller Governor Drive Gear Shaft Couplings for B-17 Airplanes, Part No. 4000-53628F, Required by Technical Order 01-20EF-12, dated December 8, 1942

UNITED KINGDOM

Date	Quantity	Way Bill No.	Markings	Disposition
Sept. 19	95	69259	Wildflower	(Arrived United
Sept. 20	94	69265	Wildflower-Air-S-XX	(Kingdom Dec. 26,
Sept. 25	95	69260	Wildflower-Air-S-YY	(1942
Dec. 3	100	Hamilton Standard London, by Air	Representative, Mr. John Burridge,	
Dec. 16	180	84-997	Ugly-Air-S-1	Forwarded by air from Newark 1-6-43

Note: Additional 116 to be forwarded by air within the next 48 hours.

ALGIERS
CG, 12th AFSC

Dec. 16	100	84998	Air Shipment
Dec. 31	160	84-865	Express Air Shipment

SECRET
SECURITY INFORMATION

1-6-43

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HEADQUARTERS
EIGHTH AIR FORCE
APO 633, C/o Postmaster, New York, N. Y.

December 11, 1942.

Lt. Gen. H. H. Arnold, USA.,
Commanding General,
Army Air Forces,
Munitions Building,
WASHINGTON. D.C.

Dear General,

I am leaving in a few hours to join General Spaatz for a brief survey of airdromes and a series of conferences with him. I expect to be back within four or five days and will write to you further on return.

We have cabled asking for authority to return Col. Norcross with a summary report on the first 1100 sorties. I am particularly anxious that you see this report and am very hopeful that you will find time to spend at least half an hour in looking it over. I am very proud of it and hope that you and your staff find it useful.

McCreary has arrived with your letter. I understand exactly what you mean, shall completely respect your confidence and, I hope, accomplish the result you desire. McCreary has spent several days, at my suggestion, becoming acquainted with our activities and establishments in this theater. He returned yesterday and we had a meeting of all our Public Relations officers and perfected an organization and drew up a plan which we think will initiate the program on a sound basis.

The photographic side is now being emphasised. Hal Roach has been a shot in the arm to the motion picture business and I feel you will begin to see the results of our new organization in an increasing quantity of good still and motion pictures delineating our efforts.

I sent you a cable yesterday telling you that the latest interrogation, including the accompanying fighters, now fairly well disclosed that our B-17 lost over Lille was not the result of flak as initially reported by us, but probably to a runaway propellor. We now think that the loss of Duncan's plane, and the loss of two or three other planes, was due to engines being torn up by runaway propellors. Propellor governors are giving us a lot of trouble. I am faced by the serious possibility that I may have to ground all heavy bombers until the technical order change has been made. The parts are not available in this theater to make this change. I urge, if you have not already done so, that you send us the parts requested in our cablegram which will permit us to make this change.

The best to you as always,

Sincerely,

IRA C. EAKER
Major General, U. S. A.
Acting Commander.

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DOD Ltr
6 Jan. & 20 June 1974
By CLAYTON C. Date 10/18/76

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AFDAS/TJH:eva/6371

January 16, 1943.

MEMORANDUM FOR THE ASSISTANT SECRETARY OF WAR FOR AIR:

Subject: Procedure for Contracting Spare Parts.

Knowing that you are interested in the matter of contracts for spare parts, the attached Routing and Record Sheet is furnished for your information.

Dispatched
JAN 17 1943
AAG

T. J. HANLEY, JR.,
Brigadier General, U.S.A.,
Deputy Chief of Air Staff.

Incl: SECRET R&R #2 to AFDAS frm Supply Div. A.S.C. dtd 1/12/43; above subject.

1 le
e 1-17-43

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AC AS 452.11 (159)

AC AS 452.11 (159)

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TO: Deputy Chief of Air Staff, A.A.F. DATE: 1-12-43.

FROM: Supply Division, A.S.C. COMMENT NO. 2
LTH/bb/3

1. In order that you may bring the Joint Aircraft Committee up to date on the subject matter above, I wish to invite your attention to the procedure now in force and which has been in force for the past ninety days:

a. We established what we call a provisioning team to review all major contracts and to work directly with manufacturers in order to revise the list of spare parts concurrently procured on all aircraft and engine contracts. This provisioning team is made up of representatives of the Air Service Command, Material Command, British representative, Navy representative, and the manufacturers' representative. This team has to date accomplished an extraordinary amount in savings on concurrent spares by eliminating a lot of the major items and some of the smaller items that experience and consumption data revealed were not used. There has been no trouble connected with this action as cost of the articles eliminated has been applied to the full spare concurrent contract and change orders issued on the original contract.

b. In addition to the above, a committee was formed consisting of repre-

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sentatives of the Air Service Command and the Materiel Command to go over existing contracts on purchase of equipment other than spares for airplanes, engines and accessories. This includes all ground equipment of whatever category and we have stopped buying in original quantities on a great many items of ground equipment. Both of these actions now in force are being executed vigorously and I feel we have the right view in mind of eliminating all unnecessary procurement from our supply system. As can be seen, this has the concurrence of the Materiel Command and both Commands are working wholeheartedly on it.

L. T. MILLER,
Brig. General, U.S.A.,
Chief, Supply Division.

43-49210

Gen. & Bd. Sec. 11 (159)

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DOD Rvs
5 Jan. & 30 June 1974
By NARS, MC, Date 10/28/76

~~SECRET~~

Procedure for Contracting Spare Parts.

Air Service Command, ATTN: General McMullen

12/31/42

Deputy Chief of the Air Staff.

1

TJH/eva/8371

1. At the Joint Aircraft Committee meeting December 31st, the matter of concurrency of spare parts was discussed at considerable length, and it was the consensus that part of the trouble is due to contracting for improper amounts of various spares.

2. I am familiar with the present agreement with contractors for the preparation of lists of spare parts and, at the time that it was consummated, believe it was the only method by which some orders could be placed quickly. I now believe that the time has arrived when the procedure should be revised. We have been engaged in war for a year. Consumption data must be available, even though not collected, and this data should be the basis of our orders. By reducing contracts for spares which are not needed, material and labor will be made available to produce needed articles.

3. It is requested that this matter be given prompt attention.

T. J. HANLEY, JR.,
Brigadier General, U.S.A.,
Deputy Chief of Air Staff.

Dispatched
JAN 1 1943
AAG

CU 11 Dec 42 (152)

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DOD Ltr
6 Jan. & 20 June 1974
By RLN/PKC J.C. Date 8/16/76

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Urgent Requirements of the R.A.A.F. and Australian Army

WDGS 5246

1 APCAS APADS 1942 12-17

1. For necessary action in accordance with paragraph 1, attached memorandum from Headquarters S.O.S.

2. Letter will be prepared and forwarded for signature in this office.

AAG

WILLIAM E. HALL
Colonel, G. S. C.

1 Incl.
Memo 12-14-42 fr Gen Lucius D. Clay w/ Incl
Memo fr Gen MacArthur 11-29-42

WDGS 452.11 (15)

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DOD ltr.
6 Jan. & 20 June 1978
By ALN/PRC Co. Date 10/31/78

SECRET

Materials for Airdromes of the Northern Route

WEH:JT 5246

1 AFCAS AFARS 1942 12-14

1. For comment and preparation of reply and return to this office.

2. Classified as "Secret" on this office 12-14-42

Dispatched
DEC 14 1942
AAG

1 Encl.
Ltr 12-11-42 to Gen Hanley
fr A. I. Belyaev

WILLIAM E. HALL
Colonel, G. S. C.

File

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AAG 452.11 (12-14-42)

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6 Jan. & 20 June 1974
By AUN/PKC UC: Date 10/18/76

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HEADQUARTERS AIR FORCES

ROUTING AND RECORD SHEET

TALLY NO	
FILE NO	

SUBJECT: Reports on Items Missing from Equipment.

ITEM NO	FROM	TO	DATE	COMMENTS: MAB/gwd 2579
5.	AFADS	AFDAS	1942 12-18	1. In accordance with item 4, supplementary directives have been issued to the Air Service Command and to the Air Transport Command, as per the attached copies. Incls. n/c 2 Added: Cy.memo,dtd.12/12/42, frm.AFADS to AFASC, Subj:Responsibilities for Loose Equipment on Airplanes Being Ferried to Theatres; Cy.memo,dtd.12/12/42, frm.AFADS to AFATC, same subj. M. M. FROST, Lt.Col.,G.S.C., Acting Executive. MAL:JT 5265
6	AFDAS	FILES	1942 12-20	MILLARD A. LIBBY Lt. Col., G. S. C.

DEC 19 42 AM

RECEIVED
Air Adjutant General

file in 452.11 (15)

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452.11 (15)

3-1109 A.F.

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DOD ltrs
5 Jan. & 20 June 1974
By AUN/PAC ...UC. Date 10/18/76

A-4 Ltr. 2969 A-4 Ltr.

HEADQUARTERS [redacted] AIR FORCES

ROUTING AND RECORD SHEET

TALLY NO.	3673
FILE NO.	

SUBJECT: Reports on Items Missing from Equipment

ITEM NO.	FROM	TO	DATE	COMMENTS WMB/gwd 2879
3.	AFADS	AFDAS	1942 12-4	1. Reference Item 1, and R&R, same subject, from AFDAS to AFADS, dated November 12, 1942, attached. Copy of a directive, prepared by this Division and addressed to the Materiel Command, Air Service Command and Air Transport Command, is attached. 2. A wire is being sent to all theatre commanders, calling their attention to the fact that navigation kits and radio repairman kits are items of individual issue, and not equipment on aircraft. These are two of the items among those reported as missing in all of the complaints that have been seen by this Division. Incl. n/c 1 Incl. added - Cy.memo,frm.AFADS to AFAMC, AFASC, and AFATC, dtd. 12/3/42,subject:"Responsibilities for Loose Equipment on Airplanes Being Ferried to Theatres." FRANK M. WILLIAMS,
			DEC 5 42 AM	
			RECEIVED Air Adjutant General	
4.	AFCAS	AFADS	1942 12-6	[redacted] It is satisfactory, except for the action taken in connection with navigation kits, radio repairman kits, and similar items of individual equipment. 2. It is directed that these items be listed in the aircraft checker's report, with the name of the individual responsible for each kit. In the case of equipment furnished to combat crews, kits necessary for the proper equipment of replacement crews will be shipped at the same time as the replacement crews, and the theater commander will be given sufficient information so that the kits can be identified and properly issued. Receipts will be obtained in all cases. T. J. HANLEY, JR., Brigadier General, U.S.A., Deputy Chief of Air Staff. Incls: n/c.

[redacted] CLASSIFIED

[redacted] AAF 452.11 (154)

3-1100 A.F.

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DOD ltrs
3 Jan. & 20 June 1974
By AIN/PKC LC. Date 10/8/76

HEADQUARTERS ARMY AIR FORCES

ROUTING AND RECORD SHEET

RELEASED SECRET

File No. _____

Tally No. AAF 2673

Note. -- A line will be drawn across sheet after each comment.

SUBJECT: Reports on Items Missing From Equipment.

NO.	FROM	TO	DATE	COMMENTS
1	General Arnold	General Strate-meyer	1942 11/12	From time to time reports received from destinations of ferried airplanes indicate that certain items are missing from the equipment. It is noted that most of these items are things that can be easily carried off and are probably desired by either crew members or persons along the route. Items most frequently reported missing are navigator watches, crew chief's kits and radio repairmen's kits. It is a well known fact that these items are checked into the ships before they leave the staging area. I wonder if this practice cannot be stopped if crew members are made to sign for these articles and their receipt sent in a sealed envelope with the plane to be delivered to a checking officer at the destination. If some such scheme as this is not followed, it will break the United States Army replacing lost navigator's watches, crew member's kits, etc.
2	AFDAS	AFADS	11/14	MAL/imm 5265 With reference to the foregoing, your attention is invited to the attached copy of an R&R addressed to A-4 on November 12, 1942. T. J. HANLEY, JR., Brigadier General, U. S. Army 1 Incl. copy of R&R mentioned above.

(Do not use reverse side) AF-4071, AF, Rev. 8/14/41

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Reports on Items Missing from Equipment.

WMR/gwd 2879

8. AFADS AFDAS 1942
12-18

1. In accordance with item 4, supplementary directives have been issued to the Air Service Command and to the Air Transport Command, as per the attached copies.

Incls. n/c
2 Added: Cy.memo,dtd.12/12/42, frm.AFADS to AFASC, Subj:Responsibilities for Loose Equipment on Airplanes Being Ferried to Theatres; Cy.memo,dtd.12/12/42, frm.AFADS to AFATC, same subj.

M. M. FROST,
Lt.Col.,G.S.C.,
Acting Executive.

MAL:JT 5265

6 AFDAS FILES 1942
12-20

MILLARD A. LIBBY
Lt. Col., G. S. C.

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8 Jan. & 20 June 1974
By ALNPAC LC. Date 10/18/74

HEADQUARTERS ARMY AIR FORCES

ROUTING AND RECORD SHEET

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TALLY NO.	2648
FILE NO.	

SUBJECT: Shipment of aircraft without complete equipment.

ITEM NO.	FROM	TO	DATE	COMMENTS TJH:eva 6371
1.	AFDAS	AFADS	1942 11-12	1. Attention is invited to cable from New Delhi, No. Aquila 7102 XS, November 10, 1942. 2. The continued shipping of aircraft without complete equipment must be stopped. Recently discussions were held with the Air Service Command and A-4 on the possibility of requiring crew members to retain accountability for certain items until arrival in the theater, at which time accountability would be determined by the regulations existing within that theater. This action was directed in the specific case of navigators' kits. 3. The First Foreign Concentration Command has now been made responsible for inspection of airplanes to determine operational completeness. Unless some system of accountability is devised immediately to insure that all equipment installed in the airplane at the time of inspection is the responsibility of some organization or individual until it arrives in the theater, we will have continuous recurrences of the situation complained of. 4. Immediate action must be taken to make ships completely operational and to provide complete equipment for crews and individuals. Your division is charged with this action. T. J. HANLEY, JR. Brigadier General, U.S.A., Deputy Chief of Air Staff.

Cpys: Air Service Command,
Dir. of Base Services,
Dir. of Bombardment.

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PAGE 1

3-1109 A.F.

Encl #1

Air IV 452.11 (54)

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DOD Ltr
5 Jan & 20 June 1974
by ALN/PKC LC: Date 10/18/74

~~CONFIDENTIAL~~

AFADS 1-2-35
WMB/gwd
Ext.2879
Rm.3D1045,Pentagon

December 3, 1942.

MEMORANDUM FOR: THE COMMANDING GENERAL, MATERIEL COMMAND;
THE COMMANDING GENERAL, AIR SERVICE COMMAND;
THE COMMANDING GENERAL, AIR TRANSPORT COMMAND.

Subject: Responsibilities for Loose Equipment on Airplanes Being Ferried to Theatres.

1. As early as August, 1942, various attempts have been made and several different methods tried to prevent the loss of essential equipment on aircraft enroute to theatres. Complaints are still being received from theatre commanders that aircraft are being delivered to theatres, lacking essential equipment. It has, therefore, become increasingly apparent that definite steps must be taken to assign zones of responsibility in order that airplanes will be delivered in the theatres with all essential equipment necessary to make them operationally complete upon arrival. The machinery to accomplish this has already been set up, and if it is properly used with the exercise of reasonable care, no complaints should be received from the theatres.

2. The zones of responsibility and the specific duties of the various Commands are outlined below, and immediate steps will be taken to comply:

a. The Materiel Command will furnish a complete "Aircraft Checkers' Report" for each type of airplane delivered from the factory. It will be the responsibility of this Command to see that each item on this report is checked, and if for any reason any of these items are missing, a note and an explanation as to the reason will be made under the column headed "Remarks". As soon as such items of equipment as are shown as missing on the "Aircraft Checkers' Report" are available to the Materiel Command they will be furnished the Air Service Command, so that they, in turn, may supply the items that were missing to the theatre to which the plane has been delivered.

b. The Air Service Command will modify the "Aircraft Checkers' Report", showing additions to, or subtractions from, the equipment furnished the airplanes at modification centers, depots, or sub-depots. (See paragraphs 2a and 2c(3) for further responsibilities of the Air Service Command.).

Ind. #2

~~CONFIDENTIAL~~ Copy for Deputy Chief of Air Staff

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e. The Air Transport Command.

(1) The Air Transport Command will either modify the "Aircraft Checkers' Report" to the extent necessary, or will furnish a separate report covering any equipment placed on the airplanes by the Air Transport Command at overseas installation point sub-depots for foreign delivery.

(2) The Air Transport Command will issue appropriate orders, placing the responsibility for this equipment on the Commanding Officer of each flight and each base for as long as the equipment is under their respective control until the airplane has been delivered to the properly designated officer in the theatre.

(3) A copy of the "Aircraft Checkers' Report", with shortages noted thereon, will be furnished the theatre commander with each airplane upon its arrival in the theatre.

(4) Another copy of the "Aircraft Checkers' Report", showing shortages, will be furnished the Air Service Command by the Air Transport Command station from which each plane departs the United States, and the Air Service Command will be responsible for supplying the equipment, which is short, to the theatre by the fastest available means. Equipment shipped to fill such shortages will be so labeled for shipment that it will be possible for the theatre commander to identify the particular airplane for which the equipment is destined.

(5) The memorandum receipt, now provided for equipment furnished the crew members, will be checked upon the return of the crews to the United States, and if any equipment signed for by the individual crew members is missing, appropriate steps will be taken to determine the reason for the shortage. It will be the responsibility of the individual crew members to obtain the signature of a properly designated officer in a theatre of operations for any equipment issued on the memorandum receipt that may be confiscated in the theatre because of any emergency existing for that particular piece of equipment.

3. Each of the Commands will again stress to Commanding Officers at depots, sub-depots and Air Force bases, both domestic and foreign, the importance of taking extraordinary precautions to protect airplanes and equipment that are at stations under their Command. The Air Transport Command will impress upon all pilots and crews the importance of protecting the equipment with which they are charged. Administrative and disciplinary action will be taken by the various Commands for non-compliance.

4. Field Manual 100-10, which permits the dropping of account-

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ability of property in a theatre of operations, will not be construed or interpreted so as to relieve any responsibility assigned an individual by virtue of this directive because of having passed through a combat zone, unless the plane or equipment is damaged or lost in actual combat, or as a result of combat.

By command of Lieutenant General ARNOLD:

RICHARD N. HALLARD,
Colonel, G.S.C.,
Assistant Chief of the Air Staff, A-4.

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AG 452.11 (154)

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DOD Dirs.
6 Jan. & 30 June 1974
By BLN/PAC LC. Date 10/18/76

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December 12, 1942.

MEMORANDUM FOR THE COMMANDING GENERAL, AIR SERVICE COMMAND:

Subject: Responsibilities for Loose Equipment on Airplanes Being Ferried to Theatres.

1. Supplementing memorandum, dated December 3, 1942, this office, above subject, it is desired that, in the case of equipment furnished to combat crews, kits necessary for the proper equipment of replacement crews be shipped at the same time as the replacement crews, and that the Theatre Commander be given sufficient information so that the kits may be identified and properly issued. Receipts will be obtained in all cases.

By command of Lieutenant General ARNOLD:

RICHARD H. BALLARD,
Colonel, G. S. C.,
Asst. Chief Air Staff, A-4.

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Index 3

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By ALN/PKC LC: Date 10/18/76

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ADS/ 4464

December 12, 1942.

MEMORANDUM FOR THE COMMANDING GENERAL, TRANSPORT COMMAND:

Subject: Responsibilities for Loose Equipment on Airplanes Being Ferried to Theatres.

1. Supplementing memorandum, dated December 3, 1942, this office, above subject, and with particular reference to paragraph 2c(1), it is desired the "Aircraft Checkers' Report" be modified by the Air Transport Command to include items of individual equipment which will be entered under a heading of "Equipment to be Returned to U. S. with Individuals". This list will include such items as navigators kits, parachutes, radio repairmens kits, etc., and each item will show the name of the individual who is responsible for the particular item, opposite the item on the list.

By command of Lieutenant General ARNOLD:

RICHARD H. BALLARD,
Colonel, G.S.C.,
Assistant Chief of the Air Staff, A-4.

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Incls. #4

AAG 452.11 (54)

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DOD 1995
By ALN/NARS Date 10/25/96

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Shipment of aircraft without complete equipment.

TJH:eva 6371

452.11 (5-4)

1. AFDAS AFADS 1942 11-12

1. Attention is invited to cable from New Delhi, No. Aquila 7102 XE, November 10, 1942.

2. The continued shipping of aircraft without complete equipment must be stopped. Recently discussions were held with the Air Service Command and A-4 on the possibility of requiring crew members to retain accountability for certain items until arrival in the theater, at which time accountability would be determined by the regulations existing within that theater. This action was directed in the specific case of navigators' kits.

3. The First Foreign Concentration Command has now been made responsible for inspection of airplanes to determine operational completeness. Unless some system of accountability is devised immediately to insure that all equipment installed in the airplane at the time of inspection is the responsibility of some organization or individual until it arrives in the theater, we will have continuous recurrences of the situation complained of.

4. Immediate action must be taken to make ships completely operational and to provide complete equipment for crews and individuals. Your division is charged with this action.

Cys: Air Service Command,
Dir. of Base Services,
Dir. of Bombardment.

T. J. HANLEY, JR.,
Brigadier General, U.S.A.,
Deputy Chief of Air Staff.

Mrs Gray

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8 Jun & 30 June 1974
By AFAG/PSC LC, Date 10/18/76

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RELEASED

4-3.11 (54)

Shipment of aircraft without complete equipment.

TJM:eva 6371

1. AFDAS AFADS 1942 11-12

1. Attention is invited to cable from New Delhi, No. Aquila 7102 XE, November 10, 1942.

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4. Immediate action must be taken to make ships completely operational and to provide complete equipment for crews and individuals. Your division is charged with this action.

NOV 12 1942
AAG

Copys: Air Service Command,
Dir. of Base Services,
Dir. of Bombardment.

T. J. MANLEY, JR.,
Brigadier General, U.S.A.,
Deputy Chief of Air Staff.

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By ALN/PRC NARS, Date 10/18/16

CONFIDENTIAL

Replacement Parts for Planes Used by Civil Air Patrol.

452.11 (153)

MAL/imm 5265

6 AFCAS AFDAR and AFAMC (In turn) 1942 11-20

1. The Certificate of Military Necessity prepared by Major Johnson will not be signed. This action has the approval of General Arnold.

2. For your information, it has been decided that in view of the activation of the Anti-Submarine Air Command, no necessity for continuance of the Civil Air Patrol is indicated and a gradual reduction in the activity of this agency will be effected as the airplanes utilized in this work become inoperative.

3. As the airplanes referred to are finally removed from patrol duties, the necessary action will be taken to make adjustments and settlements for damages or losses incurred incidental to the duty performed, in accordance with existing agreements between the individual aircraft owners and the Government. A final release should be obtained in all instances in order to preclude future claims against the United States.

NOV 10 1942
AAG

M. A. LIBBY,
Lt. Col., G.S.C.

Return to R 3E-989

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5 Jan. & 20 June 1974
By AFRAC LC. Date 10/4/76

Replacement Parts for Planes Used by Civil Air Patrol

			1942	MAL/imm 5265
11	AFCAS	AFAMC	12-7	To note the foregoing and attached proposed replies, and for any comments that you may care to make in connection therewith.

Dispatched
DEC 7 1942
AAG

M. A. LIBBY,
Lt. Col., G. S. C.

Incls.
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by AUN/PAC NC Date 10/15/76

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A-1/AS
A-2/AS
Intel. S.
A-3/AS
A-4/AS
Plans/AS
Insp/AS
Mil. Req.
A. Def.
Bomb.
Gr. Sup.
Base S.
War O&M
Ind. Tr.
Tech. S.
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Weather
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Civ. Pers.
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Mgmt. Con.
Adj. Gen.
Org. Pl.
Stat. Pl.
Leg. Pl.
Mat. C.
A. S. C.
F. C.

AG 452.11 (12-3)

13 AFMAG AFADS 12-18 For appropriate action in view of attached copy of decision that the Army Air Forces will take over the Civil Air Patrol.

7 Incls.-
6 Incls n-c
1 Incl added-cy 12-8-42

JOHN B. COOLEY
Col., A.G.D.
Asst. Air A.G.

Dispatched
DEC 19 1942
AAG

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IAW Jan. & 20 June 1974
By ALNJ/DKC LC. Date 10/10/76

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Replacement Parts for Planes Used by Civil Air Patrol.

LTB:epc 3365

12 AFAMC- AFCAS 1942
6 12-17

1. The Materiel Command concurs in the views of A-3 and A-4 as set forth in item 2 above.

2. The Joint Aircraft Committee has recently approved the production of 3,000 L-2, L-3 and L-4 type airplanes for the year 1943. That is all the productive capacity available for those types of airplanes and engines. Therefore, the only method of keeping the Civil Air Patrol airplanes in commission is to cannibilise other private airplanes.

J. W. SESSUMS, JR.
Colonel, Air Corps

Incl. n/c

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A-1/AS
A-2/AS
Intel. S.
A-3/AS
A-4/AS
Plans/AS
Insp/AS
Mil. Req.
A. Def.
Bomb.
Gr. Sup.
Base S.
War O&M
Ind. Tr.
Tech. S.
Comm.
Weather
Traffic
Photo. M&C
Tech. Insp.
Pub. Rel.
Dir. Pers.
Mil. Pers.
Civ. Pers.
Surg.
J. Advoc.
Budget
Fiscal
Mgmt. Con.
Adj. Gen. 93C
Org. Pl.
Stat. Pl.
Log. Pl.
Mat. C.
A. S. C.
F. C.

452.11 (1942)

Dispatched
OCT 27 1942
AAG

JBC:JB 5789
(APMAG)

1st Ind.

WD HQ ARMY AIR FORCES, Washington, D.C. October 26, 1942
TO: Commander in Chief, U. S. Atlantic Fleet, Navy Department, Washington, D.C.

Contents of enclosure (A) have been noted.

For the Commanding General:

10/27/42

FRED C. MILNER
Colonel, A.G.D.
Air Adjutant General

1 Incl. Cy letter, July 31, 1942

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HEADQUARTERS ARMY AIR FORCES
ROUTING AND RECORD SHEET

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File No. _____

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SUBJECT: Project 337 - Heath, Report on

NO.	FROM	TO	DATE	COMMENTS — HEH:das- 3701
1	AFAMC-6	AFCAS	1942 10/23	1. Inclosed find communication from Commander in Chief, U. S. Atlantic Fleet, addressed to Commanding General, Army Air Forces, which was forwarded to this Command for action. 2. This report is concerned primarily with the overall aspects of this project with reference to methods of operation, spares, etc. 3. Inasmuch as the Materiel Command was concerned with only a minor phase of this operation, it is thought that this report should be forwarded to the office which was responsible for monitoring this and related projects. S.T.B. for J. W. SESSUMS, JR., Colonel, Air Corps. 1 Incl. Ltr frm Com.in Chief, U.S. Atlantic Fleet to CG, AAF, 10/21/42, w/incl.

Hq. Army Air Forces
(24 1942
AAG Received

SECRET
By Authority of
The Commanding General
Materiel Command, AAF
10/24/42 S.T.B.
Date Initials

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by ALNFAC, J.C. Date 10/3/75

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RELASSIFIED

Project 337 - Heath, Report on

HHH:das- 3701

1 AFHMC-6 AFCAS 1942 10/23

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2. This report is concerned primarily with the overall aspects of this project with reference to methods of operation, spares, etc.

3. Inasmuch as the Materiel Command was concerned with only a minor phase of this operation, it is thought that this report should be forwarded to the office which was responsible for monitoring this and related projects.

J. W. SESSUMS, JR.,
Colonel, Air Corps.

1 Incl.
Ltr frm Com.in Chief, U.S. Atlantic Fleet to CG, AAF, 10/21/42, w/incl.

RELASSIFIED

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6 Jan. & 20 June 1974
By ALN/PKC LC. Date 10/18/76

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Contract DA W 535 ac-1507 -Operation of Repair and Maintenance Base in Northern Ireland - Project Magnet.

MAL/imm

6 AFCAS AFAMC 4-A 1942 11-7

Note item 4.

M. A. LIBBY,
Lt. Col., G.S.C.

Incl.
n.c.

Disposition
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DOD Itrs
6 Jan. & 20 June 1974
by AGAFRC, J.C. Date 10/15/76

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Contract DA W 535 ac-150 Operation of Repair and Maintenance Base in Northern Ireland - Project "Magnet"

MAL/ism 5265

1942

2 AFCAS AFADS 10-28

1. For recommendation.

2. It is understood that General H. J. F. Miller is looking into this matter in connection with his present visit to that theater.

M. A. LIBBY,
Lt. Col., C.S.C.

Incl.
n.c.

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6 Jan. & 20 June 1974
By ALNJPKC, Lic. Date 10/6/76

CONFIDENTIAL

Lend-Lease Administration

3	AFCAS	AFASC (Gen. Miller)	1942 11-19	MAL/ims 5265 1. Your attention is invited to General Arnold's marginal note to General Stratemeyer pencilled on item #2 above. 2. For discussion with Air Marshal Evill.

Dispatched
NOV 20 1942
AAG

M. A. LIBBY,
Lt. Col., C.S.C.

Incl.
n.c.

air adj 452.11 (149)

air adj 452.11 (149)

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ARMY AIR FORCES
HEADQUARTERS AIR SERVICE COMMAND
WASHINGTON DC

SECRET
By Authority of
The Commanding General
Air Service Command
Date OCT 12 1942 Initials RW

DECLASSIFIED
DOD ltrs
6 Jan. & 30 June 1974
by ALN/DKC Dt. Date 10/18/76

AFASC-C

October 12, 1942

452.11 (148)

MEMORANDUM TO: Chief of Air Staff

SUBJECT: Bearings for Allison Engines

1. Attached hereto for the information of your office is paraphrased copy of reply to cablegram number 706 from Australia.

For the Commanding General:

CLEMENTS McMULLEN,
Brigadier General, U.S.A.,
C. G., Overseas Division.

1 Incl.
Para cy cable
dtd 10/12/42

Hq. Army Air Forces
OCT 13 1942
AAG Received

File 1088

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5 Jan. & 20 June 1974
By RAM/PKC, LtC. Date 10/28/76

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ARMY AIR FORCES
HEADQUARTERS AIR SERVICE COMMAND
WASHINGTON DC

SECRET
By Authority of
The Commanding General
Air Service Command
OCT 12 1942 RW
AFASC-D Date Initials

October 12, 1942

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For the Commanding General:

CLEMENTS McMULLEN,
Brigadier General, U.S.A.,
C. C., Overseas Division.

1 Incl.
Para cy cable
dtd 10/12/42

ASC 0 934 SA

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SECRET

Paraphrase of secret cable dispatched by General McNullen (JKH/dg) to Kenney at Brisbane, Australia, dated October 12, 1942, in reply to A-706:

All these bearings for Allison engines are critically short. When Emergency Request 12401 was shipped by air bearing number 40924 was not available. In addition to the 31 each bearings number 40924 shipped from Hamilton Field, October 11, on plane Transair 598, Air Ferry Bill 241062, by October 15 air shipment will be made of 89 each of these bearings. As soon as the contractor can supply them, the rest of the bearings requested will be shipped.

SECRET

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DOD Dir
By ... Date ...

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By Authority of
The Commanding General
Materiel Command, AAF
Date Initials

Contract DAW 535 ac-1507 - Operation of Repair and Maintenance Base in North Ireland - Project Magnet.

FA:/tpw - 6682

6. AFAMC-4A AFCAS 1942 11-2

1. In accordance with Radio No.829A, dated October 28, 1942, from General Spaatz, Contract DA W 535 ac-1507 has been extended six months to May 1, 1943, by the attached letters.

2. Lockheed Aircraft Corporation does not desire to appoint J. Kenneth Hull to execute contracts for Lockheed at overseas bases as requested in said radio. The formal contract will be executed here.

NOV - 3 '42 AM

RECEIVED
Air Adjutant General

Incls: (2)
1. Ltr fr Lockheed 10/31
2. " to " 10/31

O. P. ECHOLS,
Major General, U.S. ARMY,
Asst./Chief of Air Staff

7 AFCAS AFAMC-4-A 11-3

Noted.

M. A. LIBBY,
Lt. Col., G.S.C.

Incls.
n.c.

Dispatched
NOV 3
AAG

~~SECRET~~

-3-

AAG 452.11 (147)

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8 Jan & 20 June 1974
By ALM/PKC NC, Date 10/18/76

SECRET

Contract DA W 535 ac-1507 - Operation of Repair and Maintenance Base in North Ireland-Project Magnet.

452.11 (147)

HJFM:msf 2488

4	AFASC	AFCAS	1942 10/18	1. In view of the fact that I am under orders to visit this theatre with the view to securing the facts concerning the Lockheed contract, it is recommended that no action be taken upon this matter until my return to the United States.

H.J.F. Miller,
Major General, USA

Incl n/c

MAL/imm 5265

5	AFCAS	AFAMC	10-25	The action recommended in preceding item is approved by the Deputy Chief of the Air Staff.

Dispatched
OCT 26 1942
AAG

M. A. LIBBY,
Lt. Col., G.S.C.

1 Incl. n.c.

SECRET

SB-208-ADS/p371

Air AG 452.11 (147)

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Contract DA W 535 ac-1507 - Operation of Repair and Maintenance Base in North Ireland - Project Magnet

JBC:JB 5789

2 AFMAG AFADS 1942
10-13 For comment.

J.B.C.
Col., A.G.D.
Asst. Air A.G.

Incl. n-c

Dispatched
OCT 13 1942
AAG

Dispatched
OCT 13 1942
AAG

A-1/AS
A-2/AS
Intel. S.
A-3/AS
A-4/AS
Plans/AS
Insp/AS
Mil. Req.
A. Def.
Bomb.
Gr. Sup.
Base S.
War O&M
Ind. Tr.
Tech. S.
Comm.
Weather
Traffic
Photo. M&C
Tech. Insp.
Pub. Rel.
Dir. Pers.
Mil. Pers.
Civ. Pers.
Surg.
J. Advoc.
Budget
Fiscal
Mgmt. Con.
Adj. Gen.
Org. Pl.
Stat. Pl.
Log. Pl.
Mat. C.
A. S. C.
F. C.

452.11 (1942)

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6 Jan. & 20 June 1974
By NLN/PSC NO. Date 10/15/76

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~~SECRET~~
By Authority of
The Commanding General
Materiel Command, AAF
10-28-42
Date Initials

Contract DA W 535 ac-1507 - Operation of Repair and Maintenance Base in Northern Ireland - Project Magnet

FW:vmh 6971

1 RFAMC-4A AFCAS 1942 10-8

1. Attached hereto is forwarded original copy of letter dated October 7, 1942, addressed to the Commanding General, Materiel Command, above subject.

2. A letter of intent was issued on January 3, 1942, superseded by formal contract approved May 1, 1942, calling for the organization, equipment and operation by Lockheed of a depot in Northern Ireland for the maintenance, repair and overhaul of airplanes, engines and propellers. The contract was made and approved on the basis of the impossibility of militarizing the project at the time, notwithstanding the policy of militarizing overseas contract activities.

3. Reference is made to AG 160 (2-15-42) MSC - D - M as supplemented by AG 160 (7-16-42) MSC - D - M, Subject "Closing out of overseas contracts and militarization of contract activities," by which such objects are to be obtained "as rapidly as can be accomplished within the limitations of the availability of troops, equipment, and transportation."

4. The contract expires by its terms on November 1, 1942, subject to renewal by mutual consent. It is understood that Major General Frank is about to extend the term to February 1, 1943 or slightly longer.

5. From the statements in the letter to Lockheed quoted in the inclosure, it may be gathered that troops and civilian employees will be available by February 1, 1943.

6. This office knows of no reason, in the interests of the Government, why the instructions from General Frank to Lockheed should be modified.

7. Request advice as to whether it is desired to continue this in its present status.

1 Incl.
Ltr. 10-7-42

O. P. ECHOLS
Major General, U.S.Army

~~SECRET~~

Ab-208

Air 02452.11 (47)

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DOD ltrs
By ALN/PAC Date 10/18/76

RELEASED

Extract from General Kenney's Letter

WEH:JT 5246

1 AFCAS AFADS 1942
AFASC 10-11

1. Following is an extract of a letter from General Kenney to General Arnold which is furnished for your information and whatever action is indicated:

"I have moved all bomber supplies and spares from Melbourne up to Townsville and the maintenance is beginning to pick up. Yesterday, out of seventy-eight (78) B-17's in Australia we had thirty in shape and thirty out in the squadrons and eighteen in depot repair. I think I can better this a little as soon as I get my depot engine overhaul and propeller overhaul going at Townsville, but to keep both the 19th and the 43rd Groups going at forty-eight assigned planes each, which will give twenty-four ready for daily operations, an additional thirty will be continually going through depot overhaul. In other words, to keep two four-squadron heavy groups going I need on hand one hundred and twenty-five B-17's. This monthly attrition for this number will be about twenty-five."

452.11 (46)

Dispatched
OCT 12 1942
AAG

WILLIAM E. HALL
Colonel, G. S. C.

RELEASED

Our 452.11 (46)

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6 Jan. & 20 June 1994
By ALN/PRC LC Date 10/15/96

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452.11 (14)

MAL/lmm 52&6

2 AFDAS AFAAP 10-9

1. It is desired that a satisfactory policy be promulgated that will insure assignment of officers with efficiency ratings of at least "excellent" to the Air Service Command duty.

2. In view of recent developments it is becoming increasingly apparent that as a general rule, the highest type officers have been given assignments with tactical units, to the detriment of our supply and maintenance activities. It is absolutely necessary to consider duty with the Air Service Command on a plane equally as high as duty with a fighting unit.

A raising of the experience level in the Air Service Command is indicated and the policy to be proposed by you should be so drafted as to accomplish this purpose.

Dispatched
OCT 10 1942
AAG

L. S. KUTER,
Brig. Gen., U. S. A.,
Deputy Chief, Air Staff.

Incl.
n.c.

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Air AG 452.11 (14)

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DOD Dirs.
6 Jan. & 30 June 1974
By RLN/PSC UC Date 10/18/76

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452.11 (144)

MAL/ism 5246

2 AFDAS AFAAP 10-6

1. Note the recommendation stated in the last sentence, paragraph 2, item #1 above. This recommendation is approved.

2. You will take the necessary action to enunciate the foregoing policy and insure the operation thereof.

L. S. KUTER,
Brig. Gen., U.S.A.,
Deputy Chief, Air Staff.

Incl.
n.c.

Dispatched
OCT 8 1942
AAG

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AG 452.11 (144)

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WAR DEPARTMENT
OFFICE OF THE COMMANDING GENERAL,
MATERIEL COMMAND, ARMY AIR FORCES
WASHINGTON, D. C.

CONFIDENTIAL

Gen Arnold

1. Discussed with Gen Knudsen

2. Recommend not be sent.

3. I am following instrument picture closely with Gen. K.

BENNETT E. MEYERS
BRIG. GEN., U.S.A.
EXECUTIVE

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DOD ltrs
8 Jan. & 20 June 1974
By ALM/PKG NC, Date 10/13/76
X-64-b, A.F.
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DOD Dirs.
5 Jan. & 30 June 1974
By NNRC J.C. Date 10/18/76

~~CONFIDENTIAL~~

To File
Gen. A. says, not to send this paper
HHG

WAR DEPARTMENT
HEADQUARTERS OF THE ARMY AIR FORCES
WASHINGTON

September 1, 1942

MEMORANDUM FOR MR. DONALD NELSON:

As you will remember, I stated to you a few days ago that in my opinion there was a holdup in production due to lack of accessories, automatic pilots, and instruments.

I have recently been informed that this shortage is going to increase rather than decrease, and that the shortage will be very serious by next Spring. The main reasons for this shortage appear to be:

a. Lack of facilities.

b. Complacency on the part of Management due to the fact that they are now receiving larger orders than they ever anticipated together with their satisfactory rate of increased production.

c. Fear on the part of Capital as to what will happen after the war is over. (The above has a direct bearing upon the lack of additional facilities which must be provided to meet our requirements.)

d. Lack of skilled workmen capable of doing precision jobs such as grinding bearings for instruments, etc.

e. The non-utilization of watch and clock factories. These are practically the only source of supply for skilled precision workers for the manufacture of bearings and instruments which require such careful workmanship.

I hope that my information is wrong but, judging from the past, I believe that it is correct and I am fearful and apprehensive of what may occur. Accordingly, not only is it very essential that the matter of additional facilities for aircraft manufacturers be looked into without delay but it is also essential that we get the facts, and if necessary, additional facilities be started at once.

H. H. ARNOLD,
Lieutenant General, U. S. A.,
Commanding General, Army Air Forces.

452.11 (1942)

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DOD ltrs
8 Jan. & 20 June 1974
By AUNPAC J.C. Date 10/18/76

September 1, 1942

MEMORANDUM FOR MR. DONALD NELSON:

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I have recently been informed that this shortage is going to increase rather than decrease, and that the shortage will be very serious by next Spring. The main reasons for this shortage appear to be:

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b. Complacency on the part of Management due to the fact that they are now receiving larger orders than they ever anticipated together with their satisfactory rate of increased production.

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e. The non-utilization of watch and clock factories. These are practically the only source of supply for skilled precision workers for the manufacture of bearings and instruments which require such careful workmanship.

I hope that my information is wrong but, judging from the past, I believe that it is correct and I am fearful and apprehensive of what may occur. Accordingly, not only is it very essential that the matter of additional facilities for aircraft manufacturers be looked into without delay but it is also essential that we get the facts, and if necessary, additional facilities be started at once.

H. H. ARNOLD,
Lieutenant General, U. S. A.,
Commanding General, Army Air Forces.

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DOD Dirs.
6 Jan. & 20 June 1975
By NNSP/PRC, NC, Date 10/18/76

SECRET

Cable to ASC 10th A.F. regarding policies and procedures.

1. CAS A-4 9/4

1. Reference is made to the attached memorandum for the Chief of the Air Staff, dated September 3rd from General McMullen.

2. For coordination or comment.

R.C.W.BLESSLEY
Colonel, G.S.C.

Incl: Memo
mentioned above
Cable to 10th AF
A.S. Commander

452.11

AFADS TJH/ceh- 5316

2. AFADS AFCAS 9-5

1. The message prepared by the Air Service Command is in accordance with policies enunciated by Commanding General and in force in this division. It answers the specific questions asked by Air Service Command in India.

(134)

2. If approved by General Arnold, (who has asked to see it before it is dispatched), I will personally take it up with RAFDEL and see that it is understood by them, and that information is dispatched to all theaters to assist in the coordination in these theaters.

T. J. HANLEY, JR.
Brigadier General, U.S.A.

Incl: n/c
Cable added - 8-31-42
fr New Delhi

LSK:cmc 6371

3. AFCAS Cable 9-8
Secretary

The attached cable has been signed and is ready for transmission.

Taken by Maj. Harbert to Cable Secretary thru A-4.

L. S. KUTER
Brig. Gen., U. S. A.

Incl: n/c

Dispatched
SEP 8 1942

SECRET

452.11 (139)

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DOD Dir 5
6 Jan. & 30 June 1980
By: AUL/DAC, HQ, Date 10/18/76

SECRET

Cable to ASC from 10th A.F. regarding policies and procedures.

RCMB/hk 5246

1. CAS A-4 9/4

1. Reference is made to the attached Memorandum for the Chief of the Air Staff, dated September 3rd from General McMullen.

2. For coordination or comment.

R.C.M. BLESSLEY
Colonel, G.S.C.

Incl: Memo
mentioned above
Cable to 10th AF
A.S. Commander

Title
c 9/4/42

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DOD ltrs
6 Jan. & 20 June 1974
By AUNPAC LC: Date 10/15/76

SECRET

Cable to ASC [redacted] 10th A.F. regarding policies and procedures.

RCWB/hk 5246

1. CAS A-4 9/4

1. Reference is made to the attached Memorandum for the Chief of the Air Staff, dated September 3rd from General McNullen.

2. For coordination or comment.

R.C.W. BLESSLEY
Colonel, G.S.C.

Incl: Memo
mentioned above
Cable to 10th AF
A.S. Commander

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Dispatched
SEP 4 1942
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000 ltrs
& 20 June 1974
AUTH: J.C. Date 10/15/74

SECRET

Spares Requested by Overseas Theaters

WHH:nl

1. AFCAS A-4 1942 7-20 For necessary action.

W.H.H.
S/AS

452.11 (132)

Dispatched
JUL 20 1942
AAG

SECRET

HEADQUARTERS—ARMY AIR FORCES—COORDINATION											
Chief of Staff	Sec'y Air Staff	A. A. G.	A-1	A-2	A-3	A-4	A-WPD	A-Insp	Budget	Statistics	

AAF-39

AirAG 452.11 (132)

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DOD ltrs
E.O. 6 20 June 1974
By ALN/AMC NLC Date 10/18/76

HEADQUARTERS [illegible] AIR FORCES
ROUTING AND [illegible] CORD SHEET

CONFIDENTIAL

File No. _____

Tally No. AAF _____

Note -- A line will be drawn across sheet after each comment.

SUBJECT: Runaway of Propellers.

NO.	FROM	TO	DATE	COMMENTS GES/hd
1.	AFCAS	AFAMC	~~1942~~ 7-16	1. During a recent inspection of the 301st Heavy Group at Westover Field, the following was brought to my attention: a. The B-17's have installed on the propellers a larger governor. In spite of this, this Group has recently experienced three runaway propellers. On one airplane the propeller ran up to 3,000 rmp; two others went to 2700. The pilots in this Group are still concerned about what will happen above 20,000 ft., as it is believed the larger governor was put on to correct such runaway of propellers at that altitude and higher levels. 452.11 (130)
2.	AFAMC -6 Hq. Army Air Forces AUG 7 1942 AAG Received	AFCAS	8-6 1942	1. Reference section one above, attention is invited to the attached copy of a letter from the Air Forces Foreign Service Concentration Command, dated July 15, 1942, and to the copy of the 1st Indorsement thereto from this Command on the same matter. O. P. E. Commanding General, A.F. Materiel Command Incl. Cy ltr fr AFSCC 7-15-42 w/cy 1st Ind. thereto
3.	CAS			File. Incl. Withdrawn R. H. H. Asst. S/AS

(Do not use reverse side) F-4071, AF, Rev. 8/14/41

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Air AS 452.11 (130)

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8 Jan. & 20 June 1974
By: NNBP/PKC NC. Date 10/18/76

HEADQUARTERS ARMY AIR FORCES
ROUTING AND RECORD SHEET

~~CONFIDENTIAL~~

File No. _____

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Tally No. AAF _____

SUBJECT: Status of Wright Aircraft Engines.

NO.	FROM	TO	DATE	COMMENTS GES/hd
1	AFCAS	AFAMC (Gen. Echols)	1942 7-12	1. With reference to the enclosed memorandum from General Miller on June 29th, a list of the enumerated parts were turned over to a member of your Command here in Washington. 2. It was understood that conferences were being held between members of the Air Service Command and the Materiel Command which would take two or three days. 3. This question of engine parts for spares is a very serious one in which General Arnold is interested. 4. A report will be submitted hereon as to the recommendations to alleviate this shortage of engine spares. G.E.S. AFCAS
2	AFAMC-13	AFCAS	7-14-1942	1. Arrangements have been made with Wright Aeronautical to produce and ship the necessary spare parts during the month of July to relieve the situation at the depots. O. P. E. Com. Gen., AFAMC Incl. n/c
3.	CAS	ASC	7-16	RCWB/hk 1. See No. 2 above. It is requested that you inform this office when the shortages referred in your original memo have been supplied. R.C.W.B. S/AS

RECEIVED JUL 14 1942 PROD. ENGR. BR., O. C. A. C.

Incl:
Memo fr Gen. Miller to CG, AAF re above subj.

Hq. Army Air Forces JUL 15 1942 AAG RECEIVED

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~~CONFIDENTIAL~~

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AG 452.11 (129)

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E Jan. & 30 June 1978
By AL/PAC LC, Date 4/16/76

HEADQUARTERS ARMY AIR FORCES
ROUTING AND RECORD SHEET

File No. _____

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Tally No. AAF _____

CONFIDENTIAL

SUBJECT: Status of Wright Aircraft Engines.

-2-

NO.	FROM	TO	DATE	COMMENTS	AFASC-E (DAB:msf)
4	AFASC	AFCAS	1942 8/13	1. Shortages referred to in original memorandum were supplied August 4th. Your attention is invited to 1st Ind. of attached correspondence. H.H.A.F.M. CG,ASC 2 Incls. Incl 1 - n/c Incl 2 - 1st Ind. fm Wright Field 8/5/42.	
5	CAS	MAG	8/17	1. File Ret'd and S/GS	

Hq. Army Air Forces
AUG 14 1942
AAG Received

452.11 (129)

(Do not use reverse side) P-4071, AF, Rev. 8/14/41

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Air CS 452.11 (129)

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WF-1-6-42,15M

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DOD ltrs
8 Jan. & 30 June 1974
By ALAIR LC; Date 10/15/76

CONFIDENTIAL

WAR DEPARTMENT

[redacted]

HEADQUARTERS, AIR SERVICE COMMAND

WASHINGTON, D. C.

TO: Commanding General, Army Air Forces.

SUBJECT: Status of Wright Aircraft Engines.

1. An acute shortage of parts exists for the repair of Wright Aircraft engines. Listed below are Wright engines in the several repair depots of Continental United States, Hawaii, and Panama, the completion of the repair of which on June 26, 1942, was being held up awaiting necessary parts. This number is considered excessive, and, in view of this, it is urgently recommended that necessary steps be taken to impress the manufacturers of these type engines with the necessity for immediate delivery of spare parts required.

R1820	-	211
R2600	-	58
		269

2. In addition to the above, there were 249 engines on which work was just being started, and it is reasonable to believe that approximately 124 of these will be held up awaiting parts. This will give a total of almost 400 engines held up awaiting parts. At a procurement rate of 35 percent this would constitute all the spares for a purchase order of almost 1200 installed engines.

3. In view of the above, it is recommended that the Wright Aeronautical Corporation be directed to supply sufficient spares immediately to place the above engines in commission. In addition, it is recommended that they be directed to supply sufficient spares for the overhaul of Wright engines as may be required on call.

HENRY J. F. MILLER
Major General, U.S.A.
Commanding General, Air Service Command

CONFIDENTIAL

aag/318.1/7/11 [illegible] Air AG 452.11 (129)

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

~~CONFIDENTIAL~~

ARMY AIR FORCES
HEADQUARTERS AIR SERVICE COMMAND
WASHINGTON

DECLASSIFIED
DOD ltrs.
6 Jan. & 20 June 1974
By AUNJLK UC; Date 10/10/76

July 21, 1942

SUBJECT: Status of Wright Aircraft Engines.

TO: Chief, Field Services, Air Service Command,
Wright Field, Dayton, Ohio.

1. Attention is invited to the inclosed Routing & Record Sheet and attached letter to the Commanding General, Army Air Forces on the above subject.

2. It is requested that this office be furnished information on which to base reply to comment 3 of Routing & Record Sheet.

For the Commanding General:

DAVID A. BURCHINAL
Captain, Army Air Forces
Aide de Camp

2 Incls.
R&R (3 comments)
Ltr to CG,AAF fm
CG,ASC, no date.

1st. Ind. S-6-3SA

AAF HQS FLD Servs ASC Wright FLD Dayton, O. August 5, 1942. To: Headquarters, Air Service Command, Army Air Forces, Washington, D. C. Att: Captain David A. Burchinal.

1. Shortages as reported in the Basic communication have been cleared up as follows; a list of shortages submitted to Wright Aeronautical on June 6th consisting of 403 Items was completed August 4th; a list submitted to Wright Aeronautical June 30th consisting of 206 Items was completed August 4th with the exception of one item. This one item is promised for shipment with in the next 10 days.

For the Chief, Field Services:

I. W. STEPHENSON
Major, Air Corps
Asst., Air Force Section.

Incls. n/c

Incl 2.

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6 Jan. & 20 June 1974
By AGO/ltr. dtd. Date 10/15/76

Status of Wright Aircraft Engines AFCAS

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DECLASSIFIED

452.11 (129)

Dispatched
JUL 16 1942
AAG

File
cc 7/16/42

RCWB/hk

3. CAS ASC 7-16 1. See No. 2 above. It is requested that you inform this office when the shortages referred in your original memo have been supplied.

HEADQUARTERS				
Chief of Staff	Secy AAF Staff	A. A. G.	A-1	A-2

Incl: n/c

R.C.W.B.
S/AS

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CONFIDENTIAL

cc: AG 452.11 (129)

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ADDRESS REPLY TO
~~THE SECRETARY OF WAR~~
WAR DEPARTMENT
WASHINGTON, D. C.

DECLASSIFIED
DOD ltrs
8 Jan. & 30 June 1974
By AWKC LC: Date 10/8/76

~~SECRET~~
RESTRICTED
WAR DEPARTMENT
Headquarters Army Air Forces
WASHINGTON

July 6, 1942.

MEMORANDUM FOR GENERAL HARMON:

Subject: Equipment for Planes to Indigo.

1. Reference the personal letter which you received from the Commanding Officer, Air Force Troops in Iceland, with regard to shortages of magazines and other parts for the first ten P-39's shipped to Iceland:

2. The Director of Base Services reports that the magazines for these planes were shipped on May 29, 1942.

452.11 (126)

Hq. Army Air Forces
JUL 6 1942
AAG Received

Max F. Schneider
MAX F. SCHNEIDER,
Colonel, G.S.C.,
Acting Assistant Chief Air Staff, A-4.

Noted - file
W J F

DECLASSIFIED
~~SECRET~~
AAG 452.11 (126)

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AAF/AG/461

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HEADQUARTERS ARMY AIR FORCES
ROUTING AND RECORD SHEET

DECLASSIFIED
DOD Ltrs.
8 Jan. & 30 June 1974
By AUSCM NC, Date 10/5/76

Note: A line will be drawn across sheet after each comment.

File No. _____

Tally No. AAF _____

SUBJECT: Engine Spares Situation.

NO.	FROM	TO	DATE	COMMENTS
				AFADS MFS/gwd
1.	AFADS	AFCAS	1942 6-30	1. The following information with reference to the engine spares situation previous to this date is furnished for record purposes: a. On June 23 representatives of the Air Service Command reported verbally to General Arnold that from their point of view the Wright engine spares situation was unsatisfactory. b. Colonel Schneider transmitted the information to the Chief of Staff, Materiel Command, at General Arnold's direction for corrective action. c. General Meyers directed that a committee consisting of representatives of the Air Service Command and the Materiel Command, proceed to the Wright plant to investigate the situation as a whole, and to work out a satisfactory solution. d. The above mentioned committee went to the Wright plant and worked out a solution that was satisfactory to Colonel Lester T. Miller of the Air Service Command at Wright Field. In view of the fact that Col. Miller was satisfied, no further direct action was taken by A-4. MFS AC/A-4.

452.11 (125)

U.S. Army Air Forces
JUL 30 1942
AAG Received

Noted. Gp-4.

(Do not use reverse side)

F-4071, AF. Rev. 8/14/41

CONFIDENTIAL

Air AG 452.11 (125)

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DOD ltrs
E.O. 11652, Sec. 3 & 5D June 1974
By ALANTIC NARA, Date 10/18/76

SECRET

July 1, 1942

MEMORANDUM FOR THE ASSISTANT CHIEF OF THE AIR STAFF - A-4:

In discussion with General Arnold this morning he brought up the question, "Why don't we send all these British spares at Morrison Field, Natal, and any other Atlantic seaport, aboard the ship that is leaving about July 5th for Takoradi". I quite agree. If we can get this stuff aboard that ship rather than transporting it by air, we will have accomplished by ocean vessel quite a task.

GEORGE E. STRATEMEYER,
Major General, U.S.A.

1 file 8/23/42
a

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Air AG 452.11 (12-4-42)

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DOD ltrs
6 Jan & 20 June 1974
By AGNJ/LK, NC, Date 10/15/76

~~SECRET~~

AFCAS
GES/hd

July 1, 1942

MEMORANDUM FOR THE ASSISTANT CHIEF OF THE AIR STAFF - A-4:

In discussion with General Arnold this morning he brought up the question, "Why don't we send all these British spares at Morrison Field, Natal, and any other Atlantic seaport, aboard the ship that is leaving about July 5th for Takoradi". I quite agree. If we can get this stuff aboard that ship rather than transporting it by air, we will have accomplished by ocean vessel quite a task.

GEORGE E. STRATEMEYER,
Major General, U.S.A.

452.11 (124)

Dispatched
JUL 1 1942
AAG

Ays/as

file 7.1.42

HEADQUARTERS ARMY AIR FORCES - COORDINATION

Chief of Staff	Sec'y Air Staff	A.A.G.	A-1	A-2	A-3	A-4	A-WPD	A-Insp.	Budget	Statistics	

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AAF-39

Air AG 452.11 (124)

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DOD ltrs
5 Jan. & 30 June 1974
By [redacted] NARS, Date 10/18/76

HEADQUARTERS ARMY AIR FORCES
ROUTING AND RECORD SHEET

File No. _____

Note -- A line will be drawn across sheet after each comment.

Tally No. AAF _____

~~CONFIDENTIAL~~

SUBJECT: Automatic Pilots for C-47 Airplanes in 60th Transport Group.

RCWB/hk

NO.	FROM	TO	DATE	COMMENTS
1.	CAS	RCW	6/12	Please note General Harmon's comment on the attached memorandum, to wit, no change in the 60th Group. R.C.W.B. S/AS Incl: Memo for C/AS
2.	AFROM C-5	AFCAS	6/15	Noted. N. F. T. Col., A.A.F. Dir., W.C.&M.

ARMY AIR FORCES W.C.&M.
1942 JUN 12 PM 12 13

452.11 (121)

File
W St

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(Do not use reverse side) F-4071, AP. Rev. 8/16/41

Page No. _____

AHAS 452.11 (121)

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ADDRESS REPLY TO
CHIEF OF THE AIR CORPS
WAR DEPARTMENT
WASHINGTON, D. C.

DECLASSIFIED
DOD ltrs
8 Jan. & 20 June 1974
By ... NARS, Date 10/25/76

DECLASSIFIED

AFROM G-5

WAR DEPARTMENT
HEADQUARTERS OF THE ARMY AIR FORCES
WASHINGTON

June 9, 1942

MEMORANDUM FOR THE CHIEF OF THE AIR STAFF:

Subject: Automatic Pilots for C-47 Airplanes in 60th Transport Group.

1. Reference is made to Memorandum dated May 28, 1942, to the Director of War Organization and Movement concerning the possibility of equipping all C-47 airplanes in the 60th Transport Group with automatic pilots.

2. Type A-3 automatic pilots are specified for all C-47 airplanes but due to shortages of GFE, only seventeen of the one-hundred eighty-nine C-47s produced to date have had automatic pilots installed. Many of these C-47s have already been ferried overseas without this accessory.

3. The total number of A-3 automatic pilots now available for installation in Army aircraft each month is thirteen less than the total number of C-47s produced.

4. It would be possible to divert A-3 automatic pilots allocated to the current production of C-47 airplanes, to install in the airplanes of the 60th Transport Group which lack them. These could be installed at an estimated rate of approximately two per day, and it is estimated that all C-47s in the group could be equipped within three weeks.

Hq. Army Air Forces
JUN 10 1942
AAG Received

Nathan F. Twining

NATHAN F. TWINING
Colonel, Army Air Forces
Director, War Organization & Movement

Incl:
Memo 5/28/42
AFCAS to AFROM.

60th Gp. C-47's
go as is.

CONFIDENTIAL

air AS 452.11 (121)

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WAR DEPARTMENT
HEADQUARTERS OF THE ARMY AIR FORCES
WASHINGTON

May 28, 1942

MEMORANDUM FOR THE DIRECTOR OF WAR ORGANIZATION AND MOVEMENT:

1. It is reported that of the C-47's in the 60th transport group, only about six or seven of the total of 52 are equipped with automatic pilots. Investigate as to the possibility of installing automatic pilots in the other airplanes of this group prior to departure.

M. F. HARMON,
Major General, U. S. A.,
Chief of the Air Staff.

Air AG 452.11 (12-7-41)

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DOD ltrs
8 Jan. & 20 June 1974
by AAG, NARS, Date 10/15/76

CONFIDENTIAL

Automatic Pilots for C-47 Airplanes in 60th Transport Group.

RCWB/hk

1. CAS RCM 6/12 Please note General Harmon's comment on the attached memorandum to wit no change in the 60th Group.

R.C.W.B.
S/AS

Incl: Memo for C/AS

452.11 (12)

Dispatched
JUN 12 1942
AAG

File
a 6/12/42

CONFIDENTIAL

HEADQUARTERS ARMY AIR FORCES - COORDINATION											
Chief of Staff	Sec'y Air Staff	A.A.G.	A-1	A-2	A-3	A-4	A-WPD	A-Insp.	Budget	Statistics	

AAF-39

Air AG 452.11 (12)

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WAR DEPARTMENT
Headquarters Army Air Forces
Office Chief of the Air Staff
Washington, D.C.

Date June 2, 1942.

TO: THE COMMANDING GENERAL,
MATERIEL COMMAND.

a brief report re

1. Let me have Brett's ~~report~~

No. 833 reference spark plug failures.

2. Are these particular plugs

mica or ceramic?

M. F. HARMON,
Major General, U. S. A.,
Chief of the Air Staff.

A- DIVISION.

AAF-44

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[redacted]

WAR DEPARTMENT
Headquarters Army Air Forces
OFFICE OF THE CHIEF OF THE AIR CORPS
WASHINGTON

CONFIDENTIAL

DECLASSIFIED
DOD ltrs
6 Jan & 20 June 1974
By ACNICK, LC. Date 10/15/76

JUN 3 - 1942

MEMORANDUM FOR THE CHIEF OF THE AIR STAFF

SUBJECT: Message from General Brett - No. AIR 833, dated June 1, 1942, Relative Spark Plug Difficulties in R-1820-65 Engines at High Altitudes.

1. Reference is made to subject message and to your memorandum, dated June 2, 1942, requesting information relative to unsatisfactory performance of spark plugs as noted in the above message.

2. The spark plugs in question are the LS-85 (ceramic) manufactured by AC which is a cold plug; and the LS 465 (mica) manufactured by BG which is somewhat hotter than the LS-85; both types of spark plugs referred to are approved for R-1820-65 engines.

3. Ceramic type spark plugs have consistently outperformed mica type spark plugs at altitude; however, low spark plug gap settings must be maintained by frequent plug replacement to keep the electrical load within the magneto limits. It is the opinion of this Command that additional factors caused either by moisture, or poor ventilation in the magneto and possibly faulty ignition harness under long cruising conditions at high altitude have contributed to the frequent changes of spark plugs. It is not expected that any better results will be gained by use of mica plugs.

(611) 11 452.4

Encl.
Copy of Cable No.AIR 833
June 1, 1942

Hq. Army Air Forces
JUN 3 1942
AAG RECEIVED

File per Central Skp
ltr 6/5/42 Noted.

B. E. MEYERS,
Brig. Gen., U.S.A.
Exec., Meteriel Command

CONFIDENTIAL

8-267

air AY452.11 (119)

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CONFIDENTIAL

DECLASSIFIED
DOD Dirs
E.O. 12356 & 29 June 1979
By AUD/JLC Date 10/16/79

From: GHQ SWPA

To: CG AAF Washington, D.C.

No. AIR 833 June 1, 1942

Cite Boup Air. This is to report that spark plugs furnished for R-1820-65 engines are not satisfactory. A requisition is to follow for type LS 465 plugs to replace type LS 85 plugs which are now in service and have been furnished for N-1820-65 engines in Australia. These LS 85 plugs operate much too cold and are considered cause rough Operations at high altitudes requiring plug changes every 20 hours. It is recommended that no future deliveries of R-1820-65 engines be equipped with these plugs and in their place BG type LS 465 be furnished.

BRETT

Capt Power has information copy of this cable, received 6/2/42. Also copy for Hannie's note

CONFIDENTIAL

Air AG 452.11 (119)

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WAR DEPARTMENT
Headquarters Army Air Forces
OFFICE OF THE CHIEF OF THE AIR FORCES
WASHINGTON

DECLASSIFIED
DOD Dirs
6 Jan. & 20 June 1974
By AFCIAC Ltr. Date 10/18/76

APR 22 1942

MEMORANDUM FOR: General Harmon.

Subject: Air Cleaners.

1. Reference is had to Maxwell's 870, April 19th, Adler for Arnold. The matter of supplying the engine has been referred to the Air Service Command for necessary action.

2. In connection with carburetor air intake cleaners for this same airplane, there is not at present completed engineering on this installation. Boeing has made a commitment to have drawings completed in two to three weeks which will be forwarded by air to the theater commanders.

3. Reference is had to Paragraph 2 of Aquila Cablegram 386. Attached is a copy of the suggested reply to that cablegram for your information. The Joint Aircraft Committee has standardized on air cleaners for all combat aircraft. This is a long and detailed study, and the following is the status of production airplanes:

B-17 - All B-17F's will have suitable air induction system. For the B-17's in service, engineering will be completed in two weeks and parts will start to flow in six weeks. In the meantime, a suitable arrangement for ferrying has been incorporated on UTO aircraft at MacDill Field. This arrangement loses 7,000 feet in critical altitudes and is not satisfactory for combat use. A technical radiogram covering this has been furnished Adler and also the commanding officer of the seven B-17's now set up in Florida to go on Project 157.

B-24D - Being engineered. No estimate available.

B-25C - In production approximately July, 1942.

B-25D - In production approximately August, 1942.

Air Ab 452.11 (112)

~~SECRET~~
By Authority of
The Commanding General
Army Air Forces
4-22-42 [illegible]
Date Initials

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~~SECRET~~

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DOD ltrs
6 Jan. & 20 June 1974
By ... Date ...

P-40E - Not being incorporated as it is this Command's understanding that, due to the location of the air intake, satisfactory operation of the engines had been obtained in the Middle East.

P-40F - Filters now being designed. Expect satisfactory solution.

C-39 - These ships are in service and it will be necessary to design filters. This will be started by Materiel Command.

C-47 - Parts for service installation at the rate of twenty sets per week, starting December, 1942. The Douglas Company has been notified that this is not satisfactory, and a new estimate has been requested.

C-53 - Parts for service installation ready next month.

4. General Brereton will be informed of the temporary expedients to prevent or relieve the dust situation on the aircraft in his theater.

For the Commanding General, Materiel Command

F. I. Ordway Jr.

F. I. ORDWAY, JR.
Lieut. Col., Air Corps
Assistant Executive

2 Incls.
Cy. Routing & Record Sheet, 4/21/42, AFAMC to AG, AAF (Cable Sec.) (suggested reply to Aquila Cablegram 386).
Cy. memo., 4/20/42, Chief of Air Staff to General Meyers.

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DOD ltrs
5 Jan. & 20 June 1974
By AGO Ltr. Date 10/16/70

~~SECRET~~

RELEASED

AFAMC-13

PWT:e,

Cablegram No. 386

1	AFAMC-13	Adjutant General, AAF Att: Cable Section	4-21-1942.	1. It is requested that a message written substantially as follows be sent to General Brereton in reply to his cablegram No. Aquila 386:

"All types mentioned in your cablegram will have air cleaners incorporated in the future. However, these changes are now being engineered and will be furnished you in blue print form as soon as completed. Definite commitment has been made by Boeing to have B-17 drawings within two or three weeks. Expect parts to be en route in six weeks. We are making studies to determine temporary measures which may be initiated on the seven types you mention. It is our understanding, due to the position of the air intake, that the P-40 has been operated successfully without filters in the Middle East."

O. P. E.
C. G., A. F. Mat'l. Command.

Incl.
Paraphrased Cy
Cable Aquila 386.

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Encl #1
8-750

AAS 452.11 (11)

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DOD Ltr
6 Jan & 30 June 1974
By: [illegible] Date: 10/15/76

DECLASSIFIED

WAR DEPARTMENT
HEADQUARTERS OF THE ARMY AIR FORCES
WASHINGTON

April 20, 1942

MEMORANDUM FOR GENERAL MEYERS:

Subject: Cablegrams.

1. Maxwell's 870 April 19th, Adler for Arnold for B-17B pilot, Lt. Col. Cullen at Aquilla request delivery by air, highest priority on 820-51 engine. For same plane, also 31820-51 engine and complete set carburetor air intake cleaners to follow via first available air transport. If cleaners not available, please advise so that we may hasten local manufactures.

2. Aquila 386, April 18th. Excessive wear on pursuit and bombardment aircraft engines caused by excessive dust conditions. B-17E engines most affected. Measures to prevent or alleviate conditions are requested to be incorporated in all aircraft allotted this theater. Advice requested as to aircraft already here which are B-17E, B-24D, C-47, C-53, C-39, P-40E, and B-25.

3. Let me know what you are going to do about this and whether or not any action can be taken before departure of seven B-17's now set up to go.

M.F.HARMON,
Major General, U.S.A.
Chief of the Air Staff.

DECLASSIFIED

Incl #2
2-750

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HEADQUARTERS ARMY AIR FORCES

DECLASSIFIED
DOD Itrs.
6 Jan. & 20 June 1974
By ALAIAC Dec. Date 10/18/76

ROUTING AND RECORD SHEET

File No. _____

Note. -- A line will be drawn across sheet after each comment.

Tally No. AAF _____

SUBJECT: Equipment for Pursuit Airplanes Moving to England in AAF Units

SECRET

NO.	FROM	TO	DATE	COMMENTS (AFASC-S) HBB:mmg
4.	AFASC	AFRBS	1942 5-18	1. As directed in Comment 1 above: a. Four hundred percent spare tanks are being supplied. b. Pursuit and Bomber airplanes are being equipped with SCR-522 (V.H.F.) radio sets. H. J. P. W. CG/ASC
5.	AFRBS	AFDAS ~~Stone~~ ~~AFDMR~~ BMM	5-20 1942	AFRBS/CAD:kj 1. This for your information regarding action taken on requests in comment no. 1 above. L.P.W. D/BS

MAY 13 1942
AAG Received

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(Do not use reverse side) W-4071, AF, Rev. 8/14/41

AAG-243

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Air AG 452.11 (109)

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DOD Rts
8 Jan. & 30 June 1974
By AAFHRC NO Date 10/15/96

HEADQUARTERS ARMY AIR FORCES

ROUTING AND RECORD SHEET

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File No. _____

Tally No. AAF _____

SUBJECT: Equipment for Pursuit Airplanes Moving to England in AAF Units.

NO.	FROM	TO	DATE	COMMENTS
1.	AFDAS	AFDMR	1942 4-15	AFDAS LSK:cmc The Commanding General, Army Air Forces, has directed this date that: a. All pursuit airplanes moving to England in AAF units will be equipped with belly tanks. Additional belly tanks will be carried in stock to permit dropping the tank in combat and returning to the base to depart again on future missions with belly tanks. b. All pursuit airplanes moving to England with AAF units, in accordance with the directive dated April 14th, will be equipped for communication with AAF Bomber Units. L.S.K. AFDAS
2.	AFDMR	AFRBS	4/17	HCL:kr 1. For appropriate action. D/[illegible]
3.	AFRBS	AFASC	1942 4-17	AFRBS DPG/mw For necessary action. L. P. W., Director of Base Services.

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W-4071, AF, Rev. 8/14/41

AAG 244.2 AW 452.11 (109)

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WAR DEPARTMENT
HEADQUARTERS ARMY AIR FORCES
WASHINGTON

Received from * Base Services, Room 4250, Headquarters Army Air Forces the following ([redacted] document:

Addressed to: Deputy Chief of the Air Staff
Munitions Building
Washington, D. C.

Subject: Equipment for Pursuit Airplanes Moving to England in AAF Units.

Type of Corres.: R&R #2

Date: 5/21/42

Basic Dated: 5/21/42

No. Incls. : no incls.

PLEASE ACCOMPLISH AND
RETURN IMMEDIATELY TO:
Classified Mail Unit,
Adjutant General A.A.F.
Headquarters Army Air Forces

DATE RECEIVED _____

BY _____
Name

_____
Rank Branch

OFFICE OF: _____

AAF NO. Capt. Dixon

* Insert symbol of office of origin.

W-7236, AF

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DOD Ltr
5 Jan. & 30 June 1974
By [illegible] NSC Date 10/15/76

Equipment for Pursuit Airplanes Moving to England in AAF Units

DIRECTOR OF
MILITARY REQUIREMENTS
A.A.F.
1942 MAY 23 PM 5

2. AFRES AFRAS 5-20 1. This for your information regarding action taken on
AFDMR 1942 requests in comment no. 1 above.

L.P.N.
B/MS

AFRES/RAD:dkj
DIRECTOR OF
MILITARY REQUIREMENTS
A.A.F.
1942 MAY 22 PM 5

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DOD Dirs
By AAG/INF on Date 10/15/96

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HEADQUARTERS OF THE ARMY AIR FORCES
ROUTING AND RECORD SHEET

516

Note. -- A line will be drawn across sheet after each comment.

File No. .....

Tally No. .....

Subject: Installation of Extra Gasoline Tank on B-26.

NO	FROM	TO	DATE	COMMENTS
1	AFAMC-13	AAG	1942 3/23	1. Reference is made to directive to the Chief of the Air Corps on the subject of installation of gasoline tank on B-26 airplane from the Air Adjutant General, dated February 19, 1942. 2. The B-26 type airplane has been equipped with total fuel capacity of 1912 gallons by adding a second 250 gallon bomb bay tank; 2 each, 125 gallon rear bomb bay tanks, and 2 each, 125 gallon tanks in the turret compartment. 3. This airplane has been flown 2900 air miles. Upon landing, 277 gallons of fuel remained. This gives an all out range of 3400 miles. This flight was made with production carburetors which are metering rich. Flight was made at maximum range conditions throughout. Note: Airplane flown was a complete airplane with a gross weight at take-off of 35,600 lbs. Airplanes presently being prepared for ferry with this fuel capacity are being stripped of 1600 lbs. of equipment, including the upper turret. This decreased weight and slight reduction in drag will further increase the range of the airplane. 4. A revised carburetor setting has been developed and is being installed in available B-26 type airplanes, which would give at least 200 miles more range with 1912 gallons. O. P. E. Com. Gen., Mat. Com.
		MA 24 942 AAG Receive		

452.11 (101)

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Page No. _____

W-4071, AC, Rev. 8/1/41

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R-726

AirAG 452.11 (101)

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HENRY HARLEY ARNOLD

Box 129 Folder 2

MILITARY

DECIMAL

SAS 452.11 Iceland
through
452.11 Superchargers

DECLASSIFIED
DOD Itr.
Sept 1994
By ltr 10/18/72
JCS Memo
DOD Dir 5200.9

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HEADQUARTERS ARMY AIR FORCES

ROUTING AND RECORD SHEET

SECRET

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DECLASSIFIED
DOD ltr's
8 Jan. & 20 June 1974
By AGSTUK IC, Date 10/8/76

File No.

Note.—A line will be drawn across sheet after each comment.

Tally No. AAF

SUBJECT: Technical Reports on Aircraft.

NO	FROM	TO	DATE	COMMENTS
				AAF/A-4 JFW/emd
1	AAF C/AS	OCAC Mat. Div.	1941 12/1	1. Inviting attention to attached copy of memo on the above subject and request information on action possible and effected to avoid inadvertant disclosures by aircraft industry. Incls: cc memo GHQ to G-4, 11/5/41 w/1 Incl. CS C/AS
2	Mat. Div. (4-[illegible])	AAF C/AS	1941 12/18	1. Find attached copies of two letters sent to manufacturers on the subject of confidential communications. 2. It seems that these have not as yet taken effect and so a third letter is now being drafted in order to again stress the need for military secrecy in all communications. O. P. E. Chief, Mat. Div. 2 Incls. Mimeo. ltr dated 11-19-41. Mimeo. ltr dated 11-28-41.

RECEIVED DEC 4 1941 GHQ AND FILE UNIT

Hq. Army Air Forces DEC 18 941 AAF Received

No further action — Nile military censorship and control slips should be prevented.

4 5 2.11 Leland (11)

A-4

Ae-329
A12-4(19-a) Ae-735

SECRET

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Page No. -1-

AG 452.1 Leland (11) 11-1

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DOD Ltr
8 Jan. & 30 June 1972
By A-LD/IK, HQ, Date 10/15/76

CONFIDENTIAL

WAR DEPARTMENT
AIR CORPS
MATERIEL DIVISION
Office of the Chief of the Air Corps

Washington, D. C.
November 19, 1941

Gentlemen:

Arrangements are being made to transmit technical reports and other information from manufacturers' representatives in the Middle East by a system similar to that used for communications originating in England. Details of this system are not completely worked out, but it is believed that it will expedite transmission of these communications considerably if you will instruct your representatives in that area to deliver such communications to Air Corps representatives wherever possible, for transmission by official diplomatic pouch.

It is particularly desired that no information of a confidential or secret nature such as numbers of aircraft in the area, military plans, etc., be transmitted by means other than through our representatives and by way of diplomatic pouch. Information sent by other means is likely to be intercepted, censored, and perhaps destroyed, and, in addition, usually causes some embarrassment to Army and State officials.

Very truly yours,

C. P. Echols

C. P. ECHOLS,
Brigadier General, U. S. A.,
Chief, Materiel Division.

C-141,AC

Ay-735

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DECLASSIFIED
DOD ltrs
8 Jan. & 30 June 1974
By NNTaC, Date 10 Jul 76

~~SECRET~~

WAR DEPARTMENT
AIR CORPS
MATERIEL DIVISION
Office of the Chief of the Air Corps

Washington, D. C.
November 28, 1941

Gentlemen:

It has come to our attention that several prime manufacturers and their sub-contractors of government aircraft and their representatives in foreign countries have been sending secret or confidential information of a military nature through straight and unregistered mail.

The Chief of the Army Air Forces states that: "Under no circumstances are they (manufacturers and sub-contractors of government aircraft) to send telegrams, radiograms or messages in the clear when containing confidential information or figures relating to production, equipment or deliveries of military aircraft. Such messages of a confidential military nature must be transmitted in code or in sealed registered mail." Such mail should be sent to this office for forwarding as stated in our confidential letter to you dated November 19, 1941.

Figures relating to personnel may also be included as confidential. Such mail should be in two sealed envelopes, the inner one being marked "confidential" or "secret," as the case may be.

It is requested that your representatives in domestic or foreign lands be notified as to the above as soon as possible.

Very truly yours,

O. P. ECHOLS,
Brigadier General, U. S. A.,
Chief, Materiel Division.

~~SECRET~~

W-6178, A.C.

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DOD 5s
8 Jan. & 30 June 1994
By NARA/LL LC, Date 10/18/94

~~SECRET~~

2 Nat.Divl (4-B-4)

1941 12/15

AAF C/AS

1. Find attached copies of two letters sent to manufacturers on the subject of confidential communications.

2. It seems that these have not as yet taken effect and so a third letter is now being drafted in order to again stress the need for military secrecy in all communications.

O. P. E.
Chief, Nat. Div.

2 Incls.
Rimco. ltr dated 11-19-41.
Rimco. ltr dated 11-28-41.

Re - 735

~~SECRET~~

Airfield 452.1 Ireland (17)

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DOD ltrs
8 Jan & 20 June 1974
By ALA/LK, Jr. Date 10/13/76

SECRET
RELEASED

AAF/A-4/198
MFS/mhh
(Written Feb. 17, 1942)

February 18, 1942.

MEMORANDUM FOR THE ASSISTANT CHIEF OF STAFF, G-4:

Subject: Supply of Air Units in Iceland.

1. Attached hereto is copy of a memorandum for the Chief of Army Air Forces from the Commanding General, Field Forces, with reference to the supply of 33rd Pursuit Squadron at Reykjavik, Iceland.

2. All requisitions received by the Army Air Forces from Iceland have been filled and shipped to the New York Port of Embarkation. However, due to the infrequent sailings and the small boats being used, the major part of the spares appear to have been held at the port for lengthy periods - as much as six (6) weeks in some cases.

3. Your comments are requested.

452.11 Iceland (3)

Incl.
Cy. memo GHQ to C/AAF
1/6/42, sub: Supply of
33rd Pur. Sq. at
Reykjavik, Iceland.

For the Chief of the Air Staff:

T. J. HANLEY, JR.,
Colonel, Air Corps,
Assistant Chief of Air Staff, A-4.

Disposition
FEB 19 1942
AAG

HEADQUARTERS ARMY AIR FORCES - COORDINATION											
Chief of Staff	Sec'y Air Staff	A.A.G.	A-1	A-2	A-3	A-4	A-WPD	A-Insp.	Budget	Statistics	
						MF					

AAF-39

Air Ops 452.11 Iceland (3)

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8 Jan. & 20 June 1974
By ALWIK NC. Date 10/31/80

IMMEDIATE ACTION

SECRET

GENERAL HEADQUARTERS, U. S. ARMY
Army War College
Washington, D. C.

COPY

452.1-Indigo-Avn
(1-5-42)

January 5, 1942.

MEMORANDUM FOR THE CHIEF OF THE ARMY AIR FORCES, WAR DEPARTMENT:

Subject: Supply of 33rd Pursuit Squadron at Reykjavik, Iceland.

1. Information received this Headquarters indicates that as of December 6, 1941 only 17 of the 30 P-40-C airplanes stationed in Iceland were in commission. Ten of the airplanes were out of commission awaiting second echelon repair, 1 for motor change and 2 for routine check. Two were awaiting survey. For the past several months only approximately 20 out of these 30 airplanes have been reported as in commission, the principal cause being second echelon repair. Some of the planes so reported have been out of commission for 2 to 4 months.

2. It is essential that the maximum possible number of airplanes in this squadron be maintained in combat condition. It is apparent that proper action has not been taken to insure that supplies required for this purpose have been delivered to Iceland, notwithstanding the fact that this situation has been repeatedly informally reported to officers of Material Section of your office, with request that adequate supplies be shipped to meet requirements.

3. The Commanding General of the Field Forces directs that the necessary action be taken to ship the supply of spare parts required for placing the airplanes of the 33rd Pursuit Squadron in combat commission at the earliest possible date.

4. It is also desired that the 10 P-39E's designated for shipment to the squadron be forwarded as rapidly as shipping facilities can be made available. In this connection a convoy is expected to leave New York about the middle of January on which some space can probably be made available for this purpose.

For the COMMANDING GENERAL:

/s/

HARRY J. MALONY,
Brig. Gen., G. S. C.,
Deputy Chief of Staff.

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DOD Dir
8 Jan. & 30 June 1954
By: MASTER NO. Date: 10/31/96

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RELEASED

RECEIPT

DATE 7

SUBJECT: Supply of Air Units in Iceland.

Received from Headquarters Army Air Forces, Memorandum above subject, with the following inclosure:

Copy memo From GHQ to C/AAF, 1/5/42, sub: Supply of 33rd Pursuit Sq. at Reykjavik, Iceland.

Officer Rank

Office

RELEASED

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DOD ltr
8 Jan. & 20 June 1974
By ... NARS, Date 10/15/76

SECRET

AAF/Comm
LHW:jmm

To Assistant Chief of Staff, WPD

This headquarters concurs in the preceding comment.

For the Chief of the Air Staff:

JAN 15 '42

Incls.
Memo for AS/S, WPD fr GHQ
1/4/42
Disp fr Hqs AAF to WPD
12/12/41
Ltr GHQ to TAG
10/31/41 w/ 1st Ind.

E. P. Curtis,
Lieut. Col., Air Corps,
Secretary of the Air Staff.

JAN 17 1942
AAG

HEADQUARTERS ARMY AIR FORCES		COORDINATION									
Chief of Staff	Sec'y Air Staff	A.A.G.	A 1	A 2	A 3	A 4	A WPD	A Insp	Budget	Stat.	Comm

AAF 39

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Ice 00453.11 Iceland (4)

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DECLASSIFIED
DOD ltr
8 Jan. & 30 June 1978
By ASD(C) JC Date 10/18/78

SECRET

WAR DEPARTMENT GENERAL STAFF
DISPOSITION FORM

WAR PLANS DIVISION 1/8/42

AG 413.44 (10-31-41)

C-WPD 4493-183

SUBJECT: VHF Equipment for Iceland. January 9, 1942.

TO; GHQ

Inviting attention to

1. The present problem of VHF equipment is not one of priority but one of production and subsequent training of personnel. American manufacturers have had no previous experience with VHF Fighter Control systems and they are copying a British sample. The first American-made system is expected next month, followed by others in succeeding months. The Chief of the Air Corps, therefore, prefers to test the first few systems for possible defects rather than make an immediate general issue which may prove unprofitable.

2. Previous top priorities were Philippines, Alaska, and Indigo, in that order. It is now expected that the sets originally scheduled for the Philippines will be used for testing and training purposes. It is therefore expected that the sets for Alaska and Indigo will be made available from production at about the same time. The set scheduled for Indigo should then be one of the first to be operated.

3. The P-39-D airplanes, mentioned in your memorandum on January 4, have not been equipped with SCR-552 VHF sets because none are yet available. The production is expected to parallel that of the ground sets. When a VHF ground set is available for Indigo, the airplanes to match it will be equipped to correspond.

L. T. GEROW,
Brigadier General,
Assistant Chief of Staff

Concurrence.
Chief, Army Air Forces ( )

Incl. - Memo for AS/S, WPD fr GHQ,
1/4/42 w/incls. as listed.

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DOD Dir.
8 Jan. & 30 June 1954
By CLASSIFICATION Div. [illegible]

GENERAL HEADQUARTERS, U.S. ARMY
ARMY WAR COLLEGE
WASHINGTON

413.44-Indigo-Avn. January 4, 1942.

MEMORANDUM FOR ASSISTANT CHIEF OF STAFF, WAR PLANS DIVISION:

Subject: VHF Equipment for Iceland.

1. Request reconsideration of action indicated in disposition form from War Plans Division attached herewith, dated December 15, 1941. It is understood that ten (10) P-39-D airplanes have been prepared for shipment to Iceland and that five (5) of these planes have been shipped from New York.

2. The British pursuit units in Iceland are using pursuit planes equipped with VHF equipment and it will greatly assist in the control and coordination of pursuit operations, if American planes operating in Iceland can be equipped with similar equipment.

For the COMMANDING GENERAL:

J. W. RAMSEY
Major, A.G.D.
Assistant Adjutant General

1 Incl:
Disp. Form WPD 4493-183, 12/15/41,
w/2 incls. as listed thereon.

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10/18/76

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WAR DEPARTMENT GENERAL STAFF
DISPOSITION FORM

WAR PLANS DIVISION

AF
G-WPD 4493-183

December 15, 1941.

Subject: Radio Equipment for Iceland.

TO;TAG, IIC/AC, I GHQ, IICSO, II C/AAF

FOR; S/W directs

I. That the attached letter be returned to the Chief of Staff, GHQ, with a secret indorsement substantially as follows:

1. It is considered undesirable at this time to change the priority for the delivery of VHF Fighter Control systems because the war situation of February 1942 is too uncertain. Furthermore, P-39E airplanes are not scheduled for delivery until June or July 1942 (Col. W. G. Smith, A.C.) and the VHF system should be in Iceland before that time, even under the present priority.

2. The Chief of Air Corps (Col. Smith)plans to equip P-39E airplanes, scheduled for Iceland, with VHF radios.

II. Notify of action taken.

Concurrence.
Chief, Army Air Forces

L. T. GEROW,
Brigadier General,
Acting Assistant Chief of Staff.

2 Incls.
#1 - Disp frm Hqs. AAF to WPD (12-12-41)
#2 - Ltr GHQ to TAG 10/31/41 w/1st Ind.

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DOD Dirs
8 Jan. & 20 June 1974
By ALAYUK, JC. Date 6/15/76

SECRET

NOTE FOR RECORD:

GHQ recommended that the priority of VHF equipment for Iceland be raised. Present priority is: Philippines, Alaska, Iceland, etc.

(VHF equipment is used for directing pursuit planes from the ground. First deliveries are expected in Feb. 1942).

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DOD Dir. 5 Jan. & 30 June 1974
By ALAFCK Lic. Date 10/10/74

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WAR DEPARTMENT
HEADQUARTERS ARMY AIR FORCES
DISPOSITION FORM

Dec. 12, 1941

AF

AAF

SUBJECT: VHF Equipment for Iceland.

To: I WPD

Attention Colonel Sherill.

For: - Primary Interest

AAF/A-4
LWD:emd

For the Chief of the Army Air Forces:

CLAUDE E. DUNCAN,
Lt. Col., Air Corps,
Secretary of the Air Staff

Incls:
Ltr GHQ to TAG 10/31/41
w/1st Ind.

MEMORANDUM FOR RECORD: Request from GHQ to raise priority of VHF equipment for Iceland.

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DOD ltr
S Jan. & 20 June 1974
By NLN/OK, JC, Date 10/31/74

SECRET

GENERAL HEADQUARTERS, U. S. ARMY
ARMY WAR COLLEGE
WASHINGTON, D. C.

413. - Indigo - Avn October 31, 1941

SUBJECT: VHF Equipment for Iceland.

TO: The Adjutant General,
War Department,
Washington, D. C.

1. Information is available that deliveries on VHF Fighter Control system will begin about February 15, 1942. This system is used in an Interceptor Command for the purpose of directing friendly pursuit to intercept hostile aircraft. Iceland is on the priority list for the fifth system to be delivered, and if on schedule, the delivery date should be about April 26, 1942.

2. It is believed that Iceland should have a higher priority for one of these units. It is very desirable to have a Fighter Control system installed and operating in that locality with minimum delay.

3. Since the SCR-283 set installed in P-40-C airplanes now in Iceland will not function with the VHF system, the P-39-E airplanes, scheduled to replace the above mentioned P-40-C, should be equipped with SCR-522 VHF sets before being shipped.

4. It is recommended that action be taken to:

a. Have the first VHF Fighter Control system delivered and assigned to Iceland.

b. Have P-39-E airplanes, scheduled to replace P-40-C airplanes in Iceland, equipped with VHF radio.

c. Provide a VHF transmitter and receiver for Iceland to communicate with airplanes equipped with VHF radio.

HARRY J. MALONY
Brig. Gen., G. S. C.
Deputy Chief of Staff

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DOD 5's
5 Jan. & 30 June 1954
By ALEXR. Ltr. Date 10/18/76

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SUBJECT: VHF Equipment for Iceland.

AF 413.44 (10-31-41)MC 1st Ind. RPM/kti - 1712.

War Department, A.G.O., November 4, 1941. To: Chief of the Army Air Forces.

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DOD ltr
6 Jan. & 20 June 1974
By ALOTUK, SC: Date 10/15/74

SECRET

DEC 12 1941

Written December 8, 1941.

VHF Equipment for Iceland.

I WPD

452.11 Colonel (4)

Attention Colonel Sherrill.

Primary interest

AAF/A-4
LND/emd

For the Chief of the Army Air Forces:

CLAUDE E. DUNCAN,
Lt. Col., Air Corps,
Secretary of The Air Staff.

Incls:
Ltr GHQ to TAG 10/31/41
w/1st Ind.

HEADQUARTERS ARMY AIR FORCES - COORDINATION

MEMORANDUM FOR RECORD. Request from GHQ to raise priority of VHF equipment for Iceland.	A.G.	A-1	A-2	A-3	A-4	A-W.D.	A-Insp.	Budget	Statistics

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AAF-39

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DOD IRS
E.O. 11652 & 20 June 1974
By ARMY WC, Date 10/15/74

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413.44 - Indigo - Avn

October 31, 1941

~~SECRET~~
Auth: Chief of Staff, GHQ
Initials RHW
Date: 10-31-41

SUBJECT: VHF Equipment for Iceland.

TO: The Adjutant General,
War Department,
Washington, D. C.

1. Information is available that deliveries on VHF Fighter Control system will begin about February 15, 1942. This system is used in an Interceptor Command for the purpose of directing friendly pursuit to intercept hostile aircraft. Iceland is on the priority list for the fifth system to be delivered, and if on schedule, the delivery date should be about April 26, 1942.

2. It is believed that Iceland should have a higher priority for one of these units. It is very desirable to have a Fighter Control system installed and operating in that locality with minimum delay.

3. Since the SCR-283 set installed in P-40-C airplanes now in Iceland will not function with the VHF system, the P-39-E airplanes, scheduled to replace the above mentioned P-40-C, should be equipped with SCR-552 VHF sets before being shipped.

4. It is recommended that action be taken to:

a. Have the first VHF Fighter Control system delivered and assigned to Iceland.

b. Have P-39-E airplanes, scheduled to replace P-40-C airplanes in Iceland, equipped with VHF radio.

c. Provide a VHF transmitter and receiver for Iceland to communicate with airplanes equipped with VHF radio.

NOV - 1 1941

47 A G O
NOV 1 1941
Received

(Signed) Harry J. Malony
HARRY J. MALONY
Brig. Gen., G.S.C.
Deputy Chief of Staff

(10-31-41) AG 413.44 (4)

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DOD Dirs.
8 Jun. & 20 June 1986
By ALA/ICR JC, Date 10/15/96

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SUBJECT: VHF Equipment for Iceland.

AG 413.44 (10-31-41)MC 1st Ind. RPM/kti - 1712.

War Department, A.G.O., November 4, 1941. To: Chief of the Army Air Forces.

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cm AG 452.11 Iceland (4)

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DOD Dirs
5 Par. 4 & 20 June 1974
By [illegible] NARS, Date 9/9/97

HEADQUARTERS ARMY AIR FORCES

ROUTING AND RECORD SHEET

1260

File No. .....

Note.--A line will be drawn across sheet after each comment.

Tally No. AAF .....

SUBJECT: VHF Equipment for Iceland.

NO.	FROM	TO	DATE	COMMENTS
1	AAF A-4	AAF A-3 AWPD	1941 11/13	AAF/A-4 LWD/lml 1. Your comments and recommendations are requested. 2. P-39-E equipped to take VHF will not be available until April, 1942. EPS C/A-4 Incl: Ltr 413.44-Indigo-Avn GHQ, aby sub, 10/31/41 w/1 Ind.
2.	AAF A-3	AAF AWPD	11/21	AAF/A-3 OSR-epb 1. It is believed the recommendations of GHQ, U.S.Army, are premature, as the P-39D's scheduled to replace the P-40C's now in Iceland cannot be equipped with VHF equipment. KLN C/A-3 Incls. n/c
3.	AAF A-WPD	AAF A-4	1941 11/26	AAF/A-WPD HSH-hlg 1. This Division concurs with the remarks of A-3 above. H. L. G. C/A-WPD Incls, n/c

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W-4071, AC. Rev. 8/14/41

Page No. ----------

AWPD-11/25

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000 Rts.
By NARS, Date 10/17/74

VHF Equipment for Iceland.

	AAF	AAF	1941	AAF/A-4
1	A-4	A-3	11/13	LMD/lal
		AWPD		

1. Your comments and recommendations are requested.

2. P-39-E equipped to take VHF will not be available until April, 1942.

Incl:
Ltr 413.44-Indigo-Avn
GHQ, abv sub 10/31/41 w/1 Ind.

EPS
C/A-4

HEADQUARTERS ARMY AIR FORCES - COORDINATION

Chief of Staff	Secy Air Staff	A.A.G.	A-1	A-2	A-3	A-4	A- WPD	A. Insp.	Budget	Statistics	
						W fus.	1/Mefor HLG				

AAF-39

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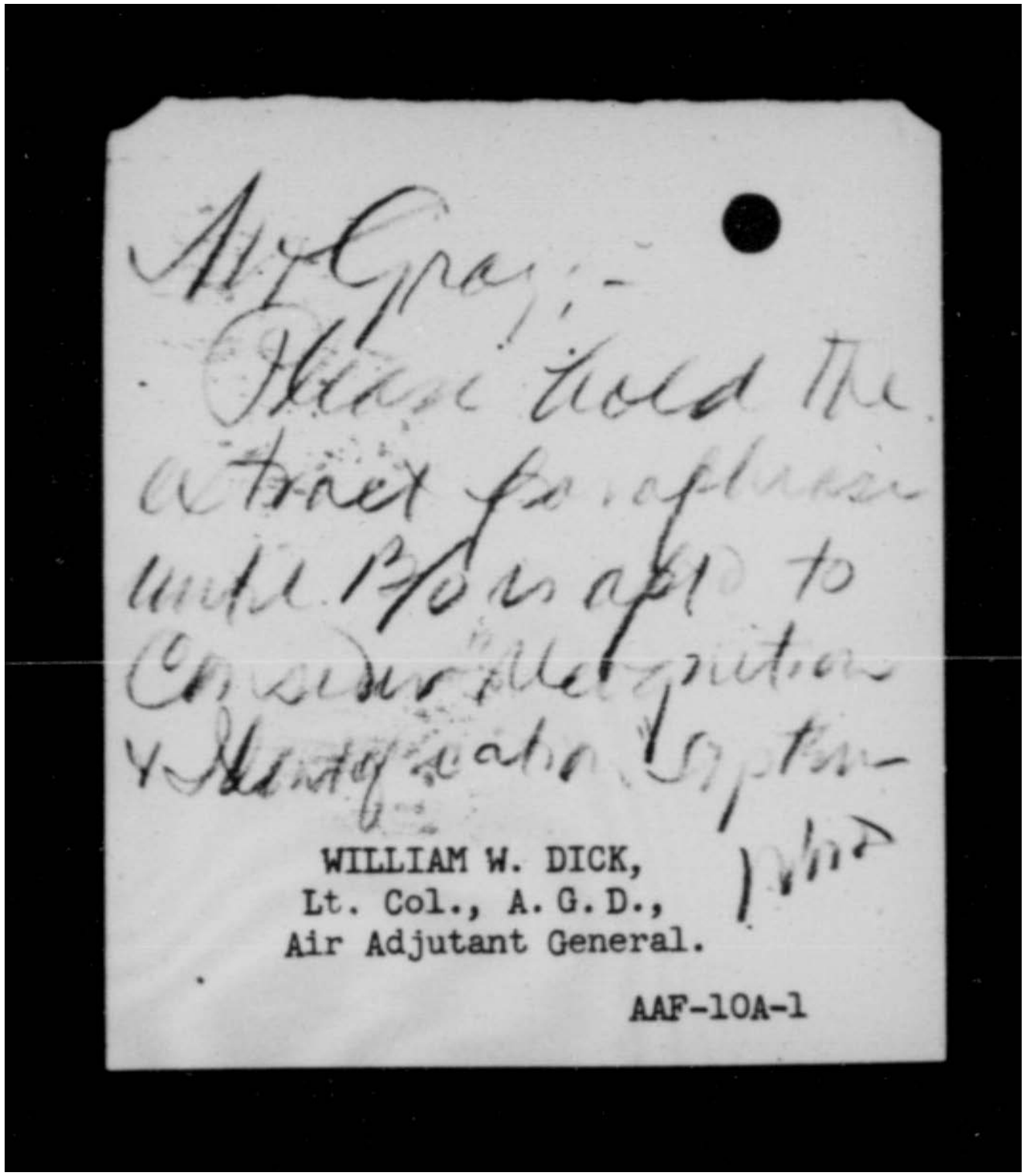

WILLIAM W. DICK,
Lt. Col., A. G. D.,
Air Adjutant General.

AAF-10A-1

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WAR DEPARTMENT
Headquarters Army Air Forces
Office Chief of the Air Staff
Washington, D. C.

Date 8-21-41

TO:
Air Adjutant General

Recommend the contents of par 4. Cable #11, aug 14, from Gen. Chaney be referred to Board recently appointed, or being appointed to standardize Aircraft ground, British — U.S. army Air Forces — U.S. navy signal, identification procedure etc.

A-2 DIVISION

X-225-B, A.C.

Am AG 452.11 Section 3

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WAR DEPARTMENT
Headquarters Army Air Forces
Washington

8/22 1941

MEMORANDUM for:

Col. Dick.

Noted also by:-

Major Henry - T.S.O.
(as suggested by Col. Kiel)
and
Col. W. Smith.
(as suggested by Major Henry)

R. C. L.

R. C. LEWIS,
Major, Air Corps
Room 2015 Phone 5789
AAF-47

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WAR DEPARTMENT
Headquarters Army Air Forces
Office of the Air Adjutant General

Date Aug. 19/41

TO:

___Chief of the Army Air Forces.
___C.G., Air Force Combat Command.
___Chief of the Air Corps.
___Chief of the Air Staff.
___Secretary of the Air Staff.
___A-1 Division.
(1) ✓ A-2 Division.
(2) ✓ A-3 Division.
(3) ✓ A-4 Division.
___Air War Plans Division.
___Budget Section.
___Statistics Section.
___Air Inspector
___A.F. Files

Note and return for forwarding to G-3.

WM. W. DICK,
Lt. Col., A.G.O.
Air Adjutant General

A.A.F-10-A. (3)
A 2 8/20

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DOD ltr
6 Jan. & 30 June 1954
By AUTOVON JC: Date 10/15/76

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INFORMATION COPY

CABLEGRAM

EHB-bjs-1712

(HC)
DI 3

AG 380.3 (8-14-41)MC

Received at the War Department Message Center
Room 3421 Munitions Bldg., Washington, D.C.

FROM LONDON

TO AGWAR

****

No. 11 Aug 14th

EXTRACT

THIS WEEK I WILL SEND LETTER TO CHIEF OF STAFF ON RECOGNITION AND IDENTIFICATION OF AIRCRAFT ATTACHING THERETO SECRET DOCUMENT SD ONE FIVE EIGHT DESCRIBING BRITISH SYSTEM OF IDENTIFICATION AND RECOGNITION WITH MY RECOMMENDATIONS THAT TO INSURE UNIFORMITY IN RECOGNITION PROCEDURE THROUGHOUT BOTH AMERICA AND BRITISH ARMIES CMA THE BRITISH SYSTEM BE ADOPTED PD SIMILAR LETTER WAS SENT BY NAVY SPECIAL OBSERVER TO NAVY DEPARTMENT.

CHANEY

452.11 Collard (3)

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WAR DEPARTMENT
Headquarters Army Air Forces
Office Chief of the Air Staff
Washington, D. C.
Date 8/1/41.

TO:

___Office, Sec'y of War.
___Office, Under Sec'y of War
_✓_Office, Asst. Sec'y of War for Air
___Secretary, General Staff
___Deputy Chief of Staff (Air)
___Asst. Chief of Staff, G___
___Chief of the Army Air Forces
_8_C.G., Air Force Combat Command
___Chief of the Air Corps

For Mr Lovetts information

Col Street - Don't you think they are going to need more generators (30 kw) gen-sets to carry 1 spare on X crossway) & extra tail wheels (unless this is the new model)?

L

M. S. FAIRCHILD,
Lt. Colonel, Air Corps,
Secretary of the Air Staff.
X-219-B, AC

AAG 452.1 Iceland (?)

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WAR DEPARTMENT

OFFICE OF THE ASSISTANT SECRETARY FOR AIR

MEMORANDUM

Chief Air Staff

Please note

Mr Lovett &

[illegible] on attached

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DOD Dir. 5 Jan. & 20 June 1974
By [illegible] NARS, Date 10/18/74

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HEADQUARTERS ARMY AIR FORCES

ROUTING AND RECORD SHEET

(To be filed with correspondence)

Note.—A line will be drawn across sheet after action by each office concerned.

SUBJECT: Equipment for Indigo Squadron. X-1806

1941

NO.	FROM	TO	DATE	DATA
1.	Chief of Air Staff	OCAC	7-22	Submit list of major items of spare parts, including wings and wing tips, and motors for the Indigo Squadron for presentation to Mr. Lovett. C. S. Chief of The Air Staff.
2.	Chief of Air Corps	Materiel Division	7-23 1941	For necessary action and return to this Office. H. W. B., Asst. Executive.
3.	(4-G) Materiel Division	Chief of Air Corps	1941 7-28	1. In accordance with the above request, the following list of major items of spare parts being sent with Project 8 (Indigo) is submitted: Class 01 1 set Radiator Assembly 1 set Cowl Flap Assembly 2 sets Engine Cowling 3 sets Exhaust Manifold 1 set Tank, Fuel System 1 set Tank, Oil System 2 sets Oil Temperature Regulators 1 set Cockpit Enclosure 1 set Landing Gear 2 sets Oleo Legs 1 set Stabilizer, Horizontal 1 set Elevator

X-1806

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(continued)
W-4664, AC

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OFFICE OF THE CHIEF OF THE AIR CORPS

ROUTING AND RECORD SHEET

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(To be filed with correspondence)

Note.—A line will be drawn across sheet after action by each office concerned.

SUBJECT: Equipment for Indigo Squadron.

NO.	FROM	TO	DATE	DATA
3.	(continued)		1941 7-28	Class 01 cont'd. 1 set Vertical Stabilizer 2 sets Rudders 2 sets Wing Tips 2 sets Wing Flaps 2 sets Ailerons 3 sets Engine Section Assemblies Class 02 15 V-1710-33 Engines 1 Oil Pump 2 Coolant Pumps 5 Cuno Strainers 2 Generator Assemblies (gun impulses) 2 Ignition Wiring Assemblies (complete) Class 03 3 Propeller Assemblies 3 Governor Assemblies 20 Starters 20 Generators 8 Magnetos 2 Carburetors 20 Fuel Pumps 20 Vacuum Pumps 3 Hydraulic Pumps 8 Batteries 5 Belts 2 Oxygen Cylinders 8 Oxygen Regulators 5 Tail Wheel Assemblies 5 Brake Assembly Sets 4 Wheel Assemblies

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OFFICE OF THE CHIEF OF THE AIR CORPS

ROUTING AND RECORD SHEET

SECRET

(To be filed with correspondence)

Note.—A line will be drawn across sheet after action by each office concerned.

SUBJECT: Equipment for Indigo Squadron.

- 3 -

NO.	FROM	TO	DATE	DATA
3.	(continued)		1941 7-28	**Class 04** 26 Casings 26 Tubes **Class 05** 3 Altimeters, type C-13 3 Compasses, type B-16 3 Gages, manifold pressure, type D-9 3 Gage Unit Engines, type B-7, 15 ft. cap. 3 Indicators, air speed, type D-7 3 Indicators, bank and turn, type A-8 3 Indicators, flight, type C-7 3 Indicators, rate of climb, type C-2 3 Indicators, turn, type A-5 3 Tachometers, type C-9 3 Thermometers, prestone temperature, 8 ft. cap. **Class 11** 2 Sights N-3A 5 Motors E-3 2 Bolt and bracket, E-3 2 Switches 2. The above list of spares is made up for 9 P-40C airplanes. These are the only airplanes directed to go in the first shipment. C. P. E. Chief, Materiel Division
4.	Chief of Air Corps	Chief, Army Air Forces.	7/30	For Mr. Lovett's information. File cy with Incl. Memo 7/25 re Maj. spare pts for Proj. 8. G. E. S. Executive

(Do not use reverse side)

F-4071, AC

SECRET

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AAG 452.11 Scotland

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WF-5-10-41-4M

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DOD ltrs
8 Jan. & 20 June 1974
By [illegible] NC, Date 10/6/76

Mailing Address:
Wright Field, Dayton, Ohio

WAR DEPARTMENT
AIR CORPS
MATERIEL DIVISION
OFFICE OF THE CHIEF OF
THE MAINTENANCE COMMAND, AIR CORPS

AIR MAIL

SECRET

PATTERSON FIELD, DAYTON, OHIO
July 25, 1941.

Memorandum For: Chief, Maintenance Section, Materiel Division, O.C.A.C., Washington, D. C.

Subject: Major spare parts for Project 8.

1. Reference is made to your teletype MS-414 dated July 25th, requesting that a list be furnished of major items of spare parts being sent with Project 8. The list is as follows:

Class 01

1 set Radiator Assembly
1 set Cowl Flap Assembly
2 sets Engine Cowling
3 sets Exhaust Manifold
1 set Tank, Fuel System
1 set Tank, Oil System
2 sets Oil Temperature Regulators
1 set Cockpit Enclosure
1 set Landing Gear
2 sets Oleo Legs
1 set Stabilizer, Horizontal
1 set Elevator
1 set Vertical Stabilizer
2 sets Rudders
2 sets Wing Tips
2 sets Wing Flaps
2 sets Ailerons
3 sets Engine Section Assemblies

Class 02

15 V-1710-33 Engines
1 Oil Pump
2 Coolant Pumps
5 Cuno Strainers
2 Generator Assemblies (gun impulses)
2 Ignition Wiring Assemblies (complete)

Class 03

3 Propeller Assemblies
3 Governor Assemblies

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Class 03 - cont'd.

SECRET

20 Starters
20 Generators
8 Magnetos
2 Carburetors
20 Fuel Pumps
20 Vacuum Pumps
3 Hydraulic Pumps
8 Batteries
5 Belts
2 Oxygen Cylinders
8 Oxygen Regulators
5 Tail Wheel Assemblies
5 Brake Assembly Sets
4 Wheel Assemblies

Class 04

26 Casings
26 Tubes

Class 05

3 Altimeters, type C-13
3 Compasses, type B-16
3 Gages, manifold pressure, type D-9
3 Gage Unit Engines, type B-7, 15 ft. cap.
3 Indicators, air speed, type D-7
3 Indicators, bank and turn, type A-8
3 Indicators, flight, type C-7
3 Indicators, rate of climb, type C-2
3 Indicators, turn, type A-5
3 Tachometers, type C-9
3 Thermometers, prestone temperature, 8 ft. cap.

Class 11

2 Sights M-3A
5 Motors E-3
2 Bolt and bracket, E-3
2 Switches

2. The above list of spares is made up for P-40C airplanes. These are the only airplanes directed to go in the first shipment.

SECRET

F. S. BORUM,
Lt. Col., Air Corps,
Chief, Field Service Section.

By: [signature]
Capt Air C

JA-504 A-337

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WAR DEPARTMENT
OFFICE OF THE CHIEF, MATERIEL DIVISION
AIR CORPS
WASHINGTON, D. C.

8-7-41

GENERAL STRATEMEYER:

The generators on the P-40's at Hamilton were manufactured by Eclipse.

The generators on the P-40's en-route to Indigo were manufactured by Leese-Neville and these are giving satisfactory performance.

Therefore believe the 20 spare generators enroute with the airplanes will be adequate.

BEM

BENNETT E. MEYERS
LT. COLONEL, AIR CORPS
EXECUTIVE

A-64; A.C

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WAR DEPARTMENT
Headquarters Army Air Forces
Office Chief of the Air Staff
Washington, D. C.

Date Aug 7

TO:

___Office, Sec. of War.
___Office, Under Sec. of War.
___Office, Asst. Sec. of War for Air.
___Secretary, General Staff.
___Deputy Chief of Staff (Air).
___Asst. Chief of Staff, G-___.
___Chief of the Army Air Forces.
___C.G., Air Force Combat Command.
X Chief of the Air Corps.

Can you give me brief pencil comment on this Sheet to take in to Mr Lovett?

1. Trail wheels connected on P-40C for Indigo.
2. See note from Benny Meyers.
3. See also note from Gen. B. to Baker re- his P-40's.

CARL SPAATZ,
Brig. Gen., Air Corps,
Chief of the Air Staff.

I-207 b, A.C.

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COPY

August 5, 1941.

SUBJECT: Generators.

TO: Colonel Ira C. Eaker, A. C.,
THRU: Commanding General, Hamilton Field, California.

1. The Chief of the Army Air Forces informs the undersigned that Colonel Eaker landed at Randolph Field or vicinity with a P-40B airplane and complained of the fact that he had to carry two additional generators in order to be able to fly the airplane.

2. Investigations discloses that Technical Order 01-25-CD-44 dated July 3, 1941, was issued which gives specific instructions concerning the restrictions in the use of certain operations of this airplane.

3. The generator is a 12 volt, 25 ampere which is not of sufficient strength to carry all the operations if performed at one time i.e., flaps, wheels, lights, and radio and the Technical Order mentioned above clearly defines the restrictions which will permit the proper use of this generator. It is therefore requested that this Technical Order be brought to the attention of Colonel Eaker in view of the fact that from other stations operating this piece of equipment there has been no complaint as long as the provisions of the Technical Order were complied with.

4. It is requested that this office be informed as to whether or not Colonel Eaker is thoroughly conversant with the provisions of this Technical Order.

GEO. H. BRETT,
Major General, A. C.
Chief of the Air Corps.

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8 Jan. & 20 June 1974
By MADJIK, WC, Date 10/18/76

WAR DEPARTMENT
OFFICE OF THE ASSISTANT SECRETARY FOR AIR
WASHINGTON, D. C.

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August 5, 1941

MEMORANDUM for General Spaatz,
Chief of the Air Staff.

Attention is invited to the penciled note of Mr. Lovett on the attached buck slip with reference to spares for Indigo.

It would seem that his comments with reference to generators and tail wheels are borne out by experience in our pursuit organizations, especially in the Twentieth, in which outfit I understand it is customary to carry a generator in the ship when on cross-country.

Your comments in this connection will be appreciated.

ST. CLAIR STREETT,
Colonel, Air Corps,
Executive Officer.

Attachment.

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DOD 5200
Sec. 4 20 June 1974
By NARS, Date 10/15/76

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AAF Rocket Development

Deputy Chief of Air Staff Attn: Maj. Gen. C. C. Chauncey 20 June 1945

AC/AS, Materiel and Services

Gen.Phillips/mch/71800

Attached hereto is Memorandum for the Chief of Air Staff with suggested reply to Dr. F. L. Hovde.

(Signed) JOHN G. MOORE
Colonel, Air Corps

E. M. POWERS
Major General, U.S.A.
AC/AS, M&S

4 Incls.
1 & 2 n/c
2 Added:
Memorandum for the Chief of Air Staff
Letter to Dr. F. L. Hovde

SAS 45-2.11 Rockets (12-4)

File C

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DOD ltrs
6 Jan. & 20 June 1974
By: ALM/KC NC. Date: 9/18/74

(AFDMA-2B GenPhillips/mKB/ln/2065/w/27 June 45)
(Rewritten AFDMA-1 GenPhillips/meh/71500/28 June 45)

28 June 1945

Office of Signature

MEMORANDUM FOR THE CHIEF OF AIR STAFF

SUBJECT: AAF Rocket Development

1. In accordance with the request of [illegible] Nos. 1 and 2 of ASR dated 22 June 1945, the following information regarding letter from Dr. Hovde, Chief of Division 3, NDRC, is submitted:

2. Letter from Dr. Hovde recommended the establishment of a new rocket research group composed of both civilian and military personnel. War Department Circular 256 dated 2 September 1944 vests the responsibility of design, procurement, etc. of rocket munitions within the Army Service Forces (Office, Chief of Ordnance), while the development of accessory items, i.e., sights, launchers, intervalometers, etc. fall within the category of the Army Air Forces. Division 3, NDRC has been instrumental in the development of rockets, launchers and sights under contract with the Navy and the Army Air Forces, and the tenor of Dr. Hovde's letter suggests that the proposed new group be given the responsibility for both research and development of the munitions and all related equipment. Unless existing War Department Regulations are drastically changed, it is not felt that the new rocket research and development group, as proposed by Dr. Hovde, would offer any advantage over the present AAF Program. Attached reply to Dr. Hovde does not refer to the division of responsibilities.

3. Air Technical Service Command is now endeavoring to obtain the services of highly qualified civilian personnel from California Institute of Technology who have previously worked under NDRC in the development of rockets, launchers, sights, etc. In addition, steps are being taken to establish a more suitable research and development station for post war work after the work now being carried on at Dover terminates.

4. In the event the Ordnance Department continues with the development of rocket munitions for the Army Air Forces, it is believed desirable to utilize one of the outlying fields at Eglin Field as a joint Ordnance-Air Forces base to insure concomitant development. The AAF and the Ordnance Department have reached a tentative agreement on this plan.

E. M. POWERS,
Major General, U.S.A.,
Asst. Chief of Air Staff,
Materiel and Services.

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DOD Dirs.
8 Jan. & 20 June 1974
By [illegible] NC Date 10/1/76

Rewritten AFDSA-1/GenPhillips/mah/71500/28 June 45

Office of Signature

5 JUL 1945

Dr. Frederick L. Hovde
Chief of Division 3, NDRC
706 - 21st Street, N. W.
Washington 6, D. C.

Dear Dr. Hovde:

Your letter of 20 June 1945 has been received and all phases relative thereto have been thoroughly considered. Before going further into the details of your letter, however, I wish to congratulate you and your staff on the excellent work done in the most successful development of the 2.5" SCAR, 5" HVAR, and the 11.75" rockets. These rockets are just now beginning to demonstrate their value in actual combat.

We are fully aware of the importance of aircraft rockets, the part which it is anticipated they will play in the war with Japan, and the necessity for maintaining research and development facilities for this equipment in post war days. The 4146th Army Air Forces Base Unit (Air Technical Service Command) was established as an accelerated development and test station to function for the duration of World War II, after which it was planned to transfer the activities to a more suitable location for post war work.

We are in agreement with the basic recommendations as contained in Dr. Anderson's report to you dated 9 June 1945, and the following action is being taken toward this end:

(1) Air Technical Service Command is at present endeavoring to obtain the services of several thoroughly qualified men who have been instrumental in the development of rockets and launchers at California Institute of Technology. This should insure continuity of the program as recommended by Dr. Anderson.

(2) Investigation is now underway to obtain the most suitable research and development station for post war work after the work now being carried on at Dover terminates. The possibilities in this connection are as follows:

a. Enlarging the facilities now available at Muroc Lake, California.

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AFDRA-32/GenPhillips/HKH/lm/2065/27 June 45
Rewritten AFDRA-1/Gen.Phillips/mch/71500/26June 45

Ltr to Dr. Frederick L. Hovde

b. Utilizing the facilities provided at the Army Air Forces Proving Ground Command, Eglin Field, Florida.

We feel that it is highly desirable that wherever the post war base is established the propellant and metal parts research facilities be also established so that development of rockets, sights, launching equipment and airplane modification can be carried on simultaneously under a coordinated program.

Until such time as definite arrangements can be made toward the establishment of a permanent base, it will be necessary for us to continue work at Dover and Muroc Lake, with such additional expert civilian personnel being given these activities as can be secured. This, we feel, will allow us to get the 5" HVAR and the 11.75" rockets into effective use in the war against Japan.

Resident Air Technical Service Command liaison officers have been established at California Institute of Technology and NOTS, Inyokern, for the purpose of improving the entire liaison and coordination program between interested agencies.

Your interest in the furtherance of the war effort and the future well-being of the Army Air Forces, as manifested by the suggestions contained in your letter, is appreciated.

Sincerely yours,

Signed

IRA C. EAKER,
Lt. Gen., U. S. Army,
Deputy Commander, Army Air Forces.

DISPATCHED
5 JUL 1945
AFSAS

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- 2 -

Gas 452.11 Rocket (124)

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DOD ltrs
8 Jan. & 20 June 1974
By MLD/DJC Date 10/15/76

AFRDA-22/CmPhillips/RMB/ln/2665/s/27 June 45
Rewritten AFRDA-1/CmPhillips/mch/71800/28 June 45

5 JUL 1945

General Powers

Dr. Frederick L. Hovde
Chief of Division B, NDRC
706 - 31st Street, N. W.
Washington 6, D. C.

Dear Dr. Hovde:

Your letter of 20 June 1945 has been received and all phases relative thereto have been thoroughly considered. Before going further into the details of your letter, however, I wish to congratulate you and your staff on the excellent work done in the most successful development of the 2.5" SCAR, 5" HVAR, and the 11.75" rockets. These rockets are just now beginning to demonstrate their value in actual combat.

We are fully aware of the importance of aircraft rockets, the part which it is anticipated they will play in the war with Japan, and the necessity for maintaining research and development facilities for this equipment in post war days. The 4148th Army Air Forces Base Unit (Air Technical Service Command) was established as an accelerated development and test station to function for the duration of World War II, after which it was planned to transfer the activities to a more suitable location for post war work.

We are in agreement with the basic recommendations as contained in Dr. Anderson's report to you dated 9 June 1945, and the following action is being taken toward this end:

(1) Air Technical Service Command is at present endeavoring to obtain the services of several thoroughly qualified men who have been instrumental in the development of rockets and launchers at California Institute of Technology. This should insure continuity of the program as recommended by Dr. Anderson.

(2) Investigation is now underway to obtain the most suitable research and development station for post war work after the work now being carried on at Dover terminates. The possibilities in this connection are as follows:

a. Enlarging the facilities now available at Muroc Lake, California.

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AFSHA-22/GenPhillips/SHB/ln/2065/27 June 45
Rewritten AFSHA-1/Gen.Phillips/mch/71500/28 June 45

Ltr to Dr. Frederick L. Hovde

b. Utilizing the facilities provided at the Army Air Forces Proving Ground Command, Eglin Field, Florida.

We feel that it is highly desirable that wherever the post war base is established the propellant and metal parts research facilities be also established so that development of rockets, sights, launching equipment and airplane modification can be carried on simultaneously under a coordinated program.

Until such time as definite arrangements can be made toward the establishment of a permanent base, it will be necessary for us to continue work at Dover and Muroc Lake, with such additional expert civilian personnel being given these activities as can be secured. This, we feel, will allow us to get the 5" HVAR and the 11.75" rockets into effective use in the war against Japan.

Resident Air Technical Service Command liaison officers have been established at California Institute of Technology and NDTS, Inyokern, for the purpose of improving the entire liaison and coordination program between interested agencies.

Your interest in the furtherance of the war effort and the future well-being of the Army Air Forces, as manifested by the suggestions contained in your letter, is appreciated.

Sincerely yours,

Signed

IRA C. EAKER,
Lt. Gen., U. S. Army,
Deputy Commander, Army Air Forces.

RELEASED

5 JUL 45
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- 2 -

SAS 452.11 Rockets 124

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DOD Dir. 5 Jan. & 30 June 1974
By ATAPUB. HQ. Date 15 MAY 74

SECRET

Development of Rocket-Firing Aviation for Close Support of Ground Combat Troops.

DATE 30 June 1945

TO: Secretary of Air Staff
THRU: AC/AS, OCAR

CONCURRENCE NO. 1
Gen. Phillips/KMB/cet/3601

FROM: AC/AS, MAS, Materiel Division

1. The attached memorandum for the Chief of Staff, above subject, has been examined in this office. Insofar as the functions of Materiel and Services are concerned, it is entirely feasible to develop and produce aircraft of this type.

2. Installations of the type noted in Paragraphs 2 and 3 have been made and successfully tested by the Army Air Forces.

3. It is desired to point out, however, that matters of policy as indicated in Paragraph 4 wherein Field Artillery pilots have used L-5's in other than liaison missions, and the development of new tactics and techniques for rocket firing close support aviation should be commented on by AAF offices other than MAS.

1 Incl:
WDGS Dis.Form,
dtd 9 June 45
w/incl

J/s/ W. G. Bunker, Col. AC
for J. F. PHILLIPS,
Brig. General, U.S.A.,
Chief, Materiel Division

TO: Secretary of Air Staff

DATE 26 JUN 1945

FROM: AC/AS, Operations, Commitments & Requirements

CONCURRENCE 2

1. Reference is made to attached Comment No. 2 to Disposition Form, subject as above.

2. The importance of this type aerial warfare is fully realized by the Army Air Forces, and a program of tactical employment covering all phases of aircraft rocket fire is in progress.

1 Incl. n/c
Added:
Com. No. 2 to Dir/KMB

WILLIAM F. McKEE
Brigadier General, U.S.A.
Acting Asst. [illegible] of Air Staff
Operations, Commitments and Requirements

SAS 452.11 Rockets (12)

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SAS 452.11 Rocket (12)

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DOD Dir. 5 Jan. & 30 June 1979
By AGO/RK, NC, Date 10/15/79

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WAR DEPARTMENT GENERAL STAFF
DISPOSITION FORM

File No. @Jun 45
WDGSD 334 JSW 471.94

SUBJECT: Development of Rocket-Firing Aviation for Close Support of Ground Combat Troops

TO AG/S, OPD } IN TURN
AG/S, G-3 }
CG, AAF }

FROM Dir/EDD

DATE 9 June 45 COMMENT NO. 1
Lt Col Ramsey/wgu/74928

Forwarded to the AG/S, OPD and AG/S, G-3 for information and to the CG, AAF for comment and return to this Division.

/s/ John S. Mills Col., GSC

for Wm. A. BORDEN
Brigadier General, GSC
Director, Nov Developments
Division

1 Incl
Memo G/S (Attn: EDD) fr
AGF dtd 7 Jun 45 above subj

Noted, OPD - 12 June 45

Noted-A.G.of S. G-3 - 14 Jun 1945

AG Sec of A/S

TO: Dir/EDD

FROM: CG, AAF
(ARDC)

DATE: 28 JUN 1945

COMMENT NO. 2
Lt Col Dollenberg/mlb/72438

1. Reference is made to paragraph 6 of the attached memorandum for Chief of Staff, U. S. Army, dated 7 June 1945.

a. The recent developments in aircraft rocket fire, and the importance of this type of aerial attack in air-ground cooperation, have been fully realized and maximum efforts toward exploiting this phase of aerial warfare are being exercised.

b. The Army Air Forces has established the Army Air Forces Board as the agency for testing the tactical employment of all Army Air Force equipment. The following AAF Board projects are in progress, and are aimed toward developing airborne rocket fire when used in tactical air operations:

(1) A series of projects are in progress which test rocket launchers for use in P-47, P-38, P-51, A-26 and B-25 type aircraft.

(2) Testing of 11.75 inch aircraft rocket (Tiny Tim).

(3) Testing of HE-2, Mod 1, Army piercing head for 5 inch HVAR rocket.

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(4) Testing of Super 4.5 inch rocket employed as an aircraft weapon.

(5) Tactical use of all available type aircraft rockets during the hours of darkness.

(6) Selection of proper fuzing, including delayed action fuzes, principally for use in close air-ground operations.

(7) Testing aircraft rocket fire in relation to anti-personnel effectiveness.

(8) The Air Forces are now conducting an investigation of all combat potentialities of light aircraft, including rocket firing. It is expected that by approximately 10 July, this investigation will have progressed to the point that a definite organization, equipment and tactics can be recommended for theater tests.

c. On July 15, an exercise is being planned, in conjunction with the Army Ground Forces, to test all available means of combating the fortified cave defense employed by the Japanese. The tactical uses of aircraft rocket fire will be employed.

d. Use of aircraft rocket fire has been proved by its effective use in air-ground operations in the combat theaters. Extensive theater field tests are in progress aimed toward improving the effectiveness of this weapon.

2. The requirement for continued emphasis on increasing the offensive capabilities and potentialities of all air-ground cooperation aircraft is recognized. The Army Air Forces should retain the responsibility for development, test and employment of such combat weapons. It is maintained that only in exceptional circumstances will effective employment of Air G. P. type aircraft, organically assigned to the Army Ground Forces, permit of their diversion to the offensive role, which will continue to be a function of the Tactical Air Commands.

For the Commanding General, Army Air Forces:

1 Incl n/c

Signed

REUBEN C. HOOD, JR.
Brigadier General, U. S. Army,
Deputy Chief of Air Staff.

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28 JUN 45

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DOD Dirs
5 Jan. & 30 June 1974
By AAF/AC, AC, Date 10/18/76

SECRET

Development of Rocket-Firing Aviation for Close Support of Ground Combat Troops.

TO: Secretary of Air Staff
THRU: AC/AS, OC&R

DATE 20 June 1945

COMMENT NO. 1,
Gen. Phillips/HRH/ect/3601

FROM: AC/AS, M&S, Materiel Division

1. The attached memorandum for the Chief of Staff, above subject, has been examined in this office. Insofar as the functions of Materiel and Services are concerned, it is entirely feasible to develop and produce aircraft of this type.

2. Installations of the type noted in Paragraphs 2 and 3 have been made and successfully tested by the Army Air Forces.

3. It is desired to point out, however, that matters of policy as indicated in Paragraph 4 wherein Field Artillery pilots have used L-5's in other than liaison missions, and the development of new tactics and techniques for rocket firing close support aviation should be commented on by AAF offices other than M&S.

1 Incl:
WDGS Dis.Form,
dtd 9 June 45
w/incl

/s/ W. G. Bunker, Col. AC
for J. F. PHILLIPS,
Brig. General, U.S.A.,
Chief, Materiel Division

TO: Secretary of Air Staff

DATE 26 JUN 1945

FROM: AC/AS, Operations, Commitments & Requirements

COMMENT 2

1. Reference is made to attached Comment No. 2 to Disposition Form, subject as above.

2. The importance of this type aerial warfare is fully realized by the Army Air Forces, and a program of tactical employment covering all phases of aircraft rocket fire is in progress.

1 Incl. w/c
Added:
Com. No. 2 to Dir/HRH

WILLIAM F. McKEE
Brigadier General, U.S.A.
Acting Asst. Chief of Air Staff
Operations, Commitments and Requirements

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8 Jan. & 30 June 1979
By CLASS'N REG. Date 10/31/76

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Sec[illegible] by authority of
CG AAF

Date Initials

Responsibility for the Operational Employment of Guided Missiles

Chief of Air Staff

26 MAY 1945

AC/AS Operations, Commitments and Requirements

1. Forwarded herewith for signature is a Memorandum for the Chief of Staff recommending a solution to the difficult problem suggested by the above subject.

2. General Norstad, concurring in this paper, feels that it is the most favorable solution we are now likely to obtain from the AAF point of view, despite that it will provide an interim rather than a permanent solution.

3. General Coupland, in withholding concurrence from this paper, draws an interesting parallel between the present status of guided missiles and that of aviation when it was an embryo development under the Signal Corps. General Coupland feels that guided missiles may require an autonomous place in the military structure, akin to Air Forces, Ground Forces and Navy, and that unless they are so handled there is a strong possibility that, competing within any major command with the primary weapons of that command they will receive insufficient funds and attention. He feels that guided missiles may develop to overshadow existing primary weapons and that only an operational organization, primary interest of which is in the field of guided missiles, will guarantee that the development of these new weapons is not stifled. He feels that guided missiles could be employed under such an organization to cooperate with other major commands and agencies in prosecuting war. He feels, further, that all technical research, development and procurement should be placed in the hands of one Technical Service.

1 Incl
Memo for C/S
w/incls

DONALD WILSON,
Major General, U. S. Army,
Asst. Chief of Air Staff,
Operations, Commitments & Requirements

SAS 452.1 Guided Missiles (1-21)

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SAS 452.11 Rockets (1-21)

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DECLASSIFIED
DOD 5200
8 Jan. & 20 June 1974
By ARMUK, JC Date 10/15/76

SECRET

AFRIT
Colonel Gilkim/ck/4827
24 May 1945

Secret by authority of
CG AAF

Date 1 JUN 1945 Initials

MEMORANDUM FOR THE CHIEF OF STAFF:

SUBJECT: Responsibility for the Operational Employment of Guided Missiles

DISCUSSION

1. On 2 October 1944, the War Department, recognizing the vast field of new weapon development foreshadowed by the German employment of buzz bombs and long-range rockets, promulgated a policy (see Tab A) establishing the responsibilities of the major commands for research and development in this field. This policy, still in effect, makes the responsibility of the major commands for operational employment of the new weapons a matter to be decided in each case upon the merits of each specific newly developed missile. The first such command decision was made in the case of the JB-2 buzz bomb, in which conflicting views of the AAF and the ASF were resolved by the decision that this weapon would be employed operationally by the AAF.

2. Although the policy of 2 October 1944 has proven adequate to assure that there shall be no duplication or duplication within the Army of effort touching upon the development of guided missiles and pilotless aircraft, this policy fails signally to eliminate duplication or omission of equipment planning effort on the part of the major commands. Thus, in the case of the JB-2, both AAF and Ground Forces developed Tables of Organization for JB-2 units and considered plans for employment of this weapon. Both AAF and Ground Forces are now considering the operational employment of very long range rocket missiles.

3. While some good may accrue, in the case of radically new weapons, from the equipment planning efforts of two separate commands, the disadvantages developing from the current situation have become amply clear. A recent IRD proposal that the V-2 be produced in Germany for our use against Japan, and which invited the visit of a War Department delegation to the theater, raised at once the question of whether AAF Forces, Ground Forces or both AAF and Ground Forces officers might be included in such a delegation. Further organization and weapon planning within this Headquarters, and surely also within that of the ASF, would be greatly facilitated by a clarification of future responsibilities concerning operational employment of guided missiles. On 6 February 1945 this Headquarters forwarded to the Operations Division, WDGS a recommendation that the responsibilities of the major commands for operational employment of guided missiles be clarified, and offered a proposed directive to accomplish this result (see Tab B). Shortly thereafter, but independently, the G-3 Division, WDGS requested by memorandum (see Tab C) the comments of the major commands as a guide in establishing fundamental policy, especially for which was clearly recognized in this connection. Sharply differing

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replies led thereafter to a conference of the interested agencies under G-3 auspices, at which no agreement could be reached in view of the basically different points of view held by the AAF and the ASF. The AAF concept, supported at the conference by the representative of Operations Division, WDGS, is that all weapons launched or fired from the ground should be an operational responsibility of the ASF. The AAF concept is this, in terms of the objective or target area to be attacked, the means of attack must be entrusted to that force which normally has primary interest in the attack thus in the case of strategic bombardment, the AAF should have operational responsibility for the employment of all applicable weapons.

b. The policy suggested by G-3, WDGS to govern responsibility of the major commands for operational employment of guided missiles (Tab A), while less definitive than that proposed by this Headquarters (Tab C), is considered to present an entirely satisfactory present solution to the problem.

RECOMMENDATION

That a policy governing the responsibility of major commands for operational employment of guided missiles substantially like that suggested by the G-3, WDGS memorandum of 19 March 1945 (Tab C) be established by the War Department.

For the Commanding General, Army Air Forces:

Signed

IRA C. EAKER,
Lt. Gen., U. S. Army,
Deputy Commander, Army Air Forces.

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War Department
Office of the Chief of Staff
Washington

2 October 44

MEMORANDUM FOR THE COMMANDING GENERAL, ARMY AIR FORCES:

Subject: Guided Missiles

1. The progress in research and development of long-range guided missiles does not yet enable us to form a clearcut understanding of the ultimate tactical employment of these weapons; and therefore not yet warranted is a specific assignment in every case of such missiles to exclusive employment by any one arm or service.

2. It is, however, essential that research and development in the long-range guided missile field continue toward ultimate production of some useable weapons which can be evaluated with respect to our strategy and our existing weapons. In amplification of previous instructions, the Chief of Staff desires:

a. That the Commanding General, Army Air Forces have research and development responsibility, including designation of military characteristics, for all guided or homing missiles dropped or launched from aircraft;

b. That the Commanding General, Army Air Forces have research and development responsibility for all guided or homing missiles launched from the ground which depend for sustenance primarily on the lift of aerodynamic forces. For the present the designation of desired military characteristics for the equipment is charged to the Army Air Forces, and to Army Ground Forces as their interests appear;

c. That the Commanding General, Army Service Forces have research and development responsibility for guided or homing missiles launched from the ground which depend for sustenance primarily on momentum of the missile. For the present the designation of desired military characteristics for the equipment is charged to the Army Ground Forces, and to Army Air Forces as their interests appear.

3. Propulsion units, whether ram-jet, rocket or more conventional means; and control systems, whether mechanical, radio, radar, television, or infra-red, are considered as integral components of specific weapons. The research and development of these two aspects of guided missiles therefore fall within the purview of the arm or service having responsibility for development of the weapon in which they are used. In contradistinction are the developments in warheads, non-integral launching devices, ground components of control systems supplementary to the primary control link, etc., for which any service having a basic technical ability in research should be called upon for assistance.

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b. It is reported that on the basis of the above general approach to the problem, the technical planning and developing agencies of the major commands will freely coordinate their efforts and exchange information on developments and status of their projects, to the end that at any specific program approximates a point where it may be tactically useful, each command will be fully cognizant of its potentialities, and thus will be assured of an opportunity to develop a tactical use with respect to its own needs for the weapon.

/s/ Joseph T. Mahoney

JOSEPH T. MAHONEY
Lt General, USA
Deputy Chief of Staff

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6 February 1945

Guided Missiles — For signature

1. Reference is made to TOP SECRET Disposition Form, subject "Guided Missiles," to the CG, AAF from OPD WDCS, dated 30 January 1945, in which a decision is reiterated as to the responsibility of major commands in the employment of a guided missile.

2. It is apparent that, under existing directives, the question of major command responsibility for the operational employment of each newly developed guided or controlled missile must continue to arise. This time consuming process, especially unfortunate in that it leads to either a duplication or a lack of preliminary planning for the use of such new weapons, would be unnecessary provided an adequate policy governing the assignment of major command responsibility for operational employment of guided or controlled missiles could be formulated. It is considered that such a policy can now be formulated.

3. This Headquarters believes that responsibility for operational employment of these important new weapons can be assigned realistically only in terms of the missions of the major commands as well as the technical character of the missiles. The missions of the AAF are:

a. To gain air superiority by attacks against aircraft in the air and on the ground and against those installations which the enemy requires for the application of air power.

b. To destroy the enemy's industrial capability of waging war and the enemy's will to resist.

c. To disrupt hostile lines of communication, destroy supply dumps and installations, and attack hostile troop concentrations in rear areas.

d. To destroy selected objectives in the battle area in furtherance of the combined air-ground effort.

4. The JB-2 and any weapon with similar capabilities can conceivably be employed in accomplishing any or all of the above missions. In accomplishing the mission of 3 d above, such weapons could be operationally employed by units of either Air or Ground Forces. However, only the air commander can employ such weapons fully against both strategic and tactical targets, and, in terms of economy of means, it would appear advisable to charge the Air Forces with responsibility for operational use of all weapons whose capabilities resemble those of the JB-2.

5. In order to clarify policy as it pertains to operations as well as development, the attached proposed revision of memorandum from the Deputy Chief of Staff, subject "Guided Missiles," dated 2 October 1944, is recommended for signature.

/s/ Barney M. Giles
BARNEY M. GILES
Lieutenant General, U.S.A.
Chief of Air Staff

Incls: Memo to CG, AAF
CG, AEF
CG, ASF
subj as above

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MEMORANDUM FOR COMMANDING GENERAL, ARMY AIR FORCES
COMMANDING GENERAL, ARMY GROUND FORCES
COMMANDING GENERAL, ARMY SERVICE FORCES

Subject: Guided Missiles.

1. Memorandum from the Deputy Chief of Staff, same subject as above, dated 2 October 1944, is rescinded.

2. In order that research, development and planning for operational use of weapons in the guided or homing missile field may be expedited, it is directed:

a. That the Commanding General, Army Air Forces have the responsibility for research, development, designation of military characteristics and operational use of all guided or homing missiles dropped or launched from aircraft;

b. That the Commanding General, Army Air Forces have the responsibility for designation of military characteristics and operational use of all guided or homing missiles whose capabilities for use are primarily those of supplementing or supplementing the air effort employed against targets in rear of the immediate ground battle.

c. That the Commanding General, Army Ground Forces have the responsibility for designation of military characteristics and operational use of guided or homing missiles whose capabilities for use are primarily those of supplementing, supplementing, or supplanting artillery fire or close cooperating air action in the immediate ground battle.

d. That the Commanding General, Army Air Forces have the responsibility for designation of military characteristics and operational use of guided missiles designed to supplement, supplement or supplant interceptor fighters, when such missiles depend for sustenance primarily on forces other than momentum of the missile.

e. That the Commanding General, Army Ground Forces have the responsibility for designation of military characteristics and operational use of guided missiles designed to supplement, supplement or supplant anti-aircraft artillery fire, when such missiles depend for sustenance primarily on momentum of the missile.

f. That the Commanding General, Army Service Forces have the responsibility for research and development of guided or homing missiles, other than those dropped or launched from aircraft, depending for sustenance primarily on momentum of the missile.

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5. That the Commanding General, Army Air Forces have the responsibility for research and development for guided or homing missiles depending for sustenance primarily on forces other than momentum of the missile.

6. While primary responsibility for research and development in the guided missile field is as set forth in paragraph 5 above, any Service having a basic technical ability in research in any of the components of such missiles, or for the control of such missiles, should be called upon for assistance.

7. It is expected that on the basis of the above general approach to the problem, the technical planning and developing agencies and the operational or tactical planning agencies of the major commands will freely coordinate their efforts and exchange information on developments, status of their projects, and contemplated operational use, to the end that, as any specific weapon approaches a point where it may be tactically useful, each command will be fully cognizant of the weapon's potentialities and will thus be assured of an opportunity to evaluate the weapon's effect on the use of its weapons and forces.

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WAR DEPARTMENT
WAR DEPARTMENT GENERAL STAFF
Organization and Training Division, G-3
Washington

WDGOT 471 (19 Mar 45) 19 March 1945

MEMORANDUM FOR THE COMMANDING GENERALS, ARMY AIR FORCES
ARMY GROUND FORCES
ARMY SERVICE FORCES

SUBJECT: Guided Missiles

1. Your remarks and recommendations are desired by 27 March 1945 on this paper, which is designed as a guide, for the information of all interested agencies in establishing responsibilities for operational employment of guided missiles.

2. The progress in research, development and testing of guided missiles now enables us to announce a more clear cut policy as to their eventual tactical employment and hence their specific assignment to one or more arms or services.

3. Policies enunciated in a memorandum from the Deputy Chief of Staff for the Commanding Generals, Army Air Forces, Army Ground Forces and Army Service Forces, dated 2 October 1944, will be adhered to insofar as they pertain to the establishment of spheres of responsibility for research, development and original designation of military characteristics.

4. Final decisions, for assignment of each specific missile to a command, to fix responsibilities for primary interest in designating military characteristics and operational employment, will be made by the Chief of Staff based on the following:

a. Guided missiles, like all other weapons, will be assigned to a major command, after an evaluation of the capabilities of the weapon, on the basis of the weapon's intended or anticipated mission, as opposed to its physical characteristics which are the basis for fixing research and development responsibilities.

b. Missiles have already been developed and others will appear that are capable of performing missions complementary or supplementary to existing weapons of both the Army Air Forces and Army Ground Forces. Such weapons will be assigned to Army Air Forces and Army Ground Forces for operational employment and to the Commanding Generals of the Army Air Forces and Army Ground Forces, as their interests appear for designation of military characteristics.

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5. a. All weapons naturally fall into one of the nine categories listed below

(1) Missiles fired or launched from the ground at a ground target.

(2) " " " " " " " " an air "

(3) " " " " " " " " a sea "

(4) " " " " " " air " an air "

(5) " " " " " " " " a ground "

(6) " " " " " " " " a sea "

(7) " " " " " " sea " a ground "

(8) " " " " " " " " a sea "

(9) " " " " " " " " an air "

b. Missiles listed under category (4), (5) and (6) are naturally chargeable to the Army Air Forces. Those under category (7), (8) and (9) are the responsibility of the Navy. Category (1), (2) and (3) contain the types under discussion.

6. Examples of these three classes are as follows:

a. (1) A type missile, fired or launched from the ground at a ground target, with capabilities of performing missions supplementary or complementary to supporting artillery, will be assigned to the Commanding General, Army Ground Forces for designation of military characteristics, and to the Army Ground Forces for operational employment.

(2) A type missile, fired or launched from the ground at a ground target, with capabilities of performing missions supplementary or complementary to supporting artillery and tactical bombardment, will be assigned to the Commanding Generals, Army Ground Forces and Army Air Forces, respectively, for designation of military characteristics, and for operational employment.

(3) A type missile, fired or launched from the ground at a ground target, with capabilities of performing missions supplementary or complementary to strategical bombardment will be assigned to the Commanding General, Army Air Forces for designation of military characteristics and to the Army Air Forces for operational employment.

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b. (1) A type missile, fired or launched from the ground at an air target, with capabilities of performing missions supplementary or complementary to antiaircraft artillery and fighter interceptors, will be assigned to the Commanding Generals, Army Ground Forces and Army Air Forces, respectively, for designation of military characteristics and for operational employment.

(2) A type missile, fired or launched from the ground at an air target, with capabilities of performing missions supplementary or complementary to fighter aircraft employed on fighter sweeps, escort missions or distant interception will be assigned to the Commanding General, Army Air Forces for designation of military characteristics and to the Army Air Forces for operational employment.

c. A type missile, fired or launched from the ground at a sea target, with capabilities of performing missions supplementary or complementary to seacoast artillery or air bombardment against sea targets, will be assigned respectively to the Commanding Generals of Army Ground Forces and Army Air Forces for designation of military characteristics and for operational employment.

7. In the application of these policies limitations imposed by availability of resources or high priority production programs may temporarily limit operational employment of a missile to one major command, even though its capabilities indicate use by both air and ground. In such cases operational employment will be temporarily assigned to the command (Air or Ground) best situated to effectively fight the weapon in this war.

8. Initial decisions will be reviewed where necessary as development progresses to effect reassignment of responsibilities for employment.

BY ORDER OF THE SECRETARY OF WAR:

I. H. EDWARDS
Major General, G. S. C.
Assistant Chief of Staff, G-3

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Colonel A. F. Tappan/nlf/71885

AFDMA-1 Written 26 April 1945

27 APR 1945

MEMORANDUM FOR THE CHIEF OF THE AIR STAFF

SUBJECT: Report to 19 Apr 45 on JB-10 (Northrop Tail-less) and JB-2 Jet Bombs.

JB-10.

1. First test on 7 April 1945. Launching cart pin sheared after 250' of 400' run and launching was too slow. Bomb flew approximately 3/4 miles and then rolled. Second launching, 13 April 1945, was also too slow. Bomb flew at 800', speed 190-200 mph, then lost altitude gradually until it hit the water at approximately 24 miles. Gross weight of JB-10 - 6,860 lbs. 5 launching rockets were used. Next test scheduled for week of 23 April 1945.

JB-2.

1. Rocket Launchings, 400' Ramps: 85 rocket launchings have been made. Of the last 35, there were 34 successful launchings and 24 successful flights. Flight failures were due to: a. engine failure, b. gyro dumping, and c. partially loaded warhead exploding at arming distance of 3 miles.

2. Other Types of Launching: a. B-17 launchings temporarily discontinued due to engine starting trouble. Fuel solenoid valve being modified. b. First dummy launching with flash-steam equipment at 400 lbs. pressure was successful. 1,000 pound pressure test scheduled for week of 23 April 1945. c. Shipment of multiple-cartridge launching ramp delayed until 24 April 1945. d. Navy modifying light-weight version of German type ramp, multiple-cartridge propulsion. Delivery expected approximately 15 May 1945. e. Allis Chalmers having difficulties with inertia flywheel system. Proposal not yet submitted.

3. Control and Warhead: a. Tests of beacon for radar control progressing satisfactorily. Good results, using C-45, have been secured up to 100 miles. b. Use of Navy blimp at Eglin for accuracy tests only partially satisfactory. c. 10 fully loaded warhead tests planned for Wendover, ramp has been shipped.

4. LST Project and Short Ramp Launching: a. Study being conducted by Guided Missiles Committee, Joint New Weapons Committee, on proposed operational use of JB-2 -- probably from LST's. Navy will make LST available at Eglin. b. Navy expediting their CVE launching project. c. AAF plans to use 40' ramp from LST. 50 expedited land launchings using 40' ramp will start 23 April 1945. d. Will study use of multiple-cartridge ramp from LST. e. Proving Ground making study of 50' by 200' YA-1 Target Boat as launching platform.

5. Availability: Willys Overland will be prime contractor on additional 10,000 JB-2's. Present schedule for full 12,000 is: To 1 April - 518; April-300; May-225; June-225; July-225; August-275; September-475; October-707; November-750; December to completion-1,000/mo. Launching powder to increase from 40/mo. to 1,000/mo. Present low priority, warhead deliveries and material shortages may set back this schedule.

(Signed) E. M. Powers

E. M. POWERS
Brigadier General, U. S. A.
Deputy Asst. Chief of Air Staff,
Materiel and Services

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24 MAR 1945

Col Travis/mw/72435
Wrtn 24 Mar 45

MEMORANDUM FOR THE CHIEF OF STAFF: (Attention: G-3 Division)

28 MAR 1945

Subject: Guided Missiles

1. Reference is made to G-3 WDGS memorandum, addressed to the Commanding Generals of the major commands, subject: "Guided Missiles" dated 19 March 1945, in which the comments of this Headquarters were desired upon a proposed policy governing major command responsibilities for operational employment of guided missiles.

2. The proposed policy is considered a definite improvement upon the existing lack of policy in this connection and, if published, would assure at once adequate preparation of military characteristics for the class of weapons under discussion. Preparation of military characteristics with the consequent impetus to development is necessarily a matter of most immediate concern.

3. With respect to responsibilities for operational employment of guided missiles, however, the proposed policy must be regarded as an interim measure, indicating as it does that in all controversial respects the new weapons may or will be employed by either or both the Air and Ground Forces. For this reason, the proposal of this Headquarters in the same connection (copy attached), unfortunately misdirected to OPD WDGS, but which has now reached your office, is considered a clearer and more definitive paper despite the obvious deficiency which exists in its use of the indeterminate phrase "the immediate ground battle." Since it is difficult to reconcile the principle of economy of force with large-scale duplication of similar units and weapons between the Air and Ground Forces, the proposal submitted by this Headquarters which points more directly toward future economy of force is considered preferable to your proposed paper as a policy for present publication.

For the Commanding General, Army Air Forces:

1 Incl

#1 - Memo dtd 6 Feb 45

Signed

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

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By AUTH: J.C. Dunn 5 Oct 76

24 MAR 1945

Col Travis/mw/72435
Wrtn 24 Mar 45

MEMORANDUM FOR THE CHIEF OF STAFF: (Attention: G-3 Division)

28 MAR 1945

Subject: Guided Missiles

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For the Commanding General, Army Air Forces:

1 Inel

#1 - Memo dtd 6 Feb 45

Signed

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

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Lt Col Stace/bja/4908

(AFDMR-2B

6 MAR 1945

MEMORANDUM FOR THE CHIEF OF AIR STAFF

SUBJECT: Progress Report to 3 March 1945 on JB-2 and JB-10 Robot Bombs.

1. The following is a brief summary of progress to 3 March 1945:

a. JB-2 - Launching 39 was successful. Bomb exploded at four miles instead of twenty due to Ordnance difficulties. Number 40 was unsuccessful when bomb fish-tailed and finally slow-rolled and crashed. Number 41 launched successfully with a radar beacon in the bomb. Set for 100 miles, but crashed at 88 miles due to motor failure. Number 42 was successful and Ordnance switch test was satisfactory. On number 43, another rocket explosion wrecked the cart and bomb. Number 44 was successful with a 30° preset clock turn (this quick turn is used as in the German bomb, to set the direction quite abruptly a short time after takeoff, rather than using the slow turn caused by the compass). Number 45 launched successfully, but started preset turn right after launching and crashed after five miles. Number 46, on 2 March 1945, was the 24th successful launching and went to 100 miles satisfactorily on a radar beacon test. The next 'ramp-less' launching is scheduled for 3 March 1945. The first dropping of two JB-2's was made from a B-17 on 2 March. The carriage and release were satisfactory, but one engine quit after starting and the other never started. These technical difficulties should be remedied comparatively easily. On the 1,000/month program, final contract commitments by Wright Field, and forwarding of requirements to Ordnance and Signal Corps are held up pending OPD approval of the program. Completion of flash-steam boiler expected by 15 - 20 March. Multiple cartridge launching scheme now looks very promising and full scale tests will be made in April if no major difficulties develop.

b. JB-10 - (Northrop Pelican) - First model with intermittent jet engine has been delivered to Eglin Field. Further modifications appear necessary, but launching is hoped for within two weeks.

(Signed) O. P. Echols

O. P. ECHOLS
Major General, U.S.A.,
Asst. Chief of Air Staff,
Materiel and Services

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14 FEB 1945

MEMORANDUM FOR: Lt. General Barney M. Giles

SUBJECT: Rocket Study from Cal.-Tech.

Forwarded, for signature, is letter to Mr. William Fowler, California Institute of Technology, Pasadena, California, on the above subject.

(Signed) E. M. Powers

E. M. POWERS
Brig. General, U. S. A.
Deputy Assistant Chief of Air Staff
Materiel & Services

Incl.

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15 February 1945

MEMORANDUM FOR DEPUTY CHIEF OF AIR STAFF:

Subject: Military Characteristics for Antiaircraft Guided Missiles

Generally concur in this paper and particularly concur as to the desirability of securing officers with anti-aircraft experience and technical background to assist in and become indoctrinated in the development and operation of guided missiles for air defense purposes.

for L. S. KUTER
Major General, U.S.A.
Assistant Chief of Air Staff,
Plans

Incl.
R&R, abf subj, w/attachment listed; suspense sheet and memos.

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Secret by authority of
CG AAF
18 Feb 45 — LHG
Date — Initials

18 FEB 1945

MEMORANDUM FOR THE DEPUTY CHIEF OF AIR STAFF:

Subject: Military Characteristics for Antiaircraft Guided Missiles

This office concurs in general with the statements contained in the attached M&R. The inclusion of antiaircraft officers with experience and technical background is highly to be desired in the AAF guided missile program. Specifically, efforts should be made at an early date to obtain a small but competent staff of such officers with the AFSC at Wright Field.

Incl.
Memo for DC/AS
dtd 15 Feb 45
w/M&R #1

Signed

WILLIAM F. McKEE
Brigadier General, U.S.A.
Acting Assistant Chief of Air Staff
Operations, Commitments and Requirements

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9 FEB 1945

Major General B. E. Meyers
Deputy Director
Air Technical Service Command
Wright Field, Dayton, Ohio

Dear Benny:

I know you are aware of General Arnold's belief that the antiaircraft artillery belongs in the Air Forces. Perhaps partly in line with this belief, but chiefly because of the decision of the Deputy Chief of Staff making the Air Forces responsible for development of all guided missiles which depend for sustenance upon aerodynamic lift, the Air Technical Service Command has been furnished AAF military characteristics for an antiaircraft guided missile. It is expected that real progress will be made in this development.

If the antiaircraft artillery is integrated into the Air Forces, it would appear that antiaircraft artillerymen should man the antiaircraft guided missiles. It is, therefore, highly desirable that some antiaircraft officers have as extensive a knowledge of this development as possible. Failure on the Air Forces' part to include antiaircraft artillerymen in the development of antiaircraft missiles may militate against integration, since it may lead antiaircraft officers to believe that the Air Force holds them of little account. In addition to the above, it is believed that antiaircraft artillery officers with extensive knowledge of present conventional equipment should be able to contribute materially to this development.

For the above reasons it appears very desirable that you have at least one antiaircraft officer, under detail in the Air Forces, as an active working member of your staff engaged in the development of antiaircraft guided missiles. The above considerations appear sound to me and I would appreciate your reactions to them.

Yours sincerely,

Signed

BARNEY M. GILES,
Lieutenant General, U. S. Army,
Deputy Commander, Army Air Forces and
Chief of Air Staff

Cy for Secy of Air Staff

9 FEB 1945

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SAS USA. 11 Rockets (10)

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8 Jan. & 20 June 1974
By AFAG/LCL, LC, Date 10/15/96

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Ltr to ATSC re AA Guided Missiles

Deputy Chief of Air Staff, General Hood — 5 Feb 45

Special Asst for Antiaircraft — 1

FBR/jl/71405

Recommend attached letter to Major General B. E. Meyers be signed and dispatched.

H. R. OLDFIELD
Major General, U. S. Army
Special Asst for Antiaircraft

1 Incl.
Ltr as above

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HEADQUARTERS ARMY AIR FORCES
WASHINGTON

AFDMA-2G

FOR VICTORY BUY UNITED STATES WAR BONDS AND STAMPS

5 FEB 1945

MEMORANDUM FOR THE CHIEF OF AIR STAFF

SUBJECT: Progress Report to 3 February 1945 on JB-2 Robot Bombs

1. The following is a brief summary of progress to 3 February 1945:

a. Launchings - Launching 26 on 25 January 1945 was successful. The Ordnance fuse functioned successfully at 28 miles. Radar estimate of speed at 23 miles was 428 m.p.h. and still gaining. Launching 27 on 27 January 1945 was successful. Pulled away from A-20 airplane at speed estimated over 350 m.p.h. Radio D-Fing experiment was unsuccessful. Launchings 28 on 29 January 1945, 29 on 30 January 1945, 30 on 31 January 1945 and 32 on 2 February 1945 were also successful with successful D-Fing by radio to 83 miles on number 32. Number 31 on 1 February 1945 was unsuccessful when one rocket failed to burn. All launchings were with four rockets from 400 feet horizontal ramp. Equipment is now under construction for the next ramp-less launching, scheduled for approximately 15 February 1945.

b. Supply - In accordance with the Acting Chief of Air Staff Memorandum of 24 January 1945, the procurement directives were reduced from 77,000 to 2,000. No procurement request has been issued on the 1000 per month rate now being studied. Air Technical Service Command have been requested to submit a plan on a study to use European resources and labor to produce the JB-2 at rates of 100, 500 and 1000 per day.

c. Range - After completion of study of the Yuma Aerial Gunnery Range, it was decided to continue testing and training at Eglin. Means of anchoring targets in the deep water (600 ft. and more) are being studied.

E. M. POWERS
Brigadier General, U. S. A.
Deputy Asst. Chief of Air Staff,
Materiel and Services

SAS To file
Initd

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

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

SAS 452.11 Rockets (58)

452.11 Rockets 58

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6 Jan. & 20 June 1974
By AFA/RX, HQ, Date 10/31/76

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30 JAN 1945

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MEMORANDUM FOR CHIEF OF THE AIR STAFF:

SUBJECT: Status of Aircraft Rockets

1. The following is a brief summary of the status of aircraft rockets, per your request in a comment on a message from General Stratemeyer. (Cm-In 24772, 25 Jan 45, log page 508).

2. The 5-inch HVAR (high velocity aircraft rocket) is being produced by the Navy for both the Army Air Forces and the Bureau of Aeronautics from propellant furnished by the Army Service Forces. This rocket is in short supply, and monthly production will not be sufficient to meet all requirements for both services until the last quarter of 1945. This ammunition is being allocated by the Joint Allocations Committee (Navy) in accordance with the ability of both services to expend rockets. At the present time, the Bureau of Aeronautics has a far larger number of airplanes equipped to fire rockets than the Army Air Forces; and, accordingly, receives an allocation of two-thirds (2/3) of the total rocket production.

3. The one-third (1/3) of present production now allocated to the Army Air Forces just meets the requirement for rocket employment in the European Theater of Operations, supplemented by the 5-inch AR (aircraft rocket), which is also being procured from the Navy. It is anticipated that a small quantity of 5-inch HVAR rockets will be available for shipment to other high priority theaters within the next two months.

4. As an interim measure, the Army 4½-inch, tube-launched rocket has been modified to be fired from Zero length launchers; and it is expected to meet our requirements for a satisfactory airborne rocket until more of the larger 5-inch HVAR are available.

5. The A-26B and all types of fighter airplanes, with the exception of the P-80, are scheduled to be factory-equipped with Zero rail rocket launchers, beginning in March of this year. This will enable us to

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6 Jan. & 30 June 1978
By ALN/LS of Date 10/31/96

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Date Initials

Responsibility for the Operational Employment of Guided Missiles

Chief of Air Staff

1

AC/AS Operations, Commitments and Requirements

1. Forwarded herewith for signature is a Memorandum for the Chief of Staff recommending a solution to the difficult problem suggested by the above subject.

2. General Norstad, concurring in this paper, feels that it is the most favorable solution we are now likely to obtain from the AAF point of view, despite that it will provide an interim rather than a permanent solution.

3. General Coupland, in withholding concurrence from this paper, draws an interesting parallel between the present status of guided missiles and that of aviation when it was an embryo development under the Signal Corps. General Coupland feels that guided missiles may require an autonomous place in the military structure, akin to Air Forces, Ground Forces and Navy, and that unless they are so handled there is a strong possibility that, competing within any major command with the primary weapons of that command they will receive insufficient funds and attention. He feels that guided missiles may develop to overshadow existing primary weapons and that only an operational organization, primary interest of which is in the field of guided missiles, will guarantee that the development of these new weapons is not stifled. He feels that guided missiles could be employed under such an organization to cooperate with other major commands and agencies in prosecuting war. He feels, further, that all technical research, development and procurement should be placed in the hands of one Technical Service.

1 Incl
Memo for C/S
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demand a larger allocation of rockets through the Joint Allocations Committee (Navy), and thus greatly improve our position in the rocket program. It is expected that by the end of this year all fighter, A-26, and B-25 airplanes in all theaters will be equipped to employ rockets.

6. The Army Air Forces Board has now completed comprehensive operational and tactical suitability tests on the subject rocket, and the results of these tests are being distributed to all Theater Commanders as rapidly as they become available.

WILLIAM F. McKEE
Colonel, G.S.C.
Acting, Asst. Chief of Air Staff
Operations, Commitments & Requirements

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By Authority of
The Commanding General
Army Air Forces
Date Initials

JB-2 use

31 Jan 45

Assistant Chief of Air Staff, Materiel & Services
(Attention: Lt. Col. Ordway)
Chief of the Air Staff

1

TAF:JB 5791

1. See note by General Timberlake on attached Memorandum. Please include a suitable item on this subject in the weekly activity report due Friday, February 2nd. In this item, please bring out, in non-technical language, the following points:

a. savings in shipping space;

b. advantages in JB-2 type in war load carried in various types of aircraft in comparison with present General Purpose bombs;

c. advantages of JB-2 in comparison with General Purpose bomb in explosive or destructive effect.

Signed
T. A. FITZPATRICK,
Colonel, G.S.C.,
Secretary, Air Staff.

1 Incl.
Memo fr AC/AS M&S
29 Jan 45

SAJ 452.11 Rockets (96)

31 JAN 1945

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

SAJ 452.11 Rockets (96)

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28 JAN 1945

AFDSC
Lt. Col Rousseau/4627
wrtn. 26 Jan 45

Guided Missiles

X Signature

1. Reference is made to Memorandum for the Commanding General, Army Air Forces, from the Deputy Chief of Staff, subject as above, dated 2 October 1944, which outlined the responsibility, among the three major commands, for research and development in the guided missile field.

2. At his staff meeting on 19 January 1945, General Marshall indicated that the AAF would have responsibility for operational use, as well as research and development, of all guided missiles of the buzz bomb (JB-2) type.

X OPD

3. In order to make General Marshall's decision a matter of record and in order to clarify policy as it pertains to operation rather than development of the JB-2 type guided missiles, the attached proposed memorandum is recommended for signature.

For the Commanding General, Army Air Forces:

Encls: Memo to CG,AAF
CG, AGF
CG, ASF
same subj.

Signed
BARNEY M. GILES,
Lieutenant General, U. S. Army,
Deputy Commander, Army Air Forces and
Chief of Air Staff

28 JAN 1945

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28 JAN 1945
AFREQ
Lt. Col Rouse:ctw/4627
wrtn. 26 Jan 45

Guided Missiles

X Signature

1. Reference is made to Memorandum for the Commanding General, Army Air Forces, from the Deputy Chief of Staff, subject as above, dated 2 October 1944, which outlined the responsibility, among the three major commands, for research and development in the guided missile field.

2. At his staff meeting on 19 January 1945, General Marshall indicated that the AAF would have responsibility for operational use, as well as research and development, of all guided missiles of the buzz bomb (JB-2) type.

X OPD

3. In order to make General Marshall's decision a matter of record and in order to clarify policy as it pertains to operation rather than development of the JB-2 type guided missiles, the attached proposed memorandum is recommended for signature.

For the Commanding General, Army Air Forces:

Incl: Memo to CG,AAF
CG, AGF
CG, ASF
same subj.

BARNEY M. GILES,
Lieutenant General, U. S. Army,
Deputy Commander, Army Air Forces and
Chief of Air Staff

28 JAN 1945

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AFRIQ
Lt Col Rouse/ek/4627
26 Jan 1945

MEMORANDUM FOR COMMANDING GENERAL, ARMY AIR FORCES
COMMANDING GENERAL, ARMY GROUND FORCES
COMMANDING GENERAL, ARMY SERVICE FORCES

Subject: Guided Missiles

Reference is made to Memorandum from the Deputy Chief of Staff, same subject as above, dated 2 October 1944. In order to clarify the policy expressed therein with respect to the JB-2 (buzz bomb) type guided missiles, the above memorandum is amended as follows:

With respect to the JB-2 (buzz bomb) and similar type guided missiles, the Commanding General, Army Air Forces will have the responsibility for operational use as well as for research, development and designation of military characteristics.

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By NARA, Date 10/18/76

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RELEASED

AFDRQ
Col Giffin/ek/3020
2 Feb 1945

Guided Missiles

For signature

FEB

1. Reference is made to TOP SECRET Disposition Form, subject "Guided Missiles," to the CG, AAF from OPD WDGS, dated 30 January 1945, in which a decision is reiterated as to the responsibility of major commands in the employment of a guided missile.

2. It is apparent that, under existing directives, the question of major command responsibility for the operational employment of each newly developed guided or controlled missile must continue to arise. This time consuming process, especially unfortunate in that it leads to either a duplication of a lack of preliminary planning for the use of such new weapons, would be unnecessary provided an adequate policy governing the assignment of major command responsibility for operational employment of guided or controlled missiles could be formulated. It is considered that such a policy can now be formulated.

OPD

3. This Headquarters believes that responsibility for operational employment of these important new weapons can be assigned realistically only in terms of the missions of the major commands as well as the technical character of the missiles. The missions of the AAF are:

a. To gain air superiority by attacks against aircraft in the air and on the ground and against those installations which the enemy requires for the application of air power.

b. To destroy the enemy's industrial capability of waging war and the enemy's will to resist.

c. To disrupt hostile lines of communication, destroy supply dumps and installations, and attack hostile troop concentrations in rear areas.

d. To destroy selected objectives in the battle area in furtherance of the combined air-ground effort.

4. The JB-2 and any weapon with similar capabilities can conceivably be employed in accomplishing any or all of the above missions. In accomplishing the mission of 3 d above, such weapons could be operationally employed by units of either Air or Ground Forces. However, only the air commander can employ such weapons fully against both strategic and tactical targets, and, in terms of economy of means, it would appear advisable to charge the Air Forces with responsibility for operational use of all weapons whose capabilities resemble those of the JB-2.

5. In order to clarify policy as it pertains to operations as well as development, the attached proposed revision of memorandum from the Deputy Chief of Staff, subject "Guided Missiles," dated 2 October 1944, is recommended for signature.

Incl: Memo to CG, AAF
CG, AGF
CG, ASF
subj as above

BARNEY M. GILES,
Lieutenant General, U. S. Army,
Deputy Commander, Army Air Forces
Chief of Air Staff

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By ACAVAC Date 10/31/76

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AFHBQ
Col Giffin:ctw/3020
wrtn. 24 Jan 45

MEMORANDUM FOR COMMANDING GENERAL, ARMY AIR FORCES
COMMANDING GENERAL, ARMY GROUND FORCES
COMMANDING GENERAL, ARMY SERVICE FORCES

Subject: Guided Missiles.

1. Memorandum from the Deputy Chief of Staff, same subject as above, dated 2 October 1944, is rescinded.

2. In order that research, development, and planning for operational use of weapons in the guided or homing missile field may be expedited, it is directed:

a. That the Commanding General, Army Air Forces have the responsibility for research, development, designation of military characteristics and operational use of all guided or homing missiles dropped or launched from aircraft;

b. That the Commanding General, Army Air Forces have the responsibility for designation of military characteristics and operational use of all guided or homing missiles whose capabilities for use are primarily those of complementing or supplementing the air effort employed against targets in rear of the immediate ground battle.

c. That the Commanding General, Army Ground Forces have the responsibility for designation of military characteristics and operational use of guided or homing missiles whose capabilities for use are primarily those of complementing, supplementing, or supplanting artillery fire or close cooperating air action in the immediate ground battle.

d. That the Commanding General, Army Air Forces have the responsibility for designation of military characteristics and operational use of guided missiles designed to complement, supplement or supplant interceptor fighters, when such missiles depend for sustenance primarily on forces other than momentum of the missile.

e. That the Commanding General, Army Ground Forces have the responsibility for designation of military characteristics and operational use of guided missiles designed to complement, supplement or supplant anti-aircraft artillery fire, when such missiles depend for sustenance primarily on momentum of the missile.

f. That the Commanding General, Army Service Forces have the responsibility for research and development for guided or homing missiles, other than those dropped or launched from aircraft, depending for sustenance primarily on momentum of the missile.

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g. That the Commanding General, Army Air Forces have the responsibility for research and development for guided or homing missiles depending for sustenance primarily on forces other than momentum of the missile.

3. While primary responsibility for research and development in the guided missile field is as set forth in paragraph 2 above, any Service having a basic technical ability in research in any of the components of such missiles, or for the control of such missiles, should be called upon for assistance.

4. It is expected that on the basis of the above general approach to the problem, the technical planning and developing agencies and the operational or tactical planning agencies of the major commands will freely coordinate their efforts and exchange information on developments, status of their projects, and contemplated operational use, to the end that, as any specific weapon approaches a point where it may be tactically useful, each command will be fully cognizant of the weapon's potentialities and will thus be assured of an opportunity to evaluate the weapon's effect on the use of its weapons and forces.

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HEADQUARTERS, ARMY AIR FORCES
WASHINGTON

IN REPLY REFER TO:

(AFDMA-2C)

6 JAN 1945

MEMORANDUM FOR THE CHIEF OF AIR STAFF. For Gen Tunberlake

SUBJECT: Progress Report to 3 January 1945 on JB-2 and JB-1 Robot Bombs.

1. The following is a brief summary of Progress to 3 January 1945:

a. JB-2 (Chinese Copy): The sixteenth JB-2 was launched on 19 December 1944 and the seventeenth on 28 December 1944; both from the 6° inclined ramp. These tests were made to determine if successful launchings could be made using four rockets and only 300 feet of the inclined ramp. Both tests were unsuccessful and indicated a 390 foot ramp is minimum necessary for successful launching. The eighteenth JB-2 was successfully launched on 3 January 1945 from the level track using 400 feet of track and 4 rocket motors. The engine cut-out for a short period, believed due to metering system, causing bomb to lose altitude slightly, but it recovered its preset altitude before diving-in at approximately its correct pre-set range. Further tests will start approximately 8 January 1945 with radio transmitters installed to permit tracking by radio direction finding equipment. Launchings from a B-17 airplane have been rescheduled for mid-February 1945. A high-pressure steam system is being developed for use in conjunction with the German Ramp to launch the JB-2. The steam system is considered the most promising launching method of the untested systems under investigation. The first tests are estimated for early March. Insufficient priority has interfered with the expansion of propellant powder facilities for the launching rockets. The Chief of Ordnance has been advised of this difficulty, so priority may be raised from present AA-1.

b. JB-1 (Northrop Tail-less Flying Bomb): Completion of the second JB-1 is dependent upon delivery of General Electric power plants. Most optimistic delivery promise is late January. Twelve intermittent jet (JB-2) engines were ordered delivered for use in cooling tests and installation in the remaining ten JB-1's on order. Preliminary estimates indicate the JB-1A, with one of these engines installed in a cooling shroud, will have a range of 200 miles at 400 miles per hour with an explosive load of 3400 pounds.

O P Echols

O. P. ECHOLS
Major General, U.S.A.,
Asst. Chief of Air Staff
Materiel and Services

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ADDRESS REPLY TO: COMMANDING GENERAL, ARMY AIR FORCES, WASHINGTON 25, D. 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
WASHINGTON (AFDMA-2C)

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DOD ltrs
8 Jan. & 30 June 1976
By ACSI/AC; Date 10/18/76

7 DEC 1944

MEMORANDUM FOR THE CHIEF OF AIR STAFF

SUBJECT: Progress Report to 1 December 1944 on JB-2 and JB-1 Robot Bombs.

1. The following is a brief summary of progress to 1 December 1944:

a. JB-2 (Chinese Copy): The ninth JB-2 was launched on the 500 ft. inclined ramp on 17 November 1944. Launching rocket explosions caused the failure of the bomb lug throwing the car from under the bomb, causing the bomb to crash. The tenth JB-2 launched on 21 November 1944, using only 400 feet of the inclined ramp, also was destroyed as a result of rocket explosions. The rocket explosions were traced to difficulties with the rocket grain size and are now believed rectified. Action has also been initiated to strengthen both the launching rail structure on future bombs and the launching hook attachment on future cars. Modifications to a launching car are under way to provide the required angle of incidence for the bomb to permit a launching from the level ramp. Radio transmitters are being installed in several bombs which will probably permit DF tracking over their entire range. The AAF Board have submitted a proposed Table of Organization. Procurement action for an additional 1000 JB-2 was initiated on 5 December 1944 to permit the present manufacturing facilities to continue without interruption. A total of seventy-four (74) JB-2s have been delivered to 1 December 1944. Eighty (80) are estimated for December. Preliminary studies indicate the B-17 can carry a JB-2 under each wing for air launching. Actual trials will not be expedited unless a statement of operational requirement is received.

b. JB-1 (Northrop Tail-less Flying Bomb): Launching of the first JB-1 has been delayed due to a lack of reliable launching rockets. Preparations have been completed to launch the JB-1 from the level ramp. High speed pictures will be taken of this launching.

E. M. POWERS
Brigadier General, U. S. A.
Deputy Asst. Chief of Air Staff,
Materiel and Services

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8 Jan & 20 June 1974
By AAUK NC, Date 10 JUL 74

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Organization of Specialized Heavy Group for Dropping Glide and Robot Bombs

General Wilson — 3 Dec 44

General Giles — 1

BMG/eva/3373

1. I am of the opinion that a specialized heavy group should be organized for the purpose of dropping glide bombs and robot bombs. We did not receive favorable comments on the glide bombing from the Eighth Air Force since all the groups employed have been trained on high level precision bombing and, of course, could not work up any interest in dropping glide bombs. Since we are going into the robot bombing business, believe that we should also consider the glide bombing angle as well.

2. Give me your comments.

Signed

BARNEY M. GILES,
Lieutenant General, U.S.A.,
Deputy Commander, Army Air Forces.

4 DEC 1944
AAG

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8 Jan & 20 June 1974
By AUDLC LC Date 10/15/74

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18 NOV 1944

MEMORANDUM FOR THE CHIEF OF AIR STAFF:

Subject: Progress Report to 15 November 1944, on JB-2 and JB-1 Robot Bombs.

1. The following is a brief of progress to 15 November 1944:

a. JB-2 (Chinese Copy): The fifth JB-2 bomb caught on fire and was jettisoned. The sixth flew eight miles and slowly settled to the water due to faulty controls. The seventh was set for a continual climb, flew 65 miles functioning perfectly, and was finally shot down by a P-63 while still climbing. The climbing speed was approximately 210 mph and the final altitude 6300 ft. The eighth, launched on 11 November (less than five months after the 13 June launching of the first V-1), levelled out correctly at 3500 ft. altitude, quickly outdistanced the accompanying P-63 and flew out of sight at a speed of approximately 400 mph. Assisted take-off with rockets has been used on a 500 ft. ramp with a 6° slope. Tests will now be conducted on shorter launching distances and on using the horizontal ramp. An investigation has been started with NACA on launching without a ramp. The German ramp will arrive late this month. Lt. Colonel Beaman has arrived from U. K. to assemble it. Decided difficulties will be encountered in securing fuel for the German type ramp. Radio development for controlling the JB-2 is on a 1A priority. Forty-six JB-2s have been completed. Delivery rate will reach 200 per month in December. Ford fuel metering difficulties have delayed production. One thousand JB-2s are on order and ATSC warns that any further orders should be placed promptly if production is to be continued. Investigation with 1A priority has been started on launching the JB-2 from the B-24, B-17, B-25, and B-26.

b. JB-1 (Northrop Tail-less Flying Bomb): First launching still scheduled for late November and will be without bombs due to unsatisfactory engine. General Electric engines with satisfactory thrust are promised for January and are estimated to give a range of 400 miles at a speed of 450 mph for a 4000 lb. bomb load. Ten models will also be built with one JB-2 type engine streamlined into airframe. A range of 220 miles at 404 mph with 3400 lbs. explosive load is estimated for this version.

(Signed) O. P. Echols

O. P. ECHOLS
Major General, U.S.A.,
Asst. Chief of Air Staff,
Materiel and Services

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By A.O.U.C. J.C. Date 10/8/74

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CVBC:dmf 71097
wrtn 22 Nov 44

23 NOV 1944

SECRET
SECURITY INFORMATION

Air Vice Marshal R. B. Mansell, RAF
British Air Commission
1785 Massachusetts Avenue, N. W.
Washington, D. C.

Dear Air Vice Marshal Mansell:

I wish to acknowledge receipt of your letter of 10 November 1944 and to concur in the desirability of having a British technical mission composed of five or six specialists visit the United States to examine developments in the field of guided missiles and to exchange views on matters of common interest. However, in order to provide for complete coverage of the subject, I recommend that all agencies of the British Government which are interested in the problem of guided missiles, including the Ministry of Aircraft Production, be represented on the mission.

I note that an Inter-Service Committee has been set up in London to coordinate British guided missile developments, and it may be that the proposed mission can be accredited to this Committee.

I understand that Dr. Alexander King of the British Central Scientific Office, Washington, is now in London. He is familiar with this matter, and it may be profitable for him to consult with the Director of Scientific Research of the Ministry of Aircraft Production.

Very sincerely yours,

Signed

BARNEY M. GILES,
Lieutenant General, U. S. Army,
Deputy Commander, Army Air Forces and
Chief of Air Staff

SEC. AIR STAFF

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23 NOV 1944

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9 Jan. & 20 June 1974
By NLJ/JC LC Date 10/15/96

The Joint Chiefs of Staff
Washington 25, D.C.

JSC/CS
Serial 11114

22 November 1944

MEMORANDUM FOR: Assistant Chief of Air Staff, Intelligence
Collection Division, Liaison Branch

Subject: Guided Missiles, Proposed British Technical Mission to the United States

1. Joint Security Control recommends that the enclosed reply be substituted for the proposed reply to Air Vice Marshall R. B. Mansell, RAF, attached to suspense and time sheet from Office of the Chief of Air Staff, case number 2555.

2. This matter has been discussed between Wing Commanders Vielle and Harmon of BAC, Drs. Alexander King and J. H. Wolfenden of BCSO, Commander R. D. Conrad, USN and others. It has been agreed that the proposed mission should represent all the interested British Ministries and Offices, rather than MAP alone, in order to render unnecessary further missions representing other British agencies in the field of guided missiles. Such an arrangement has the additional advantage of centralizing U. K. liaison in this field. Commander Conrad discussed this aspect of the problem with Air Vice Marshall Mansell on 20 November 1944 and with Dr. Wolfenden on 18 November.

3. The Coordinator of Research and Development, Navy Department further recommends that the DSR of MAP consult Dr. King, who is understood to be in London at present and who is familiar with the matter.

For the Joint Security Control:

George W. Cutting
Colonel, M. I.

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DOD Dir. 5 Jan. & 30 June 1954
By AFAD/AHC, HQ Date 8/18/74

AFICL-LI
GVBC:dnf 71097
wrtn 22 Nov 44

23 NOV 1944

SECRET
RELEASED

Air Vice Marshal R. B. Mansell, RAF
British Air Commission
1785 Massachusetts Avenue, N. W.
Washington, D. C.

Dear Air Vice Marshal Mansell:

I wish to acknowledge receipt of your letter of 10 November 1944 and to concur in the desirability of having a British technical mission composed of five or six specialists visit the United States to examine developments in the field of guided missiles and to exchange views on matters of common interest. However, in order to provide for complete coverage of the subject, I recommend that all agencies of the British Government which are interested in the problem of guided missiles, including the Ministry of Aircraft Production, be represented on the mission.

I note that an Inter-Service Committee has been set up in London to coordinate British guided missile developments, and it may be that the proposed mission can be accredited to this Committee.

I understand that Dr. Alexander King of the British Central Scientific Office, Washington, is now in London. He is familiar with this matter, and it may be profitable for him to consult with the Director of Scientific Research of the Ministry of Aircraft Production.

Very sincerely yours,

Signed
BARNEY M. GILES,
Lieutenant General, U. S. Army,
Deputy Commander, Army Air Forces and
Chief of Air Staff

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23 NOV 1944

CHIEF OF AIR STAFF

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By ALA/LK UC Date 10/31/76

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Guided Missiles

AC/AS, Intelligence (Collection Division, Liaison Branch) 15 Nov 1944

Chief of Air Staff WDG/mkm/5791 1

For draft of proposed reply to attached letter from the British Air Commission in accordance with the views expressed by the Air Communications Officer in his memorandum, dated 14 November 1944.

Signed
T. A. FITZPATRICK
Colonel, G. S. C.
Secretary, Air Staff

2 Incls.
Memo to CAS frm AFACO,
14 Nov 44
Ltr. to CAS frm British
Air Commission, 10 Nov 44
w/RS frm Col. Libby to Gen.
McClelland, 13 Nov 44

15 NOV 1944

452.11 Rockets (73)

RELEASED

J.L. 11/15/44

OFFICE SYMBOL	1	2	3	4	5	6
SIGNATURE OF RESPONSIBLE OFFICER				452.11 Rockets (73)		
INTERNAL OFFICE COORDINATION			~~SECRET~~			

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5 Jan & 30 June 1974
By ALADFUK, JC. Date 10/15/76

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Violation of Telephonic Security

The Air Inspector 5 Jan 45

1

Deputy Chief of the Air Staff, General Owens JRB/ee/72141

Your recommendation contained in paragraph 5 of the attached memorandum to General Giles dated 30 December 1944 is approved.

Signed

RAY L. OWENS
Brigadier General, U. S. A.
Deputy Chief of the Air Staff

Incl: memo w/incls

4 JAN 1945

File

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AAS 452.11 Rockets G2

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DOD Dirs.
8 Jan. & 20 June 1974
By ADDUK, AC, Date 10 DEC 76

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SECRET
By Authority of
The Commanding General
Army Air Forces
Date Initials

18 NOV 1944

Violation of Telephonic Security.

The Air Inspector

Chief of Air Staff

1. Inclosed are transcripts of four telephone conversations which represent serious violations of security on the part of Captains Mosher, Young, Andrews and possibly others.

2. It is directed that further investigation with a view to proper disciplinary action be undertaken at once. A copy of this directive has been furnished to the Assistant Chief of Air Staff, Material and Services and the Assistant Chief of Air Staff, Intelligence.

Signed
KAY L. OWENS,
Brigadier General, U.S.A.,
Deputy Chief of the Air Staff.

5 Incls:
Incl. 1 - S/I dtd 9 Nov 44 (dup)
Incl. 2 - S/I dtd 9 Nov 44 (dup)
Incl. 3 - S/I dtd 10 Nov 44 (dup)
Incl. 4 - S/I dtd 11 Nov 44 (dup)
Incl. 5 - MID Rushlip to Gen. Giles (dup)

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18 NOV 1944

452.11 Rachute (22)

COPY: Chief of Air Staff

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452.11 Rachute (22)

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By Authority of
The Commanding General
Army Air Forces
WMB
Date Initials

Capt. D. P. Hooker, Hq AAF, AC/AS, Mob.

Chief of Air Staff

Assistant Chief of Air Staff, Intelligence

1
LEM/WMB/hmm/cam 71895/4758

1. As per General Giles' oral instructions, purported violation of telephonic security by subject officer has been investigated. It is the opinion of this office that both subject officer, Captain Hooker and [illegible] others, as well, have seriously violated security, and that further investigation with a view to disciplinary action should be instigated.

2. The Assistant Chief of Air Staff, Materiel and Services, (Colonel Volandt) was notified by this office on Sunday, 12 November 1944, to contact Captain Hooker immediately and instruct him to make no reference to classified information in any telephone conversations in the future.

3. It is recommended that the attached Routing and Record Sheet to the Air Inspector, with copy to the Assistant Chief of Air Staff, Materiel and Services, be signed by the Chief of Air Staff.

JAMES P. HODGES
Major General, U. S. Army
Assistant Chief of Air Staff,
Intelligence

1 Incl:
R&R, subj: Violation of
Telephonic Security, w/3 Incls.

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CONFIDENTIAL

Lt. Col. Stace/lb/4908

(AFDMA-3C) OCT 28 1944

MEMORANDUM FOR DEPUTY CHIEF OF AIR STAFF (Brig. Gen. F. H. Smith)

SUBJECT: Review of Guided Missiles Development Projects.

1. The AC/AS, M&S, is now holding a periodical review of development project priorities. A review of guided missiles research and development projects will start at 1300 on 2 November 1944 in Room 40-870.

2. The Air Technical Service Command has been instructed to prepare a recommendation for classifying each guided missiles project in both of the following classification systems:

a. AAF Materiel Demobilization Plan, 23 September 1944.

b. Engineering Priority System.

3. A description of these classification systems is attached.

4. This information was forwarded to the Air Communications Officer; AC/AS, OC&R; AC/AS, Training; and the Air Ordnance Officer, AC/AS, M&S, with the request that personnel qualified to recommend the assignment of priority attend this review.

5. It is desired that the guided missiles development priorities resulting from this review will form a well balanced program of real value to the Army Air Forces and to the Armed Forces as a whole. Direct invitations to attend the review are being sent therefore to the following:

a. ARMY:

(1) Dr. H. L. Bowles, Expert Consultant to the Secretary of War.

(2) Brig. Gen. W. A. Borden, New Developments Division, War Department Special Staff.

(3) Brig. Gen. F. H. Smith, Deputy Chief of Air Staff

(4) Maj. Gen. H. H. Oldfield, Special Asst. for Anti-Aircraft.

(5) Brig. Gen. H. M. McClelland, Air Communications Officer

(6) Brig. Gen. H. E. Gross, Chief, Requirements Div. AC/AS,OC&R

(7) Brig. Gen. R. G. Coupland, Air Ordnance Officer

(8) Col. G. W. Trichel, Rocket Development Div., Office, Chief of Ordnance.

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SAS 452.11 Rockets (70)

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Review of Guided Missiles Development Projects (Cont'd)

b. Office of Scientific Research and Development:

(1) Dr. V. Bush, Director

(2) Mr. H. H. Spencer, Div. 8, N.D.R.C.

c. U. S. Navy:

(1) Rear Admiral J. A. Furer, Coordinator of Research and Development.

4. The purpose of this Memorandum is to invite Brig. Gen. Smith and personnel from his office concerned with the guided missiles program to the guided missiles review.

J. F. PHILLIPS
Colonel, Air Corps
Chief Materiel Division
Asst. Chief of Air Staff,

1 Att.
Desc. of Class. Systems.

AFDMA-2

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By SAF/AA UC: Date: 9/18/96

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Guided Missiles

12 Oct 44

AC/AS, Materiel & Services
Attn: GENERAL ECHOLS
xxxx Thru AC/AS, Operations, Commitments & Requirements
Management Control

PWT/eva/5265 1

FROM: Chief of the Air Staff

1. The attached memorandum outlining responsibilities in connection with guided missiles has been noted. General Arnold, General Giles and Dr. Bowles are cognizant of this decision.

2. It is expected that Management Control will pick up this responsibility and assign the pertinent parts thereof to the appropriate agencies in Headquarters, Army Air Forces.

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

1 Incl
Memo to DAS frm M&S
this subj dtd 10 Oct
w/1 incl: memo frm
Gen. McNarney to
CG,AAF this subj 2 Oct.

12 OCT 1944

452.11 Rockets (67)

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1 SAS 452.11 Rockets (67) SAS.

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8 Jan. & 20 June 1974
By ALD/CK LC. Date 10/18/76

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Maj.V.A.Stace/lb/6440

(AFDMA-2F)

10 OCT 1944

MEMORANDUM FOR DEPUTY CHIEF OF AIR STAFF

SUBJECT: Guided Missiles

1. Forwarded for your information is the attached Memorandum from Lt. General J. T. McNarney.

2. This Memorandum was delivered directly to AC/AS, Materiel and Services.

(Signed) O. P. Echols

O. P. ECHOLS
Major General, U.S.A.,
Asst. Chief of Air Staff,
Materiel and Services

1 Att.
Memo. dtd. 2 Oct. 1944

CONFIDENTIAL

OFFICE SYMBOL	1 AFDMA-2	2 AFDMA-	3	4	5	6
SIGNATURE OF RESPONSIBLE OFFICER	RCWatson					
INTERNAL OFFICE COORDINATION	mf				AAF 452.11	

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By AFAG/IS, LC. Date 10/08/76

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WHD/shu/2100
(AFACT-6)

Subject: Guided Missiles, A. A. F. Manual No. 19 dated 21 August 1944 2nd Ind

Hq Army Air Forces, Washington 25, D. C., 29 September 1944.

To: Chief of Naval Operations, Navy Department, Washington, D. C.

1. Reference is made to paragraph 2 of basic communication from the Navy Department, Bureau of Ordnance to the Deputy Chief of Naval Operations for Air. Army Regulation 380-5, governing registered Army documents, does not direct that all SECRET publications shall be registered. The authority to register such publications is vested in the officer authorized to originate and issue such classified documents, and only such documents will be registered as is deemed necessary in the interest of national defense. It is further stated that, "Only documents of exceptional importance will be registered."

2. In reference to paragraph 3 of basic communication, it is felt that the technical detail rather than the scope of the information, should be the determining factor in any decision to register a publication, AAF Manual No. 19 is neither a technical nor detailed presentation of Guided Missiles. Duplication could not be made of any of the missiles from the descriptions given in the manual.

3. Much of the material contained in AAF Manual No. 19 was obtained by a review of numerous publications, the majority of which were not registered. The registration of AAF Manual No. 19 would, for the sake of consistency, necessitate the registration of all other publications on the subject. Due to the size of the distribution of all of the publications, and the length of time that they have been in the field, registration at this time would be a futile task, requiring months for its completion.

4. For the reasons stated above, AAF Manual No. 19 was not registered and the SECRET classification given to the manual is considered sufficient to insure its security.

For the Commanding General, Army Air Forces:

WILLIAM E. WEISE
Brigadier General, U. S. Army
Assistant Chief of Air Staff,
Training

AFACT-6

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052.11 Rockets (6-8-44)

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8 Jan. & 20 June 1974
By [illegible] NC Date 10/18/76

Robot Bombs

Assistant Chief of Air Staff, OCMR
Atten: General Craig
Chief of the Air Staff

3 October 1944

1

MAL/nd/3373

1. With reference to the progress reported on the memorandum dated 27 Sept. General Giles desires that you send a message to both General Spaatz and General Baker telling them briefly how we are getting along in the manufacture of these items and asking them to establish a requirement for them.

Signed

Incl:
SECRET Memo to CAS fr
Gen. Echols dtd 27 Sept.
re above subj.

MILLARD A. LIBBY
Colonel, G. S. C.
Executive, Chief of the Air Staff

452.11 Robots (59)

Dispatched
3 OCT 1944

Return to
Air Staff
Sec/Gen
SE 1047

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See 452.11 Robots (59)

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8 Jan. & 20 June 1974
By ACSIGC JC. Date 10/18/76

~~SECRET~~

Col Sweetser/sc/74811
AFREQ/T
wrtn Oct 44

REWRTN
Maj Stebbins/bs/5132
AFDCR
7 Oct 44

8 OCT 1944

MEMORANDUM FOR THE CHIEF OF AIR STAFF

Subject: Guided Missiles

1. On 3 October 1944 you directed Assistant Chief of Air Staff, OCR to prepare a cablegram to Generals Spaatz and Eaker pertaining to ETO and MTO requirements for JB-2's and JB-1's.

2. A review of the progress of the JB-2's and JB-1's discloses that the unsatisfactory progress of the JB-1's is such that the project may be dropped. In any event the bomb will not be sufficiently developed for offensive use for some months.

3. It is therefor recommended that a cable (attached) pertaining only to progress of JB-2 development and theater requirements therefor be forwarded.

1 Attach. (cable)

Signed
WILLIAM F. McKEE
Colonel, U.S.A.
Acting Asst. Chief of Air Staff
Operations, Commitments & Requirements

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SAS 452.11 Package #1 SAS (66)

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SECRET

Col Sweetser/ac/74811
A[illegible]C/T
wrtn 7 Oct 44

REWRTN:
Maj Stebbins/ks/5132
APOCR
7 Oct 44

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8 Jan. & 30 June 1974
By ALAJUK, GC, Date 10/15/76

SECRET
By Authority of
The Commanding General
Army Air Forces
7 Oct 44
Date Initials
8 OCT

MEMORANDUM FOR THE CHIEF OF AIR STAFF

Subject: Guided Missiles

1. On 3 October 1944 you directed Assistant Chief of Air Staff, OCR to prepare a cablegram to Generals Spaatz and Eaker pertaining to ETO and MTO requirements for JB-2's and JB-1's.

2. A review of the progress of the JB-2's and JB-1's discloses that the unsatisfactory progress of the JB-1's is such that the project may be dropped. In any event the bomb will not be sufficiently developed for offensive use for some months.

3. It is therefor recommended that a cable (attached) pertaining only to progress of JB-2 development and theater requirements therefor be forwarded.

1 Attach. (cable)

Signed

Acting, [illegible] Chief of Air Staff
Operations, Commitments & Requirements

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Robot Bombs

Air Ordnance Officer

6 Sept. 1944

Chief of the Air Staff

1

BMG/ne/3373

1. As a result of a meeting we had with General Arnold 5 September on robot bombs, it is desired that you take action as soon as practicable to design and produce suitable loading equipment for the robot bombs.

2. Submit a report within the next thirty days giving the status of this project.

BARNEY M. GILES,
Lieutenant General, U.S.A.,
Chief of the Air Staff.

DECLASSIFIED
7 SEP 1944
AAG

452.11 Rockets (59) A

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SAS 452.11 Rockets (59) B

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By BLOCK LC. Date 10/18/74

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Robot Bombs.

General Echols

6 Sept. 1944

Chief of the Air Staff

1

BMG/nc/3373

1. As a result of our meeting yesterday with General Arnold on the robot bombs, it is believed that it would be a good idea to submit a report about every two or three weeks, giving the status of this project.

BARNEY M. GILES,
Lieutenant General, U.S.A.,
Chief of the Air Staff.

452.11

(55)

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7 SEP 1944
BMG

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452.11 Rockets (55)

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8 Jan. & 20 June 1974
By: A(N)(UK, JC Date 10/18/76

Standard 5" HVAR (T[illegible]4) Rockets

To: Secretary of Air Staff

DATE

From: Asst C/AS, Operations, Commitments & Requirements

Comment No. 2
Maj McKay/hmb/72675

452.11 Rockets (58)

The attached memorandum for the Asst. Chief of Air Staff, Material and Services is forwarded for signature.

1 Incl - n/c
1 Incl added - Memo as listed above.
Fighter & Air Def Br_____
Fighter Section_____
Requirements Div_____

for Wm McKee

H. A. CRAIG
Major General, USA
Asst Chief of Air Staff, Operations, Commitments and Requirements

SAS 452.11 Rockets (58)

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8 Jan. & 20 June 1974
By ALR/DK LC; Date 10/15/76

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AFRAD/F
Maj McKay/hmb/72873
wrtn 26 Sept 44

28 SEP 1944

MEMORANDUM FOR THE ASSISTANT CHIEF OF AIR STAFF, MATERIEL AND SERVICES:

Subject: Standard 5" HVAR (T-64) Rockets

1. The overall tactical plan is to use rockets on all fighter aircraft. More detailed tactical planning cannot be done until launching equipment is provided or until such time as positive information will be available as to when this equipment will be forthcoming. Information from your office indicates that all production fighters will be coming off the line equipped with "zero" length launcher rails on and after 1 January 1945. Retroactive kits to equip aircraft now in service will be available as follows:

Type Airplane	Number of Kits	Date Available
P-38	500	15 December 44
P-47	1,000	1 January 45
P-51	750	15 December 44
Total -	2,250	

2. On the basis of the foregoing information, it can reasonably be assumed that by 1 January 1945, 2,250 assorted P-38, P-47 and P-51 airplanes can be equipped for firing rockets. This number of kits would fully equip 30 fighter groups for the tactical employment of rockets.

3. We have a total of 64 fighter groups tactically deployed and with the attrition airplanes equipped with "zero" length launchers after 1 January 1945, we can gradually increase our number of rocket airplanes from 30 groups to 64 during the year of 1945. The mission rate of fighter aircraft is 15 per month, 5 of which will employ rockets. On this basis our tactical requirement for 5" HVAR rockets would be 90,000 per month beginning on 1 January 1945 and gradually increasing to 192,000 per month when all of our 64 fighter groups are equipped with "zero" length launcher rails. This does not include any allowances for training or pipe lines

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4. From experience gained by employment of rockets on a small scale in France and the CBI, it is not believed that it will be necessary to allow rockets for training in the theaters. A requirement has been established for sub caliber rockets for training of replacement pilots in rocket firing.

Signed

FREDERIC H. SMITH, JR.
Brigadier General, U. S. Army,
Deputy Chief of Air Staff

DECLASSIFIED
28 SEP 1944
AG

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SECURITY CLASSIFICATION

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6 Jan. & 20 June 1974
By [illegible] JC. Date 10/15/76

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AFDAO-4A

25

16 SEP 1944

AAF 900.4/60 (12 Sep 44)

MEMORANDUM FOR THE CHIEF OF THE AIR STAFF:

Subject: Standard 5" HVAR (T-64) Rockets

1. Pursuant to directive received from the Chief of the Air Staff to secure sufficient 5" HVAR rockets to fulfill the Army Air Forces' 1944 requirement, the following information is furnished:

a. On 16 May 1944, the Army Air Forces requested the Chief of Ordnance, thru the Commanding General, Army Service Forces, to develop and produce for the Army Air Forces' use in 1944, fifty thousand (50,000) 5" HVAR rockets. Since that date, an agreement was reached between responsible authorities for the Navy to become the procuring agency for both the Army and the Navy.

b. The Army Service Forces are manufacturing and furnishing the Navy the Ballistite powder utilized as a propellant for these rockets. Existing Army facilities for the production of finished propellant are entirely inadequate to meet the present requirements. Expansion of facilities, and purchase and installation of necessary production equipment are progressing expeditiously under great urgency. The "bottleneck" during the remainder of this year will be primarily in the production of finished grains due to the lack of needed extrusion equipment. Scarcity of the 5" HVAR rocket can only be alleviated by eliminating the "choke-point" in manufacture of the finished propellant. Unless a means can be found to overcome the limited extrusion capacity, independent action by the Army Service Forces in the manufacture of rocket components will not improve the overall production program. Listed below is the latest available information on the various estimates of production and proposed allocation of 5" HVAR rockets for the remainder of 1944, which is unsatisfactory to the Army Air Forces:

Month	Army Estimate of Rockets based on Powder	Navy Production Estimate	Navy Production Estimate discounted by 12-1/2%	Army Allocation
Aug	5,200	4,000	3,500*	1,200
Sep	11,280	7,000	6,125	2,100
Oct	18,000	10,000	8,750	3,000
Nov	25,000	13,000	11,375	4,000
Dec	25,000**	23,000	20,125	7,000
Total	84,480	57,000	49,875	17,300

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8 Jan. & 20 June 1974
By NARS, DC Date 10/15/96

AAF 900.4/60 (12 Sep 44)
Subs Standard 5" HVAR (T-64) Rockets

* 5,000 actually produced.

** The Chief of Ordnance estimates producing, in December 1944, an additional 30,000 finished propellent grains for loading 5" HVAR rockets from dies now being procured for use with existing 10-1/2" extruding presses.

c. The following action has been initiated by this office in an effort to secure 5" HVAR rockets in quantities necessary to fulfill the Army Air Forces' requirements:

(1) An interview was obtained with Admiral Reeves, Chairman, Joint Munitions Assignment Board, to discuss the allocation of rockets to the Army Air Forces. Admiral Reeves stated that existing allocation of rockets was both fair and justifiable based on the relative Army and Navy Air Force Squadrons trained and equipped for rocket employment. The Navy now has 125 trained rocket squadrons on aircraft carriers, and an additional 90 trained squadrons will be in service within 90 days. The Army has one (1) squadron trained and equipped for rocket employment and two (2) additional squadrons in process of being trained and equipped. Existing Army Air Forces' allocation, as shown in the last column, paragraph 1b, "Army Allocation," was made on the following basis: The total estimated monthly production is discounted by twelve and one-half per cent (12-1/2%) to allow for rejections; and, subtracted from the discounted production, is a quantity of rockets necessary for developmental purposes. Approximately forty per cent (40%) of the remaining rockets are allocated to the Army and sixty per cent (60%) to the Navy. Allocation of any serviceable rockets from the 12-1/2% allowed for rejects, and excess monthly production above the estimated quantities, is to be made on the same percentage basis as soon as available.

d. It is requested that complete operational plans for employment of the 5" HVAR rocket by the Army Air Forces be submitted to

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AAF 900.4/60 (12 Sep 44)
Subs Standard 5" HVAR (T-64) Rockets

the Air Ordnance Officer by OCR, Requirements Division, for presentation to the Joint Munitions Assignment Board as justification for a larger allocation of rockets. The operational plans should include specific dates on which groups will have planes equipped with Zero rocket mounts and personnel trained in the use of the rocket weapon. The recent interview with Admiral Reeves indicates it will be fruitless for the Army Air Forces to attempt to secure, through any agency, a greater allocation of 5" HVAR rockets until evidence can be produced of the existence of large numbers of rocket-equipped aircraft with trained pilots and the targets for which only this particular type of rocket is suitable.

(Signed) O. P. Echols

O. P. ECHOLS
Major General, U.S.A.,
Asst. Chief of Air Staff,
Material and Services

-3-

SECRET

Gen 452.11 Rocket (5)

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DOD Itrs.
5 Jan. & 20 June 1974
By A.D.U.S. JC, Date 10/18/74

SECRET

Standard 5" HVAR (T-64) Rockets

AC/AS, OCAR 21 Sept 1944

Chief of the Air Staff

1
FRS,Jr:JT 6371

1. Request that your office procure the information requested in paragraph 1d. of the basic communication.

2. It is believed that General Echols' conclusions are sound, and that we must secure real justification for our demands for a greater allocation of 5" HVAR rockets.

Signed

1 Incl.
Memo same subj 9-15-44
from M&S

F. H. SMITH, JR.,
Brigadier General, U. S. Army,
Deputy Chief of the Air Staff.

21 SEP 1944
AAG

452.11 Rockets (5P)

1/e

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SAS 452.11 Rockets (5P)

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DOD ltrs
8 Jan. & 20 June 1974
By ALNUK NC, Date 10/8/76

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DECLASSIFIED

Standard 5" HVAR (T-64) Rockets.

Asst C/AS, MRS, (Air Ordnance Officer)

Chief of the Air Staff

8 SEP 1944 1

It is directed that the Air Ordnance Officer make every effort to secure for the Army Air Forces a sufficient quantity of 5" HVAR (T-64) rockets to fulfill the AAF 1944 5" rocket requirement and to expedite production to the maximum extent practicable. If a satisfactory agreement cannot be reached with the Navy, the Army Service Forces should be requested to initiate independent action as necessary to more adequately meet the AAF 5" HVAR rocket requirement.

BARNEY M. GILES,
Lieutenant General, U. S. Army
Chief of the Air Staff.

[illegible]
3 SEP 1944
AAG

452-11 Rockets (58)

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452-11 Rockets (58)

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6 Jan. & 20 June 1974
By AUTH: JC; Date 10/18/76

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~~SECRET~~
By Authority of
The Chairman
Joint Chiefs of Staff
15 Sept 44

11 SEP 1944

MEMORANDUM FOR THE CHIEF OF AIR STAFF

SUBJECT: Standard 5" HVAR (T-64) Rockets - Army and Navy Proportions of Production

I. Object

To report the situation for the information of the Chief of Air Staff.

II. Discussion

1. The 5" HVAR rocket has been standardized for Army and Navy air use. The 5" HVAR rocket is superior to the 4½" rocket, both in performance and the type of launching equipment required. The Army Air Forces will use the 4½" rocket until all requirements can be met by the 5". Most Air Forces in theaters of operation are reluctant to use the 4½" rocket and all prefer the 5" HVAR.

2. The facilities for the production of the 5" HVAR rocket are insufficient to meet total Army and Navy requirements. The Army Ordnance Department has elected to permit the Navy to supervise and control all 5" HVAR rocket production.

3. The AAF has stated a 1945 requirement of 50,000 rockets per month. This is believed wholly consistent with the size of the AAF, the method and contemplated extent of employment of this weapon. On the other hand, the Navy has stated a 1945 requirement of 220,000 per month. Such requirement must be considered either inconsistent with present known contemplated size of Naval aviation or based on a contemplated expansion of Naval aviation not generally made known to this Office. Present plans of the Office of the Chief of Naval Operations are to allocate to the AAF in 1944 approximately one-third of the 5" rocket production and to the Navy approximately two-thirds of that production. On this basis, the Navy, estimating a total production of approximately 52,175 rockets during the remainder of 1944, contemplates allocating to the AAF approximately 17,800 and to the Navy 34,375. This provides approximately one-third of the AAF 1944 requirement. The Army Service Forces estimates, however, a 1944 production possibility of approximately 98,480 rockets. Should the Army be allocated one-half of the Army Service Forces estimated production possibility, the AAF requirement would be approximately met.

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8 Jan & 20 June 1974
By NLAXA LC. Date

III. Recommendations

That the attached communication be signed and forwarded to the ACAS, M&S (Air Ordnance Officer).

1 Incl:
RAR

H. A. Craig
Major General, U. S. Army
Asst. Chief of Air Staff
Operations, Commitments & Requirements

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AFSAS

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WAR DEPARTMENT GENERAL STAFF
DISPOSITION FORM

NDD

DECLASSIFIED
DOD ltrs
8 Jan & 20 June 1974
By ALW/LC Date 10/15/76

CLASSIFICATION BY
DIRECTOR NDD

8/22/44 JDR
Lt. Colonel Henderson/73484
22 August 1944

SUBJECT: Aircraft rockets.

TO: CG, AAF

FOR: Information and comment.

WM. A. BORDEN
Brigadier General, G. S. C.
Director, New Developments Division.

/s/ JOY DOW, JR.
JOY DOW, JR.
Major, G. S. C.
Executive, New Developments Division

1st Ind. AFIMP/WJK/ebd/4525
Headquarters Army Air Forces, Washington 25, D. C., 28 August 1944

TO: The Director, New Developments Division, War Department Special Staff, War Department, Washington 25, D. C.

1. This Headquarters is advised that subject rocket films have been ordered printed as requested.

2. Mr. S. W. Cummings, Industrial Engineer, Division 3, 705 21st Street, N. W., Washington, D. C., telephone District 3707 has the order at hand. The films are being developed on the West Coast.

3. Mr. Cummings is awaiting information on exact shipping address.

For the Commanding General, Army Air Forces:

1 Incl
n/c

W. J. PAUL
Colonel, Air Corps
Executive
Office of Asst Chief of Air Staff,
Intelligence

COPY FOR THE SECRETARY OF THE AIR STAFF

DISPATCHED
29 AUG 1944
AAG

~~CONFIDENTIAL~~ SAG 452.11 Rockets (55)

SAG 452.11 Rockets (55)

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DOD Itrs
E.O. 12356 & 20 June 1974
By NLRRA NC Date 10/28/74

CONFIDENTIAL

1st Ind

AG 334/73
HEADQUARTERS USAFBOA, APO 958 15 August 1944

TO: WAR DEPARTMENT, NEW DEVELOPMENTS DIVISION, WASHINGTON 25, D. C.

Approved.

For the Commanding General:

HOWARD M. CRAIG,
1st Lt., AGD
Assistant Adjutant General

2d Ind

New Developments Division, War Department Special Staff, Room 3C 972, the Pentagon, Washington 25, D. C. 22 August 1944.

TO: Office of Scientific Research and Development, 1530 P Street, N. W., Washington 25, D. C. ATTENTION: Dr. Karl T. Compton, Chief, Office of Field Service.

Noted and forwarded. Copy has been provided Commanding General, Army Air Forces for information and comment.

WM. A. BORDEN,
Brigadier General, U. S. C.,
Director, New Developments Division.

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LOR-OSS #27 CONFIDENTIAL

HEADQUARTERS UNITED STATES ARMY FORCES, PACIFIC OCEAN AREA
Operational Research Section
APO 958

DECLASSIFIED
DOD ltr
8 Jan. & 20 June 1974
By MAHLE NC Date 10/1/76

12 August 1944

Subject: Aircraft rockets.

Thru: War Department,
New Developments Division,
Washington 25, D. C.

To: Office of Field Service,
1530 "P" Street NW,
Washington 25, D. C.

Attn: Dr. Alan T. Waterman.

1. Dr. L. A. Richards passed through the Theater this week and briefly visited with us on Thursday and Friday. While he was here, we arranged for a showing of certain of his films on rockets to almost the entire membership of the G-3 Section of the Headquarters Command.

2. Of the material shown by Dr. Richards, his film #12, dealing with Navy aircraft rockets, (described as 5" rockets and "Tiny Tims"), was of particular interest. We have been asked if we could arrange to show this film to other organizations in this command. Unfortunately, Dr. Richards has already left on his way to the Southwest Pacific and had taken his films with him.

3. If is evident that the Army Air Force units in this area, and Ordnance Officers generally, would appreciate information on this subject, even though this film deals primarily with the Navy development. It would be very helpful if you could arrange to have a set of films dealing with rockets, and especially aircraft rockets, dispatched to us as soon as convenient. We should particularly like to have you include in this material, the reel listed by Dr. Richards as film #12.

HH:jmc

LAURISTON C. MARSHALL,
Chief, Operational Research Section,
Headquarters, Pacific Ocean Areas.

Copies to: CG, POA
NRD

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DOD ltrs
6 Jan. & 20 June 1974
By ACATUK J.C. Date 10/18/74

SECRET

AFDIN-5/2

18 August 1944

SUBJECT: Projects MX-543 and MX-544

TO: Chief of Engineers (Attention: Engineering and Development Division)

1. Confirming previous verbal request, it is requested that the Chief of Engineers perform the necessary construction in development work on launching ramps for pilotless projectiles.

2. Confirming the requirements established by representatives of Wright Field and this Headquarters, in conjunction with your representative at Los Angeles on 14 August, it is requested that:

a. There be constructed at Muroc Army Air Base by 1 September 1944 a section of railroad track 2,000 feet long using 75 or 80 lb steel rails.

b. There be constructed at Eglin Field by 10 September 1944, two sections of railroad track each 500 feet long of 75 or 80 lb steel rail.

c. There be accomplished such additional construction and development work as may be required in carrying out projects MX-543 and MX-544 at these two locations.

3. In view of the very limited time available to perform this work, it is requested that your office initiate immediate action on these projects.

For the Commanding General, Army Air Forces:

Signed by Colonel H. E. Fisher

(This was coordinated with General Timberlake's Office on 18 August 1944 by Colonel W. H. Kricker)

Lt.

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Subject: Development of Self-Propelled Guided Missiles.

DECLASSIFIED
DOD dirs
8 Jan. & 20 June 1974
By: ACAI(IC) AC Date: 10/18/76

452.11 Rockets (52)

TO: Chief of Air Staff DATE: 25 AUG 1944

From: AC/AS, Materiel and Services Lt. Col [redacted] Comm. No. 2 [redacted]/6440

1. Development of Self-Propelled Guided Missiles. On 2 August 1944, Materiel Division directed Materiel Command on the above subject as follows:

"From a comparison of these papers (Military characteristics drawn by Ordnance and the Air Forces were attached) it will be obvious that separate investigations by the Ordnance and the Air Corps have been started and that there is likely to be duplication all along the line. This may well lead to competition for scientific personnel, a clashing of priorities for developmental equipment and facilities, and eventually, an unnecessary overloading of production of centers.

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1 SAS 452.11 Rockets (52)

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DECLASSIFIED
DOD dirs
8 Jan. & 30 June 1972
By M.A.M.C. Date 10/18/76

SECRET

Development of Self-Propelled Guided Missiles

25 AUG 1944

Chief of Air Staff

AC/AS, Materiel and Services

2

Lt Col Richardson/mw/6440

"It is not contemplated that duplicate projects be started. The Air Corps is already joined in a liaison capacity with various Ordnance projects now going on at the California Institute of Technology in propulsive systems. Further, it is believed that both the Ordnance and the Air Corps would benefit from a more general interchange of experience and a pooling of available personnel and facilities in these propulsive projects, whether intended for the development of guided missiles or other purposes.

"It is to be noted that the military characteristics drawn by Ordnance call for a maximum dispersion of 2 per cent — or 20 mils. Conceivably this could easily be met in the case of a projectile propelled by a gun but this is not likely to be the means used in projectiles intended to travel 50 to 200 miles. Rocket propulsion or some form of jet will probably be used. This means variations in the trajectory that would eliminate the possibility of a 20 mil maximum dispersion unless some means of control during flight is used.

"The Air Corps has much experience in the use of automatic pilots, gyro-servo mechanisms, radio links for remote control as well as in the fields of radar target seeking devices, light seekers, heat seekers, and is in close touch with NDRC laboratories doing work in these particular fields of research.

"The Signal Corps has facilities and a large fund of experience in radio and radar links.

"It is directed that Materiel Command submit a plan calculated to bring about a joint operation with Ordnance and the Signal Corps on the development of long range projectiles. The plan should be drawn up and in the possession of this office as soon as possible."

2. In reply to this directive Materiel Command has submitted a plan as follows:

a. That the Materiel Command of the Army Air Forces continue to direct the development of guided missiles, including any joint developments.

b. That Wright Field, where for several years work has been going on under Materiel Command direction and involving both Ordnance and Signal Corps cooperation, will continue to be the developmental center.

c. That necessary Ordnance personnel or facilities will be called

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Development of Self-Propelled Guided Missiles

Chief of Air Staff

25 AUG 1944

AC/AS, Materiel and Services

2

Lt Col Richardson/mw/6440

upon by Materiel Command.

d. That Materiel Command will seek to consolidate military characteristics insofar as it is possible.

e. That experimental procurement will be made by Materiel Command.

f. That field tests will be conducted jointly.

3. Attached are two letters drafted for signature if this plan is concurred in:

a. To the Chief of Ordnance, setting forth the intentions of the Air Corps to embark on a considerable program of guided missile development including long range projectiles.

b. To the Secretary of War asking concurrence under 350-25 of Army Regulations for the Air Corps to pursue this course.

4. Concurrence in this program is requested. If granted it is asked that the attached letters be signed and forwarded.

(Signed) O. P. Echols

O. P. ECHOLS
Major General, U.S.A.,
Asst. Chief of Air Staff,
Materiel and Services

3 Incls.
Copy ltr GHRQT-5/91533
416 (S) (22 Jul 1944)
Ltr to Chief of Ordnance (undated)
Ltr to Secretary of War (undated)

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E Jan. & 20 June 1974
By ALAFUC LC. Date 10/15/74

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Development of Self-Propelled Guided Missiles

AUG 17 1944

AC/AS, Materiel and Services

Chief of Air Staff

1

1. Mr. Lovett has expressed concern that the attached letter from the Army Ground Forces, requesting the Army Service Forces to develop for artillery use self-propelled guided missiles, may result in a duplication of the Materiel Command's present development work in this field. It appears that there is no cause for immediate concern in this connection since the Service Forces appear to be exploiting the field of rocket developments whereas the Materiel Command is primarily interested in pilotless aircraft. Thus far the California Institute of Technology appears to have offered a satisfactory common laboratory meeting place for Ordnance and Materiel Command.

2. It is desired that you watch this situation closely and be alert to bring to the attention of this Office any duplication of developmental effort which may impend.

1 Incl
Copy ltr GNRQT-5/91533
416 (S) (22 Jul 1944)

Gund
Ken Wilson

Dispatch: 18 Aug. 44

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SAS 452.11 Rocket (52)

SAS 452.11 Rocket (52)

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DOD dirs
5 Jan. & 20 June 1974
NARS, Date 12/18/96

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AFREQ
Col Giffin/ek/4627
11 Aug 44

AUG 17 1944

Secret by authority of
CG AAF

Date Initials

MEMORANDUM FOR MR. LOVETT:

Subject: Pilotless Aircraft and Guided Missiles

1. I have made a careful investigation in connection with your memorandum on this subject, dated 2 August 1944, of the implications involved in the Army Ground Forces' request that the Army Service Forces proceed with the development of self-propelled guided missiles for artillery use.

2. The tentative military characteristics proposed by the Ground Forces for such weapons suggest a considerably more restricted development than that contemplated by the Air Forces. Thus far, there appears to be no threat of a duplication of effort in this connection between the Ordnance Department and the Material Command. Ordnance has been concentrating on rocket developments, while the Material Command, as you know, is undertaking the development of pilotless aircraft. A common laboratory meeting ground exists for both Ordnance and Material Command at the California Institute of Technology. We will be alert to watch for and head off any duplication of effort which may impend.

3. There appears to be ample room in the rocket field for both Air and Ground Forces. No question has arisen as to the primary interest of the Air Forces in pilotless aircraft type projectiles. I feel that in order to assure adequate future development, and whether or not an immediate need for its employment in combat should develop, it would be desirable to make operational use of our pilotless aircraft against the Germans at the earliest practicable date and am suggesting the advisability of such a measure to General Spaatz.

H. H. ARNOLD,
General, U. S. Army,
Commanding General, Army Air Forces.

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DOD 5200
E Jan. & 30 June 1974
By ALM/NARA, DC Date 10/15/96

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August 1944

MEMORANDUM FOR GENERAL ARNOLD

Subject: Piletless Aircraft and Guided Missiles

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DOD DIR. 5200.9

Yesterday Wright Field ran the first test on the duplicate of the German piletless aircraft jet-propelled engine which they built in the amazingly short time of three weeks. The program for the complete development of the piletless aircraft is well under way and great ingenuity and enterprise is being shown by the experimental and research engineers, using the basic material which I arranged to have brought back from England.

I observe in the "Minutes, Meeting of the General Council", dated July 31, No. 29, Paragraph 11, that the Commanding General of the Army Ground Forces states that it is believed to be practicable to develop a group or series of major caliber guided missiles of various sizes and that it is proposed to develop a self-propelled missile carrying an explosive charge of at least 2000 pounds, capable of being controlled (from the directing site) in speed, azimuth, elevation and range to within 100 yards of any selected target within the range of the missile.

This sounds as though it were an exact duplicate of the project already well advanced by the AAF which not only includes the ability to direct the missile from the launching site but to pick it up in the air and guide it if necessary or desirable, by aircraft.

Perhaps you will wish to get together with the Army Ground Forces and decide whose function such projects are. It seems clear to me that since the basic instrument is aircraft, since it is identical in many elements with our glide bomb, and since the control mechanism is an integral part of our aircraft system, responsibility should be left where it now is.

ROBERT A. LOVETT
Assistant Secretary of War for Air

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DOD ltrs
3 Jan. & 30 June 1974
By ALDAC, LC, Date 10/18/76

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22 Jul 1944

416 (S) (22 Jul 1944)
GNRQT-5/91533

SUBJECT: Development of Guided Missiles for Artillery Employment

TO: Commanding General, Army Service Forces
Attention: Research and Development Division
Room 4E 633, The Pentagon

1. Reference is made to letter from Army Ground Forces to Army Service Forces, dated 9 February 1944, file 416 (S) (9 Feb 44) GNRQT-5/71899, subject "Development of Antiaircraft Artillery Materiel," wherein the Commanding General, Army Ground Forces requested the initiation of a project for the immediate and expedited development of a major caliber radio or radar controlled antiaircraft rocket torpedo to combat high altitude high speed enemy aircraft and self-propelled bombs and missiles.

2. It is now common knowledge that the enemy threat, discussed in paragraph 2 of the reference in paragraph 1, above, has become a reality.

3. Since the enemy has demonstrated that major caliber self-propelled missiles can be projected many miles with a fair degree of accuracy, it is believed to be practicable to develop a group or series of major caliber guided missiles of various sizes, to deliver effective fire of greater destructive power at greater ranges and with greater accuracy than is attainable with conventional artillery. In this connection existing radar equipment can track a friendly aircraft, and from the intelligence gained thereby, direct the pilot to a position within approximately ± 100 yards, directly above any selected pin point terrestrial target at ranges up to approximately 50 miles from the radar site. With these capabilities available in existing radar equipment and with available knowledge of axis missiles, it appears feasible to develop jet-propelled missiles capable of being accurately guided to a selected target.

4. In addition to the antiaircraft requirement for a large very high speed missile as discussed in the reference in paragraph 1, above, there is a requirement for a group of very large guided missiles, as outlined in paragraph 3, above, suitable for seacoast and field artillery employment against fixed or slow speed land and seaborne targets. Proposed preliminary military characteristics upon which to

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predicate the development of an initial medium range guided missile for the latter mission are inclosed (Inclosure No. 1). Said military characteristics are not to be construed as the ultimate aim but are offered as a guide and as such do not preclude the acceptance of equipment which does not completely meet all requirements.

5. It is requested that:

a. The development of a medium range major caliber guided missile and associated fire control and directing equipment for terrestrial targets, predicated upon the accompanying tentative military characteristics, be initiated immediately on an "A" priority basis as a short term project aimed to produce a usuable effective weapon immediately.

b. This headquarters be informed as the approximate date that a set of the equipment contemplated in subparagraph a, above, can be made available for demonstration and test.

c. A separate project or projects be initiated for the more complete development of suitable self-propelled missiles and a completely integrated fire control system employing various combinations of equipment to meet the present and reasonably anticipated future heavy artillery requirements.

d. This latter group of projects be accorded the necessary priority to insure substantial deliveries of equipment, meeting the requirements of the using arms, within a year.

e. This correspondence be processed as expeditiously as possible and this headquarters be advised of the action taken.

For the COMMANDING GENERAL:

R. A. MEREDITH
Lt. Col., A. G. D.,
Asst. Ground Adj. Gen.

1 Incl
Tentative M/C's for Proposed
Artillery Guided Missiles Fire
Control System.

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DOD Wrs
8 Jan. & 20 June 1974
By [illegible] LC Date 10/18/74

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TENTATIVE MILITARY CHARACTERISTICS FOR PROPOSED ARTILLERY GUIDED MISSILES FIRE CONTROL SYSTEM

1. This is a combination of equipment to effect the delivery of accurate fire, in the form of major caliber self-propelled missiles, on terrestrial targets at medium ranges.

2. The system consists of:

a. A self-propelled missile carrying an explosive charge of at least 2000 pounds, capable of a speed of at least 360 mph to a range of at least 50,000 yards and preferably 100,000 yards, said missile to be capable of being controlled (from the directing site) in speed, azimuth, elevation and range to within ± 100 yards of any selected target within the range capabilities of the missile.

b. Control equipment either radio or rdar to insure reliable control of the missile from the directing site to point of target impact. Said control equipment shall not interfere with friendly equipment or be susceptible to interference from enemy equipment.

c. Directing site equipment in the form of:

(1) Launching racks or ramps for the missiles.

(2) Control equipment to direct the missile to any desired point within the range limitations of the missile.

(3) Accurate position finding radar which follows and tracks the course of the missile in flight for the purpose of guiding it to the target.

(4) Necessary plotting boards and associated equipment from which to secure range and azimuth data to selected targets.

3. The system shall be capable of launching one missile every five minutes.

4. The complete guided missile fire control equipment shall be as mobile as, and commensurate in size and weight with existing heavy Field Artillery Battery weapons and fire control equipment.

INCLOSURE NO. 1

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HEADQUARTERS AAF

ROUTING SLIP

TO → OFFICE & INDIVIDUAL IN TURN	DATE FORWARDED
1. Secretary of Air Staff	
2.	
3.	
4.	
5.	

FOR → FOLLOWING ACTION(S) AS CHECKED

	COORDINATION		NOTE AND RETURN		INFORMATION
	NECESSARY ACTION		RECOMMENDATION		FILE
	SEE OR PHONE ME		APPROVAL		SIGNATURE

COMMENT

Confirming conversation with Major Chapman, this particular case (4228) can be closed. OPD directed us not to implement the plan at this time. General Giles has been fully informed.

GEORGE V. HILL, JR.
Lt. Colonel, Air Corps

FROM →	OFFICE & INDIVIDUAL	PHONE
	AC/AS, Operations, Commitments and Requirements	

3-310. AF Rev. 1 Aug 1944

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DOD ltrs
8 Jan & 20 June 1974
By NARA, DC Date 6/28/74

~~SECRET~~

Secret by authority of CG AAF
11/9/45 Initials

HEADQUARTERS, ARMY AIR FORCES
WASHINGTON

IN REPLY REFER TO

FOR VICTORY BUY UNITED STATES WAR BONDS AND STAMPS

AFRED

1/20/45

Gen Wilson
Work out a
plan of action
Let's get
the ball rolling
Mr Spaatz
Please answer.

MEMORANDUM FOR THE CHIEF OF AIR STAFF:

Subject: Buzz Bomb (JB-2)

1. Reference top secret cable CM-IN-17060, dated 18 January 1945, from General Eisenhower to General Marshall, the plan proposed by AEF (100-a-day production and 300-a-day launchings for 10 days a month) can be accomplished as indicated in Tab A.

2. It is desired to point out, however, that under this plan approximately 1,716 troops will be idle in the theater for 20 days per month. If a launching rate of 300 a day for 30 days a month is contemplated, it can be accomplished as indicated in Tab B.

3. The total personnel requirements, broken down into launching squadrons, service centers and depots, for 100-a-day launchings 30 days a month, 300-a-day launchings 10 days a month, and 300-a-day launchings 30 days a month, are estimated to be as follows:

	* 100-a-day for 30 days a mo.	* 300-a-day for 10 days a mo.	* 300-a-day for 30 days a mo.
JB-2 Squadron	572	1716	1716
Service Center	1933	3405	5799
Depot	3087	3087	9261
TOTAL	5592	8208	16776

SAS 452.11 Rockets (5)

William F McKee

WILLIAM F. McKEE
Colonel, G.S.C.
Acting, Asst. Chief of Air Staff
Operations, Commitments & Requirements

2 Incls
1 - Tab A
2 - Tab B

* Above figures based on delivery of bombs by ASF to a depot near the port and the units handling the bombs from thereon; the port being approximately 115 miles from the launching sites.

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SAS 452.11 Rockets (87)

B-1045

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

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TAB A

DECLASSIFIED
DOD Rtrs.
8 Jan & 20 June 1974
By ADDUS, LC. Date 8/9/76

~~SECRET~~

LAUNCHING RATE OF 360 JB-2's A DAY 10 DAYS A MONTH

1. To meet an operational date of 1 September 1945, the War Department General Staff will have to direct the following:

a. Immediate assignment of full overriding priorities for obtaining machines, presses, tools, facilities, labor and critical materials involved in production of required ordnance equipment and ammunition, to include trucks, cranes, prime movers for field servicing units, warheads, explosive loads and launching powder.

b. Allocation of sufficient ship tonnage to insure the arrival of bombs, equipment and personnel in the theater in time to permit operational use of JB-2's as indicated in paragraph 1 above.

c. An increase in the AAF Troop Basis of 2996 officers, warrant officers and enlisted men (2616 for JB-2 units and 380 for permanent party personnel). The AAF will furnish, from its present Troop Basis, authority 5592 officers, warrant officers and enlisted men, or the equivalent of one JB-2 squadron with associated services.

d. An intake, or source, of 7088 bodies (by inactivation of AGF, ASF, or AAF units; cessation of transfer of AAF personnel to the AGF; immediate resumption of selective service intake), for the JB-2 units, associated service units and necessary permanent party personnel. Bodies

e. Concurrence in priority required by the War Manpower Commission for the immediate diversion of approximately 4400 skilled air frame and instrument workers to manufacture of JB-2 bombs.

2. The above program, as a preliminary estimate, will occasion the following interference with the war effort:

a. Diversion of 22½ Liberty ships commencing in August for the sole purpose of transportation of JB-2 bombs and, in addition, diversion of further tonnage in August for the movement of units and equipment to the theater.

b. An initial loss of approximately 5% in artillery ammunition production until facilities are constructed capable of replacing this production loss.

c. A loss of approximately 3 to 4% of peak bomb production until facilities are constructed capable of replacing this production loss.

d. A possible slight reduction in the production of certain types of aircraft due to the transfer of skilled air frame and instrument workers to JB-2 production facilities.

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e. New construction of ordnance facilities capable of replacing the loss in artillery ammunition and bomb production.

f. Approximately a .7% monthly reduction in the aviation gasoline and synthetic rubber program after the ordnance facilities, as mentioned in paragraph 2 e above, are made available (per cent based on January 1945 monthly production figures of gasoline and rubber).

g. Possible interference with heavy truck and automotive equipment programs of the AAF, ASF, and AGF.

h. An approximate 7 to 9 month delay in the movement dates of some presently committed AAF units after 31 March 1945, including service units and supported tactical units (VHB) and other ASWAAF units. ?

3. ASF requirements for port personnel for unloading the JB-2's and delivering them to depots could not be furnished by ASF on such short notice as port would require different numbers of personnel and civilians are largely employed in this work.

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By ARA/IAC Date 10/18/76

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LAUNCHING RATE OF 300 JB-2's A DAY 30 DAYS A MONTH

1. The above launching rate can be met on the following schedule:

100 JB-2's per day by 1 Sep 45
200 JB-2's per day by 1 Nov 45
300 JB-2's per day by 1 Dec 45

2. To meet the above schedule, the War Department General Staff will have to direct the following:

a. Immediate assignment of full overriding priorities for obtaining machines, presses, tools, facilities, labor and critical materials involved in production of required ordnance equipment and ammunition, to include trucks, cranes, prime movers for field servicing units, warheads, explosive loads and launching powder.

b. Allocation of sufficient ship tonnage to insure the arrival of bombs, equipment and personnel in the theater in time to permit operational use of JB-2's as indicated in paragraph 1 above.

c. An increase in the AAF Troop Basis of 12,324 officers, warrant officers and enlisted men (11,184 for JB-2units and 1,140 for permanent party personnel). The AAF will furnish, from its present Troop Basis, 5592 officers, warrant officers and enlisted men, or the equivalent of one JB-2 squadron with associated services.

d. An intake, or source, of 19,316 bodies (by inactivation of AGF, ASF, or AAF units; cessation of transfer of AAF personnel to the AGF; immediate resumption of selective service intake), for the JB-2 units, associated service units and necessary permanent party personnel.

e. Concurrence in priority required by the War Manpower Commission for the immediate diversion of approximately 13,200 skilled air frame and instrument workers to manufacture of JB-2 bombs.

3. The above program, as a preliminary estimate, will occasion the following interference with the war effort:

a. Diversion of 22½ Liberty ships or their equivalent in August and an additional 22½ ships monthly until a total of 67½ ships have been diverted solely for the transportation of JB-2 bombs and, in addition, the diversion of further tonnage at appropriate times for the movement of units and equipment to the theater.

b. An initial loss of approximately 16.7% in artillery ammunition production until facilities are constructed capable of replacing this production loss.

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c. A loss of approximately 11.7% of peak bomb production until facilities are constructed capable of replacing this production loss.

d. A possible slight reduction in the production of certain types of aircraft due to the transfer of skilled air frame and instrument workers to JB-2 production facilities.

e. New construction of ordnance facilities capable of replacing the loss in artillery ammunition and bomb production.

f. Approximately a 2.1% monthly reduction in the aviation gasoline and synthetic rubber program after the ordnance facilities, as mentioned in paragraph 3 e above, are made available (per cent based on January 1945 monthly production figures of gasoline and rubber).

g. Possible interference with heavy truck and automotive equipment programs of the AAF, ASF, and AGF.

h. An approximate 7 to 9 month delay in the movement dates of presently committed AAF units and AAF ground replacements after 31 March 1945, including VHB groups and associated service units, engineer troops, and other ASWAAF units.

4. ASF requirements for port personnel for unloading the JB-2's and delivering them to depots could not be furnished by ASF on such short notice as port would require different numbers of personnel and civilians are largely employed in this work.

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WAR DEPARTMENT

HEADQUARTERS ARMY AIR [redacted]CES

Date_____

MEMORANDUM FOR:

See Giles

Bongo bomb

Cost -

Eisenhower's

proposal

BARNEY M. GILES
Major General, U. S. Army
Chief of Air Staff

4-998, AF

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HEADQUARTERS ARMY AIR FORCES

ROUTING AND RECORD SHEET

TALLY NO.	
FILE NO.	

SUBJECT: 11.75" HVAR Rocket for the "MOSES" Project

TO: Asst C/AS, Materiel, Maintenance, and Distribution

DATE 1 JUL 1944

FROM: Chief of Air Staff

COMMENT NO. 1

1. I have been advised by the Navy that the 11.75" HVAR rocket has been successfully fired from an airplane in flight, and that this ammunition can be made available to the Air Forces at a rate of five (5) per day for use against land targets on the coast of France.

2. It is therefore directed that immediate action be initiated to determine the type of airplane best suited for the carrying and firing of this rocket and the necessary type of launcher required. This matter must be investigated immediately so that the Navy Department can arrange for the manufacture of the ammunition mentioned in Paragraph 1, if its use by AAF airplanes proves feasible.

dw 14729

BARNEY M. GILES,
Lieutenant General, U. S. Army
Chief of the Air Staff.

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SAS 452.11 Rocket

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DOD Dir. 5 Jan. & 20 June 1974
By ATASD(AS) Date 10/18/76

HEADQUARTERS ARMY AIR FORCES

ROUTING AND RECORD SHEET

SECRET

TALLY NO.	
FILE NO.	

SUBJECT: 11.75" HVAR Rocket for the "MOSES" Project.

TO: Chief of Air Staff

DATE 1 July 1944

FROM: ACAS/M&D

COMMENT NO. 2

Lt.Col. Diehl/LM/71714

1. Materiel Command was directed in teletype dated 29 June 1944 to make the study requested in Comment No. 1 as to the type of airplane best suited for the carrying and firing of the subject rocket. The result of this directive was that the A-20G is the airplane decided to be most adaptable.

2. Materiel Command has this date been directed verbally to make an installation in an A-20, and based on this installation to procure 15 kits for shipment to the U.K. California Institute of Technology has been contacted and promised completion of the initial installation within ten days. They have further been requested to produce the 15 kits within fifteen days in order to insure the kits being available prior to the delivery of the first of the 11.75" rockets. Fifteen (15) kits were selected as an adequate number to equip one squadron of A-20G's in the United Kingdom, inasmuch as only five (5) rockets per day will be available.

25 days

for O. P. ECHOLS
Major General, U.S.A.
Assistant Chief of Air Staff

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AAS 452.11 Rocket (12) a

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By: MASER, WC Date 10 Oct 74

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11.75" HVAR Rocket for the "MOSES" Project

Asst C/AS, Material, Maintenance, and Distribution

Chief of Air Staff

1 JUL 1944 1

1. I have been advised by the Navy that the 11.75" HVAR rocket has been successfully fired from an airplane in flight, and that this ammunition can be made available to the Air Forces at a rate of five (5) per day for use against land targets on the coast of France.

2. It is therefore directed that immediate action be initiated to determine the type of airplane best suited for the carrying and firing of this rocket and the necessary type of launcher required. This matter must be investigated immediately; so that the Navy Department can arrange for the manufacture of the ammunition mentioned in Paragraph 1, if its use by AAF airplanes proves feasible.

BARNEY M. GILES,
Lieutenant General, U. S. Army
Chief of the Air Staff.

Dispatched
1 JUL 1944
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SAS 452.11 Rockets (11-8)

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SAS 452-11 Rocket (11-8)a

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11.75" HVAR Rocket for the "MOSES" Project

Secretary of Air Staff

29 JUN 1944

Asst C/AS, Operations, Commitments & Requirements

Major McKay/djm/72673

It is requested that the attached letter to Vice-Admiral Edwards and R & R to Asst C/AS, Material, Maintenance, and Distribution be signed and forwarded.

2 Incls.
Incl 1 - Ltr to Vice-Admiral Edwards for signature
Incl 2 - R & R to MMRD for signature

WILLIAM F. McKEE
Colonel, Air Corps
Acting, Asst Chief of Air Staff,
Operations, Commitments & Requirements

Fighter & Air Defense Branch_____
Fighter Section_____
Requirements Division_____

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6 Jan. & 20 June 1974
By ARADCOM LC, Date 15 OCT 76

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AFRAD:F
Major McKay/djn/72673
wrtn 29 June 1944

1 JUL 1944

Vice-Admiral H. S. Edwards,
Chief of Staff,
Headquarters of the Commander-in-Chief,
Navy Department,
Washington 25, D. C.

Dear Admiral Edwards:

Thank you very much for the information on the "Tiny Tim." Our people have been following this project with interest. This projectile may well have possibilities for use against emplacements on the French coast, if development can be completed at an early date and necessary procurements effected.

I have directed our Material Command to determine the type of Army Air Force airplane that most readily lends itself to carrying and firing a projectile of this type and the launcher equipment necessary therwto. Upon determination of the above factors, we will be able to determine also the feasibility of employment.

Sincerely,

BARNEY M. GILES,
Lieutenant General, U. S. Army,
Deputy Commander, Army Air Forces.

Dispatched
1 JUL 1944
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DAILY FILE

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6 Jan. & 30 June 1974
By MAJNW LC. Date 10/15/74

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CG AAF

Date _____ Initials _____

Rocket Attacks on Shipping

Secretary of the Air Staff

8 JUN 1944

Asst C/AS, Operations, Commitments and Requirements

Lt Col Holbrook/ek/4627

Attached is a Memorandum for the Chief of Air Staff, subject as above. The Commanding General, AAF Proving Ground Command, has been queried on this matter and his comments will be submitted as soon as they are received.

1 Incl
Memo for C/AS

H. A. Craig
Major General, U. S. Army
Asst. Chief of Air Staff
Operations, Commitments & Requirements

Requirements Division _____

Fighter and Air Defense Branch _____

SAS 452.11 Rockets (4)

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8 Jan & 20 June 1974
By NNRA LC Date 10 Jul 74

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CG AAF

Date Initials

3 JUN 1944 AFRAD

MEMORANDUM FOR THE CHIEF OF AIR STAFF:

Subject: Rocket Attacks on Shipping

1. You recently asked for the comments of this Office with reference to the employment of rockets in view of the increasing use by the British of this weapon against shipping and other targets.

2. Our employment of rockets has thus far been limited to fighter type aircraft, launched from jettisonable tubes, whereas the British rocket is launched from non-jettisonable rails which have a serious weight and drag penalty in the performance of the aircraft.

3. The Navy has been employing the 5" rocket, which is launched from short rails that impose little additional weight and a minimum of drag. It is an adaptation of the British type rocket. This rocket was developed at the California Institute of Technology under the auspices of the National Defense Research Council in conjunction with the Navy. Action has been taken to standardize this 5" rocket for joint Army-Navy use and, as soon as production facilities can be established, it will be under procurement for AAF as well as Navy use and will then supersede the 4.5" rocket.

4. The new 5" rocket is superior to the present type, particularly against shipping, in view of its far superior under-water trajectory. It will simplify the supply problem by eliminating the necessity for production and shipment of expendable launcher tubes which have become a critical item. The new rocket also gives promise of harmonization with present and projected gun sights which will increase the accuracy and effectiveness of the weapon.

5. As a matter of interest, the present 4.5" rocket, launched from 3-tube launchers under the wings of fighter aircraft, has been employed by the Fourteenth Air Force in China and by the 1st Air Commando Group in India for the past two months. Although not as accurate as machine guns, it is sufficiently dependable that most pilots after firing once or twice become quite adept. Targets such as barracks, warehouses, locomotives, aircraft on the ground and gun emplacements have been hit with excellent results. The P-51, when equipped with this weapon, has been very successful in ground support missions and an installation has been devised which

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enables it to dive bomb, fire rockets, and strafe with machine guns.

6. A quantity of 4.5" rockets and launcher kits are now being shipped to equip two P-47 groups in the European Theater and five P-47 groups in the Mediterranean Theater which are expected to be in operation with this weapon by the middle of July against ground targets.

H. A. Craig
Major General, U. S. Army
Asst. Chief of Air Staff
Operations, Commitments & Requirements

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8 Jan. & 20 June 1974
By AFOIMC, Date 10/18/76

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Rocket Attacks on Shipping

Assistant Chief of Air Staff, Intelligence — 25 May 1944

Chief of the Air Staff

1

MAL/hd/3373

General Giles has noted recently that there has been an increasing number of rocket attacks made on shipping by the British. He desires to have full information regarding such attacks to include size of rockets used, type of target employed against, type of aircraft used for the mission, etc.

Signed

M. A. LIBBY
Colonel, G.S.C.
Executive, C/AS

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25 MAY 1944

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SAS 452.11 Rockets (46)

452.11 Rockets (46)

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8 Nov. & 30 June 1954
By AGAFC Ltr. Date 10/15/76

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(AFDRE-2A-1/6)

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

Subject: Proposed Army Air Forces Accelerated Rocket Development Program.

I. Discussion.

1. Reference is made to memorandum for the Chief of Air Staff dated 15 February 1944, subject as above, which recommended the establishment of an Army Air Forces Rocket Station under the jurisdiction of the Commanding General, Material Command, at the Dover Army Air Base, Dover, Delaware, with the station assigned to joint use of the First Air Force and the Material Command. Reference is also made to the approval of the proposed project contained in Routing and Record Sheet, Comment No. 4, dated 24 March 1944, from the Deputy Chief of Air Staff (General Perrin) to the Assistant Chief of Air Staff, M&AD. (See Tab A)

2. The approval referred to above included the expenditure of funds to the extent of $850,000.00 to cover facilities, equipment and supplies necessary for the early initiation and completion of the proposed Rocket Development Program. Approximately $768,000 of the total funds were allocated for the additional base facilities listed under the estimate of cost inclosed herewith as Tab B.

3. A conference was held at the Dover Army Air Base on 3 and 4 April 1944, to determine the detailed requirements in connection with existing facilities and site conditions. The following agencies were represented at this conference: Headquarters, AAF, AC/AS M&AD, Control Office, Material Division, Air Services Division and Air Ordnance Office; Headquarters, First Air Force; Headquarters, Material Command; Office, Chief of Ordnance; U. S. Engineer Office, Philadelphia District; Base Commanding Officer, and the British Air Commission. The facilities listed in Tab C have been established as the minimum requirements for the proposed project on the basis of decisions reached in this conference and on subsequent developments. A preliminary estimate by the Chief of Engineers indicates that the total cost of the required facilities is approximately $[illegible] or about 90 per cent of the estimate contained in the original staff study.

4. The Commanding General, First Air Force, has advised that existing personnel housing at the Dover Army Air Base is now, and will continue to be, fully utilized in the Fighter B. T. U. program conducted at this base. The schedule of Base Facilities (Tab C), therefore, includes prefabricated buildings, mess hall and laundries, not contemplated in the original program, for housing 25 officers and 146 enlisted men.

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8 Jan. & 30 June 1974
By NCAJ IUL, JC Date 10/18/76

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Memo to the Deputy Chief of Air Staff, Subj: Proposed Army Air Forces Accelerated Rocket Development Program, Dover, Delaware, AFDRS-Rk-1/6, (Continued).

2 MAY 1944

5. The Chief of Ordnance has furnished the details of the air-to-ground and ground-to-ground ranges required for the accelerated rocket development program (Tab D). These ranges may be constructed on land now owned by the government in fee and presently used by the First Air Force for Air-to-Ground gunnery, without interference with First Air Force activity. The Chief of Ordnance advises that a butt designed to stop all rockets to be fired in the proposed program would be excessively large and uneconomical to construct. It is, therefore, contemplated that ground firing of rockets from parked aircraft for the purpose of determining blast effects and similar testing will be accomplished on the open range to obviate the necessity for constructing a butt on the air base proper as proposed in the original program.

II. Action Recommended.

Approval is recommended for the construction of facilities for the Accelerated Rocket Development Program at the Dover Army Air Base, at an estimated cost of $802,000, as listed in Tab C, in lieu of the previously approved facilities listed in Tab B at an estimated cost of $788,000.

General Perrin
Air AS

L. P. WHITTEN,
Brig. General, U. S. Army,
Chief, Air Services Division,
Office of Asst. Chief of Air Staff,
Materiel, Maintenance & Distribution

4 Incls
Incl 1 - (Tab A) Series of R/Es & Memo to C/AS 6 Feb 44; Subj, same as above.
Incl 2 - (Tab B) Est. of Funds
Incl 3 - (Tab C) Base Facilities Required.
Incl 4 - (Tab D) 2 R/Ls dtd 8 & 20 Apr 44, fm C/Ordnance to Hq AAF. Subj, same as above.

Disapproved
S.W.B.

PATRICK W. TIMBERLAKE
Brigadier General, U.S.A.,
Deputy Chief of Air Staff
3 May 1944

Dispatched
4 MAY 1944
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Air AS 452.11 Pockets (45)

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8 Jan. & 20 June 1974
By AAFIG, HQ. Date 10/18/76

CONFIDENTIAL
ROUTING AND RECORD SHEET

SUBJECT: Proposed AAF Accelerated Rocket Program.

TO: Chief, Air Staff

DATE 17 Feb 1944
COMMENT No. 1
MEM/hf/23920

FROM: Management Control

1. The undersigned concurs in the proposed program for rocket development with one exception. The Material Command should provide the personnel within their present bulk allotment. A review by Material Command of the relative importance of current projects, should be made in order to determine where the necessary personnel may be obtained from within their present establishment. New projects must be worked out within existing allotments, inasmuch as WI establishment must be cut 125,000 in 1944.

/s/ BYRON E. GATES,
Brig. Gen., U. S. Army
Chief, Material Command

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DOD DIR. 5200.9

TO: Assistant Chief of the Air Staff, MMaD

DATE 24 Feb 1944
COMMENT No. 2
MAL/hd/5375

FROM: Chief of the Air Staff

1. The Chief of the Air Staff has noted the attached study and your recommendations contained in the memorandum for the Chief of the Air Staff dated 15 February 1944. This review was made simultaneously with his reading General Arnold's penned comments on Dr. Bush's letter of February 16, which is included in this file. General Giles' immediate reaction was complete agreement with General Arnold's position that the Rocket station should be located at Eglin Field, transportation and other difficulties mentioned by both you and Dr. Bush to the contrary notwithstanding.

2. The Chief of the Air Staff as of this date has not formally disapproved your recommendations but has returned this study to you for further substantiation of the reasons why the Rocket Station cannot be located at Eglin Field. In this connection it is to be pointed out that it is our plan to expand Eglin Field and provide it with every facility in order that it may be retained after the war as one of our best equipped permanent establishments.

3. The Chief of the Air Staff desires that you again review this entire subject and submit further information or recommendations in connection therewith.

Incl:
Ltr to Gen. Arnold fr. Dr. Bush dtd 16 Feb.
R/R to Manpower Div., Management Control fr OCAR dtd 11 Feb.; Proposed AAF Accelerated Rocket Development Program

/s/
M. A. LIBBY
Colonel, G.S.C.
Secretary, Air Staff.

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Tab A

Incl 1

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5 Jan. & 30 June 1974
By ALDRK JC Date 10/18/76

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SUBJECT: Proposed AAF Accelerated Rocket Program.

TO: Chief of the Air Staff

DATE 3 March 1944
COMMENT NO. 3
Lt.Col.Diehl/LM/2865

FROM: AC/AS/MMAD

1. The Commanding General of the Army Air Forces Proving Ground Command, Eglin Field, was contacted March 1 and asked for his views relative to the establishment of a rocket development unit at Eglin Field. General Gardner stated that he felt this was fundamentally undesirable because Eglin Field is set up as a Proving Ground and it is not desired to add experimental engineering functions to those now charged to that Command. Further, General Gardner believes that would lead toward duplicating experimental work, the prosecution of which is a function of the Materiel Command. From his point of view this is not desirable.

2. Eglin Field offers an excellent area for the flying phase of this program, yet actually it is estimated that only 5%-10% of the work involved is flying. 50% of the work would be installation and shop work, where close proximity to manufacturing facilities is essential in order to conduct this program in the most expeditious manner. The remainder of the work must be in close coordination with the Ordnance Department. The handicap of distance -- approximately a two-day trip from industrial centers and Aberdeen Proving Ground to Eglin Field will, of necessity, slow down the program considerably. With Air Forces facilities and the necessary cooperative facilities separated by such a distance, it is inconceivable that the necessary work to develop and furnish to the Army Air Forces adequate munitions, and means of firing these munitions from the air, can be carried on quickly and efficiently enough to meet the requirements of the present and contemplated military situation.

3. The possibility of requesting the Ordnance Department to utilize or expand facilities at Aberdeen has been thoroughly investigated. At the present times Ordnance personnel feel that facilities at Aberdeen have reached a saturation point, and additional work placed upon them in that location would hinder other proving work now being conducted at that station. Even were this not the case, it is still felt to be an undesirable move since then this unit would, of necessity, be under the jurisdiction of Aberdeen Proving Ground.

4. The setting up of such a new facility at Dover is recommended to be only a war time establishment. It would be a sub-station of Wright Field similar to those at Muroc Lake, California, and Wilmington, Ohio (Glider Station).

5. An alternative proposal to expand the existing Rocket Unit of the Armament Laboratory at Wright Field would not be an answer to the problem. Here again the close coordination required between Ordnance Department and the NDRC could not be suitably effected, and facilities for test firing preliminary in-

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SUBJECT: Proposed AAF Accelerated Rocket Program Dated 3 Mar 1944 Comment #5 (Continued)

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stallation such as are always essential, do not exist anywhere near Wright Field. Making an installation at Wright Field, flying the ship to Eglin Field, firing a few rounds and, (in case finding an undesirable feature in the installation) returning the ship to Wright Field to make the necessary experimental changes, then returning it again to Eglin Field is a time-consuming process and is one of the features that it is desired to avoid. In addition, flying or shipping a few rounds of ammunition from Aberdeen to Eglin, only to find that some change is necessary before additional firing can be conducted, is another time waster that could well be avoided by having an Air Force facility in close proximity to Aberdeen Proving Ground.

6. It is requested that the above views be considered by the Chief of Air Staff in connection with final decision on the action recommended in basic Staff Memorandum.

Incl
N/C

/s/
O.P. EHHOLS
Major General, U. S. A.
Assistant Chief of Air Staff
MMaD

To: AC/AS, MMaD

DATE 24 Mar 44
COMMENT NO. 4

FROM: Deputy Chief of Air Staff

ESP/eva/6371

General Arnold agrees to the use of Dover for rocket testing during the war. Eglin Field is to be developed for post-war use.

/s/
EDWIN S. PERRIN,
Brig. Gen., U. S. A.
Deputy Chief of Air Staff

Incl
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8 Jan. & 30 June 1974
By [illegible] NC, Date 10/8/74

AFDMA-1

MEMORANDUM FOR THE CHIEF OF AIR STAFF:

Subject: Proposed Army Air Forces Accelerated Rocket Development Program.

I. Discussion.

1. The present experience of our Allies and our Navy establishes the rocket as a new weapon of prime and possibly decisive importance. Every effort must, therefore, be made to bring it to bear quickly on the enemy. Since this weapon appears to be particularly advantageous for certain types of combat aircraft use, it is deemed essential that the Army Air Forces exploit its latent possibilities to the fullest extent by organizing a separate establishment devoted solely to aircraft rockets and their applications.

2. It is known that the British, Russians and Germans already have embarked on large scale rocket development programs which are being vigorously prosecuted. The United States Navy has recently organized an independent twenty million dollar rocket establishment in Southern California with a station complement of over one thousand to expedite an experimental, installation and training program involving seven thousand airplanes.

3. The Ordnance Department, in conjunction with the Army Air Forces, has developed and experimentally tested aircraft rockets for use on certain fighter and bombardment aircraft. However, the rapid exploitation of this weapon by the Army Air Forces is now definitely jeopardized by lack of personnel and centralized test facilities assigned to rocket work, as well as to lack of effective coordination with the Ordnance Department and the N.D.R.C. due to geographic difficulties.

4. Dependence of the Army AirForces on Navy and British rocket equipment will inevitably and rapidly result unless the Army Air Forces assumes leadership on all phases of the proposed aircraft rocket program except the Ordnance function of rocket munition development. Although the Army Air Forces rocket has not yet reached a high state of development, at present it offers greater possibilities for utilization in an automatic reloading launcher mechanism than to comparable rocket types being developed.

5. At the present time the efforst of all agencies concerned with Army Air Forces rocket development are suffering from lack of centralized control. The provision by the Army Air Forces of a

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Memo for the Chief of Air Staff:
Subj: Proposed AAF Accelerated Rocket Devel. Program.

centralized base for combined use will serve to closely coordinate efforts without depriving any agency of its primary cognizance and will result in maximum effectiveness in the rapid development of this munition.

6. There is a definite need for an Army Air Forces experimental rocket test unit, with sufficient personnel to accomplish action, in connection with Ordnance, N.D.R.C. and others, on a proposed aircraft rocket development program. Informal approval by the Ordnance Department and the O.S.R.D. has been obtained as indicated in Tabs A and B. Comments on informal conference with personnel of First Air Force are contained in Tab C. For Materiel Command comments, see Tab D.

II. Action Recommended.

1. Establishment of an Army Air Forces Rocket Station to operate under the jurisdiction of the Commanding General, Materiel Command, with the complement, as shown in Appendix I, added to the current Materiel Command manning table.

2. Joint use of the Dover Army Air Base, Dover, Delaware, by both the First Air Force and the Materiel Command. (See Appendix II.)

3. Approval for funds to the extent of $850,000.00 to cover facilities, equipment and supplies necessary for the early initiation and rapid completion of the Rocket Development Program proposed in Appendix III.

[redacted]
DOD DIR 5200.9

O. P. ECHOLS,
Major General, U.S.A.,
Asst.Chief of Air Staff,
Materiel, Maintenance & Distributi on.

ors
JPT/ah/71885
AFDMA-1 AFMMD AFAMC:50 AFAMC-HOC

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By AUSJAG LC Date 10/16/76

ESTIMATE OF FUNDS FOR PROPOSED ACCELERATED ROCKET DEVELOPMENT PROGRAM

1. In order to initiate and carry on action on the proposed rocket development program at the selected base, a careful analysis has been made to determine what additional facilities will be required. The cost estimates below have been made by the AAF Building and Grounds Office and are based on currently prevailing construction figures in the area involved.

a. Additional Base Facilities

(1)	Hangar (220' x 204' --120' clear span) (Modification center type with a 20' wide, one story lean-to on each end of hangar for machine shop and administrative space)	$295,000
	40% of initial cost for completion in four months	118,000
(2)	Parking Apron (80,000 sq.yds.	105,000
(3)	Rocket Butts (for 4½" rockets)	90,000
(4)	Taxiway to Rocket Butts (500' x 75')	131,000
(5)	Ammunition Magazine (Rocket type)	10,000
(6)	Miscellaneous (2½% of estimate)	19,000
		$768,000

2. In order to carry on the proposed program most effectively, a study has been made to determine what essential and basic equipment will be immediately needed. Itemized lists are not included due to their length; however, each such list has been coordinated with the appropriate headquarters office to insure availability, secure cost estimates, and confirm selection of equipment items.

(1)	Machine and Fabrication Shop Equipment	$ 29,300
(2)	Automotive Equipment	33,600
(3)	Water Target Equipment Including Special Camera Equipment	26,000
		$ 88,900

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By LC Date

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6 Jun. & 20 June 1974
By _____ NARS, Date

BASE FACILITIES REQUIRED

Detailed requirements based on conference at Dover Army Air Base, on 3 and 4 April 1944, and subsequent studies.

I.	At Dover Army Air Base		
	a.	Butler Prefabricated Hangar on Buttresses	$ 72,000
	b.	Administration Building 96' x 144' TO Details	20,000
	c.	Shop Building, 40' x 160' Butler Prefabricated Whses.	7,260
	d.	Housing twelve (12) 20 x 48 huts	5,350
		two (2) LCT Lavatories	13,300
		one (1) LBT Lavatory	4,700
		one (1) MBAT Messhall	8,750
	e.	Airplane Parking Apron and taxiways (35,880 sq.yds)	218,000
	f.	Automobile Parking Area (2,800 sq. yds.)	9,700
	g.	Magazine for Powder storage, one (1) 16' x 20'	4,000
	h.	Standard Underground Magazines, three (3) 26' x 40'	27,000
II.	At Bombay Hook Gunnery Range		
	i.	Concrete Hardstand, one (1) 75' x 300'	15,150
	j.	Tool House and shelter, one (1) 20 x 48 hut with partitions and chemical toilets	1,210
	k.	Range House, one (1), 20' x 20' special design	2,680
	l.	Monuments for fiducial marks (67)	1,680
	m.	Camera Plaques (50) 6' x 6'	1,750
	n.	Camera Plaques, two (2) 6' x 12'	140
	o.	Observation towers, two (2) 25' high with 12' x 12' deck	2,000
	p.	Ten foot road, approximately 12000 lin. yds.	10,800
	q.	Eight foot roads, approximately 3400 lin. yds.	25,500
	r.	Walkways, approximately 16,800 lin. yds.	25,200
	s.	Grading, approximately 325 acres	41,000
	t.	Clearing, approximately 1000 acres	75,000
	u.	Ground-to-ground range	10,000
		TOTAL	$602,170

NOTE: Costs indicated above are based on preliminary estimates by the Chief of Engineers - these costs include 7 per cent for engineering and overhead and 15 per cent for contingencies.

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Incl #3

Tab C

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DOD ltrs
8 Jan. & 20 June 1974
By NARS, Date 10/6/76

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71971

SPOTW

8 April 1944

Subject: Safety Requirements for Rocket Firing at Dover Air Base

To: Headquarters
Army Air Forces
Washington, D. C.

Attention: Air Ordnance Officer

1. The following will describe layout of ranges for use at the Dover Air Base to provide adequate safety in firing rockets from aircraft:

a. Ground firing into butt. Ground firing from parked planes can be safely accomplished in an area 300 yards wide, 150 yards long. Release point will be in the center of 300 yards dimension and 50 yards from one end. At the center of the opposite end of the area will be located a sand butt having a minimum height of 20 feet and a depth at the 20 foot elevation of 30 feet and a width of 40 feet, the sand pile to have an angle of 30° from ground to side slopes. A distance of 1,000 feet behind this butt and the 300 yard width will provide ample safe areas for the remotely possible wild rounds. Inasmuch as the maximum observed cone of dispersion is 20 mils, this area is entirely adequate. The type of butt described is essentially the same as those used at Aberdeen Proving Ground for stopping projectiles fired from sea coast weapons up to 16" caliber.

b. Air-to-ground fire. The range for firing rockets from air-to-ground in calibers 6.5" and larger should be as follows:

(1) At the release end of the range, an area 300 yards square with the point of the release in the center of the line of flight and 300 yards from the forward edge. The range should be 2,000 yards wide at the target line and 5,000 yards beyond the target line. The area of safety between the point of release and the target is a triangular shape having its sides connecting the 300 yards width at one end and the 2,000 yards at the other end. This area of safety has been established by extensive air-to-ground firings and has sufficient magnitude to include all ricochets.

2. Component and explosive storage.

a. For the storage of complete rounds with projectiles loaded with

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6 Jan. & 20 June 1972
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To: Hdqs., A.A.F., Wash., D. C.
Attn: Air Ordnance Officer

8 April 1944

high explosive, it is necessary to provide a standard underground igloo type magazine of a size to store 80,000 lbs. of high explosive as a limit. This is a standard igloo for which drawings will be available by Monday, 10 April 1944. These drawings will be turned over to the representatives of the Buildings and Grounds Section, A. A. F. Magazine of this type require spacings as follows:

(1) Between magazines - 300 feet.
(2) Between magazines and inhabited buildings - 2800 feet.
(3) Between magazines and public railways - 1680 feet.
(4) Between magazines and public highways - 840 feet.

One such magazine should be provided.

b. For the storage of complete rounds having inert heads and for rocket motors loaded with propellant powder, a simpler type of magazine for above ground construction having its capacity limited by the physical space required for the rocket stored, distance from magazine to magazine - 300 feet and to inhabited buildings - 1200 feet. Distance to public railways and public highways are proportionate to the difference between 2800 feet and 1200 feet. One such magazine should be provided for the storage of rocket motors, inert projectiles, etc.

c. Storage facility should also be provided for fuses, black powder components, etc., in accordance with Class 9 and Class 10, Quantity Distance Table as shown on page 47 and 48 of the Ordnance Safety Manual. Check should be made as to the possiblity of using one of the existing structures in the Ordnance storage area at the Dover Air Base for this purpose.

d. A building approximately 20' x 20' should be provided within the Ordnance storage area to be used as a work shop for the assembly of components into complete rounds. This does not contemplate loading of any components. A distance of 300 feet from this building to any of the magazines should be provided.

For the Chief of Ordnance:

HAROLD R. TURNER
Lt. Col., Ord. Dept.
Assistant.

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8 Jan. & 20 June 1974
By AUTLK, OC, Date 10/18/76

WAR DEPARTMENT
OFFICE OF THE CHIEF OF ORDNANCE
Washington, D.C.

Turner/pr
71971

30 April 1944

SUBJECT: Safety Requirements for Rocket Firing at Dover Air Base

TO: Headquarters
Army Air Forces
Washington, D. C.

Attention: Air Ordnance Officer

1. Reference is made to letter from this office dated 8 April 1944, O.O. 471.94/2756(c) 12 April 1944. Attention is invited to paragraph 1.a. of letter concerning suitable ground firing in butt. Supplementing the information obtained from Aberdeen Proving Ground, firings were made against butts of the type described with results such as to make it questionable whether or not sand butt can be built which is satisfactory for stopping all types of rockets. On such occasions as when the rocket propellant is still burning, performance of the rocket is somewhat unpredictable while in the sand. Certain types of rocket launchers used with aircraft are so constructed that the rocket drops materially in the first few feet of forward travel during which time it is gaining full velocity. The magnitude of this drop may be such that when launched from a parked airplane, rocket may actually touch the ground in which event the flight of the rocket will be totally unpredictable. Therefore, while the statements contained in the original letter are correct assuming that the rocket may be reasonably expected to strike the target at a point well below center at elevation and at a time after the burning of the propellant has been completed, since these conditions cannot be guaranteed, it is felt that a butt constructed of sufficient size to stop all rockets fired at it would be entirely too large to justify its construction.

2. It is, therefore, recommended that since the work to be performed at the Dover Air Base by the 732nd Air Base Unit, AAF contemplates the use of many types of rockets, both standard and experimental, and since the performance of such rockets is unpredictable, ground firings of such rockets from parked aircraft for the purpose of obtaining blast effects and similar testing, should be accomplished on an open range where possible erratic flight will not constitute a hazard.

For the Chief of Ordnance:

HAROLD R. TURNER
Lt. Col., Ord. Dept.
Assistant.

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Tab D

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DOD Ltrs
8 Jan. & 20 June 1974
By ALA/LK LC Date 10/18/76

UNITED STATES FLEET
HEADQUARTERS OF THE COMMANDER IN CHIEF
NAVY DEPARTMENT
WASHINGTON 25, D. C.

FF1/A1

Serial: 001314

~~SECRET~~
~~S-E-C-R-E-T~~

29 APR 1944

MEMORANDUM TO MAJOR GENERAL, S. G. HENRY, U. S. A.,
New Development Division

Subject: Fire Bomb Project (M5)(172).

Enclosure: (A) Proposed tests for Fieser oil slick igniter in cluster form.
(B) Description of the oil igniters.
(C) Army Air Force Proving Ground Command, Eglin Field, Florida, Secret Progress Report on Service Tests No. 1-44-19, dated 19 April 1944.

1. The progress of the Fire Bomb project (Enclosure "C") is noted with interest, especially the excellent results obtained with practically 100% ignition both on land and water of the 55 gallon drums when filled with various fuels. The Navy is especially interested in the filling consisting of 4 to 5 percent Napalm thickened gasoline, as it appears the same results can be obtained on land, on water, on sand, and on combinations of these areas.

2. The Navy Liaison Officer to this project indicates the unsuitability of adapting the 55 gallon drums (improvised Fire Bomb) to Navy aircraft of the types SB2C-3, TBM-1C and the PV-1. These aircraft, however, have jettisonable gasoline tanks of varying capacities. In view of these facts, it is requested that authorization be granted for a test of the several types of jettisonable gasoline tanks filled with Napalm thickened gasoline as part of the Fire Bomb project (M5)(172). The tests would be from low level both over land and over water.

3. In line with this subject of fire bombs, for use on land and on water, the Navy has an urgent project with Division 19 of the NDRC for the development of an oil slick igniter. This igniter is now available in the limited quantities for a full scale functioning test. As aircraft, fuel oil and areas over water have already been assigned for the Fire Bomb project and in addition the Navy Liaison Officer is a qualified

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UNITED STATES FLEET
HEADQUARTERS OF THE COMMANDER IN CHIEF
NAVY DEPARTMENT
WASHINGTON 25, D. C.

FF1/A1

Serial: 001314

~~SECRET~~

29 APR 1944

Subject: Fire Bomb Project (M5)(172).

observer, it is additionally requested that authorization be granted to conduct tests outlined in Enclosure (A) with ten (10) clusters described in Enclosure (B). The tests of dropping 5 clusters from Naval aircraft on 20 April at 500 feet at 300 Knots and 150 feet at 175 Knots showed that no danger existed to the dropping aircraft.

W. S. DeLANY
Assistant Chief of Staff.

Copy with Encl. (A) to:
VCNO
BuOrd
BuAer
Lt. Comdr. Mang,
Eglin Field, Fla.
Major General B. M. Giles,
U. S. Army Air Force.

Code 471.6 (3)

Noted
File

4/13/44

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UNITED STATES FLEET
HEADQUARTERS OF THE COMMANDER IN CHIEF
NAVY DEPARTMENT
WASHINGTON 25, D. C.

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6 Jan. & 20 June 1974
By [illegible] JC, Date 10/18/76

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OUTLINE OF PROPOSED TESTS OF OIL SLICK IGNITERS.

1. The oil slick igniters in cluster form for which the following tests are proposed have been developed by Dr. Fieser of the Department of Chemistry, Harvard University under contract to Division 19 of the NDRC. A description of the individual igniters and the clustering is contained in his Memorandum on oil slick igniters dated 18 April 1944.

2. The following are the proposed tests.

(a) One run of successive drops in train or simultaneous drops of three (3) clusters from an altitude of 500 feet with the aircraft traveling at 300 Knots, on an oil slick formed by about 200 gallons of fuel oil.

(b) One run of successive drops in train or simultaneous drop of two (2) clusters from 150 feet at 200 Knots on an oil slick formed by 200 gallons of fuel oil.

(c) Other runs as may be desired with the remaining five (5) clusters, preferably igniting oil slicks.

(d) Two (2) runs dropping a bundle of six (6) of these packages made into a hexagon on an oil slick of about 100 gallons with the plane at an altitude of about 150 feet and making 200 Knots.

3. Observations of functioning are to be observed by Dr. Louis F. Fieser as well as by the Naval Liaison Officer.

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Encl. (A)

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DOD Dir. 5200.9
8 Jan. & 20 June 1974
By AFDRC, Date 10/16/76

SECRET

AFREQ/M
Col. Reynolds:bb:71406
Wrtn 4/29/44

2 MAY 1944

Dr. V. Bush, Director,
Office of Scientific Research and Development,
National Defense Research Committee,
1530 P Street, N. W.,
Washington, D. C.

DECLASSIFIED
DOD DIR. 5200.9

Dear Dr. Bush:

The Army Air Forces have for some time been interested in the promise shown by the five inch high velocity aircraft rocket developed by the California Institute of Technology. Action in connection with this rocket has been delayed until such time as we were able to make a more complete examination by flight test.

Quite coincidental with the receipt of your letter of 21 April 1944, and based upon an examination of reports directly from Cal Tech and the Navy concerning this rocket, the decision had been reached to take action without waiting for further flight tests to be performed by Army Ordnance and Air Forces Proving Grounds. The action taken is directly in accord with your recommendations, as you will note in the outline indicated below.

The Air Forces will accept without further field proof the findings of the Navy and Cal Tech in connection with the test results of this rocket. It is proposed to submit the five inch high velocity rocket to the Joint Aircraft Committee on Standardization with a view toward standardizing this rocket as an Army-Navy requirement. The standard Army rocket will continue to be used until such time as production capabilities of the high velocity rocket are sufficient to meet all Air Forces requirements. However, a high precedence rating is established in order to accomplish the changeover at the earliest possible date. Launcher installations are being accomplished on four of our first line fighter airplanes and on our two top medium and light bombardment airplanes in order that tactical suitability tests may be accomplished on the installation, as well as to determine tactics and devise training standards adaptable to the use of this rocket.

I agree with you entirely that the high velocity rocket has remarkable possibilities. I am going to push it to the limit in accomplishing exactly the suggestions you have made.

Sincerely yours,

L. S. KUTER
Major General, U.S.A.

For and in the absence of
H. H. ARNOLD,
General, [illegible],
Commanding General, Army Air Forces.

AFREQ/M AFREQ AEAEC AECAS

Dispatched
2 MAY 1944
AAG

FILE

AAG 452.11 Rockets (44)

AAG 452.11 Rockets (44)

COPY FOR: Secretary, Air Staff

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8 Jan. & 20 June 1974
By [illegible] NLC Date 10/18/76

~~SECRET~~

Five Inch High Velocity Aircraft Rocket.

Secretary of the Air Staff

Asst C/AS, Operations, Commitments & Requirements. 1

EDR:bb:71406

1. The attached letter to Dr. V. Bush for General Arnold's signature was prepared in accordance with request of General Arnold. The attachments to Dr. Bush's letter of 21 April 1944 have been withdrawn.

1 Incl:
ltr to Dr. V. Bush,
Director, OSRD, NDRC.

AFREQ/M_____

AFREQ_____

WILLIAM F. McKEE
Colonel, Air Corps
Acting, Asst Chief of Air Staff,
Operations, Commitments & Requirements

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DOD Dirs
5 Jan. & 20 June 1974
By: [illegible] Date: 10/15/76

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Cable #M-149RR from 14th Air Force

AC/AS, MMAD - Attention: Air Ordnance

26 March, 1944

Deputy Chief of Air Staff

1

WMK:hj 72487

1. See Radio Message #M-149RR from the Commanding General, 14th Air Force, dated 24 March, 1944.

2. In what Theaters do we have rockets? Let's send a paraphrase of this message to AFTAC and, also, other Theater Commanders. What can we do toward improving the fuse setting and larger contact areas?

EDWIN S. PERRIN,
Brigadier General, U. S. A.,
Deputy Chief of Air Staff

Dispatched
26 MAR. 1944
AAG

AAG 452.11 Rockets (45)

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AAG 452.11 Rockets (42)

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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
WASHINGTON

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DOD ltrs
8 Jan. & 30 June 1974
By ACDIUK UC: Date 10/18/76

MAR 14 1944

MEMORANDUM FOR CHIEF OF THE AIR STAFF:

Subject: Rockets for ETO.

1. This is a follow-up of memorandums, same subject, dated 10 March and 11 March.

2. A conference was today held by Colonel Sands (G-4, WDGS), and attended by General Henry (New Development Division, WDGS), General Borden (ASF), Colonel Cox (AGF) and Colonel Giffin from this Office. The radiogram written by Colonel Giffin for dispatch to General Eisenhower was approved with minor changes. Office of the Chief of Air Staff is included on the distribution list.

3. The AGF representative stated that he was instructed to avoid, if possible, the loss to the Ground Forces of any rockets now allocated from 1944 production for the use of ground units. The AAF representative stated he had no instructions other than to act in the overall interest of the war effort; that consequently the Headquarters AAF would make no objection to any use of available rockets, air or ground, which best furthered the war effort. The AGF representative then concurred in this view. In effect, the rocket problem for ETO is being referred to the Air Ordnance Officer, General Coupland, now in the Theatre.

4. A salient point which emerges in connection with the use of rockets from aircraft is that we know little about their tactical suitability, yet are being involved in a large program for their use. It is proposed to have Eglin Field evaluate the tactical suitability of rockets and report their findings within two weeks. It is further proposed to have an officer from this Office present at Eglin Field during this period.

/s/ L. A. Craig

L. A. Craig
Major General, U. S. Army
Asst. Chief of Air Staff
Operations, Commitments & Requirements

AAG 452.11 Rockets (4) (8)

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Air AG 452.11 Rockets (41) 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
WASHINGTON

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DOD ltrs
8 Jan. & 30 June 1974
By AFAG, USAF, HQ, Date 10/15/76

MAR 1 3 1944

AFREQ

MEMORANDUM FOR CHIEF OF AIR STAFF:

Subject: Rockets for ETO.

1. This is a follow-up of memorandum, same subject, dated 10 March 1944.

2. Draft of a proposed radiogram was submitted to G-4, WDGS, for dispatch to General Eisenhower. Radiogram can be summarized as follows:

a. Statement of total availability of rockets and launcher tubes for 1944.

b. Statement that not to exceed two-thirds of total should be considered available to meet ETO requirements, in view of anticipated needs of Mediterranean and other theaters.

c. Statement that relative needs of air and ground units must be decided in theater at once, since production of aircraft and ground launchers retains some flexibility at this time and either type can be emphasized.

d. Suggests advisability of consulting General Coupland, now in theater, prior to restating requirements.

3. In general, it is considered that USSAFE rocket requirements are excessive in view of (a) the extremely limited tactical experience of rocket use thus far available and (b) the presence in the theater of a more than adequate supply of bombs and fighter bomb racks.

William F. McKee

WILLIAM F. McKEE
Colonel, A.C.,
Deputy Asst. Chief of Air Staff,
Operations, Commitments & Requirements

Asst Chief of Air Staff, Operations, Commitments & Requirements

~~SECRET~~

Asg 452.11 Rockets (4)

Air AG 452.11 Rockets '41

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

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FOR VICTORY BUY UNITED STATES WAR BONDS

ATTENTION:

HEADQUARTERS, ARMY AIR FORCES
WASHINGTON

DECLASSIFIED
DOD ltrs
5 Jan. & 20 June 1974
by A(AD)(E) LC; Date 10/18/76

MAR 10 1944

MEMORANDUM FOR CHIEF OF AIR STAFF:

Subject: Rockets for ETO.

1. Cable request of the Ninth Air Force for immediate shipment of rockets and launchers, building up to some 850,000 rockets and 350,000 launchers during 1944, has precipitated a serious operational and procurement problem.

2. The situation was discussed at a G-4 WDGS conference attended by representatives of AAF, AGF and ASF. The AAF representatives included Colonel Giffin of this Office and Air Ordnance personnel.

3. The current situation can be summarized as follows:

a. AAF and AGF compete in their requirements for available rockets and launchers.

b. Scheduled supply of rockets will apparently not meet the requirements during 1944.

c. The Ninth Air Force requirement exceeds by nearly 200,000 rockets the total availability of operational rockets to the AAF during 1944 (593,000 rockets available).

d. The ETO requirement for Ground Force rockets and launchers has not yet been submitted.

e. Present factor of safety in launchers considered 100% expendable is 30. By reducing this factor of safety additional launchers might be obtained sooner.

f. The initial bottle-neck occurs in the launcher program, rather than in rocket production.

4. Action accomplished thus far can be summarized as follows:

a. Colonel Giffin stated that the AAF would accept a reduction in the factor of safety of 100% expendable launchers from 30 to 5.

AAG 452.11 Rockets (40)

Note 6

AAG 25/Mar/44

AAG 452.11 Rockets (40).

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b. Colonel Giffin stated that, if ASF representatives would supply him with maximum production capabilities under high priority conditions and with the more fragile launcher tube, he would undertake to prepare a cable for dispatch to ETO stating the situation and making appropriate recommendations. Cable will be signed Marshall and must be coordinated with AAF, AGF, ASF, and G-3, G-4 and OPD, WDGS. Anticipate that this cable can be dispatched 11 March.

William F McKee

WILLIAM F. McKEE
Colonel, Air Corps
Deputy Asst. Chief of Air Staff
Operations, Commitments & Requirements

File for DAS
a. 2 Mar 44

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AG 452.1 Rockets (40)

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5 Jan. & 20 June 1974
By AGAD/AK LC. Date 10/18/76

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AAG 452.11 Rockets (39)

TO: AC/AS, MM&D

DATE 24 Mar 44

FROM: Deputy Chief of Air Staff

COMMENT NO. 4
ESP/eva/6371

General Arnold agrees to the use of Dover for rocket testing during the war. Eglin Field is to be developed for post-war use.

EDWIN S. PERRIN,
Brigadier General, U.S.A.,
Deputy Chief of Air Staff.

Incls n/c

Dispatched
25 Mar 1944
AAG

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AAG 452.11 Rockets (39)

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8 Jan. & 20 June 1974
By ALSIC NC. Date 10/18/76

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Air AG 452.11 Rockets (35)

TO: AC/AS, MM&D

FROM: Deputy Chief of Air Staff

DATE 5 Feb 44

COMMENT NO. 2
WMK/eva/72487

To note.

Dispatched
8 FEB 1944

EDWIN S. PERRIN,
Brigadier General, U.S.A.,
Deputy Chief of Air Staff.

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Air AG 452.11 Rockets (35)

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8 Jan. & 20 June 1974
By: AFAVLK LC. Date 10/15/76

~~SECRET~~

8 FEB 1944

MEMORANDUM FOR MR. B. J. THOMPSON, EXPERT CONSULTANT, OFFICE OF THE SECRETARY OF WAR

Subject: Minimum Safe Arming Distance of Rocket

1. In the design of influence type fuzes, T4 and T5, for 4.5" rocket, a minimum safe arming distance of 400 yards has been stated by the Air Ordnance Officer after considerable consultation with OCAR, Fighter Branch, and the Ordnance Department. This arming distance was arrived at from a practical standpoint in the consideration of the present stage of rocket and rocket fuze development which includes the possibility of some premature fuze functioning occuring after the arming of the fuze is completed.

2. Remaining slivers of rocket propellent powder in the projectile sometimes causes "after burning" and if this occurs after the fuze arming is completed, the influence type fuze will be actuated by the "after burning" and explode the rocket.

3. Functioning of a rocket 100 yards ahead of the plane is not considered safe, even though recent screen firing tests show that no fragment particles have been recorded at a point 10 yards (towards the plane) in back of the rocket burst.

4. Memorandum forwarded for your information.

For the Commanding General, Army Air Forces:

Dispatched
8 FEB. 44
AAG

Wm Tucker Lt Col
for EDWIN S. PERRIN
Brigadier General, U.S.A.
Deputy Chief of Air Staff

~~SECRET~~

Air Adj 452.11 Rockets (97)

Tlg 8/1/44

Air Adj 452.11 Rockets 97

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DECLASSIFIED
DOD Dirs.
6 Jan. & 20 June 1974
By ALWUE NC Date 10/18/76

TO: Deputy Chief of Air Staff DATE 29 Jan 1944

FROM: Asst C/AS, Operations, Commitments & Requirements COMMENT NO. 2
Lt Col Younger/raj - 71676

1. In the design of influence type fuses, T4 and T5, for 4.5" rocket, a minimum safe arming distance of 400 yards has been stated by the Air Ordnance Officer after considerable consultation with OCdR, Fighter Branch, and the Ordnance Department. This arming distance was arrived at from a practical standpoint in the consideration of the present stage of rocket and rocket fuze development which includes the possibility of some premature fuze functioning occurring after the arming of the fuze is completed.

2. Remaining slivers of rocket propellent powder in the projectile sometimes causes "after burning" and if this occurs after the fuze arming is completed, the influence type fuze will be actuated by the "after burning" and explode the rocket.

3. Functioning of a rocket 100 yards ahead of the plane is not considered safe, even though recent screen firing tests show that no fragment particles have been recorded at a point 10 yards (towards the plane in back of the rocket burst.

4. Mr. Thompson has been given this information informally by Lt. Colonel J. M. Gruitch in a conference approximately 17 January 1944.

Bomb. Br._____
Air Ord._____
Req. Div._____

SECRET

WILLIAM F. McKEE
Colonel, Air Corps
Deputy Asst. Chief of Air Staff
Operations, Commitments & Requirements

Gen 614.5-3.11 Rocket (37)

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DOD dirs.
8 Jan. & 20 June 1974
By NARS, Date 10/8/96

Rocket Information for Mr. Thompson

AC/AS, OC&R

26 Jan 44

Deputy Chief of Air Staff

1

ESP/eva/6371

1. Mr. Thompson of Dr. Bowles' office, is anxious to determine the minimum lead or distance between the airplane and rocket burst for safe operation. Mr. Thompson feels that 100 yards would be perfectly safe. I, personally, feel that this "safe" distance is satisfactory; however, it may be difficult to convince the boys flying fighters that a burst 100 yards ahead of them will not damage their own airplanes.

2. Mr. Thompson should know this as soon as possible in order that production of fuses may go ahead.

EDWIN S. PERRIN,
Brigadier General, U.S.A.,
Deputy Chief of Air Staff.

Gen Ltr 452.11 Rockets (37)

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DOD ltrs
5 Jan. & 20 June 1974
By AUD/IK ltr: Date 10/15/76

RELEASED

Rocket Information for Mr. Thompson

AC/AS, OO&R

26 Jan 44

Deputy Chief of Air Staff

1.

ESP/eva/6371

1. Mr. Thompson of Dr. Bowles' office, is anxious to determine the minimum lead or distance between the airplane and rocket burst for safe operation. Mr. Thompson feels that 100 yards would be perfectly safe. I, personally, feel that this "safe" distance is satisfactory; however, it may be difficult to convince the boys flying fighters that a burst 100 yards ahead of them will not damage their own airplanes.

2. Mr. Thompson should know this as soon as possible in order that production of fuses may go ahead.

EDWIN S. PERRIN,
Brigadier General, U.S.A.,
Deputy Chief of Air Staff.

Dispatched
27 JAN 19[illegible]
AAG

1/29/44

RELEASED

AAG 452.11 Rockets (37)

Air AG 452.11 Rockets (37)

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DOD 8/s
8 Jan. & 20 June 1924
By AGAF(M) NC, Date 15 Jan 74

SECRET
DECLASSIFIED

AAF Requirements for 4½" Airborne Rockets and Firing Tubes.

Secretary of the Air Staff.

14 Dec. 1943
AFREQ/M
1
Lt.Col.Macon/ame/6328

Asst C/AS, Operations, Commitments and Requirements.

It is requested that the attached memorandum for the Chief of Staff be signed and forwarded.

WILLIAM F. McKEE,
Colonel, Air Corps.

1 Incl
Memo for C/S

Orig 452.11 Rockets (34)

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File CA/2

452.11 Rockets (34)

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DOD 5200

CONFIDENTIAL

(AFDMA-2B) KBH:lm
71146
Written Dec. 9/43

18 Dec 1943

Aircraft Rockets, 4.5 Inch

Commanding General
Army Service Forces
Washington, D. C.

1. The Army Air Forces have for some time been working on and have standardized on certain items of equipment for launching rockets from fighter and light and medium bombardment aircraft. All of these items of Air Force equipment for launching rockets are built around the 4.5" rocket developed by the Ordnance Department.

2. For about two years the Ordnance Department has been working on rockets for use by the Army Air Forces. These first rockets were felt by the Army Air Forces to have considerable promise. At that time, however, all persons concerned - Ordnance and Air forces alike, knew that a tremendous amount of work had to be done on the 4.5" rocket to make it a satisfactory weapon for Air Force use.

3. Up to about seven or eight months ago there were some changes made by the Ordnance Department on the 4.5" rocket. These changes aimed toward improvement of the rocket; however, even after these changes were made the 4.5" rocket was a long way from being a good, substantial, serviceable item of armament equipment for Air Force use. For the last seven or eight months the Air Force tests using the 4.5" rocket have shown no improvement in performance. The first and most important defect is the accuracy. The Air Forces realize that they cannot expect the accuracy of a conventional gun, but do feel that the accuracy can and by all means must be increased substantially to a point where this item can be a suitable service weapon. During tests conducted on this equipment at the Air Forces Proving Ground last summer, a great amount of trouble was experienced with separations of rockets. This difficulty was great enough to stop test at that station for approximately six (6) weeks and an immediate report of the difficulties was made to the Ordnance Department. Corrective action in the form of "zone loading" for various temperature ranges was adopted by the Ordnance Department. The Ordnance Department was advised by the Air Forces that this method of solving the problem was not satisfactory for Air Force use. During these same tests at the Air Forces Proving Ground serious trouble was experienced in the functioning of the rocket fuses. This trouble was also reported to the Ordnance Department.

AFDMA-2

1A COPY FOR GENERAL ARNOLD'S OFFICE

Files

CONFIDENTIAL

Ops 452.1 Rockets (33)

Air 45 452.1 Rockets (2)

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CONFIDENTIAL

Ltr. to CG, Army Service Forces, Washington, D. C.
Subject: Aircraft Rockets, 4.5 Inch

4. On 3 August 1943 a memorandum was received in this Headquarters from Major General L. H. Campbell, Jr. This memorandum states that "The 4.5" rocket has reached a stage in development where its issue for use by the Air Forces could be undertaken". It was also recommended that immediate steps be taken to furnish the 14th Air Force with a quantity of these rockets and that a similar introduction of this weapon to other theaters be encouraged to enable the full tactical potential of this new weapon to be exploited.

5. Based on this assurance by the Ordnance Department that the rockets were far enough along for issue to and use by the Air Forces, arrangements were made for shipment of this equipment and personnel familiar with its functioning to four theaters of operation. The first of these shipments was for China and consisted of 1000 launching clusters and 12000 rockets with fuses. In October 2400 rockets were shipped to the Port of Embarkation for shipment to China. The fuses that were shipped were found to be unreliable and had to be recalled, and replacement fuses were sent which were felt by the Ordnance Department to be reliable.

6. In a conference on 29 September 1943, which was attended by personnel from both the Ordnance Department and Army Air Forces, including Major General Barnes, Ordnance Department, Brigadier General Gardner, Army Air Forces, Brigadier General Childlaw, Army Air Forces, and Brigadier General Coupland, Air Ordnance Officer, all present agreed that the rocket was not yet a perfected article but the Ordnance Department stated that improvements were being made. It was brought out by the Air Force that the troubles from an Air Force standpoint were as follows:

(1) Lack of accuracy.
(2) Fuse trouble.
(3) Temperature limitations.
(4) Zone loading.
(5) Lowering velocity.

The Ordnance Department personnel have repeatedly stated that they were working on these difficulties, and that before winter the Air Forces would have another improved rocket. To date no recent improvement in the rockets that are being furnished to the Army Air Forces has been noted; in fact present tests underway at the Proving Ground on a current lot of ammunition indicate less satisfactory operation than previous lots tested at that station.

7. The experience of the Navy and of our Allies establishes the rocket as a weapon of prime and possibly decisive importance. Every effort must

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(AFDMA-2B)
[redacted]:LM
71146
Written Dec. 9, 1943

Ltr. to CG, Army Service Forces, Washington, D. C.
Subject: Aircraft Rockets, 4.5 Inch

be made to bring it to bear quickly upon the enemy. It is felt that the 4.5 inch rocket fired from aircraft will have a most important role in reducing future Japanese strongholds on the Pacific Islands.

8. It is requested, therefore, that the Ordnance Department redouble its efforts to furnish the Army Air Forces a rocket suitable for combat use. It is further requested that the Army Air Forces be advised as to the probable time when a rocket free of the difficulties which have been reported to the Ordnance Department can be expected for test and for operational use.

9. The Army Air Forces consider the airborne rocket development of extremely great importance, and urge that it be given the highest priority. The Army Air Forces will render full cooperation to the Ordnance Department, and it is anxious to undertake under the direction of the Ordnance Department any and all phases of development and test which will contribute to the early success of this project.

For the Commanding General

[redacted]

Barney M. Giles,
Major General, U. S. Army,
Chief of the Air Staff.

AFDMA-2

-3-

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DECLASSIFIED
DOD ltrs
8 Jan. & 20 June 1974
By ACNIAS, JC. Date 9/18/76

~~CONFIDENTIAL~~

Status of Ordnance Aircraft Rockets.

Commanding General, Army Air Forces 10 Dec 1943

AC/AS, M&AD 1

JEP/ah/71885

1. It is urgently recommended that the attached letter, above subject, be forwarded to Commanding General, Army Service Forces.

2. Neither Eglin Field, OC&R, the Air Ordnance Office, nor this office, feel that the development of aircraft rockets by the Ordnance Department has kept pace with the development of the launching devices by the Army Air Forces.

O. P. ECHOLS,
Major General, U.S.A.,
AC/AS, M.M.& D.

1 Incl.
Ltr to CG, ASF,
subj: Aircraft Rockets, 4.5 Inch.

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-1-

AAF 452.11 Rockets (53)

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DOD Dir. 5200.9
8 Jan & 20 June 1974
By ALAFAC, OCI Date 8 Nov 74

HEADQUARTERS ARMY AIR FORCES

ROUTING AND RECORD SHEET

SECRET

TALLY NO.	
FILE NO.	

SUBJECT: Employment of Rockets.

TO: General Vandenberg

DATE 9/5/43

FROM: General Giles

COMMENT NO. 1

Desire that you take action immediately on cablegram number W-4044 dated September 4th from General Arnold. For your information, orders have already been issued to send rockets and adapters for installation on pursuit type aircraft in the South Pacific, India and China.

General Baker has been directed to use the glide bombs similar to the ones mentioned in General Arnold's cablegram. General Baker previously stated that such bombing would be area bombing and he did not desire to employ glide bombs at this time. Apparently he has changed his mind, and the additional B-17s should be set up for this project immediately when we hear from Baker.

Have a report of action taken and full information on this subject by Friday, the 10th of September.

B.M.G.

Incl: Cable no W-4044 from Gen. Arnold.

File 453

File
SK
11/15/43

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AAG 452.11 Rockets (37)

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3-1109 A.F.

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DOD ltrs
8 Jan. & 30 June 1974
By ALAFLC, LC, Date 10 JULY 74

(AFDRA-2B-)

20 October 1943

MEMORANDUM FOR: The Chief of Air Staff

SUBJECT: Comparison of American and British Rocket Installations.

1. In compliance with your request that an installation of the British Mark I rocket launching devices be made on a P-40 airplane, the Material Command prepared the installation and had the P-40 airplane made available to Bolling Field for your inspection on Sunday, 17 October 1943. A P-47 airplane incorporating the American rocket launching equipment was also made available to Bolling Field for comparison with the British installation.

2. There is shown below a comparison of American and British rocket launching installations as to weight of installation per airplane, weight of projectiles, loss in speed, and remarks pertinent to the rocket installation:

	American Installation (P-47)	British Installation (P-40)
Weight of Installation on Aircraft	218 lbs. complete	Approx. 430 lbs. complete
Weight of Projectiles	38.4 lbs. complete	55 lbs. each complete (with 25 lb. head) 90 lbs. each complete (with 60 lb. head)
Total Weight of Installation and Projectiles	446 lbs.	865 lbs. - 25 lb. head 1145 lbs. - 60 lb. head
Speed loss (top speed)	18 M.P.H.	60 M.P.H.

REMARKS: The British Mark I launching equipment consisting of 4 launching rails under each wing or 8 rails per airplane is a permanent installation and cannot be dropped in flight. The installation on the P-40 airplane, shown in the attached photographs, makes it impossible to use the wing guns in this airplane since the rocket blast plate and installation completely covers the gun access door in the lower side of the P-40 wing. This installation makes it impossible to service the machine guns unless the rocket installation is removed from the airplane. A similar installation of British

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DOD Rtrs
8 Jan. & 20 June 1974
By ATA/IE LC. Date 10/08/74

CONFIDENTIAL

Memorandum for: The Chief of Air Staff (AFDRA-2B)
Subj: Comparison of American and British 20 October 1943
Rocket Installations.

launching rails is being made on a P-47 airplane and it has been found necessary to remove the outboard launching rails under each wing, making only three rails per wing or six rails per airplane. Since this fourth rail makes it impossible to use the ailerons on P-47 airplanes, this same trouble may exist on other airplanes, but to date this cannot be verified.

The American rocket installed on the P-47 airplane, as shown in the attached photographs, consists of a cluster of three (3) 4½" plastic launching tubes installed under each wing and can be dropped in flight at any time the pilot so desires, either before or after the projectiles have been fired from the tubes. After the clusters have been dropped, all that remains under the wings of our fighter airplanes is the front and rear mounts. The American installation on P-47 and other fighter airplanes in no way interferes with the operation of the machine guns, either with the clusters attached to the wing or when dropped. It is felt that this is a highly desirable feature on any airplane incorporating rockets.

B. E. MEYERS
Brig. General, U. S. A.
Acting Assistant Chief of Air Staff
Material, Maintenance & Distribution

Incls.: 6 photos

Orig + Photos sent to Alan Hill

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-2-

Air AS 452.11 Rockets (3D)

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DOD Ltr
8 Jan. & 20 June 1974
By AGAU UC, LO, Date 9/18/76

SECRET

Employment of Rockets in Certain Theaters

Chief of Air Staff

24 Sept 1943

ACAS, Operations, Commitments & Requirements

3

LNT/lh/3487

1. Forwarded herewith as Comment No. 2 is the report on the Employment of Rockets in Certain Theaters.

2. The first 3 paragraphs are broken down into great detail. Your attention is particularly invited to paragraphs 4 and 5.

H. A. CRAIG
Brig. Gen., U.S.A.

This project as approved should be outlined just as soon as we get sufficient data from the Combat Zone. Make up new estimates accordingly.
(Sgd) B.M.B.

452.11 Rockets (29)

TO: AC/AS, Operations, Commitments & Requirements

Dispatched
29 SEP 1943

DATE 29 September 43

FROM: Chief of the Air Staff.

COMMENT NO. 4
MAL/mdg/5265

To note the penned directive of the Chief of the Air Staff above.

SECRET

8 Encls

WILLARD A. LIBBY
Colonel, C. S. C.

29

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DOD ltrs.
6 Jan & 20 June 1974
By ACWC UC Date 10/15/76

SECRET

24 SEP 1943

TO: Deputy Chief of Air Staff (General Perrin). DATE (24 Sep 43)

FROM: AC/AS, MMSD, Air Ordnance Officer. CONSENT NO 3
WMF ea Jan 72345

1. Arrangements have been made by this office with Colonel Otten, Transportation Corps, 17 Battery Place, New York City, to ship seven hundred (700) rockets to Eglin, two hundred fifty (250) to Aberdeen, and fifty (50) to Wright Field. All shipments will arrive within two (2) weeks.

2. Lt. Colonel H. L. Donicht, Wright Field, is arranging with Colonel Otten to fly four (4) rocket launchers from the port to Wright Field to expedite initial phases of the test.

3. Notification will be given when firing is to take place so that an observer may witness the firing.

R. C. COUPLAND,
Brig. Gen., U.S.A.

1 Encl. n/c

SECRET

AirAd 452.11 Rockets (28)

AirAd 452.11 Rockets (28)

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DOD ltrs
6 Jan. & 30 June 1974
By [illegible] Date [illegible]

SECRET

British Rockets and Launchers.

AC/AS, MR&D. 22 Sept. 1945.

Deputy Chief of Air Staff. 2
MSP/cmc/6571

1. General Giles directs that 700 rockets be sent to Eglin and 250 to Aberdeen.

2. Notify me when firing is to take place so that General Giles or someone from here can go down.

EDWIN S. PERRIN,
Brigadier General, U.S.A.,
Deputy Chief of Air Staff.

Incl: n/c.

452.11 Rockets (38)

file
ae 23 Sept '45

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air ag 452.11 Rockets (21)

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DECLASSIFIED
DOD 5200
6 Jan & 30 June 1974
By ALAIR, NARS, Date 10/15/76

SECRET

471.69

20 SEP 1943

British Rockets and Launchers.

Chief of Air Staff.

AC/AS, OMAS, Air Ordnance Officer.

1.

AIP:mcd 71170

2. Reference this, this office, to your office, "British Rockets and Launchers", dated 17 Sep 43. Subsequent information has disclosed that the British rockets have arrived in New York and therefore action was taken this date to ship 20 complete rounds to the Rocket Project Officer (Lt. Colonel E. L. Ramsey), Material Command, 200 complete rockets to the Commanding General, AAF Proving Ground Command, Eglin Field and 200 complete rockets to the Technical Division, Aberdeen Proving Ground, Maryland. It may be noted that half of the British rockets are equipped with the lower planing rocket head (25-lbs.) and half are equipped with the standard planing rocket head (60-lbs.), Enclosure #1.

3. The related British rocket launcher equipment for installation upon the aircraft will be received during the week of 20 September 1943 and according to information made available to this Headquarters through the British Air Commission, it will consist of three airplane sets or six rocket launchers, British, Mk I. Four rocket launchers will be sent to the Rocket Project Officer, Material Command, for installation upon the P-40 airplanes, and the remaining two rocket launchers shipped to the Technical Division, Aberdeen Proving Ground, Maryland, for necessary equipment in guarding the British rocket missiles.

E. E. POWER
Colonel, Ord. Dept.

1 Incl:-
Cy,ltr,AAF 471.69 (16 Sep 43)
to AC/Air Staff-4, AAF.

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DOD 5's
5 Jan. & 30 June 1994
By: [illegible] NC, Date: [illegible]

SECRET

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Rockets.

AC/A[illegible], Operations, Commitments & Requirements. 17 Sept. 43
ATTENTION: General Craig.
Chief of the Air Staff.

1
MAL/mdg/5265

1. With further reference to R&R from the Chief of the Air Staff, dated 16 September 1943, same subject as above, General Giles called the undersigned from Colorado Springs this morning and specifically directed that General Craig continue to follow through on the shipment of rockets, adapters, etc., to the Asiatic Theater and to the South and Southwest Pacific areas.

2. In the same conversation General Giles again re-emphasized his desire that immediate action be taken to follow up on glide bombs and other radio controlled missles. This subject was also mentioned in the same R&R quoted in Par. 1, which was sent you on 16 September 1943.

Dispatched
17 SEP 1943
AAG

MILLARD A. LIBBY,
Colonel, G. S. C.,
Secretary of the Air Staff.

AAG 452.11 Rockets (27)

SECRET

File 17 Sept. 43

AG 452.11 Rockets (27)

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DOD Dir.
8 Jan. & 30 June 1976
By A.A.G./C. JCS Date 10 JUL 76

SECRET

9 September 1943

MEMORANDUM FOR JOINT STAFF PLANNERS.

Attached hereto is copy of memorandum, subject: "4.5 Rockets for Fighter Aircraft". It is requested that you prepare a paper for the consideration of the Joint and Combined Chiefs of Staff, recommending that we release, at once, for use in South and Southwest Pacific Theaters, and India-China Theater, this type of rocket.

Signed
BARNEY M. GILES,
Major General, U. S. A.
Chief of the Air Staff.

1 Att.
cy of memo 7 Sept '43 fr
OCAR to CAS subj.as abv.SECRET

452.11 Rocket (24)

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452.11 Rocket (24)

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DOD Dir
5 Jan. & 30 June 1976
By [illegible] NLC Date 10/13/76

SECRET

REGRADED

15 September 1943

MEMORANDUM FOR SECRETARY OF THE AIR STAFF (COL. LIBBY):

Subject: "4.5 Rockets for Fighter Aircraft."

1. It is understood that action on this matter is being taken by means of an R&R from OCAR to AC/AS, Plans, which supersedes the action contemplated in your memorandum.

2. Accordingly, we are returning herewith for your files the papers forwarded to us with your Routing Slip, dated 10 September.

ADRIAN WILLIAMSON,
Colonel, G. S. C.
Chief of Joint and Combined
Chiefs of Staff Subjects Division.

Incls:
#1-Memo to JCS fr C/AS,
d. 9 Sept. w/1 Att.
#2-Memo to Sec. JCS, fr.
Gen. Arnold, d. 10 Sept,
w/1 Encl.

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DOD ltr's
8 Jan. & 20 June 1974
By ... NC. Date 10/15/76

SECRET

German "Rockets"

AAG 453.11 Rockets (53)

TO: Deputy Chief of Air Staff

DATE: 9 Sept 1943
Comment No. 2
JFP/ss/71500 AC-881

FROM: AC/AS, MM&D, Materiel Division

1. All information now available to the Navy covering the use of radio controlled glider bombs by the Germans has been obtained and is on record. In addition, reports from the Air Technical Section of the 8th Air Force covering same subject have been received.

2. From these data it appears the glider bomb consists essentially of a 1000 lb. bomb carried by means of wings having a span of approximately 10 feet and tail structure permitting change of direction in flight. The missile is apparently propelled by means of rocket or jet motors in its initial flight. It has been definitely ascertained that it is radio controlled. It was also suspected that it might have radar but this apparently has been disproven by virtue of the fact that radar was used as a counter measure with no effect. The speed of the missile has been estimated at 1200 to 1400 f/s. The reports indicate that apparently there are three different types either in use or in manufacture with sizes running up to 1400 kg.

3. Col. Leslie Skinner has conferred with Gen. Chidlaw as well as with the Armament Laboratory at Wright Field and has presented his opinions of foreign as well as Bureau of Aeronautics and British developments on rockets. An attempt is being made to have Col. Skinner assigned to duty with the Ordnance Officer at Wright Field so as to make his considerable experience and recent information more readily available

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DOD ltrs
8 Jan. & 30 June 1974
By Arnold NC Date 10/27/76

SECRET

German "Rockets"

FROM ACAS, MM&D, Material Division

9 Sept 1943

XXXXX TO: Deputy Chief of Air Staff

2
(continued)

in the field of rockets. Latest report is that the Office, Chief of Ordnance does not look favorably on this proposed assignment.

B. E. CHIDLAW, BRIG. GEN., U.S.A.,
Chief, Material Division,
Office, Asst. Chief of Air Staff,
Material, Maintenance & Distribution.

Talk OK 9/2/43

SECRET

2.

Air Ms 452.11 Rockets (23)

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DOD ltrs
8 Jan & 28 June 1974
By AGAUK, UC, Date 10/18/78

HEADQUARTERS ARMY AIR FORCES

ROUTING AND RECORD SHEET

TALLY NO.	
FILE NO.	

SECRET

SUBJECT: German "Rockets".

TO: AC/AS, Materiel, Maintenance & Distribution (General Chidlaw)

DATE 2 Sept. 1943

FROM: Deputy Chief of Air Staff.

COMMENT NO. 1
ESP/cmc/6371

1. The U.S. Navy is getting information in U.K. on a German radio controlled glider bomb. Suggest we contact them and get the dope.

2. A Colonel Leslie Skinner, Ordnance, (from U.K.) is on temporary duty in Washington. He has some information on the German rockets. Have we gotten any data on this from him?

3. Please let me know what you find out.

EDWIN S. PERRIN,
Brigadier General, U.S.A.,
Deputy Chief of Air Staff.

TO: Deputy Chief of Air Staff

DATE: 9 Sept 1943
Comment No. 2
JFP/sz/71500 4C-881

FROM: AC/AS, MM&D, Materiel Division

1. All information now available to the Navy covering the use of radio controlled glider bombs by the Germans has been obtained and is on record. In addition, reports from the Air Technical Section of the 8th Air Force covering same subject have been received.

2. From these data it appears the glider bomb consists essentially of a 1000 lb. bomb carried by means of wings having a span of approximately 10 feet and tail structure permitting change of direction in flight. The missile is apparently propelled by means of rocket or jet motors in its initial flight. It has been definitely ascertained that it is radio controlled. It was also suspected that it might have radar but this apparently has been disproven by virtue of the fact that radar was used as a counter measure with no effect. The speed of the missile has been estimated at 1200 to 1400 f/s. The reports indicate that apparently there are three different types either in use or in manufacture with sizes running up to 1400 kg.

3. Col. Leslie Skinner has conferred with Gen. Chidlaw as well as with the Armament Laboratory at Wright Field and has presented his opinions of foreign as well as Bureau of Aeronautics and British developments on rockets. An attempt is being made to have Col. Skinner assigned to duty with the Ordnance Officer at Wright Field so as to make his considerable experience and recent information more readily available

Chief A.S.

SECRET

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AAF 452.11 Rockets (23)

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HEADQUARTERS ARMY AIR FORCES

ROUTING AND RECORD SHEET

TALLY NO.	
FILE NO.	

SECRET

SUBJECT: German "Rockets"

FROM ACAS, M&D, Materiel Division

DATE 9 Sept 1943

TO: Deputy Chief of Air Staff

COMMENT NO. 2 (continued)

in the field of rockets. Latest report is that the Office, Chief of Ordnance does not look favorably on this proposed assignment.

B. W. CHIDLAW, BRIG. GEN., U.S.A.,
Chief, Materiel Division,
Office, Asst. Chief of Air Staff,
Materiel, Maintenance & Distribution.

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PAGE 2.

3-1109 A.F.

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6 Jan. & 30 June 1974
By [illegible] LC. Date [illegible]

HEADQUARTERS ARMY AIR FORCES

ROUTING AND RECORD SHEET

SECRET

TALLY NO.	
FILE NO.	

SUBJECT: Status of Rockets 4½".

TO: Chief, Requirements Division
Attn: Colonel Gross
FROM: ACAS, Operations, Commitments & Requirements

DATE 31 Aug 1943

COMMENT NO. 1
FHL/ltm 5132

For preparation of information as requested by Chief of Air Staff on the inclosed memorandum.

H. A. CRAIG
Brigadier General, U.S.A.

Incl.
Memo, subj as above, dtd 26 Aug 43.

To: Asst C/AS, Operations, Commitments & Requirements

From: Asst C/AS, OCR (Requirements Division)

Date 8 Sept 43

Comment No. 2
Col Wise:sjp 72429

The information requested by the Chief of Air Staff on the inclosed memorandum was furnished in the form of a memorandum, subject "4.5" Rockets for Fighter Aircraft" on 7 September 1943, which was forwarded by Comment No. 2 of R&R dated 7 September, subject "Rocket Project."

MERVIN E. GROSS
Colonel, Air Corps

Incl. n/c

Fighter & Air Defense Branch

TO: Secretary of Air Staff

FROM: ACAS, Operations, Commitments and Requirements

DATE 10 Sept 43

COMMENT NO. 3
FHL/brs 5132

R&R dated 7 September referred to in comment 2 was delivered by messenger on 8 September 1943.

H. A. CRAIG
Brigadier General, U.S.A.

Incl. n/c

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mdr

Ag AB 452.1 Rockets (2)

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Status of Rockets 4½"

TO: Secretary of Air Staff

DATE 10 Sept 43

FROM: ACAS, Operations, Commitments and Requirements

COMMENT NO. 5
FHL/brs 5132

R&R dated 7 September referred to in comment 2 was delivered by messenger on 8 September 1943.

Incl. n/c

H. A. CRAIG
Brigadier General, U. S. A.

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26 August, 1943.

MEMORANDUM FOR: General Giles.

SUBJECT: Status of Rockets.

1. Letter from Major General Campbell, Chief of Ordnance, to General Arnold, [illegible], dated August 6, 1943, stated that the rocket 4½" had reached a stage in development wherein its issue for use by the Air Forces could be undertaken, and recommended that the rocket be introduced to the theaters. This letter was R&R'd on August 10, 1943 to AC/AS, OC&R, Operations Division, for information and any action necessary.

2. On August 18, Memorandum for Chief of Fighter Section from Colonel McKee informs that General Craig stated at staff conference that a directive had been issued to send all rocket-equipped fighter airplanes to the Japanese theater, which included South Pacific, Southwest Pacific, China-India-and Burma theaters.

3. On August 20, 1943, AC/AS, OC&R, by R&R to AC/AS, MM&D, requested the following:

a. To immediately install rocket equipment on the following airplanes:

5 P-38's
5 P-39's
5 P-40's
5 P-47's
5 P-51's

this installation to be made at AAFSAT.

b. That personnel under MM&D jurisdiction, familiar with rocket equipment, be made available to AAFSAT to aid in the tactical tests of the equipment.

c. That sufficient tubes, projectiles and associated equipment be made available at AAFSAT for the test.

d. Information as to the availability of personnel, familiar with the installation and use of rocket equipment, who could be sent to the theaters with rocket kits.

4. Letter to the Army Air Forces Board, AAFSAT, from AC/AS, OC&R, dated August 20, 1943, directed that the Air Forces Board conduct tactical employment tests on the rocket 4½".

5. Memorandum for the AC/AS, Operations Division, subject, "Employment of Rockets" from Chief of Air Staff, Army Air Forces, requested that previous instructions, prohibiting shipment of rockets to combat theaters until a certain stock level had been reached, be revised to reduce this certain amount, and a decision rendered to permit the shipment of rocket 4½" to the combat theaters for early use.

6. Memorandum to General Craig, from Colonel Gross, Chief, Requirements Division, subject "Employment of 4½" Rockets on Fighter Aircraft", dated August 23, gives the status of the subject as of that date.

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Air AS 452 11 Pursuits (22)

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Employment of Rockets

Secretary of the Air Staff — 10 Sept 1943

Asst C/AS, Operations, Commitments & Requirements — 2
Col Wise:sjp 72429

1. In compliance with directive in Comment No. 1, the following action has been taken:

a. An R&R has this date been forwarded to the Assistant Chief of Air Staff, Plans, requesting that JCS be notified of the decision to ship rockets to the China-India-Burma and Pacific Theaters.

b. An R&R has been forwarded to Assistant Chief of Air Staff, Materiel, Maintenance and Distribution, requesting that modification kits, clusters, and rockets be shipped as follows:

(1) CHINA
125 kits (25 for P-38's and 100 for P-40's)
1000 clusters
12000 rockets (with M4 fuze)

(2) INDIA
125 kits (25 for P-38's, 75 for P-51's, and 25 for P-40's)
1000 clusters
12000 rockets (with M4 fuze)

(3) SOUTH PACIFIC THEATER
125 kits (25 for P-38's, 25 for P-40's, and 75 for P-39's)
1000 clusters
12000 rockets (with M4 fuze)

(4) SOUTHWEST PACIFIC THEATER
250 kits (75 for P-38's, 75 for P-47's, 50 for P-39's, and 50 for P-40's)
2000 clusters
24000 rockets (with M4 fuze)

(5) First priority has been given the China Theater.

c. NRAD has been previously requested to ship necessary equipment and materials to Orlando for tactical test of this weapon, and a test directive has been forwarded to the Air Forces Board.

d. A reply to the letter from the Chief of Ordnance is attached for signature. This reply has been coordinated with the Air Ordnance Officer, NRAD.

Air AG 452.11 Rockets (6)

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Employment of Rockets

10 Sept 1943

(continued)

2. Headquarters Army Air Forces initiated action on 26 July 1943 for the development, by appropriate agencies responsible to the Army Service Forces, of countermeasures against controlled missiles. On 6 September 1943 it was requested that this countermeasure program (Electronic Devices Countermeasure Program) be expedited. The Air Ordnance Officer, Materiel, Maintenance and Distribution, has complete details in this connection.

4. It is believed that the best immediate countermeasure against rockets used by enemy fighters is the employment of long-range escort fighters in sufficient numbers to deny the enemy the opportunity of effectively launching these rockets against our bombardment formations. Every effort has been and is being made by this office to supply long-range escort fighters to the U.K. in the greatest possible numbers.

3 Incls.
1 Incl. added (Memo to Gen. Campbell)

H. A. CRAIG
Brigadier General, U.S.A.

Fighter & Air Defense Branch _____
Requirements Division _____

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s Jan. & 20 June 1974
COPY By AFRC/HS OC Date 10/16/74

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Employment of Rockets.

General Vandenberg 9/5/43

General Giles 1

Desire that you take action immediately on cablegram number W-4044 dated September 4th from General Arnold. For your information, orders have already been issued to send rockets and adapters for installation on pursuit type aircraft in the South Pacific, India and China.

General Eaker has been directed to use the glide bombs similar to the ones mentioned in General Arnold's cablegram. General Eaker previously stated that such bombing would be area bombing and he did not desire to employ glide bombs at this time. Apparently he has changed his mind, and the additional B-17s should be set up for this project immediately when we hear from Eaker.

Have a report of action taken and full information on this subject by Friday the 10th of September.

B.M.G.

Incl: Cable no W-4044 from Gen. Arnold.

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Rocket Project

Assistant Ch. of Air Staff, OC&R

Aug. 31, 1943

1.

General Giles

1. Submit full information on the Rocket Project as to whether or not we are now prepared to furnish rockets and tubes, adapters, etc., to South, Southwest Pacific, India, China and to all theaters that want them.

BARNEY M. GILES
Major General, U.S.A.
Chief of the Air Staff

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8 Jan. & 20 June 1974
By AFAD/DK NC Date 10/15/96

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Employment of Rockets

Asst. Chief of Air Staff, Plans. 9 September 43

Secretary of the Air Staff. 1

WRB/mdg/73691

1. Reference is invited to attached R&R (copy) from the Chief of the Air Staff to General Vandenberg, dated 9/5/43, subject as above, and letter (attached) dated 9/8/43, from the Chief of Ordnance to General Arnold, subject "Introduction of 4.5" Rockets and Launchers for Employment in Combat". Particular attention is directed to the time limit indicated by the Chief of the Air Staff's R&R.

2. Additional pertinent data is to be found in JCS 119/1 and "secret" letter AG 471.6 (5-5-43) OB-S-SPDDO-M, dated May 7, 1943, subject, "Withholding Proximity Fuses from Theaters".

3. It is understood that a JCS directive is outstanding at this time to the effect that 4.5" rockets will be withheld from combat until adequate stocks are built up in the Zone of the Interior. This directive has been converted by the War Department into the AG letter referred to above wherein adequate is established at 745,000 rockets.

4. OC&R Division has forwarded a memorandum to Operations Division, WDGS, requesting revision of this restriction on shipping rockets, and it is understood that OPD has forwarded the OC&R memorandum to ASF for recommendation inasmuch as the ASF (Ln. Br., Stock Control Division) directed the Adjutant General to issue the AG letter cited above.

5. General Vandenberg directs that Plans Division confer with OC&R, WM&D (Colonel Pepple) and OPD (Colonel Lazarus) and ascertain that the orders referred to in the Chief of the Air Staff's R&R (Par. 1) are being executed and do not conflict (submit recommendations for changes if necessary) with the JCS directive.

6. It is also desired that the OC&R memorandum to OPD (now in hands of ASF) and attached letter from the Chief of Ordnance be tied in together and recommendations re further action on the JCS directive (119/1) submitted to General Vandenberg.

MILLARD A. LIBBY,
Colonel, G. S. C.,
Secretary of the Air Staff.

Dispatched 8 SEP 1943 AMC

Att: cc R&R fm. CAS to DAS, 9/5/43 w/cc Memo to Gen. Arnold fm. Maj. Campbell 9/8/43.

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Air AS 452.11 Rockets (23)

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6 Jan. & 30 June 1974
By AUD/CIC WC Date 10/15/76

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9 September 1943

MEMORANDUM FOR JOINT STAFF PLANNERS.

Attached hereto is copy of memorandum, subject: "4.5 Rockets for Fighter Aircraft". It is requested that you prepare a paper for the consideration of the Joint and Combined Chiefs of Staff, recommending that we release, at once, for use in South and Southwest Pacific Theaters, and India-China Theater, this type of rocket.

Signed

BARNEY M. GILES,
Major General, U. S. A.
Chief of the Air Staff.

1 Att.
cy of memo 7 Sept '43 fr
OC&R to CAS subj.as abv.SECRET

Dispatched
10 Sep 1943
AMS

AAG 452.11 Rockets (9-9)

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c.10 Sept 43

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AAG 452.11 Rockets (2-10)

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By AGS/HK UC: Date 10/16/74

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German "Rockets".

AC/AS, Materiel, Maintenance & Distribution (General Chidlaw) 2 Sept. 1943

Deputy Chief of Air Staff. 1
ESP/cmc/6371

1. The U.S. Navy is getting information in U.K. on a German radio controlled glider bomb. Suggest we contact them and get the dope.

2. A Colonel Leslie Skinner, Ordnance, (from U.K.) is on temporary duty in Washington. He has some information on the German rockets. Have we gotten any data on this from him?

3. Please let me know what you find out.

EDWIN S. PERRIN,
Brigadier General, U.S.A.,
Deputy Chief of Air Staff.

(3)

Dispatched
3 SEP 1943
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AG AS 452.11 Rockets (23)

AAG 452.11 Rockets

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By Authority of
The Commanding General
Army Air Forces
Date Initials

28 AUG 1943

MEMORANDUM FOR THE ASSISTANT CHIEF OF STAFF, OPERATIONS DIVISION:

Subject: Employment of Rockets

1. Letter AG 471.6 (5-5-43) OB-S-SPDDO-M, subject, "Withholding (Special) Fuzes from Theaters," to Commanding General, Army Air Forces, Chief of Ordnance, Chief Signal Officer, dated 7 May 1943, prohibits the shipment of the 4.5 inch rocket and of special fuzes until specified stock levels have been reached. The Army Air Forces do not desire to employ special fuzes at this time, but an extreme tactical advantage can be gained in certain theaters by the employment of the 4.5 inch rocket equipped with contact fuze Gd AC.

2. A quantity of 75,000 rockets complete with contact fuze is believed sufficient to establish an initial combat stock level for the introduction of this weapon in the following theaters: China-India-Burma (10th and 14th Air Forces), Southwest Pacific (5th Air Force), and South Pacific (13th Air Forces). The restriction, as stipulated in the above letter, of a stock of 745,000 is believed excessive, and it is felt that with the supply now on hand and presently to be made available by Army Service Forces (Ordnance Department), continued use of this weapon can be made. The Technical Division, Office of the Chief of Ordnance has advised this headquarters that the above quantity of 75,000 will be available to the Army Air Forces through 1 December 1943, and further that approximately 500,000 additional are expected to be available in the succeeding six months.

3. It is therefore requested that the cited letter be rescinded or revised, and that a decision be rendered that will permit the shipment of the 4.5 inch rocket with contact fuze Gd AC to the combat theaters for early use.

For the Commanding General, Army Air Forces:

Signed

BARNEY M. GILES,
Major General, U. S. Army,
Chief of the Air Staff.

Dispatched
28 AUG 1943
AMC

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Ad Hq 452.11 Rockets (5-7)

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By [illegible] NARS Date 10/18/74

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Rocket Developments

AC/AS, Operations, Commitments & Requirements 23 Aug 43

Chief of the Air Staff 1

MAL/ee/5265

1. The Chief of the Air Staff has noted with interest the attached newspaper article reference the Russian development of a so-called rocket bomb.

2. General Giles desires a brief report as to the progress being made by the Army Air Forces in the development of this and similar type new weapons.

Dispatched
24 AUG 1943
AAG

Incl:
Newspaper clipping

M. A. LIBBY
Colonel, G. S. C.
Secretary, Air Staff

File
8/24/43

AAG 452.11 Rockets (20)

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5 Jan. & 20 June 1974
By AAG/HS, HC, Date 10/8/76

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Rocket Projectiles

AC/AS, Materiel, Maintenance & Distribution — 26 Aug 43

Chief of the Air Staff — 3

MAL/ee/5265

1. Note General Giles' directive penned at bottom of preceding comment.

2. For necessary action.

M. A. LIBBY
Colonel, G. S. C.
Secretary, Air Staff

Dispatched
26 Aug 1943
AAG

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8/26/43

AAG 452.11 Rockets (19)

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Ad Ac 452.11 Rockets (5)

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By MAJ HC Date 10/15/76

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Rocket Projectiles

AC/AS, Materiel, Maintenance & Distribution — 23 Aug 43

Chief of the Air Staff — 1

MAL/ee/5265

1. Mr. Lovett in a conversation with the Chief of the Air Staff indicated that the British were using an extremely satisfactory rocket projectile on their fighter aircraft. In view of our attempts to develop this type weapon, General Giles directs that you immediately take steps to secure six or eight sets of these rockets from the British and have them shipped to Eglin Field for testing.

2. A report of the action taken in connection with this directive is desired as the Chief of the Air Staff is intensely interested in this project.

Dispatched
23 AUG 1943
AAG

M. A. LIBBY
Colonel, G. S. C.
Secretary, Air Staff

452.11 Rockets (19)

File Cy 23 Aug

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8 Jan. & 20 June 1974
By AFRAS/JC Date 10/15/76

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By Authority of
Lt. Col. [illegible] General
Room 4[illegible]
wrtn. 18 Aug. [illegible]
[illegible] Date

25 AUG 1943

Major General Ira C. Eaker
Eighth Air Force
c/o Postmaster
New York, N. Y.

Dear Ira,

Preliminary studies of the A.A.F. School of Applied Tactics indicate that the formations which you are using, insofar as unescorted formations can be defended by their own weapons, are sound for defensive needs. AAFSAT is continuing its investigations on high altitude eighteen-plane bombardment formations using fighter escort to maximum range in order to constantly devise tactics upon which to establish a basis of employment for large operations of heavy bombers. I will supply you with the progress report of this program within sixty days, and it is our intention to continue to constantly supply you with progressive information on the results being attained at AAFSAT.

The Tactical Doctrine of the 1st Bombardment Wing of the VIII Bomber Command has been received and given wide distribution. This doctrine has already been of great assistance in bringing us up-to-date on your development of tactics and we are including your doctrine of heavy bombardment employment in the AAFSAT program and will carry it on from there. I am extremely anxious to make AAFSAT's program produce tangible results that can be immediately reflected in the combat theater through improved combat operations.

We are working, at the present time, on the solution of the problem of long range high caliber gun fire from enemy fighters, as well as rocket projectiles. The solution, at the present time, is indicated by increasing the fighter support and continuing your present employment of suitable defensive formations. As a possible solution for the problem of rocket projectiles, it is suggested that successive waves of fighters escorting bombardment formations would be one answer. I mean by this that one wave of the fighters without long range tanks should proceed in close support with a bombardment formation to the limit of the fighters' tactical radius of action. A second wave of fighters, initially equipped with long range auxiliary tanks, then picks up the escort duties where the first wave left off, and upon encountering the enemy, drop their

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AFHRB
Lt.Col.Gibson/mlk
wrtn. 18 Aug 43
Room 4E126A - 5611

auxiliary tanks, and proceed on to the target with the bombers. You have probably considered such a plan previously, but I believe that some such sort of solution will be the one that is finally arrived at.

The fact is becoming appreciably evident from our comparatively remote position here in Washington that perhaps one of the solutions to the offensive capabilities of your bombardment formations would be the use of formation leaders, these formation leaders to be equipped with airplanes that have increased armor protection for the crew members, and the airplanes to be crewed by more highly trained and experienced personnel than are being used in the rest of the formation. For example, the bombardier, upon his assignment to the Eighth Air Force, would fly five to ten missions, and then, if in your estimation he shows promise of being a combat bombardier, you send him back to us and we will give him a special intensive course in high altitude precision AFCE bombing. The man will then be returned to you for use as a formation leader bombardier. I believe that the ratio of airplanes and crews so equipped and trained should be approximately one to three. Your recommendations and opinions of such a program are desired, and I wish you would feel free to make any suggestions you care to, to evolve such a plan. Needless to say, everyone here is more than anxious to do anything we can to assist you in your operations over the continent in all phases of your requirements.

Sincerely,

Signed

BARNEY M. GILES,
Major General, U. S. Army,
Chief of the Air Staff.

Dispatched
25 AUG 1943
AAG

Dispatched
25 AUG 1943
AAG

AAG 452.11 Rockets (17)

File 8/26/43

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Air AG 452.11 Rockets (17)

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8 Jan & 20 June 1974
By ALD/LC LC. Date 01/16/74

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HEADQUARTERS
EIGHTH AIR FORCE
APO 633
C/o POSTMASTER, NEW YORK, N.Y.

July 22, 1943.

Major General Barney M. Giles, USA.,
Office of the Commanding General,
Army Air Forces,
WASHINGTON. D.C.

Dear Barney,

Recently I wrote to General Arnold suggesting that you undertake on the proving grounds and in the experimental stations at home at the earliest possible time, tests on proper counter measures for bombardment to employ against fighters using any of the following tactics :

a. Head-on attacks.

b. Pursuit bombing.

c. Long-range high-caliber gunfire from pursuit.

d. Rocket projectile launched from pursuit aircraft.

Enclosed herewith are three scraps of information having a bearing on the present development of German rocket projectiles aboard their aircraft. I am sending this to you in the belief that you will want to emphasize at the earliest possible moment two things :

a. The possibility of the use of rockets by our pursuit aircraft.

b. Bombardment counter-measures.

Sincerely,

IRA C. EAKER
Major General, U. S. A.
Commanding.

3 Incls :
1. Ltr. Col. Hull to A-2, 8th A.F. dated June 1/43.
2. Air Ministry Report No. 3003.
3. Memo. Capt. O'Mara to Col. Ordway dated July 19/43.

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• Plan. & 20 June 1974
By NARS, LC, Date 10/6/74

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HEADQUARTERS EIGHTH AIR FORCE
Office of the Assistant Chief of Staff, A-2

AAF Sta 586
APO 633, U.S.Army,
19 July 1943.

MEMORANDUM:

TO: Colonel Lucius Ordway, A.C. of S., A-2.

1. Since the 29th of April there has been good reason (mostly from our own crew reports) to suspect that the Hun was trying out, against our Fortresses, rocket projectiles launched from the underside of the wings and fuselages of their planes.

2. Such a development could be expected because:

a. The basic development work for such a project was completed in 1929 by the Gernam engineer Opel.

b. The range of such projectiles would be greater than a 50 calibre.

c. The lethal radius of a 21 cm rocket projectile burst such as the Hun is believed to use should be twice as great as that from the 88 mm Flak guns.

d. The problem of installation of such a rocket gun is much simpler than the installation of aircraft cannon because it hasn't the large recoil forces presented by cannon.

3. The British AI2(g) Air Ministry Intelligence Section said they didn't believe these reports, and that they knew of no evidence of any kind which could lead one to believe the Germans had such a weapon. They didn't believe such a weapon would be practical. Thirty days later the British reported using a similar projectile successfully on both Hurricanes and Beaufighters against submarines. Between the first report and the time the British announced their use of such a weapon, more of our crews reported seeing German planes with such weapons. On June 1st, Col. Hull sent in the first report containing a meagre, yet none the less revealing description, of the German Rocket Gun. Still AI2(g) questioned the German use of such a weapon. S/L Robinson has reported (with a request that we don't report it) that a British Beaufighter used their rocket guns against a FW-200 in the Bay of Biscay. There is good reason to believe that they are being used against many targets where the aim is not more than 20 to 25° from the horizontal.

4. One group of German planes could easily raise hell with a Fortress formation if no counter measures were taken. I have no way of knowing whether any steps are being taken in such matters, but feel that the attached memo from [redacted] gives us the desired proof, and steps should be initiated to see what is being done about it.

s/ John A. O'Mara
JOHN A. O'MARA
Captain, A.C.,
Assistant, A-2

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5 Jan. & 20 June 1974
By ACA/NE-LO Date 10/28/76

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HEADQUARTERS
VIII BOMBER COMMAND
A.P.O 634

1 June, 1943

SUBJECT: Teletype Report in RE: New Enemy A/C.

TO: Assistant Chief of Staff, A-2, Eighth Air Force.

1. In response to telephonic request from Captain John J. O'Mara, Eighth Air Force, received this date, herewith is the information desired:

2. Teletype report from COMBOMWING ONE:

" OIPNT V OIBMP NR 39 241830B
Attention A-2
Routine confidential 1BW M1037D

Report on large caliber guns on e/a on the last mission to Wilhelmshaven, it was reported by several groups of this Wing that they or other groups leading them had been attacked by various German fighters that were apparently using larger caliber shells than 20 mm. These e/a included FW190s, ME109s, ME110s, ME210s and Do217s.

Several e/a (Me109s) were reported with red wing tips, rounded, approximately 40 ft. wing span, very fast but very slow in climb, with two long barreled cannon, one in each wing, and two machine guns in each wing. The muzzle flash from the guns of these planes was a good 12 ft. in length and the burst of the projectile was described as being twice as large as a flak burst. The fire was limited to two or three rounds and about 3 seconds between rounds."

3. This is the only portion of the teletype report dealing with the enemy a/c with red wing tips.

HARRIS B. HULL,
Colonel, G.S.C.,
A.C. of S., A-2

~~CONFIDENTIAL~~

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DOD Rtr's
5 Jan. & 30 June 1978
By [illegible] NG, Date 10/15/79

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Plane-to-Plane Rockets.

Materiel Command (Att: General Chidlaw)

15 February 1943

Deputy Chief of the Air Staff.

#1
TJH/cmc/6371

The attached letter from Dr. Bush is forwarded for your information in connection with the letter which you recently prepared for General Stratemeyer.

T. J. HANLEY, JR.,
Brigadier General, U.S.A.,
Deputy Chief of Air Staff.

Incl: Ltr (Secret) to Gen.
Stratemeyer frm Dr. Bush,
dtd 2-12-43.

Dispatched
Feb 16 1943
AAG

AC/AS 452.11 Rockets (15)

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2-2/17/43

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Miss Ingram
AC/AS #52.11 Rockets (15)

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6 Jan. & 20 June 1974
By [illegible] Date [illegible]

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1/1-20-43 AFAMC-5B
Rm 4137 Ext. 2065
Munitions WEJ:IN

REWRITTEN AFCAS 1-29-43 WEK:JT 5246

January 29, 1943

452.11 Rockets (4)

Dr. Vannevar Bush, Director
Office of Scientific Research and Development
1530 P Street, N. W.
Washington, D. C.

Dear Dr. Bush:

This is in reply to your letter to General Arnold of January 14, 1943, "Plane to Plane Rockets", which I am taking the liberty of answering since General Arnold is out of the city.

Your statement, "For a long time I have been disturbed because the rocket program in this country, of which this is a part, has not moved more rapidly", causes me considerable concern. In the Army Air Forces we intend to use any and all effective means against our enemies on which we can lay our hands. Naturally in the case of any new weapon or device of a basic nature we have first to make proving ground tests of it and determine just how, against what targets, and by what tactics we shall use it. In the case of 4.5" rockets we have not yet been able to obtain even one inert rocket to test at Eglin Field. We have not yet fired a high explosive loaded round from an airplane.

We have been very anxious also to obtain a quantity of inert rounds for use at Wright Field (to fire at Jefferson Proving Ground) in the development and test of the various launcher installations on different types of aircraft. Up to this time there have been fewer than one hundred (100) such available and you can appreciate that we need several times these we have had. Realizing the many problems confronting the development section of the Ordnance Department, we have no criticism of that Department for not having had everything connected with this program available and in order "for a long time". Personally, I feel that splendid progress has been made by the different groups concerned with various phases of this program, considering the complexity of the problems, dealing as it does with new propellants, new fuses and new types of launching equipment.

Your further statement "I am inclined to believe that if there were one capable officer in full charge of this matter from every angle, and with nothing else on his mind, we would have had this weapon ready some time ago", has also been carefully noted. Of course you know that we have

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had for six months a special section set up at Wright Field with the sole function of furthering and coordinating the aircraft rocket program. A capable pilot officer is in charge of this section. Either this officer or an assistant recently sent from Eglin Field to Aberdeen Proving Ground has fired every rocket available for firing from an airplane. The latter officer has been engaged for about two months in test firing in the air the various proximity fuses. As pointed out by your Mr. Hovde in his memorandum to you, "the malfunction of a radio fuse may be due to many causes, and the troubles will not be ironed out until many hundreds of rounds have been fired. So far, only a few have been fired, because the rate of supply of rocket motors is not adequate".

In spite of the remarkable progress which I feel has been made by the various groups, it still is possible, as you suggest, "that we are not in this country, moving at maximum speed". Certainly we are arriving at that stage in this development where we may expect soon to have a quantity of 4.5" rockets for test and tactical evaluation at Eglin Field. We shall need several thousand inert rounds for these purposes and at the same time should have several hundred high-explosive loaded rounds with fuzes of such types as are proven to be reasonably safe. There should also be several hundred fuzes additional for practice use with the inert rounds.

I fully agree with you that "rocket devices have many important applications". As your letter apparently relates to plane-to-plane usages, I have confined this letter to the 4.5" rocket. There are other types with considerable promise which we hope also to get tested before long at Eglin Field. As pointed out herein, certain practice work and tactical evaluation must first be done at Eglin Field. We now expect to have initial quantities of the 4.5" available for these purposes early in February. If you can do anything to insure this for us, you will most certainly help us a lot in speeding up the program.

Very truly yours,

GEORGE E. STRATEMEYER,
Major General, U.S.A.,
Chief of the Air Staff.

Dispatched
JAN 31 1943
AAG

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- 2 -

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DOD ltrs
6 Jan. & 20 June 1974
By ALNIUS, DC Date 10/5/74

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RELEASED

Plane-to-Plane Rockets.

General Hanley 1/15/43.

General Stratemeyer 1.

It is desired that you prepare a reply to the attached letter from Dr. V. Bush, Director, Office of Scientific Research and Development, after investigation has been made as to the best method for the Army Air Forces to handle this question of plane-to-plane rockets.

G. E. S.

Incl:
Ltr. to Gen. Arnold 1/14/43 from Dr. Bush.
Memo to Dr. Bush 1/13/43 from Sec. K. Maertens.
Memo to Dr. Bush 1/13/43 from F. L. Hovde.
Ltr. to Gen. Arnold 1/3/43 from Gen. Chidlaw.

DATE 1/15/43

TO: Materiel Command; ATTENTION - General Chidlaw.

COMMENT NO. 2

FROM: Deputy Chief of the Air Staff.

For Information upon which to base a reply.

Dispatched
JAN 16 1943
AAG

T. J. HANLEY, JR.,
Brigadier General, U.S.A.,
Deputy Chief of Air Staff.

Incls: n/c.

AAG 452.1 Rockets (14)

9 Jan 43

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AAG 452.1 Rockets (14)

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DOD Ltr
8 Jan. & 30 June 1974
By ARMY NC Date 10/18/76

AFAMC-5
EBH:ms1
JUM:mmd
6/30/42

Jul 1 1942

MEMORANDUM FOR: General Arnold

SUBJECT: Rocket Demonstration

1. A demonstration was held at Camp Simms, District of Columbia, June 25, 1942, to show the effectiveness of a newly developed 3.25 pound high explosive anti-tank rocket which is under development for ground force use. This rocket projectile has been developed from the anti-tank rifle grenade and, while it is believed that the development has proceeded far enough to make it of interest to the ground forces, difficulties may still arise requiring further experimentation and perfection.

2. The rocket was fired electrically from a hand-held shoulder launcher, at the side of a M-3 medium tank. Ten rockets were fired; eight hits were scored, five of which were complete penetrations. It was generally believed that any one of the five penetrations would have put the tank out of commission. One of the penetrations set the tank on fire and burned it out completely.

3. The rocket obtains its armor penetration by employing the "Munroe Effect". By using the "Munroe Effect", the necessity for high velocities for armor penetration is eliminated and a velocity great enough for accuracy is all that is needed. The following are characteristics of the rocket:

Effective range	400 yards
Muzzle velocity	310 feet per second
Weight of rocket	3.25 pounds
Armor penetration	2.5 inches

Army Air Forces
4 1942
AAG Received

O. P. ECHOLS
Major Gen., U.S.A.
Commanding General
Materiel Command

CC: Col. M.E.Gross

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452.11 Rockets (13)

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DOD ltrs
8 Jan & 30 June 1974
By ALA/ILC, LC, Date 10/15/76

HEADQUARTERS ARMY AIR FORCES

ROUTING AND RECORD SHEET

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Note. --A line will be drawn across sheet after each comment.

Tally No. AAF _____

SUBJECT: Air Supremacy.

NO.	FROM	TO	DATE	COMMENTS
1	General Arnold	General Echols	1942 5/21	Prepare necessary reply for me. H. H. A. Incl: Memo. frm F.D.R. to Gen. Arnold, 5/20/42, re incl. Report on the above subject frm. E.B. Myers, N.Y.C.
2.	General Echols	General Arnold	5-22 1942	1. In compliance with directive in section 1 above, a reply has been prepared and is forwarded herewith attached. O. P. E. Commanding General, A. F. Materiel Command Incls.- Memo. frm F.D.R. to Gen. Arnold, 5/20/42, re incl. Report on the above subject frm. E.B. Myers, N.Y.C. Memo. to Gen. Watson.

452.11 Rockets (3)

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by ARMY/NAVY Date 20 June 1974

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by _____ Date _____

MAY 25 1942

MEMORANDUM FOR THE PRESIDENT.

SUBJECT: Impulse Reaction Aircraft Engine of Mr. E. B. Myers

1. In the absence of General Arnold, who is not in Washington at the present time, I am acknowledging your memorandum, dated May 20, 1942, together with attached descriptive data, subject: "Air Supremacy - Impulse Reaction Aircraft Engine", from Mr. E. B. Myers.

2. Mr. Myers has been in contact with the Army Air Forces for the past few years regarding the furtherance of this invention. The Myers reaction device, consisting of fuel cylinders, fuel lines, ignition apparatus and combustion chamber, was tested at Wright Field in April, 1941. Results of this test, while indicating that the thrust available appeared to be sufficient so as to offer an attractive means for assisted take-off, and, possibly, aircraft propulsion, revealed no practical solution for handling the fuel, igniting the fuel in the combustion chamber, providing for continuous operation or converting of the reaction to a usable thrust.

In general, the invention as set forth represented an elementary device extremely unsatisfactory and dangerous to handle because of the unstable condition of the fuel components used after the mixing process. Moreover, no method was proposed for successfully converting the reaction to a usable thrust for aircraft propulsion.

3. The last contact with Mr. Myers by the Army Air Forces was on January 3, 1942, at which time a letter was written to him setting forth views and opinions based upon a conference held at Wright Field, Dayton, Ohio, on December 22, 1941, between Mr. Myers and Army Air Forces' engineers. The above conference was held expressly at the request of Mr. Myers and an examination of available data and plans indicated nothing of advancement over previously submitted information and under the circumstances, it was decided that the device held no further interest in its state of development at that time.

4. At present the Army Air Forces, the Ordnance Department and the Bureau of Aeronautics have all under consideration and development

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H. H. Yale
5/28/42

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Written (5-22-42)
(Tel. No.-3350)
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accelerated take-off and jet propulsion projects that are believed to be much farther advanced, less complicated, and less dangerous from the viewpoint of practical employment than the device proposed by Mr. Myers.

FOR THE COMMANDING GENERAL, ARMY AIR FORCES,

MILLARD F. HARMON,
Major General, U.S.A.,
Chief of the Air Staff.

elh:mm

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Written (5-22-42)
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8 Jan & 30 June 1976
By AAMS MC Date 10 Mar 76

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MEMORANDUM FOR: Major General Edwin M. Watson
Secretary to the President

SUBJECT: Impulse Reaction Aircraft Engine of Mr. E. B. Myers

1. Reference is made to a memorandum from President Roosevelt, dated May 20, 1942, together with attached descriptive data, subject: "Air Supremacy - Impulse Reaction Aircraft Engine", from Mr. E. B. Myers.

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4. At present the Army Air Forces, the Ordnance Department and the Bureau of Aeronautics have all under consideration and development

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accelerated take-off and jet propulsion projects that are believed to be much further advanced, less complicated, and less dangerous from the viewpoint of practical employment than the device proposed by Mr. Hyard.

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8 Jan. & 20 June 1974
By ALNJ/LC NC. Date 10/15/76

COPY

THE WHITE HOUSE

WASHINGTON

May 20, 1942.

MEMORANDUM FOR

GENERAL ARNOLD:

Will you let me have a report on this?

F.D.R.

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DOD ltrs.
8 Jan & 30 June 1974
By ACS/JCK LC. Date 10/15/76

SUBJECT: Air Supremacy

Impulse Reaction Aircraft Engine

From E. B. Myers

THE PRINCIPLE:

The principle of the Myers engine is frequently miscalled "The rocket type." It differs in the essential detail of having controlled power thrust regulated to the speed of the aircraft propelled, altitude, and service desired.

THE ENGINE:

There is available NOW an engine ready for test.

FACILITY:

There is available NOW complete test equipment at the Anacostia Naval Research Laboratory.

RESULTS:

The results of tests will establish the following:

1. An engine weight of one twentieth of a pound per thrust horsepower (Installed.).
2. Completely controlled power thrust. (0 to 5000 horsepower)
3. Speed available - 100% increase above full throttle at sea level - 1500 miles per hour at 40,000 ft.
4. Increase in fuel load or bomb load up to the aerodynamic limit of aircraft.
5. Fuel, safe; volume available adequate and inexpensive.

MILITARY USES:

Speed burst in combat.

Assisted take off.

Stratosphere operation.

Inexpensive prime mover for torpedoes.

REMARKS:

Technical experts have stated "Little effective help can be

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hoped for from consultants or authorities on the art, as the principles used are so few that neither consultants nor authorities have been developed."

CONCLUSIONS:

"The inventors experience and six years of exhaustive research, his complete knowledge of the subject coupled with the facility and honestly anxious technical interest of the physicists at Anacostia Naval Research Laboratory assure prompt results."

Technical and mathematical statements concerning this invention are unacceptable in the face of available demonstrated proof.

Professor Alexander Klemin, Dean of the Daniel Guggenheim School of Aeronautics, after six months study has stated "This is the most important contribution to aviation since the Wright Brothers Aileron."

COST:

It is recommended that the Navy appropriate a fund of $10,000 for complete test of this engine at the Naval Research Laboratory immediately. Results of this test will verify for the Government facts which are stated above which have been privately tested.

Respectfully submitted

/s/ E. B. Myers
Hotel Abbey
New York City

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DOD ltrs*
6 Jan. & 20 June 1974
By ALA/LK LC; Date 10/15/74

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(4-2-3)

w/12-2-41

DEC 5 1941

Dr. James B. Conant, Chairman,
National Defense Research Committee,
Office of Scientific Research and Development,
1530 P Street, N. W.,
Washington, D. C.

Dear Dr. Conant:

The Air Corps will be glad to maintain liaison at the California Institute of Technology as requested in your letter of November 7, 1941.

The Materiel Division at Wright Field, Dayton, Ohio has been requested to inform Dr. Von Karman that liaison between the Air Corps and National Defense Research Committee groups working on jet propulsion should be carried on.

In order that complete cooperation may be obtained, it is suggested that your group be informed of this action.

Sincerely,

Dispatched
DEC 6 1941
AAG

EDWARD P. CURTIS,
Major, Air Corps,
Secretary of The Air Staff

452.11

WPB:ss

Rockets (1)

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Experimental Engineering
Materiel Division, OCAC.

Ans 452.11 Rockets (1)

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8 Jan. & 20 June 1974
By ARAD/HC, UC. Date 10/18/76

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(4-E-3)

w/12-3-41

DEC 5 1941

452.1 Rockets (1)

Dr. James B. Conant, Chairman,
National Defense Research Committee,
Office of Scientific Research and Development,
1530 P Street, N. W.,
Washington, D. C.

Dear Dr. Conant:

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In order that complete cooperation may be obtained, it is suggested that your group be informed of this action.

Sincerely,

WPB:sz

To Mail & Record Room

Date

EXECUTIVE

ADMINISTRATIVE

B & G

CIVILIAN PERS.

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DEC 6 1941
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EDWARD P. CURTIS,
Major, Air Corps,
Secretary of The Air Staff

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air ad 452.11 Rockets (1)

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OFFICE FOR EMERGENCY MANAGEMENT

NATIONAL DEFENSE RESEARCH COMMITTEE
OF THE
OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT

1530 P STREET NW.
WASHINGTON, D. C.

DECLASSIFIED
DOD ltrs
8 Jan. & 20 June 1974
By ACW/LKS NC; Date 10/18/76

JAMES B. CONANT, Chairman
RICHARD C. TOLMAN, Vice Chairman
ROGER ADAMS
CONWAY P. COE
KARL T. COMPTON
FRANK B. JEWETT
MAJ. GEN. R. C. MOORE
CAPT. LYBRAND P. SMITH

IRVIN STEWART, Executive Secretary

November 7, 1941

Major General H. H. Arnold
Room 2017 Munitions Building
Washington, D. C.

Dear General Arnold:

I am writing you to suggest that it might be well to provide for some official liaison between the work which is going on under the National Defense Research Committee on jet propulsion and the work which is under contract with you at California Institute of Technology on new propellants for jet propulsion. I am making this suggestion after talking with Professor Richard C. Tolman, of California Institute of Technology, who is, as you know, a member of the National Defense Research Committee.

There are two divisions of the National Defense Research Committee which are concerned with various aspects of jet propulsion problems; namely Division A under Dr. Tolman and Division B under Dr. Roger Adams. Section H of Division A, of which Dr. Hickman is Chairman, keeps in touch with both phases of the work. Under this Section there is a contract at the California Institute of Technology. Specifically, it would be very desirable if a method of liaison could be developed between this work under NDRC at California Institute of Technology and the work which the same institution is doing for your organization under contract. At present the two groups must work entirely independently which seems inadvisable.

Anything you can do to arrange for liaison in general and the specific problem that I have mentioned would facilitate, I believe, progress on this important problem.

Very sincerely yours

James B. Conant

James B. Conant
Chairman

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NOV 12 1941
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cc Dr. Chadwell
(for Dr. Kistiakowsky)

This document contains information affecting the national defense of the United States within the meaning of the Espionage Act, U. S. C. 50; 31 and 32. Its transmission or the revelation of its contents in any manner to an unauthorized person is prohibited by law.

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DOD ltrs
8 Jan & 20 June 1974
By ALA/LLC, OC; Date 10/8/76

AAF/A-3
GLeC/jg
written 2/20/42

SUBJECT: Assignment of B-23 Airplane for Supercharger Test Work.

FEB 28 1942

1st Ind.

WD HQ ARMY AIR FORCES, Washington, D. C. To: The Office of the Chief of the Air Corps, Washington, D. C.

B-23, 39-50 now at Eglin Field is allocated for the above supercharger tests. It is desired that this airplane be ferried to Wright Field at the earliest practicable date.

By command of Lieutenant General ARNOLD:

R.C. LEWIS,
Major, Air Corps,
Acting Ass't. Air Adjutant General.

4/52, 11 supercharger (3)

Signed
FEB 28 1942
AAG

AIR STAFF COORDINATION

C. of A. S.	SECRETARY	A. A. G.	A-1	A-2	A-3	A-4	A-WPD	INSP.	BUDGET	STATISTICS	
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Air 580 452.11 Superchargers (3)

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DOD Dirs
8 Jan. & 30 June 1972
By AGAFR NO. Date 10/15/76

FEB 9 1942

Assignment of B-23 Airplane for Supercharger Test Work.

Chief of Air Staff

1. An intensive supercharger development program has been under way with the General Electric Company. At the time that this work was initiated early last summer, arrangements were made by the Materiel Division for the use of a B-23 type airplane as a test ship for the various development projects, such as (a) overspeed controls, (b) electric regulator, (c) after-burning and flame suppression, (d) tests of engine with 2-speed blowers for extremely high altitude operation, etc.

2. Approval of the use of a B-23 airplane for this project was concurred in by the GHQ Air Force, the Plans Division, OCAC, and the Chief of Air Corps. (See Routing and Record Sheets, dated June 5, 7, and 11, 1941, subject: "Loan of B-23 Airplane to General Electric Company".)

3. Based on the approval of use of this airplane, contracts have been negotiated with the General Electric Company, and the point has been reached where that organization needs this test airplane for installation and test of the above listed items. To drop the projects or to change to another airplane at this date, would considerably delay these important projects in the current experimental program, and it is requested that a B-23 airplane be immediately made available for transfer to Wright Field, in order that it might be loaned to the General Electric Company for use on the above mentioned tests.

For the Chief of the Air Corps

F. I. GRDWAY, JR.,
Major, Air Corps,
Asst. Exec., Mat. Div.

~~CONFIDENTIAL~~ Air Adj 452.11 Superchargers (2)

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DECLASSIFIED
DOD Dirs.
8 Jan & 30 June 1974
By AUL/LE UC Date 10/15/76

AAF/A-3
GMcC/jg
written 2/20/42

SUBJECT: Assignment of B-23 Airplane for Supercharger Test Work.

1st Ind.

WD HQ ARMY AIR FORCES, Washington, D. C. To: The Office of the Chief of the Air Corps, Washington, D. C.

B-23, 39-30 now at Eglin Field is allocated for the above supercharger tests. It is desired that this airplane be ferried to Wright Field at the earliest practicable date.

By command of Lieutenant General ARNOLD:

R. C. LEWIS,
Major, Air Corps,
Acting Ass't. Air Adjutant General.

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DOD Dir 5200.9
By NCN/UC Date 10/15/70

WAR DEPARTMENT
Office of the Chief of the Air Corps
Washington

Feb 9, 1942

SUBJECT: Assignment of B-23 Airplane for Supercharger Test Work.

TO: Chief of Air Staff

1. An intensive supercharger development program has been under way with the General Electric Company. At the time that this work was initiated early last summer, arrangements were made by the Materiel Division for the use of a B-23 type airplane as a test ship for the various development projects, such as (a) overspeed controls, (b) electric regulator, (c) after-burning and flame suppression, (d) tests of engine with 2-speed blowers for extremely high altitude operation, etc.

2. Approval of the use of a B-23 airplane for this project was concurred in by the GHQ Air Force, the Plans Division, OCAC, and the Chief of Air Corps. (See Routing and Record Sheets, dated June 5, 7, and 11, 1941, subject: "Loan of B-23 Airplane to General Electric Company".)

3. Based on the approval of use of this airplane, contracts have been negotiated with the General Electric Company, and the point has been reached where that organization needs this test airplane for installation and test of the above listed items. To drop the projects or to change to another airplane at this date, would considerably delay these important projects in the current experimental program, and it is requested that a B-23 airplane be immediately made available for transfer to Wright Field, in order that it might be loaned to the General Electric Company for use on the above mentioned tests.

For the Chief of the Air Corps

/s/ F.I. ORDWAY, JR.
F.I. ORDWAY, JR.
Major, Air Corps,
Asst. Exec., Mat. Div.

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HENRY HARLEY ARNOLD

Box 189 Folder 3

MILITARY

DECIMAL

SAS 452 (2
Hansen
452.2

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DOD Itr.
By: 20 June
NLJ/RAC; Date: 10/5/76

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Bubble Canopy for the P-47.

Deputy Chief of the Air Staff. (Attn: Col. M. A. Libby) 6 Nov 1943

AC/AS, M.M. & D. (Material Division)

SRB:ect/2370 4

1. Minutes of the conference held at Wright Field, 4 November 1943, on the installation of the "bubble canopy" on P-47 aircraft, will be forwarded to your office from the Material Command, Wright Field.

B. W. CHIDLAW,
Brig. General, U.S.A.

Incl.
n/c

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DOD ltrs.
8 Jan. & 20 June 1974
By NNRM LC; Date 10/18/76

AAG 452.1 D

File
AG 111.0 1943

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3

AAG 452.1 D

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

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WAR DEPARTMENT

HEADQUARTERS OF THE ARMY AIR FORCES

WASHINGTON, D. C.

DECLASSIFIED
DOD ltrs
8 Jan. & 20 June 1974
By Alan, LC; Date 9/18/76

FEB 16 1944

MEMORANDUM FOR THE CHIEF OF THE AIR STAFF

Subject: Life Rafts on Heavy Bombers.

1. While in Orlando General Arnold asked why the seven man life raft for use in heavy bombers had not been adopted in lieu of the five man life raft now being used.

2. The seven man life raft (Type E-2) has been adopted for use on heavy bombardment airplanes in accordance with paragraph 2b (3) of Military Requirements Policy No. 33, dated 12 January 1944, which states that:

"Aircraft which carry six but not more than eleven crewmen will be equipped with two Type E-2 life rafts."

3. These seven man life rafts will be in heavy bombers as soon as the modification of the life raft stowage compartment can be accomplished without holding up production. It is estimated, however, that a minimum of six months will be required for this modification. Meantime, emergency equipment is being packed in the stowage compartment with the five man raft rather than carried inside the airplane as heretofore. This procedure facilitates ditching.

AAG 452.16 (2)

William F. McKee

WILLIAM F. McKEE
Colonel, A.C.,
Deputy Asst. Chief of Air Staff,
Operations, Commitments & Requirements

File
JK 2/18/44

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AAG 452.16 (2)

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DOD ltrs
8 Jan. & 30 June 1974
By NNDJ/JLC, JC, Date 10/1X/76

Amendment of Army Regulation 95-15

The Air Inspector

17 Feb 45

1

Deputy Chief of Air Staff, General Owens

RLO/mkm/8246

General Giles has disapproved your recommendation contained in paragraph 3 of attached Memorandum for the Chief of the Air Staff, dated 10 February 1945, and directs that no further action be taken to amend paragraph 14a of above mentioned Army Regulation until such time as he personally directs such action.

Signed

RAY L. OWENS,
Brigadier General, U. S. Army,
Deputy Chief of Air Staff.

1 Incl.
Memo to CAS, dtd
10 Feb 45 w/2 incls.

17 FEB 1945

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DOD Dir.
By ... Date ...

AFTAG/Major Goff/gnh/70070/Ea 62000
AFMSE (B)
20 February 1945

MEMORANDUM FOR THE CHIEF OF THE AIR STAFF

Subject: Amendment of AR 95-15, paragraph 14 c and AAF Regulation 60-5

1. In order to determine the advisability of amending AR 95-15, paragraph 14 c and AAF Regulation 60-5 to provide protection at all times for all personnel, the Office of Flying Safety was requested to furnish the following information.

2. In the first study dated 9 August 1944 you will note that there were 38 successful parachute jumps by persons from Air Transport Command airplanes. In the total Air Forces there were 38 successful jumps from cargo type aircraft. In Section II of the first survey it is noted that there were 320 successful parachute jumps in all accidents involving cargo type aircraft.

3. During the past the Air Transport Command has contended that the use of parachutes by inexperienced and untrained personnel would render the parachute a dangerous if not deadly instrument. Section I of the first study points out that there were two successful parachute jumps from cargo type aircraft and there were four in the total Air Forces. I should consider this sufficient evidence to refute the statement made by Air Transport Command on the desirability of parachutes in the hands of untrained personnel.

4. It is further pointed out in the first survey that 147 persons saved their lives by parachuting from aircraft which were about to become total or would crash if parachutes were not available. Of these, [redacted] parachuted from Air Transport Command aircraft. Considering total accidents there were 71 persons escaping of which 35.2% made use of the parachute. The 35.2% represents 25 persons of which 20 or [redacted] were riding in Air Transport Command aircraft.

5. The second study conducted by the Office of Flying Safety included 147 accidents of which 106 or [redacted] were fatal with no evidence concerning the use of parachutes. In the remaining 41 accidents there were 10 where no information is available on the use of the parachute. The remaining 31 or [redacted] of the total were cases where one or more persons used the parachute successfully as a life saving instrument. In view of the above figures and the continuing inquiry by organizations other than the armed forces of the United States, it is believed that the use of parachutes in all aircraft should be mandatory. Personal observation by members of this

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office has shown that the additional work load of inspection and maintenance of parachutes could easily be accomplished with the present number of personnel assigned.

4. An outstanding example of an accident where the use of parachutes could have saved lives is the case of the C-47 No. 42-23510, flown by 2nd Lt. Eugene [redacted] which crashed near Olmstead Field, Harrisburg, Pennsylvania, on 25 November, 1944, with a crew of 4 and 23 passengers aboard. In this particular instance the Office of Flying Safety has informed this office that there were 4 parachutes aboard the airplane. This was in accordance with a document received from the Office of the Superintendent, Flying Training, Sedalia Army Air Field, Marshburg, Missouri, which provided that no parachutes will be required for passengers and that parachutes will be furnished for crew members. A true copy of this document is attached to the Regional Safety Officer's report of a major aircraft accident concerning this airplane. A review of the completed report of investigation and AAF Form No. 14 reveals that a total of 9 attempts to land were made in very bad weather. It is believed that had all personnel been equipped with parachutes the pilot would have abandoned the aircraft some time prior to the final crash and go-around on which he crashed. There were, in this case 12 fatalities and 15 cases of major injury.

5. Recommendations submitted by the Assistant Chief of Air Staff, Training, to revise AR 95-15 to eliminate the prohibition against requiring parachutes on multi-motor transport aircraft and to revise AAF Regulation 60-5 accordingly, were not favorably considered by the Deputy Chief of Air Staff (General Smith) under date of 1 November, 1944.

6. Recommendation.

It is recommended that action be initiated to amend paragraph 14a of AR 95-15, dated 3 May, 1944, to eliminate the directive contained therein that "Parachutes shall not be required for crews or passengers in multi-motored transport type aircraft," and that, when this is accomplished, AAF Regulations require that a parachute be carried for each aircraft passenger and crew member.

Signed

[redacted]
Major General, U. S. Army
The Air Inspector

2 Incl.,
#1 - [redacted]
#2 - [redacted]

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DOD Dirs.
8 Jan. & 20 June 1974
By [illegible] NO. Date 19 [illegible]

SECRET

Mr R W Jones/fr-3831

Subject: Covers for Supply Dropping Parachutes

1st Ind. AFDMA-2C

Headquarters, Army Air Forces, Washington 25, D. C., JAN 27 1945

To: Assistant Chief of Staff, New Developments Division, War Department General Staff, Washington, D. C.

1. The Air Technical Service Command has been instructed to investigate the subject matter on a 1 B priority and report to this office.

2. It is anticipated that approximately thirty (30) days will be required before complete answer can be made to your office, since it will be necessary to determine the availability of suitable substitute fabrics, fabricate samples and conduct drop tests. A preliminary check indicates that some substitutes which might be suitable are no more available at this time than cotton duck.

For the Commanding General, ARMY AIR FORCES:

Signed
J. F. PHILLIPS
Colonel, Air Corps
Chief, Materiel Division
Asst. Chief of Air Staff, MAS

SAS COPY FOR SECRETARY OF AIR STAFF 452.161 (10)

30 JAN 1945

- 2 -

AFDMA-2 AFDMA-1

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SAS 452.161 (10)

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WAR DEPARTMENT GENERAL STAFF

SECRET

DISPOSITION FORM

DECLASSIFIED
DOD 5200.
9 Jan. & 20 June 1974
By: ALA, NC, Date: 10/15/74

SUBJECT: Covers for Supply Dropping Parachutes.

To: Commanding General, AAF
Atten: Materiel & Services
Materiel Div., Engineering Br.
Rm 5D-860, Pentagon Bldg.

1. Reference: Memorandum for The Director, MED, from The Assistant Chief of Staff, G-4, 9 January 1945, subject: Covers for Supply Dropping Parachutes.

2. Request:

(a) That an investigation, as outlined in basic communication, and discussed with Mr. Jones (Ext. 3831), be made.

(b) That the results of investigation and basic communication be returned to this Office.

WM. A. BORDEN
Brig General, G.S.C.
Director, New Developments Division

1 Incl.:
Memo to MED, 9 Jan 45
fm G-4, Supply Div.

by H. S. TURNER, JR
Lt Col, G. S. C.
Executive, New Devel Div.

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DOD Dir. 5 Jan. & 30 June 1974
By ALD/ISC, JC, Date 10/18/76

WAR DEPARTMENT
WAR DEPARTMENT GENERAL STAFF
SUPPLY DIVISION, G-4
WASHINGTON

7388

9 January 1945

MEMORANDUM FOR THE DIRECTOR, NEW DEVELOPMENTS DIVISION:

SUBJECT: Covers for Supply Dropping Parachutes

1. The requirements for Supply Dropping Parachutes have recently been increased from 15,500 a month to 50,000 a month, particularly for the Burma-India Theater.

2. Each parachute comes in a cover made of duck, and although supposedly recoverable for reuse, in practice this is never accomplished. An increase in production of this nature materially affects the tentage program, and at present the requirement for duck for tentage is of the highest urgency.

3. It is requested that an investigation be made of the possibility of making this parachute container of some less critical material in order to prevent interference with the present tentage program.

CRAWFORD F. SAMS
Colonel, GSC
Chief, Program Branch

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DOD Dir.
8 Jan. & 20 June 1974
By NARS, Date 12/31/74

SECRET

Mr R V Jones/Sr-3832

AFDMA-GC
27 January 1945

~~S-E-C-R-E-T~~

By Authority of the
CG, Army Air Forces:

L.T.B. 27 Jan 1945

Director
AAF Air Technical Service Command
Wright Field, Dayton, Ohio

Attention: Chief of Administration - TSDEX

Covers Air Supply Dropping Parachutes

1. Attention is invited to the attached copy of Memorandum dated 9 January 1945, from the Supply Division, G-4, War Department General Staff.

2. It is directed that availability and suitability of substitutes for the cotton duck pack covers now used on aerial delivery parachutes be investigated. Priority 1 B is assigned.

3. Specific conclusions and recommendations are desired by teletype ~~not later than~~ 27 February 1945.

By Command of General ARNOLD:

J. F. PHILLIPS
Colonel, Air Corps
Chief, Material Division
Office, Asst. Chief of Air Staff
Material and Services

Encl.
Ltr Memo dtd
9 Jan 45 fm
WDGS.

AFDMA-2 AFDMA-1

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DOD Dir 5
By AFDIUC, HQ; Date 8/15/74

9 March 1944

MEMORANDUM FOR DEPUTY CHIEF OF AIR STAFF (GENERAL HALL)

SUBJECT: Quick-Release Parachute Harness (Types A3 and A3) for Chest Pack.

1. Attached is Drew Pearson's column from this morning's Washington Post.

2. According to the article, all of our parachute harness designs are unsatisfactory.

3. A quick check by this office indicates:

a. The Eighth Air Force has procured from the RAF several thousand of their quick release type but numbers near enough for their complete needs.

b. A cable dated 16 January 1944 from the Eighth Air Force Service Command to Air Service Command Headquarters (reference B5102) stated that Eighth Air Force combat personnel had substantially refused henceforth to wear any type of parachute harness not equipped with the quick-release box. This box is a part of the RAF quick-release type and of our type A3 but is not part of our other parachute harnesses.

c. We have adopted, but not yet put in service, a type A3 for quick-attachable chest pack, which type is equal to the referenced British harness and also includes a modification to prevent unintentional release.

d. 60,000 of the quick-release type (A3) have been ordered by Material Command, the authority for purchase having been dated 1 February and the contract let 27 February 1944. Approximately 15,000 are scheduled for delivery in June and this delivery may be improved. All being procured are scheduled for overseas shipment.

e. Lt. Colonel Royston and Major Farren from the Winston-Salem Office of Flying Safety visited Camp Marshall yesterday to investigate

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the incident referred to in paragraph 1 of the attached clipping. In a conference held there with officers of the Airborne Center, including Colonel F. T. Daily, Commanding, they stated the deaths occurred during a night jump made upon signal from the pilot who obtained his position by a Radar fix. The fix procedure had been carried out perfectly at two o'clock that afternoon, but during the night jump, because of a mechanical or technical failure, the men were jumped a mile and a half from the proper target. The men were wearing full combat equipment, (no Kha Packs), were jumped from 600 feet, leaving less than a minute for descent, and without warning approximately thirty of the jumpers landed in water in total darkness. Eight drowned. The question of quick-release parachute harness was discussed at length and officers of the Airborne Center agreed that in all probability its use would have made little difference under the circumstances, although they felt some advantage might be gained by its general use by paratroops.

4. Lt. Colonel Boynton, Chief of the Medical Safety Division of this office, has made a considerable study of parachute employment and is a graduate of the parachute school at Fort Benning. AAF Forms 285, Medical Officer's Report of Aircraft Accident, received at Winston-Salem between 1 September 1943 and 25 January 1944 showed a total of thirty-three emergency parachute descent terminating in water, of which twelve (36%) were fatal. This office, therefore, determined to investigate thoroughly the technique of water landings and issue suitable educational literature. Accordingly on 23 and 24 February 1944, Lt. Colonel Boynton and Lt. Colonel Angus of this office and Lt. Colonel R. Verne Stewart, Chief of the Parachute Unit, Emergency Equipment Branch, Wright Field, each made two jumps from 3,000 feet into the Gulf of Mexico off Boca Raton, Florida, using standard B5 type parachutes with D ring release points. The three men were chosen for boat space-section, Col. Angus never having jumped previously and Col. Stewart being unable to swim. Each made one jump under reasonably calm conditions and one jump during a surface wind of 35 m.p.h. Kha Packs were worn on all jumps so in combat and no difficulty was experienced in getting out of the harness after landing. It was discovered, however, that previously recommended procedure which stated that the jumper should drop free of the harness approximately ten feet above the water was entirely impractical, in that no such estimation of distance was possible. Revision No. 7 of the Pilots' Information File, dated 1 March 1944, copy attached, brings this together with several other facts discovered by these jumps to the attention of all AAF pilots.

5. Motion pictures of these jumps were taken and it is planned to issue them at once as a training film, following up as soon as possible with posters outlining proper technique. It should be emphasized that the only case where a reasonably cool-headed person would experience any

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Memo for Gen Hill, 9 Mar 44, Parachute Harness

difficulty in removing our present parachute harness (non quick-release type) while in the water would be the fairly remote one mentioned in the attached clipping where the user had one hand injured to the point of uselessness; and also that the British quick-release harness could conceivably be opened unintentionally, though no such occurrence is known.

6. This office is unable to comment on the reference in Pearson's article to "the explanation gets down to an insidious matter of patents and profits."

GEORGE C. PRICE
Colonel, Air Corps
Chief, Flying Safety

2 Atch
Newspaper clipping
Revision No. 7 to PIF

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DOD 5200.1-R

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To: Deputy Chief of the Air Staff (General Hall) Date 13 Mar 44

From: AC/AS, Materiel, Maintenance and Distribution
Special Advisory Group Comment No. 2

Transmitted herewith is copy of MAR dated 11 March 1944 to General Perrin from General Echols, together with copy of report referred to therein.

WM. A. BORNHLAST
Colonel, Air Corps

Encls.
as MAR dated 11 Mar 44
w/as Report dated 11 Mar 44

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Ltr dtd 4 Mar 44 452.1 (3) 191

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DOD Dir.
E.O. ... By ... NARS, Date ...

~~CONFIDENTIAL~~

Preparation of letter for Gen. Giles signature to General Baker

TO: Chief of the Air Staff

DATE: 27 Sep 45

FROM: Asst C/AS, Operations, Commitments and Requirements

COMMENT NO. 2
Lt.Col.Reynolds/mlh/71676

Prepared letter to General Baker requested in paragraph 1 of Comment No. 1 above, is attached for signature.

2 Incls
Incl 1 - n/c
Added Incl 2 - Ltr to Gen.Baker fr Gen. Giles.

H. A. CRAIG
Brig. General, U.S.A.

Number_____

Req. Div._____

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DOD Dir.
8 Jan. & 30 June 1974
By ADUK, HQ, Dec. 10, 1974

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Auth. C. G. 8th A. F.
Init. DEP
Date 11-4-43

HEADQUARTERS
EIGHTH AIR FORCE
APO 633
C/o POSTMASTER, NEW YORK, N.Y.

September 11, 1943.

Major General Barney M. Giles, USA.,
Chief of the Air Staff,
War Department,
WASHINGTON, D.C.

Dear Barney,

As explained to you in our cable, it is going to be difficult for us to relieve Colonel Hall, our PRU head. However, General Arnold when he was here confirmed his desire to have him back as soon as possible. I have brought in Colonel Sanders, an able pursuit pilot and a good executive who has recently joined us, to take over from Hall. I anticipate, therefore, that within 10 days to two weeks we shall have Hall on his way to you.

You will recall that Colonel Garland came over last Spring and worked with our Groups on AFCE. With the arrival of the new groups it is indicated quite clearly that there is need for Garland's return here. I am hopeful that you can, at an early date, send him back to us. His skill and experience in training bombardment units in the employment of AFCE has been demonstrated and his services will contribute much in our campaign to improve bombing accuracy.

This morning I received your cable on the Mark II Gyro Gunsight in answer to mine of the day before yesterday. I am delighted to see that you are pressing the tests on the Mark II and the Fairchild and Sperry Sights. I am sure you will realize the importance of this and endeavour to get us in quantity the best sight at the earliest possible time.

I delivered your message to General Arnold about collecting the data on Harold George's press conference and believe that he has complete details on that. It appears that t[illegible] was nothing out of the way in Hal's press conference. He h[illegible] very well and the comment in the British papers was most[illegible] He had a private interview with Bob Considine after[illegible]nsidine's reporting of that int[illegible]h which caused you and Hal all the tro[illegible]

Thanks ver[illegible] your well wishes on the decorations and parti[illegible] tive and prompt action in support-

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ing me and this Air Force in every conceivable way.

I believe that much good will flow from General Arnold's visit. Unfortunately, it was far too short, but perhaps you or he can get over to see us again in the near future. I told General Arnold that I felt you should come at the earliest possible time and spend at least two weeks with us.

General Arnold expressed agreement in having General Peshet come over at an early date to work with us on standardizing promotions and decorations. I hope you will work this out as soon as you can.

We received your cable about giving you additional information on how our heavy bombers are lost. I think, with a little reflection, you will appreciate the great difficulty in stating definitely in the flash communique how our bombers went down. Your knowledge of bombardment aircraft will convince you how difficult it is to see from any one station an air battle involving several hundred airplanes. We 'piece-out' the story by careful interrogation of all the participating personnel which returns. This usually takes two or three days at best. By that time we have put into the final summaries all of the details which can be verified. We shall, in the cable communiques, give you such information as we can on this subject but do not expect it to be complete. Much harm would be done if we made hasty guesses before all of the interrogation was completed.

Please give my best to Hollyce and here's wishing for both of you continued good health, success and happiness.

Sincerely,

IRA C. EAKER
Major General, U. S. A.
Commanding.

P.S. I sent Lt. Col. Beirne Lay back recently. I had worked out with Davenport Johnson an agreement that he be given a Bombardment Group, grow up with it, train with it and bring it back to this theater. I understand General Johnson may not be at the Second Air Force. I am hopeful, therefore, that you will direct this assignment for Lay. He has done five or six missions creditably with LeMay and the 4th Wing and he has had considerable experience here which would help him. I believe he will swing a Group Command and am anxious to see him have a crack at it.

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DECLASSIFIED
DOD 5200.1-R
8 Jan. & 30 June 1974
By ALAFUK, HQ Dept (AFRS)

AFRDB
Lt.Col.Reynolds/mlk
wrtn 27 Sep 43
Room 4E128 - 71676

9/28/43

Major General Ira C. Baker
Commanding General
Eighth Air Force
APO [illegible]
c/o Postmaster
New York, N. Y.

Dear Ira,

The AFRB Standardization Program as set up by Colonel Garland, is now going along in good shape, and it looks like that by 15 October, the program will have developed to such an extent that Colonel Garland will be available for reassignment to your Command. I have been a little inclined to feel that Garland could accomplish more by remaining here in order that he might keep careful watch over the AFRB program, but I am willing to let him go in an effort to make every sortie your bombers run effect a more efficient destruction of the German industry.

General Pachet will be available to assist you in standardizing your promotions and decoration awards as soon as he has completed his present assignment, and he should be available in a fairly short time.

You, of course, are familiar with the K-5 and K-4 Sperry sights, and as yet no radical change is contemplated in these two models. Sperry, however, is building three new models, the K-9, K-10, and K-11. The K-9 is more or less of the conventional type except that a foot ranging control has been added and a remotely driven sighting head. These changes make it suitable for installation in the various turrets which do not have computing sights. It is expected that production items of this sight should be available within the very near future, which should enable the gunners to make far better scores than at present. The K-10 and the K-11 sights, primarily are nose and tail sights, and are to be used in lieu of the present reflector sights in the nose and tail turrets. These sights are very small and compact, roughly a six-inch cube, and the mounting dimensions are such as to be interchangeable with the K-4 or K-5 reflector sights with a minimum of modifications. Procurement has been initiated for 6,000 of the K-10 tail sights. At present, it is contemplated that enough of both sights will be procured to enable us to equip the nose and tail turrets of all the heavy bombers.

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AFRDB
Lt.Col.Reynolds/mlk
wrtn. 27 Sep 43
Room 4E128 - 71676

The K-8 sight has had considerable "bugs" in it, but the latest model is currently undergoing test at Eglin Field and it is expected that the results will be much better than previously. This sight is very large and is estimated that completely installed, it will weigh in the neighborhood of 110 pounds. This is considered excessive at this time; however, it is understood that extended range computation can be more readily built into this sight than in any other sights that are now under contemplation for procurement. This sight is also designed for installation in the various upper turrets now in production, the most logical of which will be the Martin.

As regards the British Mark II Gyro Sight, we are in the unfortunate predicament of having to rely on the Navy and the British for our supply of these sights. These two agencies have ordered upwards of 25,000 sights, total, and all indications at this date lead us to believe that it will be possible for us to secure from the British a minimum of 200 sights per month effective January 1 increasing in number thereafter until a maximum of 1,000 sights per month will be available to us. The Air Forces Proving Ground reports on this sight and the opinions of using personnel give rise to the indication that this may be the answer to most of our computing sight problems.

Lt. Colonel Elvine Lay has been assigned to the Second Air Force, there he will undergo the necessary transition on B-24 airplanes. He will then "grow up" with his group, and bring it to your theater when they have completed the OTU cycle. It is a bit too early to estimate when he will arrive there. (Davenport, as you probably knew, has the Eleventh Air Force, but I am certain that General Street will exert every effort to carry out any agreement you may have had with Davenport.)

We are growing more concerned about standardizing a method for controling large formations, formations such as you are employing against the Germans. As you are able to employ greater numbers of airplanes, the problem is going to become more acute. General Craig has directed AAFRAT to develop a standard for the control of large formations both on the ground and in the air. It will include takeoffs, climbing up through an overcast and assembly, and also, return to the airdrome under the same conditions. In order to study the problem at first hand, it is very likely that observers from AAFRAT will have to spend some time in your theater. We have given General Eubank the job of Director of Tactical Development, and we are hoping that he will make the organization pay dividends and turn out something useful for us.

I don't know when I will be able to pay you a visit, but you can believe that it is one of the things that I want to do. Give my regards

-2-

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AFRDB -
Lt.ColReynolds/mlk
wrtn 27 Sep 43
Room 4E128 - 71676

to your boys, and until I can visit you personally, I'm afraid a letter will have to do.

Best regards,

Sincerely,

Barney M. Giles,
Major General, U. S. Army,
Chief of the Air Staff.

Dispatched
25 SEP 1943
AMC

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- 8 -

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DOD 5200.1-R
By ALM/NARA, Date 10/18/96

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HEADQUARTERS
EIGHTH AIR FORCE
APO 634
c/o POSTMASTER, NEW YORK, N.Y.

September 11, 1943

Major General Barney M. Giles, USA,
Chief of the Air Staff,
War Department,
WASHINGTON, D.C.

Dear Barney,

As explained to you in our cable, it is going to be difficult for us to relieve Colonel Hall, our PRU head. However, General Arnold when he was here confirmed his desire to have him back as soon as possible. I have brought in Colonel Sanders, an able pursuit pilot and a good executive who has recently joined us, to take over from Hall. I anticipate, therefore, that within 10 days to two weeks we shall have Hall on his way to you.

You will recall that Colonel Garland came over last Spring and worked with our Groups on AFCE. With the arrival of the new groups it is indicated quite clearly that there is need for Garland's return here. I am hopeful that you can, at an early date, send him back to us. His skill and experience in training bombardment units in the employment of AFCE has been demonstrated and his services will contribute much in our campaign to improve bombing accuracy.

This morning I received your cable on the Mark II Gyro Gunsight in answer to mine of the day before yesterday. I am delighted to see that you are pressing the tests on the Mark II and the Fairchild and Sperry Sights. I am sure you will realize the importance of this and endeavour to get us in quantity the best sight at the earliest possible moment.

I delivered your message to General Arnold about collecting the data on Harold George's press conference and believe that he has complete details on that. It appears that there was nothing out of the way in Hal's press conference. He handled it very well and the comment in the British papers was most favorable. He had a private interview with Bob Considine afterward and it was Considine's reporting of that interview from which the story came which caused you and Hal all the trouble.

Thanks very much, old fellow, for your well wishes on the decorations and particularly for your positive and prompt action in supporting me and this Air Force in every conceivable way.

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I believe that much good will flow from General Arnold's visit. Unfortunately, it was far too short, but perhaps you or he can get over to see us again in the near future. I told General Arnold that I felt you should come at the earliest possible time and spend at least two weeks with us.

General Arnold expressed agreement in having General Peshot come over at an early date to work with us on standardizing promotions and decorations. I hope you will work this out as soon as you can.

We received your cable about giving you additional information on how our heavy bombers are lost. I think, with a little reflection, you will appreciate the great difficulty in stating definitely in the final communique how our bombers went down. Your knowledge of bombardment aircraft will convince you how difficult it is to see from any one station an air battle involving several hundred airplanes. We "piece-out" the story by careful interrogation of all the participating personnel which return. This usually takes two or three days at best. By that time we have put into the final summaries all of the details which can be verified. We shall, in the cable communiques, give you such information as we can on this subject but do not expect it to be complete. Much harm would be done if we made hasty guesses before all of the interrogation was completed.

Please give my best to Hallyce and here' wishing for both of you continued good health, success and happiness.

Sincerely,

IRA C. EAKER
Major General, U. S. A.
Commanding

P.S. I sent Lt. Col Beirne Lay back recently. I had worked out with Davenport Johnson an agreement that he be given a Bombardment Group, grow up with it, train with it and bring it back to this theater. I understand General Johnson may not be at the Second Air Force. I am hopeful, therefore, that you will direct this assignment for Lay. He has done five or six missions creditably with LeMay and the 4th Wing and He has had considerable experience here which would help him. I believe he will swing a Group Command and am anxious to see him have a crack at it.

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DOD 5200.
8 Jan. & 30 June 1976
By AGAD/NR MD Date 15/IX/76

Preparation of letter for Gen. Giles signature to General Eaker.

AC/AS, Operations, Commitments & Requirements. 9/24/43

Chief of the Air Staff. 1

MAL/mdg/5265

1. For preparation of an appropriate letter to the attached for General Giles signature.

2. General Giles particularly emphasizes the point that he would like to give General Eaker as much additional information on the program of tests on the gun sights mentioned in Paragraph 3 of the letter as is readily available.

3. Reference the remarks regarding General Fechet and Lieut. Colonel Beirne Lay, it will be necessary for you to contact General Fechet to find out when he wants to go to England and to check with personnel to confirm Colonel Lay's assignment.

Dispatched
24 SEP 1943

MILLARD A. LIBBY,
Colonel, G. S. C.,
Secretary of the Air Staff.

Att: Ltr to Gen. Giles fm.
Gen. Eaker 9/11/43.

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DECLASSIFIED
DOD ltrs.
8 Jan. & 20 June 1974
By ALAIAK MC, Date 10/18/76

Changes in B-25Js with 150 Waist Tank Installed

AC/AS, Material Division, Aircraft Projects Branch, Modification Section.

OCT 24 1944

1

AC/AS, OC&R, Requirements Division

Maj Puckett/dr/72936

1. Confidential cable #AF 2215 from ATSC dated 23 October 1944, has come to the attention of this office. The following action is requested regarding the authority to deviate from the instructions supplied by FEAF:

a. Due to the fact that the airplanes now being modified have gone through three major production changes since the FEAF mock up was made, authority is granted to install the tank and deviate from the FEAF instructions to the extent that an operationally suitable airplane can be delivered.

b. Regarding the necessity of modifying the camera hatch, mount, and provisions, authority is granted to reinstall the same in accordance with the instructions contained in letter, Headquarters (Censored) Bombardment Group (M), APO 713 Unit 1, dated August 1944, subject: "Aircraft Camera Mount Modified, B-25J", a copy of which is inclosed. This is granted only if a design study indicates that this change can be accomplished to provide satisfactory operation of the camera and noninterference with ingress to the tail gunner's turret.

c. It is further recommended the camera mount provisions should be those provided for the K-24 camera which B-25 units are authorized.

d. The tail gunner's riding seat should be reinstalled as far forward as possible on either the right or left hand side of the waist compartment and should be provided with a safety belt.

2. The kits being supplied direct to the theater should remain intact in that the tank and shell are the major items involved as far as the FEAF are concerned. Minor changes of location of equipment may be made in the theater when the kits are installed in the airplanes.

3. The request for a project for the total quantity of B-25J airplanes to be modified should be directed to AC/AS, OC&R, Commitments Division, for action.

CLARE W. BUNCH
Colonel, A. C.
MERVIN E. GROSS
Brigadier General, USA

1 Incl.
Cy ltr fr Hq Bomb Gp(M)
APO 713 Unit 1

Bomb Br._____

A/C Sec._____

AFHRQ/M_____

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SAS 452.22 (69)

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DOD ltrs.
8 Jan. & 20 June 1974
By ARMY IAG, Date 10/15/76

Status of Self-Sealing Tanks for C-47 Aircraft

AC/AS - Operations, Commitments & Requirements
Attn: Colonel McKee
Chief of Air Staff

29 Sept 44

1

PWT/ls/5265

1. My understanding was that when the 2500 sets were authorized, that a decision had to be made at the time in order to pre-empt certain facilities for the purpose. The Far Eastern Theater had not been surveyed, and it was agreed that after such survey and if these tanks were not desired by the Theater Commanders, that these 2500 sets would be cut down to the number needed in ETO and MTO.

2. What has been done about this?

Signed

1 Incl:
cc of memo to OCR,
9/25/44, same subj.
frm Gen. Cross

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

Downgraded
30 SEP 1944

~~SECRET~~

AFDSH 52.22 (69)

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DECLASSIFIED
DOD Dir.
By ALA/IHC, Date 10/15/76

1 LAID 1A2 Approval 3 Signature AFOCR

2 Chief of Staff
3 Secretary of War Lt.Col. Hill

Re: Information that Army has placed an order for self-sealing tanks for 2500 transport planes. 18 August 1944

SUMMARY

1. Letter to Secretary of War dated August 12, 1944 from Senator Kilgore states that he has been informed that the Army has placed an order for self-sealing tanks for 2500 transports and he would appreciate knowing whether or not this rumor is correct. Senator Kilgore also desires to know if the decision to install these tanks was made as a result of the experience in the invasion of the Norman Peninsula.

2. Draft of reply for the signature of the Secretary of War informs that the Army has placed an order for 2500 sets of self-sealing tanks for troop carrier aircraft and the decision to procure these tanks was not made as a result of unanticipated losses in the Normandy invasion. It is further pointed out that the losses of troop carrier aircraft in the Normandy invasion were less than expected and were relatively light.

COORDINATION

Reply has been coordinated with the Assistant Secretary of War for Air and Legislative and Liaison Division.

FOR THE COMMANDING GENERAL, ARMY AIR FORCES:

Signed

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

Incls.
Ltr to S/W dtd 12 Aug 44
fm Sen. Kilgore
Draft of Reply for sig of S/W

SAD 452.22 (67)

COPY FOR SECRETARY, AIR STAFF

SECRET SAS 452.22 (67)

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AFOCR
Lt. [redacted]. Hill/bs
wrtn 20 Aug

DECLASSIFIED
DOD Dirs.
8 Jan. & 20 June 1974
By [illegible] NC, Date 10/18/76

Honorable Harley M. Kilgore,

United States Senate.

Dear Senator Kilgore:

This will acknowledge your letter of August 12 with reference to the procurement of self-sealing tanks for troop carrier aircraft.

The information you have to the effect that the Army has placed an order for 2500 sets of self-sealing tanks for troop carrier aircraft is correct. The decision to procure these tanks was not, however, made as a result of unanticipated losses in the Normandy invasion.

As a matter of fact the losses of troop carrier aircraft in the Normandy invasion were less than expected and were relatively light. The loss rate for troop carrier aircraft was roughly 2½% during the early and difficult phase of the invasion. Personnel casualties of all categories were even less, amounting to less than 1.8% of troop carrier crew members airborne during the same period.

Your attention is invited to the fact that troop carrier operations were concentrated in a 2½ day period. Prior to the night of June 5 troop carrier aircraft were employed solely in training and other non-combat operations. Our other combat aircraft, however, were committed to a sustained aerial offensive in which losses in excess of 2½ percent per mission were by no means unusual and for which self-sealing tanks were essential.

It is now possible to procure self-sealing tanks in sufficient quantities to make them available to all troop carrier aircraft without appreciable interference with their procurement for other aircraft engaged in constant combat operations. Self-sealing tanks for troop carrier aircraft will be made available to overseas theaters in kits

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so that they may be installed prior to operations for which they would appear to be required, and removed when, as outlined in my letter of 15 May, there is no requirement for them and they would unnecessarily impair performance.

Sincerely yours,

Secretary of War

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UNITED STATES SENATE

Committee on Military Affairs

August 12, 1944

Honorable Henry L. Stimson
Secretary of War
Washington, D. C.

My deal Mr. Secretary:

In pursuance of my inquiry to you with reference to the installation of self-sealing tanks on trahsport planes used for the transportation of parachute troops and other airborne Infantry, your reply stated that such action was not contemplated. This, of course, was before the invastion of the Norman Peninsula, in which airborne troops were extensively used. According to the news stories our casualties were heavy. I have recently been informed that the Army has placed an order for self-sealing tanks for 2500 transports and would appreciate knowing whether or not this rumor is correct, and whether or not the decision to install these tanks was made as a result of the experience in the invasion of the Norman Peninsula.

With kindest regards, I am,

Most sincerely yours,

/s/ H. M. Kilgore

hh

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18 August 1944

MEMORANDUM FOR THE SECRETARY OF THE AIR STAFF

Mr. Lovett has read the attached draft of reply to Senator Kilgore regarding self-sealing tanks and has suggested that it would be possible ti improve its third paragraph. It is his recollection that although 41 troop carrier aircraft were lost in the sorties referred to, from between 21 and 25 pilots and crews were saved. If this is correct the fact should be included.

For the Assistant Secretary of War for Air:

GEORGE A. BROWNELL
Colonel, Air Corps
Executive Officer

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10 August 1944

DECLASSIFIED
DOD Dirs.
8 Jan. & 20 June 1974
By ADDLE, NG, Date 10 JULY 76

Received from the Office of the Assistant Secretary of War for Air the following documents:

1. Report of Investigation Concerning Expose, by Drew Pearson, of Secret Matters Relating to Self-Sealing Tanks for Troop Carrier Aircraft, and attached copy of memorandum from the Air Inspector, Acting, to General Arnold, dated 23 May 1944.

2. Files from Administrative Services Division, Management Control:
   (a) Letters 1 to 12 incl. and 16 to 55 incl. requested 10 May 1944.
   (b) Letters 1 to 16 incl. requested 24 June 1944.

3. Copy of Report of Investigation made by Hq., U.S. Strategic Air Forces, dated 19 May 1944.

4. R&R from Deputy Chief of the Air Staff to Secretary of the Air Staff, dated 9 May 1944, subject, "Correspondence on Self-Sealing Tanks for Transport Aircraft", and attached papers.

5. R&R from Deputy Chief of the Air Staff to the Air Inspector, dated 24 May 1944, subject, "Drew Pearson's Column-Washington Post April 29, 1944", and attached papers.

6. Copy of Memorandum for the File, subject "Drew Pearson Article re Army Air Forces Parachute Equipment".

7. Copy of memorandum from Colonel S.F. Griffin to AC/AS, O.C.&R, dated 28 April 1944, subject "Drew Pearson's Troop Carrier Story".

8. Copy of memorandum from AC/AS, O.C.&R., April 27, 1944, transmitting proposed letter to Senator Kilgore, and attached papers.

9. Memorandum from the Office of the Air Inspector to C.G., I Troop Carrier Command, dated 1 May 1944, subject "Allegations by Drew Pearson Re Self-Sealing Gasoline Tanks", 1st Indorsement thereto and enclosures.

10. Folder entitled "Senate Investigation - Bullet Proof Tanks on Transport Planes".

11. Folder entitled "Folder for O.C.&R." containing copies of correspondence commencing with proposed letter from the Secretary of War to Senator Kilgore and ending with memorandum from AC/AS,

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SAS 452, 52 (6)

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O.C.AR. to Office of Legislative Services, dated 16 May 1944, subject "Letter to General Arnold from Senator Pepper".

12. Folder from Development Engineering Branch, Materiel Division, entitled "Self-Sealing Tanks and Armor Plate for Transports".

13. Folder from Deputy, AC/AS, MM&D, entitled "Self-Sealing Tanks for C-47".

14. Folder from Executive, Office of ACAS, MM&D, entitled "Self-Sealing Tanks for C-47's".

15. Folder entitled " Colonel Ray A. Dunn".

16. Folder entitled "Envelopes for Bags".

17. Folder from Air Services Division entitled "Self-Sealing Tanks and Armor Plate for Transports".

18. Folder from Capt. George E. Connally entitled "Self-Sealing Tanks and Armor Plate for Transports".

19. Folder entitled "Colonel Bagby".

20. Folder entitled "Sec'y Air Staff" containing copies of correspondence commencing with memorandum from C.O., I Troop Carrier Command to C.G.,AAF, dated 29 August 1943, and ending with memorandum from Deputy Chief, Air Staff to Legislative Services, dated 1 May 1944, subject "Installation of Armor and Leak-Proof Tanks in Troop Carrier Aircraft".

21. Cables obtained from the Office of the Air Inspector as listed below:

CM-IN	- 12637	20 January
	- 17044	26 Jan
OUT	- 10993	28 Jan
	- 12153	30 Jan
IN	- 440	1 Feb
	- 1146	2 Feb
OUT	- 709	2 Feb
IN	- 2703	4 Feb
IN	- 4629	7 Feb
IN	- 5011	7 Feb
WD - ASC	- 5657	25 March
CM - OUT	- 1973	6 Jan
IN	- 9124	14 Jan
OUT	- 7200	19 Jan
IN	- 12609	20 Jan

22. Folder from Office of ACAS, MM&D, entitled "Self-Sealing Fuel Tanks for Transport Airplanes".

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23. Copy from ACAS, OC&R, of chronological listing entitled "Armor and Leak-Proof Tanks in Troop Carrier Aircraft".

24. Copies of correspondence from Office of ACAS, Training, commencing with memorandum from the Director of Individual Training to C.G., Air Service Command, dated April 28, 1942, subject "United States Rubber Company School" and ending with memorandum from Deputy ACAS, OC&R to ACAS, Training, dated 4 February 1944, subject "Nonconcurrence in Part with Attached Letter".

Office of Chief of Air Staff

SECRET

Title Ai 11 Aug 44

SAS #52-52 (66)

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12 June 44

Received of Sec'y Air Staff all correspondence of Hdqrs., AAF re Self Sealing Tanks & Jettisonalbe Fuel Tanks Program.

~~Nine~~ Five Class Files

1 Folder with Sec'y Air Staff Corres.

6 Folders from MMD

1 Folder from Legis. Services

Bundle from Training

3 Folders & Miscl. papers fr. TAI

1 Folder from OCR

Geo. P. Barwell Capt AC

Returned
20 Aug 44

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RECEIVED FROM OFFICE OF THE AIR INSPECTOR CABLES AS LISTED BELOW

CM-IN -	12637	20 January
-	17044	26 Jan
OUT -	10993	28 Jan
-	12155	30 Jan
IN -	440	1 Feb
-	1146	2 Feb
OUT -	709	2 Feb
IN -	2703	4 Feb
IN -	4629	7 Feb
IN -	5011	7 Feb
WD - ASG -	5657	25 March
CM-OUT -	1973	6 Jan
IN -	9124	14 Jan
OUT -	7200	19 Jan
IN -	12609	20 Jan

8/11/44
above listed documents
recd from Miss Ingram
P. D. Habulin

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RECEIVED FROM OFFICE OF THE AIR INSPECTOR THE FOLLOWING FOLDERS TAKEN FROM FILES OF OCAR

1. Folder labelled "Colonel Ray A. Dunn" containing memoranda by Lt. Col David N. Laux

2. Folder labelled "Colonel Bagby" containing memoranda by Lt. Col David N. Laux

3. Folder containing envelopes addressed to "Colonel Ralph B. Bagby, Norfolk House, London, England. (2 envelopes marked Secret, 3 plain)

8/11/44
Above listed documents
recd. from Miss Ingram
P. D. Habulin

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CERTIFICATE

FROM: AC/AS, Training

Memorandum for AC/AS, Training, frm Col. W. F. McKee, OC&R, dtd 2/4/44 w/1 incl -- Sbj & to Memo from Gen Brereton, 9th AF, dtd 1/14/44

3 cys Sbj & to Memo frm Gen Brereton, 9th AF, dtd 1/14/44

3 cys Memo for C/AS, frm AFACT, dtd 11/20/43, sbj: Matters Affecting Training and Operations I Troop Carrier Command, w/Tab A,--extract frm comment 1 of R&R to Special Asst., Glider Program, frm AFACT, dtd 6/14/43

Cy Memo for C/AS, frm AFACT, dtd 11/20/43, sbj: Matters Affecting Training and Operations I TCC.

Comments 1, 2, and 3, R&R, sbj: Self-Sealing Tanks for Troop Carrier Aircraft, dtd. 2/15/44, 2/17/44, and 2/21/44 respectively

Memo for C/AS originating frm Lt. Col. Laux, AFREQ, dtd 4/20/44, sbj: "Self-Sealing Tanks for Troop Carrier Aircraft."

Comments 1, 2, and 3, R&R, sbj: "Self-Sealing Tanks for Troop Carrier Airplanes" dtd 1/29/44, 1/31/44, and 2/9/44 respectively. w/2 Incls -- cy memo for C/AS, same sbj, d. 1/24/44, frm AFACT, and cy comment 1, R&R, to MM&D frm Gen Giles, sbj: "Self-Sealing Gasoline Tanks for C-47 Aircraft" dtd 2/8/44

Memo to C/AS, frm AFACT, dtd 1/24/44, sbj: "Self-sealing Tanks for Troop Carrier Airplanes."

Comment 2, R&R to OC&R frm AFACT, dtd 1/31/44, sbj: "Self-sealing Tanks for Troop Carrier Airplanes."

Daily Diary, two items, frm Lt. Col. F. K. MacMahon, Chief, Troop Carrier Br., to Chief, Unit Training Division, AFACT, No. 2 entitled "Self-Sealing Tanks for Troop Carrier Airplanes."

Comment 1, R&R, to Special Assistant, Glider Program, frm AFACT, dtd. 6/14/43, sbj: "Maneuver, 101st Airborne Division, Week of 23 May 1943. (Combined Troop Carrier and Airborne Maneuver 26 - 27 May 1943)." w/1 Incl - Memo to AFACT, frm Spec. Asst., Glider Program, no date, sbj: "Maneuver, 101st A.B. Div., Week of May 23, 1943."

Cy of same comment 1, R&R, listed directly above -- incl. w/d

Report frm Troop Carrier Branch, AFACT, to Unit Trng. Div., AFACT, dtd 12/14/43, sbj: "Report of Visit to Troop Carrier Activities in England." w/Tabs A thru Q

Sbj and to ltr to CG, AGF frm AFACT, dtd. 2/17/44, sbj: "Report of Visit to Troop Carrier Activities in England" w/1 Incl. - cy rpt to Chief, Unit Trng. Division, AFACT, from TC Br., AFACT, dtd 12/14/43, sbj same, includ. Tabs A - Q

B/S to Col. Herzog, AFACT, frm Capt. Freeman, AFACT, not dated

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AAF Trng. Standard No. 80-45, Fuel Tank Repairman

AG 352.00, ltr frm Col. P. C. Ragan, Adj. Gen., to CG, AAF, dtd. 7/31/43 (frm Knollwood Fld, N.C.), sbj: "Request to Lengthen Fuel Cell Repair Course" w/1st Ind. frm AFACT-3 to CG, AAF Trng. Cmd., Knollwood Fld., N. C., dtd. 8/4/43

Sbj and to ltr to CG, AAF TTC, Knollwood Fld, N. C. frm Col J. T. Morris, Maintenance Div. w/1 incl, cy R&R, and 7 Indorsements

2nd Ind. frm AFACT-3 to CG, AAFTTC, Knollwood Fld, N. C., dtd. 6/12/43, w/cys of 1 1st Ind, and 1 teletype.

Cy ltr sbj: "Trng. at Goodyear" to ASC frm Dir. of Ind. Trng., dtd. 1/26/43 w/3d and 4th Inds.

R&R, comment 1, "Civilian Instructor Trng. at Goodyear" - dtd 1/5/43, to Materiel Cmd., frm Ind. Trng.

Ltr to CG, 4th AF, frm Dir of Ind. Trng. dtd 12/8/43, sbj: "Installation and Care of Aromatic Tanks and Hose." w/1 incl. and 2 Inds.

Ltr to CG, AAFTTC, frm Dir of Ind. Trng. sbj: "Action to Clarify the Status of Fuel Cell Repairmen, dtd. 12/9/42

Ltr to 4th AF, sbj: "Installation and Care of Aromatic Tanks and Hose," dtd. 12/8/42, frm Dir of Ind Trng

R&R, comment 2, AFAMC -- AFRIT, dtd. 12/5, sbj: "Trng on Aromatic Tanks & Hose, Goodrich Rubber Co." w/1 Incl.

Tel to AAFTTC frm Weaver, Aug 22

Tel to ASC frm Dir of Ind Trng, 8/17/42

R&R 1 frm AFRIT to AFPMP, 8/17/42, "Trng. at Goodyear."

" " " AFAMC, 8/17/42, " "

Ltr frm Goodyear Tire & Rubber Co., Akron, O., to CO, ASC, 7/21/42, sbj: "Student Strength." w/2 Inds.

R&R 1, frm Dir Trng. to AFASC, 6/2/42, "Goodyear Tire & Rubber Co."

Ltr to AAFTTC, 5/14/42, "Fuel Cell Repair School, Akron, O." w/1 Incl. and 1st Ind.

Ltr to Dir Ind Trng, dtd. 4/29/42, sbj: "Cell Repair School, Akron, Ohio, w/indls.

Ltr to CG, AAFTC, 8/20/43, AG 353, "Training - Fuel Cells.", w/incl. and 2 Inds.

Ltr to CG, AAFTTC, "Training - Fuel Tank Repairman Course" 8/2/43, w/incl & 2d Ind.

14 comments on R&R, "Self Sealing Fuel Tank Repairmen"

Ltr to CG, AAF, frm AAFTTC, "Proposal for Increase Instruction at U. S. Rubber Co., Detroit, Mich." dtd 9/18/42

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R&R, comment 1 frm AFRTT to AFDMR, 10/1/42, "Self Sealing Fuel Tank Repairmen."

Ltr to CG, AAF, frm AAFTTC, "Proposal for Increase Instruction at the U. S. Rubber Co., Detroit, Mich." dtd 9/18/42 w/1st Ind.

Ltr to CG, AAFTTC, frm Dir Ind Trng., 10/14/42, Sbj: "U. S. Rubber Co."

Ltr to CG, AAF, frm AAFTTC, "U. S.Rubber Co., Detroit, Mich." - 6/24/42

Ltr to U. S. Rubber Co., Detroit, Mich. frm District Experimental Engineering Officer, dtd. 6/3/42, w/incls.

2 comments on R&R, "Self-Sealing Fuel Tank Repairmen."

Comment 1 R&R, frm AFRIT to AFAMC, 5/30/42, "U. S. Rubber Co. Self Sealing Fuel Tanks Repair Trng." w/incls.

Ltr to U. S. Rubber Co., Detroit, Mich. frm Dir of Ind Trng. 5/18/42, Sbj: "Self Sealing Fuel Tank Repair."

Ltr to CG, ASC, frm Dir of Ind Trng., 4/28/42, sbj: "U. S. Rubber Co. Schoo.

Carolyn Ingram
RECEIVED BY

11 May 44
DATE

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HEADQUARTERS ARMY AIR FORCES

ROUTING SLIP

DATE 6/5

TO:

OFFICE OR SYMBOL	BUILDING
Col. Libby	
ATTENTION:	ROOM

FOR:

	COORDINATION		INVESTIGATION		NEC. ACTION
	INFORMATION		RECOMMENDATION		SIGNATURE
	FILE		CONFERENCE		

REMARKS:

I have held this from General Hall since he wanted not alter his directive.

Could you straighten it out now with Col Fitzpatrick.

Harper

FROM:

NAME		OFFICE OR SYMBOL
PHONE	BUILDING	ROOM

3-218, AF

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DOD ltrs
6 Jan. & 20 June 1974
By MATUK Ltr. Date 10/17/79

CONFIDENTIAL

HEADQUARTERS ARMY AIR FORCES

ROUTING AND RECORD SHEET

TALLY NO.	
FILE NO.	

SUBJECT: Correspondence on Self-Sealing Tanks for Transport Aircraft

TO: Secretary of the Air Staff

DATE 9 May 1944

FROM: Deputy Chief of the Air Staff, General Hall

COMMENT NO. 1
RHH/ee/72141

1. General Giles has directed that all papers existing in the Headquarters dealing with the question of self-sealing tanks for transport aircraft be turned over to the undersigned for destruction.

2. Please make a project of this matter and deliver to me as soon as possible all papers you are able to find on the subject.

WILLIAM E. HALL
Brigadier General, U. S. A.
Deputy Chief of the Air Staff

Secretary, Air Staff 7 June 44

This directive is killed as a result of instructions issued verbally to you this date.

WAL

File w/ Corr

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32-1047
Miss Ingraham

HEADQUARTERS ARMY AIR FORCES

DOCUMENT RECEIPT

(EXTERNAL)

ORIGINATING OFFICE	ADDRESSEE
AC/AS, MM&D	Secretary of the Air Staff

IDENTIFICATION OF DOCUMENT

TYPE	DATE
Complete files from Office, AC/AS, MM&D on self-sealing tanks and armor plate for transport airplanes -	
SHORT TITLE	**BASIC DATED**

NUMBER AND TYPE OF ENCLOSURES OR ATTACHMENTS

1. complete file from General Meyers' office
2. complete file from Colonel Sessums' office
3. complete file from office Chief, Materiel Division
4. complete file from Transport Unit, Production Branch, Materiel Division
5. complete file from Supply & Maintenance Branch, Air Services Division
6. complete file from Development Engineering Branch, Materiel Division
7.
8.
9.
10.
11.
12.
13.

PLEASE ACCOMPLISH AND RETURN IMMEDIATELY TO: *Commanding General, Army Air Forces, Office of Air Adjutant General, Central Mail Section, Washington, D. C.*

RECEIVING HEADQUARTERS	DATE RECEIVED
	13 May 45

SIGNED SIGNATURE: Carolyn Ingram, SAS 3E1047

TYPED SIGNATURE	GRADE	ARM, SERV. OR ORG.

FILE. DATE	COURIER NUMBER	REGISTERED NUMBER

(See Instructions on Reverse Side) 3-5267, AF

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The originating office will prepare this form in duplicate whenever a receipt is necessary for a document transmitted to an office outside of this headquarters. The original and copy will accompany the document to the Central Mail Section where the appropriate number (courier or registered) will be inserted on both copies. The Central Mail Section will inclose the original with the document sent forward to the addressee, returning the copy to the originating office to indicate the dispatch number. Upon return of the original through the Central Mail Section to the originating office, the copy will be destroyed.

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August 1, 1944.

Lt. Colonel David N. Laux, A.C., O-900662,
Station No. 12, A.T.C.,
A.P.O. 947,
Minneapolis, Minnesota.

Dear Colonel Laux:

The Secretary of War has directed me to reply to your letter dated June 1, 1944, with regard to the provision of armor and self-sealing tanks for troop-carrier aircraft. He has directed me to advise you as follows:

This whole subject, including the various Command decisions which have been made to date both in this country and in the various theaters and the whole record relating thereto, has been recently thoroughly reviewed. In this review, we have had the benefit of our actual experience in the recent Normandy operation in which, as you doubtless know, our troop-carrier plane and personnel losses were exceedingly light. This review has made it abundantly clear that the decisions which have been made to date reflect in each case a reasonable exercise of discretion and judgment. We have found no justification for your belief, "that there has been criminal negligence on the part of one or more general officers."

The secretary of War further directs that I advise you that in the circumstances of your case, it is not appropriate for him to take any action with respect to your present assignment. If you desire to resign from the Service or to be placed on an inactive duty status, your application therefor should be made through channels in accordance with current War Department regulations and directives.

Sincerely yours,

HARVEY H. BUNDY
Special Assistant to
the Secretary of War.

hhb/mob

Mailed C+R Div
Aug. 1, 1944
Office Sec. War

Confidential Paper attached

Copy for AFSAS

SPD 452.22 (65)

SAS/452.22 (65)

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CONFIDENTIAL

DECLASSIFIED
DOD Dir.
8 Jan & 20 June 1974
By AGAO/IC, IG; Date 10/15/76

June 1, 1944.
Washington, D.C.

Honorable Henry L. Stimson,

Secretary of War.

Dear Secretary Stimson:

In commenting upon the loss of Troop Carrier aircraft at Catania, Sicily, last July 13 - 14, you stated:

"To say that the Army will tolerate blundering or endeavor to cover it up is simply not true".

In view of your statement, I feel confident that you would not tolerate the situation which exists in connection with self-sealing tanks for Troop Carrier aircraft, if you knew the facts. I am also confident that you do not know the true story because the information upon which your reply to Senator Kilgore's letter was based is at variance with the facts.

Senator Kilgore's letter originally was turned over to me as Deputy Chief for Troop Carrier - the responsible office - (Airborne and Liaison Branch, Requirements Division, O.C. & R.) with instructions to prepare an answer defending the position of the Army Air Forces. I declined to prepare the answer on the grounds that this office has consistently recommended the installation of self-sealing tanks and that the facts as outlined by Senator Kilgore were substantially correct.

One example of the inaccuracies in the information furnished you is that the Troop Carrier losses in the Sicilian campaign were in no way attributable to the lack of armor and self-sealing tanks. The official report on Troop Carrier operations in Sicily (and this is the only official report in the War Department) states:

"The lack of armor and self-sealing tanks was definitely the cause of a great many of our casualties".

When the Army Air Forces informed you that the installation of self-sealing tanks in Troop Carrier aircraft would have an adverse effect upon the performance of the aircraft, they were either covering up or deliberately misrepresenting the facts. The reduction in speed or climb would be so slight that it could not be detected by the most skilled pilots.

The installation of self-sealing tanks and armor results in a slight penalty in weight and range, however, these disadvantages were made known to Troop Carrier units in both North Africa and the United Kingdom - and each cabled this Headquarters stating that they were willing to accept these penalties and requesting that the installations be made. Furthermore, both the tanks and the armor can be easily removed, therefore, these penalties need not interfere with non-tactical operations.

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It is interesting to note that the information furnished you for your reply to Senator Kilgore is not even remotely connected with the reasons advanced to General Spaatz as to why the tanks could not be provided. In his case they stated:

1. No stocks on hand. (However, the necessary stocks were being manufactured and would have been available in time for the invasion if the contract had not been cancelled.)

2. Unable to produce them without interfering with production of P-38 and P-51 tanks. (This statement was simply not true as the contract for Troop Carrier tanks had been let with the definite understanding that it would not interfere with P-38 or P-51 tank production.)

3. Inability of the theatre service centers to install them. (Troop Carrier had volunteered to install the tanks with their own personnel - and this fact had been made known to all concerned.)

Another interesting sidelight is the fact that when General Giles returned from the United Kingdom, he brought with him a letter from General Brereton (Commanding General of the 9th Air Force, which controls all Troop Carrier units being used in the invasion) in which General Brereton requested that the shipment of self-sealing tanks for Troop Carrier aircraft be expedited. Despite this fact, General Giles had the contract cancelled (Incidentally, the contract had been ordered by General Arnold himself and at the time he had stated emphatically: "If they want them, they will get them".) and, in order to justify his position, sent a cable to General Spaatz embodying the three inaccuracies outlined in the above paragraph.

When Mr. Lovett indicated that Drew Pearson was about to release an article showing that the Army Air Forces was asleep at the switch on this subject, I was directed by my immediate superior to prepare a defense for the Army Air Forces in these words:

> "Even though we all recognize the necessity for self-sealing tanks in Troop Carrier aircraft, that is not the point, the Army Air Forces are being attacked and our job is to protect the Chief. It is now up to us to present all the reasons why we should not have self-sealing tanks".

I declined to prepare such a document and merely provided such data as the Office of Technical Information requested.

The actual record on self-sealing tanks for Troop Carrier aircraft

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will show that they have been demanded consistently for a period of a year and a half - that the materiel is available - that the priority of other Air Forces projects would not be affected - and that the tanks could have been produced and delivered to the United Kingdom in time for the coming invasion - and would undoubtedly have been responsible for the saving of many lives. The lack of these tanks will not only cost many lives, but may even imperil the success of the entire invasion effort.

I have recently completed eighteen months overseas duty, participating in both the Sicilian and Italian Troop Carier operations. At Catania, Sicily, on the night of July 13 - 14, I stood in the Navigator's Dome of the leading Troop Carrier aircraft and watched the Navy and the enemy shoot down our planes. Consequently, I realize the necessity for self-sealing tanks to a degree that cannot be appreciated by anyone who has not gone into combat in Troop Carrier aircraft. That belief is shared by every Troop Carrier pilot and every Troop Carrier officer who has been charged with the responsibility of sending his men into combat operations. It is little short of murder, and I have waged many battles within this Headquarters in an effort to correct the situation - without success. However, a copy of the latest staff study on the subject is attached for your information -- it has been on General Craig's desk for several weeks and has been coordinated with all interested offices.

Because of my efforts to get self-sealing tanks for Troop Carrier aircraft and because of my belief that there has been criminal negligence on the part of one or more General Officers - a fact which I am prepared to establish before an impartial investigating committee - I am now being railroaded in true Gestapo style.

Upon returning from leave - and without any previous information on the subject - I have been relieved from assignment to this Headquarters, assigned to the ATC and they have been directed to send me to Alaska.

I have no objection to going overseas again:

I volunteered to pilot a Glider in the invasion in order to secure data - from a command viewpoint - which would be helpful to us in future airborne operations. I was turned down;

I requested assignment to an Air Commando Unit (and was asked for by one of the units) because I believe we have much to learn about this type of operation, and my experience could be used to the best interest of the service. I was again turned down - this time on the basis that my services could not be spared from Troop Carrier work at this time;

A recent request for my services from the Central Pacific Theatre (for a type of work similar to that

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which I performed successfully in North Africa) was turned down (by cable, May 7th) on the ground that I was not available;

Yet, without even being consulted, which is the usual practice, I was suddenly made available to an inactive theatre for a type of work about which I know absolutely nothing. Incidentally, none of my immediate superiors had been consulted on the transfer either.

In view of the above facts, it is requested that an investigation be initiated by your Office to determine the following:

1. Does a requirement for self-sealing tanks and armor in Troop Carrier aircraft exist and, if so, why have they not been provided?

2. Why is an officer - who has been refused an assignment to an <u>active</u> theatre for a job where his experience and training can be used to the best interest of the service - being assigned to an <u>inactive</u> theatre for a job for which he has not the slightest qualifications?

As I have stated before, I stand ready to serve my country in active combat, or in any other way that I am qualified, however, I have no qualifications for the assignment to which I have been directed. Therefore, if you do not believe that an investigation is warranted - I ask, <u>but only upon that basis</u>, (as an officer over 38 years of age, whose services are no longer needed in the roles for which he is qualified) that I be granted permission to retire to civil life where I can serve my country in civilian capacities within the scope of my qualifications.

Sincerely yours,

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AFDIR-1/8 AUG 30 1944

Lt Col Sargent/3626

Writn. 8-30-44

DECLASSIFIED
DOD Dir 5
6 Jan & 30 June 1974
By ARMY IAG, Date 10/18/76

The Department General Staff
(Attn: G-4 Division)

x Action

x Information

Additional Tankage, Harmon Field, Newfoundland.

With reference to par. 2 of Disposition Form dated 26 August 1944 and further to par. 6 of 3rd Indorsement attached thereto, this Headquarters approves the substitution of two (2) 40,000 barrel and one (1) 10,000 barrel welded steel tanks in place of the ten (10) 12,000 barrel bolted tanks as originally requested.

For the Commanding General, Army Air Forces:

(Sgd.) W. M. Kriebel, Lt.Col
for PATRICK W. TIMBERLAKE
Brigadier General, U. S. A.
Deputy Chief of Air Staff

1 Incl
B/7 dtd 26 Aug 44
fm WDGS,SPD, w/1 incl

COPY FOR SECRETARY OF AIR STAFF

Apd 452.22 (64)

Parcel by hand to G-4, 30 Aug 44

Apd 452.22 (64)

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AFDIM-4/1 18 AUG 1944
Colonel Woolley/5141/ind

DECLASSIFIED
DOD ltr
8 Jan & 20 June 1972
By AADILK NC, Date 10/18/76

War Department General Staff
Operations Division

X Action

Additional Tankage, Harmon Field

1. In order that the conflicting statements noted in paragraph 2 of your disposition form of 8 August 1944 might be authoritatively reconciled, the Office, Chief of Transportation, Army Service Forces, was requested to provide this headquarters with an analysis of the Newfoundland Railway and its findings as to the capability of this Railway to transport 100 octane gasoline from the port of Placentia to Harmon Field, Newfoundland. The study, in the form of a Memorandum from Office, Chief of Transportation is attached as an inclosure to this correspondence.

2. The findings of the Office, Chief of Transportation may be briefly summarized as follows:

Prior to and including 1941, available railway stock and motive power were insufficient to handle existing traffic over the railway. Since 1941, the motive power has been augmented by five (5) American locomotives, thus providing an overall percentage increase of 21.7 over that available in 1941. Existing traffic will demand 80% of the augmented motive power and 20% may thus be allocated to the hauling of 100 octane gasoline. Based on conditions imposed by climate and weather, it can be assumed that during the summer period 3.6 cars can be hauled daily. During the winter months, however, this assumed traffic will drop to 2.4 cars daily, or a monthly total of 374,400 gallons for the winter months.

3. These figures are at variance with the more optimistic figures quoted in paragraph 2 of your disposition form, but in the opinion of this headquarters represent a conservative statement of dependable deliveries throughout the entire winter period.

Action Recommended
The recommendation is resubmitted that approval be granted for the erection of ten (10) ten thousand (10,000) barrel tanks at Harmon Field, Newfoundland at an estimated cost of $800,000 and that sufficient priority be granted the project to assure its completion not later than 1 November 1944.

For the Commanding General, Army Air Forces:

2 Incls
1 Incl n/c
1 Added:
Memo as described in
Par. 1 above.

MEMO FOR FILES: Complete corres already in files under D/F, 8/2/44, above subject.

Dispatched
18 AUG 1944
AGO

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

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COPY FOR Sec. of Air Staff

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SAS 452.22 (64)

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OPERATIONS DIVISION
WAR DEPARTMENT GENERAL STAFF
DISPOSITION FORM

DECLASSIFIED
DOD ltrs
8 Jan. & 20 June 1974
By ADDUK NC, Date 10/18/74

OPD 463.7 (2 Aug 44)
AG
G-

SUBJECT: Additional Tankage, Harmon Field. 8 August 1944

To: CG, AAF

1. Reference is made to the attached Army Air Forces Disposition Form, subject as above, dated 2 August 1944, with inclosures.

2. Conflict appears in the correspondence concerning the railroad movement of 100 octane gasoline in Newfoundland, as follows:

a. Tab "B", paragraph 5 of basic letter. "*** and it is estimated that 100,000 gallons can be hauled by rail."

b. Tab "B", paragraph 2, 3d Indorsement to basic letter. "During the past season, movements of gasoline have been made from Argentia to Harmon Field at the rate of 1,000,000 gallons per month."*** "Canadian authorities, who are now responsible for supply of aviation gasoline to the Island, state that supply to all stations will be furnished as needed."

c. Tab "B", paragraph 3, 3d Indorsement to basic letter. *** "Decreased requirements for Gander would permit hauling from Lewisporte to Harmon and increase the amount which the railroad could deliver to an estimated 1,500,000 gallons per month."

d. Tab "B", paragraph 1, 6th Indorsement to basic letter. ***"This telegram states that from the 1st of January to the 1st of March, 281,720 gallons of gasoline were delivered by rail to this field, and that because of weather conditions the delivery of this amount could not be relied upon during the coming winter."

e. Tab "B", paragraph 2, 6th Indorsement to basic letter. "*** the records of this Headquarters show that the most gasoline delivered to Harmon Field by rail during one month was 875,000 gallons during the month of April."

f. Tab "B", paragraph 1, 7th Indorsement to basic letter. "*** to be supplied by railroad 1,705,000."

3. Before consideration can be given to the recommendation of paragraph 9, reference Disposition Form, it is necessary that this conflict be resolved on the capability, expressed in gallons, of the railroad to move gasoline to Harmon Field each month, during the icebound period.

THOS. T. HANDY,
MAJOR GENERAL,
Assistant Chief of Staff.

1 Incl
D/F, AAF,
2 Aug 44,
w/3 Incls.

~~SECRET~~

/s/ John C. Daly,
Colonel, G.S.C., Chief, Operational Logistics Sec.
Logistics Group, OPD, WDGS

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DOD Dir.
8 Jan. & 30 June 1976
By ALAD/LK, HQ Date 10/15/76

Additional Tankage, Harmon Field, Newfoundland — 1st Ind — AFATC/S&S/AID/SLS/pd
HQ AAF Air Transport Command, Washington 25, D. C. 18 Aug 1944

To: Commanding General, Army Air Forces, Washington 25, D. C. Attention: Asst C/AS, M&S, Air Installations Division, (Lt. Colonel L. M. Sargent).

1. In compliance with Paragraph Two of basic communication and Disposition Form, dated 8 August 1944, attached, request was made to the Office of the Chief of Transportation, Army Service Forces, to submit a study of the estimated capacity of the Newfoundland Railway to handle gasoline deliveries to Harmon Field, in addition to the normal traffic load.

2. The requested study made by the Office of the Chief of Transportation is included as Inclosure Two. Attention is invited to Paragraph Two of "Conclusions" of this Transportation Study which indicates that 374,400 gallons of Aviation Gasoline per month can be hauled during the winter without interfering with the normal traffic flow.

3. In view of this study, it is recommended that the figures submited by the Transportation Corps be considered as final which will require erection of 10 - 10,000 barrel bolted steel Aviation Gasoline storage tanks, Should variations in the requirements for gasoline at Harmond Field require additional gasoline, it is recommended that the railroad be depended on for these emergency supplies with the understanding that the normal traffic flow will be affected.

For the Commanding General:

/s/ J. P. Binns
J. P. BINNS
Lt. Col., Air Corps
Deputy Ass't Chief of Staff
Supply & Service

2 Incls
Incl 1 - N/C.
Added 1 Incl.
Incl 2 - Office of Chief of Trans. Study.

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HEADQUARTERS ARMY AIR FORCES
WASHINGTON

AFDIN-1/3

DECLA
DOD
[illegible] 10/18/26

12 Aug 1944

SUBJECT: Additional Tankage, Harmon Field, Newfoundland

To: Commanding General, Air Transport Command, Washington, D.C.

1. Your attention is invited to the attached Disposition Form dated 8 August 1944 from War Department General Staff, Operations Division, and to the statements regarding conflict contained in the various opinions as to ability of the railroad in Newfoundland to transport gasoline.

2. Before the subject request can again be placed before higher authority, it is necessary that this conflict be resolved on the capability, expressed in gallons, of the railroad to move gasoline to Harmon Field each month during the icebound period.

By command of General ARNOLD:

/s/ Lucius M. Sargent,

LUCIUS M. SARGENT, Lt. Col., A.C.
Asst. Chief, Air Installations Division
AC/AS, M&S

1 Incl
D/F, WDGS, OPD,
8 Aug 44,
w/1 Incl.

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ARMY SERVICE FORCES
Office of the Chief of Transportation
Washington 25, D. C.

DECLASSIFIED
DOD Dirs.
8 Jan. & 30 June 1974
By dd/OTM, OCT Date 10/21/76

17 August 1944

MEMORANDUM FOR HEADQUARTERS, AIR TRANSPORT COMMAND.

SUBJECT: Estimated Capacity of Newfoundland Railway to Handle 100 Octane Gasoline from the Port of Placentia to Harmon Field.

1. At the verbal request of Major S. L. Stantz, Hdq., ATC, the governing conditions prevailing on the Newfoundland Railway have been reviewed and below are submitted the findings. An effort is made to be as practical as possible and the conclusion drawn with due consideration given to the operation of the railroad under severe conditions prevailing in Newfoundland.

2. Basic Data:

a. Operating Divisions:

(1)	Placentia - Clarenville	88.4	2½%
(2)	Clarenville - Bishop's Falls	136.3	2½%
(3)	Bishop's Falls - Humbermough	136.4	2%
(4)*	Humbermouth - Harmon Field	58.7	2%
		419.8	

*Trains on No. 4 will switch Harmon Field.

b. Ruling passing track distance 18 miles.

c. Track and structures fair. Rail 70 lbs., bridges steel and concrete. No mention of block signals. Curvature heavy, maximum 12%.

d. Motive Power:

Units	Type	Tractive Effort	Date
17	4-6-0	19074	1900-1917
3	2-8-0	22275	1903-1913
6	4-6-2	20400	1921
2	4-6-2	21600	1926
2	4-6-2	27600	1929
2	2-8-2	27600	1930
6	2-8-2	28980	1935-38-41
5	2-8-2	20100	1942
43 ... Total			

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e. Rolling Stock

50 Tank Cars Capacity 5,000 Imp. Galls.
6,000 U.S. Gals.

298 Flat Cars
365 Box Cars
105 Miscellaneous

f. Manpower and fuel evidently are not a serious problem.

3. a. This study develops three controlling factors.

(1) Traffic capacity (physical)
(2) " " (motive power)
(3) " " (rolling stock) (tank cars)

The factor of the above indicates the lower factor will rule the ability of the railroad to move hight octane gasoline from the post of Placentia to Harmon Field.

b. Physical track conditions, passing track spacing with a maximum of 18 miles and a lack of signals dictate an average of 10 miles per hour for freight trains over any division and will limit trains in each direction to a maximum of 8.

c. From the list of motive power available the following job allocation of motive power appears logical. Switch engines: 10; 2 each at St. Johns, Placentia, Clarenville, Bishops Falls and Humber Mouth. Road Engines. Passenger trains on main line only:

2 South of Clarenville
1 Clarenville to Bishop's Falls
1 Bishop's Falls to Humbermouth
1 Humbermouth to Port aux Basque

5

Rotary Plow 3 locomotives

Shop - 3 = 7% under repairs.

Of the remaining, 22 engines use the 10 locomotives with 27,600 lbs. or more tractive effort on Divisions 1 & 2 for 2½ trains per day loaded to 7 cars of 40 tons gross in summer and 4 cars of 40 tons gross in the winter.

Use the 12 locomotives, 20,100 to 20,600 lbs. tractive effort on Divisions No. 3 and No. 4 for 3 trains of 6 cars of 40 tons gross during the summer quarter and 4 cars of 40 tons gross during the winter quarter.

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We quote from a report on Newfoundland Railway:
"During September 1941, and for the six months previous to that month, the traffic handled by the Newfoundland Railway demanded every serviceable locomotive hour available, and even so a great deal of traffic, such as handling some seven thousand cars of pulpwood, was still waiting movement."

Attention is drawn to the fact that since 1941 the motive power has been augmented by 5 American locomotives representing an overall percentage of 21.7 percent in 1941. In round numbers based on available normal motive power, traffic will demand 80% of the augmented motive power and 20% can be allocated to the hauling of 100 octane gasoline.

The resulting 100 octane traffic will be:

Summer: 20% of 18 cars = 3.6 cars

Winter: 20% of 12 cars = 2.4 "

3.6 x 6,000 = 21,600 gal/day
2.4 x 6,000 = 14,400 "

21,600 @ 26 days = 561,600 gal.

14,400 @ 26 " = 374,400 " Answer

*Tank cars are 40 tons gross.

Rolling Stock:

50 tank cars are available

Assume running repairs will maintain all these new cars in service.

Travel Time	(Summer)		(Winter)
Line	4 days		6 days
Port	2 "		2 "
Terminals	2 "		2 "
Weather	0 "	Weather	2 "
	8 days		12 days

12 days turnaround will permit loading 4.17 cars during the winter season. 8 days turnaround will permit loading 6.25 cars per day.

CONCLUSIONS:

1. The physical features of the railroad will permit a maximum of 8 trains per day in each direction.

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2. Motive power available will permit handling over and above switching service and passenger service outlined above 3 trains of 6 40 ton cars (gross) during the summer quarter and 3 trains of 4 = 40 cars (gross) during the winter.

The allocation of service for handling of 100 octane gasoline is approximately 20%.

Summer: 20% of 18 cars = 3.6 cars
3.6 cars @ 6,000 gal = 21,600 U.S. gal/day
3.6 cars @ 5,000 gal = 18,000 Imp. gal/day

Winter: 20% of 12 cars = 2.4 cars
2.4 cars @ 6,000 = 14,400 U.S. gal/day or 374,400 gal/mo
2.4 cars @ 5,000 = 12,000 Imp. gal/day

Note: Tank cars loaded = 40 tons gross

3. The 50 tank cars are adequate to handle 6.25 cars per day during the summer quarter and 4.17 cars during the winter quarter. To utilize the 50 cars to the maximum will require 6 additional 2-8-2 locomotives when the daily delivery can be expected to be.

Summer: 6.25 cars @ 6,000 = 37,500 U.S. gal/day
@ 5,000 = 31,250 Imp. gal/day

Winter: 4.17 cars @ 6,000 = 25,020 U.S. gal/day or 650,000 gal/mo
@ 5,000 = 20,850 Imp. gal/day.

For the Chief of Transportation:

/s/ R. E. Shineman,
Lt. Colonel, TC,
Executive, Rail Division.

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DECLASSIFIED
DOD 5200.1-R
8 Jan. & 20 June 1979
By [illegible] NARA, Date 10/18/96

Self-Sealing Tanks

6 July 1944

AC/AS M&&D

3

AC/AS OC&R

1. Your attention is invited to cable from London, CM-IN-3737 of 5 July 1944 with reference to the subject of self-sealing tanks.

2. In order that an early decision may be made it is requested that you furnish this office information similar to that contained in comment number 2 above, but based on accurate information obtained by consultation with the manufacturers concerned. Your study should be premised on two factors:

a. Equipping all troop carrier aircraft now in the ETO and MTO with self-sealing tanks and all troop carrier aircraft scheduled for these theaters.

b. Equipping all troop carrier aircraft with self-sealing tanks.

3. Request that the above study be treated as a matter of urgency.

(13) 548 452.2

File
a-2 July

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DECLASSIFIED DOD Dir. 5 Jan. & 30 June 1974 By [illegible] NC. Date 10/15/76

Self-Sealing Tanks

Asst C/AS, Operations, Commitments, and Requirements — 8 June 1944

Asst C/AS Materiel, Maintenance, and Distribution — 2

JPM:MMM:72176

1. The following estimates, provided by the Materiel Command without recourse to the factories concerned, are predicated on the following assumptions:

a. That the production of subject tanks would be accomplished under highest first priority.

b. That information obtained in February 1944 from manufacturers is currently useable as a basis for these estimates.

2. The following is with specific reference to questions as numbered in Comment no. 1 above:

a. The cost to manufacture 2000 sets of subject tanks will be approximately $4,800,000.

b. If Firestone and Goodrich are used, the combined rate of production will be 300 sets within 45 to 60 days of date of order and thereafter, a total production of 500 sets per month. If Goodrich alone is used, 150 sets can be produced within 45 to 60 days after date of order and thereafter, 300 sets per month.

c. The interference with other projects would be as follows:

Airplane Model	Type Tank	Estimated Loss Per Month
	Goodrich	
B-24	Bombay	25 sets
B-17	Main	25 sets
SBD	Main	100 sets
P-38	Leading Edge	75 sets
B-25	Bombay	
	Firestone	
P-47	Main	

In addition, there would be an undetermined loss in production of M-8 tanks. Firestone is the sole producer of these tanks. (M-8 is Ordnance Combat Tank)

d. Storage facilities can be made available for 2000 sets of self-sealing tanks.

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DOD Dir. 5200.9 & 30 June 1974
By AAFHRC Doc. Date 10/18/96

e. When stored in suitable facilities, these tanks can be maintained in useable condition for a period of approximately two years.

3. The above should be accepted as the best estimate which can be developed by the Materiel Command without reference to the manufacturers concerned. No estimated loss per month is given for certain models as there is no definite information available upon which to predicate such an estimate. Firestone and Goodrich are selected as the manufacturers as these companies only now have the engineering developed for these tanks. It is possible that some relief from the above losses may be obtained by increasing production at the U.S. Rubber Company, Hewitt Company, and Goodyear Company. No estimate of the possibilities of such increases can be obtained without recourse to the manufacturers.

/s/ J. F. Phillips

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DECLASSIFIED
DOD ltrs
By NWRCE & 20 June 1974
NC, Date 10/31/74

AC/AS, M&S, Air Services Division — 22 July 1944

Lt. Col. L. D. Moreland — 4300

SECRET — Routine

COMMANDING GENERAL AIR SERVICE COMMAND PATTERSON FIELD, OHIO

LEAK PROOF TANKS FOR CR[illegible]IE DASH FOUR SEVEN AIRPLANES IS SUBJECT THIS MESSAGE FOR ATTENTION COLONEL DANA PD FIVE SETS SUBJECT TANKS ARE TO BE SHIPPED TO UNCLE KING IN ACCORDANCE WITH INSTRUCTIONS AND PRIORITIES TO BE ESTABLISHED IN REPLY TO CABLE BEING SENT FROM YOUR HEADQUARTERS PD BALANCE OF TANKS ON HAND ARE TO BE SENT TO THEIR ORIGINALLY CONTEMPLATED DESTINATION

ARNOLD

SAS 452.22 (62)

File

/s/ J. W. Sessums
J. W. SESSUMS,
Colonel, Air Corps
Executive, AC/AS, M&S.

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SAS 452.22 (62)

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DECLASSIFIED
DOD Dirs
6 Jan. & 20 June 1974
By ACMJ&C, JC, Date 10/15/76

AFDAS
PST/eva/5265

14 July 1944.

MEMORANDUM FOR AC/AS, OPERATIONS, COMMITMENTS & REQUIREMENTS,
Attention: General Craig.

SUBJECT: Self-sealing Tanks for Troop Carrier Aircraft.

1. Discussed with General Arnold and General Wilson the approval given this morning for the construction of 2500 sets of C-47 self-sealing tanks and explained that we would ascertain the requirements of the theaters before any tanks were shipped; that, if it was found that only 1500 tanks were needed, the construction could be cutback in December and January.

2. If you are agreeable, I suggest that we proceed along those lines.

Signed

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

Dispatched
15 JUL 1944
AAG

SAS 452.22 (SS)

File Cy

SECRET 452.22 (SS) SAS.

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DOD Dirs
8 Jan. & 20 June 1974
By AFHRC, Doc Mgmt Div

(28) AFRIT

1 4 JUL 1944

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

Subject: Employment of Droppable Gas Tanks by Fighter Aircraft

1. This has reference to radio from USSTAF in Europe, U64734, dated 11 July 1944, in regard to which you made the following remarks on General Arnold's log "General Craig - - Suggest you advise General Spaatz to guard against possible danger of using this method in too little volume on first missions."

2. The following is paraphrased from reply to subject message: "Suggest consideration be given to the possible danger of using this method in too little volume on first missions."

Kenneth P. Bergquist
Colonel, Air Corps
Executive, Asst Chief of Air Staff
Operations, Commitments & Requirements

SAS H52.22 (57)

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SAS H52.22 (57)

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ADDRESS REPLY TO
HEADQUARTERS OF THE ARMY AIR FORCES
WAR DEPARTMENT
WASHINGTON, D. C.

SECRET

DECLASSIFIED
DOD Dir. 5 Jan. & 30 June 1976
By MASTER, NC, Date 10 Oct 76

WAR DEPARTMENT
HEADQUARTERS OF THE ARMY AIR FORCES
WASHINGTON (25)

AFRDR

14 JUL 1944

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

Subject: Employment of Droppable Gas Tanks by Fighter Aircraft

1. This has reference to radio from USSTAF in Europe, U64754, dated 11 July 1944, in regard to which you made the following remarks on General Arnold's log "General Craig - - Suggest you advise General Spaatz to guard against possible danger of using this method in too little volume on first missions."

2. The following is paraphrased from reply to subject message: "Suggest consideration be given to the possible danger of using this method in too little volume on first missions."

Kenneth P. Bergquist

Kenneth P. Bergquist
Colonel, Air Corps
Executive, Ass't Chief of Air Staff
Operations, Commitments & Requirements

SAS 452.22 (17 July 44)

DW
File - 17 July 1944
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File 17 July 44

SAS/452.22 (17 July 44)

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DECLASSIFIED
DOD Dirs
8 Jan. & 20 June 1973
By AGAFLK UC, Date 10/15/76

12 JUL 1944

AFOCR

MEMORANDUM FOR THE ASSISTANT SECRETARY OF WAR FOR AIR

SUBJECT: Recommendations made by the Assistant Secretary of War for Air

1. Reference is made to your three memoranda of 30 June and one of 6 July on the subjects following.

2. AGLD Device for Norden Bomb Sight. The Status of the Automatic Gyro Leveling Device for the Norden Bomb Sight is as follows:

(a) Proving Ground Command reports indicate that the AGLD modified sight is inferior to the standard Norden M-Series bomb sight. In January all theaters were so informed, but were given an opportunity to state their requirement for AGLD modified sights. The ETO was the only theater which indicated a requirement. Action was taken to meet the initial ETO requirement and has been initiated to expedite the procurement of two additional requirements established by the Eighth Air Force on 28 June and 4 July respectively.

(b) The Minneapolis Honeywell Company has a contract for two hundred fifty (250) AGLD kits. The first hundred will be ready 20 July and the remaining one hundred fifty (150), ready 20 August. Thereafter, the rate of production can be over one hundred fifty (150) per month. Action is being initiated to increase the production of the Minneapolis Honeywell Company to meet the requirements established by the Eighth Air Force but this item will not be standardized until a more suitable gyro erection is obtained.

(c) Several new Automatic Gyro Leveling Devices are under development. Their development and testing is being expedited with a view towards standardization.

3. Leak Proof Tanks and Flak Curtains for Troop Carrier Aircraft.

(a) General Spaatz was queried by radio with respect to the requirement for [redacted] leak proof tanks and armor in troop carrier aircraft. He replied that [redacted] his opinion, certain advantages, provided the production of such equipment did not interfere with the

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SAD 452.22 (56)

AAG 452.22 (56)

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production of similar equipment for any other tactical aircraft and provided the flak curtains are detachable so that they need be used only on particularly dangerous missions.

(b) General Spaatz's point of view was relayed by radio to General Baker, whose opinions were also requested. To date no reply has been received.

(c) A final decision on this matter must take into consideration the contemplated redeployment of units in the ETO and MTO to the Pacific Theaters where distances will normally be greater and where the loss in range occasioned by installation of self-sealing tanks, flak curtains, and engine armor will be a more important factor.

(d) If the consensus of opinion of the combat theaters after consideration of all factors justifies the provision of this equipment, however, it is proposed to establish a requirement in all troop carrier aircraft for leak proof tanks, detachable flak curtains, and detachable engine nacelle armor.

(e) It is considered that, if such a requirement is established, leak proof tanks should be interchangeable with metallic tanks to permit a maximum use of the airplanes as cargo carriers in rear areas. An order for 2500 kits would meet the total requirements, based on unit equipment plus 25% reserve, in a recommended priority as follows:

(1)	ETO	1120 kits
(2)	MTO	240 kits
(3)	CBI	225 kits
(4)	Far East Air Force	460 kits
(5)	2d and 3d Air Commando Troop Carrier Squadrons	40 kits
(6)	1st, 2d and 4th Combat Cargo Groups	365 kits

Attrition airplane requirements should be met after initial needs are satisfied.

(f) It is considered that the flak curtains should protect only the pilot and co-pilot and should be similar in material to those supplied heavy bombers and the engine nacelle armor should furnish protection to the lower half of engine coolings and nacelles against .30 caliber fire. If this requirement is established, it will be given a priority which will not interfere with the equipment of other tactical aircraft.

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4. **Fighter Requirements for Eighth and Ninth Air Forces.** The status of the requirements you discussed in your memorandum of 6 July is as follows:

(a) A reserve of 50% in fighter crews and of 50% in fighter aircraft is authorized the Eighth and Ninth Air Forces. The fighter crew strength is now approximately 900 crews over the total authorized strength. This 900 over strength is 350 more crews than a 75% reserve which the Air Force intends to propose to the General Staff for approval. The fighter aircraft strength is 365 under the total authorized, but is being built up as fast as availabilities permit. It is not believed feasible, in face of estimated aircraft availabilities, to increase the authorized fighter strength in these Air Forces at this time. The only pool of heavy bomber strength authorized the Eighth Air Force is the usual 50% reserve in aircraft and 100% reserve in crews authorized in active theaters. Therefore, insofar as this Headquarters is concerned, the same general policies apply to both fighter and bomber groups.

(b) Tables of Organization for Airdrome Squadrons (1-487) have recently been revised and are now being published. The new Table increases grades and ratings of both officer and enlisted personnel, as well as the total numbers in the organization.

(c) Action is being taken to query the Eighth and Ninth Air Forces with respect to their requirements for flying control units.

For the Commanding General:

(Signed)

BARNEY M. GILES,
Lieutenant General, U. S. Army
Chief of the Air Staff.

Dispatched
12 JUL 1944
AAG

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DOD Dirs.
6 Jan. & 20 June 1974
By OASD/ISA, WC, Date 10/15/76

12 JUL 1944

AFOCR

MEMORANDUM FOR THE ASSISTANT SECRETARY OF WAR FOR AIR

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AAF 452.22 (5-9)

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(c) A final decision on this matter must take into consideration the contemplated redeployment of units in the ETO and MTO to the Pacific Theaters where distances will normally be greater and where the loss in range occasioned by installation of self-sealing tanks, flak curtains, and engine armor will be a more important factor.

(d) If the consensus of opinion of the combat theaters after consideration of all factors justifies the provision of this equipment, however, it is proposed to establish a requirement in all troop carrier aircraft for leak proof tanks, detachable flak curtains, and detachable engine nacelle armor.

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(c) Action is being taken to query the Eighth and Ninth Air Forces with respect to their requirements for flying control units.

For the Commanding General:

[Signed]

BARNEY M. GILES,
Lieutenant General, U. S. Army
Chief of the Air Staff.

Dispatched
12 JUL 1944

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Tanks

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DECLASSIFIED
DOD dirs.
5 Jan. & 20 June 1974
By AGAF IC, Date 10/18/10

4 July 1944

MEMORANDUM FOR THE CHIEF OF AIR STAFF:

Subject: Jettisonable Fuel Tanks for Eastern Command - Cable No. H-61165 London.

1. Cable H-61165, received in this Headquarters from London on 27 June 1944, represented the first request to be made for any supply of jettisonable fuel tanks for fighter aircraft to be delivered from this country to the Eastern Command.

a. Within twenty-four hours of receipt of subject cable asking for direct shipment of 1,800 seventy-five gallon tanks to the Eastern Command, twenty freight cars loaded with 1,968 of these tanks, had been diverted from Newark to Charleston, for loading to vessels and delivery via Teheran.

b. Arrangements have been made to supply the Eastern Command with 1,800 tanks per month, as requested by ETO, in 110-gallon size.

2. The diversion mentioned in paragraph 1 a. above, was made from shipments scheduled for U.K. For your assistance in estimating the tank supply situation in both ETO and MTO as a result of the foregoing action, there are attached as Tabs "A" and "B" statements of requirements versus supply for each of these Theaters, in the order mentioned.

3. Regular monthly reports of tanks expended and of balances on hand are submitted to this office. It is of interest to note from these that expenditures of U.S.-furnished tanks rarely exceed 60% of the Theater's estimates.

(Signed) E. M. Powers

2 Incls
Incl 1 - Tab A
Incl 2 - Tab B

E. M. POWERS
Brig. General, U. S. A.
Deputy Asst. Chief of Air Staff,
Materiel, Maintenance, and Distribution

SAA 452.22 (53)

Dated
7 July - OK - all
Shipped !

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AAG 452.22 (53)

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DOD Dir. 5 Jan. 6, 20 June 1894
By ... NARS, Date 10/15/96

Leak-proof tanks for troop carrier aircraft

Assistant Chief of Air Staff, Materiel, Maintenance & Distribution — 5 July 44

Secretary of Air Staff — WDG:JB 5791 — 3

For comment, attention being invited to par. 6 of attached Memorandum from AC/AS, OC&R dated 5 July 44, to the Chief of Air Staff. Please expedite.

T. A. FITZPATRICK
Colonel, G. S. C.,
Secretary, Air Staff.

Incl n/c

SAS 452.22 (52)

Dispatched
6 JUL 1944
AGO

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

~~SECRET~~ SAS 452.22 (52)

U. S. GOVERNMENT PRINTING OFFICE

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DECLASSIFIED
DOD Dir.
6 Jan. & 30 June 1976
By ... NARA, Date ...

TO: Chief of Air Staff DATE 5 Jul 44

FROM: Asst C/AS, Operations, Commitments & Requirements COMMENT NO. 2
Col Giffin/ch/5627

Attached is the memorandum required by Comment No. 1 above.

1 Incl
Memo for C/AS

Requirements Division _____

H. A. Craig
Major General, U. S. Army
Asst. Chief of Air Staff
Operations, Commitments & Requirements

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DECLASSIFIED
DOD Dir
5 Jan. & 30 June 1974
By [illegible] NARS, Date 10/15/74

Leak-proof Tanks for Troop Carrier Aircraft.

30 June 1944

1

AG/AS - CSGE

Chief of the Air Staff.

1. Mr. Lovett on his return from the European Theater, stated that he contacted General P. L. Williams and a number of other personnel assigned to the Troop Carrier Command and it was the consensus of opinion that all Troop Carrier aircraft should be equipped with leak-proof tanks.

2. Request you prepare an estimate as to the number of tanks that we should have to equip all Troop Carrier aircraft. Submit this paper to me as I want to talk to General Arnold about it before forwarding to MMD.

BARNEY M. GILES,
Lieutenant General, U. S. A.
Chief of the Air Staff.

SOS 452.22 (3-2)

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1 JUL 1944
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DOR 452.22 (2)

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19 Jun

Secretary, Air Staff

Please send this to Air Marshal Sir William L. Welch for his comments.

Mak.

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d 19 June 40

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COPY

HEADQUARTERS ARMY AIR [redacted]S

ROUTING SLIP

TO: General Echols DATE 6-15-44

OFFICE OR SYMBOL	BUILDING
ATTENTION:	ROOM

FOR:

	COORDINATION		INVESTIGATION		NEC. ACTION
	INFORMATION		RECOMMENDATION		SIGNATURE
	FILE		CONFERENCE		

REMARKS:

As directed by you, I took this cable to Gen. Craig's office but he is out of town for several days. Col. McKee took the cable to Gen. Giles who indicated a reply should be sent along the lines of the prepared cable.

J.W.S.

COPY

FROM:

NAME	OFFICE OF SYMBOL
J W SESSUMS, JR., COL., A.C.	
PHONE / BUILDING	ROOM

J-218, AF

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DOD Dir.
5 Jan. & 30 June 1954
By MAHC, 10/12/06

CONFIDENTIAL
AFDAS
Ref: [illegible] 5265
RESTRICTED

25 May 1944

MEMORANDUM FOR GENERAL CRAIG:

SUBJECT: Project of Fire Prevention by Fuel Tank Flushing with Engine Exhaust Gas.

1. General Giles desires that you have General Arnold briefed on the project of fuel tank flushing with engine exhaust gas. He eventually wishes to be briefed himself.

2. General Meyers is familiar with this project.

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

Carried by Messenger
5/25/44

File
5 Jun 44

Lad 452.22 (50)

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SAS 452.22 (50) SAS.

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DECLASSIFIED
DOD Wfg
8 Jan. & 20 June 1994
By [illegible] NG Date 10/17/94

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

ATTENTION:

HEADQUARTERS, ARMY AIR FORCES
WASHINGTON

30 March, 1944

MEMORANDUM FOR GENERAL ARNOLD:

SUBJECT: Jettisonable Fuel Tanks for Fighters in U. K.

1. The true status of the supply of jettisonable fuel tanks in U. K. is this:

a. There is a lag of two to three weeks in U. K. between docking of a vessel carrying tanks and final delivery of tanks to combat stations.

b. We have been counting a requirement as satisfied when the cargo reaches port in U. K.

c. The theater people, on the contrary, have now insisted that current requirements are not satisfied until tanks reach combat stations.

d. On 6 February, 1944, U. K. requested that their initial April requirements of 75 gallon tanks (Total 10,000) be shipped from the States prior to 20 February. They were advised that our entire stock of these tanks had been depleted and that new production could not possibly meet the requested shipping schedule.

e. Again on 22 February, U. K. requested that March shipments be expedited, although they had been informed that all production facilities were going full-blast, and that there was no delay in the movement of tanks to the theater.

2. Tank manufacturers are working on an accelerated program. Nine out of eleven are now working 24 hours a day, six days a week. Action has been taken to set up the remaining two on the same basis and will be taken to secure 7 days a week output from all. The present

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program provides the following peak supply of tanks:

Tank	Production as % of Requirements	Month in Which Peak is Reached
75	164	July, '44
110	152	Aug., '44
150	133	Aug., '44

Production begins to exceed requirements in May.

3. Additional sources are being brought in for the manufacture of the 150 gallon tank, to bring its peak up to a minimum of 150% of requirements. We cannot expect any substantial output from this new manufacture, however, before August.

4. ETO and MTO require over 80% of our tank production. In view of the fact that only 5,000 a month of the 150 gallon tanks are going to all other theaters through long pipe lines, it is not considered advisable to cut off the flow to them in favor of U. K.

5. The only partial answer to the problem right now is to speed up the current production rate of tanks by an appeal to worker incentive. As a result of manufacturer's requests, therefore, it is proposed to prepare, for your signature, letters to each of the eleven concerns involved, asking each of their workers to "put out" to the utmost. You may recall that you signed similar letters last fall about the special flat top tank for U. K.

EDWIN S. PERKIN,
Brigadier General, U.S.A.,
Deputy Chief of Air Staff.

File 13 May 42

CONFIDENTIAL

SAS 452.22 (40)

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WAR DEPARTMENT
HEADQUARTERS OF THE ARMY AIR FORCES
WASHINGTON

DECLASSIFIED
DOD dir. 5 Nov. & 30 June 1954
By NARS, Date 8/15/78

28 MAR 1944

This is in answer to your query "How come?
Give me a status statement" on attached cable.

MEMORANDUM FOR COMMANDING GENERAL, ARMY AIR FORCES:

Subject: Jettisonable Fuel Tanks for Fighters in U. K. (Cable H-60039).

1. On 22 March, 1944, U. K. presented its fifth revision of requirements for jettisonable fuel tanks for fighter airplanes since 15 December 1943. This latest revision is in accord with the Supply Program prepared by this office and forwarded to U. K. recently.

2. U. K.'s new requirements for U. S. produced tanks versus planned supply is as follows:

150 Gallon Tanks

Month	Requirement	Cumulative Requirement	Supply in UK	Cumulative Supply	Surplus
April	12,000	12,000	14,000	14,000	+2,000
May	14,000	26,000	12,400	26,400	+ 400
June	14,000	40,000	14,400	40,800	+ 800
July	14,000	54,000	15,400	56,200	+2,200

110 Gallon Tanks

	(*)				
April	6,000	6,000	6,500	6,500	+ 500
May	12,000	18,000	12,400	18,900	+ 900
June	12,000	30,000	20,000	38,900	+ 8900
July	12,000	42,000	20,000	58,900	+16900

(*) This requirement is tentative

Yes Gen Lemnitzer
Yes Jo -
for U.K. stuff
they are short
Revise the above figures
accordingly - what's true

A-2951

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Memorandum to Commanding General, Army Air Forces

Subj: Jettisonable Fuel Tanks for Fighters in U.K. (Cable H-60039)

75 Gallon Tanks

Month	Requirement	Cumulative Requirement	Supply in UK	Cumulative Supply	Surplus
April	12,000	12,000	21,000	21,000	+ 9,000
May	20,000	32,000	17,000	38,000	+ 6,000
June	20,000	52,000	17,000	55,000	+ 3,000
July	20,000	72,000	17,000	72,000	(*)

(*) The P-51 airplane, for which this supply is used, will utilize the 110 gallon tank henceforward.

3. As has been pointed out to U. K., our supply situation on jettisonable fuel tanks is tight and will remain so until production reaches its peak. Up to the present, we have been able to meet requirements from all theaters, and expect to continue to do so.

B. E. MEYERS
Major General, U. S. A.
Deputy Assistant Chief of Air Staff,
Materiel, Maintenance & Distribution

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- 2 -

SAS 45-2.22 (V9)

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DOD Dir. 5200.9 & 30 June 1974
By ... Date 10/6/76

WAR DEPARTMENT
CLASSIFIED MESSAGE CENTER

INCOMING MESSAGE

P R I O R I T Y

From: CG 8th AFSC London England

To: War Department H60039
CG Rome Air Depot No#
CG ASC Patterson Field Ohio No#
CG New York POE No#

23rd March 1944.

To Martenstein info Arnold attn AFMMD, Frank, info Farthing info Col Hicks and Knerr. Cite H60039. To the Commanding General Army Air Forces.

Supply of jettisonable tanks is subject. According to schedule 4 of supply program presented by MM and D as of 26 February 1944. This theater was to receive 7600 each 150 gallon standard United States tanks immediately and 11400 additional each during month of March. Of these quantities this theater has received to date 4836 each and our records indicate 1893 each on high seas. This falls short of requirements by 8271 tanks by 1 April 1944.

New subject. Schedule 4 on 75 gallon United States tanks provides 12000 immediately and 5000 additional by 1 April 1944. None received or reported enroute. Requirement for March is 10000 each.

New subject. As our stock is being rapidly depleted it is imperative to expedite shipments to fulfill all commitments and to commence April shipments at once set up in schedule 4 under the 8 and 9 Air Force.

ACTION: CG AAF MAS No Sig

WD-ASC-5357 (23 Mar 44) 2103Z med

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THE MAKING OF AN EXACT COPY OF THIS MESSAGE IS FORBIDDEN

SAS 452.22 (49)

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DECLASSIFIED
DOD Itrs
8 Jan. & 30 June 1972
By ACAVIK, JC; Date 10/18/76

5-22-44

Mr. Rudolph Halley,
Executive Assistant to the Chief Counsel,
Truman Committee
United States Senate,
Washington, D. C.

Dear Mr. Halley:

Re: B-427-H

This will acknowledge your letter of April 27, 1944, in which you asked what steps are being taken to provide bullet-proof gas tanks for transport planes which are in use abroad.

Strictly speaking, of course, no gas tanks are bullet-proof and it is assumed that you refer to self-sealing tanks, or those which, when pierced by a bullet, automatically seal up to prevent the fuel from escaping and to reduce the fire hazard.

Transport-type airplanes used abroad are not equipped with self-sealing tanks. Installation of such tanks would add materially to the weight of the airplane (a 600 gallon tank, self-sealing, would add approximately 600 pounds weight) and reduce its cargo capacity and range, to the serious detriment of our transport service.

On the other hand, the mission of these airplanes, which is to move personnel and material over long distances in the greatest quantity possible, is normally accomplished over routes on which they operate in complete security and without interference by the enemy. Under these circumstances, installation of self-sealing tanks with the consequent loss of vital cargo carrying capacity and range is neither necessary nor desirable.

Sincerely,

William E. Hall,
Brig. Gen., U. S. A.
Deputy Chief of Air Staff.

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DOD Itrs.
6 Jan. & 30 June 1974
By [illegible] Date 10 Jul 76

AFOCR
Maj Stebbins/bb/5132
wrtn 6 May 44

MAY 23 1944

Mr. Rudolph Halley,
Executive Assistant to the Chief Counsel,
Truman Committee
United States Senate,
Washington, D. C.

Dear Mr. Halley:

Re: R -427-H

This will acknowledge your letter of April 27, 1944, in which you asked what steps are being taken to provide bullet-proof gas tanks for transport planes which are in use abroad.

Strictly speaking, of course, no gas tanks are bullet-proof and it is assumed that you refer to self-sealing tanks, or those which, when pierced by a bullet-automatically seal up to prevent the fuel from escapting and to reduce the fire hazard.

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On the other hand, the mission of these airplanes, which is to move personnel and materiel over long distances in the greatest quantity possible, is normally accomplished over routes on which they operate in complete security and without interferences by the enemy. Under these circumstances, installation of self-sealing tanks with the consequent loss of vital cargo carrying capacity and range is neither necessary nor desirable.

Sincerely,

(SIGNED) JULIUS H. [redacted]

[redacted]
Special Assistant to the
Secretary of War

Cy Secret & Class Files

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SC-542

Cy of Chief of the Air Staff

File
a 25 May 44

SAS 452.2 2 (48)

452.22 (5-23-44)

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DOD Dirs.
8 Jan. & 20 June 1974
By NLAFVC, WG Date 01/31/96

Senate Investigation - Bullet-Proof Gas Tanks on Transport Planes

Deputy Chief of Air Staff (Brig. Gen. Wm. E. Hall) 8 May 1944

Office of Legislative Services 1

CFT/ec/7444.80

Annexed is suggested reply for signature of Mr. Asberg which is responsive to Mr. Halley's inquiry of 27 April 1944, transmitted in Mr. Asberg's memorandum of 29 April 1944, addressed to Chief, Legislative Services.

WARREN S. ROE
Colonel, Air Corps
Chief, Legislative Services

Incl.
Proposed Ltr. to
Mr. Halley

AAS 452.22 (48)

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DOD Dir. 5 Jan. & 30 June 1974
By: AUL/LK-10 Date 10/15/76

1 May 1944.

MEMORANDUM FOR GENERAL KUTER:

1. At the Secretary of War's direction, I discussed with him the pros and cons of installing leak proof tanks in C-47's.

2. As a result of our discussion, he said that it was plain to him that such installations should not be attempted on a large scale, but that he was going to "sleep" on the Kilgore letter, because he felt at the moment that such installations should be made in a small number of our C-47's for missions that were of the most dangerous character. It was explained to Mr. Stimson that missions of this type could probably best be performed by heavy bombers and he was told that such a plan was practicable.

3. I discussed this meeting with Mr. Lovett, who suggested that the one hundred (100) leak proof tanks for C-47's which are now available in this country be shipped to the U.K. with a covering letter explaining all of the reasons therefor. Colonel McKee says that this is possible and practicable.

WILLIAM E. HALL,
Brigadier General, U.S.A.,
Deputy Chief of Air Staff.

452.22 (15)

10/5/44 ITT

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DECLASSIFIED
DOD Dir. 5 Jan. & 20 June 1974
By AADUK NC, Date 10/15/76

Installation of armor and leak-proof tanks in troop carrier aircraft.

Legislative Services
Thru: AC/AS, OCAR
Chief of the Air Staff

1 May 1944

1

WEH/hd/3373

1. Since there will undoubtedly be many letters submitted to this Headquarters on the subject of equipping troop carrier transports with armor and leak-proof tanks, I discussed the attached with General Arnold and Mr. Lovett with a view toward establishing a type letter. Both General Arnold and Mr. Lovett agreed that the attached proposed reply to Honorable Harley M. Kilgore is excellent. However, two suggestions were made which should be followed in future correspondence on this subject.

a. The first sentence in Paragraph 2 should read, "This question has been given very careful consideration by the War Department, General Arnold, and Air Force Commanders in Theaters of Operations".

b. The fact that the C-47 is a multi-purpose airplane, the Naval equivalent of a merchant vessel which needs freedom from attack or convoy, arming the C-47 would detract from its present usefulness and practically make it a bombardment aircraft. The use of bombers for troop transports is no more efficient or sound than the use of battleships for the same purpose.

WILLIAM E. HALL
Brigadier General, U. S. Army
Deputy Chief of the Air Staff

Dispatched
1 MAY 1944

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DOD ltrs.
8 Jan. & 20 June 1974
By ALW/LK NC, Date 10/18/76

"SECRET"

TO: Chief of the Air Staff

22 April 1944
Comment 2
OPR:ajg:2120

FROM: AC/AS, MMAB - General Echols

1. The difficulty in regard to these tanks has been the sharp increase in requirements from U.K. on short notice; also the distribution problem in the Theater. Due to the traffic congestion in U.K., a large surplus stockage of tanks is required at each airdrome, as the tanks cannot be moved forward from rear echelons quickly.

2. These tanks are now leaving the U. S. at the rate of approximately 5,000 per week—2,000 tanks are leaving Newark this date. They are expected to arrive in the U.K. within the next ten days.

3. Twenty thousand tanks per month will meet the latest requirement from U.K. Based on present production schedules and on the availability of shipping, there should be a surplus of these tanks in U.K. by 15 May 1944.

"SECRET"

O. P. ECHOLS
Major General, U.S.A
AC/AS, MMAB

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DOD ltrs
8 Jan. & 20 June 1974
By AAA/LK NO. Date 10/15/76

Droppable Tank Situation in U.K.

AC/AC, M&D - General Echols

20 April 1944

Chief of the Air Staff

1

BMG/ne/3373

1. Your attention is invited again to the droppable tank situation in U.K. General Spaatz states that unless approximately 5,000 tanks arrive within the next ten days tactical operations will be seriously restricted. A considerable amount of pressure has been placed on this project for the last three or four months. Apparently the action taken was not sufficient. What is the trouble? Is it due to lack of shipping; lack of manufacture; or poor distribution of tanks after manufacture. Whatever the difficulty is we must solve it. It may be necessary to ship the material over as flat stock and build the tanks in the theaters or to partially manufacture them here to facilitate some, completing the work in the theaters. With the increased tempo in fighting that is now taking place and which will probably continue for the next three or four months in Europe, we will require a very large number of droppable tanks.

2. This subject requires your personal and immediate attention. What are your plans?

BARNEY M. GILES
Major General, U. S. A.
Chief of the Air Staff

Dispatched
21 APR 1944
AAG

AAG 452.22

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Air AG 452.22 (2)

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DOD Dir
By ADDRK NG Date 10/18/76

SECRET

Droppable Tank Situation in U.K.

AC/AC, M&D - General Echols

20 April 1944

Chief of the Air Staff

1

BMG/ne/3373

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2. This subject requires your personal and immediate attention. What are your plans?

BARNEY M. GILES
Major General, U. S. A.
Chief of the Air Staff

Dispatched
21 APR 1944
AAG

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DOD Ltr.
6 Jan. & 30 June 1974
By: AUA/JLK JAG Date 10/15/76

16 April 1944

MEMORANDUM FOR MR. LOVETT:

SUBJECT: Armor and Leak-Proof Tanks in Troop Carrier Aircraft.

Attached hereto is a chronological history of the project on providing armor and leak-proof tanks in troop carrier aircraft.

[redacted]

WILLIAM E. HALL
Brigadier General, U. S. A.
Deputy Chief of the Air Staff

Dispatched
11944
AAG

Army 452.22 (4)

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

~~CONFIDENTIAL~~

ATTENTION:

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

DECLASSIFIED
DOD Ltr
6 Jan. & 30 June 1972
By AFDMA IG, Date 10/15/76

20 APR 1944 AFDMA-2E

MEMORANDUM FOR THE CHIEF OF AIR STAFF:

Subject: Fire Suppression and Fuel Tank Purging

1. This is the seventh weekly report on the subject project, submitted pursuant to request from Operations, Commitments and Requirements, and is for the information of Brigadier General E. S. Perrin.

2. Fuel Tank Purging. - Test work on this phase has been completed and a complete report on flight testing and results thereof is in preparation. The system as tested is deemed satisfactory and further action will depend upon the establishment of a requirement for the system in bombardment aircraft.

3. External Fire Suppression. - The B-17 airplane, used for fuel tank purging tests, is now in the shop and the external fire suppression system is being installed. The work includes the installation of baffles, bags, and exhaust gas plumbing, to fill space around the fuel tanks with exhaust gas. Successful completion of this part of the program is questionable due to the possibility of corrosion difficulties on basic wing structure.

4. Fire Extinguishing System Around Fuel Tanks. - The B-17 wing is nearly completely equipped, and the test set up is nearly finished for the CO_2 sprinkler system. Work has been held up several days on account of weather. Initial testing is expected to be undertaken during the week of 17 to 22 April 1944.

5. British Extinguishing and Suppression Equipment is being held pending completion of tests above outlined.

O P Echols

O. P. ECHOLS
Major General, U.S.A.
Assistant Chief of Air Staff
Materiel, Maintenance and Distribution

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4/19

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DOD ltrs
8 Jan. & 20 June 1974
By AGAVLE NO Date 10/08/76

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AFHSA-2E
4 April 1944

MEMORANDUM FOR THE CHIEF OF AIR STAFF:

SUBJECT: Fire Suppression and Fuel Tank Purging

1. This is the fifth weekly report on subject project, supplementing others dated 2 March, 10 March, 17 March and 23 March 1944. It is made pursuant to request from Operations, Commitments and Requirements, and is for the information of Major General H. S. Vandenberg and Brigadier General E. S. Perrin.

2. Fuel Tank Purging. The B-17 test installation for exhaust gas tank purging has been flight tested several times, and after minor corrections from preliminary flights, has been found satisfactory in principle. Flights were made at levels up to 30,000 feet and noncombustible mixtures were maintained in the tanks at all levels. Maximum allowable descent was made from 30,000 feet to 15,000 feet, at which the fuel tank mixture became combustible. It returned to the noncombustible state within five minutes after leveling off. It is not believed that this drastic maneuver will occur under combat conditions often enough to warrant augmenting the exhaust gas supply to the tanks any more than at present--such augmentation would increase the weight of the system. Further corrections are being made on the system to reduce exhaust gas temperatures as a safety measure.

3. External Fuel Suppression. Status is the same as last week. This system will be installed on the B-17 as soon as tests on the fuel tank purging system are complete.

4. External Fire Extinguishing System. Work on the B-17 test wing and facilities for testing are proceeding on schedule. Tests on the system should start the latter part of next week.

5. British Extinguishing and Suppression Equipment. Installation and test will be deferred until tests on Wright Field systems are completed and evaluated.

6. A meeting of the technical subcommittee on fire extinguishers, of the Joint Aircraft Committee, will be held 11 April 1944 with representatives of AC/AS OCAR, the Materiel Command, and AC/AS MMAD Materiel Division present to discuss and, if possible, determine requirements for fire suppression and extinguishing systems.

O. P. ECHOLS
Major General, USA
Assistant Chief of Air Staff,
Materiel, Maintenance & Distribution

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DOD ltrs.
8 Jan. & 20 June 1974
By ACN/UK, NARA Date 10/8/76

Additional Fuel Tanks

AC/AS, M&D

28 Mar 44

Deputy Chief of Air Staff

1

ESP/eva/6371

1. General Arnold directs that additional jettisonable fuel tank manufacturing facilities be developed sufficient to produce at least 50% excess of the stated theater requirements.

2. It is desired that this office be furnished with a report by 1 April as to how this will be done and when the additional tanks will start becoming available.

EDWIN S. PERRIN,
Brigadier General, U.S.A.,
Deputy Chief of Air Staff.

FILE Sub
3/28/44

Dispatched
28 MAR 1944
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WASHINGTON, D. C.

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DOD Dir. 5 Apr. & 30 June 1974
By AAG/DLK, HQ; Date 10/18/06

WAR DEPARTMENT
HEADQUARTERS OF THE ARMY AIR FORCES
WASHINGTON 25, D.C.

17

AFDMA-2E
17 March 1944

MEMORANDUM FOR THE CHIEF OF AIR STAFF

SUBJECT: Fire Suppression and Fuel Tank Purging

1. This is the third weekly report on subject project supplementing others dated 2 March and 10 March 1944. It is made pursuant to request from Operations, Commitments and Requirements and is for the information of Major General H. S. Vandenberg and Brigadier General E. S. Perrin.

2. Fuel Tank Purging. - The B-17 test installation for exhaust gas tank purging is complete, and the airplane will undergo ground test 17 March 1944 and will start flight test 18 March. Flight test will continue for approximately one week, depending upon the outcome of tests as they proceed. Flight test will include climb, glide, and high altitude flight for approximately two hours, during which pressures and temperatures will be recorded, and sampling of the vapor in fuel tanks will be effected. The weight of the exhaust gas tank purging system for the B-17 is thirty-six lbs. (This compares with an estimated 300 lbs. for the British nitrogen purging system)

3. External Fire Suppression. - Fabrication of components for the external fire suppression system is substantially complete, including main tank bags, baffles for outboard tanks, and most of the fittings. Completion of some of the fittings and plumbing will await the outcome of the fuel tank purging tests, to expedite the correct design of similar parts. Installation of the external fire suppression system will start upon completion of the flight testing of the purging system.

4. External Fire Extinguishing Systems. - Work is continuing on preparation of a B-17 wing with a fire extinguishing system which may operate either on CO_2 or methyl bromide. This system is an alternate to external fire suppression.

5. British Extinguishing and Suppression Equipment. - The British material has been received and is now being sorted. Plans for its use will be made after test results on domestic systems have been established.

Frederick Hopkins Jr.
for O. P. ECHOLS
Major General, U.S.A.
Asst. Chief of Air Staff
Materiel, Maintenance & Distribution

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WASHINGTON, D. C.

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8 Jul. & 30 June 1994
By NARA, Date 10/18/10

WAR DEPARTMENT
HEADQUARTERS OF THE ARMY AIR FORCES
WASHINGTON 25, D. C.

AFDMA-2E
10 March 1944

MEMORANDUM FOR THE CHIEF OF AIR STAFF

SUBJECT: Fire Suppression and Fuel Tank Purging

1. This is the second weekly report on subject project. The first was dated 2 March 1944. These weekly reports are made pursuant to request from OC&R, in order that Brigadier Generals E. S. Perrin and H. S. Vandenberg may be acquainted with latest progress on the projects under development.

2. Fuel Tank Purging. - A test B-17 airplane is now being equipped with internal fuel tank purging apparatus and completion of the installation is expected on 14 March 1944. Flight tests will then be conducted to adjust exhaust gas flow to optimum amount as determined by sampling of gas in the vapor space of fuel tanks for oxygen content at various conditions of pressure and temperature. On all components for the purging system, drawings have been made to minimize delay in procurement of components after tests are successfully completed.

3. External Fire Suppression. - Drawings and components for baffles, fuel tank bags and other apparatus are substantially completed for the B-17 installation. Upon completion of flight tests on the fuel tank purging, reference Paragraph 2 above, the airplane will have the external fire suppression system installed. This installation should start approximately 22 March 1944.

4. External Fire Extinguishing Systems. - A B-17 wing is now being repaired and tubing is being installed for the CO_2 fire extinguisher system. It is anticipated that fire extinguishing tests will be made on this wing approximately 7 April 1944. These tests will include the initiation and extinguishing of a wing fire in the presence of an external air blast over the wing.

5. British Extinguishing and Suppression Equipment. - As reported last week, components are being shipped concurrently from the United Kingdom to Wright Field for the British suppression and extinguishing system, but have not yet arrived. The installation of similar equipment, in a B-17 in the United Kingdom, is expected to start 15 March 1944.

O P Echols

O. P. ECHOLS
Major General, U.S.A.
Asst. Chief of Air Staff
Materiel, Maintenance & Distribution

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WAR DEPARTMENT
WASHINGTON, D. C.

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DOD 1/8
8 Jan. & 30 June 1974
By OASD/C ... Date 10/18/82

~~CONFIDENTIAL~~

WAR DEPARTMENT
HEADQUARTERS OF THE ARMY AIR FORCES
WASHINGTON

AFDMA-2E
2 March 1944

MEMORANDUM FOR THE CHIEF OF AIR STAFF:

SUBJECT: Fire Suppression and Fuel Tank Purging

1. Pursuant to a request that a weekly report be rendered through Brigadier General E. S. Perrin's Office on the above subject, the following information is submitted.

2. Fuel Tank Purging. Initial tests on the purging of fuel tanks with exhaust gas have been completed and the system appears to be entirely practicable. Current estimates are that the system may be installed in an airplane such as the B-17 at a weight cost of not more than thirty (30) pounds. Suppression of fuel tank explosions has been assured by gunfire tests, using .50 caliber incendiary ammunition, and no internal explosions or internal fires could be produced. Current tests indicate that the use of exhaust gas purging will have no undesirable effects upon fuel or tank materials.

3. External Fire Suppression. Modification of a B-17 wing is well under way to provide a sealed compartment around the fuel tanks into which exhaust gas will be passed to maintain an inert atmosphere around the tanks, so that liquid fuel entering such space will not be ignited by gunfire. Firing trials have been made on a fire suppression system of this kind with excellent initial results. The fabrication of the "V-Board" barriers around the fuel tanks is progressing rapidly, and the initial B-17 wing being processed for test is also being arranged so that patterns and templates for a modification fix for existing airplanes are being evolved. The "V-Board" is a glass and plastic material of low weight and excellent resistance to flowering and shattering under gunfire. Sealing media to seal the "V-Board" in the wings are being worked out by rubber manufacturers in conjunction with the Materiel Command. It is anticipated that a complete report on this activity, on the B-17 airplane, will be available by 20 March 1944.

4. Fire Extinguishing System for the interior of wings contemplates the use of a CO_2 fire extinguisher arrangement. A damaged B-17 wing is currently being repaired, and prepared for installation of the extinguishing system. Specialists from commercial fire extinguishing organizations have been secured for expediting this work, necessary supplies are being procured, and preliminary drawings have been made. Completion of this part of the subject project will take longer than the suppression systems mentioned in paragraphs 2 and 3.

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Memo for the Chief of Air Staff:
Sub: Fire Suppression and Fuel Tank Purging
2 March 1944

5. Reference is made to Memorandum for the Chief of Air Staff, dated 23 February 1944, subject as above, wherein it was stated that British extinguishing and purging system components are being procured, and that a B-17 is being equipped by the British. The components are being shipped by air to Wright Field currently and the B-17 installation will start in the United Kingdom 15 March 1944.

O P Echols

O. P. ECHOLS
Major General, U.S.A.
Asst. Chief of Air Staff
Materiel, Maintenance & Distribution

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W mk. per tcg.

Recd at Air Tech

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Ce 21 Mar 44

Air AG 452.22 (34)

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~~CONFIDENTIAL~~

DECLASSIFIED
DOD Ltr.
8 Jan. & 20 June 1972
By: AWilk NO Date: 10/8/76

25 February 1944

MEMORANDUM FOR GENERAL GILES

SUBJECT: Explanation of Functions of Fuel Tank Purging and Other Fire Suppression Systems

1. Fires may be inside or outside of tanks, both within the wing.

2. Fuel tank purging is the introduction of inert gas such as carbon dioxide, nitrogen, or clean exhaust gas into the vapor space in the fuel tank, creating a non-combustible atmosphere to prevent explosions or fires from incendiary bullets. Explosions without inert gas purging may be of low or high order depending upon the temperature and mixture strength of the fuel-air mixture above the liquid fuel.

3. Outside of the fuel tanks, in wing compartments, the possibility of fire exists when gunfire through the fuel cell permits leakage of gasoline into the wing structure. While self-sealing fuel tanks prevent fuel leakage in large quantities, there is some leakage until the cell seals. Such fuel, within the wing, evaporates and presents a fire hazard due to incendiary gunfire. To suppress fires of this kind, two methods have been and are under development:

a. One system sprays inert gas or liquid upon the fire to extinguish it - plain old fire extinguisher system. The extinguishing spray is initiated by heat responsive valves in the spray system which, when heated by fire, turn the extinguishing fluid on - like a factory sprinkler system. The disadvantage of such a system is that it may not be turned off once it has started and the fire protection is only good for the first fire.

b. Another system under development consists of an envelope of gas impervious material surrounding the fuel cell and into this envelope exhaust gas or other inert gas is passed. Any fuel leaking into the envelope is collected and drained overboard. Since the bag is filled with inert gas, there is insufficient oxygen to support a fire should incendiary or other bullets enter the envelope.

4. The merits of the two arrangements outlined above are now being determined at Wright Field, primarily from the standpoint of minimum weight and complication in the aircraft, since all of them are basically sound.

5. For current progress on this development reference is made to attached copy of memorandum for the Chief of Air Staff dated 23 Feb 1944.

Incl.
Cy memo to C/AS, 23 Feb 44

B. E. MEYERS
Brig. General, U. S. A.
Deputy Assistant Chief of Air Staff
Materiel, Maintenance & Distribution

2/27/44

~~CONFIDENTIAL~~

452.22 (32)
Air 452.22 (32)

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HEADQUARTERS ARMY AIR FORCES

ROUTING AND RECORD SHEET

DECLASSIFIED DOD Dir. 5 Jan. A 30 June 1974 By: ACSI Mil. Int. Dept. 10/31/76

TALLY NO.	9
FILE NO.	

SUBJECT: Self-Sealing Gasoline Tanks for C-47 Aircraft.

TO: AC/AS, Materiel, Maintenance & Distribution.

DATE 8 February 44

FROM: General Giles.

COMMENT NO. 1
BMG/mgq/3373

I have just been informed that you have placed an order for the purchase of 900 self-sealing gasoline tanks for C-47 aircraft. It is the policy of the Army Air Forces that "no armor, armament or self-sealing fuel tanks will be installed on any transport or troop carrier aircraft". Until this policy is changed no material such as armor or self-sealing tanks should be procured for this type of equipment.

BARNEY M. GILES,
Major General, U. S. Army,
Chief of the Air Staff.

TO: Chief of the Air Staff

DATE 16 Feb 1944

FROM: AC/AS, MM&D

COMMENT NO. 2
BEM:lw/3153

1. Procurement of self-sealing gasoline tanks for C-47 aircraft was initiated with the idea of having the tanks available when and if it was desired to make installation. Steps have been taken to stop this procurement.

B. E. MEYERS
Brig. General, U.S.A.
Deputy AC/AS, MM&D

Noted by Gen. Giles
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ADDRESS REPLY TO
HEADQUARTERS OF THE ARMY AIR FORCES
WAR DEPARTMENT
WASHINGTON, D. C.

SECRET

WAR DEPARTMENT
HEADQUARTERS OF THE ARMY AIR FORCES
WASHINGTON

DECLASSIFIED
DOD INS
8 Jan. & 20 June 1974
By AU DOE HQ Date 10/15/74

SECRET
By Authority of
The Commanding General
of the Army Air Forces
1/22/44 BHCh.
DATE INITIALS

JAN 26 1944 AFRDB

MEMORANDUM FOR GENERAL PERRIN:

Subject: Auxiliary Wing Fuel Tanks in B-24s

1. Reference to Radio W-9173, 19 January from Richardson HDAIDE page 254 of General Arnold's log of messages, installation of the Auxiliary Wing Fuel tanks in B-24s was originally made in October 1942. The construction was inferior to the main fuel cells being made of "Buna" synthetic compound. Approximately one year ago this unsatisfactory condition was corrected by the use of the same material used in the main fuel cells, with additional improvements made in the fittings.

2. A reply has been prepared stating the first B-24 airplanes to have auxiliary wing tank modification including change in the filler neck and that auxiliary tanks for replacement will be made available if desired.

3. Radio P775 from Richardson, dated 25 December states in part, the use of auxiliary tanks in B-24s has been discontinued. There has been no other complaint concerning excessive number of failure of auxiliary tanks since the original inferior tank installation was corrected.

4. Radio W-9173 was a reply to our Radio 9216 dated 5 January 1944 requesting further information on the impracticability of the auxiliary wing tanks as stated in Radio P-775 dated 25 December from Richardson to CG PB ASCAD McClellan Field.

452.22 (26)

William F. McKee

WILLIAM F. McKEE
Colonel, A.C.,
Deputy Asst. Chief of Air Staff,
Operations, Commitments & Requirements

W. M. K.

DECLASSIFIED

FOR VICTORY BUY UNITED STATES WAR BONDS AND STAMPS

DECLASSIFIED
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DOD Dir. 5 [illegible] 1974
By [illegible] NARS, Date 10/6/76

"CONFIDENTIAL" AFRDB

MEMORANDUM FOR BRIGADIER GENERAL VANDENBERG:

Subject: Purging of and Suppression of External Fires Around Wing Fuel Tanks

1. The information contained in Cable H-5989 from London, 1 January 1944, on the success of the British with the high pressure nitrogen system was forwarded by Lieutenant Colonel Gasser, Power Plant and Propeller Section, Development Engineering Branch, Material Division, Assistant Chief of Air Staff, Material, Maintenance and Distribution, to the Material Command, Wright Field. He requested they report on all development conducted on this subject to date and furnish an estimate on the time necessary to make this installation in our airplanes.

2. The letter mentioned in Cable H-5989 will be forwarded to Lieutenant Colonel Gasser for his immediate study and necessary action in order to expedite an answer to the Commanding General, Army Air Forces. The present state of suspense is due to not having received the letter mentioned in the above cable.

3. Lieutenant Colonel Gasser has further contacted the Air Technical Section in London for complete and pertinent information on the above subject.

H. A. Craig
Brigadier General, U. S. Army
Asst. Chief of Air Staff
Operations, Commitments & Requirements

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DECLASSIFIED
DOD Dirs.
6 Jan. & 30 June 1954
By ALADAC MO Date 10/31/76

Chemical Tanks for B-24 Airplanes

Air Chemical Officer

26 Nov 43

Deputy Chief of Air Staff

1

ESP/eva/6371

Your comments are requested on the attached memorandum.

1 incl
CONF. memo for Gen.
Perrin frm OC&R this
subj dtd 19 Nov 43.

Dispatched
26 / /1943
AAF

EDWIN S. PERRIN,
Brigadier General, U.S.A.,
Deputy Chief of Air Staff.

OCR 452.1 (2-23-43)

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DECLASSIFIED
000 ltrs.
5 Jan. & 20 June 1974
By AFAS/DK JC, Date 10/18

19 November 1943

Memorandum For: Colonel M. R. Nelson

Subject: Cable from NAAFSC, Come in PF-3025, Cable No. NRSC-1420 dtd. 18 November 43

General Perrin made the following comment:

"O.C.&R. - Have self-sealing tanks & armour been authorized for Troop Carrier airps?"

Colonel McKee made the following comment:

"Advise."

WILLIAM F. McKEE
Colonel, Air Corps

Memorandum For: Colonel McKee

No. General Arnold personally directed that they were not to be so authorized.

MORRIS R. NELSON
Colonel, Air Corps

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DOD Ltr.
8 Jan. & 20 June 1974
By [illegible] NC, Date 10/15/74

AFDMA-4D
21 October 1943

MEMORANDUM FOR THE CHIEF OF AIR STAFF:

Subject: Fighter Airplane Range Extension

1. This memorandum is submitted in response to your Routing and Record Sheet dated 12 October 1943, subject, "Installation of Long Range Gasoline Tanks on P-38's and P-51's.

2. To meet the necessity for long range escort fighters, every item necessary to extend the combat radius of action of P-38, P-47 and P-51, including self-contained fuel capacity increases and jettisonable fuel tanks, has been included in the Fighter Airplane Range Extension Program, to which all concerned have been directed to accord highest priority, in the fullest sense.

3. As an integral part of this program, arrangements have been made to follow, individually, each P-38 and each P-51 airplane from the factory to theater destination; and follow each single kit for these airplanes in the same way. Modification center arrangements are perfected and all machinery prepared to accomplish the following:

a. Each airplane bound for U. K. will be diverted to Modification Center for installation of the tank only as a kit is on hand and ready for installation.

b. Only such kits scheduled for U. K. will be diverted to Modification Centers as are required for installation in those airplanes which can be modified without delay.

c. All undiverted airplanes and kits will proceed direct to theater destination.

d. This procedure, carefully timed and effectively executed, will insure compliance with your wishes.

4. On Monday, 25 October, there will be held a conference between representatives of this office, of Asst. C/AS, OCAR, Air Transport Command, Air Service Command, Materiel Command, VIII AFSC Liaison office and Transportation Corps, to work out a complete plan for the supply of all items relative to the program to all theaters.

AAG 452.1 (17) DAS

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Memorandum to Chief Staff "CONFIDENTIAL" 21 October 1943

5. On 5 September 1943, Major Robert E. Johnson was assigned as special project officer for this office, to devote his full time to expediting following, following-up and reporting on all phases of the program. On 16 October, Lt. Colonel C. C. Seward and C. H. Mitchell, Air Service Command and Material Command, respectively were a signed as full-time project officers for their Commands' several functions. These actions were taken to accord with your wishes as expressed to Asst. Chief A/S, MMAD, 5 September and 12 October, 1943.

6. U. K. has been informed that every effort will be made to supply 700 flat-top 150 gallon, and 3000 flat-top 115 gallon jettisonable fuel tanks for P-47 belly suspension by the end of November 1943.

By direction
B. E. MEYERS,
Brig. General, U.S.A.,
Actg. Asst. Chief of Air Staff,
M. M. & D.

"CONFIDENTIAL"

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DOD Ltr
8 Jan & 20 June 1974
By AIA/NARS MC, Date 10/24/76

Fighter Airplane Range Extension

IN TURN AC/AS, OC&R
AC/AS, M&SD

24 Oct 43

Deputy Chief of Air Staff

ESP/eva/6371 1

The latest report indicated that we are ordering 200,000 75-gallon dropable tanks. Do we actually have a requirement for this large number of small tanks? Also, 108-gallon paper tanks; why not concentrate on the 150-gallon size?

EDWIN S. PERRIN,
Brigadier General, U.S.A.,
Deputy Chief of Air Staff.

AAG 452.22 (D)

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

~~CONFIDENTIAL~~

WAR DEPARTMENT
HEADQUARTERS OF THE ARMY AIR FORCES
WASHINGTON, D. C.

DECLASSIFIED
DOD Dir. 5 Nov. & 30 June 1954
By OASD(C) WHS Date 10/5/76

Orig. Files

18 October 1943.

MEMORANDUM FOR THE CHIEF OF AIR STAFF:

Subject: External Wing Tanks

Copies of the report of the Eglin Field tests which showed that external wing tanks will not explode nor burn seriously from incendiary fire, were forwarded this date by air mail to all Air Forces in accordance with your directive.

for J. W. Chapman
MERVIN E. GROSS
Brig. Gen., U. S. A.
Deputy Asst. Chief of Air Staff,
Operations, Commitments & Requirements

AAG 452.22 (10)

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

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DOD Dirs.
8 Jan. & 30 June 1954
By AUG/LK JC; Date 10/6/76

WAR DEPARTMENT
HEADQUARTERS OF THE ARMY AIR FORCES
WASHINGTON, D. C.

18 October 1943

MEMORANDUM FOR GENERAL GILES:

Subject: Combat Range Extension Tanks

1. Reference is made to your query regarding Cable No. H-5462, subject: "Gas Tanks".

2. Close contact will be maintained with all theaters to determine their requirements for combat range extension tanks.

3. 4,000 150-gallon tanks will be on hand in U.K. early in November. 400 of these tanks were shipped 4 October 1943, and the remaining are scheduled for early shipment by fast boat.

4. Estimated requirements for combat range tanks for 1944 have been submitted to Assistant Chief of Air Staff, Materiel, Maintenance, and Distribution based upon stated requirements of the active theaters. These estimates were computed on the basis of two tanks per airplane per mission, 50 airplanes per group flying 20 missions per month, and were submitted to enable the Materiel Command to arrange steel priorities and secure manufacturing facilities to meet our needs. Research and development of tanks made of less critical materials are also being accelerated.

Mervin E. Gross.

MERVIN E. GROSS
Brigadier General, U. S. A.
Deputy Asst. Chief of Air Staff,
Operations, Commitments & Requirements

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DOD [illegible]
By [illegible] NLS Date 10/8/76

Gas Tanks.

To: Asst C/AS, Operations, Commitments & Requirements 18 October 1943

From: Asst C/AS, OCR, Requirements Division Comment No. 2
Capt McKay:mf/72873

Memorandum for General Giles attached for signature and forwarding.

1 Incl: Memo for Gen Giles
dtd 18 Oct 1943 for signature

MORRIS R. NELSON
Colonel, Air Corps

Fighter & Air Defense Br

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DOD ltrs.
8 Jan. & 30 June 1974
By AWRK NC, Date 10/15/76

Test of Fire Hazard of External Combat Tanks on Fighter Aircraft

AC/AS, OC&R

10 October 43

Deputy Chief of Air Staff

1

ESP/eva/6371

It is desired that complete information on tests of self-sealing droppable tanks be sent to all Theaters. Tell them that, in view of the shortage of rubber, etc., we believe self-sealing feature should be eliminated.

EDWIN S. PERRIN,
Brigadier General, U.S.A.,
Deputy Chief of Air Staff.

Declassified
10 Oct 1943
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File 10/11/43

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DOD Dir
5 Jan. & 30 June 1974
By [illegible] NC; Date 10/18/76

Leading Edge Tank Installation, P-38 J Airplane.

IN TURN:
AC/AS, OCAR.
AC/AS, MMAD
Deputy Chief of Air Staff.

9 October 1943

1
ESP/cmc/8371

The attached letter to General Giles from Major Shoop, subject, as above, is forwarded for your information.

Incl: Ltr to CAS frm Maj. Shoop, Mat. Cmd, 30 Sept 43, Subj. as above, w/3 incls.

EDWIN S. PERRIN,
Brigadier General, U.S.A.,
Deputy Chief of Air Staff.

Dispatched
10/7/1943
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HEADQUARTERS ARMY AIR FORCES

ROUTING AND RECORD SHEET

DECLASSIFIED
DOD ltrs
6 Jan. & 29 June 1972
By AFHRC, HC, Date 10/4/77

TALLY NO.	
FILE NO.	

SECRET

SUBJECT: Gas Tank Leaks on C-87's and B-24's.

TO: AC/AS, MM&D.

DATE 5 Sept. 1943

FROM: Deputy Chief of Air Staff.

COMMENT NO. 1
ESP/cmc/6371

What is the status of gas tank leaks in C-87's and B-24's? It has been noted that two Air Transport Command C-87's are grounded because of gas tank leaks.

Noted - P

EDWIN S. PERRIN,
Brigadier General, U.S.A.,
Deputy Chief of Air Staff.

Air AS 452.22

TO: Deputy Chief of Air Staff (Attn: Gen. Perrin)

DATE 14 Oct. 1943

FROM: Asst. C/AS, MM&D, (Materiel Division)

COMMENT NO. 2
WM:ihg 3563

1. Following is the status of fuel tank leaks in C-87 airplanes: Original C-87 airplanes were equipped with bullet sealing fuel cells identical to B-24. This installation has been deleted to decrease weight and conserve critical materials and integral fuel tanks are now being used. Lower surface of wing originally contained 12 access doors to permit access to and replacement of bullet sealing cells. These doors were attached to wing with single row of screws whose spacing was determined by structural considerations and screws were spaced 1" apart. Consolidated attempted to seal these doors without providing closer screw spacings. Twelve airplanes were delivered without fuel cells and with this 1" screw spacing, serial numbers 43-30557 through 43-30568 inclusive. Service reports indicated that integral fuel tanks were leaking badly around these access doors and the contractor removed the screws and riveted the doors in place with much closer rivet space. Consolidated prepared service letter dated 27 September 1943, which was forwarded to Air Service Command outlining method of corrective action to be taken. It is estimated that this change will take approximately 160 man hours. It was not given immediate attention, however, because no unsatisfactory reports had been received by Air Service Command regarding this condition. Air Service Command reproduced this service letter 7 October 1943, and was distributed in form of airmail special instructions to the organizations having these 12 airplanes.

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HEADQUARTERS ARMY AIR FORCES

ROUTING AND RECORD SHEET

SECRET

TALLY NO.	
FILE NO.	

SUBJECT: Gas Tank Leaks on C-87's and B-24's.

TO: Deputy Chief of Air Staff (Attn: Gen. Perrin)

DATE 14 Oct. 1943

FROM: Asst. C/AS, MM&D, (Materiel Division)

COMMENT NO. 2
Continued

2. This office has been advised that at the present time only one C-87 airplane, serial number 43-30566, is grounded because of leaking integral tanks and is now at Patterson Field for special radio installation and this modification will be made at that field prior to its departure.

3. Status of B-24 fuel tank leaks have been grouped as follows:

a. Failure and leakage of fuel tank vent line.
b. Leakage attributed to improper fitting installation.
c. Leakage of fuel tank filler cap.

These difficulties have been corrected in service and production as noted below. Service corrective action is covered by the following technical orders:

01-5-64 Relocation of vent outlet.
01-5-58 Dated 11 September rework of filler caps.
03-10J-3 Dated 13 July installation accessories doors and fittings.

4. With regard to production, aircraft troubles listed above, as reported by Air Service Command and Materiel Command, are now corrected or in process of being corrected.

B. W. CHIDLAW,
Brig. General, U.S.A.,
Chief, Materiel Division.

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DOD Dir. 5 Jan. & 30 June 1954
By [illegible] NCS, Date 10/1/74

Gas Tank Leaks on C-87's and B-24's.

AC/AS, MMAD.

5 Sept. 1943

Deputy Chief of Air Staff.

1
ESP/cms/6371

What is the status of gas tank leaks in C-87's and B-24's? It has been noted that two Air Transport Command C-87's are grounded because of gas tank leaks.

Dispatched
5 OCT 1943
AMC

EDWIN S. PERRIN,
Brigadier General, U.S.A.,
Deputy Chief of Air Staff.

AAG 452.1 (11)

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10/5/43

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DOD Itrs
8 Jan. & 20 June 1974
By ACW/LLC LC, Date 10/16/76

written 30 Sept

6 OCT 1943

Lieut. General George C. Kenney
A.P.O. 925
c/o Postmaster
San Francisco, California

Dear George:

General Gardner recently viewed take-off tests on the P-38J, conducted at the Proving Ground Command, Eglin Field, Florida. In one case a 2,000-pound bomb was carried under each wing, and in another case a 300-gallon external fuel tank was carried under each wing. I am relaying the substance of General Gardner's report for your information.

Take-offs were made from a paved runway and from a steel bar and rod runway with normal internal fuel and ammunition load. Take-off distances were less than 2700 feet, using forty-two to forty-seven inches of manifold pressure, and it was conservatively estimated that a fifty foot obstacle would have been cleared in 3000 feet from the starting position. Detailed statistics on the tests are as follows:

a. Loading Condition:

Basic Airplane	12,[illegible] lb.
Internal Fuel	1,900 lb.
Ammunition	442 lb.
Pilot	200 lb.
External	4,100 lb.
Approx. Gross Weight	19,142 lb.

b. Take-off Distances:

Load	Hard Runway & Rush Head Wind	Bar and Rod Runway & Rush Cross Wind
2-2000 Bombs	[illegible] Feet @ 47" HP	[illegible] Feet @ 45" HP
2-300 Gallon Tanks	[illegible] Feet @ 45" HP	[illegible] Feet @ [illegible]" HP

c. The 300-gallon droppable fuel tanks were filled with 2?? gallons of water, weighing 1900 pounds each.

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AFRAE/7
Capt. Stebbins:ajp 72439

Letter to Gen. Kenney (Continued)

d. The tanks and tanks were hung on the B-29D shackles and the tanks were supplemented with "Tanner" boards. All releases were made electrically although the ship had a supplementary mechanical release installed, since electrical release switches fail to function due to the tanks' being over-heated too tightly or a short circuit occurring in the electrical system.

e. Handling characteristics of the airplane with this load were practically normal. However, there was a mutual tendency to stall at speeds of less than 120 MPH indicated air speed when large movements of the controls were made. The initial rate of climb immediately upon take-off was a little sluggish, but the average rate of climb up to 15,000 feet was approximately 1,000 ft./min.

f. The maximum calibrated indicated air speed at sea level, [illegible] speed with the tanks was 276 MPH and with the [illegible] was 270 MPH.

g. The service ceiling with this load was between 26,000 and 28,000 feet. Insufficient number of tests were run to determine the exact service ceiling.

h. Approximately 65 gallons of gasoline were consumed in climbing to 15,000 feet from take-off.

Sincerely yours,
Signed
Barney M. Kenney,
Major General, U. S. Army,
Chief of the Air Staff.

Dispatched 6 Oct 1943 AAG

File OK 10/6/43

Copy for Gen. Arnold

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DOD Dir.
By AGSIL Date 10/18/76

Collapsible Ship Joint Bladder Gasoline Tank — Proposed by Messrs. [redacted]

Chief of Air Staff — 29 Sept 1943

AC/AS, M&MAB, Material Division — 1
377/cs/71309

1. As a result of your memorandum for General Echols dated 14 September 1943, attached, and following conference in this office and Wright Field, Material Command, initiating procurement of fifty (50) of the subject tanks for service test.

B. W. CHIDLAW, BRIG. GEN., U.S.A.,
Chief, Material Division,
Office, Asst. Chief of Air Staff,
Material, Maintenance & Distribution.

Incl.
Memo. for Gen. Echols from
Gen. Chidlaw, 9/22/43

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10/2/43

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DECLASSIFIED
DOD Dir.
E.O. 11652 & 30 June 1974
By [illegible] NLC, Date 10/15/74

File Copy

27 September 1943.

MEMORANDUM FOR GENERAL CRAIG.

SUBJECT: Troop Carrier Transports.

1. In accordance with attached directive from General Hull, dated 18 September 1943, the Material Command has been directed to make no production plans for the installation of sewer or leak-proof tanks in transport airplanes.

By command of General ARNOLD:

J. W. REEVES, Jr.,
Colonel, Air Corps,
Executive,
Office, Asst Chief of Air Staff,
Material, Maintenance & Distribution.

1 Encl:
Directive fm.
General Hull,
dtd.18 Sept.

AFDMM-AD
JPH:llg/oct

cc: Gen. Giles

~~CONFIDENTIAL~~

452.22 (1)

452.22 (2)

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DOD Dir.
0 Jan. & 30 June 1974
By ACMJS, JCS; Date 10/18/76

~~CONFIDENTIAL~~

18 September 1943

MEMORANDUM FOR GENERAL GILES

1. At a conference this morning, General Arnold made the decision that no armor or leak-proof tanks would be provided for transport aircraft. He also directed General Craig to dispatch a cable to General Baker advising him of this fact together with the reasons therefor.

2. General Harper was directed to arrange a conference with General Craig and General Brereton with a view toward devising a plan for education of the TCC on the tactical employment of gliders.

3. Colonel McCormick (Personnel) was directed to take steps to make the following officers available to General Brereton:

Colonel Hastey	Colonel S. T. Smith	Colonel E. M. Jonson
Colonel Niergarth	Colonel Bacas	Colonel J. E. Sprague
Colonel Paul	Colonel Spry	Colonel Frank Wolfe
Colonel Powers	Colonel Early	Colonel W. E. Todd
Colonel Crumrine	Colonel Crane	Colonel J. E. Mallory
		Colonel Kelsey

signed:

WILLIAM S. HALL,
Brigadier General, U. S. ARMY
Deputy Chief of the Air Staff.

cc * General Echols
General Craig
General Harper
General Vandenberg
General Perrin
Colonel McCormick

COPY

~~CONFIDENTIAL~~

air as 452.22 (2)

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DECLASSIFIED
DOD Dir.
by NNTU-10, Date

Extra Built-In Leakproof Gas in P-51 and P-38.

General Craig.

General Vandenberg.

9 Sept. 1943

1
HSV/gmd/72052

General Giles suggested that Colonel Eric Nelson be given this to "bird dog" at the same time he is attempting to follow through on the increased fighter production. General Giles further feels that the delay incident to testing is definitely not desirable, and that we should immediately order a couple thousand of these tanks so that there will be no delay when the "bugs" of the testing airplanes have been rectified.

Incls:
Memo for Generals Meyers, & Perrin, Colonels Wise & Seagums, dtd. 8/31/43, above subj., w/1 Incl.-TWX re P-38 extra tanks dtd. 8/30/43.

H. S. VANDENBERG,
Brigadier General, U.S.A.,
Deputy Chief of Air Staff.

SPD 452.22 (6)

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DECLASSIFIED
DOD DIR.
5 Jan. & 30 June 1974
By AGD/ES(AR) Date 10/18/76

31 August 1943

MEMORANDUM FOR: General Meyers
General Perrin
Colonel Wise
Colonel Sessums

Subject: Extra Built-In Leakproof Gas in P-51 and P-38

1. The North American local representative has just reported that the three test airplanes for Orlando are 55% complete and are estimated for October 1st delivery. If Firestone delivers tanks sooner delivery can be made sooner. This office has just telegraphed Firestone of the importance of this project and early delivery under General Arnold's name. North American has proposals with Goodyear, Goodrich, Firestone and U. S. Rubber for production tanks with deliveries estimated thirty to seventy-five days after purchase order. This office is following up the purchase order.

2. There is attached the latest report on the P-38 extra tanks.

J. W. SESSUMS,
Colonel, Air Corps,
Executive, Office,
AC/AS, M&D

Incl.
TWX re P-38 extra
tanks dtd 8/30/43

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CONFIDENTIAL

DECLASSIFIED
DOD ltrs.
9 Sep. & 20 June 1974
By AFSHK HQ Date 10/16/76

MEMORANDUM FOR THE CHIEF OF THE AIR STAFF:

Subject: Fighter Airplane Range Extension

1. The following are the measures instituted to provide an extension of range for P-38, P-47 and P-51 airplanes:

a. P-38J: Internal fuel capacity increased 100 to 110 gallons by the installation of leakproof leading edge wing tanks. Three (3) test airplanes should be ready for flight test 18 September 1943. Although Lockheed has claimed six (6) months as being required to incorporate the change in production, all possible pressure is being exerted to accomplish the change by 1 November. In the meantime, P-38F airplanes will go through Modification Centers, for the installation, estimated to require 200 man hours. An order for 100 of the necessary kits is presently scheduled for delivery during the period 1 October-15 November. This order is being increased to 600 to provide for the J models produced by 1 November. It has not yet been determined whether the installation can be accomplished by depot facilities in U. K.

Firestone, Goodyear and Goodrich are currently submitting for test samples of 150 gallon leakproof droppable tanks. A quantity of 201 150 gallon leakproof tanks has been covered by A. for P. with Firestone. This quantity will be increased to a total of 1200 distributed among those manufacturers whose test articles prove satisfactory. The expected production rate is 8 per day for each plant.

b. P-47B: Provisions for carrying droppable wing tanks on this airplane will be incorporated in production beginning 15 October 1943. The installation, consisting of a B-10 shackle, pressure relief valve and the necessary plumbing, will accommodate 75 gallon, 100 gallon or 150 gallon tanks interchangeably. Production P-47B airplanes now are equipped with the B-7 belly shackle which will accommodate either a 75 gallon tank, a 108 gallon U. K. paper tank or our own 115 gallon pressurized belly tank, a quantity of 5,000 of which has been ordered. It is not practicable to supply kits for the modification of P-47 airplanes to take the wing tanks because of the magnitude of work involved.

c. P-51B and C: The internal fuel capacity in P-51B and C airplanes is increased by an 85 gallon self sealing fuselage tank. Three (3) test P-51B airplanes with an 85 gallon tank installed should be delivered to AFSAF

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CONFIDENTIAL

Memo to Chief of Air Staff

for test by 15 September 1943. Orders have been placed for a quantity of 600 85 gallon tanks with a promise of deliveries starting immediately. The job of installing the fuselage tank in the airplane is one which can be accomplished by Service activities. Complete kits will be furnished for all model B and C airplanes.

Instructions have been issued to Materiel Command to procure a quantity of 1200 75 gallon leakproof droppable wing tanks for P-51 airplanes. Firestone, Goodyear and Goodrich are submitting sample tanks for test. Purchase orders will be issued to those manufacturers whose tanks prove satisfactory.

B. M. CHIDLAW, BRIG. GEN., U.S.A.,
Chief, Materiel Division,
Office, Asst. Chief of Air Staff,
Materiel, Maintenance & Distribution.

Air AG 452.22 (9-B)

1st Ind.

General Giles, Chief of the Air Staff, 9 September 1943, To Asst.Chief of Air Staff, MM&D, Attention: General Chidlaw.

1. It is desired that wherever possible a short cut be taken to eliminate all service tests and delays in rushing this project through at the earliest possible date.

2. The Germans, as we see in the daily cables, are becoming more proficient in the use of rockets and long range firing from their fighter aircraft and are taking a greater toll of our B-17's and B-24's from day to day.

3. Exert the greatest possible pressure to rush through the P-38's and P-51's with this extra built-in gas.

Signed

BARNEY M. GILES,
Major General, U. S. A.
Chief of the Air Staff.

Dispatched
11 Sep 1943
AMC

CONFIDENTIAL

Air AG 452.22 (9-B)

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HEADQUARTERS ARMY AIR FORCES

ROUTING SLIP

TO: DATE 7.9.42

OFFICE OR SYMBOL	BUILDING
C/AS	
ATTENTION:	ROOM

FOR:

	COORDINATION		INVESTIGATION		NEC. ACTION
	INFORMATION		RECOMMENDATION		SIGNATURE
	FILE		CONFERENCE		

REMARKS:

This is the first of the regular reports on the subject, requested by General Giles.
The next is due 20/9/43

FROM:

NAME	OFFICE OR SYMBOL
Major R. W. Johnson	DMA
PHONE 6225 / BUILDING	ROOM 5D935

3-218, AF

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DOD Dir. 5200.9
E.O. 11652 Sec. 3 and Sec. 5 (d) and (e)
By NARS, Date 10/15/74

Extra Built-In Leakproof Gas in P-51 and P-38.

General Craig. 9 Sept. 1943

General Vandenberg.

1
HSV/gwd/72062

General Giles suggested that Colonel Eric Nelson be given this to "bird dog" at the same time he is attempting to follow through on the increased fighter production. General Giles further feels that the delay incident to testing is definitely not desirable, and that we should immediately order a couple thousand of these tanks so that there will be no delay when the "bugs" of the testing airplanes have been rectified.

Incl:
Memo for Generals Meyers, & Perrin, Colonels Wise & Sessums, dtd. 8/31/43, above subj.,w/1 Incl.-TWX re P-38 extra tanks dtd. 8/30/43.

H. S. VANDENBERG,
Brigadier General, U.S.A.,
Deputy Chief of Air Staff.

(6)

AAG 452.22

Dispatched
10 Sept 1943
AAG

File
10 Sept 43

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Copy for Miss Ingram
Air Adj Gen 452.22 (6)

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DOD Dirs.
5 Jan. & 30 June 1974
By A&G/IUS, OC; Date 10/16/74

August 30, 1943
Prepared by Gen Giles/nl
3373

MEMORANDUM FOR THE PRESIDENT:

Subject: Leakproof gasoline tanks

In line with our conversation this afternoon quoted below is an extract from a message received from the Eighth Air Force:

" To Arnold signed Baker.
From July 28th to August 24th the P-47's of this Air Force operated in support of 8 heavy bomber missions. On 7 of these missions 2 or more groups of P-47's used external jettisonable gas tanks on penetrations up to 275 miles from home bases. During these operations 87 enemy planes were destroyed, 14 probably destroyed and 38 damaged for the loss of 15 P-47's and 14 pilots.

The success of these operations indicates that the P-47 has proved its worth as an escort fighter for heavy bombers operating at a high altitude where the P-47 is at its best.

As sufficient external tanks and shackles become available, 4 operational groups and 2 additional groups, which are now being equipped and processed, will be operated in support of heavy bombers to the limit of the combat radius of action.

Coordinated effort with P-38's also equipped with long range tanks should help towards deeper fighter penetration and will assuredly increase bomber efficiency, and at the same time take a heavy toll of enemy fighters. "

Additional leakproof gasoline tanks are now being built into the wings of P-38's (2-engine fighters) and P-51's (1-engine fighters) for escort missions to a depth of 500 miles into Germany.

Dispatched 9/30/43 by office courier

H. H. ARNOLD
General, U. S. Army
Commanding General, Army Air Forces

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452.22 (3)

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DECLASSIFIED
DOD Dirs.
8 Jan. & 30 June 1978
By ASAF(LL) IG, Date 10/18/76

Cable No. 340

Dispatched
29 Sep 1943
AMC

TO: AC/AS, MMaD

DATE 28 Sep 43

FROM: Deputy Chief of Air Staff

COMMENT NO. 8
ESP/eva/6371

452.22 (4)

It is desired that this office be furnished production data on 75-gallon tanks as soon as this information is available.

EDWIN S. PERRIN,
Brigadier General, U.S.A.,
Deputy Chief of Air Staff.

SECRET 452.22 (4)

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DECLASSIFIED
DOD 5200
8 Jan. & 20 June 1974
By NARS, Date 10/24/78

Cable No. 340

Deputy Chief of the Air Staff

14 Sept 1943

Asst C/AS, OCR, Requirements Division

5

Lt Col Gibbs:mf/72673

1. Commanding General, South Pacific originally asked for 100 leakproof combat tanks per month for P-39 and P-40 by cablegram No. 1727 dated 24 April 1943. No tanks were available since their development was started in January 1943.

2. Eighth Air Force requested 1500 each 75 and 150 gallon leakproof tanks in cablegram No. R1046 dated 9 September 1943.

3. North African Air Force requested 1585 of the 150 gallon leakproof tanks and 935 of the 75 gallon leakproof tanks by cablegram No. JM0725 dated 11 September 1943.

4. This branch has requested MMAD to increase the procurement of leakproof extension tanks from 1200 each, as directed by General Giles, to 4,000 of 150 gallon and 3,000 of 75 gallon leakproof tanks to fulfill the requirements of all theaters.

5. The leakproofing of the external combat range extension tanks is still in the development stage. Production in quantity of such tanks should be expected in the near future.

MERVIN E. GROSS
Colonel, Air Corps

Fighter & Air Defense Br_____

DATE 17 September 43

TO: AS/AS, Materiel, Maintenance & Distribution.

COMMEN NO. 6
MAL/mdg/5265

FROM: Chief of the Air Staff.

1. For report as to action taken to comply with [redacted] mentioned in Par. 4, preceding comment.

2. The Chief of the Air Staff has indicated that he is extremely dissatisfied with the results apparently being obtained in compliance with his many directives that leak-proof extension tanks be immediately procured and supplied all theaters. He further stated that on several occasions he had directed that this project receive the highest priority. The result to date indicates that this had not been complied with.

Dispatched
18 SEP 1943

MILLARD A. LIBBY,
Colonel, G. S. C.,
Secretary of the Air Staff.

Incl. n/c

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Air AS 452.22 (4)

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DECLASSIFIED
DOD 5200
By ALAIR AC, Date 10/15/76

Cable No. 340.

5 Sept. 1943

AC/AS, Materiel, Maintenance & Distribution.
AC/AS, Operations, Commitments & Requirements (IN TURN)
Deputy Chief of Air Staff.

5
RSP/cmo/6371

Who asked for these tanks originally? Seems like no one did. How about the 8th A.F.? General Giles directed procurement of 1200 of them.

EDWIN S. PERRIN,
Brigadier General, U.S.A.,
Deputy Chief of Air Staff.

(4)

Dispatched
7 SEP 1943
AAG

AAG 452.22

File
ci 7 Sept 43

Air A.F.

SECRET
- 8 -

Air AG 452.22 (4)

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DECLASSIFIED
DOD ltr
8 Jan & 30 June 1972
By ACS/IIC AG Date 8/18/76

TO: Deputy Chief of the Air Staff

DATE Sept. 4, 1943

FROM: AC/AS, Materiel, Maintenance & Distribution

COMMENT NO. 2
JHK/m/71568

There is outlined below a resume of the situation on P-38 belly tanks relative to subject Cable #340:

1. a. Fort Richardson Radio AADS 1441 PC dated 22 August requested shipment of Plywood Belly Tanks to Amchitka, Shemya, Attu, and Adak. Also requested one Hundred (100) each Leak-proof Belly Tanks for Amchitka.

b. ASC Radio 0604 dated 24 August advised Emergency Request was initiated to supply plywood tanks as requested. No leak-proof tanks available in Air Corps stock or are any being procured.

2. a. Radio 250024 dated 25 August from Fort Richardson. Washington advises 150 gallon leak-proof tanks are available for P-38's. Request one hundred (100) be shipped immediately to Amchitka.

b. Overseas Supply Section conatacted Material Command, who advised that approximately two hundred (200) self-sealing belly tanks for P-38's were being procured from Firestone Rubber Corp. and that the whole quantity was allocated to the Southwest Pacific Theatre in compliance with a request made by General Kenney. The tanks have not been accepted by Material Command and are still being tested. He also advised that if tanks were alright, 1200 more would be procured with an estimated delivery date of approximately three months.

c. Radio ASC 0641 dated 26th August advised Fort Richardson that these tanks were not available in Air Corps stock but that 200 tanks were

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Cable No. 340

Deputy Chief of the Air Staff

AC/AS, Materiel, Maintenance & Distribution.

Sept. 4, 1943

2

JHK/m/71568

2. c. (Continued)

being procured and all allocated to another theatre. Tanks have not been approved yet and still undergoing tests. If tests satisfactory, procurement for 1200 additional to be initiated with approximate delivery date of three months.

3. a. Radio 290315 Z 29 August, Fort Richardson advised that they were badly in need of leak-proof belly tanks for P-38's and that planned operation made it mandatory that these planes accompany bombers on missions. Missions cannot be flown without these leak-proof tanks.

b. Colonel J. A. Wilson, ASC Liaison Officer, Washington, D. C. was contacted. He checked OCR, who stated that allocation was made and would not be changed at present unless more detailed information could be received from Alaska pertaining to need and use of these belly tanks.

c. Radio 0693 ASC sent to Alaska. Leak-proof tanks are not available because another overseas destination has first priority. Suggest complete story and requirements and urgency of this material be forwarded to Air Defense Section, Requirements Division, Assistant Chief of Air Staff, OCR, Washington.

4. a. Cable 340 from Fort Richardson via Washington received 1 September. Fort Richardson advised that 25 each belly tanks for P-38's were needed because subject planes were being used as fighters escort for bombers on combat mission. 200 allocated to another theatre. Request 25 be shipped to Adak immediately because flying weather ceases about 15 October.

b. Colonel Wilson's office contacted and advised to have copy of radio 340 sent to OCR. In conference with Colonel Wilson, OCR advised General Kenney did not request leak-proof tanks and the allocation of 25 tanks should be made and shipped with first priority. Colonel Wilson so advised M M & D (Major Kricker's office) and ASC was advised by cable that per OCR's decision 25 each leak-proof belly tanks for P-38's were directed shipped at earliest practicable date. In reply to Fort Richardson, ASC was to inquire if additional seventy-five (75) tanks was desired or if the twenty-five (25) tanks being furnished would be sufficient, based on the production schedule.

c. Materiel Command advises that Firestone has started production on subject tanks at a rate of three (3) per day. However, final approval on tanks has not been made as yet.

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Wm. M. Kricker
Major, Air Corps
Chief, Overseas Section.

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DECLASSIFIED
DOD Dir. 5 Jan. & 20 June 1974
By AGAVE LC. Date 10/18/76

Cable No. 340.

AC/AS, Materiel, Maintenance & Distribution. (Col. Kricker) 30 August 1943

Deputy Chief of the Air Staff. 1

ESP/cmc/6371

Reference cable No. 340, dated August 2, 1943, from Butler, give me dope on number of tanks and planned distribution.

EDWIN S. PERRIN,
Brigadier General, U.S.A.,
Deputy Chief of Air Staff.

Dispatched
31 A.G.1943
AAG

4/3.22 (A)

9/1/43.

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

SECRET

DECLASSIFIED
DOD Dir. 5 Jan. & 30 June 1974
By: AAJ/LK, JC, Date 10/15/76

WAR DEPARTMENT
HEADQUARTERS OF THE ARMY AIR FORCES
WASHINGTON, D. C.

AFRAD:F

30 August 1943

MEMORANDUM FOR GENERAL GILES:

Subject: Increased Range of Escort Fighters

1. Latest information on the installation of the fuselage tank in the P-51B, C, and D Airplane:

a. Three test ships (P-51B) with eighty-five (85) gallon fuselage tanks, but without alternate provision for IFF, will be ready about 24 September. These airplanes will be sent directly to Army Air Forces School of Applied Tactics for practical escort test. The directive for this test has been sent to the Army Air Forces School of Applied Tactics.

b. Eight hundred (800) modification kits are now on order for P-51B and C airplanes. The kits will provide for alternate installation of either the tank or the IFF, changeable in the field. The kits will be available late in October.

c. Two thousand one hundred and forty (2,140) kits will be procured for the fifty-five (55) gallon tank as alternate for the IFF in the P-51D. These should be available in time to make the installation in the production line.

d. Study is continuing on installation of both the extra tank and the IFF by installing the IFF in the rear of the engine compartment. Test will be necessary to determine the effect of temperatures on the IFF. To obtain this installation initially would result in an additional delay of 30 days.

e. The United Kingdom was informed of the alternate installation and replied that they desired the tank installed and the IFF shipped with airplane as alternate.

f. Action being taken now will provide the tank installed in the airplane with alternate provisions for the IFF. If the new IFF location proves satisfactory new kits will be made up and the new installation will be treated as a separate project.

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2. Latest information on the installation of the extra internal fuel tanks on the P-38J:

a. The additional one hundred and twenty (120) self-sealing fuel cells will be incorporated into the production line of the P-38J beginning approximately 30 November. To provide long-range fighters until the production line can handle this installation, one hundred (100) tank assembly kits have been let on contract and this installation will have to be made by modification. Delivery of the one hundred (100) tank kits is to begin 30 September and to be completed 15 November. Additional tanks are being procured to modify all P-38J's produced prior to the incorporation of this installation in the production line.

b. Fabrication on three (3) test P-38J's having this installation is 85% completed. The first test airplane is expected to be ready for delivery 15 September and the other two to be ready by 22 September.

1st Kits eng.

W. A. CRAIG
Brigadier General, U.S.A.
Asst. Chief of Air Staff
Operations, Commitments and Requirements.

Title A S 7 4 1 4

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Air AS 452.22 (3)

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DECLASSIFIED
DOD Dir. 5 Jan. & 30 June 1974
By AUL/IK NC, Date 10/6/76

AFDAS
ESP/ega/6371

25 August 1943

Brigadier General Grandison Gardner,
Army Air Forces Proving Ground Command,
Eglin Field, Florida.

Dear Gran:

I received your letter with the inclosed photographs of the P-38 chemical tanks. We, here, are not completely convinced of the necessity for a leak-proof belly tank but it has been requested by the theaters. We have recently sent a cable to Baker asking him to justify the necessity or desirability, together with some factual data to support it.

In the meantime, we are ordering 1,200 leak-proof tanks to be used on P-38's and P-51's. At the factory, all of the fighter P-51B's will have the 85-gallon tank installed back of the pilot. The version intended for reconnaissance cannot have this tank since the camera fits in the same space.

I am glad to hear that Wright Field is getting along so well on the mounts for large caliber guns. Please keep me advised of the results of your firing tests.

We have taken action here and I think you should have received the Navy 40 mm. gun by now with ammunition for testing. This, with the 20 (new type ammunition) and the 37, should enable you to start your comparative tests promptly.

Present duties (international business) in addition to the rush of normal work keep me pretty well tied in the office. I do want to come down, however, and will make it as soon as possible.

Yours sincerely,

Signed

BARNEY M. GILES,
Major General, U.S.A.,
Chief of the Air Staff.

Dispatched
26 AUG 1943
AAG

AAG 452.22 (2)

File ESP 8/26/43

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(27-1)p

HEADQUARTERS
ARMY AIR FORCES PROVING GROUND COMMAND
EGLIN FIELD, FLORIDA

DECLASSIFIED
DOD ltrs
8 Jan. & 20 June 1974
By AGAFK, AC; Date 10/18/76

17 August 1943

General H. H. Arnold,
Commanding General, Army Air Forces,
Washington, D. C.

Dear General Arnold:

The suggestion General Peabody and I made about using non-leak-proofed auxiliary tanks on fighters accompanying bombers probably did appear to you to be a rather injudicious recommendation. We did not mean to suggest that these tanks be used longer than is necessary to procure leak-proofed tanks. I still believe, however, that the suggestion is not so bad, and justify my belief by the fact that we burned a number of tanks similarly mounted under an airplane wing on the ground, in a strong air stream produced by a large propeller running in front of the gas tank. Even though a tank is split almost in half, the gas trails to the rearward in a plume and, if burning, the fire trails back so straight to the rear that it does not even scorch the wing under which the tank is mounted. In the case of the P-38, one might wonder if the flame would pass over the tail surfaces and burn them off. My belief that this will not be the case is justified by the attached photograph showing chemical smoke discharged from a similar tank. I would not feel a bit more uncomfortable with such a fire under a P-38 than with the discharge of some rockets we are using for accelerated take-offs and the discharge of conventional rocket projectiles; and the faster the airplane flies, the less would be the danger from such a fire. In case of small leaks, the fire might be completely extinguished, even though the gas were ignited while the bullet was passing through.

I talked to Colonel Orville Cook at Wright Field a few days ago, and he states that they are now buying two hundred (200) leak-proofed tanks of one hundred fifty (150) gallon capacity for the Southwest Pacific Theater and expect deliveries in September and October. He said that on the strength of my inquiry he would place orders for additional tanks of three hundred (300) gallon capacity, without any further directive. I think, however, that it would be wise to issue a directive covering this procurement, partly to assure him that the tanks are wanted and partly to expedite the procurement. Colonel Cook told me also that the P-51B's can be built originally with an extra eighty-five (85) gallon leak-proofed tank behind the pilot, if we will just indicate that such a tank is desired. With this additional tank P-51B's could accompany bombardment to a distance of over six hundred (600) miles and return.

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I believe that General Peabody is writing you a letter on this same subject, and just as soon as he can get a flight of P-38's he will make some studies of the proper technique of flying P-38's with bombers so as to best conserve gasoline and insure adequate defense.

I was at Wright Field Friday, and find that they have a number of mounts for larger caliber guns already in process, one for the M-4 37mm gun is already in a B-24, and we expect to air fire it within the next few days. The same mount could be used in the tail of a B-29, and it appears that the same or a very similar mount for the high velocity 37mm gun could be readily procured for the tail of a B-29. We have some Bofors 40mm guns belonging to an Anti-Aircraft Artillery battalion here at the present time, and they look awfully large and clumsy for mounting in an airplane, particularly in the tail; but we decided at Wright Field that we would build a B-29 mock-up tail around one to see what it would look like if so mounted.

The Ordnance is loading some of these special 20mm rounds referred to in the conference in your office last week, and expects to have a thousand (1,000) ready by the first of October. We will fire them immediately when we receive them, and hope that we will have the 37mm installations mentioned above ready to compare with them.

We fired some rockets vertically Saturday and yesterday to see how they might look as defense against an enemy dropping bombs from straight overhead. While they looked pretty good and might really impress the enemy, the range is apparently a little less, and the effectiveness would probably be less, than vertical .50 caliber fire.

We are in hopes that when the present rush of international business is over, you may be able to come down and see some of the things I have mentioned above and some of the suggestions we wanted to make for attack on aircraft carriers, bombing attack on bombardment airplanes, etc. If you could some way manage to spare a couple of days, we could show you something about them all.

Hoping we may be able to give you at least a reasonable part of all these things you want, which I agree we may sometime find ourselves badly in need of, I am

Yours sincerely,

GRANDISON GARDNER,
Brigadier General, U. S. Army,
Commanding.

Incl.
Photographs
10263 and 10265

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DOD DIR. 5 Jan. & 30 June 1974
By [illegible] NARS, Date 10/16/75

Installation of Additional Gasoline Tanks in Fighter Aircraft

21 August 1943

AC/AS, OCAR

Deputy Chief of Air Staff

ESP/eva/6371 1

452.22

It is desired that immediate action be taken:

1. To put additional gasoline tanks in "fighter" P-51b's.

2. To put additional tankage in all P-38's (in modification centers) pending ability to work into the production line.

EDWIN S. PERRIN,
Brigadier General, U.S.A.,
Deputy Chief of Air Staff.

Dispatched
21 AUG 1943
AMG

Y.C.
C to D, Aug 43

SECRET

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HENRY HARLEY ARNOLD
Box 129 Folder 4

MILITARY I

Declined

SAS 452.3
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DECLASSIFIED
DOD Dir.
E.O. 11652 20 June 1974
By [illegible] NLC; Date [illegible]

SUBJECT: Future Military Valuation of Lighter-than-Air Rigid Aircraft

TO [illegible] FROM [illegible] DATE 10 JUL 1945

[illegible]

For the Commanding General, AAF!

Incl
n/c

REUBEN C. HOOD, JR.
Brigadier General, U. S. Army,
Deputy Chief of Air Staff.

DISPATCHED
10 JUL 1945
AFSAS

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Copy for Office of Signature

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A- DOD ltrs
of 20 June 1974
Declassified: Date 10/18/76

AFAEF
LEI/as/2842
Wtn 22 April 1945

SECRET

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22 Apr 45

CG,
ARMY SERVICE FORCES

Assistant Chief of Staff, Operations
Division, War Department General Staff

Joint Planning for Combating Japanese Balloons

From: AC/AS, Plans
N. Hemisphere

Date
COMMENT NO. 2
Lt.Col.Ireland/as/2842

1. Reference the recommendations contained in paragraph 12, basic letter the AAF has taken action as outlined below.

a. The tests recommended by para 12 a., basic, were authorized by first Indorsement, this headquarters, to CG, Fourth Air Force, dated 6 April 1945. A copy of this Indorsement is attached as Tab A. This action has enabled the Commanding General, Fourth Air Force, to immediately initiate preparations for the radar experiments.

b. Reference para 12 b, basic, all upper air data currently available from the Pacific Ocean areas is now being furnished to the Fourth Air Force. As pointed out in the above cited 1st Indorsement (Tab A), continued efforts will be made to provide all necessary and available weather data to the Fourth Air Force.

c. Reference para 12 c, this headquarters has, previous to initiation of the basic letter, assisted the U.S. Forest Service in procuring additional airplanes to the complete satisfaction of that service and subsequently took the additional action outlined in Tab B. This assistance was considered more than adequate by Mr. Redwin of the U.S. Forest Service. The airplanes tentatively available as outlined in para 1 b. and 1 c. of Tab B, are now definitely scheduled for this assignment as the pyrotechnist fire fighters have been made available by the War Department. The Fourth Air Force will be so advised by separate communication.

2. Reference Para 12 c. the Army Air Forces are prepared to collaborate to every extent possible with the Chemical Warfare Service and the U.S. Forest Service in developing the use of airborne chemicals in fire control upon receipt of a directive from the War Department to conduct such experiments.

3. This headquarters will maintain a continued supervisory interest in the development of air counter-measures against these free balloons and will be prepared to advise all interested agencies of any promising developments as the result of present experiments.

2 Incls
1-Incl 1-m/c
~~1-Ltr 19 Apr 45 fr OPD to CG AAF w/incls.~~
1-Tab "A"
1-Tab "B"

DECLASSIFIED Signed
JOHN H. STONE
Colonel, G.S.C.
Acting Chief, Operational Plans Division

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DISPATCHED
23 APR 45
AFSAC

978RBS 452.3 (43)

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SECRET
by authority A.C.of S., G-2
Date Feb 13 1945 Initials

COPY

WAR DEPARTMENT
War Department General Staff
Military Intelligence Division G-2
Washington

13 February 1945

SUBJECT: Japanese Free Balloons

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

1. Reference is made to the various incidents occurring recently in Western United States, Canada, and Alaska involving Japanese free balloons. Information regarding these incidents and various reports relative thereto have been forwarded to you from time to time.

2. It is requested that your studies include the question as to whether there is any correlation between the time of launching and weather conditions. By this is meant, can a determination be made from the data available concerning times of arrivals of the balloons and wind currents, as to whether the Japanese apparently release the balloons with particular consideration of favorable wind and weather conditions. It is conceivable that the balloons are released in groups and only at the most favorable times.

3. It has been noted from data obtained on several moving radio signals similar in character to the signal which one of the recovered balloons would emit, that these signals apparently travel at a speed of some 175 to 180 miles per hour. One such signal was tracked on 19 January 45 from 36° N, 168° W, to 47° N, 142° W, a distance of some 1600 miles in slightly over nine hours. Study of air currents by AAF has indicated that the direction of travel of the signal corresponded to the estimated direction of travel of the parcels of air on that date. The logical conclusion is that the transmitter was attached to a balloon. However, the speed of travel of the parcels of air at that time and in that area has been estimated not to exceed 90 miles per hour. It is requested that a study be made in an effort to determine reasons for these discrepancies.

4. Your conclusions relative to the questions raised above would be appreciated.

CLAYTON BISSELL
Major General, GSC
Assistant Chief of Staff, G-2

/s/ John Weckerling
JOHN WECKERLING
Brigadier General, GSC
Deputy A.C. of S., G-2

DECLASSIFIED
DOD Dir.
5 Jan. & 20 June 1974
By NARS, LC; Date 8/8/74

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AFIAN
WNRC 11/2466
Rewrtn: TSM/ww/73539
26 Feb 45

DECLASSIFIED
DOD Dir.
5 Jun. & 20 June 1974
By: [illegible] Date: 10/31/74

27 FEB 1945

MEMORANDUM FOR ASSISTANT CHIEF OF STAFF, G-2/WDGS

Subject: Japanese Free Balloons

1. Reference is made to letter from your office, dated 13 February 1945, subject: "Japanese Free Balloons." Special Studies Branch, Weather Division, is preparing a study on the connection between wind currents and sightings of Japanese balloons which study is expected to be available to this office on or about 1 March 1945. A copy of the study will be furnished your office as soon as received.

FOR THE COMMANDING GENERAL, ARMY AIR FORCES:

Signed
John F. Turner
Colonel, AC
Executive
OAC/AS, Intell.

COPY FOR SECRETARY OF AIR STAFF

[redacted]
27 FEB 1945

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A. DOD ltrs
8 Jan. & 20 June 1974
By: AHS, LC; Date: 11-7-74

Training Aids in Overseas Air Forces

TO: Assistant Chief of Air Staff, Training

DATE 16 Oct 1944

FROM: Chief of the Air Staff

COMMENT NO. 2
MAI/hd/3373

Upon a reconsideration the Chief of the Air Staff has approved the dispatch of an officer from the training aids division to visit commands of the Seventh Air Force and the Far East Air Forces in connection with sub-paragraph d, Comment 1.

Signed
MILLARD A. LIBBY
Colonel, G. S. C.
Executive, Chief of the Air Staff

[illegible]
17 OCT 1944
[illegible]

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SAS 452.3 (10)

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DOD ltrs.
8 Jan. & 20 June 1974
By [illegible], LC; Date [illegible]

SECRET

HEADQUARTERS ARMY AIR FORCES

DECLASSIFIED

ROUTING AND RECORD SHEET

TALLY NO.	
FILE NO.	

SUBJECT: Training Devices for Seventh Air Force

TO: Chief of Air Staff

DATE 5 OCT 44

FROM: AC/AS, Training

COMMENT NO. 1
JHW/ckh/73470

1. In compliance with your directive expressed at the staff meeting on the 28th of August 1944, the 7th Air Force was requested to submit their requirements for additional Link Instrument Trainers and Bomb Trainers. In accordance with their answer, twenty-five (25) Type ANT-18, Link Instrument Trainers were shipped during September to cover their total additional requirements. Their cable stated that no requirement exists for additional bomb trainers. Copy of cablegrams are attached.

1 Att:
Allied corres.

WILLIAM W. WELSH
Brig. General, U. S. Army
Assistant Chief of Air Staff,
Training

noted - file

FREDERIC H. SMITH, JR.
Brigadier General, U. S. Army,
Deputy Chief of Air Staff

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DOD ltrs.
6 Jun. & 20 June 1974
By AMJAG,LC; Date 10/8/74

PARAPHRASE OF MESSAGE

FROM: WRIGHT FIELD, OHIO, DIRECTOR, AIR TECHNICAL SERVICE COMMAND

TO: WD

DATE 26 September 1944, NR: AT 18015

ON REQUISITION 455 R 7-180PO IRON-AIR-S-D 17 TO BE PROCESSED BY CLASS 28-A WERE PLACED 25 EACH MODIFIED C-3 LINK TRAINERS.

REURAD DATED 22 SEPTEMBER, NR. WAR 34856 FROM MILES SIGNED KNUDSON FOR ARNOLD

INSTRUCTED TO NOTIFY YOUR HEADQUARTERS DATE SHIPMENT IS MADE HAD BEEN MENTIONED CLASSIFICATION.

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SAS 452.3 (39)

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DECLASSIFIED DOD Res. 8 Jun. & 20 June 1974 By ALM, LC; Date 8 JUL 74

~~SECRET~~ DECLASSIFIED MSG NO 2SCR 7390

~~SECRET~~ FROM: AAF PACIFIC OCEAN AREAS

0531Z 23 September 1944

TO: TRAINING AIDS DIVISION

Received in Secret Code

PARAPHRASE

NO ADDITIONAL REQUIREMENTS FOR ABLE DASH TWO BOMB TRAINERS EXIST (AAFPOA 986 FROM COM GENERAL AAF POA TO CG TRAINING AIDS DIVISION) CONCERNING YOUR RADIO SCO 5246-TWO ONE SEPT

SECRET

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SAS 452.3 (39)

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A DOD ltrs. 6 Jun. & 20 June 1974
By [illegible]; Date [illegible]

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DECLASSIFIED

TRAINING AIDS DIVISION
OFFICE OF THE ASSISTANT CHIEF OF THE AIR STAFF, TRAINING
HEADQUARTERS ARMY AIR FORCES
★
ONE PARK AVENUE
NEW YORK CITY 16

~~SECRET~~
By Authority of the Commanding General Army Air Forces
9/30/44

D60

TAD-452.3
S-873

21 SEP 1944

MEMORANDUM FOR: Assistant Chief of Air Staff, Training

Attention: Plans and Liaison Division

Subject: Requirements for Link Instrument Trainers - Seventh Air Force

1. In compliance with your TWX #AFACT-5 560 dated 2 September 1944, the following is a paraphrase of message received in reply to our Message #S-8, D-60 dated 13 September 1944:

"Twenty-five Link Instrument Trainers were asked for by this Command in our Radio AAFPOA 800 dated 16 September 1944 (AAFPOA 879, Com Gen AAFPOA-WVP). This will be sufficient."

2. No mention was made of any requirement for A-2 Bombing Trainers.

3. The Seventh Air Force will be queried regarding A-2 Bombing Trainers specifically and reply thereto will then be forwarded to your Headquarters.

GEORGE W. PAXTY
Colonel, Air Corps
Chief, Training Aids Division

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DOD ltrs.
6 Jan. & 20 June 1974
By: AAVIUSLC; Date 10 Jul 74

13 SEPTEMBER 1944

HQ AAF, ASST CHIEF OF AIR STAFF, TRAINING, TRAINING AIDS DIVISION
ONE PARK AVENUE, NEW YORK 16, NEW YORK

D6Q/JMF/jjh

~~SECRET~~

PARAPHRASE

THAT THIS INFORMATION BE FURNISHED WITHOUT DELAY IS URGENT PERIOD ALREADY SHIPMENT TO SEVENTH AIR FORCE HAS BEEN OR IS BEING MADE OF SIXTEEN ABLE DASH TWO BOMBING TRAINERS PD RECORDS OF THIS DIVISION INDICATE THAT NO LINK INSTRUMENT TRAINERS IN PROCESS OF SHIPMENT PD DISREGARD OUR MESSAGE NUMBER SUGAR FIVE DOG SIX EIGHT PD PAREN COMMANDING GENERAL SEVENTH AIR FORCE SUGAR EIGHT DOG SIX ZERO SIGNED PARDY ARMY AIR FORCES TRAINING AIDS DIVISION PAREN REQUEST TOTAL COMMAND REQUIREMENTS FOR LINK INSTRUMENT TRAINERS AND ABLE DASH TWO BOMB TRAINERS OVER AND ABOVE AMOUNTS INDICATED ABOVE BE FURNISHED ARMY AIR FORCES TRAINING AIDS DIVISION EARLIEST DATE PRACTICABLE.

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DOD Dirs.
8 Jan. & 20 June 1974
By JLC; Date 10/8/74

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TRAINING AIDS DIVISION
OFFICE OF THE ASSISTANT CHIEF OF THE AIR STAFF, TRAINING
HEADQUARTERS ARMY AIR FORCES
★
ONE PARK AVENUE
NEW YORK CITY 16

9/7/44 DGS
D68

TAD 452.3
S 3211

7 SEP 1944

MEMORANDUM FOR: Assistant Chief of Air Staff, Training

Attention: Plans and Liaison Division

Subject: Bombing Trainers and Link Instrument Trainers for Seventh Air Force

In compliance with TWX request from your Headquarters, AFACT 5-560, dated 2 September, copy inclosed, the following is a paraphrase of cable sent to Seventh Air Force:

REQUEST INFORMATION NUMBER OF LINK INSTRUMENT TRAINERS DESIRED BY YOUR COMMAND. REQUEST CABLE REPLY.

1 Incl:
Cy TWX fm AFACT-5
dtd 2 Sept 44

GEORGE W. PARDY
Colonel, Air Corps
Chief, Training Aids Division

ADDRESS REPLY TO CHIEF, TRAINING AIDS DIVISION, ONE PARK AVENUE, NEW YORK CITY 16

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DOD Ltr.
8 Jun. & 20 June 1974
By NARS, LC; Date 10/18/74

2 SEPTEMBER 1944

FROM ARNOLD WASHINGTON DC

TO CHIEF AAF TRAINING AIDS DIV 1 PARK AVE NYC

AFACT-5 - 560 PD IT IS DESIRED THAT CABLE BE DISPATCHED IMMEDIATELY TO THE SEVENTH AIR FORCE REQUESTING THEIR REQUIREMENTS FOR BOMBING TRAINERS AND LINK INSTRUMENT TRAINERS PARAPHRASED COPY OF THIS CABLE WILL BE FORWARDED TO AFACT-5 AND COPY OF REPLY WILL BE FORWARDED TO AFACT-5 IMMEDIATELY UPON RECEIPT.

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SAS 452.3 (39)

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DOD ltrs.
8 Jan. & 20 June 1974
By Auth. LC; Date 10/18/76

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D 27 July 44

CONFIDENTIAL

SUBJECT: Transfer of Navy Lighter-than-air Activities from Carlson Field to Waller Field.

TO: Commander in Chief, U. S. Fleet,
Navy Department,
Washington 25, D. C.

1. Reference is made to your Memorandum of 9 July 1944, Serial: 0243, above subject, in which you requested authority for the transfer of lighter-than-air units and activities from Carlson Field to Waller Field.

2. A canvass of the contemplated traffic and available facilities at Waller Field has been made.

3. It is the opinion of the field commands concerned that the introduction of lighter-than-air activities and mooring facilities into this station would constitute a severe safety hazard.

4. Waller Field is a main base for ferrying combat aircraft and for Air Transport Command activities. Peak traffic loads occur by reason of weather back-ups making it highly inadvisable to permit construction which would constitute a hazard for such operations.

5. The savings in personnel indicated in your Memorandum of 9 July 1944 would unfortunately be more than offset by the operational hazards such a move would create.

6. It is regretted that your request for authority to move lighter-than-air units into Waller Field cannot be favorably considered.

Dispatched
27 July 44

Sgn
Gen. Arnold

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SAD 452.3 (3-27-43) (38)

Copy for AFSAS

SAD 452.3 (3873)

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DECLASSIFIED "DOD ltr"
8 Jan. & 20 July 1974 HEADQUARTERS ARMY AIR FORCES
By NAVK Ltr. Date 10/15/76

ROUTING DECLASSIFIED

TO: Secretary of Air Staff DATE

OFFICE OR SYMBOL	BUILDING
AFSAS	Pentagon
ATTENTION:	ROOM
General Timberlake	3 E 1045

FOR:

1-3	COORDINATION		INVESTIGATION		NEC. ACTION
	INFORMATION		RECOMMENDATION	4	SIGNATURE
	FILE		CONFERENCE		

REMARKS:

The attached letter to Commander in Chief, U. S. Fleet, Navy Department, regrets that his request for authority to move lighter-than-air units and activities into Waller Field from Carlsen Field, cannot be favorably considered for safety reasons. ATC and CG, CDC nonconcur in transfer. Originals of the Navy request and correspondence with ATC and CDC attached to central files copy herewith.

ROUTE TO: 1. ~~AFAEF Copy~~
2. AFSAS
3. AFDAS
4. AFACG (Signature)

FROM: Air Installations Division

NAME	OFFICE OR SYMBOL
Colonel George Mayo	AFDIN-1
PHONE	BUILDING / ROOM
6675	AAF Annex #1 / 1440

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Epc-997 SC-36178

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DOD ltrs.
8 Jan. & 20 June 1974
By [redacted],LC; Date 10/1/76

15 JUL 1944

SUBJECT: Transfer of Navy Lighter-than-air Activities from Carlson Field to Weller Field.

TO: Commander in Chief, U. S. Fleet,
Navy Department,
Washington 25, D. C.

1. Reference is made to your memorandum dated 9 July 1944, Serial: 02048, above subject. The agencies affected by the proposed transfer of Navy lighter-than-air activities from Carlson Field to Weller Field are being canvassed.

2. It is anticipated that a final reply can be made to your memorandum about 25 July.

For the Commanding General:

Signed [redacted]

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

SAS 452.3 (22)

Dispatched
15 JUL 1944
AAG

Copy for: AFACG

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SAS 452.3 (22)

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[redacted]
[redacted]
NAVY DEPARTMENT
WASHINGTON 25, DC

FF1/EM

Serial: 02545 9 JUL 44

CONFIDENTIAL

MEMORANDUM FOR THE COMMANDING GENERAL, U. S. ARMY AIR FORCES:

Subject: Transfer of Navy Lighter-Than-Air Activities from Carlson Field to Waller Field.

1. The Navy is currently transferring all Heavier-Than-Air units and activities now based on Carlson Field to Waller Field.

2. The Lighter-Than-Air units operating from Carlson Field consist of two blimps of MP Squadron ZH. These blimps are considered essential in order to provide adequate protection to the bauxite routes. Additional mooring masts are required to permit necessary staging of blimps to South America. Present estimates indicate that a minimum of 916 persons will be needed to support these Lighter-Than-Air activities at Carlson Field.

3. It is apparent that substantial savings will be effected if Lighter-Than-Air as well as Heavier-Than-Air activities can be transferred to Waller Field, thus making possible the abandonment of Carlson Field, and adjacent strips, except for civilian guards. Lighter-Than-Air operations are feasible by the use of four portable mooring masts so located on parking areas or possibly unused runways as not to interfere with land-planes using Waller Field. No blimp hangar is necessary.

4. Your authorization is therefore requested to transfer Navy Lighter-Than-Air units and activities from Carlson Field to Waller Field.

/s/ E. J. KING
Admiral, U. S. Navy

Copy to:
[redacted]
[redacted](AIR)
[redacted]

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Address reply to
COMMANDING GENERAL, ARMY AIR FORCES
WASHINGTON, D. C.

DECLASSIFIED
DOD ltrs.
8 Jan. & 20 June 1974
By: AFHRA,LC; Date 8/8/75

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WAR DEPARTMENT
HEADQUARTERS OF THE ARMY AIR FORCES
WASHINGTON, D. C.

AFAAA
15 February 1944

MEMORANDUM FOR CHIEF OF AIR STAFF:

Subject: Barrage Balloon Program

In compliance with your instructions the following information is submitted reference the barrage balloon program:

1. Status as of 31 January 1944:

THIS IS WHAT WE HAVE NOW & WHERE IT IS LOCATED. →

a. 1 Bn (VLA)- UK - 882 men.

b. 7 Bns (VLA) - ZI - 6174 men.

c. 3 Batteries (VLA) - NATO including Italy - 765 men

d. 1 Battery (VLA) - ZI - 255 men.

TOTAL - 8076 Men

2. The War Department 1944 troop basis recently approved requires inactivation of certain barrage balloon battalions.

3. Status as of 31 December 1944:

THIS IS WHAT THERE WILL BE AFTER THE CUT IS MADE. →

a. 1 Bn (VLA) - UK - 882 men.

b. 2 Bns - undeployed - 1764 men.

c. 3 Batteries (VLA) - NATO - including Italy - 765 men.

d. 1 Battery (VLA) - ZI - 255 men.

TOTAL - 3666 Men

Turns took Care of 50 balloons for the RAF.

H. R. OLDFIELD
Major General, U. S. Army
Special Asst for Antiaircraft

Noted by Gen. Giles + Gen. Arnold File mak

Have done them

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File 17 Feb 44

Air 452.3 (31)

Air Corps 452.3 (31)

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DOD ltr
6 Jun. & 20 June 1974
By Major JLC; Date 10/6/75

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AFDAS
TJR/ovm/6371

March 6, 1943.

MEMORANDUM FOR: Commanding General, Fourth Air Force.

SUBJECT: Barrage Balloons at Douglas Plant.

1. The Assistant Secretary of War for Air and the Commanding General, Army Air Forces, are much concerned over the protection of airplane factories within the Western Defense Command. From a study of photographs of the Douglas plant, it is evident that the balloon barrage employed in connection with its protection negatives the camouflage of the installation.

2. Under date of January 18, 1943, the Chief of Staff forwarded an indorsement to the Commanding General, Western Defense Command, stating in part that:

"f. Recommendations for the employment of balloon barrages is the responsibility of the Air Defense Commander.

"g. Final decision as to use and location of balloon barrages rests with Defense or Theater Commander."

3. It is earnestly recommended that you recommend to the Western Defense Commander the removal of barrage balloons from the Douglas plant and other installations of similar nature which have been camouflaged.

For the Commanding General, Army Air Forces.

Dispatched MAR 8 1943 AAG

GEORGE E. STRATEMEYER,
Major General, U.S.A.,
Chief of the Air Staff.

File
3/7/43

CPW: Dir. of Air Defense
Col.H.A.Barber, Jr. (OPD)

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Ai as 452.3 (34)

COPY FOR GENERAL STRATEMEYER

Ai as 452.3 (36)

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DOD ltrs
8 Jan. & 20 June 1974

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AFDAS
TJH/eva/6371

March 6, 1943.

MEMORANDUM FOR: Commanding General, Fourth Air Force.

SUBJECT: Barrage Balloons at Douglas Plant.

1. The Assistant Secretary of War for Air and the Commanding General, Army Air Forces, are much concerned over the protection of airplane factories within the Western Defense Command. From a study of photographs of the Douglas plant, it is evident that the balloon barrage employed in connection with its protection negatives the camouflage of the installation.

2. Under date of January 18, 1943, the Chief of Staff forwarded an indorsement to the Commanding General, Western Defense Command, stating in part that:

"f. Recommendations for the employment of balloon barrages is the responsibility of the Air Defense Commander.

"g. Final decision as to use and location of balloon barrages rests with Defense or Theater Commander."

3. It is earnestly recommended that you recommend to the Western Defense Commander the removal of barrage balloons from the Douglas plant and other installations of similar nature which have been camouflaged.

For the Commanding General, Army Air Forces.

Dispatched
MAR 8 1943
AAG

File
DK
3/9/43

GEORGE E. STRATEMEYER,
Major General, U.S.A.,
Chief of the Air Staff.

CPE: Dir. of Air Defense
Col. H.A. Barber, Jr. (OPD)

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DOD ltr 8 Jan. & 20 June 1974
By NARA, LC; Date 5/8/76

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SECRET
BY AUTHORITY OF A.C. OF S, OPD

WAR DEPARTMENT
WAR DEPARTMENT GENERAL STAFF
OPERATIONS DIVISION
WASHINGTON

3/5/43 (Date) WD (Initials)

March 5, 1943.

MEMORANDUM FOR GENERAL UPSTON:

Subject: Barrage Balloons at Douglass Plant.

I informed Gen. Hanley at 11:00 a.m. this date as follows:

The Chief of Staff (OPD) on Jan. 18, 1943 forwarded an indorsement to the CG, WDC reading as follows:

a. Balloon barrages, unless employed in concentrations over large areas, defeat the purpose of camouflage. If employed at all, they should be of sufficient density to be lethal.

b. Balloon barrages which are employed only at night in the vicinity of camouflaged installations must conform to the local camouflage pattern when bedded down by day.

c. When, due to geographical or constructional difficulties, effective camouflage measures cannot be taken, barrage balloons and/or smoke generators may be used.

d. Under conditions to be specified by responsible commanders, control tower personnel, located at fields in the vicinity of balloon barrages, should be authorized to lower or bed balloons obviously a hazard to a particular flight or flights.

e. To minimize some of the damage caused when bedded down balloons break away during high winds, their cables should be removed. In exceptional cases, if breakaways of bedded balloons cannot otherwise be avoided, consideration should be given to the use of the British Type T/7 cradle beds.

f. Recommendations for the employment of balloon barrages is the responsibility of the Air Defense Commander.

g. Final decision as to use and location of balloon barrages rests with Defense or Theater Commander.

Note: This action had the concurrence of the Director of Air Defense.

452.3 (35)

y.le 3/7/43

Gen Hanley
Chas called away this morning so asked Col Barber to furnish you the information you requested. Hope this fills the bill
Upston

HENRY A. BARBER, JR.,
Colonel, G. S. C.,
Chief, North American Theater,
Theater Group, OPD, G.S.

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DOD ltr 6 Jan. & 20 June 1974
By [illegible] LC; Date [illegible]

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DEC 28 1942

MEMORANDUM FOR MR. LOVETT:

Subject: Follow-up on Barrage Balloons at Aircraft Plants.

1. General Stratemeyer made an investigation on December 27th and obtained information from O.P.D. that they had forwarded my memorandum for the Assistant Chief of Staff, Operations Division, subject: "Barrage Balloons in Vicinity of Camouflaged Installations", with other papers on the same subject listed as enclosures, copy of which is attached, to the Western Defense Commander on November 27th. Their forwarding indorsement stated generally the following:

a. Barrage balloons tend to defeat the purpose of camouflage.

b. A study of passive defense measures under his control will be made with the view to submitting recommendations relative to their employment.

c. Since smoke generator units and barrage balloon units are required, an early reply is desired.

2. I have forwarded your memorandum of December 26th to the Assistant Chief of Staff, Operations Division and have requested information as to what action has been taken reference my memorandum to O.P.D., which is referred to above.

Dispatched
DEC 28 1942
AAG

Sgd. H. H. Arnold

H. H. ARNOLD,
Lieutenant General, U. S. A.,
Commanding General, Army Air Forces.

Inel:
Cy of Memo to O.P.D.
dtd 11-25

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COPY FOR MR. GRAY

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AAG 452.3 (33) a

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DOD ltrs
8 Jun. & 20 June 1974
By NNDB, LC; Date 8/8/74

(AFRAD/AAA)

November 25, 1942

MEMORANDUM FOR ASSISTANT CHIEF OF STAFF, OPERATIONS DIVISION:

Subject: Barrage Balloons in Vicinity of Camouflaged Installations.

1. Attention is invited to the attached correspondence.

2. Barrage balloons defeat the purpose of camouflage. If barrage balloons are used in the vicinity of an installation they should be present in sufficient density to afford in themselves an effective passive defense against air attack, and no camouflage measures should be taken. Equally, if camouflage measures are taken, barrage balloons should not be used, since they defeat the purpose of camouflage.

3. In the case of Pacific Coast aircraft factories effective camouflage measures have been taken. The purpose of this camouflage is defeated by the presence of barrage balloons.

4. It is recommended that barrage balloons be eliminated in the vicinity of well-camouflaged installations in the continental United States.

For the Commanding General, Army Air Forces:

MORRIS R. NELSON
Colonel, Air Corps
Acting Director of Air Defense

Incls:
#1 R/R #1,11/23/42, for AFCAS subj: "Balloon Barrage".
#2 Memo for Gen. Arnold frm Assist. Sec. of War for Air 11/19/42
#3 Memo for Asst. Sec. of War For Air Fr Col. Rosenblatt 11/18/42 w/2 photographs.

JAB:mlp
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DOD ltrs.
8 Jan. & 20 June 1974
By: AAG/NARS, Date: 10/15/76

December 27, 1942

MEMORANDUM FOR THE ASSISTANT CHIEF OF STAFF, OPERATIONS DIVISION:

Subject: Barrage Balloons in Vicinity of Camouflaged Installations.

1. Your attention is invited to memorandum for General Arnold, subject: "Follow-up on Barrage Balloons at Aircraft Plants" from Assistant Secretary of War for Air, Robert A. Lovett.

2. A memorandum was forwarded to you on November 25th inviting attention to certain correspondence, subject: "Barrage Balloons in Vicinity of Camouflaged Installations," copy of which is attached.

3. The Commanding General, Army Air Forces desires information reference the action that has been taken on our recommendations that Barrage Balloons be eliminated in the vicinity of our camouflaged installations in the Continental United States.

For the Commanding General, Army Air Forces:

Dispatched
DEC 28 1942
AAG

GEORGE E. STRATEMEYER,
Major General, U.S.A.,
Chief of the Air Staff.

Incl:
Memo to Gen.Arnold fr Mr. Lovett
dtd 12-26-42
Cy of Memo for OPD fr Col. Nelson
dtd 11-25

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8 Jan. & 20 June 1974
By LTR/WSLC; Date

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WAR DEPARTMENT
OFFICE OF THE ASSISTANT SECRETARY FOR AIR
WASHINGTON, D.C.

December 26, 1942

MEMORANDUM FOR GENERAL ARNOLD

Subject: Follow-up on Barrage Balloons at Aircraft Plants

My file raises for follow-up the matter of the use of barrage balloons in the neighborhood of aircraft plants on which a memorandum dated November 19 was sent to your office.

In that memorandum attention was invited to the feeling among the aircraft manufacturers that the completion of the camouflage program had perhaps made the use of the barrage balloons unnecessary in view of the hazard to air navigation as well as the cancelling effect which these balloons had on the general camouflage scheme.

Word from the Western Procurement District at Santa Monica indicates that as of December 11, the barrage balloons were still located at the Boeing Aircraft Company plant, Seattle, Washington; Douglas Aircraft Company plants, Santa Monica and Long Beach; Consolidated Aircraft Corporation plant, San Diego, and the North American Aviation plant, Inglewood, California. Apparently, the balloons at the Boeing plant in Seattle have been camouflaged by the use of green paint which is considered at least partically effective. The statement is made that efforts "to effect camouflage of the balloon bases in the Los Angeles .....have been made.....but to date this method has been ineffective."

The aircraft contractors still feel that the balloons constitute a hazard not only to air navigation but more particularly to the actual operation of their plants, several of which have been shut down for varying periods of time as a result of the balloons breaking away from their moorings and dragging cables across power lines.

The Western Procurement District points out, on the other hand, that there may be tactical necessity for this type of defense which they know nothing about but suggest that higher authority be requested to make a decision if they have not already done so.

The above information is passed on to you merely for follow-up purposes.

/s/ ROBERT A. LOVETT
Assistant Secretary of War for Air

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8 Jan. & 20 June 1974
By: [illegible], LC; Date [illegible]74

(AFRAD/AAA)

November 25, 1942

MEMORANDUM FOR ASSISTANT CHIEF OF STAFF, OPERATIONS DIVISION:

Subject: Barrage Balloons in Vicinity of Camouflaged Installations.

1. Attention is invited to the attached correspondence.

2. Barrage balloons defeat the purpose of camouflage. If barrage balloons are used in the vicinity of an installation they should be present in sufficient density to afford in themselves an effective passive defense against air attack, and no camouflage measures should be taken. Equally, if camouflage measures are taken, barrage balloons should not be used, since they defeat the purpose of camouflage.

3. In the case of Pacific Coast aircraft factories effective camouflage measures have been taken. The purpose of this camouflage is defeated by the presence of barrage balloons.

4. It is recommended that barrage balloons be eliminated in the vicinity of well-camouflaged installations in the continental United States.

For the Commanding General, Army Air Forces:

MORRIS R. NELSON
Colonel, Air Corps
Acting Director of Air Defense

Incls:
#1 R/R #1,11/23/42, for AFCAS subj: "Balloon Barrage".

#2 Memo for Gen. Arnold frm Assist. Sec. of War for Air 11/19/42

#3 Memo for Asst. Sec. of War For Air Fr Col. Rosenblatt 11/18/42 w/2 photographs.

JAB:mlp
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8 Jan. & 20 June 1974
By [illegible] Date 10/17/74

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[redacted] HEADQUARTERS [redacted] FORCES

ROUTING AND RECORD SHEET

TALLY NO.	
FILE NO.	

SUBJECT: Barrage Balloons in the Vicinity of Camouflaged Installations

ITEM NO.	FROM	TO	DATE	COMMENTS AFRAD/AAA
1.	AFRAD	AFCAS	1942 12/1	RT/grs 72427

DEC 2 '42 PM

RECEIVED
Air Adjutant General

1. Attention is invited to memorandum for the Asst. Chief of Staff, OPD, subject: "Barrage Balloons in the Vicinity of Camouflaged Installations", dated Nov. 25, 1942, copy of which is attached hereto.

2. This memorandum was coordinated with AFACT, AFADS and AFAEP on Nov. 26, 1942, and carried by hand to the OPD, WDGS on the same day.

1 Att: Memo for Asst. C/S OPD, as listed above.

GORDON P. SAVILLE
Brig. Gen., U.S.Army

H.H.A.

File

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DOD ltrs.
6 Jun. & 20 June 1974
By: NWD, OCT, Date: 10/18/76

(AFRAD/AAA)

November 25, 1942.

MEMORANDUM FOR ASSISTANT CHIEF OF STAFF, OPERATIONS DIVISION:

Subject: Barrage Balloons in Vicinity of Camouflaged Installations.

1. Attention is invited to the attached correspondence.

2. Barrage balloons defeat the purpose of camouflage. If barrage balloons are used in the vicinity of an installation they should be present in sufficient density to afford in themselves an effective passive defense against air attack, and no camouflage measures should be taken. Equally, if camouflage measures are taken, barrage balloons should not be used, since they defeat the purpose of camouflage.

3. In the case of Pacific Coast aircraft factories effective camouflage measures have been taken. The purpose of this camouflage is defeated by the presence of barrage balloons.

4. It is recommended that barrage balloons be eliminated in the vicinity of well-camouflaged installations in the continental United States.

For the Commanding General, Army Air Forces:

MORRIS R. NELSON
Colonel, Air Corps
Acting Director of Air Defense

Incls:
#1 R/R #1,11/23/42,for AFCAS subj:"Balloon Barrage".
#2 Memo for Gen. Arnold frm. Asst. Sec. of War for Air 11/19/42.
#3 Memo for Asst. Sec. of War for Air fr.Col.Rosenblatt, 11/18/42, w/2 photographs.

JAB:mlp
AFRAD/AAA

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A DOD ltrs
8 Jan. & 20 June 1974
By NARS, Date 6/21/76

HEADQUARTERS ARMY AIR FORCES
ROUTING AND RECORD SHEET

SECRET DECLASSIFIED File No. _____

Note -- A line will be drawn across sheet after each comment. Safety No. AAF _____

SUBJECT: The Value of Balloons for Protection of Craft and Beach Areas.

NO.	FROM	TO	DATE	COMMENTS
1.	AFACT	AFCAS	1942 6/17	MMacC:hl 1. The attached secret document was referred to Headquarters Army Air Forces as a matter of information only. 2. The reference to Paragraph J is a matter of primary interest to the Army Ground Forces since the training of Barrage Balloon Units is a matter of the Army Ground Forces under the Anti-Aircraft Artillery Command. Incl: B/7/15 (Br. Joint Staff Mission Report) H.S.V. C/AFACT
	Army Air Forces 18 1942 Received			
2	CAS	MAG	6-18	For files JCW 3/45

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BRITISH JOINT STAFF MISSION

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OFFICES OF THE COMBINED CHIEFS OF STAFF

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WASHINGTON.

Ref: B/7/15

12th June, 1942.

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Authority NND 760030 By [illegible] Date 2 Jan 75

TO: War Department
(O.P.D.)

At the request of Colonel Walker, Special Activities Section, Headquarters, Army Ground Forces, a suggested list of points on training of Army Divisions in amphibious operations was prepared and submitted.

2. This list was also sent to the Chief of Combined Operations' office, for suggestions and criticisms, and the following additions to the list have been recommended by the Vice Chief of Combined Operations :

(a) Staff Training. The divisional staff must realise that they will have to plan the operation and in doing so have the aid of naval and air officers. In the course of their work they will come to realise that on nearly every point one or other service has to give way slightly on what they would like to have. The result is necessarily a compromise. What is essential is that it should be a joint compromise and not the result of a joint disagreement.

(b) The staff must rehearse in working from the probably confined and inconvenient amount of space which can be allotted to it in the headquarters ship. Unless rehearsals are carried out the problem won't be realised and allowed for.

(c) The study of air photographs is a necessity not only for divisional headquarters but also for the units of the division. Memorisation of ground by individual men, as opposed to unit commanders only, is a requirement.

(d) Firing from boats as they approach the shore should be practiced; Small arms and mortars should both be employed.

(e) Each man should be trained to carry the exact load with which he will have to land.

(f) Night firing will constitute an important branch of training.

(g) Unless there is a lavish supply of engineers; the task of clearing beach obstacles will probably have to be delegated to infantry units. The ideal would be to have [illegible] demolition parties of 8 - 10 men in each platoon. Such parties need not be complete technical experts but should be skilled enough to take on not only the clearing of beach obstacles but other demolition tasks of a straight forward nature.

(h) The detection and clearing of beach mines is important and troops require training in it.

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(i) The use of smoke to cover craft as they go in and withdraw requires study and practice. Similarly, the covering of the landing place area with smoke should be practised. The latter means allotting a certain amount of shipping space to the carriage of generators, but if the air threat is important then the sacrifice of the space may be well worth while.

(j) The value of balloons for the protection of craft and beach areas needs examination.

(k) Everything must be done to improve the waterproofing of vehicles so as to increase their wading capacity.

(l) Every sub-unit down to platoons or their equivalent should have a number of men who have gone through a really advanced first aid course. The presence and skill of such men tides over the long period which might otherwise elapse between the men being wounded and the time at which he can get proper attention in a hospital or other ship.

(m) The evacuation of wounded and the provision of stretchers, blankets and a medical haversack in landing craft needs study.

(n) In dealing with the intercommunication problem, especially the link between ships and shore, the rule to follow is to duplicate and even triplicate the ways in which communication can be opened and maintained.

(o) In night assault each detachment should be allotted a definite task and should make for that task regardless of what is happening to right or left. If they carry this rule into practice then it is probably the way in which they can best help the operation as a whole.

(p) In operations of a short raid nature very careful arrangements must be laid down in orders regarding the latest time by which all ranks must have reached the place of re-embarkation and the latest time by which they must have been re-embarked. If such arrangements are not strictly adhered to then the safety of the whole force might be jeopardised by having to wait for a few boat loads of people who had taken too long over their tasks.

(q) It is most important, particularly in a combined operation, that every man should know exactly what is going to happen. Without this knowledge the men cannot be expected to co-operate intelligently. If there are models available, and there should always be, then companies and platoons should be given the chance to study them.

(r) As always, security is essential. It is most difficult to arrange for. The best answer is no doubt to have an area which is definitely and completely closed to outside sources. Obviously all ranks cannot be told exact details until they are in such an area or embarked in ships and out of touch with possible sources of leakage.

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3. A copy of the original list of points is enclosed for information. It is hoped that these "Points on Training" which have been worked out in the light of our experience may prove of assistance.

A V Boyle
Major, G.S.

Copy to:-

1. Headquarters, Army Ground Forces.
(Col. Walker, Special Activities Section).

2. Col. Keating, Commandant, Amphibious Training Centre.

3. Major-General Willson, Chemical Warfare Service.
(With special reference to Sub-para. (i).)

4. Commanding General, Engineer Corps.
(With special reference to Sub-para. (h).)

5. Headquarters, Army Signals.
(With special reference to Sub-para. (n).)

6. Colonel Gillespie, R.A.M.C., C/o British Army Staff.
(With special reference to Sub-paras. (l) and (m).)

7. Headquarters, Army Air Corps.
(With special reference to Sub-para. (j).)

8. Headquarters, Atlantic Amphibious Corps.
(With special reference to Sub-paras. (p) and (q).)

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POINTS FOR TRAINING

(1) TRAINING OF AN INFANTRY BATTALION

1. Getting accustomed to boats.
2. Training in the correct position to which each man goes in the boat.
3. Training getting into and out of boats in full fighting equipment really quickly and silently.
4. Crossing wire in the dark quickly and silently.
5. Once debarked, getting well clear of the beach quickly and the sub-unit Commander then taking control ready to advance again.
6. Coming out of a boat under fire and moving inland, providing covering fire from the craft and from positions on the beach.
7. Knowing how to communicate back to the beach and to the flanks.
8. Knowing the various rocket signals.
9. Knowing the various beach signs.
10. Drivers driving trucks, tanks, machines etc. on to and off a craft quickly.
11. Drivers knowing how to dirve on a beach roadway.
12. Knowing how to co-operate with light artillery, tanks, etc.
13. Knowing the various visual signals between air and ground.
14. Knowing how to call for air and/or artillery support.
15. Living hard, i.e. carrying all food required for 2 days, little sleep or water, hard fighting.

(2) TRAINING OF ENGINEERS

1. Practice reconnaissance of beaches and rapid estimate of engineer work involved in making them passable for vehicles.
2. Practice reconnaissance of routes inland from a beach and rapid estimate of work involved in dealing with demolished bridges, cratered defiles, etc., bearing in mind the limited equipment likely to be available.
3. Rapid preparation, laying and firing of explosives in the dark for the demolition of artificial obstacles.
4. Laying beach roadway.
5. Construction and use of vehicle landing ramps.
6. Erection of improvised bridges over spans up to 30 ft. using material likely to be found locally.
7. Construction of causeways over fordable streams.
8. Training in the improvisation of cargo handling facilities where no docks exist.
9. Handling stores over beaches.
10. Rapid construction of temporary piers.
11. Reconditioning of ports.

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(3) TRAINING OF ARTILLERY INCLUDING ANTI-AIRCRAFT

1. Training loading different types of craft with guns, tractors, predictors, ammunition and personnel.
2. Practice driving on and off craft quickly.
3. Practice use of winches.
4. Practice backing vehicles onto craft.
5. Practice control of driving backwards and forwards, by means of hand signals.
6. Practice in driving across beaches and coming into action (for Anti-Aircraft guns) on beaches.

(4) TRAINING OF COMMUNICATION PERSONNEL

1. Training and practice in quick netting.
2. Practice in Naval procedure and Inter-Allied procedure.
3. Knowledge of the communication lay-out.

(5) TRAINING OF SUPPLY AND ORDNANCE PERSONNEL

1. Rapid reconnaissance of beach areas.
2. Laying out rapidly dumps and depots with suitable turn rounds for vehicles etc.

(6) TRAINING OF MEDICAL PERSONNEL

1. Knowledge of tactical handling of a field ambulance in assault landings.
2. Knowledge of most essential medical stores in an assault landing and best method of stowage to ensure correct sequence of unloading.
3. Knowledge of sequence of and responsibility for evacuation of wounded right back across the water.
4. Practice embarking casualties.

(7) TRAINING OF STAFF

1. Knowledge of the object and type of operation.
2. Tactics of landing fighting troops.
3. Tactics of Field Artillery, Anti-Aircraft Artillery and A.F.V. support.
4. Tactics of Air support.
5. Tactics of Naval support.
6. Knowledge of Beach Organisation.
7. Knowledge of Supply problem.
8. Knowledge of Communications problem.
9. Knowledge of and practice in preparation of orders and instructions for an amphibious force.
10. Practice in handling forces, half of which are ashore and half afloat.

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(8) GENERAL POINTS FOR ALL TYPES OF UNIT

1. Practice to determine the absolute minimum essentials to be landed with the troops. Craft will NOT be available for normal vehicles, equipment or stores and every item landed which is not vital is delaying some store which is vital.

2. Practice to determine the best and most economical method of stowage of all men, equipment and stores.

3. Constant practice in smoke or darkness without a sound or a light of any sort.

4. Training in living "hard", i.e. carrying all their food for 48 hours, very little sleep or water, and working and fighting at tremendous pressure for days on end.

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By: [illegible] Date: [illegible]

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2 AFMAG AFAMC (Att: Gen. Chidlaw) 11-11

1. Attention is invited to the attached file on "Use of free balloons for distribution of incendiaries".

2. This file has recently been received in this office from Colonel Holland (AFRIT), In view of the length of time that has elapsed since action has been taken in the case and in view of your interest in the ma ter as set forth in Item #1 of R&R dated June 4, 1942, (Incl. #1), information is requested as to whether the project in question is still an active one or whether the project has been abandoned.

J.B.COOLEY
Col., A.C.D.
Asst. Air A.C.

3 Incls. n-c

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INTERNAL OFFICE COORDINATION					

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8 Jan. & 28 June 1974
By: AMALC; Date 31 JUL 74

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Return of Classified Documents

LIC:Mrk 73469

1. AFRIT-4 AFMAS 1942
Att'n: 11-9
Col.
Milner

1. The inclosed secret documents were received from Edward M. Hill, Colonel, Air Corps, Air Inspector. Due to the transfer of Colonel Harvey H. Holland, Air Corps, from AFRIT to AAFTTC, the inclosed are being transmitted for proper disposition.

2. Request that receipt be furnished acknowledging these documents.

HARVEY H. HOLLAND
Colonel, Air Corps

Incls.
#1 - Use of Free Balloons for Distribution of Incendiaries - 2 & 2 June 25, 1942, with 2 Incls.

#2 - Figured & Data June 24, 1942 Memorandum - with 2 Incls.

#3 - Ltr. Incls. Entire File Balloons.

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HEADQUARTERS ARMY AIR FORCES

Lucky Balloons.

May 28, 1942

Dr. Vannevar Bush, Director
Office of Scientific Research & Development
1530 P. Street N. W.
Washington, D. C.

Dear Dr. Bush:

As General Arnold is out of the city for an indefinite period, I am replying to the letter of Mr. Carroll L. Wilson, Senior Liaison Officer, prepared at your request to General Arnold, with reference to "Vinylite" film balloons as presented by the National Carbon Company, Inc., as of May 20, 1942, which is inclosed herewith.

The information contained in Mr. Warren's letter is most interesting, and in fact is very nearly identical to the thought proposed by me. There is the one exception of course that Mr. Warren proposes a balloon without altitude control, and which consequently would be good for short distances only, since it would probably either burst or drop to the surface of the earth, as it would be difficult in such a type of balloon to secure static equilibrium. However, if properly trimmed prior to release, it would probably not burst or settle to earth too early to reach objectives not too far distant. It appears that the use of such a type of balloon might be feasible for area targets within ten (10) or fifteen (15) miles of the point of release, and under conditions of strong winds for longer distances. Experimentation would of course determine under what conditions its use might be practicable.

I am sure that General Arnold is interested in this project and I am hopeful that the meeting that you suggested can be effected in the near future, as I would like very much to be personally present at the time of

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the meeting. As my duties are that of Inspector for the Army Air Forces, I am frequently out of the city for prolonged periods of time, but do not expect to leave within the next week. Suggest Colonel Harvey H. Holland, whose telephone number is War Department 2086, also be included, as he is an expert on aerostatics and has had wide experience in lighter-than-air.

Very sincerely,

EDMUND W. HILL,
Colonel, Air Corps,
The Air Inspector.

Incls.

HEADQUARTERS—ARMY AIR FORCES — COORDINATION

Chief of Staff	Dep'y Chief of Staff	A. A. G.	A-1	A-2	A-3	A-4	A-WPD				
								Col. Edmund W. Hill Air Inspector			

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6 Jan. & 20 June 1974
By [illegible], D.C. Date 6/14/74

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May 22, 1942

Lt. General H. H. Arnold
Commanding General, Army Air Forces
Room 2017, Munitions Building
Washington, D. C.

Dear General Arnold:

Dr. Bush has asked me to send you the enclosed letter with reference to balloons, which you may wish to refer to Colonel Hill. This is in connection with the proposal submitted to you recently by Colonel Hill, and which you sent on to Dr. Bush for comment. The attached was received after Dr. Bush has replied to your letter. We should appreciate it if the enclosures could be returned to us after they have served your purposes.

Very sincerely yours,

Carroll L. Wilson
Senior Liaison Officer

Enclosures

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8 Jan. & 20 June 1974
By [illegible]; Date [illegible]

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May 20, 1942

Dr. Robert W. King
1530 P St.
Washington, D. C.

Dear Dr. King:

Confirming conversation, I attach hereto a memo, some snapshots and an extremely crude sketch from Mr. R. R. Smith of our Cleveland development unit which is now working on the application of "Vinylite" film and sheeting to Army-Navy problems.

The idea covered by these attachments contemplates an attack against which no direct defense is possible. It consists of floating incendiary bombs (etc.) over enemy territory, such bombs to be fastened to small balloons made of .004" "Vinylite" film -- diameter approximately 5.25' -- the bomb to be released from the balloon by an inexpensive timer set for a time-interval as determined by wind velocity and distance to the enemy objective. In other words, the bomb drops, the balloon floats on.

This kind of attack has the obvious disadvantage that only a very rough control as to exact geographic release-point is possible. That disadvantage, however, would seem to be somewhat offset by:

(a) the fact that no man power is risked.

(b) lower cost of delivering a given number of bombs, as compared with dropping the same number of bombs from planes.

(c) the surprise element, and attendant psychological factors.

(d) the fact that bombs can be dropped in weather not suited to flying.

Instead of incendiary bombs, the English type phosphorous "Calling cards" could be dropped, in which case much smaller balloons could be used.

The idea is also applicable to gas and bacteriological warfare, (v. my suggestion, submitted through National Inventors Council, regarding spreading rice blast in Japan).

While I visualize a balloon attack as being launched from land

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such as the Channel Coast of England, balloons could also be launched from submarines. Space in a submarine is at such a premium, however, that I doubt whether the idea has much value in that particular application. Still, it might be worth exploring from the point of view that a very small number of incendiaries can set a large number of forest fires, etc. (Incidentally, Rutgers University has some good data on the the incidence of fires in Japan, by months of the year).

"Vinylite" is a critical material, but so is almost everything else. I believe, from what I know of the situation, that WPB would unquestionably allocate for this purpose if Army, Navy or Land-Lease were anxious to proceed.

Attached are some snapshots of a balloon, somewhat larger than the size proposed, released by our Cleveland people. This particular balloon was made from film like the sample submitted herewith. Seams were heat sealed. The balloon carried 2-1/4 lbs. of dirt, travelled to a height estimated at 25,000' and disappeared, going strong, over Lake Erie.

Mr. Smith has not had enough time to get, in complete detail, all necessary data. If the NDRC is interested we will be glad, of course, to do more work. Meanwhile, this is enough to prove that such balloons can be made, and that they will lift objects the weight of incendiary bombs to sufficient altitudes to catch winds at varying distances above the earth.

Cordially yours,

H.M.Warrenton

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SMALL BALLOONS

Size of Balloon to Lift Bomb approx. 2.25# -- Capacity 75 to 80 cu. ft. about 4.25' diameter; inflated to 5.25'. Weight of balloon approx. 1.6#. Weight of balloon plus timer approx. 1.75#.

Assume desired altitude of 10,000'.

Wt. of Air	.055459
" " hydrogen	.003840
Lift "	.051619

Wt. of balloon- timer	1.75#
" " bomb	2.25
Total	4.00#

Weight divided by lift = cu.' of gas required
4 - .051619 = 77 - cu.'.

77 cu.' = 5.25' diameter (75.76)

We believe that an additional 15 to 20% of hydrogen can be employed (for greater altitude) using the material as per sample enclosed. More highly plasticised material might permit as much as double the amount of hydrogen before the balloon burst.

Normally, the expansion of gases varies with the change in temperature, but air and hydrogen have practically the same expansion per degree of change. As the balloons rise, temperature of 15° C at sea level would be about -4.8 at 10,000'. Such a change would not affect the buoyancy of the balloons.

Porosity-Dispersion of Hydrogen through Film -- No data available as yet. We believe that if clear stock (as per sample) is employed, this is not a factor of importance.

Seams -- Heat sealed.

Construction Rate -- One heat sealing machine, approximately 15 balloons per hr.

Cost -- Per balloon, approximately $2.50; timer and clamp, approximately $.50.

Means of Inflating -- No data. We believe that a system employing manifolds and automatic measuring devices can be made fairly inexpensively.

Test Balloons -- The balloon shown in accompanying snapshots was 5' in diameter, inflated to about 6'. It weighed 2.25# and had a lift of about 5.75# plus its own weight. This checks with theoretical data as follows:

Wt. of air at sea level	.080728
" " hydrogen at sea level	.005590
Lift	.075138

Diameter 6' = 113.1 cu.' capacity
113.1 x .075138 = 8.498# lift

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Actual Sample:	Balloon material	2.25#
	Weight attached	2.25
	Excess lift	3.50
		8.00#

These weights were taken with a cheap spring balance, and an error in readings could explain the difference shown.

R. R. Smith
May 18, 1942

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Voucher No. 40971
5050
10-900-11 - Harpers - Page 1
Gal. 1 - One Way to Cripple Japan
MCNICHOLS

Tromblay

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Japan's early victories have proved her strength to be just what competent observers predicted long before this war began. On the fighting front she has an excellent general staff, a superb infantry, and a fanatical will to win. On the home front she has a disciplined, hard-working population that willingly shoulders its present burden of long hours of toil and increasing privations because of a firm belief that the Emperor's army and navy will keep the home soil inviolable and at the same time continue to win victories afield until the Japanese attain their predestined place as world rulers.

Her weakness, likewise, is just as predicted, although the press and public both have seemed to overlook the fact. Her aviation has not been effective unless it has caught the enemy sound asleep or in greatly inferior numbers. Her artillery is not good and her naval gunnery is bad. But her great weakness is at home--in the concentration of all her vital industrial production in a few small areas very vulnerable to aerial bombing.

The largest and most vital of these concentrations is in the Osaka Bay district, in which are located about half of Japan's heavy industries, including ship-building and the manufacturing of motors, engines, and railway equipment, as well as a major portion of her chemical, electrical, textile, and machine-tool industries.

To get a rough idea of the concentration of both production and population in this area, imagine the lower end of Lake Michigan as Osaka Bay, with Chicago's three and a half million people crowded into about a quarter of her present area (the city of Osaka); with all of Detroit's industries and all of her population moved to Gary, Indiana (the city of Kobe); and with Pittsburgh and Toledo jammed together into a twenty-square-mile area around Chicago Heights (the city of Kyoto).

Owing to the great influx of workers for war industries, the present population of Osaka, Kobe, Kyoto, and their several contiguous suburbs is probably seven million, of which nearly five million live and work in one- and two-storey paper-and-plyboard houses packed together almost wall to wall in the older, central sections of the three cities.

These cities are highly vulnerable not only to bombing but to the easiest and cheapest type of bombing--the broad-casting of many small incendiaries over a comparatively wide area by a few large, long-range planes flying above anti-aircraft fire.

The Germans tried this "area bombing" over London and after some initial success abandoned or greatly modified it because the percentage of the London area that is covered by combustible structures was too low. All the accounts in technical publications agree that about fifteen per cent of London's metropolitan area is covered with buildings that are inflammable to a greater or lesser degree, while eighty-five per cent is parks, pavement, bodies of water, and fireproof buildings. So out of a thousand incendiaries dropped at random over the London area, only one hundred and fifty would hit anything that might burn.

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Furthermore, it was discovered that about half of these one hundred and fifty bombs would glance off brick walls or steep slate roofs and burn out harmlessly on the pavement below, leaving only seventy-five individual problems for the fire wardens. And because London is primarily a brick-and-plaster city--in which only its wooden beams, wooden floors, furnishings and stored goods are inflammable--most of those seventy-five incendiaries (out of the original one thousand) would fall in places sufficiently fire-resistant to allow vigilant fire wardens to deal with them by methods now widely known before a real blaze could be started.

In places that are a hundred per cent inflammable, say in a waste-basket full of rumpled paper, none of these methods would work because of a thermite-magnesium bomb--the most effective type-- would set the paper ablaze practically at the instant of contact, and certainly during the first minute when it would still be violently ejecting flaming thermite through the slots in the magnesium case.

We will put the average inflammability of London structures at twenty-five per cent, which is probably too high. At all events it is low enough so that the watchers can often delay attempts to isolate or smother an incendiary until after the first violent phase of combustion is over and the magnesium case is burning placidly at a mere twenty-three hundred degrees Fahrenheit.

Yet in London, where the average coverage is only fifteen per cent and the inflammability of that coverage is twenty-five per cent or less, much damage was done by incendiaries alone until a considerable part of the population was assigned to duty as fire wardens.

II

In its fire-resistant qualities Tokyo compares much more favorably with London than do the other great Japanese industrial cities. After the great earthquake and fire of 1923 authorities in charge of reconstruction cut a hundred new wide streets through Tokyo, established fifty new parks and squares, and saw to it that throughout the central section of the city a number of fire-proof, earthquake-proof buildings were erected.

The Japanese could not afford to build a completely modern city, and the standard wood-and-plyboard houses sprang up all round the modern buildings. But the parks, the wide streets, and the occasional rows and blocks of modern buildings are all effective fire-breaks. Further they reduce Tokyo's combustible coverage to about twenty per cent--as against London's fifteen. The inflammability of much of that coverage is far higher than London's--probably three times as high--but there is no likelihood of causing a city-wide conflagration in Tokyo with a few cargoes of incendiaries.

An effective bombing of Tokyo would be a costly multiplane job, involving precision bombing of limited objectives such as the central station, the naval arsenal, shipping installations and several scattered industrial areas, as well as widespread incendiary bombing. The same applies for the adjacent Yokohama area which has been widely modernized since the big earthquake.

About half way between Tokyo and the cities around Osaka Bay is Nagoya, a very important port town and industrial center with a wartime population approaching two million. Most of Nagoya's large industrial installations

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are quite new and the greater part of them are housed in modern buildings, such as are now common in the Tokyo-Yokohama area. But much of Nagoya's small industry and about seventy-five per cent of its population are housed in squat flimsy Japanese structures crowded together on narrow cluttered streets in the central section where there are few parks or other open areas. The average combustible coverage in Nagoya is around fifty per cent--higher in the central district. The over-all inflammability of this coverage must be about sixty per cent.

In other words, out of a thousand incendiaries scattered across Nagoya, five hundred would hit something that would burn, and probably more than three hundred would start fires before any preventive measures could be put into effect.

But none of these towns offers such a combustible target as the cities of Kyoto, Kobe, and Osaka.

Kyoto, lying at the inland apex of the vital Osaka Bay triangle, with a war-time population of a million and a half, has an over-all roof coverage that is somewhat less than Nagoya's, probably forty per cent, because in Kyoto there are several open areas--parks, temple grounds, and the like--and some comparatively wide streets. But except for these the coverage is very high, notably in the slums about the main railway station. The inflammability is high because there are very few modern buildings. Most of Kyoto's industry is carried on in family dwellings or structures of similar type. Before the war with China a large part of the population made ornamental objects of brass and iron and a great deal of lacquer and cloisonne work. Then one after another of the narrow streets in which these artisans lived and worked was barred to foreigners. The supposition is that the metal workers are making parts for arms and transport equipment and that the former manufacturers of lacquer are making explosives.

An American business man, returning from Kyoto late in 1940, said, "I don't know just what they're making, but it explodes frequently."

Kobe lies on the bay west of Osaka. Its wartime population is about a million and a half and it is Japan's largest shipbuilding center. Kobe's older districts, such as the Shinkawa section with its five-and seven-foot streets, are appallingly crowded, but that part of town that has been built up along the hills to the north is fairly open. Perhaps sixty per cent would be high for Kobe's over-all roof coverage, with eighty per cent along the water front.

In Osaka congestion approaches the unbelievable. Its three and a half million people, five hundred thousand buildings, seven thousand factories--not counting innumerable home industries--are crowded on the mud-flat delta of the Yodo River.

On the map Osaka looks as though it should be fairly impervious to widespread fires because several arms of the Yodo run through it and the whole area is crisscrossed by what the guidebooks call "navigable canals." The fact is that all but a score of these canals are navigable by pole-push sampans only, and many of them are eight to ten feet wide, Osaka's streets are almost as narrow. Many of the "through" streets are fifteen feet wide and the bystreets are rat-runs where a large man can thrust out his elbows and strike the buildings on either side. Even the famous Shinsui-bashisuji, the principal business thoroughfare, is no wider than some of the streets in the old quarter of New Orleans.

The central section of Osaka is particularly devoid of parks and other open areas. There is a strip of grass and a double row of trees along the bank of one of the larger canals, paralleling the principal business district that is called a park. Many Japanese propaganda pictures show these trees with

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a couple of modern-looking buildings in the background with some such title as "Modern Osaka, the Chicago of Japan," to give the impression that this city really is modern, but most informants who have spent some time there report that there are not more than a hundred Class A buildings in the whole town. These include the plants of the two great newspapers, the Osaka Mainichi and the Asahi Yshimbun, a few stores and commercial buildings, and certain recently built units of the larger industrial plants.

After some considerable calculation we have determined that the combustible coverage in the twenty-five-square-mile area that is the central section of Osaka is eighty per cent, as opposed to fifteen per cent for London. This might seem to be too high, even for Japan, but an American student who climbed the Tennoji pagoda while it was being re-built following a typhoon a few years ago, wrote "Looking either toward the river or the bay I saw a choppy sea of dirty gray roofs. No street or canal was visible anywhere." The same student puts the combustible coverage at ninety per cent, with the statement, "About ten per cent of the area is canals. All of the rest will burn. Most of the streets are covered with cloth or mat awnings and cluttered with carts, drays, push-carts, packing cases, and even piles of merchandise. In those districts where there are yards or gardens in the rear of the houses, you will find them used for catch-alls for any kind of combustible trash that can be used for fuel. The wartime fuel shortage has made everyone a trash-hoarder."

The combustibility of Osaka's building is likewise very high. Most of the large industrial concerns that have modern fire-proof units have built them in the outlying districts. The typical large factory in Osaka proper is a crowded hodge-podge of obsolete buildings, some brick veneer, some plain wood, some pastered inside and out with a sort of mud-line stucco. Beams, joists, and floorings are entirely of wood. A picture in the East Asia Economic News of November, 1940, shows a huge generator under construction in an Osaka electrical works and, while the background is gogged out to obscure detail, board floors and wooden beams are quite discernible. A former employee of a similar plant--one owned by the great Mitsui family--referred to it as a "fire-bug's dream."

Furthermore, wartime expansion has placed a premium on building space, and hastily erected temporary buildings have been crowded in wherever there were a few square yards of open ground.

From this and other data, it appears that the inflammability of the average large industrial plants--barring ship-yards and foundries--must be fifty per cent. In most textile and chemical plants it will run higher. But the larger part of Osaka's industrial output comes from small electric-powered home industries housed in wood-and-paper buildings in what may be loosely called the residential section.

—

No matter how devoid of all other conveniences, every shack in Osaka is wired for electricity and the vast network of open wiring over [redacted]ity is another major fire hazard.

Typical is the house of one Toya Miyaki, visited last year by an American student. Miyaki-san was a sub-foreman in a plant which manufactures railway locomotives. He had a son who was at that time a sergeant on the China Coast, where graft and looting was very good. His wife and daughter-in-law ran a thriving sweatshop at home, with the aid of three electric sewing machines and two poverty-stricken female relatives from the country, making pants for the army. Miyaki-san was therefore quite prosperous by local standards, as attested by the fact that his family ate rice rather than barley and had fish nearly

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every day. Though his home was packed into an endless row of similar houses on a fifteen-foot street, it was by no means in a slum, for it enjoyed the luxury of a garden in the rear.

In detail, the house had a tile roof of rather low pitch supported by beams that rested on good stout poles set into the ground at six-foot intervals, with one permanent and three removable walls. Below the roof was a ceiling of heavy paper, soaked in fish-oil to keep out the damp. Between the roof and ceiling was a space of no great height that was entirely shut off from human access. It was the abode of the ubiquitious Osaka rats and was filled with the paper and straw nests of undisturbed generations, for they were only removed at rare intervals when the ceiling was renewed.

The permanent wall was wood, covered with mud-lime plaster. The other outer walls and all the inner partitions were light wooden frames covered with the same sort of heavy paper as the ceiling. They resembled, roughly, the scenery "flats" used on the stage. In some homes a very thin wood veneer takes the place of the paper, but that is frowned upon by the police, for the usual police spy-hole can be made through a paper wall with just a poke of the finger.

There were many of these screens so that the house could be divided into several small rooms in winter. Whether they are in place or stacked against the permanent wall, they make a fine fire-hazard. Almost equally inflammable are the straw mats, the wooden floor, the piles of cotton, kapok, or ersatz-fiber bedding stuffed away in various cupboards, and the piles of cotton piece-goods the women were sewing. The only objects of household furnishing not a hundred per cent combustible were a few dishes, the medieval brazier--a box lined with fire-clay universally used for cooking and heating--and the equally primitive bath heater. The big family tub was made of wood.

The American was proudly shown the garden. It contained a clump of bamboo, some bushes, a tiny fish pond, and several large stacks of old packing crates and waste-paper--fuel for the bath heater. It was surrounded by a seven-foot fence, another indication of the familiy's prosperity. As the neighbor on the right was in the mat-weaving business--one of the commonest occupations in Japan--his side of the fence was stacked high with straw and millet fiber. The neighbor on the left made plyboard by gluing together incredibly thin sheets of wood veneer. His back yard was crammed with material. Across the ten-foot canal in the rear was a house who inhabitants wound armatures for electric generators. Rolls of insulated wire and kegs of shellac were everywhere.

Across the street in front was a house that had been transformed into some sort of a chemical plant. The American did not dare ask what was made there, but a sign said "No Smoking" in Chinese characters, Japanese script, in German, and in English. At least the English words were there in March of 1941.

III

A two-pound thermite-magnesium bomb drops out of the sub-stratosphere at a terminal velocity of three hundred and fifty feet per second, with a striking force of several hundred pounds. The thermite core ignites when it hits, and burns for about sixty seconds at the blinding heat of four thousand and five degrees Fahrenheit, spitting flaming metal forty or fifty feet through slots in its case. Thereafter the magnesium case burns for ten or fifteen minutes at twenty-three hundred degrees, generating enough heat to ignite dry wood several feet away.

Such a bomb would go through the Miyaki roof like a bullet through butter. The paper ceiling and the interesting collection of rats' nests would light up

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like a Roman candle at the instant of contact. The whole house would be afire in a matter of seconds. If the bomb fell either in the street or the back yard there would be better than a fifty-fifty chance of a fire being started in the initial, or fire-spitting stage when no one can approach it without grave danger of incineration; for in every direction there would be combustible material within range of the ejected thermite.

In a really congested neighborhood, crowded with buildings from the bank of one canal to the next, with only shoulder-width runways between, the chance of the bomb starting an immediate fire is just about as good as if it fell into a full waste-paper basket.

Osaka has a large and experienced fire department. It also has a wind that blows almost continually, varying in direction with the seasons. About a quarter of a mile from the Miyaki house is one of the hundred-foot observation towers that thrust themselves above the unending expanse of house roofs all over the city. One of the four watchers on the tower would spot the fire immediately, and thereafter it would be a race between a half dozen little mandrawn hand-pumpers, hose carts, chemical-wagons and the wind to determine whether that one two-pound bomb would burn several acres of Osaka.

There have been some mighty conflagrations that had much less vigorous starts. In 1910 a woman knocked over a cooking brazier and eleven thousand homes were destroyed despite the fact that it was raining. In 1912 another small blaze got out of control, jumped several of the widest canals, burned all day and night and wiped out the southwest section of the city. There have been plenty since but details on fire losses are no longer published.

Of course it would be impossible for the energetic little firemen to save anything of the Miyaki property, so they would immediately start pulling down all the buildings in the path of the flames, and by this method, plus vigorous pumping and squirting, they might be able to stop the fire from spreading downwind beyond the first sizable canal. If two fires have started in that district they would have to split their force and attack the second, with a diminished chance of success.

When an American asked an Osaka fireman what his company would do if it had three simultaneous fires on its hands, he said, "I don't know. They only teach us how to deal with two fires."

Both local and imperial authorities have realized the peril of incendiaries. Concrete firewalls have been built in Osaka and Kobe and probably Kyoto, across the prevailing winds. But since incendiaries dropped from a great height scatter widely, it is doubtful if these walls would be very effective in preventing a city-wide conflagration.

If one of our B-17 or B-24 bombers scattered its normal load of two thousand incendiaries across Osaka, with its eighty per cent coverage and an average inflammability for this coverage of at least seventy-five per cent, it would mean twelve hundred immediate fire problems for the fire department, as opposed to the one hundred and fifty a similar cargo would cause in London, and each problem would be at least three times as serious.

Admitting that if Osaka were destroyed by fire some very important units, such as shipyards and steel mills and the modern buildings in the commercial district, would suffer little damage--the same goes for Kobe and to a lesser degree for Kyoto--nevertheless its industrial output would stop. The plants that were not destroyed could not function when their workers were destitute, without shelter and numb with that particularly stupefying mass-hysteria that besets the Japanese after a great disaster.

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Furthermore the feeding and sheltering of a couple of million destitute workers--and there would be nearer four million if Kyoto and Kobe could be burnt at the same time--would place Japan in an appalling dilemma. Her only reserves are those she has built up to supply her invasion armies. Her transportation system is already greatly overburdened with the task of moving army supplies. She would have the choice of diverting supplies from the army or doing without a large part of the industrial production that is itself vital to the army.

When these cities in the Osaka Bay district can be burned depends on when we can base our B-17 or B-24 bombers within striking distance. That is not a subject for comment, but the optimum season would be in midsummer during the hot weather that follows the heavy June rains. Usually this lasts two months, between July 15th and September 15th. Heavy showers do fall in this period, particularly in the afternoons from two to five, but there is always a succession of hot, dry days when the summer monsoon brings in from the ocean no more than a high, thin mist that hides a high-flying plane from the ground but permits outstanding landmarks to be seen from a plane.

On such an evening five four-motored bombers coming over Osaka crosswind on parallel courses a half mile apart at an altitude of twenty-five thousand feet or better, both for their own safety and to permit a mile dispersal of each bombload, could well-nigh blanket the area with ten thousand incendiaries, which would according to our calculations of eighty per cent coverage and seventy-five per cent inflammability cause about six thousand widely scattered fires. Under conditions then prevailing it would be doubtful if any human agency could check half of them.

In Kyoto one plane over the section east of the Kamo River and two covering the west side could do a most effective job.

Kobe, where the vital congested industrial district skirting Hyogo and Kobe harbors is hardly more than a mile wide, could be effectively covered by two bombers.

The cost to us in men and planes of destruction of this, the most important industrial area in Japan would be infinitesimal in comparison with the results achieved; for there would be comparatively few planes in the attack and they could operate at a height which is well above the effective range of any anti-aircraft guns the Japanese are known to have, and above the ceiling of Japanese pursuit planes.

In any case our flying fortresses have already proved that they can take care of themselves in the air against whatever the Japanese send up against them.

The loss of civilian life in Osaka would not be as great as that caused by German demolition bombs in England's industrial centers, and certainly not as great as the Japanese demolition and fragmentation bombs caused in Chinese cities. In Osaka the canals can be a refuge from fire and the tidal flow is sufficient to keep the water from becoming unbearable. In some of the slum sections of Kobe and Kyoto where there are no canals the suffering that an incendiary attack would cause is terrible to contemplate.

But the fact remains that this is the cheapest possible way to cripple Japan. It will shorten the war by months or even years and reduce American and Allied losses by tens of thousands.

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HEADQUARTERS OF THE ARMY AIR FORCES

June 24, 1942.

MEMORANDUM FOR: Colonel Harvey H. Holland.

Colonel Hill directed me to forward these random notes to you as they contain some figures that may be of use.

WILLIAM H. HALL,
Colonel, A.A.F.

AFTAI
WEH/lo

2 Incls.
Figures and
Data.

HEADQUARTERS ARMY AIR FORCES — ROUTING AND RECORD SHEET											
Chief of Staff	Asst. Chief of Staff	A.A.G.									
								NWH			

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HEADQUARTERS, ARMY AIR FORCES

June 5, 1942

Mr. Morris M. Davidson
Assistant to the President
Rutgers University
New Brunswick, New Jersey

Dear Mr. Davidson:

Thank you for your kind letter of June 3 in reply to mine of May 29 to Dr. Clothier.

I appreciate sincerely your efforts to secure the information which I desired. However, since I was misinformed regarding the source of this information, I will take other steps to secure same.

Should, however, information on the subject in question come to your attention within the course of the next several months, it would be appreciated if you would so inform me.

Sincerely,

EDMUND W. HILL,
Colonel, AAF,
The Air Inspector.

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RUTGERS UNIVERSITY
NEW BRUNSWICK NEW JERSEY

OFFICE OF THE PRESIDENT

June 3, 1942

Colonel Edmund W. Hill
Headquarters Army Air Forces
War Department
Washington, D.C.

Dear Colonel Hill:

Acknowledgment is made of the receipt of your letter of May 29 addressed to Dr. Clothier, President of Rutgers University.

The University, I am sorry to say, has no information regarding incidence of fires in Japan and discreet investigation so far shows that none of our key men have any such knowledge. Might we ask if it is possible for you to give us any further information that might direct us to the possible recipient of such data. Please be assured it is our great desire to help you to get these facts.

Sincerely

Morris M. Davidson

Morris M. Davidson
Assistant to the President

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8 Jan. & 20 June 1974
By [illegible] LC; Date [illegible]

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HEADQUARTERS ARMY AIR FORCES

May 29, 1942

The President
Rutgers University
New Brunswick, New Jersey

Dear Sir:

Information has been received indicating that your University has acquired information regarding the incidence of fires in Japan by month.

It would be appreciated if you would forward such information regarding Japan and Germany as is available to me for use in planning.

Sincerely,

EDMUND W. HILL,
Colonel, Air Corps,
The Air Inspector.

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Headquarters, Army Air Forces

May 25/42

Dr. Vannevar Bush
Office of Scientific Research
and Development
1530 P Street, N. W.
Washington, D. C.

Dear Dr. Bush:

General Arnold has asked me to reply to your letter of May 20, as he is absent from the City and is desirous that study on this project be started with the least practicable delay since there is not too much time left should the project prove feasible.

Your suggestion regarding the assembly of a group by Dr. Conant to make such a study and report appears to be an excellent one. I suggest also that you include in this group a person who has knowledge of aerostatics. Provided such an individual is not readily available, an officer from Headquarters, Army Air Forces, can be detailed for this purpose. Colonel Hill will be delighted to work very closely with the group during the study.

There is no doubt that it would be desirable to find out who is carrying on the studies apparently being made by Union Carbide and insure that those studies are linked in.

Although I know you realize as well as I the importance of secrecy in this matter, I cannot fail to stress that that thought should be impressed upon all who are in any way consulted in this matter, as the effectiveness of the project depends to a large extent on surprise, as does also the defense of our allies against the use of a similar weapon against them.

M. F. HARMON,
Major General, U. S. A.
Chief of the Air Staff.

HEADQUARTERS ARMY AIR FORCES

AAG 452.3 (28) a

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DOD ltrs.
8 Jan. & 20 June 1974
By: NARA, LC; Date: [illegible] DC

AG 452.3 (2-25-42)MSC MNE/cmk-1705.

IMMEDIATE ACTION

February 27, 1942.

VIA AIR MAIL

SECRET

SUBJECT: Barrage Balloon Equipment for the 305th Coast Artillery Barrage Balloon Battalion.

Auth: T.A.G.
Initials: R.G.H.
Date: FEB 27 1942

TO: Commanding General, Western Defense Command.

1. The 305th Coast Artillery Barrage Balloon Battalion has been designated for overseas tropical service, movement to begin after March 31, 1942.

2. Movement Order, when published, will contain the following instructions relative to Balloon Barrage equipment to be taken:

"Equipment will be taken in accordance with Revised Tentative Supplement to Table of Basic Allowances No. 4 for Barrage Balloon Battalions and Batteries. In addition to the barrage balloon equipment listed in this tentative supplement, the following additional items of Air Corps equipment will be taken:

Cable, flying, barrage balloon low altitude....	24 per Bn
Generator, Gas, Hydrogen.....	2 " "
(If Hydrogen is not available locally)	
Kit, Winch, spare parts.....	1 " "
Kit, Electrician, Storage Battery.....	1 " "
Kit, Barrage Balloon, Maintenance.....	5 " "
Kit, Inflation.....	2 per Ltrd Btry
Terminal assembly, cable.....	5 per Btry
Truck, Balloon Winch.....	1 per Ltrd Btry
	1 per Bn Hq Btry
Winch, Balloon.....	1 per Ltrd Btry
	1 per Bn Hq Btry".

3. A copy of Revised Tentative Supplement to Table of Basic Allowances No. 4 for Barrage Balloon Battalions and Batteries is inclosed. Copies of documents showing the composition of new and revised Air Corps Kits, listed below, are also inclosed:

Kit, Electrician, Storage Battery
Kit, Barrage Balloon Maintenance
Kit, Inflation, Barrage Balloon
Kit, Winch, Spare Parts

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AG 452.3 (2-25-42)MSC

February 27, 1942.

IMMEDIATE ACTION

(Cont'd)

4. Information as to the availability of hydrogen at the overseas tropical station will be furnished you at a later date.

5. Shortages of barrage balloon equipment itemized by services, based on the supply documents inclosed, will be reported to the Chief of Coast Artillery direct by the most expeditious means of communication.

6. These instructions will be transmitted to the Commanding Officer, 305th Coast Artillery Barrage Balloon Battalion.

By order of the Secretary of War:

R. G. Hersey

Adjutant General.

5 Incls.
#1 - Revised Tentative T/BA No. 4.
#2 - Kit, Electrician, Storage Battery.
#3 - Kit, Barrage Balloon Maintenance.
#4 - Kit, Inflation, Barrage Balloon.
#5 - Kit, Winch, Spare Parts.

INFORMATION COPIES TO:
1. Chief of the Army Air Forces;
2. Commanding General, Field Forces;
3. A. C. of S., G-3;
4. Chief of Coast Artillery, ref. his basic ltr, 14. - 2-25-42, to TAG.

Ex. Army Air Forces
MAR 4 1942
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- 2 -

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AG 452.3 (25)

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AAF/A-3
JHA
2/26/42

MAR 2 1942

Subject: Servicing Sites for Navy Nonrigid Airships' Transcontinental Ferry Flights.

To : Commanding General,
Air Force Combat Command,
Bolling Field, D. C.

4/52.3 (24) c

1. Inclosed herewith copy of letter from the Chief of Bureau of Aeronautics, Navy Department, reference above subject, also copy of reply thereto and copy of letter to Commanding General, Field Forces, for your information and guidance.

By Command of Lieutenant General Arnold

JOHN B. COOLEY
Lt. Colonel, A. G. D.,
Assistant Air Adjutant General

Incls:
1-Cy ltr frm C/Bureau of Aero. ND 2/16/42
2-Cy memo to C/Bureau of Aero.
3-Cy ltr to CG/Field Forces

Hq. Army Air Forces
FEB 27 1942
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rlc.

HEADQUARTERS ARMY AIR FORCES - COORDINATION											
Chief of Staff	Sec'y Air Staff	A.A.G.	A-1	A-2	A-3	A-4	A-WPD	A-Insp.	Budget	Statistics	
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NAVY DEPARTMENT
BUREAU OF AERONAUTICS
WASHINGTON

Refer to No. Aer-PL-9-MW
ZN
LS-4
NA62(1)

February 16, 1942

RESTRICTED

From: The Chief of Bureau of Aeronautics.
To: The Chief of the Army Air Forces.

Subject: Servicing Sites for Navy Nonrigid Airships' Transcontinental Ferry Flights.

1. In order to supply patrol type nonrigid airships to Naval Air Stations on the West Coast, it is necessary that they be flown across the continent from the Naval Air Station, Lakehurst, N. J., to their assigned stations on the West Coast. This ferrying of nonrigid airships is expected to start in June, 1942.

2. The accomplishment of this task will require the location of about four servicing sites, along the ferrying route, at which the airships may refuel. The servicing equipment will consist essentially of a mooring mast which can be assembled on very short notice, under the direction of Navy personnel, perhaps the day before the scheduled arrival of an airship. A helium supply will be provided by means of a Navy tractor-trailer. It is expected that aviation gasoline can be obtained locally. Other than at the times that an airship is using the servicing site and when the mooring mast is being assembled and disassembled, there will be no obstruction of any kind at the site. The services of about 50 men for from 15 to 30 minutes at the times of landing and take-off will be required.

3. The proposed route indicates that the Army Air Force Stations at Jackson, Mississippi; Abilene, Texas; El Paso, Texas; and Phoenix, Arizona, are those most desirable, from the Navy point of view, for locating nonrigid airship servicing sites. Other sites might be chosen or used in an emergency.

4. Provided there is no objection to the establishment of the above proposed sites, it is requested that the respective Air Force Area Commanders, under whom the stations along the proposed route operate, be requested to cooperate in the proposed servicing of nonrigid airships at those stations.

/s/ J. H. Towers

J. H. TOWERS
Rear Admiral, U.S.N.,
Chief of the Bureau of Aeronautics

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AAF/A-3

701

MEMORANDUM FOR THE CHIEF OF BUREAU OF AERONAUTICS, NAVY DEPARTMENT

Subject: Servicing Sites for Navy Nonrigid Airships' Transcontinental Ferry Flights.

1. As requested in your memorandum, subject as above, dated February 16, 1942, the Air Force Commanders concerned are being advised to cooperate in the proposed servicing of nonrigid airships in any manner that you may desire.

2. It is requested that the Officer in command of the flight be directed to notify the Commanding Officers of the stations concerned direct, approximately ten (10) days prior to the flight in order that they may be able to make any necessary preparations.

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SUBJECT: Servicing Sites for Navy Nonrigid Airships' Transcontinental Ferry Flights.

TO: Commanding General, Field Forces,
United States Army, War College,
Washington, D. C.

1. Attached hereto copy of letter from the Navy Department reference above subject, which is self explanatory. Also copy of memorandum in reply thereto.

2. It is requested that the appropriate Air Force Commander in the Western Defense Command be instructed to cooperate with the Navy Department in connection with this flight.

3. The above confirms telephone conversation between Lt. Colonel Walter S. Smith of your Headquarters and Lt. Colonel Atkinson of the Air Staff.

Incls:
1-Cy ltr to C/AAF frm
C/Bureau of Aeronautics
2/16/42
2-Cy memo to C/Bur. of Aeronautics

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2/26/42

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MAR 2 - 1942

MEMORANDUM FOR THE CHIEF OF BUREAU OF AERONAUTICS, NAVY DEPARTMENT

Subject: Servicing Sites for Navy Nonrigid Airships' Transcontinental Ferry Flights.

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452.3 (24) B

FOR THE CHIEF OF THE ARMY AIR FORCES

WILLIAM W. DICK
Colonel, A. G. D.,
Air Adjutant General

Dispatched
MAR 2 1942
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Hq. Army Air Forces
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HEADQUARTERS ARMY AIR FORCES - COORDINATION											
Chief of Staff	Sec'y Air Staff	A.A.G.	A-1	A-2	A-3	A-4	A-WPD	A-Insp.	Budget	Statistics	
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2/26/42

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WAR 2 1942

SUBJECT: Servicing Sites for Navy Nonrigid Airships' Transcontinental Ferry Flights.

TO: Commanding General, Field Forces,
United States Army, War College,
Washington, D. C.

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2. It is requested that the appropriate Air Force Commander in the Western Defense Command be instructed to cooperate with the Navy Department in connection with this flight.

3. The above confirms telephone conversation between Lt. Colonel Walter S. Smith of your Headquarters and Lt. Colonel Atkinson of the Air Staff.

FOR THE CHIEF OF THE ARMY AIR FORCES

JOHN B. COOLEY
Lt. Colonel, A. G. D.,
Assistant Air Adjutant General

Lt. Army Air Forces
FEB 27 1942
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WAR 2 1942
AAG

Incls:
1-Cy ltr to C/AAF frm
C/Bureau of Aeronautics
2/16/42
2-Cy memo to C/Bur. of Aeronautics

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HEADQUARTERS ARMY AIR FORCES - COORDINATION											
Chief of Staff	Sec'y Air Staff	A.A.G.	A-1	A-2	A-3	A-4	A-WPD	A-Insp.	Budget	Statistics	
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NAVY DEPARTMENT
BUREAU OF AERONAUTICS
WASHINGTON

Refer to No. Aer-PL-9-MW
ZN
L8-4
MA62(1)

February 16, 1942

RESTRICTED

From: The Chief of Bureau of Aeronautics.
To: The Chief of the Army Air Forces.

Subject: Servicing Sites for Navy Nonrigid Airships' Transcontinental Ferry Flights.

1. In order to supply patrol type nonrigid airships to Naval Air Stations on the West Coast, it is necessary that they be flown across the continent from the Naval Air Station, Lakehurst, N. J., to their assigned stations on the West Coast. This ferrying of nonrigid airships is expected to start in June, 1942.

2. The accomplishment of this task will require the location of about four servicing sites, along the ferrying route, at which the airships may refuel. The servicing equipment will consist essentially of a mooring mast which can be assembled on very short notice, under the direction of Navy personnel, perhaps the day before the scheduled arrival of an airship. A helium supply will be provided by means of a Navy tractor-trailer. It is expected that aviation gasoline can be obtained locally. Other than at the times than an airship is using the servicing site and when the mooring mast is being assembled and disassembled, there will be no obstruction of any kind at the site. The services of about 50 men for from 15 to 30 minutes at the times of landing and take-off will be required.

3. The proposed route indicates that the Army Air Force Stations at Jackson, Mississippi; Abilene, Texas; El Paso, Texas; and Phoenix, Arizona, are those most desirable, from the Navy point of view, for locating nonrigid airship servicing sites. Other sites might be chosen or used in an emergency.

4. Provided there is no objection to the establishment of the above proposed sites, it is requested that the respective Air Force Area Commanders, under whom the stations along the proposed route operate, be requested to cooperate in the proposed servicing of nonrigid airships at those stations.

/s/ J. H. Towers

J. H. TOWERS
Rear Admiral, U.S.N.,
Chief of the Bureau of Aeronautics.

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MEMORANDUM FOR THE CHIEF OF BUREAU OF AERONAUTICS, NAVY DEPARTMENT

Subject: Servicing Sites for Navy Nonrigid Airships' Transcontinental Ferry Flights.

1. As requested in your memorandum, subject as above, dated February 16, 1942, the Air Force Commanders concerned are being advised to cooperate in the proposed servicing of nonrigid airships in any manner that you may desire.

2. It is requested that the Officer in command of the flight be directed to notify the Commanding Officers of the stations concerned direct, approximately ten (10) days prior to the flight in order that they may be able to make any necessary preparations.

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MAR 3 1942

MEMORANDUM FOR THE CHIEF OF THE AIR CORPS:

SUBJECT: Panama Balloon Barrage.

1. Attached hereto is correspondence on the above subject for action necessary and draft of 6th indorsement to the Chief of Coast Artillery with pertinent remarks.

By Command of Lieutenant General Arnold

JOHN E. COOLEY
Lt. Colonel, A. G. D.
Assistant Air Adjutant General

Incls:
Ltr to CG, Panama Canal Dpt., 2/1/42 w/5 Inds. and 1 Incl:
Cy ltr to CG Pan.Coast Art. Cmd., 2/9/42 w/2 incls.

Dispatched
MAR 3 1942
AAG

HEADQUARTERS ARMY AIR FORCES - COORDINATION											
Chief of Staff	Sec'y Air Staff	A. A. G.	A-1	A-2	A-3	A-4	A-WPD	A-Insp.	Budget	Statistics	
	WDS					3/4/42					

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Ltr to CG, Panama Canal Dpt., 2/1/42 w/5 Inds. and 1 Incl: Cy ltr to CG Pan.Coast Art. Cmd., 2/9/42 w/2 incls. (2J)

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DOD ltrs.
8 Jan. & 20 June 1974
By: [illegible], LC; Date: [illegible]

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1 February 1942

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SUBJECT: Panama Balloon Barrage.

TO: The Commanding General, Panama Canal Department.
Quarry Heights, Canal Zone.

1. Unless a radical change is effective in the rate of supply of balloon barrage equipment, the Panama Balloon Barrage after February 15th next will no longer be an efficient element in the Defense of the Panama Canal.

2. Prior to the departure of the 201st Coast Artillery from Camp Davis, N. C. for Panama on December 16, 1941, a complete list of shortages was submitted to the Air Corps Supply representative. A copy of this list was furnished G.H.Q.'s representative at the transport at Norfolk as well as to the representative of the Quartermaster General. Another copy has been forwarded through the Air Corps Supply, Albrook Field, C.Z. To date, not one single item has been received. Much of the equipment brought had seen considerable service, some of which was ready for salvage. Some of the balloons had been condemned. Everything was brought along, however, in order to establish as effective a balloon barrage as possible at the earliest date. Despite the efforts of the personnel assigned, the deterioration of equipment is proceeding at such a pace that they cannot get ahead. Such repair material as was brought from Camp Davis, except minor items, is gone.

3. In supplying equipment of this nature for the defense of the Panama Canal, attention is invited to the following factors:

a. Weather - The dark neoprene fabric of which the local balloons are made absorbs the heat of the tropical sunlight to such an extent that it is impossible to place the hand on it. All balloons sent here should be painted with aluminum neoprene paint so as to reflect the sun's rays. A requisition sent sometime ago for neoprene solvent to make aluminum paint and thus lengthen the life of the balloons already here has not been filled.

b. Type of balloon.
(1) The D-5 or D-6 dilatable balloon is definitely not suited to local conditions. Already the rubber cross cords in the interior of some of the balloons have lost their elasticity. Some have

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carried away. This type of balloon is too easily upset by turbulent air, causing it to get on its side and dive. We do not desire any more of this type.

(2) A ballonet type, capable of carrying at least a ½-inch cable (103 pounds per 1000 feet) to an altitude of 6500 feet without valving gas, under ordinary conditions, due to superheat or altitude, is what is desired. Gas is not plentiful here. We have had good flying results from the Air Cruiser ballonet balloon, using 3/16 inch cable, while it lasted. Unfortunately the fabric did not hold up in all cases. A balloon of the British type takes less gas and can be flown from the cramped places used for balloon beds here. However, there is some question as to whether the small British balloon can carry a heavy cable to 6500 feet or above in the tropics.

(3) The present type of balloon valve is unsatisfactory. It is unreliable. We cannot test it without removing it from the balloon with the consequent loss of gas. We want a more reliable and less fragile valve, with a scale showing the pressure to which set, and which can be adjusted and tested without removing it from the balloon. The time involved in checking the present type of valve is quite a factor Such a valve does not exist, so far as is known here, However, study leading to the type of valve suggested could be undertaken.

c. The 3/16-inch 7X19 Air Corps cable, with breaking specification of 4,200 pounds (reported as 5,100 pounds) is definitely wrong for balloon barrage work. Not only is it too weak to hold balloons in a strong breeze but its value as a weapon against modern bombers is questionable. Slight rusting in the tropics causes a loss of too great a proportion of its strength. Its weakness has caused us more than a score of balloons in one month of operation. A ½-inch cable, 7 X 19, breaking specification of 7,000 pounds, is considered the minimum. If at the present time only the 3/16 inch cable is available, it can be used here if sent in reels of 12,500 feet. We have managed to hold the balloons, where the accessory equipment was available, by doubling the cable, i.e., running it from the winch to swivel block on the balloon to deadman 200 yards from the winch. This increased our strength to 8,400 pounds and our weight to 120 pounds per thousand feet. However, as the cloud ceiling is at about 3500 feet, too much weight did not have to be carried. All cable shipped here should be treated with hot petrolatum and light oil before shipment as rusting commences before it gets here.

d. All cable blocks (pulleys) should have a ball-bearing swivel attached, else the cable wears out against the side of the block when the shifting of the balloon aloft inclines the cable out of line. We have made a universal joint for the block but it is not as suitable for all-around use as the block equipped with the swivel (which we have also made).

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e. Ball-bearing cable swivels should be provided to straighten cable by reducing its troque and thus reduce the tendency to kink on the winch storage drum and in the air. Careful attention must be paid to the use of this. Excessive use will unlay the cable.

f. Day and night operation in the field bears out previous complaints about the A-9 winch. The friction bands continue to grind and chatter. It is too slow. It does not free-wheel readily. There is great need for a footage meter, particularly when balloons are sent aloft at night adjacent to a flying field or military airway. We have devised one type of snubber here and are working on an improved type for the double cable. Had some sort of spring snubber been included in the winch, thousands of dollars worth of balloons might not have been lost.

g. The type of U-bolt is not satisfactory. The clamping area on the cable is not great enough. When screwed up tight enough to hold, it squeezes the small 3/16 cable causing it to break at that point when under great strain.

h. The method of fastening the cable to the balloon under fueld conditions is still not satisfactory. The bronze junction piece is not machined smooth enough and causes the cable to wear. We are experimenting on this and may be able to submit an improvement shortly.

i. (1) After almost one month's operation, the field hydrogen generating plant (ferro silicon) has been kept in operation long enough to produce enough gas for two balloons. Being the first model, it has a number of objectionable features and it will have to be extensively over-hauled at the first opportunity. It should produce daily enough gas to fill two balloons and for general maintenance. This would mean 60,000 cubic feet or 300 cylinders. BBTC safety regulations require that when the hydrogen purity in a balloon drops to 85% it should be dumped. In some of our balloons that point was reached after about 10 days. Obviously, this safety regulation could not be carried out. Due to deterioration, the balloons on hand have required an average of 5 cylinders (100 cubic feet) each per day for topping up. A field of 20 balloons would thus require 100 cylinders daily, leaving a balance of 200 cylinders per day to fill replacement balloons (120-135 cylinders per balloon) and furnish gas for balloons that have been dumped. Black-out conditions limit field operations in the tropics to about 15 hours of operation. This requires a plant that will fill one cylinder every three minutes, 60,000 cubic feet in 15 hours of continuous operation. As the initial barrage here is to consist of 78 balloons, at least three machines of the above capacity are needed initially. The balance of the required capacity is coming from the Mechanical Division of the Panama Canal which is producing 40,000 cubic feet per day. This plant will be doubled about April 15th. This additional capacity will be used to build up a battle reserve of hydrogen. Counting the gas cylinders now

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in the possession of the First Marine Barrage Balloon Squadron , we have about 11,500 cylinders on hand, a total storage capactiy when all are filled to fill 85 balloons. As some cylinders will always be empty, it might be said that our storage would be sufficient to replace the entire field should the balloons be shot down.

(2) All of our present balloons will be exhausted shortly. We should have on hand 78 balloons of the new type specified, plus 100% replacement, plus 20% of the field per month for loss incident to operation, or 172 balloons. Thereafter, balloons should be shipped at the rate of 16 per month. This monthly allowance may be reduced at first if we can maintain on hand a supply of repair materials but deterioration will not lower this estimate. This is a difficult location for barrage balloons, not alone because of the tropical weather, but because the balloons, to protect the locks, are located among buildings, adjacent to high tension power lines, etc., which adds to the normal consumption rate. It is requested, therefore, that our stock of balloons be built up to 172 as soon as possible and be maintained at that figure. Those ballons on hand will be flown until it is no longer economical to do so.

4. No lethal devices of any kind are on hand. It is recommended that a supply of these be sent for use on those balloons where the device can be safely used. It is estimated that about 50 will be required for the present barrage.

Wm. E. SHEDD,
Major General, U. S. Army
Commanding.

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DOD
E.O. 12958, Sec. 4 20 June 1974
By NARA, LC: Date 10/17/74

BASIC Ltr Hq PCAC, Fort Amador, C.Z., 2/1/42 -Subject: Panama Balloon Barrage.

AG 452.31-1 (c) 1st Ind.

Hq. P. C. Dept., Quarry Heights, Canal Zone, February 6, 1942.
Thur: Commanding General, Caribbean Defense Command, Quarry Heights, C.Z.
To: Commanding General, Field Forces, GHQ, Washington, D. C.

1. Approved.

2. Unless immediate steps are taken to correct deficiencies noted in basic letter the barrage balloon defense of the Panama Canal will be non-existent.

KARL TRUESDELL,
Major General, U. S. Army,
Deputy.

CBC-S 452.31 Balloons (2/1/42) 2nd Ind. GW/pr-wfl

HEADQUARTERS CARIBBEAN DEFENSE COMMAND, Quarry Heights, C. Z., February 9, 1942. To: Commanding General, Field Forces, General Headquarters, Washington, D. C.

1. Approved.

2. Balloon barrage defense must be maintained. Suitable equipment must be provided. The present barrage alloon equipment is not satisfactory.

For the Commanding General.

WALLACE C. PHILOON,
Brigadier General, United States Army,
Chief of Staff.

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DOD ltrs
5 Jan. & 20 June 1974
By: [illegible] Date: [illegible]

452.3/1 (PAD) (C)-D
2-1-42

3rd Ind.

GENERAL HEADQUARTERS, U. S. ARMY, Army War College, Washington, D. C., February 15, 1942 - TO: The Adjutant General, Washington, D. C.

1. It is recommended that this correspondence be forwarded to the Chief of the Army Air Force through the office of the Chief of Coast Artillery for such action as is deemed necessary.

2. The maintenance of these barrage balloons is highly important to the defense of the Panama Canal Zone. It is realized that these balloons and the equipment pertaining to their maintenance and operation is yet in the experimental stage. This equipment has been subjected to practical tests and it is believed that the information contained in basic communication should be used as a basis for future manufacturing specifications and for future operations.

3. Request that this headquarters be informed of the action taken.

For the COMMANDING GENERAL:

J. R. DRYDEN,
Major, AGD,
Asst. Adj. General.

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[redacted]

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A DOD Mtrs.
6 Jun. & 20 June 1974
By: NARA, LC; Date: 8/8/74

SUBJECT: Panama Balloon Barrage.

AG 452.3 (2-1-42)MSC 4th Ind. RPM/jb-1705

War Department, A.G.O., February 18, 1942. TO: Chief of Coast Artillery and Chief of the Army Air Forces, IN TURN.

For appropriate action.

By order of the Secretary of War:

E. G. Hersey

Adjutant General.

COPY FOR: Chief of Coast Artillery.

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-8-

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A DOD ltrs.
8 Jan. & 20 June 1974
By: AGO/AGC; Date:

580.852/35-D 5th Ind. 14.

War Department, Office, Chief of Coast Artillery, February 25, 1942.-
To: The Adjutant General, THRU Chief of the Army Air Forces.

1. There is no record in this office of the receipt of the list of shortages referred to in Paragraph 2 of the basic letter.

2. Immediately upon receipt on February 6, 1942, of a copy of the basic letter, which was forwarded to this office by the Commanding General, Panama Coast Artillery Command, a copy was furnished the Chief of the Air Corps (Colonel Lober). On February 9, 1942, the Chief of the Air Corps furnished this office with a copy of a letter to the Commanding General, Panama Coast Artillery Command, copy inclosed, in which action taken to correct the defects mentioned in the basic letter is indicated in detail. The action taken by the Chief of the Air Corps as indicated in the letter referred to is concurred in.

3. The following additional comments pertain to identically numbered paragraphs of the basic letter:

a. Paragraph 3 b. A balloon of the ballonet type substantially the same as the British Mark VIII, which has an inflation capacity of 23,000 cubic feet and is capable of reaching an altitude of approximately 5500 feet, was recommended for adoption as standard and action has been initiated to procure this type as soon as possible.

b. Paragraph 3 c. 0.24" 6 x 1 cable has been recommended for adoption as standard.

c. Paragraph 3 e. 10 ball bearing cable swivels will be shipped to Panama as soon as received from manufacturer.

d. Paragraph 3 f. The A-9 winch is being re-designed so as to take a 1/4" cable. Pending the availability of a new American winch, action has been taken to secure a number of British winches to replace the present A-9 winch.

e. Paragraph 3 i. Action has been taken to obtain lethal devices from the British Government for use until a satisfactory American lethal device can be developed.

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AAG/1110
Aug 45 2.3 (23)

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4. An officer from the Office, Chief of Coast Artillery, accompanied by Squadron Leader, M.A.H. Bellhouse, R.A.F., now on duty in an advisory capacity in this office, has been sent to Panama to confer with the Commanding General, Panama Canal Department.

For the Chief of Coast Artillery:

M. M. MERRICK,
Colonel, C.A.C.,
Executive.

1 Incl.—cy ltr, sub. Panama Balloon Barrage 2/9/42 to CO, Panama CA Command. (w/ 2 incls. thereto) List of Shortages (Incl. to ltr Panama Air Depot 1/6/42) and Equip. shipped-re Panama requisition.

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OFFICE OF THE CHIEF OF THE AIR CORPS

U. S. CONFIDENTIAL

ROUTING AND RECORD SHEET

DECLASSIFIED

DECLASSIFIED
DOD ltrs.
3 Jan & 20 June 1974
By: [illegible] NARS, Date 10/15/76

Note. -- A line will be drawn across sheet after each comment.

File No. 4813

Tally No.

SUBJECT: Barrage Balloons - 1942 to 1943 - Malaki Cotton

DECLASSIFIED
Per
[illegible] Jan 75
By [illegible] NARS, Date 10/15/76

NO.	FROM	TO	DATE	COMMENTS
1.	OCAC Intel.	OCAC APS (ATTN: Barrage Balloon Section)	JAN 28 1942	(3-C-1) LWS:em 1. Attached is undated letter number 510-14 499/WGJ, addressed to Office of the Chief of the Air Corps, War Department, Washington, D. C., by the British Air Commission, Washington, D. C., concerning above subject. 2. Because of the urgency of the situation, it has been discussed informally between Colonel Lober of the Barrage Balloon Section, Assistant for Procurement Services, Office, Chief of Air Corps, and Captain L. W. Sweetser, Jr., Foreign Liaison Section, Intelligence Division, Office, Chief of Air Corps. 3. As agreed, the following information has been given informally to Mr. Jennings of the British Air Commission after informal conversations between Colonel Lober and Captain Sweetser, Jr., and between Mr. Walton, Chief, Textile Division, W.P.B., and Captain Sweetser, Jr.: a. The Army now has 3400 balloons on order in the United States, of which 300 have been delivered (All figures approximate) b. Four thousand additional balloons will be ordered and delivered prior to the end of 1943 (All figures approximate) c. The balloons will be manufactured of 3.7 ounce cotton with approximately three thousand yards to the balloon. d. It is planned to reduce the size of the balloons down to five to six hundred pounds. 4. Inasmuch as the word Malaki Cotton is unknown, Mr. Walton was contacted who gives the following information: a. The word Malaki Cotton is unknown to Textile Division, but it may be another designation for

(Do not use reverse side)

DECLASSIFIED DOD ltr 20 OCT

PAGE NO. - 1 -

W-4071, AC. Rev. 8/1/41

90,546 3/2

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OFFICE OF THE CHIEF OF THE AIR CORPS

U. S. CONFIDENTIAL BR. SECRET

ROUTING AND RECORD SHEET

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DOD
By

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File No. 4813

Talley No.

SUBJECT: Barrage Balloons - 1942 to 1943 - Malaki Cotton

NO.	FROM	TO	DATE	COMMENTS
1. (cont'd)	OCAC Intel.	OCAC APS (ATTN: Barrage Balloon Section)	JAN 28 1942	(3-C-1) LWS:em "Egyptian Cotton Sack" b. It is not necessary to make barrage balloons from the so-called "Egyptian Cotton Sack", although some manufacturers are doing it. However, a great many of the balloons are manufactured from the cotton grown in the United States and these are satisfactory. c. Mr. Walton states in substance that the question of so-called "Egyptian Sack Cotton" or Malaki Cotton for barrage balloons is a very small portion of the cotton problem now being discussed by his Division and the British Embassy in Washington. Mr. Walton states that the cotton problem should be treated as such and not as a barrage balloon question, inasmuch as the barrage balloon question is a very small part of the cotton problem. He further states that this problem should be looked into very carefully inasmuch as the British are attempting to sell a great deal of the Nile Cotton to the United States Therefore, he is reluctant to pick out one minor portion of the problem, such as a small supply of cotton for balloons and be committed to it. 5. All the above information has been transmitted informally, as diplomatically as possible, to Mr. Jennings of the British Air Commission. 6. This is forwarded to you for comment, if any, and return. Mr. Walton has been informed that he would be quoted as diplomatically as possible to the British Air Commission. JOE LAWSON C/OCAC INTEL. F.L.S. SUSPENSE: 2/5/42 1 Incl. Ltr.fr.Br.Air Com.,S10-14 499/WGJ,

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W-4071, AC.Rev.8/1/41

A-2/20,084

Rec'd 452.3 (22)

90,546-12 C-203

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DOD ltrs.
8 Jan. & 20 June 1974
By: AWSLC; Date 9/5/74

[OFFICE] OF THE CHIEF OF THE AIR CORPS

ROUTING AND RECORD SHEET

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Note.—A line will be drawn across sheet after action by each office concerned.

4813

SUBJECT: Barrage Balloons - 1942 to 1943 - Malaki Cotton.

NO.	FROM	TO	DATE	DATA
2.	OCAC APS (4-K) FEB 7 '42 PM	OCAC Intel.	1941 2-2 1 Incl. n/c	1. Noted. No comment. TDO O.P.E. Assistant for Procurement Services

RECEIVED FOR LIAISON SEC., SCAC

Ade & T/C per mea

452.3 (22)

DECLASSIFIED A-2/20,084

(Do not use reverse side) ~~CONFIDENTIAL~~ (22) F-4071.1C Barrage

C-293 air 34523 A-V-16 Balloon

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Per
By NARS, Date

~~U.S. CONFIDENTIAL~~
British ~~SECRET~~

4813

BRITISH AIR COMMISSION
1785 MASSACHUSETTS AVENUE
WASHINGTON, D. C.
TELEPHONE HOBART 6000

PLEASE QUOTE S10-14
REFERENCE NO. 499/WGJ

Office of the Chief of the Air Corps
War Department
Washington, D.C.

Attention: Major Joseph T. Clement, A.C.
Chief, Foreign Liaison Section
Room 708, Maritime Building
Washington, D.C.

Subject: Barrage Balloons

As arranged by telephone with our Mr. W. G. Jennings, can you please let us know the number of barrage balloons it is proposed to manufacture in the United States during 1942 and 1943? Will you please state how many of these will be made from malaki cotton? This information is urgently required by England, so that an adequate crop may be sown for export.

Will you please advise us if this information is not immediately available?

MAR 23 12 PM

Roderic Hill
Air Marshal

WGJ:sc

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FOR LIAISON SEC., OCAC.

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E. DOD ltrs.
8 Jan. & 20 June 1974
By [illegible] Date [illegible]

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AAF/A-4
JFK/mwb
Wrnt 3/4/42

Funds for Barrage Balloon Units.

3rd Ind.

War Department, Headquarters Army Air Forces, Washington, D. C.
MAR 6 1942 To The Commanding General, Field Forces, Army War College, Washington, D. C.

1. To note.

By Command of Lieutenant General Arnold

Incl n/c

Hq. Army Air Forces
MAR 6
AAG RECEIVED

JOHN B. COOLEY
Lt. Colonel, A. G. D.,
Assistant Air Adjutant General

Dispatched
MAR 6 1942
AAG

HEADQUARTERS ARMY AIR FORCES - COORDINATION											
Chief of Staff	Secty Air Staff	A. A. G.	A-1	A-2	A-3	A-4	A-WPD	A-Inspr.	Budget	Statistics	
						3/4/42					
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AAF-39

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DOD ltrs
8 Jan. & 20 June 1974
By Mayer, LC; Date 10/21/74

2nd Ind. (5-D)

War Department, Office Chief of the Air Corps, Washington, D. C., March 2, 1942 - TO: Headquarters Army Air Forces, Washington, D. C.

1. The Commanding General, Caribbean Defense Command, Quarry Heights, Canal Zone, has been advised by radio this date, copy attached, that Procurement authority AC 2195 P 82-02 A 0705-23 is being issued allotting his station $35,000.00 for procurement of Hydrogen for Barrage Balloon Units.

For the Chief of the Air Corps

A. W. MARTENSTEIN,
Colonel, Air Corps,
Fiscal Officer

Incl: Para. of radio
from CG, CDC 2/13/42
cy radio OCAC to CG, CDC 2/82/42

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(5-D)

RADIOGRAM

Fiscal

MARCH 2 1942

COMMANDING GENERAL
CARIBBEAN DEFENSE COMMAND
QUARRY HEIGHTS
CANAL ZONE

FIVE DASH NINE FIVE FIVE STOP RERAD FEBRUARY THIRTEEN NINETEEN HUNDRED FORTY TWO STOP PROCUREMENT AUTHORITY AC TWO ONE NINE FIVE P EIGHT TWO DASH NAUGHT TWO A NAUGHT SEVEN NAUGHT FIVE DASH TWO THREE BEING ISSUED ALLOTTING YOUR STATION THIRTY FIVE THOUSAND DOLLARS FOR PROCUREMENT OF HYDROGEN FOR BARRAGE BALLOON UNITS.

WEAVER ACTING.

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DOD ltrs
6 Jan. & 20 June 1974
By [illegible] LC; Date [illegible]

AAF/A-4
JRF/soc
Written 2/24/42

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452.3 (20)

Hq. Army Air Forces
FEB 24
AAG RECEIVED

SUBJECT: Funds for Barrage Balloon Units.

1st Ind.

War Department, Headquarters Army Air Forces, Washington, D. C.
FEB 26 1942
To: Chief of the Air Corps

1. Funds to the extent of thirty-five thousand dollars($35000) are approved to the Panama Canal Department for the purchase of hydrogen for Barraged Balloon Units. It is desired that these funds be furnished.

FEB 26 1942
AAG

By Command of Lieutenant General Arnold,

1 Incl - n/c

HEADQUARTERS ARMY AIR [illegible] COORDINATION											
Chief of Staff	Sec'y Air Staff	A.A.G.	A-1	A-2	A-3	A-4	A-WPD	A-[illegible]	Budget	Sta-tistics	
	WJF					Assistant Air Adjutant General					

AAF-39

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Air ab 452.3 (20)

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A DOD Ltr
8 Jun. & 20 June 1974
By: AUJU, JC; Date 10/11/74

120/1(PAD)(C)-D
(2-13-42)

February 16, 1942.

MEMORANDUM FOR CHIEF OF ARMY AIR FORCES, WAR DEPARTMENT:

Subject: Funds for Barrage Balloon Units.

1. This headquarters is informed by Commanding General, Caribbean Defense Command, that there are no funds available to the Panama Canal Department for the purchase of hydrogen for the barrage balloon units. The Panama Canal is furnishing hydrogen at a cost of three and one-half mils per cubic foot. Estimated needs are one million cubic feet per month.

2. It is recommended that the request for funds in the amount of fifty thousand dollars in order to cover purchases for the remainder of the calendar year, be approved.

For the COMMANDING GENERAL:

T. DRYDEN
Major, AGD.,
Assistant Adjutant General

1 Incl - Paraphrase of radio
fm CG,CDC 2/13/42.

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AAG 314
Air AB 452.3 (20)

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DOD ltrs
8 Jan. & 20 June 1974
By: AALC; Date 10/31/74

R A D I O G R A M

FROM: CG, CARIBBEAN DEFENSE COMMAND SENT: FEBRUARY 13 1942 9:55 AM

TO : CGFF, GHQ RECD: FEBRUARY 13 1942 2:20 PM

P A R A P H R A S E

There are no funds available to the Panama Canal Department for the purphase of hydrogen for the Barrage Balloon units. The unit cost of hydrogen is 3½ mils per cubic foot. Panama Canal is now furnishing hydrogen. The estimated needs are 1,000,000 cubic feet per month. It is requested that funds in the amount of $50,000 be furnished to cover the purchases for the remainder of the calendar year.

ANDREWS

Paraphrased by: /s/
W. H. SCHILDROM,
Lt. Colonel, GSC,
Assistant to G-4.

Copies furnished:

P A R A P H R A S E

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A. DOD ltrs
6 Jan. & 26 June 1974
By AAG, LC; Date 6/24/76

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AAF/A-4
JRF/esg
Written March 7, 1942.

Subject: Location of Barrage Balloon Units outside the United States.

1st Ind.

War Department, Headquarters, Army Air Forces, Washington, D. C.
MAR 7 1942 To: The Chief of the Air Corps.

1. The attached paper contains the only information available concerning Barrage Balloon units planned for outside the continental limits of the United States.

By Command of Lieutenant General Arnold

1 Incl (added)
D/F WPD 1098-26
(3/2/42) to A-4,
Air Staff.

R. C. LEWIS
Major, Air Corps
Acting Ass't Air Adjutant General.

Dec 45 452.3 (19)

Hq Army
MAR 7 1942
AAG Recd.

Dispatched
MAR 7 1942
AAG

HEADQUARTERS ARMY AIR FORCES - COORDINATION											
Chief of Staff	Sec'y Air Staff	A.A.G.	A-1	A-2	A-3	A-4	A-WPD	A-Insp.	Budget	Statistics	
		RCL				JRP					

AAF-39

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DOD Rts
6 Jun. & 20 June 1974
By: NARS, LC; Date:

Hydrogen Facilities.

FEB 14 1942

The Chief of Army Air Forces.

1. It is understood that plans are under way for the operation of barrage balloon units at several points outside the Continental limits of the United States. In order to permit adequate planning, information is requested as to the availability of commercial hydrogen, including compression facilities at the specific locations at which it is contemplated operating barrage balloons.

For the Chief of the Air Corps

F. I. ORDWAY, JR.,
Major, Air Corps,
Asst. Exec., Mat. Div.

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C-79

Air AG 452.3 (19)

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DOD ltr.
8 Jan. & 20 June 1974
By [illegible], LC; Date [illegible]
AG WHD 1098-26

WAR DEPARTMENT GENERAL STAFF
DISPOSITION FORM

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March 2, 1942.

Subject: **Location of Barrage Balloon Units outside the United States.**

To: A-4 Air Staff

For:

X Information

In reply to your request for information on above subject, dated 19 February, 1942, AAF/A-4/227, the following information is submitted:

1. One battalion, Coast Artillery, barrage balloon, is ear-marked for North Ireland and is expected to be stationed at Londonderry.

2. In addition to the above definite plan, the follwoing are tentative plans being considered but which have not been finally decided upon:

a. Possibly 1 more barrage balloon battalion to North Ireland.

b. Possibly 3 barrage balloon battalions to Australia for stations at Darwin, Townsville, and Brisbane.

c. Panama now has 1 battalion and possibly 2 more may be required.

d. It is planned to send the barrage balloon battalion now at Mare Island to Hawaii and replace it with another battalion.

3. It is emphasized that the plans now outlined in paragraph 2 above are merely in the tentative planning stage and the action outlined therein is subject to change.

DWIGHT D. EISENHOWER,
Brigadier General,
Assistant Chief of Staff.

/s/R. W. Crawford
R.W. CRAWFORD
Brigadier General, G.S.C.

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8 Jan. & 20 June 1974
By: WHS/LC; Date 10 SEP 74

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RECEIPT

DATE _____

SUBJECT: Location of Barrage Balloon units outside the United States.

Receipt is acknowledged of 1st Indorsement, above subject, with the following inclosures:

D/F WPD 1098-26
(3/2/42) to A-4,
Air Staff.

_____
OFFICER RANK

_____
OFFICE

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DOD ltr
6 Jan. & 20 June 1974
By: NNIDS, Date 6/13/74

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AAF/A-2
2746
LWS: em
(2/10/42)

WAR DEPARTMENT
HEADQUARTERS OF THE ARMY AIR FORCES
WASHINGTON

FEB 11 1942

SUBJECT: Material Desired by Barrage Balloon School

TO: Assistant for Procurement Services,
Office, Chief of Air Corps.

1. Reference is made to Routing and Record Sheet addressed to Intelligence Division, Office, Chief of Air Corps, War Department, Washington, D. C., by you under date of January 28, 1942, Subject: Material Desired by Barrage Balloon School.

2. The information requested in the referenced communication was forwarded to you by our letter dated February 2, 1942.

For the Chief of the Air Staff:

MARTIN F. SCANLON,
Brigadier General, U. S. A.,
Assistant Chief of the Air Staff, A-2.

452.3 (18)

FEB 11 1942
AAG

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air AFS 452.3 (18)

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OFFICE OF THE CHIEF OF THE AIR CORPS

ROUTING AND RECORD SHEET

(To be filed with correspondence)

Note.—A line will be drawn across sheet after action by each office concerned.

2746

SUBJECT: Materiel Desired by Barrage Balloon School.

NO.	FROM	TO	DATE	DATA
1.	OCAC Mat.Div. (4-K)	OCAC Intel. Div.	1942 1-28	1. Information is requested as to when the materiel asked for in our Routing and Record Sheet dated September 10, 1941, same subject, may be expected.

JAN 29 '42 PM

O. P. E.
Assistant for Procurement Services.

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FOR LIAISON SEC., OCAC

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W-4071, AC

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DOD ltrs
6 Jan. & 20 June 1974
By: AWA, LC; Date 10/31/76

Barrage Balloon Equipment

1	General Arnold	General Echols	1942 2/10

1. Note the attached communication.

2. During my recent trip to Panama, the following facts were brought out:

a. Their loss in balloons is about 16% each month.

b. The cables are too small.

c. The balloons are too large.

d. The winches wind the cable the wrong way so that they twist the strands causing the cables to break more easily.

452.3 (17)

3. Have your balloon man read the attached letter from General Shedd. Note statements I have made above and give me a report as to what he is doing to correct these defects.

4. It is quite obvious that unless something is done very soon the losses in balloons in Panama will be such that we can't maintain balloon barrage over the locks. This is a very essential form of defense.

H.H.A.

Incl: Ltr to Gen. Arnold frm. Gen. Shedd, 2/7/42, re above subj. w/ copy of ltr to CG, Panama Canal Dept. 2/1/42 frm. Gen. Shedd re above subj.

FEB 13 1942

AAG - request copy of ltrs

A-1/2

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Copy for A-4

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AG 452.3 (17)

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DOD ltrs
6 Jan. & 20 June 1974
By [illegible]; Date [illegible]

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FEB 10 1942

Supplemental Barrage Balloon Estimates.

I USW

I Comment or concurrence.

AAF/A-4
JFW/mmb

Dispatched
FEB 11 1942
AAG

For the Chief of the Air Staff:

Incls:
B&R to Budget, 2/9
w/1 incl:
Ltr to C/AC, 1/28 w/3
Inds and 1 Incl:
Ltr (cy) to C/AAF w/
cy 1st Ind.

T. J. HANLEY, Jr.,
Colonel, A.U.S.,
Assistant Chief of the Air Staff, A-4.

HEADQUARTERS ARMY AIR FORCES - COORDINATION

[illegible]						A-4	A-WPD	A-Insp.	Budget	Sta-tistics

[illegible] in the next available supplemental estimates ("E" SY-1942) those projects and articles listed.

AAF-39

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AAG 452.3 (16)

452.3 (16)

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DOD Mtr
6 Jan. & 20 June 1974
By: AAFAALC; Date 10kt74

Supplemental Barrage Balloon Estimates.

1. AAF/A-4 AAF/BS 1942
2/9

1. The underlying communication on the subject of supplemental barrage balloon estimates is self-explanatory.

2. It is requested that necessary action be taken to include in the next available supplemental estimates ("E" FY-1942) those projects and articles listed. In this connection also, it is requested that the concurrence of the Under Secretary of War be obtained.

Incls:
Ltr to C/AC, 1/28/42
w/3 Inds w/1 Incls:
Ltr (copy) to C/AAF
w/copy 1st Ind.

TJH, Jr.,
C/A-4

HEADQUARTERS ARMY AIR FORCES - COORDINATION											
Chief of Staff	Sec'y Air Staff	A.A.G.	A-1	A-2	A-3	A-4	A-WPD	A-Insp.	Budget	Statistics	

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A DOD ltrs.
8 Jan & 20 June 1974
By: NARS, LC; Date: 10/1/01

WAR DEPARTMENT
OFFICE OF THE CHIEF OF COAST ARTILLERY
WASHINGTON

14. January 28, 1942

SUBJECT: Supplemental Barrage Balloon Estimates

TO: The Chief of the Air Corps

1. In order that the Chief of Coast Artillery may have available complete information as to the status of funds for the development and procurement of barrage balloon equipment, information is requested as to the action taken on letter dated, The Chief of the Air Corps, December 17, 1941, subject as above (AC 452.3) (OCCA III/KI) Which was forwarded by this office to the Chief of the Army Air Forces by first indorsement dated January 5th, 1942.

2. It is requested that this office be furnished a copy of the "D" Estimate submitted by your office (or so much therof as pertains to barrage balloon equipment) together with such revisions thereof as may be submitted.

3. It is further requested that copies of all future estimates and revisions thereof, pertaining to barrage balloon equipment be furnished this office as a matter of routine.

For the Chief of Coast Artillery:

WILLIAM D. EVANS
Lt. Colonel, C. A. C.,
Assistant

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DOD Rts
8 Jan & 30 June 1974
By ALOSAC; Date 6/26/74

WAR DEPARTMENT

Subject: Supplemental Barrage Balloon Estimates.

1st Ind.

War Department, Office, Chief of the Air Corps, Washington, D. C.
To: The Chief of Coast Artillery.

1. There has been included in Supplemental "D" Estimates FY-1942 (Equipment) Air Corps, Army, Project No. 11 procurement of barrage balloons and accessories estimated obligations $116,283,392.00. This figure is arrived at by taking the shortages listed on Page 84, Equipment Expenditure Program Pertaining to the Third Supplemental National Defense Appropriation FY-1942, which totals $96,152,227.00, and adding thereto a 20% increase to provide for changes in Troop Bases, changes in Tables of Organization and Tables of Basic Allowances, and to provide for increased prices due to speed-up. In addition thereto the sum of $900,000.00 has been included in Supplemental "D" covering the procurement of ten cars, hydrogen tank, at a unit cost of $90,000.00. This is all that G-4 Division, War Department, General Staff would consider suitable for incorporation in Supplemental "D" Estimates. The remaining 70 tank cars should be included in Supplemental "E" Estimates.

2. There was also included $10,000,000.00 under sub-paragraph 1 c of letter of December 17, 1941 to the Chief of the Army Air Forces through the Chief of Coast Artillery, subject: "Supplemental Barrage Balloon Estimates," which is covered by Memorandum dated December 30, 1941 to Major G. W. Heiss, Office of the Under Secretary of War, subject: "Supplemental Estimate "D" FY-1942 (Equipment)" signed by Lt. Col. A. W. Martenstein, Chief, Fiscal Division. So far as is known to this office, this is the only Estimate in which the figures submitted in letter of December 17, 1941 have been included.

3. It is therefore necessary to include at once in Supplemental "E" Estimates FY-1942 the remaining items included in letter of December 17, 1941 previously referred to. In doing this it is believed that paragraph 1 c thereof should remain at the figure $10,000,000.00 inasmuch as approximately $3,500,000.00 have been obligated so far out of current funds which require replacement from future funds available.

4. It is recommended that the Chief of Coast Artillery immediately initiate an action letter through G-4 of the General Staff to the Chief

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WAR DEPARTMENT

Subject: Supplemental Barrage Balloon Estimates
1st Ind. To C/CA (cont'd.)

of the Army Air Forces to include the remaining Estimates to be included in Supplemental "E" FY-1942, in order that same may have Staff approval prior to being incorporated in the Estimates of the Chief of Army Air Forces.

For the Chief of the Air Corps

F. I. ORDWAY, JR.,
Major, Air Corps,
Asst. Exec., Mat. Div.

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8 Jan. & 20 June 1974
By: [illegible] Date: [illegible]

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War Department, Office, Chief of Coast Artillery, February 2, 1942. - To: Chief of the Army Air Forces,--THRU The Assistant Chief of Staff, G-4.

1. In accordance with the recommendation contained in paragraph 4 of the preceding 1st Indorsement, it is requested that funds for the following items be included in the estimates submitted by the Chief of the Army Air Forces for barrage balloon equipment and operation:

a. Hydrogen.

(1) Construction of fixed hydrogen generating plants.....$ 5,000,000

A survey of hydrogen facilities made under direction of the Chief of the Air Corps indicates that in some localities it will be desirable to construct hydrogen generating plants, while at other localities it will be desirable to expand existing facilities to meet requirements.

(2) Purchase of 70 tank cars for shipment of hydrogen gas, each $75,000 - Total..... 5,250,000

A rough estimate of the amount of hydrogen required for the 26 battalions provided for in the augmented force (See Page 84 Expenditure Program, pertaining to 3rd Supplemental, National Defense Appropriation Act, Fiscal Year 1942) is 1,033,696,000 cubic feet for one year of operation. Hydrogen will be procured commercially wherever possible. In order to facilitate the use of hydrogen by using troops, it is estimated that it will be necessary to provide tank cars for the shipment of approximately 300,000,000 cubic feet of gas. It is understood that funds for ten tank cars are included in Estimate "D".

(3) Purchase of hydrogen or materials for its manufacture, including transportation costs thereof.....13,500,000

This sum includes the $3,500,000 referred to in paragraph 3 of 1st Indorsement. Information obtained from Colonel G. W. Hains, Office of the Under Secretary of War, indicates that the Chief of the Air Corps has available sufficient funds to provide the $10,000,000 estimated as the

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cost of expansion of plants, for construction of new plants to produce chemicals for hydrogen generation and to provide compression and storage facilities for the same (See Par. 2, 1st Ind., and Par. 1-C of Inal.).

b. Repair of Barrage Balloon Equipment.....$ 4,212,000
Repairs to barrage balloon equipment which may be made locally will be handled that way. When necessary, certain equipment such as instruments will be returned to the factory for repairs.

c. Development of barrage balloons and related equipment..... 3,000,000
This sum has been requested by the Chief of the Air Corps to carry on development work now in progress or projected for the Coast Artillery Corps.

d. Purchase of lethal devices for cable..... 1,000,000
Experience has indicated the necessity for use of lethal devices on barrage balloon cable to insure positive action against airplanes striking the cable. None are available to barrage balloon troops at this time, but the British have an approved design which, with minor modifications, may be used.

e. Purchase of equipment for operation over water..3,000,000
The total number of anchorages which will be required for over water positions has not yet been determined. Assuming that the average price will be approximately $20,000 per boat, this sum will purchase 150 such anchorages. At present, test anchorages are being constructed by the Quartermaster General.

2. In addition to the items listed above, it is recommended that due to the urgent necessity for providing gas compression facilities at once, the sum of $260,000 be included in estimates to cover the cost of 26 Compressors, portable, high pressure, which are being recommended for inclusion in the Table of Basic Allowances.

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3. In general, recommendations included in paragraph 1, above, conform to those made by the Chief of the Air Corps in his letter, subject "Supplemental Barrage Balloon Estimates" dated December 17, 1941 (AG 452.3; O.C.C.A. 111/XI), copy with 1st Indorsement inclosed. A reduction has been made in the items included in paragraphs 1 a (3) and 1 b, above. The item of $12,000,000 for combined or separate winch and gas cylinder trailers has not been included in paragraph 1, because the state of development of that item does not indicate the necessity of obligating funds for quantity procurement prior to the next estimates which the Assistant Chief of Staff, G-4 (Colonel Wood) states will be submitted in May 1942.

For the Chief of Coast Artillery:

H. N. HERRICK,
Colonel, C.A.C.,
Executive.

1 Incl.—
Copy of ltr dated Office of the Chief of the Air Corps 12/7/41, w/ 1st Ind. thereto (AG 452.3; O.C.C.A. 111/XI).

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6 Jan. & 30 June 1974
By [illegible] Date [illegible]

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G-4/31938-1

3rd Ind.

Office, Assistant Chief of Staff, G-4, War Department, General
To: Chief of Army Air Forces.

1. The Assistant Chief of Staff, G-4, concurs with the recommendations of the Chief of Coast Artillery to the effect that the Chief of the Army Air Forces take necessary action to include in the next available Supplemental Estimate, FY 1942, those projects and articles listed in the second indorsement, Office, Chief of Coast Artillery, February 2, 1942, to Chief of the Army Air Forces, through the Assistant Chief of Staff, G-4.

2. It is further recommended that the concurrence of the Under Secretary of War be obtained as his office has an interest in several of the projects.

BREHON SOMERVELL,
Brigadier General
Assistant Chief of Staff

1 Incl.
(no change)

LeR. Lutes
Brigadier General,
Executive.

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LSW:em (Rewritten wm)

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DOD ltrs
8 Jan. & 20 June 1974
By: AN/USLC; Date: 8/5/74

FEB 4 - 1942

SUBJECT: Materiel Desired by Barrage Balloon School.

TO: Assistant for Procurement Services,
Office of the Chief of the Air Corps.
(Attention: Colonel Lober)

1. Reference is made to Routing and Record sheet addressed to the Intelligence Division by the Materiel Division under date of December 19, 1941, subject same as above.

2. Attached is letter addressed to Military Attache, American Embassy, London, England, by the Chief, Military Attache Section, G-2, War Department, Washington, D. C., under date of October 8, 1941, together with two indorsements and five inclosures.

3. Forwarded for your information.

MARTIN F. SCANLON,
Brigadier General, U.S. Army,
Assistant Chief of the Air Staff, A-2.

1 Incl.
G-2 ltr. to M/A London,
10/8/41, w/2 Inds. & 5 Incls.

Dispatched
FEB 6 1942
AAG

HEADQUARTERS ARMY AIR FORCES - COORDINATION											
Chief of Staff	Secy Air Staff	A.A.G.	A-1	A-2	A-3	A-4	A- WPD	A. Insp.	Budget	Statistics	

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Air AG 452.3 (15)

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6 Jan. & 20 June 1974
By LMK,LC; Date 6/15/76

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AAF/A-2
2746
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FEB 2 1942

SUBJECT: Material Desired by Barrage Balloon School.

TO: Assistant for Procurement Services,
Office of the Chief of the Air Corps.
(Attention: Colonel Leber)

1. Reference is made to Routing and Record sheet addressed to the Intelligence Division by the Material Division under date of December 19, 1941, subject same as above.

2. Attached is letter addressed to Military Attache, American Embassy, London, England, by the Chief, Military Attache Section, A-2, War Department, Washington, D. C., under date of October 8, 1941, together with two indorsements and five inclosures.

3. Forwarded for your information.

J. T. CLEMENT,
Major, Air Corps,
Chief, Foreign Liaison Section, A-2,
Air Liaison Officer.

1 Incl.
A-2 ltr. to M/A London,
10/8/41, w/2 Inds. & 5 incls.

HEADQUARTERS ARMY AIR FORCES							COORDINATION				
Chief of Staff	Sec'y Air Staff	A A G	A 1	A 2	A 3	A 4	A WPD	A Insp	Budget	Stat. Stds	

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DECLASSIFIED DOD ltr 6 Jun. & 20 June 1974 By NNDJ/NSLC; Date 15 Jul 74

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OFFICE OF THE CHIEF OF THE AIR CORPS

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2746

ROUTING AND RECORD SHEET

(To be filed with correspondence)

Note.—A line will be drawn across sheet after action by each office concerned.

SUBJECT: Materiel Desired by Barrage Balloon School.

NO.	FROM	TO	DATE	DATA
1.	Mat.Div. (4-K)	Intel. Div.	1941 12-19	1. Reference our Routing and Record Sheet dated September 10, 1941, same subject, it is requested that: a. Information be furnished as to the status of procurement of the items requested therein, and in addition, the items requested in letter, dated this office, October 8, 1941, to the Assistant Chief of Staff, G-2,(Col. B. B. McMahon), subject: "Barrage Balloon Equipment," and the expected date of receipt in this country. b. It is requested that a 1,000 ft. length of British barrage balloon cable, fifty (50) cartridges for D.P.L. unit, and two (2) cramps for driving the D.P.L. wedges be added to the equipment to be obtained. 2. It is believed that the allotment of funds to the Military Attache, London, England (reference Routing and Record Sheet September 23, 1941 to Fiscal Division, subject, "Allotment of Funds to Military Attache, London, England, for Procurement of Certain Items of Barrage Balloon Equipment,") will be sufficient to pay for the additional items requested above. Chief, Materiel Division.

DEC 23 '41 AM

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No. 45914/JLH/jph 1st Ind.

Office of the Military Attache, American Embassy, London, England, December 18, 1941. To: Assistant Chief of Staff, G-2, Washington, D. C.

The items listed on procurement authority attached to basic communication are being purchased and shipped to The Quartermaster, Camp Davis, North Carolina, for The Air Corps Supply Officer, Barrage Balloon Training Center

For the Military Attache:

/s/ John L. Horner, Jr.
JOHN L. HORNOR, JR.
Major, Q. M. C.
Asst. Military Attache

Encl: 6

(a) Copy of letter from the Assistant Chief of Staff requesting purchase of above equipment, dated October 8, 1941.

(b) Copy of letter from the Commanding Officer, Barrage Balloon Training Center, Camp Davis, North Carolina, dated August 29, 1941.

(c) Copy of 1st Indorsement thereto from the Chief of Coast Artillery dated September 5, 1941.

(d) Memorandum thereon from the Chief of Air Corps dated September 22, 1941

(e) Memorandum dated October 4, 1941 from the Chief of Air Corps providing procurement authority therefor (AC 2062 P 11-30 A 0705-2)

(f) Memorandum from the Chief of Air Corps dated October 8, 1941, requesting the purchase of two items in addition to those mentioned in (a) above.

MID 452.31 Great Britain 10-8-41 (9-22-41) 2nd Ind. OTJ/ess
G-2, W. D., January 27, 1942. To: Chief of Air Corps, War Department, Washington, D.C.

B.B.M.

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WAR DEPARTMENT
WAR DEPARTMENT GENERAL STAFF
MILITARY INTELLIGENCE DIVISION, G-2
WASHINGTON, D. C.

October 8, 1941

SUBJECT: Purchase of Barrage Balloon Equipment.

TO: Military Attache, American Embassy, London, England.

1. Attached are:

(a) Copy of letter from the Commanding Officer, Barrage Balloon Training Center, Camp Davis, North Carolina, dated August 29, 1941, requesting above equipment.

(b) Copy of 1st Indorsement thereto from the Chief of Coast Artillery dated September 5, 1941.

(c) Memorandum thereon from the Chief of Air Corps dated September 22, 1941.

(d) Memorandum dated October 4, 1941 from the Chief of Air Corps providing procurement authority therefor (AC 3062 ? 11-30 A 0705-2).

(e) Memorandum from the Chief of Air Corps dated October 8, 1941, requesting the purchase of two items in addition to those mentioned in (a) above.

2. It is requested that this equipment be shipped to the Quartermaster, Camp Davis, North Carolina, for the Air Corps Supply Officer, Barrage Balloon Training Center.

For the Acting A. C. of S., G-2:

/s/ J. S. Winslow
J. S. WINSLOW
Lieut. Colonel, Field Artillery
Chief, Military Attache Section

Encls: (as listedin para. 1).

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WAR DEPARTMENT
OFFICE OF THE CHIEF OF THE AIR CORPS
WASHINGTON

October 8, 1941.

SUBJECT: Barrage Balloon Equipment

TO: Assistant Chief of Staff, G-2.
Attention: Col. B. B. McMahon.

1. It is requested that the following two items of British equipment be purchased for the Barrage Balloon School, Camp Davis, North Carolina, under Procurement Authority Serial Number 2062, dated August 12, 1941:

a. One lightning predictor, the wiring diagram for which is numbered (KBC-399-41).

b. One combined D.P.L. and ripping link.

For the Chief of the Air Corps

DONALD F. FRITCH
Lieut Col., Air Corps
Assistant Executive
Materiel Division.

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A. DOD ltrs
6 Jan. & 20 June 1974
By: [illegible]; Date: [illegible]

AG 452.3 (1-26-42)MSC-D MHR/gc - 1705.

January 30, 1942.

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Auth: T.A.G.
Initials: G.B
Date: JAN 30 1942

SUBJECT: Barrage Balloon Equipment.

TO: Chief of Coast Artillery.

1. Reference is made to your memorandum to the Deputy Chief of Staff (Major General R. C. Moore), January 15, 1942, subject: British Barrage Balloon Equipment.

2. In reply to the above-mentioned memorandum the Defense Aid Director informed the Assistant Chief of Staff, G-4, as follows:

"The British advised that barrage balloon equipment can be furnished by them as follows:

2,000	Mark VII Balloons
600	Trailer Winches mounted on Subframe without Engines
500	Reels of Cable - Mark II
1,728	Ripping Links and 6,000 Cartridge Ripping Links, Mark III-Z.
2,016	Heavy Duty D.P.L. Parachutes with Bags and D rings."

"The British will be requested to furnish this equipment, marking it for shipment to: Coast Artillery Section, Columbus General Depot, Columbus, Ohio, in accordance with request of the Chief of Coast Artillery."

By order of the Secretary of War:

A. G. Brookbridge

Adjutant General.

JAN 31 1942
AAC Received

COPY TO: Chief of the Army Air Forces,

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DOD ltrs.
8 Jan & 20 June 1974
By [illegible] NC, Date 10/15/74

FEB 2 1942

SUBJECT: Lethal Devices for Barrage Balloons.

To: Assistant for Procurement Services,
Office, Chief of Air Corps.
(Attention: Colonel Leber)

1. Attached is letter number S10-14 3552/WOJ, addressed to Office of the Chief of the Air Corps, War Department, Washington, D. C., by the British Air Commission, Washington, D. C., under date of January 26, 1942, concerning above subject.

2. This office has no record of Requisition Number W3CA1 dated January 15, 1942.

3. As discussed with your Colonel Leber, this information was first given orally by telephone by Mr. Jennings of the British Air Commission to Captain L. W. Sweetser, Jr., Foreign Liaison Section, A-2, and was immediately transmitted to Colonel Leber. When letter of January 26, 1942, was received, this was likewise transmitted by telephone. This is now forwarded for the specific attention of Colonel Leber.

4. Attention is invited to the fact that copy of this letter was sent to Lieutenant Colonel W. H. Dunham, who should undoubtedly be contacted prior to making up additional quantities for balloons. After this matter has been entirely worked out and coordinated, this office should be pleased to furnish the information to the British Air Commission.

5. It is understood that Requisition Number W3CA1 was forwarded to the British through another channel.

Disposition
FEB 5 1942
AAG

J. T. CLEMENT,
Major, Air Corps,
Foreign Liaison Section, A-2.

HEADQUARTERS ARMY AIR FORCES										
Chief of Staff	Secy Air Staff	A A G	A-1	[illegible]	[illegible]	A-4	A-5	A-6	Budget	Statistics
		1 Incl. Ltr.fr.Br.Air Com. S10-14 3552/WOJ,1/26/42.								

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BRITISH AIR COMMISSION

1785 MASSACHUSETTS AVENUE
WASHINGTON, D. C.

TELEPHONE HOBART 9000

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Per Jcs memo 4 Jan. 75
By [illegible] Date 12/15/76

PLEASE QUOTE
REFERENCE NO. 810-14
8552/WGJ

January 26, 1942

Office of the Chief of the Air Corps
War Department
Washington, D.C.

Attention: Major Joseph T. Clement, A.C.
Chief, Foreign Liaison Section
Room 708, Maritime Building
Washington, D.C.

Subject: Barrage Balloons

BAC File No. 810-14/8552/WGJ
FLS File No. 4241

Further to our letter dated December 30th, we have not received notice from England that it may be possible to supply additional quantities of Mark VII balloons, cables and winches over and above those stated in the above letter. It may also be possible to release some Mark VI (Convoy Balloons), if required.

Will you please let us know the total number of Mark VII balloons, cables and winches that you would like in addition to the numbers requested in your requisition, Number W3CA1, dated January 15, 1942? Will you also please state if you require any Mark VI balloons? The quantities asked for should cover all requirement sources, e.g. Air Corps, Coastal Defence, etc.

(Sgd.) R. L. RAGG.
Roderic Hill
Air Marshal

WGJ:se

cc: Lt. Col. W.H. Dunham

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Air AG 452.3 (13)

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8 Jan. & 20 June 1974
By: NNRE, LC; Date 10/6/76

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February 11/1942

Barrage Balloons and Equipment for SUMAC

To: WPD

452.3 (12)

No Copy of D/F -
WPD 4630-37
concurred by Col. Curtis

Dispatched
FEB 17 1942
AAG

Concur.

Eq. Army Air Forces
FEB 12
AAG RECEIVED

For the Chief of the Air Staff

H. S. VANDENBERG
Colonel, Air Corps
Assistant Chief of the Air Staff, A-3

NOTED 2/16/42
Office Chief of the Air Staff

Incl.
D/F from WPD
WPD/4630-37, 2/3/42,
with Incl: Memo A C of S, WPD (1-18-42) from CAOA (1-18-42)

ARMY AIR FORCES — COORDINATION

Chief of Staff	Sec.			A-3	A-4	A-WPD	A-Insp.	Budget	Statistics	
				Vem						

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DOD ltr
8 Jan. & 20 June 1974
By [illegible] LC; Date [illegible]

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WAR DEPARTMENT
Office of the Chief of Coast Artillery
Washington

January 18, 1942

Subject: Barrage Balloons and Equipment for SUMAC.

MEMORANDUM for the Assistant Chief of Staff, War Plans Division.

1. Reference is made to disposition form, subject "Barrage Balloons and Equipment for Australia", dated the War Department General Staff, War Plans Division, January 12, 1942 (WPD/4630-37) (OCCA 580.85/102-A), which is returned herewith.

2. The requirements of letter forwarded with disposition form, referred to above, can be satisfied by the shipment of three Barrage Balloon Battalions to SUMAC, one for station at each of the places named. Each Barrage Balloon Battalion contains 54 operating balloons and 27 spare balloons.

3. There are now active five Barrage Balloon Battalions, stationed as follows:

301st Coast Artillery Barrage Balloon Battalion - Panama
302d Coast Artillery Barrage Balloon Battalion - Camp Davis, N. C.
(scheduled to move to Camp Tyson, January 20, 1942)
303d Coast Artillery Barrage Balloon Battalion - Bremerton, Wash.
304th Coast Artillery Barrage Balloon Battalion - Seattle, Wash.
305th Coast Artillery Barrage Balloon Battalion - Camp Davis, N. C.
(scheduled to move to Mare Island, California by Feb. 1, 1942)

The 302d Coast Artillery Barrage Balloon Battalion is intended for use as school troops and as a source of cadres for additional Barrage Baloon Battalions scheduled for activation in the future, and should not be considered as available for other assignment.

4. The following additional Barrage Balloon Battalions are tentatively scheduled for activation during the remainder of the calendar year 1942:

306th Coast Artillery Barrage Balloon Battalion at Camp Tyson, Tenn., February 1, 1942, for transfer to MAGNET about June 1, 1942.
307th Coast Artillery Barrage Balloon Battalion at Camp Tyson, Tenn., February, 1942.

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308th Coast Artillery Barrage Balloon Battalion at Camp Tyson, Tenn., April, 1942.
309th Coast Artillery Barrage Balloon Battalion at Camp Tyson, Tenn., April, 1942
310th Coast Artillery Barrage Balloon Battalion at Camp Tyson, Tenn., July, 1942
311th Coast Artillery Barrage Balloon Battalion at Camp Tyson, Tenn., July 1942
312th Coast Artillery Barrage Balloon Battalion at Camp Tyson, Tenn., August, 1942

5. It is estimated that the 307th, 308th and 309th Coast Artillery Barrage Balloon Battalions could be made available for shipment to SUMAC about July 1, 1942 provided activation is authorized in accordance with tentative schedule indicated in paragraph 4, above, and these units are placed in a high priority for the supply of personnel.

6. It is recommended that:

a. The 307th, 308th and 309th Coast Artillery Barrage Balloon Battalions be activated in accordance with the schedule indicated in paragraph 4, above,

b. These battalions be placed in a high priority for the supply of personnel.

c. These battalions be earmarked for transfer to SUMAC about July 1, 1942.

For the Chief of Coast Artillery:

/s/ H. N. HERRICK,
Colonel, C.A.C.
Executive

1 Incl: Dis Form WPD/4630-37
w/1 inclosure.

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DOD ltrs.
8 Jan. & 20 June 1974
By: AAMH LC; Date 9/18/76

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AAF/A-4
JRF/emd

JAN 1 0 1942

MEMORANDUM FOR THE ASSISTANT CHIEF OF STAFF, WPD:

Subject: Barrage Balloons and Equipment for Australia.

1. The following is extracted from radiogram No. 8, January 4, 1942, the action copy of which was sent to the Office, Chief of Air Corps:

"It is essential that sixty (60) barrage balloons be sent to Darwin, Townsville, and Brisbane for use there, in order to provide adequate protection of ports to be used by the U. S. Army Air Forces in Australia. Requested that as soon as possible, these 180 balloons be shipped plus necessary operating personnel and equipment."

2. Inasmuch as the operation of barrage balloons is a function of the Coast Artillery the matter is referred to you for such action as may be advisable.

3. It is requested that General Brett be advised of the War Department's action in this matter.

For the Chief of the Air Staff:

JOHN Y. YORK, Jr.
Col. Air Corps,
T. J. [illegible], Jr.,
Colonel, Air Corps,
Acting Assistant Chief of the Air Staff, A-4.

HEADQUARTERS ARMY AIR FORCES - COORDINATION											
Chief of Staff	Sec'y Air Staff	A.A.G.	A-1	A-2	A-3	A-4	A-WPD	A-Insp.	Budget	Statistics	
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(Air AG)
A C 57

January 9, 1942

SUBJECT: Barrage Balloons, Canal Zone

TO : The Chief of the Air Corps

The following exceppt from a recent communication from the Commanding General, Caribbean Air Force, is quoted for your information and necessary action:

"In the vicinity of Pedro Miguel, Gatun Locks, Miraflores, and Gatun Spillway Barrage balloons will be flown at 6,000 feet, and until further notice they will be flown in those areas."

By Command of Lieutenant General ARNOLD:

Secret

JOHN D. COOLEY
1t.Col., A.G.D.
Assistant Air Adjutant General.

Same letter sent to CG AFCC and CG Field Forces

Dispatched
JAN 9 1942
AAG

DECLASSIFIED
DOD ltrs
8 Jan. & 20 June 1974
By: GAJC; Date: 8/8/74

HEADQUARTERS ARMY AIR FORCES						COORDINATION					
Chief of Staff	Secy Air Staff	A A G	A 1	A 2	A 3	A 4	A WPD	A Insp	Budget	Statistics	
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AAF 39

air ag 452.3 (10)

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DOD .ltr
8 Jan. & 20 June 1974
By NNDK LC Date

~~SECRET~~ DECLASSIFIED

HEADQUARTERS ARMY AIR FORCES
ROUTING AND RECORD SHEET

File No. . . . . .

Note.-- A line will be drawn across sheet after each comment.

Tally No. AAF . . . . . .

SUBJECT: Barrage Balloons, Canal Zone

NO.	FROM	TO	DATE	COMMENTS AAF/A-3 WGC:eb
1	AAF A-3	AAG	1942 1-9	Request that communication substantially as follows be addressed immediately to the Chief of the Air Corps, the Commanding General, Air Force Combat Command, and to Commanding General, Field Forces, Army War College. excerpt from a recent communication "The following is quoted for your information and necessary action: "In the vicinity of Pedro Miquel, Gatun Locks, Miraflores, and Gatun Spillway Barrage balloons will be flown at 6,000 feet, and until further notice they will be flown in those areas.'" By direction E. L. N. C/A-3
				from the Commanding General, Caribbean Air Force

DECLASSIFIED

(Do not use reverse side) V-4071, AC. Rev. 8/14/41

Page No. _____ ~~SECRET~~ Envl AG 452.3 (10)

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SUBJECT: Tests of Manheim Schwartz Kite System

1 C AC CAAF 11-7-41 Attached hereto is Memorandum report EXP M 51-LA269 Tests of Manheim Schwartz Kite System dated Oct. 4 1941 for your information, and return.
M.S.F.

Incl 1 w/ exh. A to M

452.3

2 Air AG Chief A.C 11-19 1. Noted and returned.

W.W.D.
AIR A.G.

incl. a-c

Dispatched
NOV 21 1941
AAG

HEADQUARTERS ARMY AIR FORCES - COORDINATION											
Chief of Staff	Sec'y Air Staff	A.A.G.	A-1	A-2	A-3	A-4	A-WPD	A-Insp.	Budget	Statistics	

AAF-39

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DECLASSIFIED
DOD Ltrs.
8 Jan. & 20 June 1974
By: [illegible] Date: [illegible]

CONFIDENTIAL

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Tests of Manheim-Schwartz Kite System.

1. C/AC C/AAF 1941 11-7

1. Attached hereto is Memorandum Report XXP-M-51/LA269, "Tests of Manheim-Schwartz Kite System," dated October 4, 1941, for your information and return.

M. S. F.
Executive.

1 Incl. - XXP-M-51/LA269
w/Exhibits A to M

(4-K)
CBL:ah

452.3 (7)

To Mail & Record Room	Date
EXECUTIVE	M3F
ADMINISTRATIVE	
B & G	
CIVILIAN PERS.	
FISCAL	
INSPECTION	
INTELLIGENCE	
LEGAL	
MATERIEL	CRM 10/20
MEDICAL	
MILITARY PERS.	
PLANS	
TRAIN. & OPER.	
W. COM. AERO BD.	

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MDAC-265-WP-6-25-41-200M

DECLASSIFIED
A DOD ltrs.
8 Jan. & 20 June 1974
By NARS, LC; Date 10/31/76

INTER-OFFICE MEMORANDUM

WAR DEPARTMENT, AIR CORPS
Office, Assistant Chief
Materiel Division

AHR:lbs:51

571

Wright Field, Dayton, Ohio
Date OCT 21 1941

TO: Chief, Materiel Division, O.C.A.C.,
Washington, D. C.
Attention: Chief, Barrage Balloon Section.

SUBJECT: Tests of Manheim-Schwartz Kite System.

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~~CONFIDENTIAL~~

1. There is inclosed for your information and file Memorandum Report EXP-M-51/LA269, "Tests of Manheim-Schwartz Kite System", which supplements Colonel Lober's report dated September 22, 1941, on these tests.

D. J. ELLINGER
Major, Air Corps
FOR

F. O. CARROLL,
Lt. Colonel, A. C.,
Chief, Experimental
Engineering Section.

2 Incls.
Incl 1 - Exp-M-51/LA 269
Incl 2 - Col. Lober Report 9/22/41

DECLASSIFIED
~~CONFIDENTIAL~~

Signature T. A. Sims
T. A. SIMS
Major, Air Corps
Ass't. Technical Executive

aj-50
ai-407

K-941

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DECLASSIFIED
DOD ltr. 20 June 1974
By [illegible] NLC, Date 10/21/76

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DECLASSIFIED

3374

SUBJECT: Barrage Balloon Requirements (Continental United States).

AG 452.3 (11-5-41)MSC-D 6th Ind. LFL/evh-1705.

War Department, A.G.O., January 14, 1942. - To: Chief of the Army Air Forces.

1. The recommendations contained in the preceding 3rd and 5th Indorsements have been noted.

2. Supplemental Estimates "D", FY 1942 submitted by the Chief of the Air Corps completes the shortages on the 8,775 low altitude barrage balloons mentioned in the 3rd Indorsement.

3. It is desired that no further action be taken on this basic letter.

By order of the Secretary of War:

Joseph R. Clark.
Adjutant General.

No further action necessary
File (WD)

No further action
file

Rec'd AG 452.3 (6)

DECLASSIFIED
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Encls 452.3 (6)

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A DOD ltrs
8 Jan. & 20 June 1974
By [illegible] LC; Date 10/18/76

WAR DEPARTMENT

659

THE ADJUTANT GENERAL'S OFFICE

IN REPLY REFER TO AG 452.3 (6-11-41)MC-D WASHINGTON JMH/mlh - 1712.

November 5, 1941.

~~SECRET~~

Auth: T.A.G.
Initials: CR
Date: NOV 5 1941

SUBJECT: Barrage Balloon Requirements (Cont. U.S.).

TO: Chief of the Army Air Forces.

1. Reference is made to letter, this office, to Commanding General, GHQ Air Force, June 11, 1941, AG 452.3 (6-9-41) MC-WPD, subject: Barrage Balloon Requirements (Cont. U.S.), and related correspondence. A total requirement for Continental United States and overseas commands of 4905 low altitude barrage balloons and 2452 high altitude barrage balloons is approved for planning purposes.

2. It is desired that you include funds in estimates, FY 1943 for the development and purchase of barrage balloons and related equipment on the following bases:

a. For experiment and development of barrage balloons and related equipment, $3,000,000.
b. For purchase of helium, hydrogen, repair and replacement parts and materials, and for services in connection with salvage, reclamation, repairs, etc., $6,500,000.
c. For the procurement of approximately 726 low altitude balloons and related equipment, $13,500,000.
d. Total amount authorized, $23,000,000.

3. It is further desired that request for funds for the procurement of high altitude balloons will be resubmitted after the high altitude balloon has been developed, tested and standardized.

By order of the Secretary of War:

Carl Robinson
Adjutant General.

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~~SECRET~~

AG 452.3 (6)

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DECLASSIFIED

Subject: Barrage Balloon Requirements (Cont. U.S.)

1st Ind.

War Department, Headquarters Army Air Forces, Washington, D. C.,
NOV 19 1941 To: The Adjutant General.

1. Present production rate of barrage balloons under current contracts represent about 3,400 per 18 months' time, or about 2,200 units per year. Procurement of approximately 726 low altitude balloons and related equipment during F. Y. 1943 will utilize only about one-third the productive capacity available.

2. It may be desirable, as it appears from the above angle, to increase item c, paragraph 2 to 1,500 units or about three-fourths productive capacity. This particular point is raised accordingly.

4 A. G. O.
NOV 19 1941
RECD BACK

NOV 19 1941

By the Chief of the Air Forces:

H. H. ARNOLD

NOV 22 1941
31938-1

IN IN

G-4 DIVISION
WAR DEPT GEN. STAFF

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~~SECRET~~

AMAG 452.3 (6)

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SUBJECT: Barrage Balloon Requirements, (Cont. U.S.).

AG 452.3 (11-5-41)MC-D 2nd Ind. LFL/gjw - 1712.

War Department, A.G.O., November 27, 1941. - To: Chief of Coast Artillery.

For comment and recommendation.

By order of the Secretary of War:

REC'D NOV 29 1941 O.C.C.A.

Adjutant General.

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DECLASSIFIED
DOD ltrs.
8 Jan. & 20 June 1974
By LC; Date 10/8/74

580.85/AL-1 3rd Ind. 12.

War Department, Office, Chief of Coast Artillery, December 10th, 1941.
To: The Adjutant General.

1. Since this communication was referred to the Chief of Coast Artillery, the Chief of the Air Corps has submitted a new Expenditure Program, which is based on the procurement of a total of 8,775 low altitude barrage balloons. If funds to procure the shortages in balloons shown in the new Program are appropriated, it is believed that present balloon manufacturing facilities will be taxed to the utmost.

2. It is understood that the Chief of the Air Corps is taking steps to obtain additional funds for the items mentioned in paragraph 2-a and b of the basic letter.

3. In view of the increase in requirements, it is recommended that no further action be taken on this communication.

For the Chief of Coast Artillery:

DEC 11 1941

Rec'd Back
DEC 11 1941
46 A G O

D. W. HICKEY, JR.,
Lt. Colonel, C. A. C.,
Assistant

DEC 13 1941
31938-1

IN IN

G-4 DIVISION.
WAR DEPT. GEN. STAFF

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SUBJECT: Barrage Balloon Requirements (Cont. U.S.).

AG 452.3 (11-5-41)MSC-D 4th Ind. LFL/hm - 1712.

War Department, A.G.O., December 18, 1941. - To: Chief of the Army Air Forces.

For comment and recommendation in view of the recommendations set forth in Paragraph 3 of preceding 3rd Indorsement.

By order of the Secretary of War:

Joseph T. Clark

Adjutant General.

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~~SECRET~~ AG 452.3 (6)

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DECLASSIFIED
DOD Res
8 Jan & 20 June 1974
By: AAG,NARS Date: 6/24/74

Subject: Barrage Balloon Requirements

5th Ind.

War Department, Headquarters Army Air Forces, Washington, D. C.,
Jan. 12,1942 To: The Adjutant General

1. Recommendations of the third indorsement noted.

2. It is recommended that no further action be taken on this communication.

For the Chief of the Army Air Forces:

4 A. G. O.
JAN 12 1942
RECD BACK

JAN 12 '42 AM

RECEIVED MISC. DIV., AGO.
S. & C. Section

John B. Cooley.

JOHN B. COOLEY,
Lieutenant Colonel, A. G. D.,
Assistant Air Adjutant General.

JAN 12 1942
3 1938-1

IN IN
G-4 DIVISION
WAR DEPT. GEN. STAFF

DECLASSIFIED
~~SECRET~~ - 6 -

AmAD 452.1 (8)

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Subject: Barrage Balloon Requirements

AAF/A-4
EBB/elm

DECLASSIFIED
DOD ltrs.
6 Jan. & 20 June 1974
By: [illegible] Date [illegible]

(Written January 9, 1942)

5th Ind.

War Department, Headquarters Army Air Forces, Washington, D. C., Jan. 12, 1942 To: The Adjutant General

1. Recommendations of the third indorsement noted.

2. It is recommended that no further action be taken on this communication.

For the Chief of the Army Air Forces:

JOHN B. COOLEY,
Lieutenant Colonel, A.G.D.,
Assistant Air Adjutant General.

Dispatched
JAN 12 1942
AAG

10 1942
AAG Received

HEADQUARTERS ARMY AIR FORCES - COORDINATION											
Chief of Staff	Sec'y Air Staff	A.A.G.	A-1	A-2	A-3	A-4	A-WPD	A-Insp.	Budget	Statistics	
						Gen'l [illegible]					

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DOD ltrs
8 Jan. & 20 June 1974
By: [illegible] LC; Date 10/16/74

Barrage Balloon Requirements (Cont. U.S.).

2.	OCAC Mat.Div. (4-K)	AAF C/AS	1941 12-30	1. It is recommended that no further action be taken on basic communication inasmuch as items 2 a and b are to be included in Supplement E to be submitted in January, 1942, and item 2 g is being included in Supplement D, to be submitted at an early date.

CBL:ah

Incls. n/c

W.R.H.
Actg. C/AC

EXECUTIVE
ADMINISTRATIVE
S & G
CIVILIAN PERS
FISCAL
INSPECTION
INTELLIGENCE
LEGAL
MATERIEL
MEDICAL
MILITARY PERS.
PLANS
TRAIN. & OPER.
W. CON AERO BD.

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DECLASSIFIED
DOD ltrs.
6 Jan. & 20 June 1974
By: [illegible] Date: [illegible]

WAR DEPARTMENT
The Adjutant General's Office
Washington

AG 452.3 (6-11-41) MC-D

JMH/mlh - 1712

November 5, 1941.

SUBJECT: Barrage Balloon Requirements (Cont. U.S.).

TO: Chief of the Army Air Forces.

1. Reference is made to letter, this office, to Commanding General, GHQ Air Force, June 11, 1941, AG 452.3 (6-9-41) MC-WPd, subject: Barrage Balloon Requirements (Cont. U.S.), and related correspondence. A total requirement for Continental United States and overseas commands of 4905 low altitude barrage balloons and 2452 high altitude barrage balloons is approved for planning purposes.

2. It is desired that you include funds in estimates, FY 1943 for the development and purchase of barage balloons and related equipment on the following bases:

a. For experiment and development of barrage balloons and related equipment, $3,000,000.
b. For purchase of helium, hydrogen, repair and replacement parts and materials, and for services in connection with salvage, reclamation, repairs, etd., $6,500,000.
c. For the procurement of approximately 726 low altitude balloons and related equipment, $13,500,000.
d. Total amount authorized, $23,000,000.

3. It is further desired that request for funds for the procurement of high altitude balloons will be resubmitted after the high altitude balloon has been developed, tested and standardized.

By order of the Secretary of War:

Adjutant General

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A DOD ltr.
8 Jan. & 20 June 1974
By: ALM,LC; Date 10/1/74

Subject: Barrage Balloon Requirements (Cont. U.S.)

1st Ind.

War Department, Headquarters Army Air Forces, Washington, D. C.
To: The Adjutant General

1. Present production rate of barrage balloons under current contracts represent about 3,400 per 18 months' time, or about 2,200 units per year. Procurement of approximately 726 low altitude balloons and related equipment during F. Y. 1943 will utilize only about one-third the productive capacity available.

2. It may be desirable, as it appears from the above angle, to increase item c, paragraph 2 to 1,500 units or about three-fourths productive capacity. This particular point is raised accordingly.

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DOD Ltr
8 Jan. & 20 June 1974
By: AWB, NLC; Date 6/21/74

SUBJECT: Barrage Balloon Requirements, (Cont. U.S.).

AG 452.3 (11-5-41MC-D 2nd Ind. LFL/gjw - 1712.

War Department, A.G.O., November 27, 1941. - To: Chief of Coast Artillery.

For Comment and recommendation.

By order of the Secretary of War:

Adjutant General

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DECLASSIFIED
DOD ltr
5 Jan. & 20 June 1974
By: [illegible] Date: [illegible]

580.85/AL-1 3rd Ind. 12.

War Department, Office, Chief of Coast Artillery, December 10th, 1941.
To: The Adjutant General.

1. Since this communication was referred to the Chief of Coast Artillery, the Chief of the Air Corps has submitted a new Expenditure Program, which is based on the procurement of a total of 8,775 low altitude barrage balloons. If funds to procure the shortages in balloons shown in the new Program are appropriated, it is believed that present balloon manufacturing facilities will be taxed to the utmost.

2. It is understood that the Chief of the Air Corps is taking steps to obtain additional funds for the items mentioned in paragraph 2-a and b of the basic letter.

3. In view of the increase in requirements, it is recommended that no further action be taken on this communication.

For the Chief of Coast Artillery:

D. W. HICKEY, JR.,
Lt. Colonel, C. A. C.,
Assistant

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DOD ltrs
8 Jan. & 20 June 1974
By LC; Date 10/21/74

SUBJECT: Barrage Balloon Requirements (Cont. U. S.).

AG 452.3 (11-5-41)MSC-D 4th Ind. LFL/hm - 1712.

War Department, A.G.O., December 18, 1941. - To: Chief of the Army Air Forces.

For comment and recommendation in view of the recommendations set forth in Paragraph 3 of preceding 3rd Indorsement.

By order of the Secretary of War:

Adjutant General.

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DOD ltrs
8 Jan. & 20 June 1974
By [illegible] Date 10/30/74

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HEADQUARTERS ARMY AIR FORCES

ROUTING AND RECORD SHEET

2835

Note.--A line will be drawn across sheet after each comment.

File No. .....

Tally No. AAF .....

SUBJECT: Barrage Balloon Requirements (Cont. U.S.).

NO.	FROM	TO	DATE	COMMENTS
1.	AAF C/AS	OCAC Mat. Div.	1941 12/2[illegible]	AAF/A-4 JFW/coc 1. For the attention of Lt. Col. C. L. Lober for comment and recommendation. Incls: Ltr fm AGO to CAAF abv sub 11/5/41 w/4 Inds. GS C/AS
2.	OCAC Mat. Div. (4-a)	AAF C/AS	1941 12-30	1. It is recommended that no further action be taken on basic communication inasmuch as items 2 a and b are to be included in Supplement E to be submitted in January, 1942, and item 2 c is being included in Supplement D, to be submitted at an early date. W.R.W. Actg. C/AC Incls. n/c

RECEIVED DEC 30 1941 CLASSIFIED MAIL AND FILE UNIT

(Do not use reverse side) W-4071, AC. Rev. 8/14/41

A-12/30-(4-a) A-989 XN-765

Page No. ~~SECRET~~ DECLASSIFIED AG 452.3 (6)

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WAR DEPARTMENT
OFFICE OF THE CHIEF OF THE AIR CORPS
WASHINGTON

Received from the Office, Chief of the Air Corps the following (SECRET, [redacted]) document:

DECLASSIFIED

Addressed to: AAF C/AS

Subject: Barrage Balloon Requirements

Type of Corres.: RAR

Date: 12-30

Basic Dated:

No. Incls.: ltr frm ASC to CAAF 11/8/41 w/ 4 Inds

PLEASE ACCOMPLISH AND
RETURN IMMEDIATELY TO
Classified Mail & File Unit,
Administrative Division,
Office, Chief of Air Corps.

DATE RECEIVED: _____

BY _____
Name

_____
Rank Branch

OFFICE OF: _____

OCAC NO. _____

W-4003,AC.,Rev. 12/2/41

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DOD ltrs
8 Jan. & 20 June 1974
By [illegible] Date [illegible]

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Barrage Balloon Requirements (Cont. U.S.).

1.	AAF C/AS	OCAC Mat. Div.	1941 12/22	1. For the attention of Lt. Col. C. L. Leber for comment and recommendation.	AAF/A-4 JTE/ccc

Incls:
Ltr fm AGO to CAAF abv sub 11/5/41 w/4 Incls.

CS
C/AS

45136

Disposition
DEC 30 1941
AAG

HEADQUARTERS ARMY AIR FORCES - COORDINATION

Chief of Staff	Secy Air Staff	A.A.G.	A-1	A-2	A-3	A-4	A-WPD	A-Insp.	Budget	Statistics	

AAF-39

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DECLASSIFIED
A DOD ltr
6 Jun. & 20 June 1974
By: ; Date:

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DECLASSIFIED

AAF/Asd
JPC/cmd
Written Nov. 14, 1941.

Subject: Barrage Balloon Requirements (Cont. U.S.)

1st Ind.

War Department, Headquarters Army Air Forces, Washington, D. C.,
To: The Adjutant General.

NOV 19 1941

1. Present production rate of barrage balloons under current contracts represent about 8,400 per 18 months' time, or about 5,200 units per year. Procurement of approximately 726 low altitude balloons and related equipment during F. Y. 1942 will utilize only about one-third the productive capacity available.

2. It may be desirable, as it appears from the above angle, to increase item c, paragraph 2 to 1,800 units or about three-fourths productive capacity. This particular point is raised accordingly.

452.3 (6)

For the Chief of the Army Air Forces:

WILLIAM W. DICK
Lt. Col., A.G.D.
Air Adjutant General

Dispatched
NOV 19 1941
AAG

HEADQUARTERS ARMY AIR FORCES - COORDINATION											
Chief of Staff	Sec'y Air Staff	A.A.G.	A-1	A-2	A-3	A-4	A-WPD	A-Insp.	Budget	Statistics	

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DOD ltrs
6 Jan. & 20 June 1974
Sys Atta, LC; Date filed

AG 452.3 (6-11-41)MC-D JMK/mlh - 1712.

November 5, 1941.

~~SECRET~~

SUBJECT: Barrage Balloon Requirements (Cont. U.S.).

Auth: T.A.G.
CR
Initials:
Date: NOV 5 1941

TO: Chief of the Army Air Forces.

1. Reference is made to letter, this office, to Commanding General, GHQ Air Force, June 11, 1941, AG 452.3 (6-9-41) MC-WPD, subject: Barrage Balloon Requirements (Cont. U.S.), and related correspondence. A total requirement for Continental United States and overseas commands of 4906 low altitude barrage balloons and 2452 high altitude barrage balloons is approved for planning purposes.

2. It is desired that you include funds in estimates, FY 1943 for the development and purchase of barrage balloons and related equipment on the following bases:

a. For experiment and development of barrage balloons and related equipment, $3,000,000.
b. For purchase of helium, hydrogen, repair and replacement parts and materials, and for services in connection with salvage, reclamation, repairs, etc., $6,800,000.
c. For the procurement of approximately 726 low altitude balloons and related equipment, $13,800,000.
d. Total amount authorized, $23,000,000.

3. It is further desired that request for funds for the procurement of high altitude balloons will be resubmitted after the high altitude balloon has been developed, tested and standardized.

By order of the Secretary of War:

CARL ROBINSON

Adjutant General.

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AG 452.3 (6)

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DECLASSIFIED
DOD ltrs
6 Jan. & 20 June 1974
By [illegible] Date [illegible]

~~CONFIDENTIAL~~ DECLASSIFIED

AAF/A-4
JJC/gwd
Rewritten Oct. 4, 1941.

OCT 6 1941

Suggested Method of Neutralizing High-tension Transmission (I. C. 4480).

Lt. Colonel Frederick D. Sharp,
Room 811, 1270 Sixth Avenue,
New York City, New York.

1. Your letter of August 11, 1941, above subject, addressed to the Assistant Chief of Staff, G-2, has been referred to this Office for reply.

2. The method proposed by Mr. Ward Davidson of neutralizing high-tension lines, as outlined in your letter, has been reviewed by the Materiel Division and, in the absence of further information, indications are that some means would have to be devised for controlling altitude of balloons or parachutes, together with a means of controlling speed of movement and direction.

3. While it is true that runaway barrage balloons from the British A. A. Defense have short-circuited power lines in Denmark and Sweden, it is also true that they have caused considerable damage in England.

4. From preliminary studies it would seem that such an instrument of offense would have to be solely a weapon of opportunity, to be used when wind conditions were favorable for the operation intended. It is believed that a far more accurate and less costly means is by the employment of bombardment aircraft against enemy power transmitting stations.

5. Mr. Davidson's interest in this matter is appreciated.

Dispatched
OCT 6 1941
AAC

For the Chief of the Army Air Forces:

EDWARD P. CURTIS,
Major, Air Corps,
Secretary of The Air Staff

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Copy for AAG.

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DOD ltrs
9 Jan. & 20 June 1974
By: [illegible] Date: [illegible]

DISPOSITION FORM

AG
Ge WPD 1098-24
SUBJECT: Suggested method of neutralising high-tension transmission lines. (I.G.4480) DATE August 19, 1941

TO:

Chief, Army Air Forces

FOR:

Primary Interest

For the Acting Assistant Chief of Staff, WPD:

/s/ C. K. GAILEY
Major, General Staff
Executive, WPD

Incl. Ltr. to ACofS G-2
fr. Lt.Col. Sharp,
8-11-41

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DOD ltrs
6 Jan. & 20 June 1974
By: [illegible] Date: [illegible]

In reply
refer to:
Serial No. 1436 AC

ROOM 811
1270 SIXTH AVENUE
NEW YORK, N. Y.

SMCK:S

August 11, 1941

SUBJECT: Suggested method of neutralizing high-tension transmission lines. (I.G. 4460)

TO: The Assistant Chief of Staff G-2
War Department
Washington, D. C.

1. Mr. Ward Davidson, Director of Research, Consolidated Edison Company, 4 Irving Place, New York City, has been in frequent consultation with this office in connection with the Air Corps project now being developed.

2. Mr. Davidson has information to the effect that, on several occasions, runaway barrage balloons from the British A. A. defense have short-circuited power lines in Denmark and Sweden by dragging their mooring cables across the conductors with the result that large areas were temporarily deprived of electric light and power.

3. He suggests that apparatus could be easily devised consisting of small balloons or parachutes with a trailing wire which could be released in large quantities to windward of and parallel to important transmission lines which would, upon contact with the conductors, cause arcs which would tend to fuse the conductors before the protective relays could clear the circuits and cause serious interruptions to service which, if successful in several locations, might constitute a major problem for repair forces. He stated that a small wire would be more effective than a large one, as it would fuse and create an arc more quickly.

4. Instructions are desired as to whether more detailed information should be secured.

FREDERICK D. SHARP
Lieut. Col. G. S. C.

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DOD ltrs
8 Jan. & 20 June 1974
By: AFHRC Date 10/1/76

Parachute Dropping Containers.

TJH:cmc 6371

1. AFDAS AFADS 1942 12-4

Attached, for your information and file, is a memo from Materiel Command to General Arnold. This information may be useful in planning aid in connection with OSS.

Dispatched
DEC 5 1942
AAG

T. J. HANLEY, JR.,
Brigadier General, U.S.A.,
Deputy Chief of Air Staff.

Incl: Conf. Memo for the CG,AAF,
frm Materiel Command, dtd Oct. 20,1942,
Subject as above.

AUG 19 1952. 33 (2)

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Ari AS 452.33 (2)

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DOD ltrs.
8 Jan. & 20 June 1974
By [illegible] Date [illegible] 74

HEADQUARTERS ARMY AIR FORCES

ROUTING AND RECORD SHEET

TALLY NO.	
FILE NO.	

SUBJECT: Canopies for British Parachutes ~~SECRET~~ DECLASSIFIED

ITEM NO	FROM	TO	DATE	COMMENTS — MAL/imm 5265
1	AFCAS	AFASC ATTEN: GEN. MCMULLEN	1942 11-4	General Stratemeyer desires an exact copy of the subject letter, showing his approval, date of same, and any other pertinent comments including signature which he placed on the original letter. M. A. LIBBY, Lt. Col., G.S.C. Incls. Ltr to CG AAF fr ASC dated 11/2/42, above subject incl copy of ltr to CG AAF fr ASC dated 10/31/42, above subject. JKH/fmv 72360
2	AFASC	AFCAS	1942 11-7	1. The comments of General McMullen, General Echols and General Stratemeyer have been typed on the copy of the subject letter. H. J. F. Miller Maj. General, U.S. Army Incl. n/c
3	AFCAS	AFMAG	11-8	To - File JKH FOR FILES. M. A. LIBBY, Lt. Col., G.S.C. Incl. n.c.

RECEIVED NOV - 3 42 AM
Air Adjutant General

RECEIVED NOV - 8 42 PM
ASC 2073 SA

File 11/8/42

~~SECRET~~ DECLASSIFIED

O-17. Colonel Libby

PAGE ___. AMAS 452.33 (6)

3-1109 A.F.

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

DECLASSIFIED
DOD ltr. 6 June 1974
By [illegible] LCI Date 8/18/76

ARMY AIR FORCES
HEADQUARTERS AIR SERVICE COMMAND
WASHINGTON

~~SECRET~~

By Authority of
The Commanding General
Air Service Command
NOV 2 1942 RW
Date Initials

November 2, 1942

SUBJECT: Canopies for British Parachutes.

TO: Commanding General, Army Air Forces, AFCAS

1. Attached hereto is a copy of a letter, subject as above, which was requested for the files of General Stratemeyer.

For the Commanding General:

CLARENCE McMULLEN
Brigadier General, U.S.A.
CG/Overseas Division
Hq., Air Service Command

NOV - 3 '42 AM
RECEIVED
Air Adjutant General

FOR VICTORY BUY UNITED STATES WAR BONDS AND STAMPS

RSC 01814 SA

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~~SECRET~~

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DOD ltrs
8 Jan. & 20 June 1974
By ...LC; Date ...

~~SECRET~~
By Authority of
The Commanding General
Air Service Command
NOV 2 1942
Date Initials RW

October 31, 1942

MEMORANDUM FOR: The Commanding General,
Army Air Forces

Subject: Canopies for British Parachutes.

1. Reference a recent request from the British for parachute canopies of silk, we do not have parachutes now fabricated to supply our own needs. The British have asked us for an immediate delivery of 1,200 canopies, followed by a delivery of 10,000 on December 31st.

2. We can supply the British with nylon. To date they have refused to accept nylon but hold out for silk. We will be out of silk entirely by next June, and the Navy by next January. Since the British are as qualified to use nylon as we are, it is recommended that they be offered nylon, or nothing.

For the Commanding General:

NOV - 3 '42 AM

CLEMENTS McMULLEN,
Brigadier General, U.S.A.,
Assistant Chief,
Air Service Command.

RECEIVED
Air Adjutant General

10-31-42
Approved
G.E.S.
C.A.S.

We will supply the 1200 which we have borrowed. if such is the case - C.M.

Concurred in
O.P.Echols

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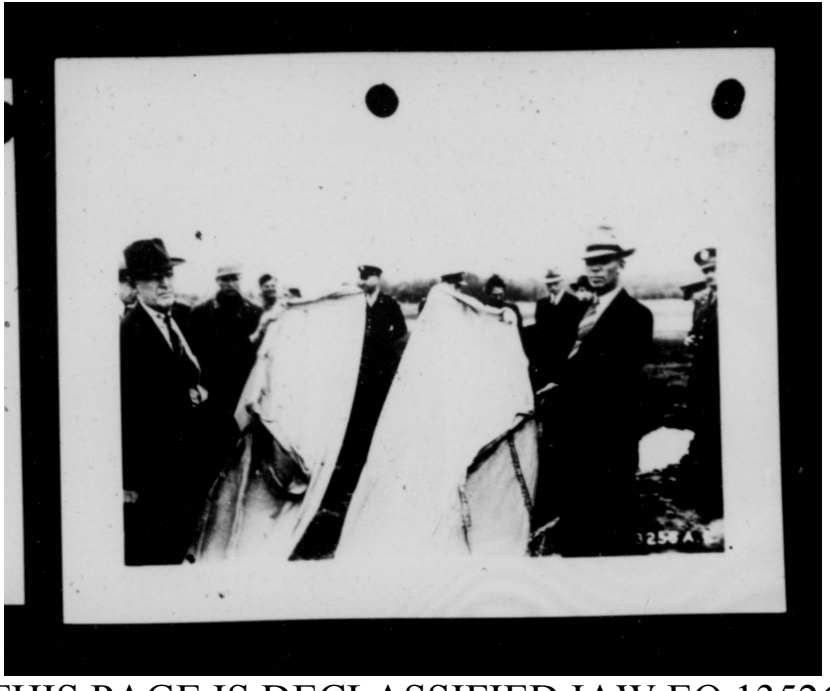

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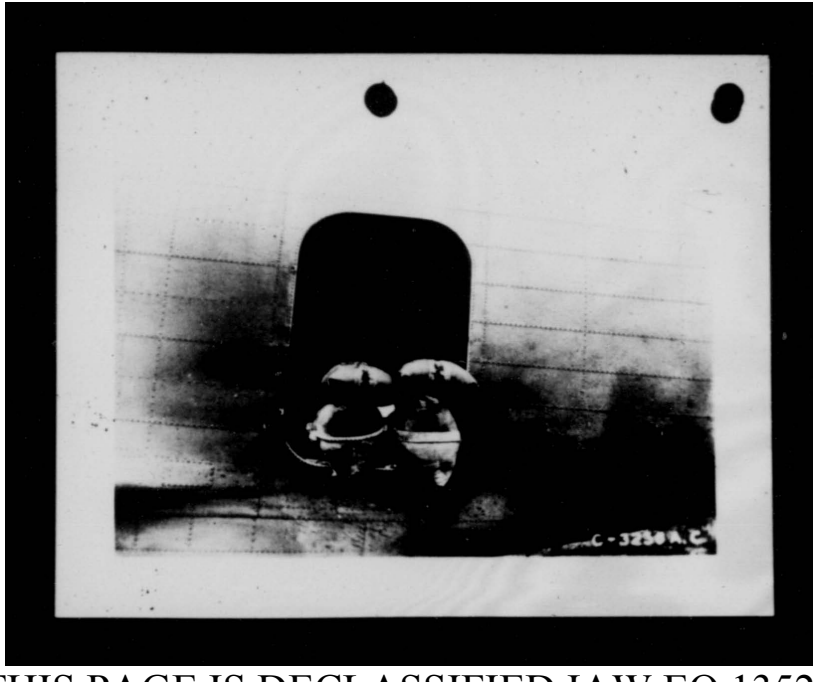

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WAR DEPARTMENT
HEADQUARTERS ARMY AIR FORCES
WASHINGTON

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Received from * Air Adjutant General, Headquarters Army Air Forces, the following document:

Addressed to: AFASC ATTN: Gen. McMullen

Subject: C F B P

Type of Corres.: R&R #1

Date: 11/5/42

Basic Dated: 11/4/42

Number of Incls.: One w/

PLEASE ACCOMPLISH AND
RETURN IMMEDIATELY TO:

Commanding General,
Army Air Forces,
Office of Air Adjutant General,
Classified Mail Unit,
Washington, D. C.
2013

AAF NO. 452.33 (6)

*Insert symbol of office of origin.

DATE RECEIVED _____

BY _____
Name

_____
Rank Branch

OFFICE OF: _____

W-7236,AF. Rev. 7/20/42.

Air AB 452.33 (6)

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DOD ltrs
9 Jun. & 20 June 1974
By MAJ/LC; Date 10/18/74

~~SECRET~~

DECLASSIFIED

Canopies for British Parachutes

MAL/imm 5265

1	AFCAS	AFASC	1942 11-4	General Stratemeyer desires an exact copy of the subject letter, showing his approval, date of same, and any other pertinent comments including signature which he placed on the original letter.
		ATTEN: GEN. MCMULLEN		

Dispatched
NOV 5 1942
AAF

M. A. LIBBY,
Lt. Col., G.S.C.

452.33 (6)

Incls.
Ltr to CG AAF fr ASC dated 11/2/42, above subject incl copy of ltr to CG AAF fr ASC dated 10/31/42, above subject.

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Ans as 452.33 (6)

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DOD ltr
8 Jan. & 20 June 1974
By MAMA-1.C; Date 10/30/74

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~~SECRET~~
By Authority of
The Commanding General
Air Service Command
NOV 2
Date Initials

November 2, 1942

Canopies for British Parachutes.

Commanding General, Army Air Forces, AFCAS

1. Attached hereto is a copy of a letter, subject as above, which was requested for the files of General Strategyer.

For the Commanding General:

CLEMENTS McMULLEN
Brigadier General, U.S.A.
CS/Overseas Division
Hq., Air Service Command

ASC 01814 SAJ

- 1 -

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DOD ltrs.
8 Jan. & 20 June 1974
By [illegible] Date 10/15/76

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Demonstration of Jahn Parachute.

AAF/AFRGS
HLE/bmc

1 AFRGS AFACC 1942 5/16 1. Report on "Jahn" parachute test submitted in compliance with R & R dated May 4, 1942.

Hq. Army Air Forces
MAY 16 1942
AAG RECEIVED

Incls.
1 - Photos
Ltr 4/11/42
report "Jahn" test

DMS
AFRGS

2 Gen AFRGS 1942 5/20 Noted Arnold

S&A 452.39 (5)

~~CONFIDENTIAL~~ DECLASSIFIED

CAH 452.39 (5)

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DOD ltrs
8 Jan. & 20 June 1974
By [illegible]; Date [illegible]

May 11, 1942.

~~CONFIDENTIAL~~ DECLASSIFIED

SUBJECT: Report of "Jahn" parachute test.

TO: Director of Ground Air Support.

1. Parachute tested.

28' Jahn type (22 yrs old)
24' Army type with "Jahn" attachments.

2. "Jahn" attachments.

The "Jahn" attachments consists of two (2) sets of spring arrangements and two pieces of parachute silk.

The spring arrangements consists of three (3) pieces of thin flat steel connected by springs. Each set is sewed into the seam of the canopy at the perimeter extending along three (3) panels. These sets are diametrically opposite each other and according to Mr. Jahn are intended to aid in opening the parachute. A locking device is provided to compress the springs in a zigzag manner to facilitate packing the parachute.

The two (2) pieces of silk are attached to the shroud lines diametrically opposite each other and according to Mr. Jahn are intended to prevent oscillation.

3. Place.

May 8, 1942.
Hybla Valley Airport, Near Alexandria, Va.

4. Weather Conditions.

Cloudy-Bright
Wind at surface - 15-18 MPH.

5. Airplane used.

B-18A 37-489 from Bolling Field with door removed for convenience in dropping parachutes.

6. Cotton bags filled with 180 lbs. of sand were used for dummies.

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7. The parachutes were securely attached to the dummies and placed on the door sill of the airplane. Static lines were used to operate the rip-cords.

8. The parachutes were dropped nearly simultaneously at a ...ted altitude of 150 ft. and indicated air speed of ... MPH with airplane headed into the wind.

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9. Time of Drop. CONFIDENTIAL

Time to open - 2 seconds. Timed from the time the parachute left the bombers door sill until parachutes opened.
Time to ground - 3 seconds. Timed from the time the parachutes left the bomber's door sill until parachutes reached the ground.

10. Results of examination.

Both parachutes landed at approximately the same time on the gravel runway. The dummy attached to the 28ft parachute had apparently hit the ground somewhat harder than the one attached to the 24 ft. parachute as indicated by two (2) one approximately 3" long and one approximately 6" long rents burst open in the cotton bag. No other damage was indicated.

11. Personal opinion.

In the opinion of this observer, this test was unsatisfactory and inconclusive. The only conclusion that can be drawn, is that the parachutes will open when dropped from a low altitude. No opportunity was presented to observe oscillation features. As "Jahn" attachments were an integral part of both parachutes, no comparison could be made between time of drop on time to open the Jahn parachute and the army parachute.

There was no indication of any desirable features that would warrant additional investigation or test either for Army Air Force or parachute troop use.

12. Foreign Observers.

Dr. R. R. Goldstein	Technical Investigation Branch British Air Command.
Pilot Officer Jeffries Jeffs.	R.C.A.F. British Air Command
Lt. Col. C. C. Kuo	China
Major Y. F. Chiang	China
Col. P. Berezin	Soviet Embassy
Major A. Ouchinnikov	" "
Captain P. Asseen	" "

Harold. L. Hadeen,
Captain, Air Corps

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WF-3-26-42M

WAR DEPARTMENT
AIR CORPS, MATERIEL DIVISION
WASHINGTON, D. C.

SERIAL NO.
EXP, ENG. 105

MEMORANDUM REPORT FOR: GENERAL ARNOLD.

Date MAY 15 1942

SUBJECT: Demonstration of Jahn Parachute.

A. Purpose:

To report on subject demonstration as directed in R & R Sheet dated May 4, 1942 from General Arnold to Materiel Command.

B. Factual Data:

1. The demonstration, which took place on May 8, 1942 at the Hybla Valley Airport near Alexandria, Virginia, was attended by representatives of the British Air Commission, Russian Embassy, Chinese Embassy, and the following representatives of the Headquarters, Army Air Forces:

Major Crisp) Major Calhoun)	War Organization & Movement
Captain Nadeau)	Ground Support
Lt. Col. R. C. Wilson) Lt. V. H. Merson) Mr. R. W. Jones)	Materiel Command

2. Two parachutes were drop tested, one a 28 foot diameter Jahn parachute, and the other a 24 foot diameter Army type parachute with Jahn attachments. Sand bag dummies weighing 180 lbs. each were used.

3. The Jahn attachments consisted of:

a. Two flat springs installed in the skirt of the canopy, each five feet long, at opposite sides of the canopy, and each folded in three sections when packing the parachute. A key is provided which is pulled out releasing the springs at the instant of opening. The two opened springs form a pocket on opening, which is designed to increase the speed of inflation of the remainder of the canopy.

b. A small cone of parachute fabric about 5 feet long which is intended to reduce oscillation.

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WF-3-36-47-3M

WAR DEPARTMENT
AIR CORPS, MATERIEL DIVISION
WASHINGTON, D. C.

SERIAL NO.
EXP. ENG. 105

MEMORANDUM REPORT FOR: GENERAL ARNOLD

Date [illegible]

SUBJECT: Demonstration of Jahn Parachute (Continued)

C. Method of Tests:

1. The two parachutes were dropped out of the rear door of a B-18A airplane nearly simultaneously. Indicated airspeed at the moment of dropping was 110 m.p.h., and altitude above the ground was 150 feet. The airplane was flown into the wind. Wind speed on the ground was 18 m.p.h.

D. Results:

1. Both parachutes opened in approximately two seconds. There appeared to be no oscillation, but oscillation characteristics cannot be definitely determined at such a low dropping altitude.

E. Conclusions:

1. Functionally, no superiority was shown over standard equipment now in use, either in certainty of opening at low altitude, or in speed of opening. Oscillation characteristics were not determined due to the limited scope of the tests.

2. From a design standpoint, the parachute is not as satisfactory as present standard equipment since the former contains steel springs and an additional cone to suppress oscillation. Both of these features add to the complication of manufacture and require additional material without improving the performance over the present type.

F. Recommendations:

1. In view of E., above, no further action is recommended in connection with the Jahn parachute.

4 Incls.
Photos

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DOD ltrs
8 Jan. & 20 June 1974
By NNRC, LC; Date 10/31/74

April 14, 1942

SUBJECT: Parachutes.

TO: A-2.

1. It is directed that steps be taken to provide all U. S. Air Missions to the following countries with twenty-eight foot (28') parachutes:

Argentina
Chile
Bolivia
Peru
Ecuador

2. This directive is issued in order to prevent use of the smaller parachute which would be less effective over the extremely high terrain of these countries.

By command of Lieutenant General ARNOLD:

E. P. CURTIS
Lt. Col., Air Corps,
Secretary of Air Staff

Dispatched
APR 14 1942
AAG

HEADQUARTERS—ARMY AIR FORCES—COORDINATION

		A-1	A-2	A-3	A-4				

AAF-30

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ADDRESS REPLY TO
CHIEF OF THE AIR CORPS
WAR DEPARTMENT
WASHINGTON, D. C.

~~SECRET~~

DECLASSIFIED
DOD ltr
6 Jan. & 20 June 1974
By [illegible] Date [illegible]

DECLASSIFIED

WAR DEPARTMENT
OFFICE OF THE CHIEF OF THE AIR CORPS
WASHINGTON

~~SECRET~~
By Authority of
the Chief of the Air Corps
(14-S)
FEB 18 1942
Date Initials

SUBJECT: Parachute and Jungle Kits to "X". FEB 18 1942

TO: The Chief of the Army Air Forces.

1. Reference is made to your letter, subject same as above, dated February 9, 1942, regarding parachutes and jungle kits for shipment to "X". This office has taken necessary action to ship 1,000 parachutes, seat type; 250 each parachutes, back type; 1250 kits, jungle, as requested in the above mentioned letter.

2. The Commanding General, United States Army Forces in Australia has been advised.

For the Chief of the Air Corps:

W. T. Hefley

W. T. HEFLEY
Lt. Col., Air Corps.
Executive, Air Service Command

Air AS 1/0 2 33 (2)

file 1205

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A DOD ltrs
8 Jan. & 20 June 1974
By: NNMLC; Date: 6/18/76

(Air AG)

DECLASS

~~SECRET~~
BY AUTHORITY OF THE
CHIEF OF ARMY AIR FORCES
DATE INITIALS

February 9, 1942

SUBJECT: Parachute and Jungle Kits to "X".

TO: The Chief of the Air Corps.

Request the following Air Corps equipment be shipped as soon as possible to "X". This is in addition to any which may have been furnished previously as organization equipment or on special projects.

1000 ea. Parachutes, seat type
250 ea. Parachutes, back type
1250 ea. Kits, jungle

By command of Lieutenant General ARNOLD:

JOHN B. COOLEY
Lt. Col., A.G.D.
Assistant Air Adjutant General

4/52.33 (2)

FEB 10 1942
AAG

HEADQUARTERS ARMY AIR FORCES							COORDINATION				
Chief of Staff	Secy Air Staff	AAG	A 1	A 2	A 3	A 4	A WPD	A Insp	Budget	Stat. Stics	
WJF											

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HEADQUARTERS ARMY AIR FORCES

ROUTING AND RECORD SHEET

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DECLASSIFIED
E.O. DOD ltrs
8 Jan. & 20 June 1974
By ASHAC, LC; Date 10/15/76

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File No.

Tally No. AAF

Note.--A line will be drawn across sheet after each comment.

SUBJECT: Parachute and Jungle Kits to "X".

NO	FROM	TO	DATE	COMMENTS
				AAF/A-4 DPG/emd
1	AAF A-4	AAF AAG	1942 2/7	1. Request that a directive, substantially as follows, be sent to the Chief of the Air Corps: "1. Request the following Air Corps equipment be shipped as soon as possible to "X". This is in addition to any which may have been furnished previously as organization equipment or on special projects. 1000 ea. Parachutes, seat type 250 ea. Parachutes, back type 1250 ea. Kits, jungle WJF for TJH,Jr. C/A-4

HQ. ARMY AIR FORCES
FEB 7 1942

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SECRET (Do not use for purposes of this)

W-4071, AC. Rev. 8/14/41

Page No. -1-

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HENRY HARLEY ARNOLD
Box 129 Folder 5

MILITARY

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DOD Ltr
8 Jan. & 20 June 1973
By [illegible] NC, Date 8/10/76

AUG 20 1942

The Honorable A. H. Vandenberg,

United States Senate.

Dear Senator Vandenberg:

This will acknowledge receipt of your letter of August 5, 1942, forwarding photographs and descriptive matter pertaining to the Johnson Helicopter Airplane, together with a photostatic copy of letter from the National Advisory Committee for Aeronautics, commenting on the aircraft.

The Johnson Helicopter Airplane has been the subject of prior investigation by the Army Air Forces. It is basically a conventional airplane, to which has been added an auxiliary power plant, mounted within the airplane for the purpose of driving horizontally rotating propellers installed beneath the wing. This arrangement necessitates the installation of considerable shafting and gearing in order to transmit the power from the auxiliary power plant to the lifting propellers. These propellers cause an undesirable disturbance to the air flow about the wing. The resultant loss of wing efficiency, together with the inefficient use of power from the auxiliary source, will not produce the same degree of increased performance that could be gained by adding the equivalent power of the auxiliary power plant to the primary power source.

The arrangement proposed by the inventor may result in an increased rate of climb over that which could be obtained with the same airplane using only its primary power plant. It is desired to point out, however, that should the equivalent power of the auxiliary power plant be added to that of the primary power unit, an increase in performance over that obtained with the lifting propellers should result. Further, the forward speed of the proposed aircraft would be affected adversely by the suspension of the lifting propellers beneath the wing.

The Navy Department has given a great deal of study to the question of employing helicopters as a means of combating submarines, but according to the information available to me, none of the designs submitted to date has been considered a practical solution to the problem.

SPD 4524 Airplanes (1)

COPY FOR GENERAL ARNOLD

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AFAMC-S
RRG/ms
8/17/42

The Honorable A. H. Vandenberg,
United States Senate.
(continued)

The Army Air Forces, the Bureau of Aeronautics and the National Advisory Committee for Aeronautics have all given the Johnson Helicopter considerable study, and are unanimous in the opinion that this design is less efficient than conventional equipment. In view of this, it is not believed advisable for the War Department to sponsor this development at this time.

Sincerely yours,

Incls. - 3 photos; ltr. 8/11/42 fr. NACA; memo. for CG/AAF.

H. H. ARNOLD,
Lieutenant General, U.S.A.,
Commanding General, Army Air Forces.

Dispatched
AUG 20 1942
AAG

cc: General Arnold

- 2 -

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HEADQUARTERS ARMY AIR FORCES
ROUTING AND RECORD SHEET

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DOD ltrs.
8 Jan. & 26 June 1974
By ACNJLK NO Date 10AR17

File No. _____

Note -- A line will be drawn across sheet after each comment.

Tally No. AAF _____

SUBJECT: Rotary Wing Aircraft operated from Merchant Freighters

NO.	FROM	TO	DATE	COMMENTS
1	AFCAS	AFADS	1942 6-16	RCWB/imm Reference is made to the attached memorandum, subject, "Rotary Wing Aircraft operated from Merchant Freighters." Confirming telephone conversation, General Arnold has decided against quantity production of autogiros. He desires, however, that a memorandum be prepared, addressed to the proper agency of the Navy, advising them of the possible value of autogiros operating from improvised platforms built on freighters or other ships as a means of operation against submarines in coastal waters. R.C.W.B. Secy/A.S. 1 Incl. Memo to Col. Chidlaw, subj as above.
2.	AFADS	AFCAS	6-20	RCC/hmh 1. Attention is invited to inclosed memorandum sent to the Chief, Bureau of Aeronautics, Navy Department. for M. F. S. Act'g C/A-4 1 incl. n/c 2 Incl. Memo to C/ Bureau of Aeronautics, Navy Dept. dtd 6-18-42 (cy)
3.	CAS	MAG	6-22	1. Noted. For FILES. R.C.W.B. S/AS

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F-4071, AF. Rev. 8/14/41

Page No. _____

Air AG 452.4 Autogiros (4)

Air AG 452.4 Autogiros (4)

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June 14, 1942

Memorandum for Colonel Chidlaw:

Subject: Rotary Wing Aircraft operated from Merchant Freighters

General Hanley called this morning and stated that it was necessary to procure a quantity of rotary wing aircraft which could be landed and taken off from platforms mounted on commercial freight vessels. The following information is submitted for your [redacted] in the preparation of [redacted] memorandum. Recent tests have been conducted on taking-off and landing an autogiro on an improvised platform built on a freighter operating in Chesapeake Bay. Wing Commander Brie of the British Air Commission, piloted the autogiro and made several successful landings and take-offs. These trials were witnessed by Colonel Gregory who reports that, while the trials were entirely satisfactory so far as successful take-off and landing was concerned, he felt that none other than a highly experienced autogiro pilot would be able to accomplish such operations consistently. In other words, the business of operating rotary wing aircraft under such conditions would seem to narrow down to the helicopter type, wherein no forward motion for landing and take-off is necessary. It should be noted that the above comments are based entirely upon Colonel Gregory's opinion.

Assuming that the subject operations should be restricted to the consideration of a helicopter, the next question that appears to rise, is that of performance and production. The XR-4 which was recently brought to Wright Field has undergone about 11 hours of actual flight time since being ferried from the contractor's plant. With the exception of a minor engine brakedown, this machine has operated satisfactorily in all respects. As stated by General Hanley, it would be necessary to carry at least one 325 lb. depth charge which the XR-4 could do. Whether or not this would make it a satisfactory vehicle for the purpose intended is another matter since this machine will not accommodate the depth charge and a second crew member.

Colonel Gregory was questioned regarding the possible rate of production of the XR-4 type. It is his opinion that, should this machine go into production, the first unit could not be brought out before approximately January 1, 1943, and that if this design were to be put into the greatest possible production at the Sikorsky plant, it might be possible to deliver as many as 500 units during the year 1943.

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The possibility of the XR-5 as a production model is also considered. This machine which will be a two-place job having ~~the~~ a useful load of 1225 lb. could be brought out somewhat after the manner of the XAT-15, that is, a production quantity would be considered shortly after the preliminary design of the experimental item is complete, so that production would follow delivery of the experimental article by possibly 3 months. As now set-up, the XR-5, is due for delivery in June 1943, and it appears that it might be possible to produce 50 additional articles during the calendar year of 1943.

If it is found necessary to actually go into the production of autogiros for the purpose noted above, and if it is desired to give further consideration to the autogiro type rather than the helicopter type, it appears that the XO-60 and XO-61 now being procured for the Ground Arms, are the only models that should be seriously considered since all other autogiros are of a highly experimental nature. The XO-60 and -61 are scheduled for delivery of the first article in August this year. Also the productive capacity of both the Pitcairn and Kellet plants appears to be limited and it is Gregory's opinion that Sikorsky production of XR-4's would be greater than the combined production of Kellet and Pitcairn on their respective models.

General Hanley requested a brief performance on both of the above types, which is as follows:

helio

XR-4

Gross weight	2050 lbs.
Useful load	649 lbs.
High speed	108 m.p.h.
Range	116 miles
Take-off and landing run	0
Crew	Pilot only

Capable of carrying one 325 lb. depth charge

Helio

XR-5

Useful load	1125 lbs.
Crew	2

Endurance 4.17 hours at 109 m.p.h.
Capacity of carrying at least two 325 lb. depth charges

Other information not available at this time.

XO-60

Gross weight	2640 lbs.
Useful load	680 lbs.
Endurance	2 hours.
High speed	127 m.p.h.
Take-off distance	250 ft.
Landing distance	50 ft.
Cr Crew	2

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XO-61

Gross weight	3038 lbs.
Useful load	702 lbs.
Endurance	2 hrs.
High speed	103 m.p.h.
Crew	2

Take-off and landing run 250 ft. each

R. R. G.

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AFADS
RCC/hmh
6-18-42

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DOD Dir. 5
6 Jan. & 22 June 1974
By AAFHRS, HQ Date 10 Jul 74

DECLASSIFIED

June 18, 1942

MEMORANDUM FOR THE CHIEF, BUREAU OF AERONAUTICS, NAVY DEPARTMENT

SUBJECT: Rotary Wing Aircraft Operated from Merchant Freighters.

1. For your information as a matter of primary interest. Tests were recently conducted on taking off and landing autogiros on a freighter operating in Chesapeake Bay. Wing Commander Brie of the British Air Commission piloted the autogiro and made several successful landings and take-offs. These trials were witnessed by Colonel Gregory who reports that while the trials were entirely satisfactory so far as successful take-offs and landings were concerned, he felt that the operation of the autogiro required a highly experienced pilot on this type of machine to conduct such operations consistently. Colonel Gregory further stated that in his opinion the most logical type of rotary wing aircraft for this type of operation would be the helicopter, wherein no forward motion for landing and taking off is necessary.

2. If the operation should be restricted to the helicopter, you are advised that the XR-4 which was recently brought to Wright Field has undergone about 11 hours of actual flight time since being ferried from the contractor's plant. With the exception of a minor engine breakdown this machine has operated satisfactorily in all respects. The XR-4 is capable of carrying a 325 lb. depth charge. However, it is not known whether this would make a satisfactory machine for the purpose intended as it will not accomodate the depth charge and a second crew member.

3. The opinion has been expressed that should the XR-4 type machine be put in production the first unit could not be brought out until approximately January 1, 1943 and if this design were to be put into production at the Sikorsky plant, it might be possible to deliver as many as 500 units during the year 1943.

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4. The XR-5 is due for delivery in June, 1943 and it appears that it might be possible to produce 50 additional articles during the Calendar year 1943.

5. If it is desired to give further consideration to the autogiro it appears that the XO-60 and XO-61 now being procured for the Ground Arms are the only models that should be seriously considered as all other autogiros are of a highly experimental nature. The XO-60 and XO-61 are scheduled for delivery of the first article in August of 1942. The production capacity of both the Pitcairn and Kellet plants appears to be limited and Sikorsky production of the XR-4 would probably be greater than Kellet and Pitcairn on their respective models.

6. For your information there is listed below some performance data on 4 types of machines mentioned above.

XR-4

Gross weight	2050 lbs.
Useful load	649 lbs.
High Speed	108 m.p.h.
Range	116 miles
Take-off and landing run	0
Crew	Pilot only
Capable of carrying one	325 lb. depth charge

XR-5

Useful load	1125 lbs.
Crew	2
Endurance 4.17 hours at	109 m.p.h.
Capacity of carrying at least two 325 lb. depth charges.	

Other information not available at this time.

XO-60

Gross weight	2640 lbs.
Useful load	680 lbs.
Endurance	2 hours
High Speed	127 m.p.h.
Take-off distance	250 ft.
Landing distance	50 ft.
Crew	2

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XO-61

Gross weight	3038 lbs.
Useful load	702 lbs.
Endurance	2 hours
High speed	103 m.p.h.
Crew	2

Take-off and landing run 250 ft. each.

For the Commanding General, Army Air Forces:

R. C. COUPLAND
Colonel, G. S. C.
Acting Assistant Chief of the Air Staff, A-4

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DOD ltr
8 Jan. & 24 June 1974
By NARS, Date 1974

COPY FOR GEN. HANLEY

Rotary Wing Aircraft Operated from Merchant Freighters.

RCWB/imm

1 AFCAS AFADS 1942 6-16

Reference is made to the attached memorandum, subject, "Rotary Wing Aircraft operated from Merchant Freighters." Confirming telephone conversation, General Arnold has decided against quantity production of autogiros. He desires, however, that a memorandum be prepared, addressed to the proper agency of the Navy, advised them of the possible value of autogiros operating from improvised platforms built on freighters or other ships as a means of operation against submarines in coastal waters.

R.C.W.B.
Sec/A.S.

1 Incl.
Memo to Coll Chidlaw,
subj as above.

T

RCC/hmh

2. AFADS AFCAS 6-20

1. Attention is invited to inclosed memorandum sent to the Chief, Bureau of Aeronautics, Navy Department.

M. F. S.
Act'g C/A-4

1 incl. n/c
2 Incl. Memo to C/ Bureau
of Aeronautics, Navy Dept.
dtd 6-18-42 (ey)

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OFFICE OF THE CHIEF OF THE AIR CORPS

ROUTING AND RECORD SHEET

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DOD Dirs.
6 Jan & 26 June 1974
By AUTH: AC, Memo 10/18/76

File No. _____

Tally No. _____

Subject: Autogiros

NO.	FROM	TO	DATE	COMMENTS
1.	OCAC Intel.	AAF A-2	NOV 8'41	OCAC/Intel. JGT/lwc 1. Attached memorandum for your information. JGT C/Intel. 1 Incl. Memo to Col.Taylor,11/22/41 subject: Autogiros

DEC 23 41 PM

RECEIVED
AIR WAR PLANS DIV.

Capt. McCall

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W-4991, AC, Rev. 8/1/41

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An AS 452 - Autogiros

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ADDRESS REPLY TO
CHIEF OF THE AIR CORPS
WAR DEPARTMENT
WASHINGTON, D. C.

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S-1263

WAR DEPARTMENT

OFFICE OF THE CHIEF OF THE AIR CORPS (2-B-2)

WASHINGTON

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DOD ltrs.
8 Jan. & 20 June 1974
By AJAJK NO. Date 10/15/74

November 22, 1941.

MEMORANDUM FOR: Colonel Taylor
(Through: Chief of Air Intelligence Section)

SUBJECT: Autogiros.

1. During a conference relative to his trip to England, Major General Robert H. Danford, F. A., stated that twenty odd autogiros had been employed on secret missions for the past 10 months without one being intercepted by enemy aircraft.

2. In accordance with your instructions, the M. A. London was cabled requesting information on this point and has replied, "Autogiros are not used for any purpose".

Bartlett Beaman

BARTLETT BEAMAN,
Major, Air Corps,
Chief, Evaluation Unit.

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S-2508 11/26 (2A-2)

Am AS 052.4 Autogiros (2)

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HENRY HARLEY ARNOLD

Box 120 Folder 6

MILITARY

DECIMAL

SAS 4524 Gildas
(1-45)

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DOD Dir.
By 20 June 1974
By dlw NARS; Date 10-18-76

JCS Memo

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DOD ltrs
8 Jan & 20 June 1974
By ACS/MLC UC Date 10/18/74

HEADQUARTERS ARMY AIR FORCES

ROUTING AND RECORD SHEET

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File No. _____

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Tally No. AAF _____

SUBJECT: Training of Troops for Formation of Air Transport Units.

NO.	FROM	TO	DATE	COMMENTS
1	General Arnold	General Harmon	1942 4/6	1. In my opinion there is still too much being taken for granted in connection with the formation of air transport units. General Miller, in a very sketchy fashion, outlined his proposed method of training this morning. Realizing that we must have a total of 200 transports in England by September, and during the coming interval not only train crews to tow gliders but have additional crews to train parachute troops and also take care of airborne infantry, it must be seen that this gigantic task cannot be mastered with such a sketchy plan as he outlined to me this morning. 2. His plan must include formation of units at once for operations with the ground troops and at the same time must train satellites at a very rapid rate. H.H.A.
2.	AFCAS	AAF/A-3	4/7	AFCAS MFH/mwb 1. See me in regard to this and in the meantime contact Gen. Barringer and General Miller and tell them to get together in formulating a plan for immediate initiation of this training that can be presented to you for review and coordination. MFH C/AS
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Page No. _____

AAG/2300
Air Ops 45 2.4 Gliders (45)

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File No. _____

Tally No. AAF/ _____

Subject: Training of Troops for Formation of Air Transport Units.

NO.	FROM	TO	DATE	COMMENTS	HSV:meb
3.	AFACT	AFCAS	1942 4-17	1. In accordance with the directive contained in comment 2, the plans already formulated by General Miller are being sent to the Director of Military Requirements for coordination and recommendation. 2. Mr. Barringer and General Miller have been in contact, and the plan mentioned above was the initial result of this conference. The plans are now proceeding, and the Director of Military Requirements (Director of Ground-Air Support) will undertake supervision of their progress at once. HSV C/AFACT	
4.	Gen. Harmon	Gen. Arnold	4/23	1. Plans are underway for the formation of units at once and the overall plan is being worked up as rapidly as possible at the same time. M.F.H. C/AS	AFCAS JYY/mwb
5	Gen. Arnold	A-3	4/30 1942	Keep me advised DDE	

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Ans CG 4524 Gliders

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HEADQUARTERS ARMY AIR FORCES
ROUTING AND RECORD SHEET

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File No. _____

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Tally No. AAF _____

SUBJECT: Training of Troops for Formation of Air Transport Units.

NO.	FROM	TO	DATE	COMMENTS
6.	AFACT	AFRGS	5/1	In compliance with R&R 5 from General Arnold, request information on status of Air Transport Command and formation of units. AFACT OSP:hma
7	AFRGS	AFACT	5/7	725011 WSS-JCH 1. A schedule of activation, organization, and equipping dates for units of the Air Transport Command has been prepared. 4 Transport Groups are planned to be in readiness for Bolero by September 1st. One squadron of which is being readied for Bolero movement with 8th A.F. Pursuit, rear echelon, during May. An answer in detail to General Arnold's R/R dated April 19, 1942, Subject: Plan of Operation for the Transport Division of the Air Service Command, is being prepared and will be submitted shortly. for D.M.S. Diretor, Ground-Air Support OSP:hma
8.	A-3 MAY 9 42	General Arnold	5/9	1. R&R 7 above gives present status of Air Transport Command. H. S. V.

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AVAAF 45-2-4 Gliders

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ROUTING ~~SECRET~~ SHEET

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File No. _____

Note -- A line will be drawn across sheet after each comment.

Tally No. AAF _____

SUBJECT: Training of Troops for Formation of Air Transport Units.

NO.	FROM	TO	DATE	COMMENTS
9.	AFDAS	AFRGS Thru AFACT	1942 5/16	AFDAS LSK:cmc 1. R&R from this office to the Director of Military Requirements, dated May 9, 1942, directs that four transport groups must be available for duty with the 8th Air Force in Bolero no later than August 1, 1942. It is believed that this change in the directive has been made by your office since Item #7, above, was prepared. If that is the case, it is directed that these papers be forwarded to the Air Adjutant General for file. L.S.K. AFDAS
10	AFACT	AFRGS	5-18	JJO'S:ek Noted. H. S. V. C/AFACT
11	AFRGS	AFMAG copy to C.O. Air Trans. Com.	5-21	AFRGS WSS-MPH 1. Noted. Change in directive as outlined in No. 9 is being followed by Air Transport Command. D.M.S. AFRGS
				5/23/42 file gsc

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air AG 452.4 Holding (45)

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WAR DEPARTMENT
Headquarters Army Air [redacted]ces
Office of the Air Adjuta[redacted]eneral

Date MAR 25 1942

TO:

___Chief of the Army Air Forces.
___C.G., Air Force Combat Command.
___Chief of the Air Corps.
___Chief of the Air Staff.
___Secretary of the Air Staff.
___A-1 Division.
___A-2 Division.
___A-3 Division.
✓ A-4 Division (Mr Barringer)
___Air War Plans Division.
___Budget Section.
___Statistics Section.
___Air Inspector.
___A.F. Files.

To note.

Noted 4/7/42 G.B.B.

Return to Adjutant [redacted]

Check & file

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NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS

TECHNICAL NOTE NO. 844

INVESTIGATION OF THE FORCES ACTING ON GLIDERS IN AUTOMOBILE-, PULLEY-, WINCH-, AND AIRPLANE-TOWED FLIGHT

By W. B. Klemperer

SUMMARY

The magnitude, the direction, and the fluctuation of towing forces exerted upon gliders by towing them aloft behind an automobile, by means of a winch, and by airplane were measured under a variety of conditions covering a range from gentle to severe types of operation. For these tests the towing forces did not exceed 92 percent of the gross weight of the glider.

The results indicate that in pulley and winch towing the towing forces are of about the same magnitude as in automobile towing. Speed increases in the accelerated phases of the towing jerks encountered in airplane towing can readily become critical as speeds in excess of placard speeds can be attained. Passage through the slipstream of the towing airplane can be equivalent to a severe gust that, at high speed, may impose high wing loads and require large control moments.

INTRODUCTION

A previous investigation into the nature and the magnitude of the towing forces exerted on gliders has been reported in reference 1. That investigation was limited to three utility types of glider and to automobile and airplane towing. The tests indicated that the towing forces depend largely upon the towing technique, that under favorable conditions they are insignificant but that in deliberately rough maneuvers, simulating extremely crude and inexperienced handling, they can exceed one and one-half times the gross weight, and that twice the gross weight probably could be assumed as a reasonable design load limit.

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Since the publication of reference 1, the Civil Aeronautics Authority has promulgated regulations (reference 2, pp. 20, 21) from which the following passages referring to towing forces are quoted:

"05.250 General. The following requirements do not apply to the entire glider structure, but have particular reference to the towing and launching, and holding fittings (and/or mechanisms) and the structures to which they are attached. These requirements are somewhat arbitrary in nature and will be suitably revised when satisfactory test results are available. A minimum limit factor of safety of 1.0 and a minimum ultimate factor of safety of 1.5 shall be used, unless otherwise specified. See also Paragraph 05.27 for multiplying factors of safety required in certain cases.

"05.251 A limit load of 1200 pounds or 3.0 times the gross weight, whichever is greater, shall be assumed to act in the following separate cases:

(a) Forward at the towing and launching fitting (or mechanism), and aft at the rear holding fitting.

(b) At the towing and launching fitting, and directed forward and upward at an angle of 30° with the longitudinal axis.

(c) At the towing and launching fitting, and directed forward and downward at an angle of 75° with the longitudinal axis.

(d) At the towing and launching fitting, and directed forward and sideward at an angle of 30° with the longitudinal axis.

"05.252 Unless the strength of the wing in resisting rearward acting chord loads is equal to or greater than the strength against forward acting chord loads, suitable provision shall be made to provide adequate strength of wing drag trusses to resist chord inertia loads developed in shock chord and winch launches."

In order to extend quantitative experience to cover more broadly commonly used glider and sailplane types and

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varieties of towing methods and flight conditions, additional tests were organized during 1940 and 1941 under contract for the NACA. These additional tests, described herein, were conducted by the Southern California Soaring Association, Inc., a group affiliated with the Soaring Society of America, Inc., and assisted by some members of the Avions, an organization of air-minded young high-school students sponsored by the National Aeronautical Association.

TEST EQUIPMENT

Gliders

The gliders flown in the tests comprise representative current types. The accompanying photographs (figs. 1 to 4) show the gliders used in the investigation. Table I shows the various dimensions and data that have bearing upon the interpretation of the tow-test results.

The Bowlus Baby Albatross and the Briegleb BG6 gliders (figs. 1 and 3) are intermediate types commercially manufactured and popular for training and soaring contests. The Stick and the Jensen gliders (figs. 2 and 4) are good examples of experienced home building.

Typical of the Bowlus glider is the very small cockpit nacelle and the slender tail boom that eliminates a complete fuselage. In Expedition I the Bowlus glider was equipped with a fixed stabilizer and conventional trailing elevators, whereas in Expedition II the elevator was of the balanced "pendulum" type without any fixed stabilizer, which arrangement is provided as standard equipment of this type of glider. The other types tested had conventional fuselages and empennages.

The Stick glider was home-built by Herman Stiglmeier who used a Grunau II (Baby) wing and combined it with a fuselage design of his own. The Jensen two-seat sailplane, the seats side-by-side, was designed and home-built by Volmer Jensen. It has a highly tapered wing of symmetrical profile; with the NACA 0018 airfoil at 7° incidence at the root tapering to the NACA 0012 airfoil and 3° incidence at the tip, and with pronounced dihedral. The wing is equipped with spoilers and landing flaps, the latter extending over the inner third of the wing span. The empennage and the fuselage are of conventional plywood construction. On

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flights 30 through 33 the glider was towed up with the flaps approximately 15° down. Each of the gliders was equipped with a single wheel approximately under the center of gravity with a nose-landing skid ahead of it.

Instruments

The following instruments were carried aboard the glider during the tests:

(a) A 1-square-inch hydraulic piston-type tensiometer, made by V. Jensen and H. J. Stiglmeier, transmitting oil pressure through a flexible hose to an oil pressure gage of either 500- or 1000-pound range (fig. 5), was used to measure the towing forces. The tensiometer was repeatedly calibrated. A calibration chart is presented in figure 10.

(b) A motion-picture camera mounted on an outrigger extending forward below one wing (see fig. 1) was used in Expeditions I, II, III, and IV for recording in flight the readings of an improvised external instrument board. In Expeditions V to VII the camera was mounted above and back of the pilot's shoulder to photograph the instrument board in the glider cockpit.

(c) A second motion-picture camera mounted in the nose of the glider was used in the airplane towing flights of Expedition V to photograph the towing ship.

(d) External instrument board (figs. 1, 2, and 6) containing an altimeter, a rate-of-climb meter, an airspeed meter, and (in Expeditions III to VI) a clock having a 1/4-second escapement.

(e) A protractor (fig. 6) mounted at the towing hook for determining the angle between the towline and the fuselage reference line.

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TESTS

Towing Technique

The present tests comprise several towing techniques. In Expeditions I, II, and VI the glider was towed aloft behind an automobile. In these tests, which were made on a desert dry lake whose immense perfectly flat, smooth area permits a car to be driven at 50 to 60 miles per hour for several miles in any direction, a long towline was used. The towline consisted of 1200 feet of number 12 galvanized fence wire in Expedition II and a 50-foot length of 3/8-inch Manila rope snubber line at each end of the 1200 feet of steel wire in Expedition I; in Expedition VI the towing wire was 1800 feet long, 14 gage, with 25 feet of snubber rope inserted at the upper end only and with a 3-foot parachute snapped to the junction. The snubber ropes broke in flight 2 (at lower end) and flight 3 (at upper end) soon after the start when an inexperienced tow-car driver shifted jerkily into high gear. In flight 5 the towing wire broke at a kink, at low altitude. In all other flights the towline was released deliberately by the pilot under moderate load. In the other flights the tow car accelerated steadily and cruised at speeds between 40 and 55 miles per hour. In the dry-lake operation the glider could hang on for several minutes and execute turns while still in tow. The towing cars were a 1939 Lincoln-Zephyr sedan in Expedition I, a 1936 Ford convertible in Expedition II, and a 1938 De Soto sedan in Expedition VI.

Expedition IV was devoted to the so-called pulley method in which the rope is slung over a pulley fastened to the rear bumper of the towing car (fig. 7) and the end of the rope is anchored on a "dead-man" or stake driven into the ground. This method is resorted to where the runway for the car is extremely short or so rough as to limit the car speed. The initial towing speed is twice the car speed. In the steeper phases the pulley method is comparable to the winch inasmuch as its free line gets shorter and shorter. The towline was a 1/2-inch Manila rope. The pulley had a 3-inch sheave diameter. A 1927 Chevrolet coupé served as towing car and was driven at 17 to 30 miles per hour. The towing cars were driven by drivers having experience in glider towing except in the two instances previously mentioned.

In Expedition III the glider was launched by means of

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a power winch. This winch had been built by Jay Buxton in 1936 and had been used in over 1500 launchings including three regional soaring contests. The winch is shown in figure 8. It serves to wind the towing rope on a drum, the diameter of which grows from 10 inches at the beginning to 18 inches when full of rope. The rope is led over an overhead guide pulley and is evenly distributed over the 20 inches of drum width by a spooling device manually controlled by the winch operator. The drum is directly driven by the drive shaft of a 6-cylinder, 1928 model Studebaker automobile engine. The clutch, the gear, the gas pedal, and the shaft brake were arranged to be operated from a seat facing the glider. All of the present winch launchings were made in second gear without shifting. The towline consisted of 7/16-inch Manila rope, over 2400 feet of which was payed out from the winch to the glider to be launched. About 1500 feet of this rope was hauled in by the winch, which was smoothly accelerated to full speed and finally slowed down to signal the pilot that he should release. The winch was operated by an experienced operator, himself a glider pilot.

In Expeditions V and VII the glider was towed behind an airplane. The towing plane was a Spartan open cockpit two-seat biplane NC 8561 powered by a 175-horsepower J-6-5 Wright engine. The line, the spliced-in end ring of which was attached to a quick-release hook improvisedly mounted on the tail-wheel fork of the towing airplane (fig. 9), had a length of approximately 450 feet. It consisted of 450 feet of 5/16-inch Manila rope in flights 24, 25, and 26. After it had eventually broken in flight at a worn splice knot, a length of approximately 350 feet of number 11 steel wire to which was spliced 100 feet of 5/16-inch Manila rope at the rear end was substituted in flights 27 and 28. In flights 34 and 35 a Manila rope of 7/16-inch minimum diameter was used. This rope broke in a violent maneuver in flight 34, whereupon the ends were knotted together for the last short flight.

In these airplane towing flights the "locomotive" airplane climbed steadily to about 2000 feet, flying either straight or making gentle turns until the glider pilot released at his end, whereupon the towing airplane would return to the airport to drop the line and land. The towing pilot reported that the drag of the glider decreased the climb rate of the airplane from about 900 feet per minute to about 500 or 600 feet per minute and decreased the speed at full power by about 10 to 15 miles per hour.

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Towing turns were executed at about a 10° bank. The pitching and the yawing movements applied by the towline to the tail when the glider failed to track were easily corrected by elevator and rudder maneuvers, and the deceleration due to tow-pull peaks was usually small because such peaks were of short duration. The maximum momentary speed drop observed was reported as between 12 and 15 miles per hour and was accompanied by a drop of 70 rpm. The airplane towing pilot tried to hold 60 to 65 miles per hour by his airspeed meter. These flights were made from a level airport in the lowlands.

Maneuvers

The gliders were flown by experienced pilots in all of the experiments. In some of the tests the pilots attempted to fly according to approved conventional towing technique of moderate and steady climbing at moderate speed without excessive or severe maneuvering. In some of the other flights spontaneous porpoising (reference 1) was observed in a mild degree and in many instances the same typical porpoising oscillations were deliberately fanned by the pilot instead of damped, in an effort to simulate typical inexperienced students' mistakes and to create unusually severe two-force peaks. Steep climbs were made deliberately in a few of the flights.

Only casual attention was paid to the lateral and the directional stability. Large rolling amplitudes were repeatedly allowed to build up in several flights. The maintenance of course in tracking was very good in all flights except one when deliberate yawing was practiced.

In the aircraft towing flights the glider was taken off the ground as soon as it attained flying speed and then was flown low to give the locomotive a chance to take off. Normally the glider pilot attempted to track behind the towing airplane and to fly a few feet higher. Repeatedly, however, he would deliberately fly higher, lower, off to one side, or through the propeller slipstream, or he would allow the towline to slacken and then to jerk taut. During part of one flight the glider pilot deliberately made repeated violent veering maneuvers, first allowing the rope to slacken, then turning 15° to 30° away from the path of the towing airplane until the rope snapped taut and jerked the plane, thus imparting a violent yawing moment and a high forward acceleration to it. In the last maneuver,

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which was particularly vicious, the towline actually broke when the glider veered away to the right while the towing airplane made a left turn. These violent maneuvers were executed to simulate bad pilots' errors. They appeared extreme in severity, rougher than any reasonably trained pilot should inadvertently encounter. The airspeed peaks actually exceeded the placard speed and reached 85 miles per hour, although the towing airplane kept a relatively smooth pace at 60 to 65 miles per hour indicated speed. The jerks did not appreciably affect the towing plane, although its pilot could feel them at the elevator and rudder controls.

Topography of Sites

Wind velocity, gradient, and gustiness are recognized to have a marked influence upon the severity of the towing operation. The topography of the site also influences this severity, inasmuch as it affects the wind structure and the motion of the towing vehicle. The sites at which the present tests were conducted are typical of California glider-activity places.

Rosamond Dry Lake is a perfectly flat dry lake bed covering about 25 square miles, situated in a vast semi-desert valley ringed by desert mountain ranges 15 to 25 miles away. It is a favorite and typical Western site for glider-student training. The altitude is approximately 2200 feet. Occasionally good soaring thermals are found there.

Dominguez Field is a typical flat and level lowland type ~~of glider~~ field, about 1½ miles by ½ mile extending in the prevailing wind direction. The elevation is 40 feet. The Dominguez oil-field hills adjoin it to the north. The nearest seashores are 8 miles west and south, but ocean winds are intercepted by the Palos Verdes and by the Torrance oil-field hills.

Gardena Field is an airport used for student training. It has a smooth turf surface and is 6 miles from the coast in flat surroundings. The elevation is 50 feet.

The site at Torrey Pines is a small plateau on a rugged cliff jutting several hundred feet above the ocean and offering an uninterrupted though jagged barrier, which deflects the sea breeze and extends for several miles along the coast north of La Jolla.

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Weather

The following is a summary of the meteorological conditions prevailing during the various expeditions at the sites:

Expedition I, October 9, 1940, at noon to Rosamond Dry Lake.- The day was warm, the air temperature was 86°, and the sand temperature was 96°. A high-pressure area was building up over the desert; as a result Los Angeles experienced a heat wave of over 90°. A gusty desert wind of up to 15 miles per hour veering between north and northwest alternated with dead calm.

The small thermal clouds forming and evaporating again at the edge of the dry lake were not reached by the glider. Exploration by airplane revealed strong vertical up- and down-currents over adjoining mountain ranges 20 miles to the south.

Expedition II, October 12, 1940, late afternoon and evening.- The wind died down gradually from 8 miles per hour, north, at 3:30 p.m., to a dead calm before sunset with practically no wind activity aloft. The temperature ranged between 75° and 80° F, and the weather was clear.

Expedition III, November 24, 1940, afternoon, to Dominguez Field.- The sky was clear overhead, but a high overcast drifted in westward from the ocean. The wind was westerly and very slight (3 to 6 mph) on the ground, dying down after 4 p.m. Slightly higher winds aloft were indicated by smoke and steam given off by nearby oil refinery plants.

Expedition IV, February 2, 1941, at Torrey Pines.- The sea breeze was unusually weak, in fact was too slack to support soaring at the cliff, and the flying had to be discontinued when fog drifted in from the ocean.

Expedition V, May 11, 1941, at Gardena.- The weather was fine; the wind veered from the east toward the southwest. The wind speed on the ground averaged less than 5 miles per hour but there were occasional sizable gusts and small thermals.

Expedition VI, June 21 and 22, 1941, to Rosamond Dry Lake.- The weather was cloudless and clear, temperature

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85° to 90° F, with a strong gusty desert west wind blowing, wind velocity averaging 12 to 18 miles per hour, with gusts up to 24 miles per hour and lulls down to 8 miles per hour measured 5 to 7 feet above ground. In flights 29 and 33 the air was decidedly rough. On the second day, flights 30 to 31 were made in the morning before the wind had attained full force.

Expedition VII, June 28, 1941, at Gardena.- Appreciable thermal activity and a west wind of approximately 12 miles per hour with occasional gusts to 15 miles per hour were followed by lulls to 7 miles per hour recorded 7 feet above the ground. The weather was clear except for the edge of light ocean fog 6 to 7 miles to the west.

RESULTS AND DISCUSSION

The various flight parameters as evaluated from the motion pictures are shown plotted against both frame sequence and time on figures 11 to 17 for several representative flights. Each of the figures from 11 to 14 comprises several graphs. The top portion of the figures shows the history of towing force and altitude above the field. The center plots show airspeed and towing angle (between fuselage reference line and upper end of towline). The lowermost plots show roll and inclination (fuselage to horizon). Figures 15 and 17 present the results of the airplane towing tests of Expeditions V and VII.

A complete set of figures obtained in the investigation are available for reference at the Washington office of the NACA.

Table I presents a synopsis of the gliders flown, the towing methods used, the number of flights made, and table II a chronological log of the individual flights with an abstract of the results.

The following is a brief survey of the interesting features of these results. The maximums observed in each flight are entered in the synopsis table.

The extreme peaks of the towing force, as observed in the present series of tests, in pounds and in terms of gross weight W are given in the following table.

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EXTREME PEAKS OF TOWING FORCE

Glider	Type of locomotion	Force measured		Towing-force angle (deg)
		(lb)	(percent W)	
Bowlus	Automobile	465	90	51
Jonson	----do----	380	[a]50	------
Bowlus	Pulley	340	72	38
Stick	Winch	480	92	45
Briegleb	Airplane	385	86	In yaw

[a]Observed on maximum pointer but not caught on film.

Extreme peaks of the towing force P, measured at the glider, invariably occurred in the pull-up phase of extreme pitch oscillations. They do not, as a rule, coincide with the steepest pull angles α, because the increased pull tends to reduce the sag of the towline.

The greatest towing force components normal to the wing chord, important as flight loads, can be derived as P cos (α + i), where i denotes the angle of incidence between the chord and the reference line from which the plotted towing angles were measured. The maximum normal components thus encountered were 360 pounds (0.70 W) in the Bowlus flights, and 350 pounds (0.67 W) in the winch-towed Stick flights.

In the Jonson flights the towing-force angle was not measured. Observations from the ground indicate that an estimate of 50° probably is not far from the maximum attained. This would place the normal force attained at about 250 pounds or 0.33 W, but in these flights the inclinations were kept moderate by the pilot (14° for aircraft reference line, 21° for chord at wing root).

The towing-force extremes are exceptional. Peaks exceeding 80 percent of the extremes were very rare, but 75 percent was attained quite a few times. Steady loads in steep climbs are seen frequently to average 150 to 250 pounds in the automobile-towed Bowlus flight, and 250 to 350 pounds in the winch-towed Stick flight.

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In the pulley towings, even though steep climbs as fast as 2400 feet per minute were made, the towing force peaks reached 340 pounds once and 310 pounds several times.

In the automobile-towed Jensen flights the maximum pull of 380 pounds was observed on the maximum pointer but was not caught on the film. This value is only about 0.50 W in spite of the very high wind speeds which prevailed during some of the tests. These towing forces may in part be characteristic of the symmetrical wing profile.

To some extent any such comparative statistical data may be systematically influenced by the differences of prevailing conditions relating to wind, towing speed, and climb. The fact that no peaks observed reached quite as high values in terms of gross weight as those reported in reference 1 is interpreted as indicative of the fact that those deliberate rough-weather flights in 1937, made by an acrobatic-trained pilot, comprised unusually severe maneuvers not easily duplicated under normal training or service conditions.

A little more light was shed on the peculiar pitch oscillations sometimes referred to as porpoising and observed in both automobile and winch towing. The oscillation periods were mostly between 1 and 2 seconds, in some instances very regular. In the Bowlus Baby Albatross flights, the type of elevator did not seem to influence the character of the porpoising behavior, but the impression was gathered that the tendency to porpoise was less with the stabilizer-and-flippers type of empennage than with the undamped pendulum type of elevator.

The porpoising motion is to some extent reflected in the form of the inclination oscillations. Not exactly in phase with the towing force, inclination peaks usually precede the pull peaks by a fraction of the period. This can be interpreted to indicate that inertia forces should not be added to but should be subtracted from towing-pull components as far as wing loads in porpoising are concerned.

That the porpoising phenomenon is not merely a fanned phugoid motion is indicated by the fact that the phugoid frequency of the gliders tested is noticeably slower as observed in free flight after release and after deliberately disturbing a steady glide (5 to 8 sec).

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Yawing and rolling up to ±9° and at periods varying from 4 to 11 seconds did not tend to enhance the towing forces measurably in automobile and winch towing, but did so in airplane towing.

Otherwise, the pull in airplane towing was normally quite low. It averaged less than 100 pounds at airspeeds limited by the CAA placard. Occasional peaks occur when the glider, after having coasted on a slack line, begins to lag behind and the bight snaps taut. Peaks registered at only 250 pounds were already felt as severe jolts and caused quick acceleration of the glider. When passing through the slipstream, the glider is thrown somewhat out of its track which may accentuate the next towing-force peak considerably.

The deliberate swerving maneuvers executed on flight 34 must be regarded as unusually violent and departing considerably from conventional practices. Even so, the towing-force peaks stayed mostly below 300 pounds, in spite of the fact that excessively high airspeed peaks were attained. How much the towing force might have increased had the line not broken at 385 pounds in flight 34 at 530 seconds is, of course, unknown. However, the jerks felt in these maneuvers and the longitudinal and veering accelerations imparted to the glider by the towing-force peaks were uncomfortably severe. Yet the forces themselves were actually lower than the maximums observed in automobile, pulley, or winch towing. In view of the acute angles of the towing pull against the wing chord in airplane towing, the contribution of the towing forces to the wing-load factor is rather insignificant, but the speed increases in the accelerated phases of the towing jerks are significant. The increases can readily become critical as speeds in excess of placard speeds can inadvertently be attained and passage through the propeller slipstream can be equivalent to a severe gust which, at excessive flight speed, may impose high wing loads and require large control moments.

Arrangements had been made to carry the towing-force measuring instruments, equipped with a maximum pointer, on a ferry trip in which a Cadet glider (the same one, G10265, on which the 1937 NACA towing tests reported in reference 1 had been conducted) was flown in tow by 560 feet of 5/16-inch Manila rope line behind a Waco UPF7 airplane on May 30, 1941, from Bakersfield to Montebello, California, a distance of 115 miles, 40 miles of which was

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over the semidesert San Joaquin Valley, 50 miles over the rugged Tehachapi range with peaks of 7000 feet and narrow gorges, while the last 25 miles led over part of the Los Angeles metropolitan area. The towed flight took one hour and fifteen minutes and was made at altitudes up to 8100 feet. The towing airplane was powered by a 210-horsepower Continental engine. Unfortunately, due to some minor installation trouble, no quantitative towing-force measurements were collected from this flight. However, the pilot reported that most of the flight was remarkably smooth and but few jerks were felt, even though airspeeds in excess of 90 miles per hour were occasionally reached and in some places the towing plane flew through fringes of clouds hanging low over the mountains, temporarily blotting out the vision between the two craft. The greater part of the second half of the flight was made above broken clouds where the air was stable. The roughest part of the flight was the part immediately following the take-off when, at high speed and low altitude, thermal currents apparently rising from oil-storage tanks were encountered. The temperature was near 90° F. and the weather there was dry and clear. Although about three sizable jolts were felt by the pilot during the climb over the broad valley, they were inconsequential. Most of the time the towline was fairly taut because of the high towing speed which averaged 78 miles per hour. During most of the flight the glider pilot did not feel it necessary to move the control stick more than a fraction of an inch to parry gusts. He flew above the slipstream most of the time. At one instance, however, just before hitting a cloud over the end of Antelope Valley a sharp roll required full opposite control.

CONCLUSIONS

1. The present tests indicate that in normal winch and pulley towing the towing forces are of about the same magnitude as in automobile towing and stay below the weight of the aircraft.

2. In airplane towing the forces are normally low, much less than in automobile or winch launching, and in a less critical direction.

3. Speed increases in the accelerated phases of the towing jerks encountered in airplane towing can readily become critical as speeds in excess of placard speeds can

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be attained and passage through the propeller slipstream can be equivalent to a severe gust which, at excessive flight speed, may impose high wing loads and require large control moments.

4. In airplane towing the insertion of a weak link at the rear end of the towline would seem to offer the advantage that it would limit the jerk and in case of line severance, save the glider pilot from the necessity of dropping his end of the line before landing.

5. Although the present tests included several instances of high wind, they afforded no opportunity to learn the effects of bad weather.

Southern California Soaring Association, Inc.,
Los Angeles, Calif.

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1. Klemperer, W. B.: Measurement of the Forces Acting on Gliders in Towed Flight. T.N. No. 753, NACA, 1940.

2. Anon: Civil Air Regulations. Proposed Part 05 - Glider Airworthiness. C.A.A., June 1940.

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TABLE I.- GLIDER CHARACTERISTICS AND LAUNCHING METHOD

Expedition	Glider make and model	Wing area (sq ft)	Span (ft)	Aspect ratio	Weight empty (lb)	Crew weight (lb)	Equipment weight (lb)	Gross weight (lb)	Launching method	Type elevator	Design tow speed (mph)	Identification number
I, II	Bowlus Baby Albatross	156	44' 6"	12.7	300	200	15	515	Automobile tow	I Conventional II Pendulum	55	NX21734
IV	Bowlus Baby Albatross	156	44' 6"	12.7	300	150	20	470	Automobile and pulley	Pendulum	55	N-21742
III	Stolp-moior Stick	160	46' 2⅜"	13.4	345	160	15	520	Power winch	Conventional	55	N-15539
V, VII	Briegleb BG6	117	32' 3"	8.9	235	180 with chute	35	450	Airplane tow	Conventional	55 (80 airplane tow)	NC28373
VI	Jonson two-seater	180	55' 0"	16.8	430	335	15	760	Automobile tow	Conventional and flaps deflected 15°	75	N-28375

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TABLE II.- CHRONOLOGICAL LOG OF FLIGHTS

Expedition number	Flight number	Tow speed **) (mph)	Wind (mph)	Maneuver performed	Number of camera frames	Maximum air speed (mph)	Maximum altitude (ft)	Maximum climb (ft/min)	Maximum tow force P (lb)	Maximum tow angle α (deg)	Maximum inclination (deg)	Maximum roll (deg)
I	1	50	5	Normal climb	661	50	450	900	275	70	23	±7
	2	45	8	Start *)	89	45	---	---	215	(42x)		
	3	45	0-10	Steep take-off *)	97	43	180	750	285	35	24	
II	4		8	Steep climb and porpoising	173	53	460	1300	465	59	18	±6
	5		2	Take-off *)	100	40	50	---	160	15	13	
	6	53	2	Steep steady climb	353	56	370	900	265	42	16	+4-5
	7	51	1	Moderate porpoising	223	57	400	1200	350	45	14	+4-5
	8		1-2	Steady climb	480	57	500	1000	310	51	14	+2-5
	9		1-2	Porpoising	632	58	560	1000	360	60	16	±9
	10		0	Steady climb	450	55	420	1150	420	57	15	±5
	11	50	0	Steep climb and porpoising	390	51	410	1000	395	49	17	+9-3
III	12		3	Steep climb	395	40	450	1200	390	50(76x)	32	±3
	13		3	Steep steady climb	464	43	590	1150	395	54(89x)	23	+3-2
	14		5	Deliberate porpoising	376	49	570	1200	395	52	24	+3-5
	15		6	Mild porpoising	352	47	630	1300	410	57	26	±3
	16		5	Sharper porpoising	385	45	600	1075	440	56	24	±3½
	17		3	Deliberate violent porpoising	418	45	520	1100	460	55	26	±2
	18		1	Smooth steep climb	377	49	600	1150	440	60	26	+2-1
	19		0	Steep deliberate porpoising	406	44	560	1080	475	55	27	+3-2
	20		0	Deliberate wild yawing	392	45	540	1090	370	52(66x)	25	+3-4½
IV	21	2x17	11	Steep climb	390	39	200	1300	310	52(60x)	23	
	22	2x20	2	--- do ----------	290	47	265	1600 (2400)	340	57	24	
	23	2x20	1	--- do ----------	280	42	215	1400	310	42	30	
V	24	60-65	2	Normal climb	(500+694)	64½	1320		140			
	25	60-65	3	--- do ----------	(1345+906)	68	1400	450	200			
	26	60-65	4	--- do ---- *)	(1400+1092)	70	1510	(700)	230			
	27	60-65	4	Test hop	(84+825)	64	1680	(800)	170			
	28	60-65	4	Flew through slipstream	(3933+2090)	72	2060	600	185	±7	±7	
VI	29	40	18	Slow climb	734	57	495 (800)	400 (900)	320 (385)		14	
	30	40	12	Moderate climb	661	51	600	900	300		14	
	31	40	12	Steady climb	644	52	970	700	345		14	
	32	40	15	Moderate climb	792	56	780	1000	300		13½	
	33	40	18	Slow climb	470	57	985	400	335		10	
VII	34	65	12	Violent yaw jerks *)	3725	85	2370	500	385			
	35	62	10	Out turns	182	61	900+		210			

**) As reported by the towing personnel
*) Line broke
x) At low load only
( ) For short period only
( ) Observed but not recorded

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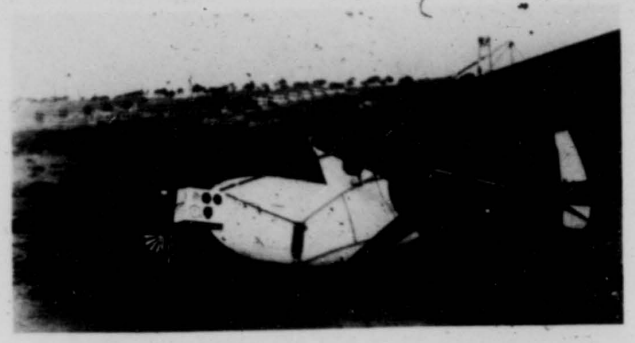

Figure 1.- Bowlus Baby Albatross glider with camera on collapsible outrigger and instruments.

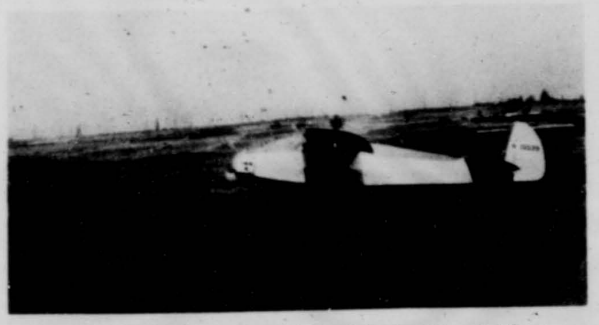

Figure 2.- Stiglmeier "Stick" glider.

Figure 3.- Briegleb BG 6 glider.

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Figure 4a.- Jensen two-seater sailplane.

Figure 4b.- Jensen two-seater sailplane.

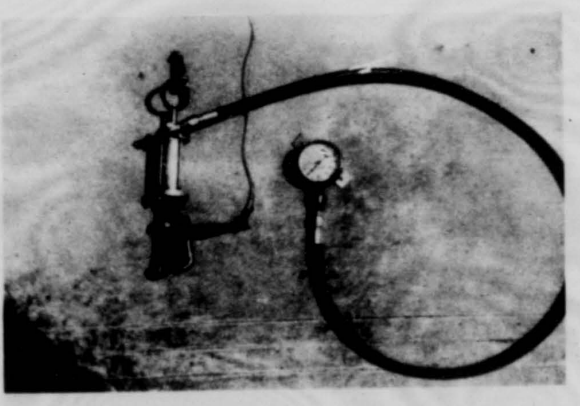

Figure 5.- Hydraulic tensiometer.

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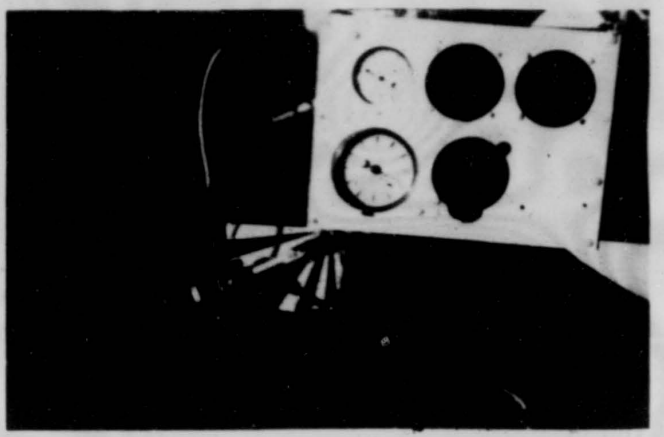

Figure 6.- Tow test equipment on Stiglmeier "Stick".

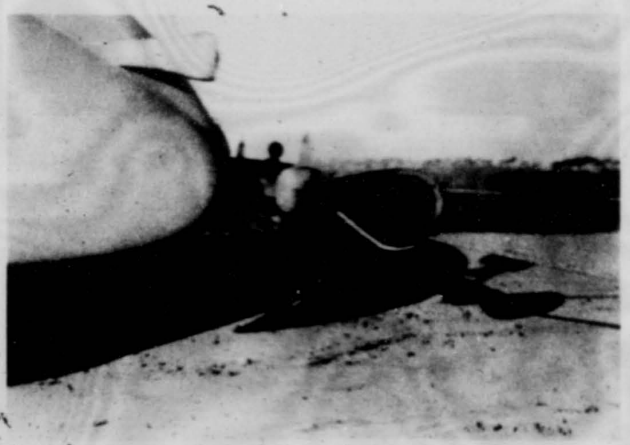

Figure 7.- Car pulley for pulley tow.

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Figure 8.- Buxton winch.

Figure 9.- Release hook on tow plane tailwheel fork.

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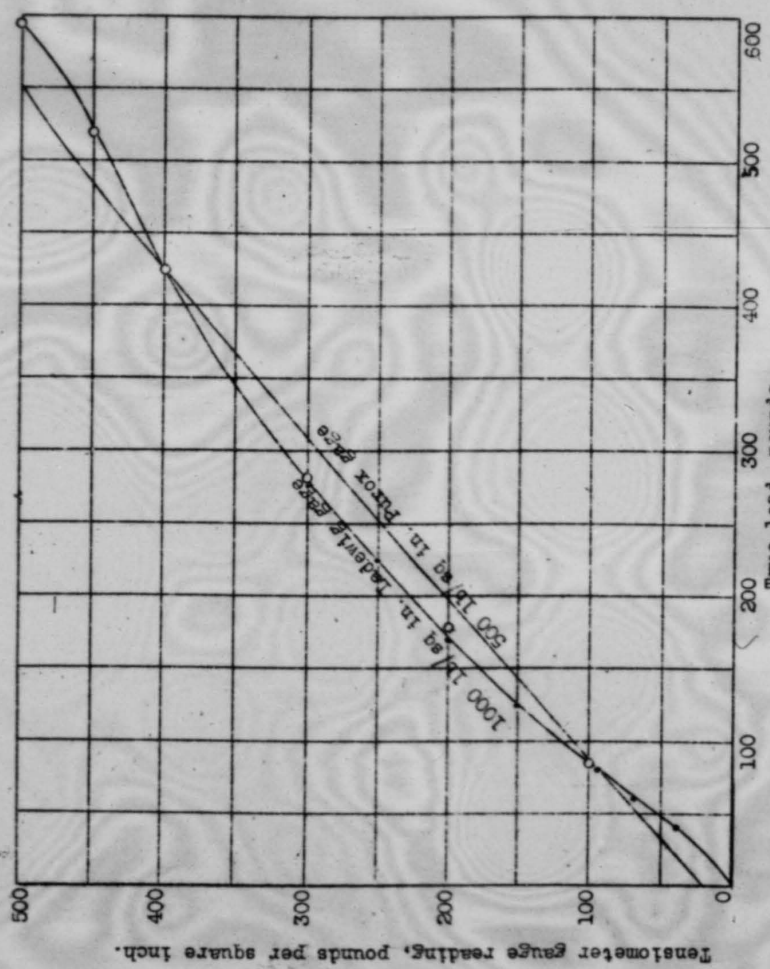

Figure 10.- Calibration of tensiometer.

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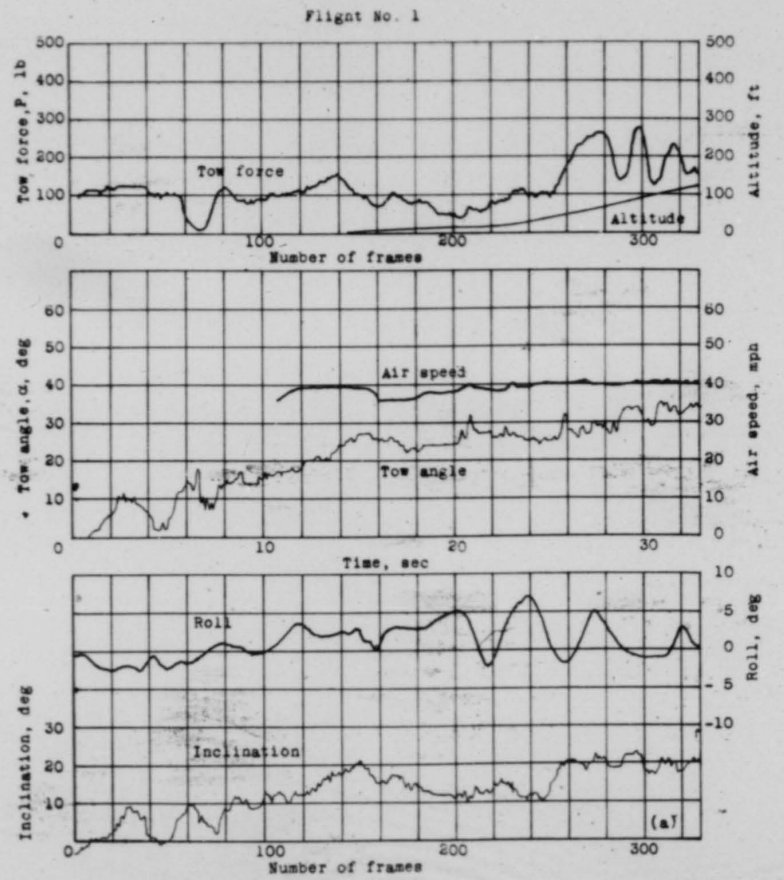

Figure 11(a,b).- Results of flight of Bowlus Baby Albatros glider with conventional elevator in automobile tow.

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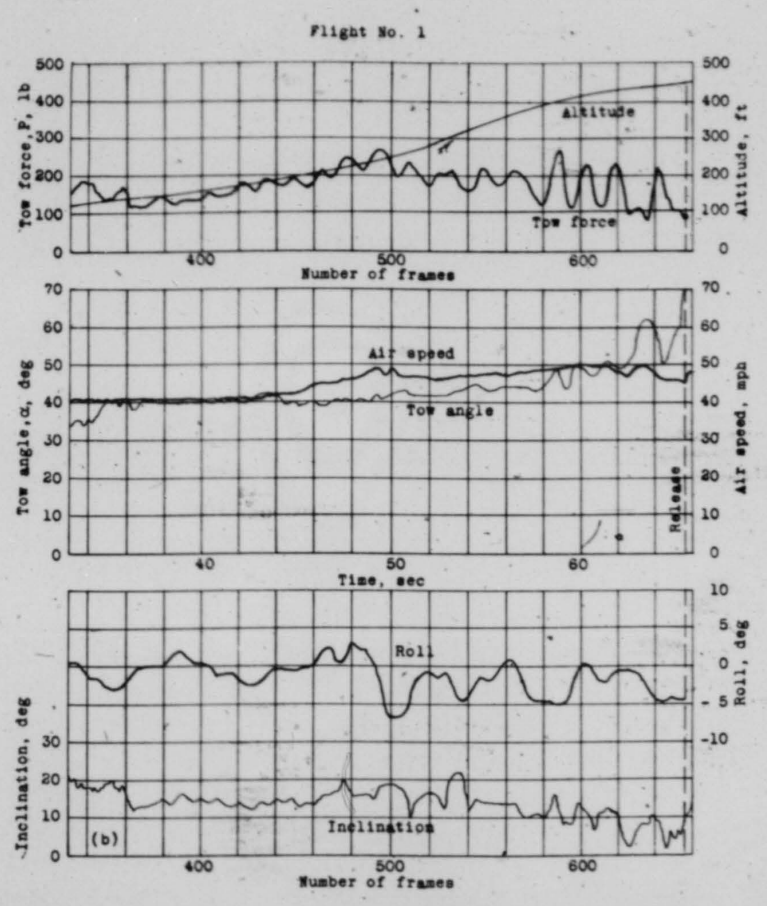

Figure 11.- (Concluded)

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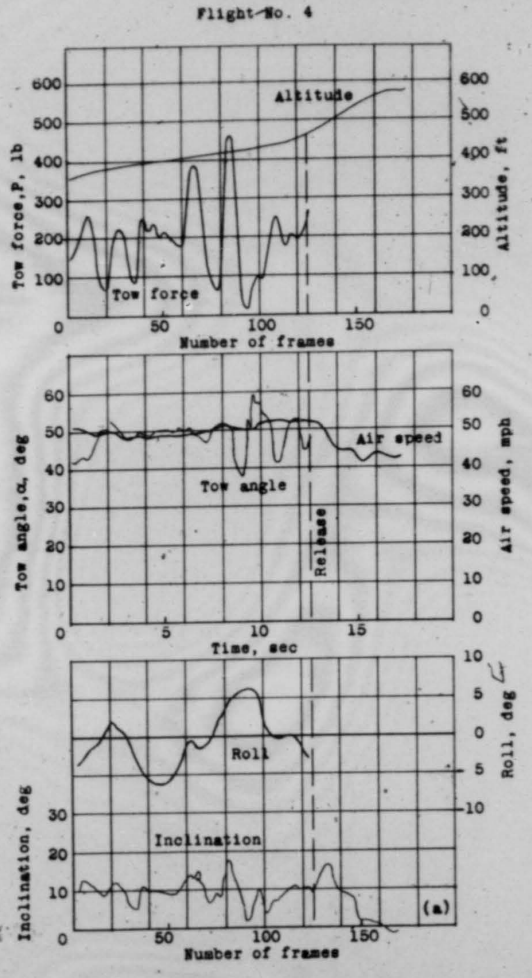

Figure 12(a,b).- Results of flights of Bowlus Baby Albatros glider with pendulum elevator in automobile tow.

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Flight No. 6

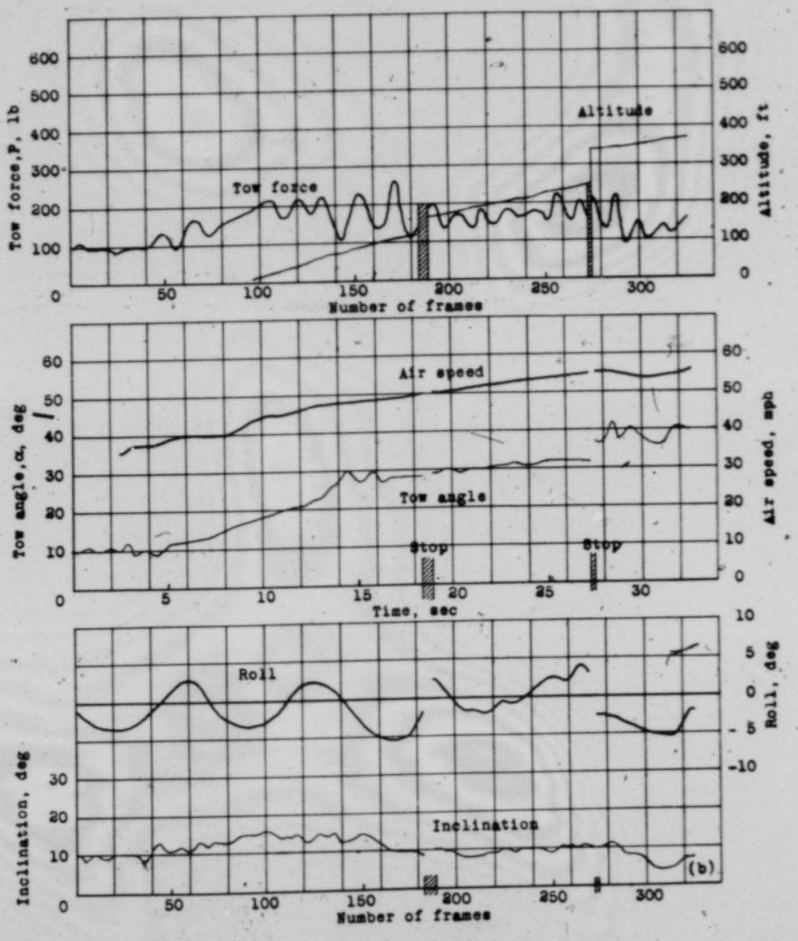

Figure 12.- (Concluded)

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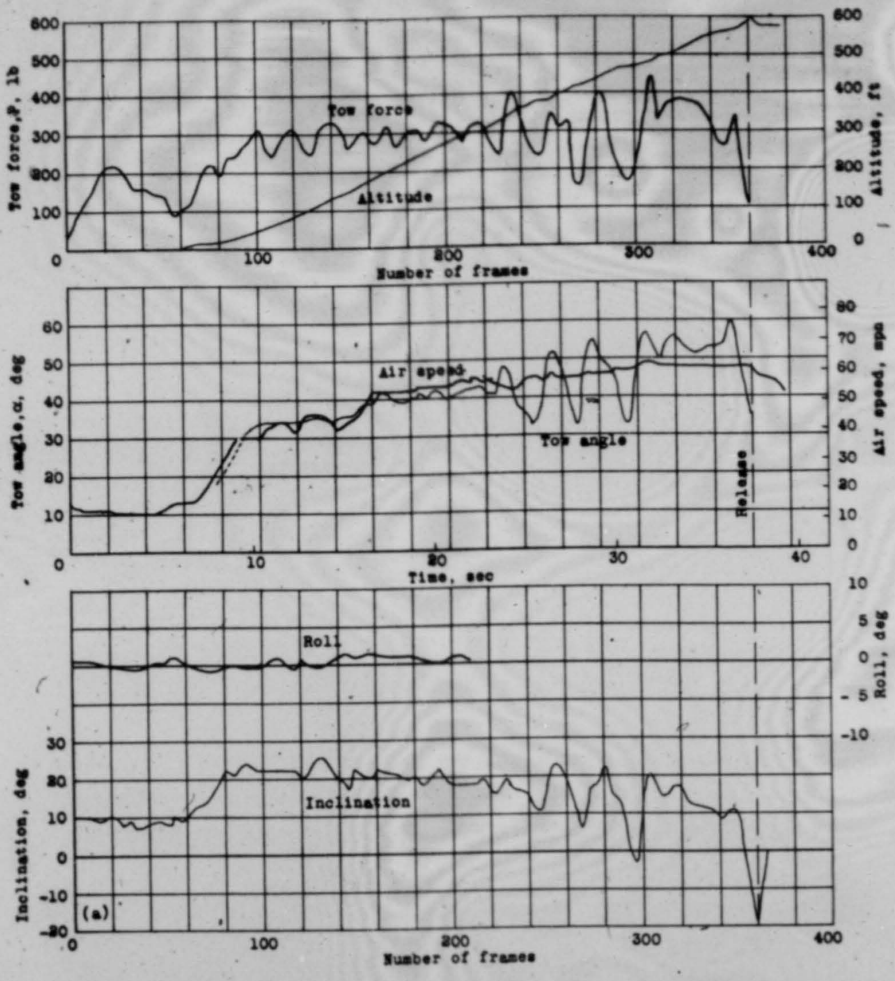

Figure 13(a to c).- Results of flight of Stiglmeier "Stick" glider launched by power winch.

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Flight No. 19

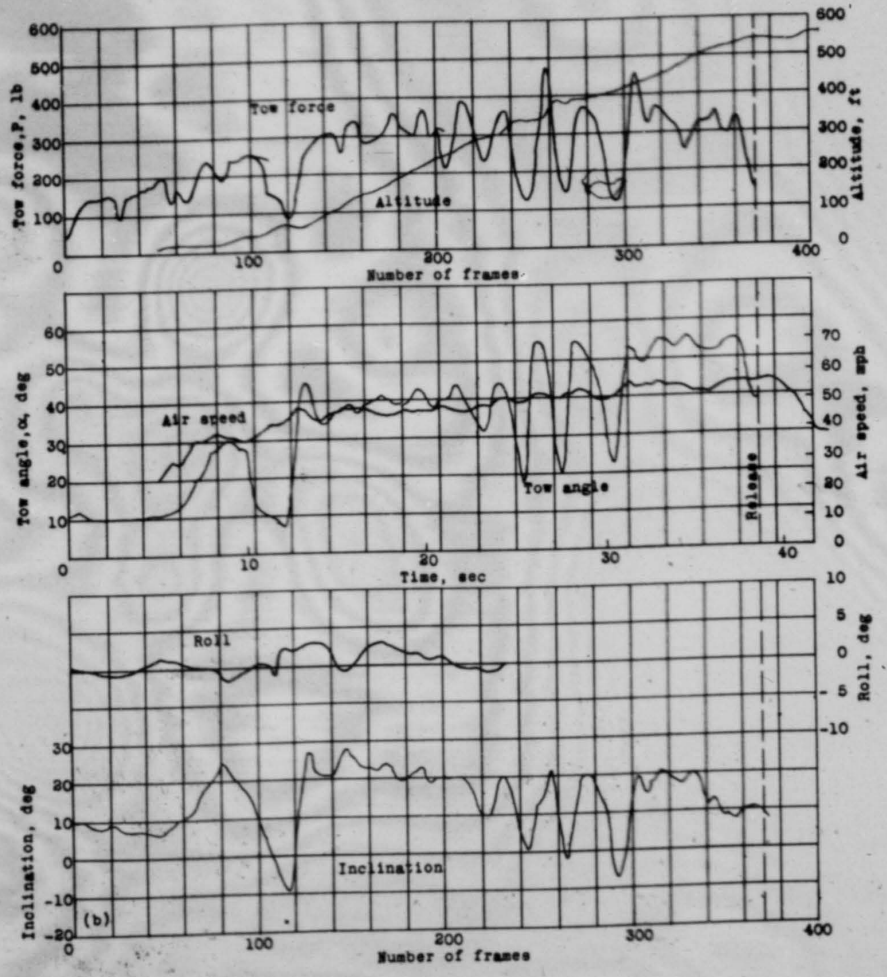

Figure 13.- (Continued)

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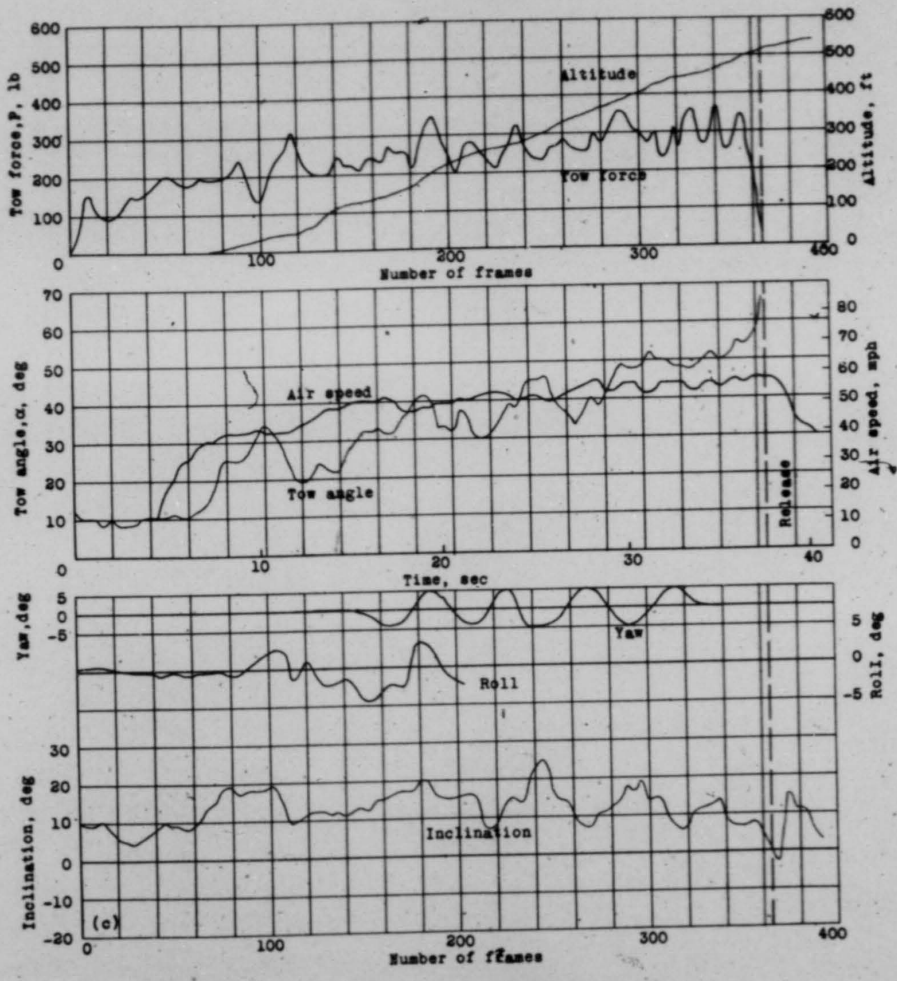

Figure 13.- (Concluded)

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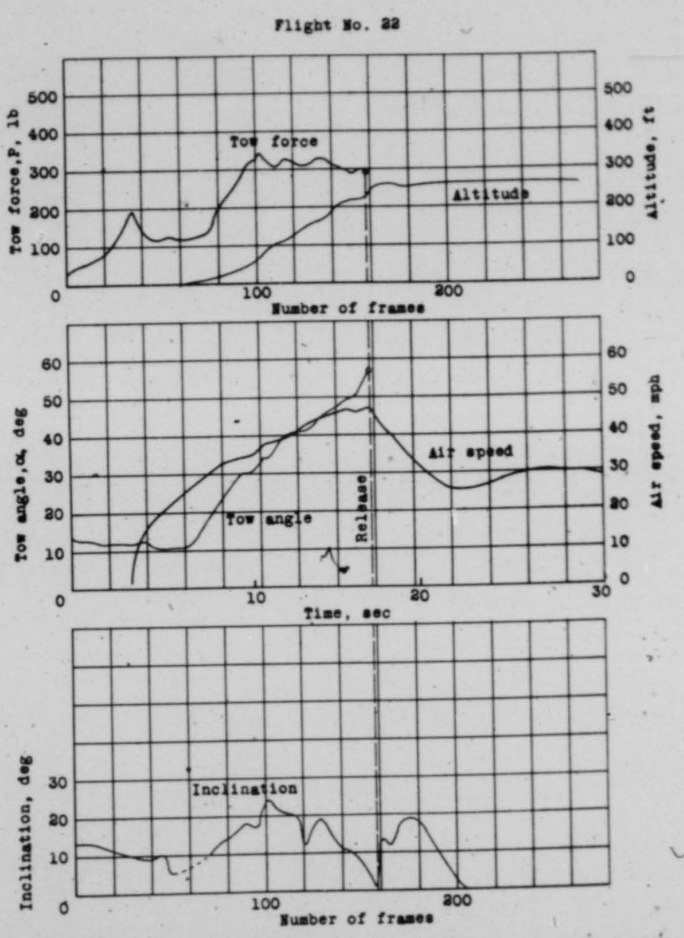

Figure 14.- Results of flight of Bowlus Baby Albatross glider with pendulum elevator launched by the pulley method of automobile tow.

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Flight No. 28

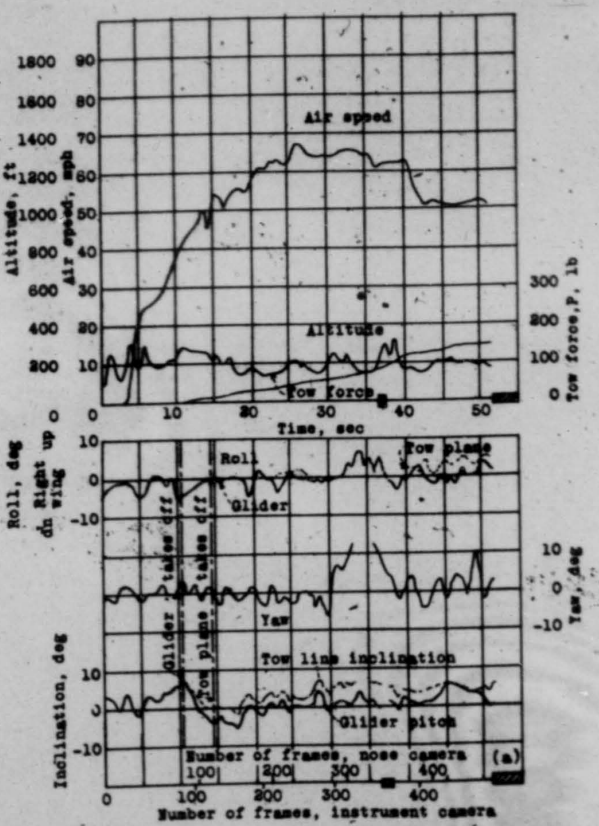

Figure 15(a to d).- Results of flight of the Briegleb BG6 glider in slipstream of tow airplane.

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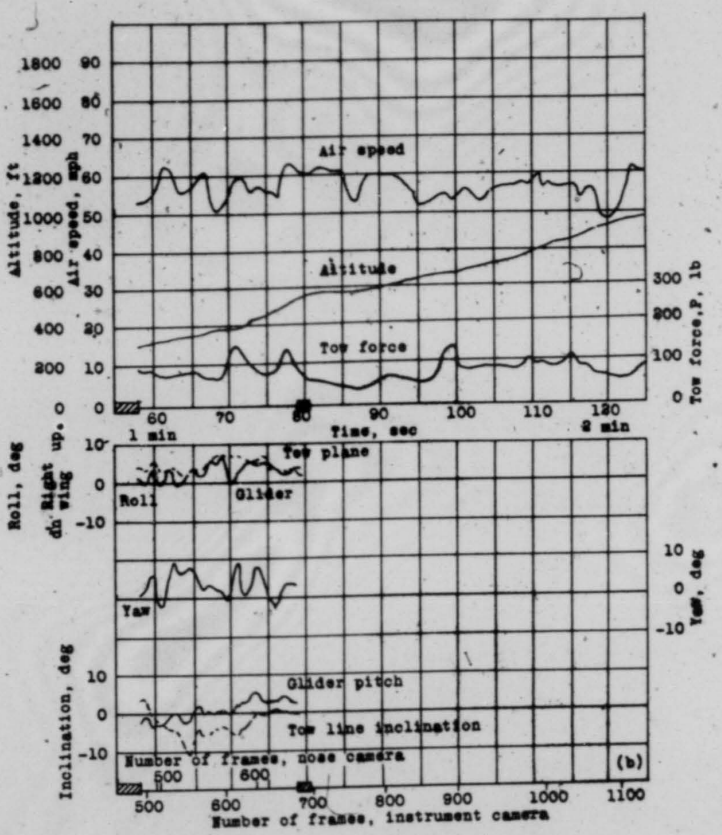

Figure 15.- (Continued)

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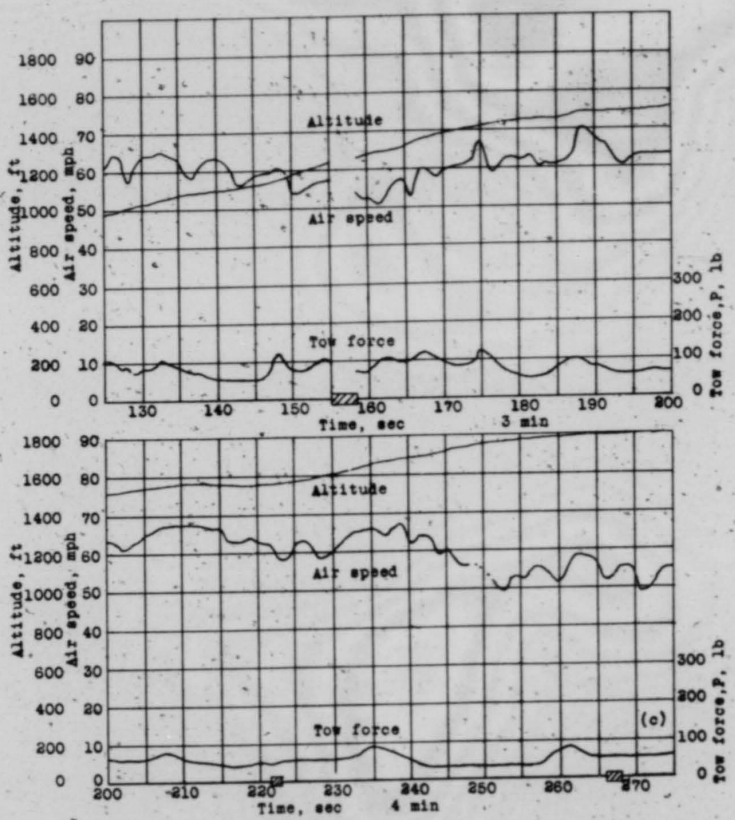

Figure 15.- (Continued)

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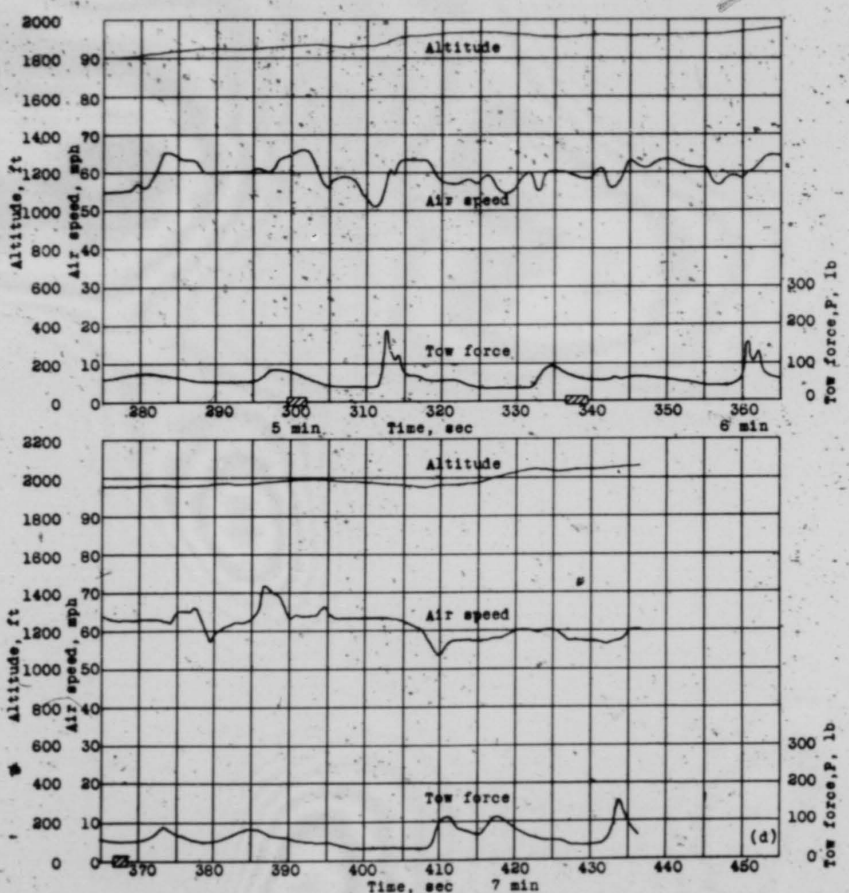

Figure 15.- (Concluded)

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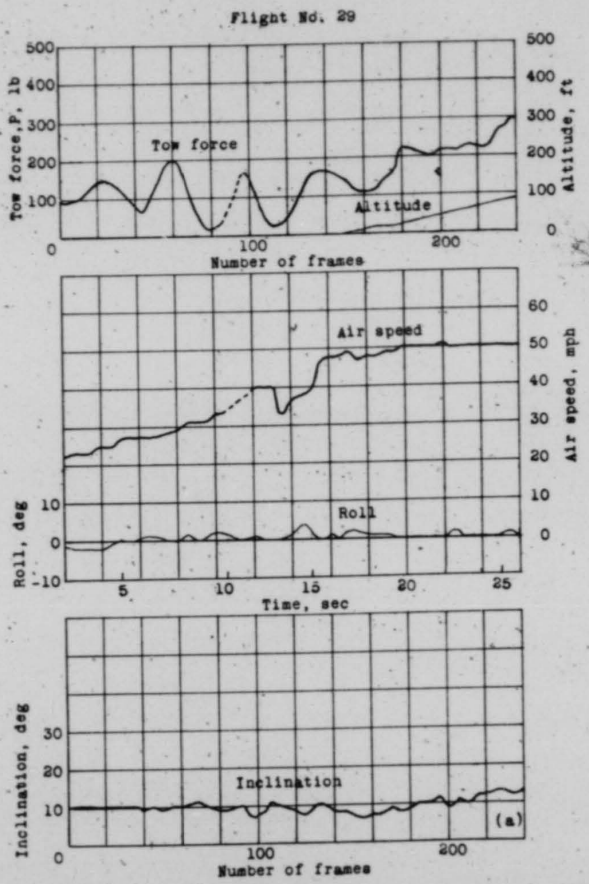

Figure 16(a,b,c).- Results of flight of the Jensen two-seater glider in automobile tow.

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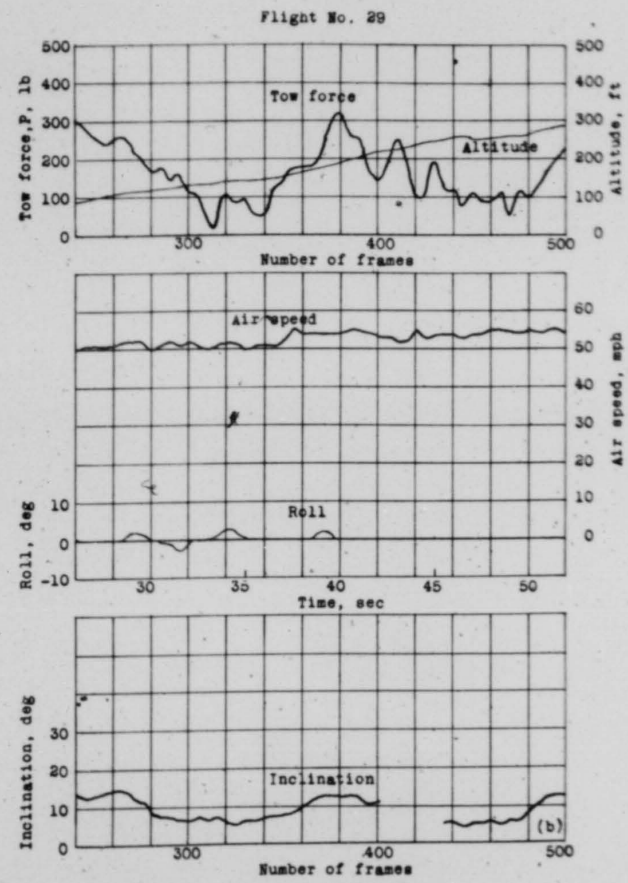

Figure 16.- (Continued)

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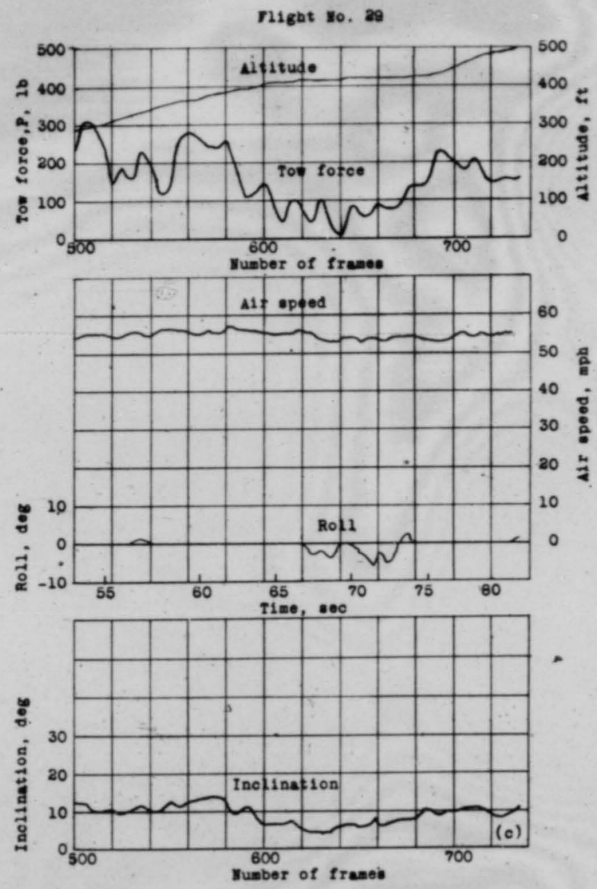

Figure 16.- (Concluded)

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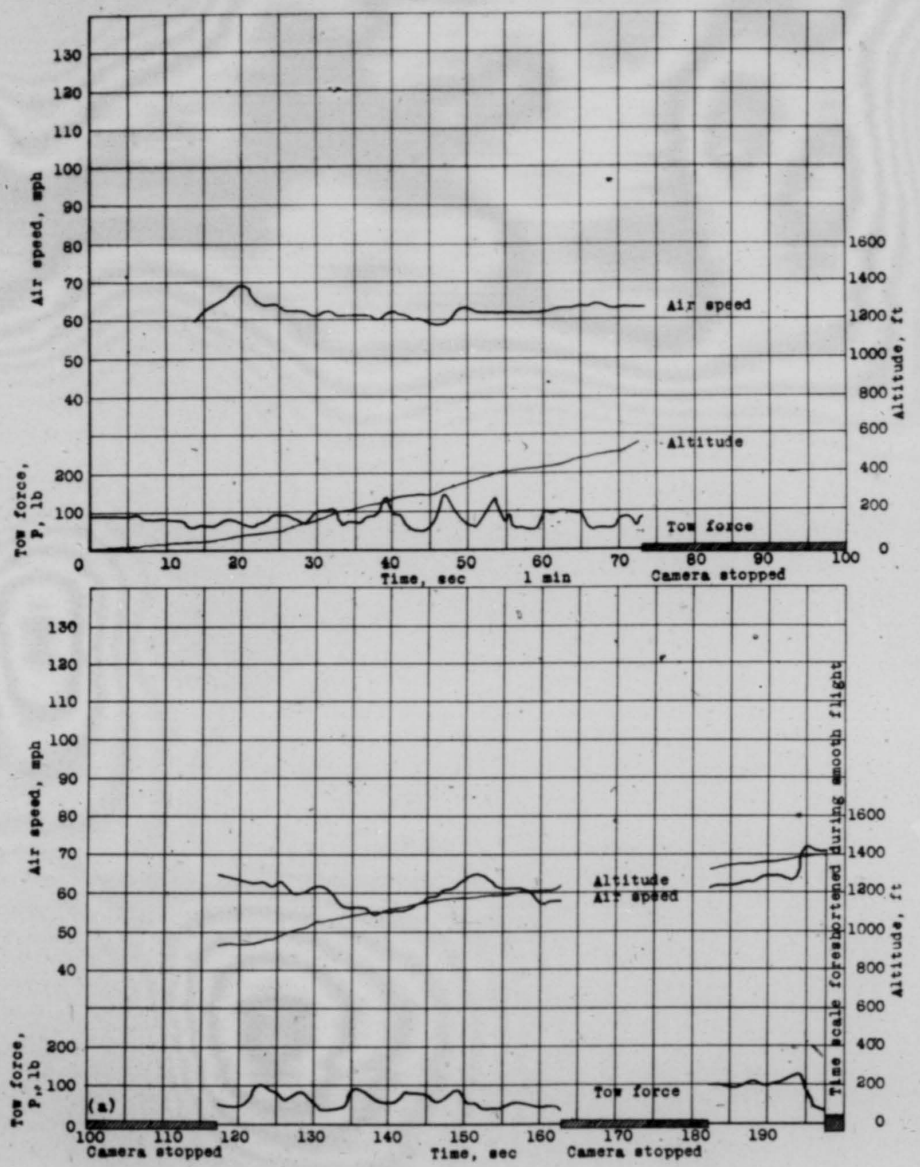

Figure 17(a,b).- Results of flight of Briegleb BG6 glider, yawed violently while in airplane tow.

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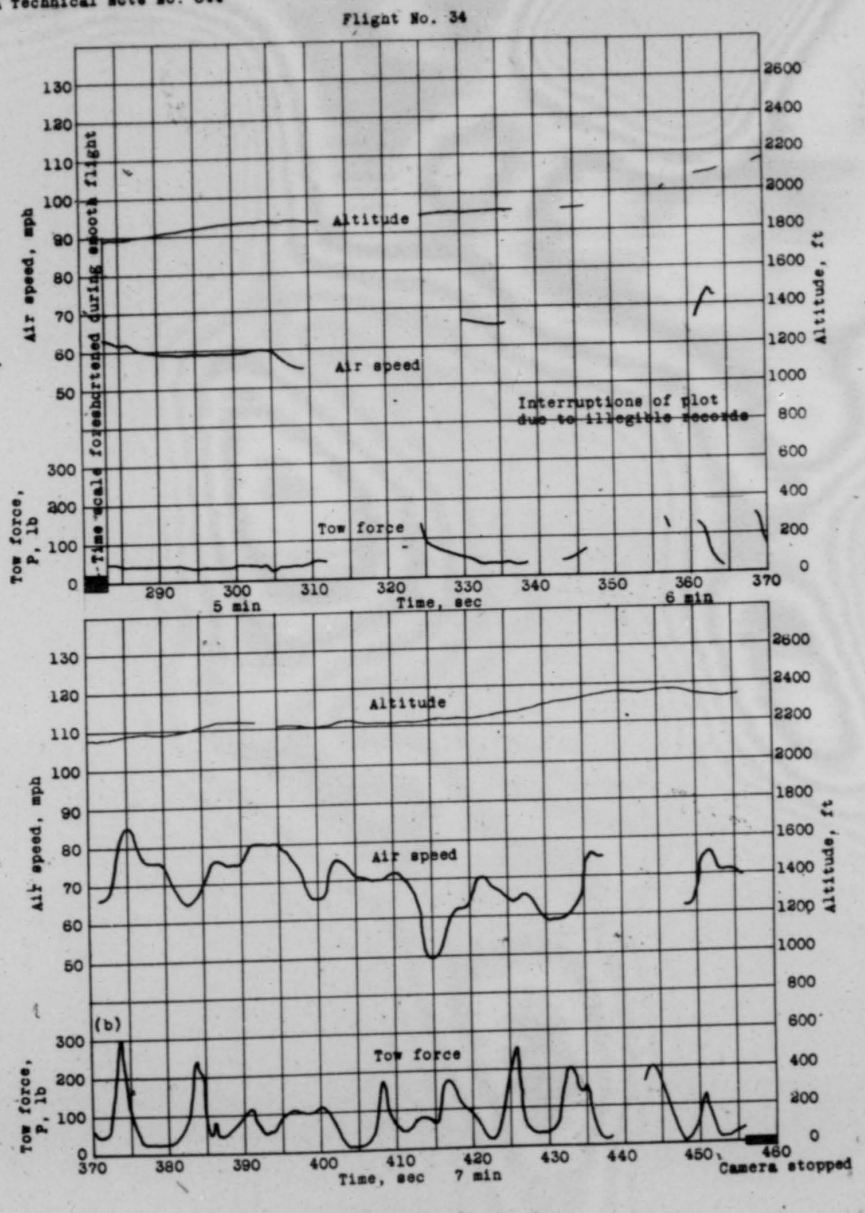

Figure 17.- (Concluded)

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8 Jan & 20 June 1974
By ALMC, AC, Date 10/6/76

MAR 3 - 1942

U 552 v Gliders (37)

MEMORANDUM FOR THE ASSISTANT CHIEF OF STAFF, G-3

Subject: Glider Program.

1. Reference memorandum for the Chief of the Army Air Forces from the Assistant Chief of Staff dated February 16, 1942 above subject, concur with Par. 1.

2. Reference Par. 2 present plans are based on the memorandum for the Chief of Staff, subject: Army Glider Program, as approved by order of the Secretary of War, December 28, 1941. Copy is attached as Tab "A".

3. Specifications of gliders now ordered are shown in Tab "B".

4. Number and type of gliders ordered with estimated schedules of availability are in Tab "C".

5. Basic training of glider pilots is proceeding at 29 Palms, California where 1,000 pilots will be trained by January 1, 1943. Advanced training will be done at a new school station soon to be established. In addition it is planned to establish four glider transport stations.

6. Pilots to be trained will be enlisted men with CPT airplane pilot training. They will have the rank of staff Sergeant upon graduation from the Advanced Glider School.

7. It has been directed that all suitable transport airplanes be modified to tow gliders.

8. Tentative plans are now being drawn up for future production of gliders for the Second, Third, and Fourth air-borne divisions. Possible proportions are shown in Tab "D". Comment on these is invited.

HEADQUARTERS ARMY AIR FORCES - COORDINATION

Chief of Staff	Sec'y Air Staff	A.A.G.	A-1	A-2	A-3	A-4	A-WPD	A-Insp.	Budget	Statistics	

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9. Tables of Organization for the Glider Units and a Glider Command are now being drawn up.

10. It is believed that certain Infantry Officers should be selected to serve as liaison or project officers in order to establish as complete coordination as possible.

For the Chief of the Air Staff:

Incls.
TAB A
TAB B
TAB C
TAB D

hmh

T. J. HANLEY, Jr.,
Colonel, Air Corps,
Assistant Chief of the Air Staff, A-4.

HEADQUARTERS ARMY AIR FORCES - COORDINATION											
Chief of Staff	Sec'y Air Staff	A.A.G.	A-1	A-2	A-3	A-4	A-WPD	A-Insp.	Budget	Statistics	
						2/3/42 TJH/hr					
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8 Jan. & 20 June 1974
By MA/LK LC, Date 10/1x/74

MEMORANDUM FOR THE CHIEF OF STAFF:

Subject: Army Glider Program.

I. Discussion.

1. This program is based on:

a. Providing air transport by means of troop airplanes and gliders for one air-borne division at the earliest practicable date. (See Tab A).

b. Providing air transport by airplanes and gliders for a second air-borne division by expansion or continuation of the program as dictated by the experience in providing the air transportation for the first air-borne division.

2. It is estimated that there will be no serious effect or delay on the present aircraft program (Second Aviation Objective), although it is possible that this glider program may conflict with other projected programs. (See Tab A).

3. The training plan is outlined in Tab B, and the over-all cost estimates are shown in Tab C.

II. Action Recommended.

The Secretary of War directs that the Chief of the Army Air Forces include the sum of $121,869,992.00 in current Estimates. Actual procurement of the transport aircraft and the gliders contemplated in this program will be made as a result of the conferences now in progress of representatives of the War a d Navy Departments, the OPM, and the SPAB. The Chief of the Army Air Forces will submit recommendations as to the time this program will be initiated based upon the conferences referred to.

III. Concurrences.

A.C. of S., G-3
A.C. of S., G-4
A.C. of S., WPD
C. of S., GHQ

Incls:
Tab A "Equipment."
Tab B "Glider Pilot Training."
Tab C "Materiel Cost."

CARL SPAATZ
Brig. General, Air Corps
Chief of The Air Staff

Approved as Amended
By Order of the Secretary of War

H. H. Arnold
Deputey Chief of Staff.

December 26, 1941

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TAB "A" DECLASSIFIED

Equipment.

Discussion.

The average size of present triangular divisions is 14,000 men. It is estimated that approximately 75% of the personnel and equipment, both individual and organizational, can be carried in the gliders and that the remaining 25 % of personnel and equipment can be accommodated in the towing transport planes.

In order to transport the division, 1,000 gliders (half eight-place and half fifteen-place) and 292 transport planes will be required. 3500 troops will be carried in the 500 eight-place gliders, and 7,000 troops in the 500 fifteen-place gliders. It is expected that 4 eight-place, or 3 fifteen-place, gliders can be towed behind each transport. Of the 292 transport planes carrying twleve men each, 125 will tow 500 eight-place gliders and 167 will tow 500 fifteen-place gliders.

The equipment cost for transporting one division by gliders and transport planes will be approximately $30,000,000.00 (or 27%) less than by transport planes alone, not including the considerable additional saving in operating costs.

It is estimated that the earliest possible date for the completion of the first phase of this program is July 1, 1943. This is based on the following considerations:

1. Procurement of Gliders.

a. One static test and one flight article of both an eight-place and a fifteen-place glider are on order from each of four manufacturers. Delivery of these gliders will be made between December 1, 1941, and March 1, 1942. It is estimated that the experimental program to test and evaluate these gliders after their delivery cannot be completed before July 1, 1942.

b. Due to the lack of experience and engineering knowledge in the aircraft industry for the manufacture of large gliders it is estimated that it will require not less than fifteen months to produce the 1,000 gliders required, following receipt of Air Corps contracts for their manufacture. This is predicated on the belief that orders or letters of intent can be placed on about April 1, 1942, if funds are available.

c. It is estimated that a sufficient number of gliders for an infantry test air-landing battalion can be produced by November 1, 1942; for a regiment by February 1, 1943; and for a brigade by May 1, 1943. This is predicated on sufficient transport airplanes being transferred from other uses for which they are being provided under present plans.

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2. Procurement of Transport Airplanes.

a. The transport airplanes for this program cannot be procured until completion of existing procurement schedules by January, 1943. They can be produced after January, 1943.

b. The Glider Program will interfere with any other projected program which would utilize the facilities of the Douglas Company, now producing C-47 airplanes, between January and June, 1943 for other than glider towing airplanes.

3. Training of Pilots.

It is estimated that there will be no difficulty in completing the training program in the time limit set by the procurement of equipment.

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TAB "B"

Glider Pilot Training Plan.

Discussion.

Due to the degree of skill estimated to be required to pilot these large troop carrying gliders in towed formation at night, under instrument conditions and while landing in small fields it is not contemplated using other than qualified airplane pilots, preferably graduates of the Air Corps Flying Schools.

1. Primary Training.

a. Primary training will be given in a four weeks course by civil schools, operating under contract to the AirCorps, with an annual training capacity of 1000 pilots. It is estimated that a maximum of four schools will be needed.

b. This training will include auto, winch, and airplane tow in two-seater training gliders. The general pattern for these schools will follow that of the civil schools contracting for primary airplane training. The school will provide airport facilities, food, housing, instruction, flying and launching equipment, storage and maintenance. The Air Corps will provide the necessary supervisory and medical personnel.

c. The graduates of these schools will receive the rating of Glider Pilot. No Air Corps gliders, outside of the primary schools, will be flown except by pilots with this rating.

2. Advanced Training.

a. Only one school for advanced glider training will be necessary. At this school graduates of the primary glider schools will receive thorough instruction in the flying and military use of the large troop carrying gliders. This training will include night flying and the actual carrying of ground troops and landing them under simulated war conditions.

b. Personnel.

(1) 1 Base Group (479-688)
(2) 4 School Squadrons (Transport) (200 men per squadron)

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c. Equipment.

(1) 26 Transports (C-47)
(2) 20 Training Towplanes (O-49)
(3) 52 Eight-place Gliders
(4) 39 Fifteen-place Gliders
(5) 50 Two-place Training Gliders

d. Increase in Personnel Required for Training.

(1) Air Corps : 1114 Pilots (Officers)
1488 Enlisted men
(2) Services: 32 Officers
455 Enlisted Men.

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TAB "C" Overall Cost Estimate.

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Discussion.

The following budget estimate for a Supplement to the 1943 Preliminary Estimates covers the equipment and school facilities needed to carry out the first phase of the program. Items marked with an asterisk (*) include the cost of equipment plus 20% for spare parts. Additional data on these items follow the budget.

1. Training.

a.	150 two-place training gliders (including ins ruments and ground trailers)	@	$ 3,000.	$ 540,000.*
b.	70 tow planes (O-49)	@	$ 22,486.	$ 1,882,104.*
c.	100 glider tow and equipment cars	@	$ 2,000.	$ 240,000.*
d.	20 winches	@	$ 2,500.	$ 60,000.*
e.	Miscellaneous accessories (tow-lines, pulleys, releases, etc.)			$ 100,000.
f.	230 short wave radios	@	$ 200.	$ 46,000.
g.	Experimental development			$ 100,000.
h.	One station school and organization equipment			$ 5,000,000.
				$ 7,968,104.

2. Troop Carrying.

a.	500 eight-place gliders	@	$ 25,000.	$ 15,000,000.*
b.	500 fifteen-place gliders	@	$ 35,000.	$ 21,000,000.*
c.	292 transport planes (C-47)	@	$132,220.	$ 46,329,888.
d.	1300 short wave radios	@	$ 400.	$ 520,000.
e.	Miscellaneous accessories			$ 200,000.
f.	Experimental development			$ 800,000.
g.	Additional Civilian Personnel (20)			$ 52,000.
				$ 83,901,888.

3. Transport Stations.

	Four Air Corps transport stations	@	$7,500,000.	$ 30,000,000.
				$121,869,992.

NOTE: Supplement to 1942 Preliminary Estimates for the sum of $595,000.00 to train 1,000 glider pilots has already been requested.

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Additional data on the foregoing budget:

1. Training.

a. From the experience gained in training several classes of Air Corps pilots, it has been determined that one -two-place training glider is needed for each two students. This duget includes 50 for training and 100 to be distributed to Air Corps Stations and used in practice flying by Glider Pilots to maintain their proficiency.

b. Tests made at Wright Field have shown that the O-49 is an ideal tow-plane for training. It is estimated that 20 are needed for training and 50 for assignment with gliders to various stations.

c. One heavy type tow car is needed for each training glider, plus one for each two practice gliders. These cars will also carry equipment, such as pulleys, tools, flags, tow-lines, etc.

d. Winch towing is needed to round out the training.

e. This item covers towlines, releases, pulleys, etc.

f. Tests now being made at Wright Field indicate that it will probably be practical to use the light, parachute troop radios, type SCR-536, for intercommunication, in the training lgiders. This estimate covers one for each glider and towplane.

g. This covers the estimated cost of experimental development at Wright Field in connection with the training program.

h. This estimate covers the approximate cost of establishing one Advanced Training School, to be similar to the present two-engine Advanced Training School, at a suitable location (preferably) in Texas).

2. Troop Carrying.

a & b. Possible variables may be the carrying of more than 12 men with equipment in each transport and the use of other than transport planes for the towing. It is estimated that the figure of 1,000 transport gliders will allow for an adequate number of spares.

c. It has been determined from the standpoints of (1) availability, and (2) suitability that the C-47 type transport airplane should be used as the standard towplane of the troop-carrying gliders.

d. The standard field service type radio SCR-195 is being used in experiments at Wright Field and is expected to serve the dual

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purpose of intercommunication between tow-plane and glider in flight and communication between the troop combat unit and other infantry forces on the ground after landing. This estimate provides one for each glider and towing transport plane.

g. This estiiate covers tow-lines, releases, etc.

f. This estimate covers necessary experimental development at Wright Field.

g. It is estimated that this number of additional civilian personnel, @ $2,600 per year, will be needed to carry out the experimental development.

3. Transport Stations.

a. It is contemplated that one air transport group equipped with approximately 73 transport airplanes and 250 transport gliders will be stationed in each of the four Air Force areas. This group can transport 3500 ground troops.

b. It is considered impracticable to utilize stations devoted to combat aircraft for the operations of this number of transports and gliders. Therefore, four additional group stations will be required.

g. Housing facilities at each station will include quarters for one battalion of air-borne infantry which will be rotated during successive periods of training.

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TAB "C"

Specifications of Transport Gliders

	9-Place (CG-3A)	15-place (CG-4A)
Span	73 ft. 1 inch	83 ft. 8 inches
Chord	10 ft. 6 inches	10 ft. 6 inches
Area	740.4 sq. ft.	851.5 sq. ft.
Length	48 ft. 5 9/16 inches	48 ft. 3 9/16 inches
Height	7 ft. 2 inches	6 ft. 9 9/16 inches
Weight Empty	2044 lbs.	3050 lbs.
Useful Load	2356 lbs.	3750 lbs.
Gross Weight	4400 lbs.	6800 lbs.
Gliding Ratio	14 to 1	15 to 1
Landing Speed	42 mph	44mph

The 9-place CG-3A is now undergoing flight tests.

The 15-place CG-4A is substantially the same design. It is expected to be ready for test by May 15th. This glider will carry, as alternate loads to 14 troops, : a. Jeep and 5 troops; b. 75 mm Howitzer and 5 troops.

The 30-place CG-5 will carry, as an alternate load to 29 troops: a. Jeep and Howitzer and 14 troops.

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TAB "D"

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Estimated Glider Delivery Schedule

Company	Glider	Months - 1942										
		Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	TOTALS
	2-place											
Frankfort	XTG-1	(2) 1										3
Schweiser	TG-2	(7) 4	5	2								18
	TG-3A			3	6	9	12	12	12	12	9	75
	XTG-3		3									3
Laister-Kauffman	XTG-4	(1) 2										3
	TG-4A	2	4	6	8	10	11	12	12	10		75
	Totals	(10) 9	12	11	14	19	23	24	24	22	9	Total 177
	9-place											
Waco	CG-3A		1	4	15	25	35	50	50	20		200
Rearwin			1	3	7	9	12	14	15	17	22	100
	Totals		2	7	22	34	47	64	65	37	22	Total 300
	15-place											
General	CG-4A					1	2	5	12	25	30	75
Porterfield						1	2	3	4	5	5	20
Pratt, Read							1	6	18	25	25	75
Timm					1	4	20	40	50	55	60	230
Robertson							1	1	4	4	10	20
Babcock							1	3	12	17	17	50
National							1	3	7	9	10	30
A.G.A.							1	4	15	20	20	60
Laister-Kauffman							2	4	6	8	10	30
Jenter							2	3	4	5	6	20
Gibson							1	2	15	20	22	60
Northwestern							2	4	6	9	9	30
	Totals				1	6	36	78	153	202	224	Total 700
A.G.A.	30-pl. XCG-5							1	1			2

GRAND TOTAL 1,179

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TAB "D"

Gliders for Three Air-borne Divisions

Type	Number	Total Troops
15-place gliders		
a. 14 troops	300	4200
b. Jeep or Howitzer and 5 troops	400	2000
	700	6200
30-place gliders		
a. 29 troops	300	8700
b. Jeep and Howitzer and 14 troops	600	8400
	900	17,100
TOTALS	1600 gliders	23,300 troops
Transports a. 18 troops	1250 transports	22,500 troops
TOTAL		45,800

TAB "D"

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WAR DEPARTMENT
Headquarters Army Air Forces
Washington

_____ 194_

MEMORANDUM for:

Distribution

1 Secy a/s
1 A-1
1 A-2
1 A-3
1 A-4
1 A-WP
1 Air Surgn.
1 File

MAR 2 1942 Distribn. made

H. H. HEWITT,
Captain, A. G. D.,
Assistant Air Adjutant General.

AAF-10B-1

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WAR DEPARTMENT
OFFICE OF THE CHIEF, MATERIEL DIVISION
AIR C[illegible]
WASHINGTON, D. C.

Date 2/25

TO:

- Executive, O. C. A. C.
- Administrative Division
- Buildings and Grounds Division
- Civilian Personnel Division
- Fiscal Division
- Inspection Division
- Intelligence Division
- Legal Division
- Medical Division
- Military Personnel Division
- Plans Division
- Training and Operations Division
- Central Files

Dir Adj Gen.
Publications Division.

MATERIEL DIVISION, O. C. A. C.

- Chief
- Assistant
- Executive
- Asst. Executive
- Contracts Section
- Engineering Section
  - Armament Branch
  - Engine Branch
  - Exp. Eng. Branch
  - Prod. Eng. Branch
  - Radio Liaison Branch
  - Sched. and Prior. Branch
- Facilities Section
- Field Service Section
- Personnel Section
- Statistical Section

FOR:

- Coordination
- Remarks and Recommendation
- Necessary Action
- Notation and Return
- Notation and File
- Preparation of Reply
- Signature

GA

Experimental Engineering
Materiel Division, OCAC.

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DECLASSIFIED DOD Ltr. 8 Jan. & 20 June 1974 By NARS, Date 10/16/06

WAR DEPARTMENT
Office of the Chief of the Air Corps
Washington

COPY

February 8, 1942

SUBJECT: Military Characteristics of Aircraft

TO: Chief of the Army Air Forces

452.4 Gliders (35)

1. The following principal characteristics of Troop and Cargo Carrying Gliders are submitted for approval:

TRANSPORT GLIDER - 30-PLACE

A. Class - 30-Place

B. Mission - The mission of this type of aircraft is the transportation of armed troops and their equipment, airborne task force equipment, and cargo by airplane tow to an altitude and geographical location that will permit descent by gliding and landing at a desired objective. As an alternative mission the glider may be used as a parachute troop transport.

C. Requirements

1. Performance (with Design Useful Load)

(a) Desired Tow Speed - 150 m.p.h. (minimum requirement)

(b) Desired Stalling Speed - 45 m.p.h. (55 m.p.h. permissible)

(c) Satisfactory controllability, stability, and maneuverability under all design conditions of takeoff, landing and towed and gliding flight.

2. Crew and Useful Load

(a) Thirty (minimum) troops (infantry or parachute), fully equipped, two of whom will act as pilot and copilot (weight per man and equipment 240 pounds) or an alternate useful load of airborne task force equipment or cargo.

(b) Total Design Useful Load - 8000 pounds approx.

3. Armament

(a) Optional.

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C. **Requirements** (Continued) DECLASSIFIED

4. **Equipment**

(a) Instruments - Minimum Flight Instruments:

(1) Air Speed Indicator.

(2) Bank and Turn Indicator.

(3) Compass.

(4) Altimeter.

(5) Rate of Climb Indicator.

(b) Safety Belts for each occupant.

(c) Radio - Provision for installation of two-way radio for intercommunication between gliders and also between tow-plane and gliders.

5. **Structure and Design Features.**

(a) Suitable seating provisions.

(b) Provision for quick, easy exit, and for loading and unloading airborne task force equipment.

(c) Provision for "breakdown" of the aircraft into components of such size as will permit rail shipment, overseas shipment, and transportation on highways.

(d) Quick, easy assembly of the occupants in 5 (c), above.

(e) Provisions for dual controls.

(s) W. R. Weaver

W. R. WEAVER,
Major General,
Acting Chief of the Air Corps.

February 10, 1942

Approved.

For the Chief of the Air Staff

(s) E. P. Curtis
E. P. CURTIS
Lt. Colonel, Air Corps,
Assistant Secretary of the Air Staff

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Military Characteristics of Aircraft
Transport-Glider - 30-Place
February 8, 1942

Distribution:

3 - Aircraft Laboratory
1 - Power Plant Laboratory
1 - Armament Laboratory
1 - Equipment Laboratory
1 - Propeller Laboratory
1 - Materials Laboratory
1 - Contract Section
2 - Production Engineering Section
18 - Chief, Materiel Division, OCAC
1 - C.G., GHQAir Force Combat Command, Bolling Field.
1 - Commandant, A. C. Tactical School, Maxwell Field
1 - Chief, Experimental Engineering Section, Wright Field
6 - Technical Staff
3 - Technical Executive, Wright Field
1 - Specification Branch, Prod. Engr. Section
1 - Photographic Laboratory
1 - Aircraft Radio Laboratory
1 - Director, Air Corps Board, Eglin Field, Fla.
2 - Army War College

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8 Jan. & 20 June 1974
By ALCSJE, HQ USAFCC 10 Dec 10/18/74

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DATE 2-13-42

HEADQUARTERS CARIBBEAN AIR FORCE
Office of The Commanding General

452.1

B-1

ALBROOK FIELD, CANAL ZONE.

February 13, 1942.

SUBJECT: Gliders.

TO: Chief of the Army Air Forces, Washington, D. C.

1. It is requested that a service test quantity of gliders be assigned to the Caribbean Air Force for use in transporting the 501st Parachute Battalion and the 550th Airborne Infantry Battalion, which have been assigned to this Air Force.

2. The number of transport airplanes assigned to the Caribbean Air Force will never be able to transport both the 501st Parachute Battalion and the 550th Airborne Battalion at the same time, while the tactical employment of these units in this theater would be greatly enhanced if this could be done. It is desired, therefore, to test the use of gliders to supplement the available transports. After a service test of gliders has been made, recommendation regarding the number and types will be submitted.

DAVENPORT JOHNSON
Major General, U.S. Army
Commanding.

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AAC/1132
air 452.1-4 Gliders (34)

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DOD ltrs
8 Jan. & 20 June 1974
By OSAF/IMC, Date 10/18/76

AAF/A-4
LBB
Written 3-3-42

Subject: Gliders

1st Ind.

War Department, Headquarters, Army Air Forces, Washington, D. C.
MAR 6 1942 **To: Commanding General, Caribbean Air Force, Albrook Field, Canal Zone.**

1. Reference request in Par. 1 above a test quantity of gliders will be assigned to the Caribbean Air Force as soon as practicable.

2. It is estimated that sufficient 9 and 15-place transport gliders will be produced and pilots trained to fly them by October 1942 to provide the test quantity requested.

hmh

FOR THE CHIEF OF THE ARMY AIR FORCES

JOHN B. COOLEY
Lt. Colonel, A. G. D.,
Assistant Air Adjutant General

452.4 Gliders (SP)

Hq. Army Air Forces
MAR 5
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MAR 6
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HEADQUARTERS—ARMY AIR FORCES—COORDINATION										
Chief of Staff	Sec'y Air Staff	A. A. G.	A-1	A-2	A-3	A-4	A-WPD	A-Insp.	Budget	Statistics	
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8 Jan. & 20 June 1974
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RECEIPT

DATE_____

Subject: Gliders.

Received from Headquarters, Army Air Forces,

1st Ind. on the above subject.

_____
Officer Rank

_____
Office

HEADQUARTERS ARMY AIR FORCES - COORDINATION										
Chief of Staff	Sec'y Air Staff	A.A.G.	A-1	A-2	A-3	A-4	A-WPD	A-Insp.	Budget	Statistics
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8 Jan & 20 June 1974

151

FEB 24 1942

SUBJECT: Experimental Glider Procurement.

2nd Ind.

War Department, Headquarters Army Air Forces, Washington, D. C.
To The Chief of the Air Corps.

1. The simplest analysis of the foregoing is the fact that commercial airline operators are anxious to use gliders which may approximate those in classified category undergoing development for the Army.

2. This should be encouraged as a distinct asset by the removal of any unduly restrictive classifications as early as possible.

By command of Lieutenant General ARNOLD:

1 Incl:
Cy R&R No. 6 frm Ch/AC
to C/AS, 12/18/41.

R. C. Lewis.

R. C. LEWIS,
Major, Air Corps,
Acting Ass't. Air Adjutant General.

452.4 Gliders

War Department, Office, Chief of Air Corps, Washington, D. C.
To: The Chief of Army Air Forces.

FEB 26 1942

1. Compliance will be made with the directive in paragraph 2, 2nd Indorsement.

For the Chief of the Air Corps

File
Noted 2-27-42

1 Incl. withdrawn

DONALD F. FRITCH
Lieut Col., Air Corps
Assistant Executive

Hq. Army Air Forces
FEB 27 1
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Ca-347

also as 452.4 Gliders (32)

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DOD ltr
8 Jan. & 20 June 1977

Subject: Experimental Glider Procurement (4-E-3)

1st Ind. FEB 16 1942

War Department, Air Corps, Office of Assistant for Procurement Services,
To: Air Adjutant General,

1. Action referred to in paragraph 2 of basic communication has been withheld by this office pending comments from the Chief of Air Staff on the recommendations included in Item No. 6 from Chief of Air Corps to Chief of Air Staff, dated December 18, 1941, copy attached.

2. Search of files discloses that this Item No. 6 may have been misplaced during transmittal to your office.

3. The XCG-3 (Waco) 8-place glider was initially flown at Wright Field on February 3, 1942. Delivery of the three other experimental gliders to Wright Field and their flight tests are expected to be made in the near future.

For the Chief of the Air Corps

FEB 16 1942
AAG Received

F. L. Ordway Jr

1 Enclosure
Cy R&R, No. 6, fr C/AC
to C/AS, 12-18-41.

F. L. ORDWAY, JR.
Lt. Air Corps,
Asst. Exec., Mat. Div.

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air 88 452.4 Gliders (32)

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AAF/A-4/82

WAR DEPARTMENT
OFFICE OF THE CHIEF OF THE ARMY AIR FORCES
WASHINGTON

AAF 452.6 (Air AG)

FEB 12 1942

MEMORANDUM FOR THE CHIEF OF THE AIR CORPS:

SUBJECT: Experimental Glider Procurement.

1. Reference is made to R&R to the Chief of the Air Corps on the above subject, dated November 21, 1941, Item No. 1, and also Item No. 5 on the same subject, dated December 12, 1941 wherein the Chief of the Air Corps was requested to advise Bowlus or other sailplane manufacturers that there is no objection to the construction of a glider for airline experimental operations provided essential military features are not disclosed.

2. Request information as to the action taken in this connection. Also, request information regarding the Air Corps Experimental Glider Program, whether or not gliders have been flown.

By command of Lieutenant General ARNOLD:

P. M. WHITNEY
Lieutenant Colonel, A.G.D.
Assistant Air Adjutant General

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Air AD 452.4 Gliders (32)

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DOD ltrs
6 Jan. & 20 June 1974
By NARS, Date 10/8/76

AAF/A-4
JFW/mwb
Wrnt 2/19

SUBJECT: Experimental Glider Procurement.

2nd Ind.

War Department, Headquarters Army Air Forces, Washington, D. C.
FEB 24 1942 To The Chief of the Air Corps.

1. The simplest analysis of the foregoing is the fact that commercial airline operators are anxious to use gliders which may approximate those in classified category undergoing development for the Army.

2. This should be encouraged as a distinct asset by the removal of any unduly restrictive classifications as early as possible.

By command of Lieutenant General ARNOLD:

1 Incl:
Cy R&R No. 6 frm Ch/AC
to C/AS, 12/18/41.

R. C. LEWIS,
Major, Air Corps,
Acting Ass't. Air Adjutant General.

452.4 Gliders (52)

Basic Memo already in file
copies of incl not retained

Dispatched
FEB 24 1942
AAG

HEADQUARTERS ARMY AIR FORCES - COORDINATION											
Chief of Staff	Sec'y Air Staff	A.A.G.	A-1	A-2	A-3	A-4	A-WPD	A-Insp.	Budget	Statistics	
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452.4 Gliders (52)

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DOD ltr 8 Jan. & 20 June 1974
By ALAJILK NC, Date 10/18/76

Subject: Experimental Glider Procurement (4-E-3)

1st Ind.

War Department, Air Corps, Office of Assistant for Procurement Services,
To: Air Adjutant General,

1. Action referred to in paragraph 2 of basic communication has been withheld by this office pending comments from the Chief of Air Staff on the recommendations included in Item No. 6 from Chief of Air Corps to Chief of Air Staff, dated December 18, 1941, copy attached.

2. Search of files discloses that this Item No. 6 may have been misplaced during transmittal to your office.

3. The XCG-3 (Waco) 8-place glider was initially flown at Wright Field on February 3, 1942. Delivery of the three other experimental gliders to Wright Field and their flight tests are expected to be made in the near future.

FEB 16 1942

1 Enclosure
Cy R&R, No. 6, fr C/AC
to C/AS, 12-18-41.

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AAF/A-2
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(rewritten wn 2/13/42)

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DOD ltr
8 Jan & 20 June 1974
By CLA/LK NC, Date 10/11/76

FEB 14 1942

SUBJECT: Information Regarding Russian Gliders.

TO: U. S. Military Mission to U.S.S.R.,
Room 2608, Munitions Building.
(Attention: Major W. J. Baird, Infantry)

1. It is understood that the Russian Air Force has had considerable experience in connection with the designing, building, and use of gliders. The Army Air Forces are very much interested in securing information on this subject, and it is requested that a cablegram be sent to Colonel Frank B. Hayne, Infantry, Executive, U. S. Military Mission to Russia, asking him to secure any information regarding Russian Gliders, particularly large transport gliders, that it is possible for him to obtain. It is further requested that when this information is received from Colonel Hayne that it be transmitted to Chief of Army Air Forces, attention A-2 Division.

For the Chief of the Air Staff:

MARTIN F. SCANLON
Brigadier General, U. S. Army,
Assistant Chief of the Air Staff, A-2.

452.4 Gliders (31)

FEB 16 1942
AAG

HEADQUARTERS ARMY AIR FORCES — COORDINATION										
Chief of Staff	Sec'y Air Staff	A. A. G.	A-1	A-2	A-3	A-4	A-WPD	A-Insp.	Budget	Statistics
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Air AG 452.4 Gliders (31)

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HEADQUARTERS ARMY AIR FORCES

ROUTING AND RECORD SHEET

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DOD ltrs. 8 Jan. & 20 June 1974
By ASDIC, WPAFB, OH, Date 10/15/74

File No. 500.3

Tally No. AAF/A-4/42

N. [illegible] A line will be drawn across sheet after each comment.

SUBJECT: Obtaining Information on Russian Gliders

NO	FROM	TO	DATE	COMMENTS
1	AAF A-4	AAF A-2	1942 1/30	AAF/A-4 LBB/hmh 1. It is generally supposed that the Russian Air Force has had considerable experience with large transport gliders. Information on these gliders would be very useful for the Army Glider Program but so far it has not been possible to obtain any. 2. It has been ascertained that Col. Frank B. Haynes has been appointed Russian Army Attache' and is at present en route to Kuibyshev. 3. It is requested that a cable be sent to Col. Hayne asking him to send back any information he can obtain on Russian gliders and that this information be forwarded to A-4. for T. J. H., Jr. AAF/C/A-4

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W-4071, AC. Rev. 8/14/41

A-4 7/4 Lovett

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[illegible]
By [illegible]

5003

AAF/A-2
JTC-ew
2-7-42

SUBJECT: Information Regarding Russian Gliders

TO: U. S. Military Mission to U.S.S.R.,
Room 2608, Munitions Building,
Washington, D. C.

ATTENTION: Major W. J. Baird, Infantry

It is understood that the Russian Air Force has had considerable experience in connection with the designing, building, and use of gliders. The Army Air Forces are very much interested in securing information on this subject, and it is requested that a cablegram be sent to Colonel Frank B. Hayne, Infantry, Executive, U.S. Military Mission to Russia, asking him to secure any information regarding Russian gliders, particularly large transport gliders, that it is possible for him to obtain. It is further requested that when this information is received from Colonel Hayne that it be transmitted to the Foreign Liaison Section, A-2 Division, Headquarters Army Air Forces, Room 708, Maritime Building, 1818 H Street, N.W., Washington, D. C.

HEADQUARTERS — ARMY AIR FORCES — COORDINATION

Chief of Staff	Sec'y Air Staff	A. A. G.	A-1	[illegible]	A-3	A-4	A-WPD	A-Insp.	Budget	Statistics	

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1st. Ind.

AAF/COMM
WGS:bn

War Department, Headquarters Army Air Forces, Washington, D. C.
FEB 1 1942
To: Chief of Air Corps

1. Attached hereto is a copy of Tentative Military Characteristics for short range light weight radio equipment for Glider Communications submitted by the Aircraft Radio Laboratory, Wright Field through the Chief Signal Officer and approved by this headquarters.

2. Information has been received that 12 SCR-536 sets used by parachute troops are being modified to meet these military characteristics and will be shipped to Wright Field for a service test. If the results of the service test prove satisfactory procedure will be made for the quantities required.

By Command of Lieutenant General Arnold

4552.4 Gliders (39)

2 Incls,
1 N/C
2 (cy Tab. Tent.
Mil. Char.)

JOHN B. COOLEY
Lt. Colonel, A. G. D.,
Assistant Air Adjutant General

Dispatched
FEB 11 1942
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HEADQUARTERS ARMY AIR FORCES							COORDINATION				
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4552.4 Gliders (39)

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(4-B-8)

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DOD ltrs.
8 Jan. & 20 June 1974
By ALPLK, LC, Date 10/15/76

FEB 4 - 1942

PROJECT #42-16 -- Procurement of Gliders for Army Glider Program (GTI-480)

The Chief of the Army Air Forces
(Atten: Lt.Col.W.G.Smith, Communication Section)

1. Attached copy of GTI-480 is forwarded for your information.

2. It is noted that "short-wave" radio will be required for these gliders. This office has no information on what type radios are to go in these gliders, and requests consideration and advice.

For the Chief of the Air Corps

1 Incl.
cy GTI-480

F. I. ORDWAY, JR.,
Major, Air Corps,
Asst. Exec. Asst. Div.

FEB 5 1942
AAC Received

13 FEB 1942
CENTRAL MAIL SECTION A.A.F.

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Air AG 452.4 Gliders (39)

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DOD Dir
By AUSTIN, NARA Date 10/31/76

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GTI-480

PROJECT #42-16
Procurement of Gliders for Army Glider Program

Technical Executive - Material Division
Wright Field
Dayton, Ohio

1. Problem presented:

a. 150 two-place training gliders with ground trailers
b. 200 eight to nine-place transport gliders with an option for 300 additional
c. 500 fifteen-place gliders with an option for 300 additional
d. 100 tow and equipment cars for ground handling and launching gliders
e. 20 winches
f. 230 short-wave radios for training gliders
g. 1300 short-wave radios for transport gliders
h. Necessary miscellaneous accessories such as tow-lines, pulleys, releases, etc.

2. Factual Data:

a. The funds for this procurement are included in the "D" Estimates

b. This procurement will hereafter be referred to as Project #42-16 and all correspondence should refer to this number.

3. Authority:

a. Chief of the Army Air Forces

4. Action Desired:

a. That action necessary to order immediately the gliders and their related equipment as specified for Project #42-16 and listed in Items a, b, c, d, e, f, g, and h, under Problem Presented.

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8 Jan & 20 Dec 1974
By AUHGC, LC, Date 10/15/76

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b. It is further directed that modification necessary for towing the transport gliders be incorporated in all suitable transport airplanes at the earliest practicable date.

c. It is further directed that contracts be awarded to manufacturers capable of producing gliders without interfering with present combat and training airplane production.

d. Although the funds for this procurement are in the "D" Estimate, and have not as yet been appropriated, it is directed that this procurement proceed immediately.

By order of the Assistant for Prodrurement Services:

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8 Jan. & 30 June 1972
By AGUIK MC, Date 10/18/76

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TENTATIVE MILITARY CHARACTERISTICS

Short Range Light Weight Radio Equipment for Glider Communication.

1. Use. - For communication between gliders and tow planes.
2. Method of Installation. - Semi-permanent installation so that equipment may be easily removed and operated outside of glider.
3. Frequency Range. - 2 to 10 megacycles.
4. Range. - One and a half mile or more. Sets will be capable of operating as close as 25 feet.
5. Weight. - The complete set shall weigh not more than 10 pounds, including headset, microphone and cords.
6. Type of Transmission. - Voice only.
7. Channels. - The set shall operate on a pre-tuned channel, the frequency of which shall be governed by quartz crystals in the receiver and the transmitter. Frequency to be decided later.
8. Netting. - The set shall be capable of netting.
9. Antenna. - To be installed in glider.
10. Power. - Dry batteries.
11. Special Requirements. - Transmitter, Receiver and batteries to be contained in a single housing, and designed to operate with a standard headset (8000 ohms), carbon microphone

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DOD Dirs
8 Jan. & 20 June 1974
By ALA/ILE DC. Date 10/15/76

SUBJECT: Transport Airplanes Army Glider Program (4-E-4)

1st Ind.

WD, OFFICE, CHIEF OF THE AIR CORPS, Washington, D. C. Feb. 12, 1942
TO THE CHIEF OF THE ARMY AIR FORCES.

1. This Directive is being returned for reconsideration in view of a directive issued by your office under date of January 27, 1942, (Air A[illegible] Ac 228), which directs that the modification necessary for towing transport gliders be incorporated in all suitable transport airplanes at the earliest practicable date.

2. This action has been co-ordinated by telephone with Mr. Barringer, Glider Specialist on General Arnold's staff.

For the Chief of the Air Corps:

DONALD F. FRITCH
Lt. Col, Air Corps
Assistant Executive
Materiel Division.

U52.4 Gliders (28)

2nd Ind.

WD HQ ARMY AIR FORCES, Washington, D. C. February 26, 1942.
To: Chief of the Air Corps.

The basic directive dated February 4, 1942 is ~~C~~ancelled, except for Par. 4, g, which directs that 26 C-47 airplanes modified for glider towing be made available for advanced training by September 1, 1942.

By command of Lieutenant General ARNOLD:

Dispatched
Feb 27 1942
AAG

R. C. LEWIS
Major, Air Corps
Acting Assistant Air Adjutant General

HEADQUARTERS ARMY AIR FORCES - COORDINATION											
Chief of Staff	Sec'y Air Staff	A.A.G.	A-1	A-2	A-3	A-4	A-WPD	A-Insp.	Budget	Statistics	
		RCL									

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Air Ab U52.4 Gliders (28)

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HEADQUARTERS ARMY AIR FORCES

ROUTING AND RECORD SHEET

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DOD ltrs. 8 Jan. & 20 June 1974
By ALAMUC, AC, Dec. 1975/76

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File No.

Tally No. AAF

Note--A line will be drawn across sheet after each comment.

SUBJECT: Transport Airplanes for Army Glider Program

NO	FROM	TO	DATE	COMMENTS
				AAF/A-4 LBB/hmh
1	AAF A-4	AAG	1942 2-23	1. It is requested that a directive, substantially as follows, be sent to the Chief of the Air Corps: "1. The directive from the Chief of the Army Air Forces to the Chief of the Air Corps above subject dated February 4, 1942 is cancelled, except for Par. 4, a, directing that 26 C-47 airplanes modified for glider towing be made available for advanced training by September 1, 1942. Incl. Ltr fm Asst.AAG dtd 2-4-42 to C/AC abv subj w/ 1st Ind. TJH/hl TJHJr LBB, C/A-4
		Hq. Army Air Forces FEB [illegible] AAG RECEIVED		
	a/s	AAG	2-25	approved HHA a/s

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Page No. 1 ~~CONFIDENTIAL~~ Air AS 452.4 Gliders (25)

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DOD Dir. 5
8 Jan. & 30 June 1976
By [illegible] NC, Date 10/12/76

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BY AUTHORITY OF THE CHIEF OF THE ARMY AIR FORCES
DATE INITIALS

(Air AG)
AC 268

February 4, 1942

Subject: Transport Airplanes for Army Glider Program.

To: The Chief of The Air Corps.

1. The Army Glider Program is based on the transport gliders being towed by 292 C-47 transport airplanes.

2. Certain modifications must be made to the C-47 for towing the gliders.

3. It is estimated that the 1,000 transport gliders for the first phase of the program can be produced by July 1, 1943.

4. It is directed that the necessary modifications be made to the 292 C-47 airplanes and that they be made available as follows:

a. For advanced training: 26 by September 1, 1942.

b. The balance as soon as possible thereafter with the total number by July 1, 1943.

By command of Lieutenant General ARNOLD:

JOHN B. COOLEY
Lt. Col., A.G.D.
Assistant Air Adjutant General.

452.4 Gliders (28)

HEADQUARTERS—ARMY AIR FORCES—COORDINATION

Chief of Staff		A-1	A-2	A-3	A-4	A-WPD	A-[illegible]
	WJF ↓ gjc	gjc			✓	DEC	FEB 1942

AAF-39

Air AG 452.4 Gliders (28)

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HEADQUARTERS ARMY AIR FORCES

ROUTING AND RECORD SHEET

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DOD ltrs
8 Jan & 20 June 1974
By AAG/AFE, HQ, Date 10/18/76

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File No.

Tally No. AAF

Note.—A line will be drawn across sheet after each comment.

SUBJECT: Transport Airplanes for Army Glider Program.

NO.	FROM	TO	DATE	COMMENTS
				AAF/A-4 LBB/emd
1	AAF A-4	AAF AAG	1942 1/12	1. It is requested that a directive, substantially as follows, be sent the Chief of the Air Corps: "1. The Army Glider Program is based on the transport gliders being towed by 292 C-47 transport airplanes. 2. Certain modifications must be made to the C-47 for towing the gliders. 3. It is estimated that the 1,000 transport gliders for the first phase of the program can be produced by July 1, 1943. 4. It is ~~requested~~ directed that the necessary modifications be made to the 292 C-47 airplanes and that they be made available as follows: a. For advanced training: 26 by September 1, 1942. b. The balance as soon as possible thereafter with the total number by July 1, 1943. Concurrences: A-3 ( ) AWPD ( ) TJH, Jr. C/A-4

JAN 29 42 AM

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DOD Dir. 5200.9
18 Jan. & 30 June 1974
By AUL/LCK MC, Date 10/15/76

WAR DEPARTMENT
HEADQUARTERS OF THE ARMY AIR FORCES
WASHINGTON

JAN 27 1942

MEMORANDUM FOR THE AIR ADJUTANT GENERAL:

Subject: Procurement of Gliders for Army Glider Program.

1. It is requested that a directive, substantially as follows, be sent to the Chief of the Air Corps:

"1. It is directed that orders be placed immediately for the following:

a. 150 two-place training gliders with ground trailers
b. 200-500 eight to nine-place transport gliders
c. 500-800 fifteen-place gliders.
d. 100 tow and equipment cars for ground handling and launching gliders
e. 20 winches
f. 230 short-wave radios for training gliders
g. 1,300 short-wave radios for transport gliders
h. Necessary miscellaneous accessories such as towlines, pulleys, releases, etc.

2. It is further directed that modification necessary for towing the transport gliders be incorporated in all suitable transport airplanes at the earliest practicable date.

3. It is further directed that contracts be awarded to manufacturers capable of producing gliders without interferring with present combat and training airplane production."

For the Chief of the Air Staff:

T. J. HANLEY, JR.,
Colonel, Air Corps,
Assistant Chief of the Air Staff, A-4.

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AirAG 452.1 Gliders (28)

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DOD Dir. 5200.9
Jan. 8 30 June 1971
By ALAFUE, NC, Date 10/15/76

(Air AG)

A C 105

January 14, 1942

SUBJECT: Air Corps Stations for Army Glider Program.

TO : The Chief of the Air Corps

1. The Army Glider Program calls for five (5) new Air Corps Stations as follows:

a. One station school
b. Four transport stations

2. Pending receipt of a directive initiating this Program, it is directed that a study be made and plans drawn up at the earliest practicable date for the location and construction of these stations.

3. Each station will have housing facilities for one battalion of air-borne infantry which will be rotated during successive periods of training.

4. It is suggested that the Station School be located in Texas.

5. It is directed that A-4 be informed of action taken.

By Command of Lieutenant General ARNOLD:

Dispatched
JAN 14 1942
AAG

JOHN B. COOLEY
Lt. Col., A.G.D.
Assistant Air Adjutant General.

HEADQUARTERS ARMY AIR FORCES — COORDINATION											
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	✓	JJC				✓					

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HEADQUARTERS ARMY AIR FORCES

ROUTING AND RECORD SHEET

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DOD ltr
8 Jan. & 20 June 1974
By ALN/LK NC, Date 10/15/76

File No.

Tally No. AAF

Note: A line will be drawn across sheet after each comment.

SUBJECT: Air Corps Stations for Army Glider Program.

NO	FROM	TO	DATE	COMMENTS
				AAF/A-4 LBB/cmy
1.	AAF A-4	AAG	1942 1/12	1. It is requested that a directive, substantially as follows, be sent the Chief of the Air Corps: "1. The Army Glider Program calls for five (5) new Air Corps Stations as follows: a. One station school b. Four transport stations 2. Pending receipt of a directive initiating this Program, it is ~~requested~~ directed that a study be made and plans drawn up at the earliest practicable date for the location and construction of these stations. 3. Each station will have housing facilities for one battalion of air-borne infantry which will be rotated during successive periods of training. 4. It is suggested that the Station School be located in Texas. 5. It is ~~requested~~ directed that A-4 be informed of action taken." TJH /ds TJH,Jr. LBB C/A-4
				JAN 12 1942 AAG Received
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DOD 5200
8 Jan. & 20 June 1979
By AUL NLE, Date 10/15/76

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HEADQUARTERS AIR FORCE COMBAT COMMAND

BOLLING FIELD, D. C.

(V-56)

In reply refer to:
ACC 452.4

JAN 24 1942

Subject: Organization of Glider Units.

To: The Chief of the Army Air Forces, Washington, D. C.

Letter AAF 452.4 (7-7-41), Subject "Organization of Glider Units", with the 6th Indorsement thereto, dated January 3, 1942, was sent to this headquarters for action and answer. Compliance with this communication includes the preparation of several Tables of Organization. It is expected that the action and answer called for will be completed and submitted on or about February 15, 1942.

For the Commanding General:

C. W. Russell
Brigadier General, G.S.C.
Chief of Staff

JA 25 1942
AAG Rec'd

Air Ob 452.4 Gliders (26)

File 452.3

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Air Ob 452.4 Gliders (26)

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Office of the Chief of the Air Corps 3437

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OCD ltr
8 Jan & 29 June 1974
By AAIIS LC, Date 10/8/74

IN REPLY REFER TO

WAR DEPARTMENT

JAN 17 1942

MEMORANDUM FOR - Chief of the Army Air Forces

SUBJECT - Glider Production Facilities

1. Reference is made to letter from the Chief of Army Air Forces dated January 2, 1942, subject as above. The following will serve to indicate the present situation as it relates to the objective of producing 500 eight-place CG transports and 500 fifteen-place CG transports in a minimum of time.

2. Reports from the Air Corps Procurement District Offices listed 62 firms more or less capable of taking part in the program: 27 are in the Eastern District, 20 in the Central and 15 in the Western. Instructions to the Districts were to include in their reports information on the following points:

a. Productive area.

b. Productive personnel.

c. Capital invested.

d. Annual sales value at annual capacity.

e. Is engineering staff adequate?

f. Maximum Capacity--transport production per month.

g. Time to produce--months.

h. Number now being produced.

i. Number of places in transports.

j. Will it interfere with present production?

k. Type of equipment in plant.

l. Will facilities permit of producing CG transports having wing spread of approximately 80 feet?

3. While the information submitted in many instances was too sketchy to be conclusive, it was evident that a limited few well established, fully equipped firms could be relied upon to do more in a short space of time than others, but even in these instances, a thorough check of their facilities, in the form of a detailed survey, will be required.

Ltr Ofc Chief AAF 452.1 Miller

File 452.1

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Q. M. C. Form 356 (Old Form 463)
Approved December 1, 1922

- 1 -

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Office of the Chief of the Air Corps

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IN REPLY REFER TO

WAR DEPARTMENT

Memo - Chief of the Army Air Forces.
Subject: Glider Production Facilities

4. Undoubtedly the objective of 1000 CG transports could be obtained in the minimum amount of time through the use of the maximum number of plants throughout the country, were the program to be a continuing one, but until this becomes a requirement, it appears as though the only course would be to utilize a few manufacturers in view of the cut-off at 1000 CG transports. Attention is invited to the fact that complete drawings and specifications will not be complete for the eight-place for at least six weeks, and not until 2-1/2 months after that will the fifteen-place drawings and specifications be complete. However, this would not prevent a start on the parts that have been approved.

5. No survey of availability of materials could be made until the type of glider is decided upon inasmuch as the materials required for various types are different. Whereas spruce is the most desirable wood, it is known that there is a shortage of spruce and there is no shortage whatsoever of Douglas fir, which is a suitable substitute. No shortage could be anticipated for steel since the seamed type of steel tubing could be made in any required amount and all that is required is a priority rating. It is possible that a shortage in instruments might be anticipated, or in tow lines either of steel or hemp, but this again would be dependent upon the type and future operation procedure and could not be considered as critical.

6. It is to be concluded from the preliminary reports submitted to this office, that four to five months will be required, subsequent to delivery of complete drawings, to produce 500 CG transports of both types by utilizing the existing facilities (expanded with Government aid, if necessary) of eight or ten manufacturers, if they can be obtained, for many of the firms that seem to be the most likely from the reports may not be interested if supply contracts are not to be based on a continuing program. It is estimated that four additional months will be required to produce the 500 additional for the 1000 total complement.

7. In the circumstances, it is recommended:

a. That this office be instructed to obtain, through the District Offices, a detailed survey of three or four of the best equipped plants in each district that could be relied upon without much, if any, expansion to produce a certain number of eight-place, fifteen-place or both in a limited space of time. These surveys should not require much time to complete.

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Q. M. C. Form 856 (Old Form 468) Approved December 1, 1922

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Office of the Chief of the Air Corps

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IN REPLY REFER TO

WAR DEPARTMENT

Memo - Chief of the Army Air Forces
Subject: Glider Production Facilities

b. That from these surveys (approximately 10 or 12), the number be further reduced to a minimum of 3 or 4 manufacturers who would form a nucleus with which to start a continuing program of production, even though requirements after the first objective of 1000 CG transports is obtained, are materially reduced. The manufacturers may, in turn, subcontract certain sub-assemblies to sub-contractors who have expressed interest in this program, and whose existing facilities are suitable.

For the Chief of the Air Corps

OPEchols

17 2

Oliver P. Echols,
Brig. Gen. Air Corps,
Chief Material Division.

The detailed survey referred to above was made by Lt. Col. Fred R. Dent Jr. at Wright Field. The results of this survey were discussed at a conference in Gen. Echols' office 1/27/42 which included Col. Carroll, Col. Dent, Col. Childlaw, Col. Schneider Col. Mesen, Capt. Bradley, Mr. L.B. Barringer, Capt. Batchelder and preliminary plans for immediate procurement were made. There is therefore no need for further correspondence on this matter.

Lewis B. Barringer
Glider Specialist
Air Staff, A-4

Q. M. C. Form 356 (Old Form 493)
Approved December 1, 1922

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DECLASSIFIED
DOD Dirs. 5 Jan. & 30 June 1974
By ACAN/AC IAG Date 10/18/76

OFFICE OF THE CHIEF OF THE AIR CORPS

FILE NUMBER:

Station

Date

SUBJECT: Receipt.

TO: The Chief of the Air Corps, Washington, D. C.

1. Received from the Chief of the Air Corps the following listed (*Secret - *[redacted]) documents:

Memorandum For - Chief of the Army Air Forces

Subject - Glider Production Requirements

Please accomplish and return immediately to:
~~Classified Mail and File Unit,~~
~~Administrative Division,~~
Office, Chief of the Air Corps.
Mail Room

Jessie B. Barringer Glider Specialist, A-4
Name Rank Branch

Office of: Chief of Army Air Forces

*Strike out word not applicable.

~~(*SECRET)~~ ~~(*CONFIDENTIAL)~~ W-4003, A.C.

AAF 452.4 Gliders (25)

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ADDRESS REPLY TO
CHIEF OF THE AIR CORPS
WAR DEPARTMENT
WASHINGTON, D. C.

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DOD ltr's
8 Jan & 20 June 1974
By AUTH: JC Date 10/18/76

WAR DEPARTMENT
OFFICE OF THE CHIEF OF THE AIR CORPS
WASHINGTON

JAN 2 ? 1942

SUBJECT: Army Glider Program

TO: Chief of Army Air Forces

1. Reference letter from Army Air Forces to Chief of Air Corps, dated January 12, 1942, subject: "Army Glider Program," File No. AC 94, it is requested that reconsideration be given to the directive requirements of Paragraph 3a, which directs that twenty 2-place training gliders be ordered immediately from the Frankfort Sailplane Company, Inc., Joliet, Illinois. The reasons for requesting reconsideration of this requirement are as follows:

a. A poll of the Army pilots who have taken training on the various glider types indicates that without exception among those contacted, they prefer the Schweizer 2-place training glider to the Frankfort 2-place training type.

b. The Frankfort organization is still working on modification of its design. The Civil Aeronautics Administration has not yet furnished approval of the modified type.

c. The third Frankfort experimental 2-place training article, which was due June 26, 1941, is still undelivered.

d. Both the Schweizer type and the Laister-Kauffman type, which is now being static tested at Wright Field and which will be flight-tested in February, appear superior in design and workmanship to the Frankfort article.

e. The Glider Unit at Wright Field feels that quicker delivery can be obtained from the Schweizer organization than from Frankfort and at the same time have the benefit of better design and construction.

2. For your information, the Frankfort 8-place glider now undergoing static tests at the Materiel Division, gives evidence of inferior design and fabrication. While accurate results cannot be furnished at this part of the test stage, Wright Field feels that it may even be necessary to cancel the contract for the larger Frankfort 15-place type, due to the lack of cooperation on the part of the company, and evidences of poor design and workmanship furnished to date.

~~SECRET~~
By Authority of
the Chief of the Air Corps
1-21-42 FDO
Date Initials

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Ac AS 452.1 Gliders (23)

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3. With reference to the conferences directed in Paragraph 1, these conferences will be arranged as soon as Mr. Barringer, Glider Specialist, returns from his present trip of inspection around the country.

For the Chief of the Air Corps

JAN 22 42

F. I. Ordway, Jr.

F. I. ORDWAY, JR.,
Major, Air Corps,
Asst. Exec., Mat. Div.

As a result of
meeting attended by
Gen Echols, Colonel
Council, Colonel Kent,
Colonel Chandler, Colonel
Meyers etc. a new directive
was prepared which superseded
the subject directive. This
correspondence, this correspondence
has therefore served its purpose
and should be filed under
further action.
Chief of Division
Colonel, Air Corps

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Air AS 032 Echols (23)

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DOD ltrs.
Sec. 3 & 20 June 1974
By ACLU-2 NC, Date 10/18/76

JBC/gr
(Air AC)
AC 94

January 12, 1942

SUBJECT: Army Glider Program.

TO: Chief of Air Corps.

1. Referring to paragraph 2 of Item 1, your R & R, (4-B) Materiel Division, 1/9/42, directed that, if the conferences referred to have not already been held, arrangements be made to hold them at earliest practicable date and that their findings be sent immediately to the Chief of the Army Air Forces.

2. Attention is directed to the fact that the gliders will be built largely of non-strategic materials (chiefly wood and steel tubing) and that their production is not expected to interfere with airplane production.

3. Referring to paragraph 3 of Item 1 above, it is directed that procurement be initiated as follows:

a. Twenty (20) 2-place training gliders be ordered immediately from the Frankfort Sailplane Company, Inc., Joliet, Illinois.

(1) This company is now building experimental transport gliders and needs this business to support and expand its organization.

(2) The gliders are needed at the Air Corps Gliding School at 29 Palms, California, and for initiation of glider units of Combat Command.

Dispatched
JAN 13 1942
AAG

4. Specific directives will be sent covering the remainder of the items of the Memorandum, a copy of which is inclosed, as amended and approved by order of the Secretary of War, following:

a. Receipt of findings of conferences.

HEADQUARTERS ARMY AIR FORCES COORDINATION											
Chief of Staff	Sec'y Air Staff	A.A.G.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Statistics	

Completion of present experimental work.

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AAF 39

452.4 Gliders (23)

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g. Availability of funds (now in current estimates).

d. Findings of survey now being made of available glider production facilities.

By command of Lieutenant General ARNOLD:

Incl. Memo C of S, 12/3/41

JOHN B. COOLEY,
Lieutenant Colonel, A.G.D.,
Assistant Air Adjutant General.

HEADQUARTERS ARMY AIR FORCES						COORDINATION					
Chief of Staff	Secty Air Staff	A.A.G.	A 1	A 2	A 3	A 4	A WPD	A Insp	Budget	Statistics	
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HEADQUARTERS ARMY AIR FORCES

ROUTING AND RECORD SHEET

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DOD Dir. 5
8 Jan. & 20 June 1974
By AGO/IAC, NC, Date 10/18/76

File No.

Tally No. AAF

Note.—A line will be drawn across sheet after each comment.

SUBJECT: Army Glider Program.

NO	FROM	TO	DATE	COMMENTS
				AAF/A-4 LBB/emd
2	AAF A-4	AAF AAG	1942 1/11	1. It is requested that a directive, substantially as follows, be sent to the Chief of Air Corps: (4-D) Ltr. Dir., 1/9/42, directed ~~requested~~ "1. Referring to paragraph 2 of Item 1, above, it is requested that, if the conferences referred to have not already been held, arrangements be made to hold them at earliest practicable date and that their findings be sent immediately to the Chief of the Army Air Forces. 2. Attention is directed ~~invited~~ to the fact that the gliders will be built largely of non-strategic materials (chiefly wood and steel tubing) and that their production is not expected to interfere with airplane production. directed 3. Referring to paragraph 3 of Item 1 above, it is ~~desired~~ that procurement be initiated as follows: a. Twenty (20) 2-place training gliders be ordered immediately from the Frankfort Sailplane Company, Inc., Joliet, Illinois. (1) This company is now building experimental transport gliders and needs this business to support and expand its organization. (2) The gliders are needed at the Air Corps Gliding School at 29 Palms, California, and for initiation of glider units of Combat Command. 4. Specific directives will be sent covering the remainder of the items of the Memorandum, a copy of which is inclosed, as amended and approved by order of the Secretary of War, following: a. Receipt of findings of conferences. (See over)

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Page No. -2- AAF 334.4 Gliders (23)

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SUBJECT: Army Glider Program.

NO.	FROM	TO	DATE	COMMENTS
				AAF/A-4 LBB/emd
2 (Cont)	AAF A-4	AAF AAG	1942 1/11	b. Completion of present experimental work. c. Availability of funds (now in current estimates). d. Findings of survey now being made of available glider production facilities." Incl: Cy Memo for C/S, abv. subj., 12/2/41 (AAF/360). TJH, Jr. LBB C/A-4.

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WAR DEPARTMENT
Headquarters Army Air Forces
Office of the Air Adjutant General

Date 1/11/42

TO:

___Chief of the Army Air Forces.
___C.G., Air Force Combat Command.
___Chief of the Air Corps.
___Chief of the Air Staff.
~~___Secretary of the Air Staff.~~
___A-1 Division.
___A-2 Division.
___A-3 Division.
___A-4 Division.
___Air War Plans Division.
___Budget Section.
___Statistics Section.
___Air Inspector.
___A.F. Files.

for concurrence or comment and return to AAG.

JJC.

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OFFICE OF THE CHIEF OF THE AIR CORPS

ROUTING AND RECORD SHEET

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DECLASSIFIED
DOD ltrs.
8 Jan. & 20 June 1974
By ANJ/LK JC, Date 10/09/76

(To be filed with correspondence)

Note.—A line will be drawn across sheet after action by each office concerned.

SUBJECT: Army Glider Program.

NO.	FROM	TO	DATE	DATA
1.	(4-B) Mat.Div.	C/AS Attn: A-4	1-9 1942	1. We are in receipt of Item #5, R & R, dated January 1, 1942, from the Chief of Air Staff: "The Memorandum for the Chief of Staff on the Army Glider Program dated December 2, 1941 has been approved by order of the Secretary of War. A copy is attached." 2. The action recommended in the directive referred to is quoted: "II. Action Recommended. The Secretary of War directs that the Chief of the Army Air Forces include the sum of $121,869,992.00 in current estimates. Actual Procurement of the transport aircraft and the gliders contemplated in this program will be made as a result of the conferences now in progress of representatives of the War and Navy Departments, the OPM, and the SPAB. The Chief of the Army Air Forces will submit recommendations as to the time this program will be initiated based upon the conferences referred to." 3. If it is desired to get action on this Program, it is requested that we immediately be furnished with a specific directive as to what items on the Staff memorandum referred to that it is desired that we initiate procurement. O.P.E. Chief, Materiel Div.

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DOD Dir. 5
8 Jan. & 20 June 1974
By AKJ NARA Date 10/6/76

Gliders

5. AAF C/AC 1942 AAF/A-4
C/AS 1/1 LRB/ccc

1. The Memorandum for the Chief of Staff on the Army Glider Program dated December 2, 1941 has been approved by order of the Secretary of War. A copy is attached.

3 Incls n/c &
1 Incl added:
Cpy Memo fm GAAF to Ch of S 12/2/41 w/3 Incls:
Tab A "Equipment".
Tab B "Glider Pilot Training Program."
Tab C "Materiel Cost."

GS
C/AS

Dispatched
JAN 6 1942
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HEADQUARTERS ARMY AIR FORCES - COORDINATION											
Chief of Staff	Sec'y Air Staff	A.A.G.	A-1	A-2	A-3	A-4	A-WPD	A-Insp.	Budget	Statistics	

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air ak 452.4 Gliders (22)

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SUBJECT: Gliders

1. (4-B)
Materiel Division — Chief of Air Corps — 8-23 1941

1. Attention is invited to copy of letter from the Chief of Air Staff to the Commanding General, Air Force Combat Command and copies of teletypes from our Budget Office at Wright Field to Training and Operations Division, O.C.A.C.

2. It is desired to bring to your attention the fact that the Materiel Division has made no provision in the 1943 Estimates for either gliders or power targets. Whenever a determination is made on the glider program, it will be necessary to prepare supplemental estimates in order that funds can be obtained to make the necessary procurements.

3 Encls.
Ltr. 7/3/41, Ch. Air Staff
Bud-T-513, 7/21/41
BUD-T-553, 7/31/41

O. P. E.
Chief, Materiel Division

---

2 ChAC T & O 8/26

For necessary action. Do we have a directive from Air Staff adequate for a basis on which to make estimates?

HWB

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Gliders

3.	T & O 38-50/as	Chief of the Air Corps.	1941 8/27	1. No directive has been received by T & O upon which estimates for 1943 for the procurement of gliders can be made. 2. To date twenty-four (24) glider pilots (officer pilots) have been or are undergoing training. Directive for the training of one hundred and fifty (150) additional officer pilots, has been received. Six (6) two-place training gliders are under procurement by the Materiel Division. Six (6) additional two-place training gliders were recommended for procurement by R & R, No. 1 dated 8/6/41, T & O to Materiel Division - subject: Training Gliders. 3. It is recommended that fifty (50) additional two-place training gliders be procured in order that the one hundred and fifty (150) pilots to be trained can maintain their proficiency in this type of flying. G. E. S. Brig. General, A.C. Chief, T & O Division. 2 Inc.s n/c
4.	Chief of the Air Corps	Chief of the Air Staff	1941 8/29	1. In order to bring the glider program under proper balance, request this office be furnished a directive upon which present and future plans and estimates can be based. It is important that estimates for 1943 procurement for gliders be submitted without delay. Prompt action in this matter will be appreciated. M.S.F. Executive

Hq. Army Air Forces
AUG 30 1941
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COPY

July 3, 1941

SUBJECT: Organization of Glider Units

TO: Commanding General,
Air Force Combat Command,
Bolling Field, A.C.

1. The Chief of the Air Corps has contracted for a limited number of troop-cargo towed gliders (8 to 15 man capacity). The Chief of the Air Corps is initiating the training of classes of from 10 to 15 officers with a view to having trained personnel available for the command and control of glider units in the event that they are eventually organized. It is considered, with a nucleus of officers so trained, that all future training, if deemed advisable, should be devoted to the training of enlisted men on the same status as enlisted pilots.

2. Recommendations are requested on the desirability of organizing glider units for troop transport. If such is deemed desirable, the following information prepared in the form of Tables of Organization should be prepared:

a. Number of Gliders to be procured, if development tests prove satisfactory.

b. Number of units to be equipped with Gliders.

c. Number of Gliders per Unit.

d. Personnel required by grade and rating for flider units.

3. In the near future, you will be charged with organizing a Headquarters Army Cooperative Aviation, designed to provide an agency by which you may fulfill responsibilities which will be delegated to you with respect to:

a. Coordinated development of training and aviation designed to cooperate with ground units.

b. Development of tactics and technique of Air Force support of ground units.

c. The study and preparation of recommendations as to development of aircraft and allied equipment best suited for close support of ground forces.

d. Control of such aviation set up for cooperative action with ground forces as may be assigned and not attached to ground units.

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4. The problems incident to the desirability of organizing glider units would be of a character appropriate to the activities of the proposed Headquarters Army Cooperative Aviation.

For the Chief of the Army Air Forces.

Carl Spaatz
Brigadier General
Chief of the Air Staff.

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BUD (T) 513 7-21-41

TRAINING AND OPERATIONS DIVISION

OCAC, WASHINGTON, D. C.

IT IS THE UNDERSTANDING OF THIS OFFICE THAT THE GLIDER AND POWER TARGET PROGRAMS ARE BEING DETERMINED BY TRAINING AND OPERATIONS DIVISION. NO INFORMATION IS AVAILABLE HERE AS TO THE AMOUNT THAT SHOULD BE INCLUDED IF F. Y. 1943 BUDGET ESTIMATED. REQUEST THIS DIVISION BE FURNISHED THE NECESSARY INFORMATION, OR IF THE PROJECT WILL BE INCLUDED BY YOUR OFFICE REQUEST THIS OFFICE BE SO ADVISED.

BUDGET OFFICE

MAH

12/25 PM

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BUD T 553 7-31-41

TRAINING AND OPERATIONS DIVISION

REFERENCE BUD (T) 513 P DATED JULY L(, 1941. SUBJECT: AMOUNT TO BE INCLUDED IN FISCAL YEAR 1943 ESTIMATE FOR GLIDER AND POWER TARGET PROGRAMS. IS ANY FURTHER ACTION EXPECTED OF THIS OFFICE?

BUDGET OFFICE

MB

3:05 PM

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DOD Rts.
6 Jan. & 20 June 1974
By AAFHC, HC Date 10/8/76

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WAR DEPARTMENT
OFFICE OF THE CHIEF OF THE ARMY AIR FORCES
WASHINGTON

AAF/360 December 2, 1941

MEMORANDUM FOR THE CHIEF OF STAFF:

Subject: Army Glider Program.

1. Discussion.

1. This program is based on:

a. Providing air transport by means of troop airplanes and gliders for one air-borne division at the earliest practicable date. (See Tab A).

b. Providing air transport by airplanes and gliders for a second air-borne division by expansion or continuation of the program as dictated by the experience in providing the air transportation for the first air-borne division.

2. It is estimated that there will be no serious effect or delay on the present aircraft program (Second Aviation Objective), although it is possible that this glider program may conflict with other projected programs. (See Tab A).

3. The training plan is outlined in Tab B, and the overall cost estimates are shown in Tab C.

II. Action Recommended.

The Secretary of War directs that the Chief of the Army Air Forces include the sum of $121,869,992.00 in ~~a supplement to the Feelin~~ current Enemy Estimates. F.Y.1942. Actual Procurement of the transport aircraft and the gliders contemplated in this program will be made as a result of the conferences now in progress of representatives of the War and Navy Departments, the OPM, and the SPAB. The Chief of the Army Air Forces will submit recommendations as to the time this program will be initiated based upon the conferences referred to.

III. Concurrences.

A.C. of S., G-3 ( )
A.C. of S., G-4 ( )
A.C. of S., WPD ( )
G. of S., GHQ ( )

Incls.
Tab A "Equipment."
Tab B "Glider Pilot Training Program."
Tab C "Material Cost."

CARL SPAATZ
Brig. General, Air Corps.
Chief of the Air Staff.

Dec 28 1941

APPROVED AS AMENDED
By order of the Secretary of War
H. H. Arnold
Deputy Chief of Staff

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By L. S. Kuter
Maj. G.S.C. Asst. Sec. W.D.G.S.

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TAB "A"

Equipment.

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DOD Rev.
8 Jan & 01 Dec 1951
By AUTH: DC, Date 1985

Discussion.

The average size of present triangular divisions is 14,000 men. It is estimated that approximately 75% of the personnel and equipment, both individual and organizational, can be carried in the gliders and that the remaining 25% of personnel and equipment can be accommodated in the towing transport planes.

In order to transport the division, 1,000 gliders (half eight-place, and half fifteen-place) and 292 transport planes will be required. 3500 troops will be carried in the 500 eight-place gliders, and 7,000 troops in the 500 fifteen-place gliders. It is expected that 4 eight-place, or 8 fifteen-place, gliders can be towed behind each transport. Of the 292 transport planes carrying twelve men each, 125 will tow 500 eight-place gliders and 167 will tow 500 fifteen-place gliders.

The equipment cost for transporting one division by gliders and transport planes will be approximately $30,000,000.00 (or 27%) less than by transport planes alone, not including the considerable additional saving in operating costs.

It is estimated that the earliest possible date for the completion of the first phase of this program is July 1, 1943. This is based on the following considerations:

1. Procurement of Gliders.

a. One static test and one flight article of both an eight-place and a fifteen-place glider are on order from each of four manufacturers. Delivery of these gliders will be made between December 1, 1941, and March 1, 1942. It is estimated that the experimental program to test and evaluate these gliders after their delivery cannot be completed before July 1, 1942.

b. Due to the lack of experience and engineering knowledge in the aircraft industry for the manufacture of large gliders it is estimated that it will require not less than fifteen months to produce the 1,000 gliders required, following receipt of Air Corps contracts for their manufacture. This is predicated on the belief that orders or letters of intent can be placed on about April 1, 1942, if funds are available.

c. It is estimated that a sufficient number of gliders for an infantry test air-landing battalion can be produced by November 1, 1942; for a regiment by February 1, 1943; and for a brigade by May 1, 1943. This is predicated on sufficient transport airplanes being transferred from other uses for which they are being provided under present plans.

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2. Procurement of Transport Airplanes.

a. The transport airplanes for this program cannot be produced until completion of existing procurement schedules by January, 1943. They can be produced after January, 1943.

b. The Glider Program will interfere with any other projected program which would utilize the facilities of the Douglas Company, now producing C-47 airplanes, between January and June, 1943 for other than glider towing airplanes.

3. Training of Pilots.

It is estimated that there will be no difficulty in completing the training program in the time limit set by the procurement of equipment.

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By AUTHORITY OF DoD 5200.1-R

TAB "B"

Glider Pilot Training Plan.

Discussion.

Due to the degree of skill estimated to be required to pilot these large troop carrying gliders in towed formation at night, under instrument conditions and while landing in small fields it is not contemplated using other than qualified airplane pilots, preferably graduates of the Air Corps Flying Schools.

1. Primary Training.

a. Primary training will be given in a four weeks course by civil schools, operating under contract to the Air Corps, with an annual training capacity of 1000 pilots. It is estimated that a maximum of four schools will be needed.

b. This training will include auto, winch, and airplane tow in two-seated training gliders. The general pattern for these schools will follow that of the civil schools contracting for primary airplane training. The school will provide airport facilities, food, housing, instruction, flying and launching equipment, storage and maintenance. The Air Corps will provide the necessary supervisory and medical personnel.

c. The graduates of these schools will receive the rating of Glider Pilot. No Air Corps gliders, outside of the primary schools, will be flown except by pilots with this rating.

2. Advanced Training.

a. Only one school for advanced glider training will be necessary. At this school graduates of the primary glider schools will receive thorough instruction in the flying and military use of the large troop carrying gliders. This training will include night flying and the actual carrying of ground troops and landing them under simulated war conditions.

b. Personnel.

(1) 1 Base Group (479-688)
(2) 4 School Squadrons (Transport) (200 men per squadron)

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3. Equipment.

(1) 26 Transports (C-47)
(2) 20 Training Towplanes (O-49)
(3) 52 Eight-place Gliders
(4) 39 Fifteen-place Gliders
(5) 80 Two-place Training Gliders

4. Increase in Personnel Required for Training.

(1)	Air Corps :	1114 Pilots (Officers)
		1488 Enlisted Men
(2)	Services:	22 Officers
		485 Enlisted Men

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By ACTING DC, Date 10/15/10

TAB "F"

Overall Cost Estimate.

Discussion.

The following budget estimate for a Supplement to the 1943 Preliminary Estimates covers the equipment and school facilities needed to carry out the first phase of the program. Items marked with an asterisk (*) include the cost of equipment plus 20% for spare parts. Additional data on these items follow the budget.

1. Training.

a.	150 two-place training gliders (including instruments and ground trailers)	@ $ 3,000.	$	540,000.*
b.	70 tow planes (O-49)	@ $ 22,406.	$	1,882,104.*
c.	100 glider tow and equipment cars	@ $ 2,000.	$	240,000.*
d.	20 winches	@ $ 2,500.	$	60,000.*
e.	Miscellaneous accessories (tow-lines, pulleys, releases, etc.)		$	100,000.
f.	220 short wave radios	@ $ 200.	$	44,000.
g.	Experimental development		$	100,000.
h.	0 e station school and organization equipment		$	5,000,000.
			$	7,968,104.

2. Troop Carrying.

a.	500 eight-place gliders	@ $ 25,000	$	15,000,000.*
b.	500 fifteen-place gliders	@ $ 35,000	$	21,000,000.*
c.	292 transport planes (C-47)	@ $132,220.	$	46,329,888.
d.	1300 short wave radios	@ $ 400.	$	520,000.
e.	Miscellaneous accessories			200,000.
f.	Experimental development		$	800,000.
g.	Additional Civilian Personnel (20)		$	52,000.
			$	83,901,888.

3. Transport Stations.

	Four Air Corps transport stations	@ $7,500,000	$ 30,000,000.
	TOTAL		$121,869,992.

NOTE: Supplement to 1942 Preliminary Estimates for the sum of $595,000.00 to train 1,000 glider pilots has already been requested.

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Additional data on the foregoing budget:

1. Training.

a. From the experience gained in training several classes of Air Corps pilots, it has been determined that one two-place training glider is needed for each two students. This budget includes 50 for training and 100 to be distributed to Air Corps Stations and used in practice flying by Glider Pilots to maintain their proficiency.

b. Tests made at Wright Field have shown that the C-49 is an ideal tow-plane for training. It is estimated that 30 are needed for training and 50 for assignment with gliders to various stations.

c. One heavy type tow car is needed for each training glider, plus one for each two practice gliders. These cars will also carry equipment, such as pulleys, tools, flags, tow-lines, etc.

d. Winch towing is needed to round out the training.

e. This item covers towlines, releases, pulleys, etc.

f. Tests now being made at Wright Field indicate that it will probably be practical to use the light, parachute troop radios, type SCR-536, for intercommunication, in the training gliders. This estimate covers one for each glider and towplane.

g. This covers the estimated cost of experimental development at Wright Field in connection with the training program.

h. This estimate covers the approximate cost of establishing one Advanced Training School, to be similar to the present two-engine Advanced Training School, at a suitable location (preferably in Texas).

2. Troop Carrying.

a. & b. Possible variables may be the carrying of more than 12 men with equipment in each transport and the use of other than transport planes for the towing. It is estimated that the figure of 1,000 transport gliders will allow for an adequate number of spares.

c. It has been determined from the standpoints of (1) availability, and (2) suitability that the C-47 type transport airplane should be used as the standard towplane of the troop-carrying gliders.

d. The standard field service type radio SCR-195 is being used in experiments at Wright Field and is expected to serve the dual

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purpose of intercommunication between two-plane and glider in flight and communication between the troop combat unit and other infantry forces on the ground after landing. This estimate provides one for each glider and towing transport plane.

g. This estimate covers tow-lines, releases, etc.

f. This estimate covers necessary experimental development at Wright Field.

g. It is estimated that this number of additional civilian personnel, @ $2,600 per year, will be needed to carry out the experimental development.

3. Transport Stations.

a. It is contemplated that one air transport group equipped with approximately 73 transport airplanes and 250 transport gliders will be stationed in each of the four Air Force areas. This group can transport 3500 ground troops.

b. It is considered impracticable to utilize stations devoted to combat aircraft for the operations of this number of transports and gliders. Therefore, four additional group stations will be required.

c. Housing facilities at each station will include quarters for one battalion of air-borne infantry which will be rotated during successive periods of training.

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DOD Dirs. 5 Jan. & 20 June 1974
By AAJ/CE HQ. Date 10/18/76

WAR DEPARTMENT
OFFICE OF THE CHIEF OF THE ARMY AIR FORCES
WASHINGTON

January 1, 1942.

MEMORANDUM FOR THE AIR ADJUTANT GENERAL:

Subject: Glider Production Facilities.

It is desired that instructions, substantially as follows, be given to the Chief of the Air Corps:

"1. The Memorandum for the Chief of Staff from the Chief of the Air Staff, dated December 2, 1941, subject: "Army Glider Program." has been approved by order of the Secretary of War.

2. The first phase of this program calls for providing air transport by means of 292 transport airplanes and 1,000 transport gliders (500 eight-place and 500 fifteen-place) for one airborne division at the earliest practicable date, following recommendations from the Chief of the Army Air Forces as to the time this program will be initiated.

3. It is deemed that the Chief of the Air Corps will have made an immediate survey of the facilities to be made by

a. Available glider production facilities not conflicting with airplane production (~~See~~ Tab "A") and by the

b. Availability of raw materials and that

c. Report results of the survey to be reported to this office.

3 Incls.:
1- Tab "A" - "Available Production Facilities."
2- Cy.memo to CoS,12/2/41.
3- MID Rpts.45200, 45193."

EDGAR P. SORENSEN,
Colonel, Air Corps,
Chief, A-4 Division.

Incls. as listed above.

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AG 452.1 Gliders (21)

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8 Jan & 20 June 1974
By ALAJILK NC, Date 10/1/76

TAB "A"

Available Production Facilities

1. In making a survey of available production facilities for manufacturing gliders, attention is invited to the following:

a. Training Gliders

(1) Now having production or experimental contracts:

Schweizer Aircraft Corp., Elmira, New York
Frankfort Sailplane Co., Joliet, Illinois
Leister-Kauffman Aircraft Co., St. Louis, Missouri

(2) Having signified interest in manufacturing:

Pratt, Read & Co., Deep River, Connecticut
Huntington Aircraft Co., New York, New York
Briegleb Aircraft Co., Van Nuys, California

b. Transport Gliders

(1) Now having experimental contracts:

Waco Aircraft Co., Troy, Ohio
Frankfort Sailplane Co., Joliet, Illinois
St. Louis Aircraft Corp., St. Louis, Missouri
Douglas Sailplanes, Inc., San Fernando, California

(2) Having signified interest in manufacturing:

Pratt, Read & Co., Deep River, Connecticut
Schweizer Aircraft Corp., Elmira, New York
A. G. A. Aviation Corp., Willow Grove, Pennsylvania
Burnelli Aircraft Corp., New York, New York
American Glider & Sailplane Corp., Burlington, N.C.
Funk Aircraft Co., Coffeyville, Kansas
Babcock Aircraft Corp., Boland, Florida

2. In making this survey attention is invited to the possible employment of a mass-assembly plan as now used in Great Britain. (See M. I. D. Report Nos. 4300 and 4295 attached).

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DOD Dir.
By ALWAR Ltr. Date 10/15/77

AAF/A-4
LBB/emd

MEMORANDUM FOR THE CHIEF OF THE AIR CORPS:

Subject: Glider Production Facilities.

I. Discussion.

1. The Memorandum for the Chief of Staff from the Chief of the Air Staff on the Army Glider Program, dated December 2, 1941, has been approved by order of the Secretary of War.

2. The first phase of this program calls for providing air transport by means of 492 transport airplanes and 1,080 transport gliders (900 8-place and 180 15-place) for one airborne division at earliest practicable date following recommendations from the Chief of the Army Air Forces as to the time this program will be initiated.

II. Action Recommended.

1. The Chief of the Air Corps directs the Material Division to make an immediate survey of:

a. Available glider production facilities not conflicting with airplane production (See Sub "A").

b. Availability of raw materials.

1/1/42 EOS/gmd

Enclos
Sub "A"
Ltr Memo C/S, 12/2/41
MID Rpts 4580 & 4599.

For the Chief of the Air Staff:

HEADQUARTERS ARMY AIR FORCES — COORDINATION											
Chief of Staff	Sec'y Air Staff	A.A.G.	A-1	A-2	A-3	A-4	A-WPD	A-Insp.	Budget	Statistics	
						[redacted], Colonel, U. S. A. Assistant Chief of the Air Staff, A-4.					

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DOD Dirs.
By ... NARA Date ...

AAF/A-4
LBE/coc
Written December 28, 1941.

Subject: Organization of Glider Units.

6th Ind.

War Department, Headquarters Army Air Forces, Washington, D. C.
To: Commanding General, Air Force Combat Command, Bolling Field, D. C.

1. It is requested that the letter from the Chief of the Air Staff dated July 7, 1941 be answered and tentative tables of organization prepared.

2. The answers can be based on the following information:

a. Enclosed Resume of use of Gliders by Foreign Powers.

b. Plans for the training of glider pilots and procurement of gliders will probably be based on providing air transport by means of transport airplanes and gliders for, (1) one air-borne division at earliest practicable date, for (2) a second air-borne division by expansion or continuation of the program.

c. Based on the above, present tentative plans call for the training of 1,000 glider pilots and the procurement of 1,000 gliders (500 8-place and 500 15-place) and 292 C-47 transport planes.

d. It is tentatively expected that 4 8-place, or 3 15-place gliders can be towed behind each C-47.

e. Other gliders under development or being considered for development and possibly available for carrying part of the second air-borne division are the following:

(1) 15-place, also capable of carrying 1 Jeep and 6 men.

(2) 30-place, also capable of carrying 2 Jeeps and 15 men, or 1 Jeep and 1 Howitzer and 15 men.

JAN 2 1942
AAG

By Command of Lieutenant General ARNOLD:

Incls:
Newspaper clipping

HEADQUARTERS ARMY AIR FORCES						COORDINATION					
Chief of Staff	Secretary	A.A.G.	A-1	A-2	A-3	A-4	A-WPD	A-Insp.	Budget	Statistics	
						1/3/15					

JOHN D. COOLEY
Lt.Col., A.G.D.
Assistant Air Adjutant General.

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ACC 322.082 (7-7-41) . 1st Ind. (8-13)

HEADQUARTERS AIR FORCE COMBAT COMMAND, Bolling Field, D. C., July 12, 1941,
TO: Chief of Staff, U. S. Army, Army War College, Washington, D. C.

1. As is well known, experience in Europe has disclosed that there is a definite use for towed gliders in modern warfare, and this headquarters is of the opinion that glider units should be organized.

2. Due to the shortage of officer pilots, this headquarters concurs in the training of enlisted men on the same status as enlisted pilots.

3. Attention is invited to paragraph 2 a basic. The number of gliders to be procured can only be determined by the requirements of the agency whose troops are to be transported, and your recommendations are therefore requested.

4. With reference to paragraph 2 b and c, your recommendations on the following are also requested:

a. The number of men, together with the weight of their equipment, to be transported in one glider.

b. The total number of men, together with the weight of their equipment, to be transported as a basic air-borne unit, in order for this headquarters to establish the corresponding number of glider craft per glider organizations.

For the Commanding General:

/s/ C. W. RUSSELL,
Brigadier General, G. S. C.,
Chief of Staff.

Basic ltr
cmtn in Air Staff

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322.082/207 (7-7-41) 2d Ind

GENERAL HEADQUARTERS, U. S. ARMY, Army War College, Washington, D. C., August 9, 1941. - TO: The Chief of Infantry, Munitions Bldg., Washington, D. C.

1. Your recommendation is requested as to:

a. The number of men, together with the weight of their equipment, which, as an average, should be transported in one glider.

b. The total number of gliders required to transport one air-borne battalion, men and equipment.

c. The number of air-borne battalions for which corresponding glider transport units should be presently organized.

2. The early return of these papers through this headquarters is requested.

For the CHIEF OF STAFF:

/s/ CLYDE L. HYSSONG,
Lt. Col., A.G.D.,
Adjutant General.

CE 322.082/9958 (7-7-41) 3d Ind.

War Department, Office Chief of Infantry, Washington, D. C., August 18, 1941. To: The Chief of Staff, GHQ, Washington, D. C.

1. This office is of the opinion that the lack of experience in the use of gliders for military purposes precludes an answer to the questions asked in paragraph 1, 2d indorsement. For the purposes of construction of test models, it appears that an average of 15 men per glider, and an average of 3,500 pounds per glider should be a satisfactory estimate of requirements.

2. Before any glider transport units are formed, it is recommended that a small number of gliders be procured for experimental purposes and sent with their pilots to Fort Benning, Georgia, where tests can be conducted to determine whether or not gliders are suitable as a means of troop transport. These tests can be conducted in conjunction with the tests of the experimental air-borne Infantry Battalion soon to be conducted at Fort Benning. This office is of the opinion that gliders are an inferior as well as extremely hazardous means of transporting troops.

For the Chief of Infantry:

/s/ MAXON S. LOUGH,
Colonel, Infantry,
Executive.

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322.082/207-C (7-7-41) 4th Ind.

GENERAL HEADQUARTERS, U. S. ARMY, Army War College, Washington, D. C. August 20, 1941. TO: Commanding General, Air Force Combat Command, Bolling Field, D. C.

1. The recommendation of the Chief of Infantry that a small number of gliders be procured for experimental purposes is concurred in.

2. When and if a standard glider is adopted, the total number required to transport one air-borne battalion, men and equipment, can be readily determined.

For the CHIEF OF STAFF:

/s/ CLYDE L. HYSSONG,
Lt. Col., A. G. D.,
Adjutant General.

1 Incl.
Newspaper Clipping.

ACC 322.082 (7-7-41) 5th Ind. (E-13)

HEADQUARTERS AIR FORCE COMBAT COMMAND, Bolling Field, D. C., August 26, 1941, TO: The Chief of the Army Air Forces, Washington, D. C.

1. In view of the comments in 3d Indorsement from the Office, Chief of Infantry and the current lack of some factual information relative to the actual type of gliders to be adopted, its capacity for carrying personnel and/or equipment including the bulk of such equipment, and the type of the towing airplane including technical details in relation thereto, it is recommended that the matter of a table of organization for such a unit be held in abeyance pending further development, and crystallization of ideas, plans, and equipment.

2. Particular attention is invited to paragraph 1 and 2 of our 1st Indorsement.

For the Commanding General:

/s/

1 Incl.
Clipping, RE: 1st Unit of Air-Borne landing Troops.

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DOD ltr's
8 Jan. & 20 June 1974
By ADdy MC Date 10/15/76

Foreign & United States Training & Progress in Operational Gliders

RESUME

Germany is the only foreign country of which we have any information indicating that a significant advance in the construction and use of large operational gliders has been made. Russia, England, Japan and Italy have made experiments in this line and are working on its development with Russia probably in advance of the other countries.

The British believe that by January 1, 1942 the Germans will have 1500 to 2000 gliders of 8 to 15 man capacity and 600 to 700 of 15 to 30 man capacity. Other estimates are that Germany may have as high as 4000 transport gliders at the moment. She is reported to have four divisions of air landing troops, one of which was probably used in Crete. The necessary glider equipment for these divisions is not yet available.

It is believed that the Germans could tow 600 to 800 gliders of 12 to 25 man capacity from 20 to 30 stations on the continent and, upon arrival at their destination, land them in 45 minutes.

The tug ordinarily employed is the JU-52 which is reported as capable of carrying 13 to 22 fully equipped men and of taking off and towing three 15-place gliders for 350 miles at 120 miles per hour.

Four motored aircraft are believed to have a capacity of up to 45 soldiers and to be capable of towing as high as 10 gliders.

Special runways are required to permit the take-off of the heavily loaded tug and its tow, and thorough training of ground personnel assisting in such take-offs is necessary.

Air borne troops constitute more a problem of organization than training and are particularly strong in staff organization. This is considered desirable for the supervision of the air transport and to compensate for the probable high percentage of staff losses during initial operations.

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UNITS

No definite information has been received relative to the formation of German gliders or glider personnel into operating units or their assignment to any German army or air fleet. However, reference by the Germans to Glider groups has been noted which would lead to the assumption that their basic organization may be the Glider Squadron.

ORGANIZATION & NUMBER OF MEN PER UNIT

The number of gliders or men per unit is unknown.

TYPES

The German operational glider is not the usual soaring plane but is more the type of a sturdy, high wing, monoplane without a motor or conventional landing gear. The gliders vary in wing span from 55 to 85 feet and have a landing speed of 25 to 30 miles per hour followed by a run of 18 to 25 feet. Loaded weight of the 12 man type is about 4200 lbs. It is estimated that a 55 foot span can carry 15 Infantry men equipped with small arms and that released at 10,000 feet will have a range of approximately 28 miles. The larger types employed in Crete probably have a range of 20 to 25 miles from 10,000 feet in still air.

In general the gliders are constructed with two small releasable wheels which are dropped after the take-off. The landing is made on a skid extending about 7 feet beneath the fuselage. Dive brakes are probably employed to regulate descent and permit accurate approach to the desired place of landing. Several large rectangular windows are located on each side of the fuselage to enable the crews to observe approaching enemy aircraft and to orient themselves to ground objectives. A broad door is located just abaft the wings on each side of the fuselage facilitating speedy exit of personnel.

CAPACITY

Three sizes of operational gliders are apparently employed carrying 5 to 8 men, 8 to 15 men, and 15 to 30 men with the troop carrying capacity of each depending upon the tactical purpose to which the glider is assigned. Space may be utilized to transport a

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maximum of men, a maximum of materiel or, as is usually the case in the first stages of operations, to carry a well balanced, completely equipped assault crew. In addition to the capacities mentioned above, 50 place, all metal gliders are reported as being produced.

TRAINING

Although little is definitely known of the details of the German system of training glider pilots, it is evident that their program is very widespread and that training is taking place in numerous localities, even in occupied countries. It should be noted that gliding was a popular sport in Germany for many years prior to the war with 1500 sport gliders in use as early as 1931-2. In consequence it is believed that their glider pilot training consists primarily of accustoming former sport glider pilots to the use of the larger and heavier operational types as employed in combat service.

The initial training of glider pilots is conducted on small one seated sport gliders. The training of pilots and crews as a unit takes place in 5 - 8 man gliders and is followed by transitional instruction on the 8 - 15 man type. Take-off, towing and release are diligently practiced under daylight and night conditions. The pilots are instructed how to land in the immediate vicinity of an objective.

Training of glider personnel is made as realistic as possible with infinite attention to detail. Replicas of objectives to be attacked are constructed with every effort to simulate operational conditions. Repeated attacks are made on these dummy objectives.

Crews of gliders are thought to be volunteers who have undergone rigid examinations to test their stamina, adaptability, courage and ability to make rapid decisions. They have received previous specialized training in the use of essential assault weapons. In addition, each man must be familiar with the operation of all types of vehicles, particularly motorcars and motorcycles. Linguistic in a particular line such as radio operator, chemical warfare expert, engineer, etc.

LENGTH OF COURSE AND HOURS EMPLOYED

The length of the German glider course and the hours considered necessary to train a glider pilot are unknown.

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UNITED STATES GLIDER DEVELOPMENT

At present the Air Corps has procured, or is in the process of procuring, the following equipment: 6 two-place training gliders. These are being procured from the Frankfort Sailplane Company and the Schweizer Aircraft Corporation. Delivery of the first Schweizer training glider has been effected. Procurement of one static test model and one 8-place flight test model, likewise one 15-place static test model, and one 15-place flight test model, is being made from each of the following companies:

The Frankfort Sailplane Company
The Waco Aircraft Company
The St. Louis Aircraft Corporation
Bowlus Sailplane, Incorporated.

Earliest delivery of the larger type gliders will be effected within 60 days. Further procurement of the larger types will necessarily hinge upon the results of the static and actual flight performance tests of these types.

UNITED STATES GLIDER TRAINING

To date 12 officers have been trained at Civil Glider Schools--4 from the Materiel Division and 8 from the transport groups.

Plans have been completed for the training of 12 additional officer pilots (instructors for training activities) at Elmira, New York. This first class consisting of six students is now in training.

United States Training as of January 1, 1942: 53 officers have been trained to date at the Civil Schools at Elmira (27) and Joliet, Illinois (6). A new school is being established at 29 Palms, California by the 29 Palms Air Academy. This school is expected to be in operation by January 15, 1942 and has a contract to train 126 Air Corps pilots during the next three months.

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DOD dirs
6 Jan. & 20 June 1974
By ALA/LE NC Date 10/15/76

(4-B-3)

w/1-5-42

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British Air Commission,
1785 Massachusetts Avenue, N. W.,
Washington, D. C.

Gentlemen:

In connection with the current Air Corps glider development program, consideration has been given to the procurement of a quantity of 25 to 30 place transport gliders. It is understood that the 25 place Horsa glider has reached the stage of quantity production in Britain.

In order to accelerate the current glider program and, at the same time, profit by the development already completed in England, it appears desirable to make available to the Air Corps a complete Horsa glider for study and evaluation purposes. It would therefore be very much appreciated if arrangements could be made to bring to this country a complete Horsa 25 place glider in flying condition. RRG:ss

If arrangements can be made to secure one of these gliders, consignment should be made to the U. S. Army Air Corps, Materiel Division, Wright Field, Dayton, Ohio.

Very truly yours,

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WAR DEPARTMENT
OFFICE, CHIEF OF THE AIR CORPS
FORM NO. 176
(Rev. Aug. 22, 1939)

OFFICE OF THE CHIEF OF THE AIR CORPS

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DOD ltrs.
6 Jan. & 20 June 1974
By NNRC, DC, Date 10/18/76

ROUTING AND RECORD SHEET

(To be filed with correspondence)

Note.—A line will be drawn across sheet after action by each office concerned.

SUBJECT: Shipment of British 25-pl. "Horsa" to Wright Field.

NO.	FROM	TO	DATE	DATA
3.	OCAC Mat. Div. (4-E-3)	AAF C/AS	1942 1-5	1. The British have been requested to make available to the Air Corps one complete "Horsa" glider in accordance with attached copy of a letter (written 1-5-42) to the British Air Commission. TPO O.P.E. Asst. for Procurement Services
	1 Incl. Cy. BAC ltr. w/1-5-42.			

Air AG 452.4 Gliders (5-2-42)

(Do not use reverse side)

U. S. GOVERNMENT PRINTING OFFICE 16—10330

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HEADQUARTERS ARMY AIR FORCES

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ROUTING AND RECORD SHEET

Note.--A line will be drawn across sheet after each comment.

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DOD ltr 8 Jan. & 30 June 1974
By AIAU, K. AC. Date 10/18/76

File No. .....

Tally No. AAF .....

SUBJECT: Shipment of British 25-pl."Horsa" to Wright Field.

NO.	FROM	TO	DATE	COMMENTS
1.	AAF C/AS	C/AC	1941 12/27	AAF/A-4 LBB/coc 1. In an R&R from C/AS to C/AC dated December 19, 1941 it was requested that immediate consideration be given to the procurement of ~~one~~ experimental 25-30 place transport gliders and attention was invited to the British 25-place "Horsa" glider now in quantity production. 2. There are now under consideration at Wright Field two designs of gliders capable of carrying the following: a. 2 Jeeps & 15 men, or b. 1 Jeep, 1 Howitzer & 15 men, or c. 30 men. 3. To substantially accelerate the Glider Program and to profit by the development already done in Great Britain, it is requested that a letter be written requesting the British Air Commission to ship a 25-place "Horsa" glider to Wright Field at earliest practicable date for study and evaluation. JTC CS LBB C/AS (for) GM
2	OCAC Exec	OC AC		for compliance Hwts

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RECEIVED MAY 2 1942 PROD. ENGR. BR., O. C. A. C.

Dec 6 27

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AAF-243
A12-31(47-b) XC-15[illegible]

AAG 452.4 Gliders (19)

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DOD Dir.
8 Jan. & 30 June 1954
By AFMLC, HQ. Date 10/19/76

AAF/A-4
LBB/emd

DEC 26 1941

MEMORANDUM FOR THE ASSISTANT CHIEF OF STAFF, G-3:

Subject: Army Glider Program.

I. Discussion.

1. Following is a summary of the Army Glider Program to date, with special reference to the recommendations made by Major F. H. Dent, Jr. contained in the Memorandum for the Chief of Army Air Forces from the Acting Assistant Chief of Staff, G-2 dated December 18, 1941.

II. Summary.

1. A Memorandum for the Chief of Staff, dated November 24, covering the Army Glider Program has so far been coordinated by G-3, G-4, WPD, and GHQ. This Program is based on:

a. Providing air transport by means of transport airplanes and gliders for one air-borne division at earliest practicable date (estimated to be July 1, 1943).

b. Providing air transport by means of airplanes and gliders for a second air-borne division by expansion or continuation of the program as dictated by the experience in providing the air transportation for the first air-borne division.

2. Referring to paragraph a. (1) of your memorandum, the Memorandum for the Chief of Staff recommends that the sum of $121,869,088.00 be included in a supplement to the Preliminary Estimates, F. Y. 1943 to cover the cost of the following for the first phase of the program:

a. 1,000 [illegible] gliders, 70 tugs, (C-48) equipment.
b. One Division School and organizational equipment.
c. 1,000 4-place gliders.

HEADQUARTERS ARMY AIR FORCES											
Chief of Staff	Sec'y Air Staff	A.C.S.				A-4	A-WPD	A-Insp.	Budget	Statistics	

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452.1 Gliders (18)

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d. 500 15-place gliders
e. 282 C-47 transport airplanes
f. Funds for experimental development
g. Four Air Corps transport stations

3. Referring to point (2), $686,000 has been requested in a supplement to the Preliminary Estimates, F. Y. 1943 to train 1000 pilots.

4. Referring to point (3), a study is being made to determine personnel who will be trained as glider pilots. The 53 trained so far and 136 scheduled to be trained are Air Corps commissioned personnel with Airplane Pilot rating.

5. Referring to point (4), a glider training school for the Air Corps is now being established at 29 Palms, California by the 29 Palms Air Academy. It is estimated that this school can be expanded to train in one year the 1000 pilots needed for the first phase of the program. The establishment of an operational training school is called for under the Memorandum for the Chief of Staff.

6. Referring to point (5), a study has been made at Wright Field on types of airplanes suitable for use as tugs and the C-47 transport airplane tentatively selected as a standard towplane. A new study is being made in the light of the information brought back by Major Dent.

7. A directive dated December 17, 1941 has been written to have the "Motogyr" gliders shipped to Wright Field for comparative evaluation.

8. If production of gliders by furniture manufacturers or other inexperienced companies is contemplated, they will be consulted while the glider is in the design stage.

9. A directive dated December 3, 1941 has been written covering the installation at earliest practicable date of towing equipment and attachments on a C-47 airplane.

10. The problem of glider tow hooks, releases, tow lines, and communications have been given considerable study as well as test at Wright Field during the past few months. This work will be continued [illegible] the [illegible] planned in great

Chief of Staff	[illegible]	A.A.G.	A-1	A-2	A-3	A-4	A-WPD	A-Insp.	Budget	Statistics	

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11. A directive dated December 17th has been written to have a study made of the glues used in glider construction.

12. Close liaison of glider development will be maintained between Great Britain and the United States.

Incls:
MID 452.6 frm G-2 to C/AAF, 12/13/41 w/Rpt (cy) December 9, 1941.

For the Chief of the Air Staff:

EDGAR P. SORENSEN,
Colonel, Air Corps,
Assistant Chief of the Air Staff, A-4.

HEADQUARTERS ARMY AIR FORCES - COORDINATION											
Chief of Staff	Sec'y Air Staff	A.A.G.	A-1	A-2	A-3	A-4	A-WPD	A-Insp.	Budget	Statistics	
						2/13/42					
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WAR DEPARTMENT
WAR DEPARTMENT GENERAL STAFF
MILITARY INTELLIGENCE DIVISION G-2
WASHINGTON

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DOD Dir 5
8 Jan. & 20 June 1974
By AUNTIC, NSC Date 10/18/76

MID 452.6

December 13, 1941.

MEMORANDUM FOR THE CHIEF OF ARMY AIR FORCES:

Subject: Recommendations of Military Observer.

1. Final Report, Military Observer, London, December 9, 1941, subject, Final Report of Major F. R. Dent, Jr., Air Corps, on Trip to England, a copy of which is inclosed, prepared by Major F. R. Dent, Jr., contains the following recommendations:

a. It is recommended that a glider policy be established to cover the following points:

(1) Number of gliders to be constructed.
(2) Number of glider pilots to be trained.
(3) Personnel who will be trained as glider pilots.
(4) Establishment of glider training schools and glider operational training schools.
(5) What type of airplane will be used for tugs, i.e., pursuit, bombardment or cargo.

b. It is recommended that the two 8-place "Hotspur" gliders being shipped to the United States be sent to Wright Field for comparison with those 8-place gliders under construction in this country. Since they differ greatly in performance characteristics, it is recommended that these British gliders be subsequently evaluated for tactical employment.

c. It is recommended that if production of gliders by furniture manufacturers or other inexperienced companies is contemplated, that they be consulted while the glider is still in the design stage with a view of minimizing changes required for production.

d. It is recommended that immediate attention be given to the problem of revising the towing aircraft. Future airplanes, that may be utilized for glider towing, should be designed for the tow loads encountered. The seriousness of this problem cannot be overemphasized.

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e. It is recommended that the problem of glider tow hooks, releases, tow lines, and communications be given immediate attention and study.

f. It is recommended that a study be made of the glues being used in glider construction.

g. It is recommended that close liaison of glider development be maintained between the two countries, and that information covering U. S. designs be forwarded to Great Britain.

2. Under the provisions of AG 350.05 (12-2-40) M-B-M, December 3, 1940, subject, Initiation of action on Recommendations from Military Attaches, this recommendation is referred to your Division for action.

SHERMAN MILES
Brigadier General, U. S. Army,
Acting Assistant Chief of Staff, G-2.

1 Inclosure

CC: Deputy Chief of Staff, with incl.
Assistant Chief of Staff, G-3, with incl.

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8 Jan. & 20 June 1979
By AUNICK UC, Date 10/19/82

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December 9, 1941

Subject: Final Report of Major F. R. Dent, Jr., Air Corps, on trip to England.

To: The Assistant Chief of Staff, G-2

1. Schedule:

Left Washington, D. C., September 29, 1941.
Arrived England, October 3, 1941.
Departed England, November 21, 1941.
Arrived Washington, D. C., December 7, 1941.

The following stations and organizations were visited by the undersigned between October 3, 1941 and November 21, 1941.

a. Ministry of Aircraft Production.
b. Air Ministry
c. General Aircraft, Ltd.
d. Slingsby Sailplane Co.
e. Airspeeds, Ltd.
f. Harris Lebus Furniture Co.
g. Farnborough
h. Duscombe Down
i. Thame (Glider Training School)
j. Ringway (Glider Operational Training Section)

2. My assignment in England was to study glider development and training. The following observations were made:

a. Glider Policy
b. Training of Glider pilots
c. 8-place "Hotspur" glider
d. 15-place "Hengist" glider
e. 25-place "Horsa" glider
f. "Hamilcar" Tank-carrier glider
g. Pilot's observations of "Hotspur" glider
h. Pilot's observations of "Horsa" glider
i. Technical Problems involved in towing gliders
j. Glider production
k. Harris Lebus Company
l. General Glider Problems
m. Glues in glider construction
n. Details of German gliders
o. The Airplane Trailer.

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A. Glider Policy. Report No. 45060.

Great Britain is embarked on a program of glider-borne troops. This includes experimental gliders, production contracts and the training of glider pilots and combat crews. Contracts for over 1700 gliders have already been awarded and are well underway. Approximately 100 gliders have been delivered to date.

B. Training of Glider pilots. Report No. 45340.

Schools have been established for the training of glider pilots and are now in operation. At present, 16 pilots are turned out every 3 weeks but it is anticipated that this will be increased as soon as additional gliders are received. Soldiers are being trained as glider pilots.

C. 8-Place "Hotspur" Glider. Report No. 45108.

This was Great Britain's first effort in troop glider design. Technical details of the glider are covered in the report. 1,000 gliders of this type are on order, although the design is not entirely satisfactory. Two of these gliders will be forward to the United States in the near future.

D. 15-Place "Hengist" Glider. Report No. 45107.

This design is considered an "ace in the hole" in case the 25-place design is not satisfactory. 18 prototype gliders are on order but there is at present no production contract. While an excellent design, it will not lend itself easily to production methods. Detail design features of this glider are given in the report.

E. 25-Place "Horsa" Glider. Report No. 45302.

This is Great Britain's best effort in the glider field. 600 of these gliders are on order and the first article is now flying. It was designed with the co-operation of the production furniture companies and is excellently suited for production methods. Technical details of this glider are covered in the report.

F. "Hamilcar" Tank-Carrier Glider. Report No. 45349.

This glider will carry a 7 1/2 ton tank or two Bren carriers. 46 are now on order and, if successful, a large production contract is contemplated. The first article will be flying about January 15, 1942. A half-scale model has been flying since September, 1941. Technical details of this glider are covered in the report.

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G. Pilots' Observation of "Hotspur" Glider. Report No. 45056.

This report covers pilots' observations of the 8-place glider.

H. Pilots' Observation of "Horsa" Glider. Report No. 45306.

This Report covers pilots' observations of the 25-place glider.

I. Technical Problems Involved in Glider Towing. Report No. 45145.

Considerable trouble has been experienced with tow lines, release mechanisms, shock loads, and "tug" airplane modifications. This report covers their experience to date in these fields.

J. Glider Production. Report No. 45200.

This report covers the production of troop gliders in Great Britain. The method of contracting for sub-assemblies of the 25-place glider is both novel and interesting but may not be too successful.

K. Harris Lebus Company. Report No. 45193.

This company, one of the largest peacetime furniture manufacturers in the world, is now completely engaged in the production of wooden aircraft and gliders. The production methods used are covered in the report.

L. General Glider Problems. Report No. 45328.

The problems of glider communication, and other technical problems involved in glider operation are discussed. By far the greatest problem is that of modifying the tug airplane.

M. Glues in Glider Construction. Report No. 45209.

Casein glues have proven unsatisfactory for glider construction. Synthetic glues are now being used. This report covers details and methods of application.

N. Details of German Gliders. Report No. 45301.

The Intelligence files of the MAP were inspected and notes taken on the German gliders used in Crete. The information was very incomplete.

O. The Airplane Trailer. Report No. 45342

Great Britain is experimenting with a trailer wing attached to an airplane. This report covers details and results of tests to date.

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Recommendations:

1. It is recommended that a glider policy be established to cover the following points.

   a. Number of gliders to be constructed.
   b. Number of glider pilots to be trained.
   c. Personnel who will be trained as glider pilots.
   d. Establishment of glider training schools and glider operational training schools.
   e. What type of airplane will be used for tugs, i.e., pursuit, bombardment or cargo.

2. It is recommended that the two 8-place "Hotspur" gliders being shipped to the United States be sent to Wright Field for comparison with those 8-place gliders under construction in this country. Since they differ greatly in performance characteristics, it is recommended that these British gliders be subsequently evaluated for tactical employment.

3. It is recommended that if production of gliders by furniture manufacturers or other inexperienced companies is contemplated, that they be consulted while the glider is still in the design stage with a view of minimizing changes required for production.

4. It is recommended that immediate attention be given to the problem of revising the towing aircraft. Future airplanes, that may be utilized for glider towing, should be designed for the tow loads encountered. The seriousness of this problem cannot be overemphasized.

5. It is recommended that the problem of glider tow hooks, releases, tow lines, and communications be given immediate attention and study.

6. It is recommended that a study be made of the glues being used in glider construction.

7. It is recommended that close liaison of glider development be maintained between the two countries, and that information covering U. S. designs be forwarded to Great Britain.

F. R. DENT, JR.
Major, Air Corps

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ADDRESS REPLY TO
CHIEF OF THE AIR CORPS
WAR DEPARTMENT
WASHINGTON, D. C.

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DOD ltrs.
8 Jan. & 20 June 1974
By ALN/LE NC, Date 10/18/76

WAR DEPARTMENT
OFFICE OF THE CHIEF OF THE AIR CORPS (4-E-3)
WASHINGTON

SUBJECT: Large Capacity Transport Gliders. FEB 8 1942

TO: Chief of Air Staff.

1. Reference Paragraph 1, Item No. 1, your R & R dated December 19, 1941, there are forwarded herewith proposed military characteristics for "Transport Gliders - 30 Place." If approval is given to these characteristics, it is requested such be indicated on page 2 of the original in order to facilitate reproduction.

2. Estimated cost of a development program is $1,000,000. It is anticipated this will permit experimental contracts with as many as three companies, each to supply one (1) static test article and two (2) flight test articles. Research and Development Programs approved to date do not contain sufficient funds specifically allocated to glider development to cover this cost. However, sufficient experimental funds are available under the general subject, 71-1, (Experimental Aircraft) in current R & D Program to cover this development.

3. Analysis of the "Horsa" drawings indicate that this glider, while well suited as a troop carrier or parachute troop transport, is not well suited for transporting the equipment of an airborne task force. Therefore, it is not recommended that action be taken for production of the "Horsa" design at the present time.

4. An informal proposal for a 30-place glider capable of use as a troop carrier, parachute troop transport or carrier of airborne task force equipment has been received from the AGA Aviation Corporation. This glider conforms to the proposed military characteristics attached.

For the Chief of the Air Corps:

L. S. SMITH
Lieut. Colonel, Air Corps,
Executive Assistant.

2 Incls.
#1 - R&R 1 & 2 w/incls. (listed)
#2 - Military Characteristics of Aircraft to C/AAF

Approved 2/10 & returned to Col Ac by Mr. Barringer

452.4 Gliders (17)

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C-206

Air AG 452.4 Gliders (17)

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DOD Dir 5
8 Jan. & 30 June 1954
By ACMIUC, AC, Date 10/15/76

File No. .....

Tally No. AAF .....

SUBJECT: Large Capacity Transport Gliders.

NO.	FROM	TO	DATE	COMMENTS
1.	AAF C/AS	C/AC	1941 12/19	AAF/A-4 LBB/coc 1. It is desired that immediate consideration be given to the procurement of experimental transport gliders capable of carrying 25-30 troops or materiel of equivalent weight. 2. Recommendation is requested on the estimated cost of this development. It is also desired to know whether sufficient experimental glider funds remain to cover this cost. 3. Attention is also invited to the "Horsa" 25-place transport glider now in quantity production in Great Britain. It is possible that it will be more practical to obtain plans for manufacturing this glider than to let a contract to develop a new experimental design with consequent delays. Incls: DF G-3/47658, 12/12/41 w/ Memo fm CAAF to G-3, 12/10/41 w/2 Incls: Tab "A", & Graph H. H. Arnold C/AS 2nd
2.	C/AC	Mat Div	12/24	ADB

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AirCds 452-4 Holden (17)

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8 Jan. & 30 June 1974
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WAR DEPARTMENT GENERAL STAFF
DISPOSITION FORM

Operations and Training Division, G-3

AG
G-3/47658

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SUBJECT: Large Capacity Transport Gliders.

Date December 12, 1941.

TO:	___C/S	___G-1	___G-2	___G-3	___G-4	___CG	_____Army
	___TAG	___WPD	___USW	___ASW	___ASWA	___CG	_____Army Corps
	___AC	___BLP	___BOWD	___ExRA	___NGB	___CG	_____CA
	___INF	___FA	___CAV	___CAC	___ENGR	___CG	_____Dept.
	___ORD	___QMG	___CSO	___SG	___FIN	✓	Chief of Army Air Forces
	___GHQ	___JAG	___CWS	___IG	___B/PR		

FOR:	___S/W directs	___Comment or concurrence	___Necessary action
	___Draft of reply	___Remark and recommendation	___Information for reply
	___Direct reply	___Inviting attention to	___ _____Ind. approved
	___Approved	___See notation of_____	___Primary interest
	___Disapproved	___Information	___Notation and return
	___File	___Consult_____	Noted_____

By: ___Spcl Msgr | ___Radio | ___Air Mail | ___Immed Action Ltr | ___Letter | .....

With reference to your memorandum to this Division dated December 10, 1941 on the above subject, this Division believes it very advisable to develop gliders of 20, 25, or 30-place capacity. This size glider will permit a more flexible loading system and insure the transportation of ground forces which will be more nearly self-supporting.

Harry L. Twaddle
HARRY L. TWADDLE,
Brigadier General,
Assistant Chief of Staff.

BY:
W. H. MARIS,
Lt. Col., General Staff,
Acting Executive.

Encls.
AAF memo to G-3 (12-10-41)
w/encls.

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DEC 15 1941
Air Ops 452.4 Gliders (3)

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WAR DEPARTMENT
OFFICE OF THE CHIEF OF THE ARMY AIR FORCES
WASHINGTON

DECLASSIFIED
DOD ltrs
8 Jan. & 20 June 1974
By ACMR, LC; Date 10/21/76

DEC 1 0 1941

MEMORANDUM FOR THE ASSISTANT CHIEF OF STAFF, G-3:

Subject: Large Capacity Transport Gliders.

1. An expression of opinion is desired on the advisability of developing larger transport gliders of 20, 25, or 30-place capacity, from a tactical viewpoint.

2. Reasons in favor of producing gliders of this size are as follows:

a. Lower Equipment costs (See Tab "A").
b. Smaller number of units, requiring:

(1) Fewer personnel
(2) Less storage space

c. Probable increased efficiency and flexibility when used in conjunction with 8-place, 15-place, and "Jeep" carrying gliders (now under development) in large scale movements of airborne troops with equipment and supplies.

d. The British are now developing a glider capable of transporting 25 troops and one capable of carrying a Mark VII tank or 2 Bren guns. The Navy is developing amphibian gliders of 24-place capacity.

For the Chief of the Army Air Forces:

Incls:
Tab "A"
Graph

EDWARD P. CURTIS,
Major, Air Corps,
Secretary of The Air Staff

REC'D-G-3 47658 DEC 11 1941

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TAB "A"

Subject: Large Capacity Troop Gliders.

Discussion.

Experimental 8-place, 15-place, and "Jeep" carrying gliders are now on procurement. This discussion is to show the advantages of developing gliders of larger capacity, from the viewpoint of cost alone.

The following table, which includes estimated costs of the gliders and known cost of the C-47 transports (carrying 12 men), shows various arrangements for transporting one air-borne division of 14,000 men. Total cost figures include 20% added for spares. Costs of the gliders may be substantially less in quantity production.

PLAN	Total No. Gliders	Total No. Transports $132,000	Total No. Aircraft	Jeep & 6 men 3-1 * $35,000	8-pl. 4-1 $25,000	15-pl. 3-1 $35,000	20-pl. 3-1 $40,000	25-pl. 2-1 $45,000	30-pl. 1-1 $50,000	Cost Million $
A	0	850	850							134.6
B	1000	292	1292		500	500				82.2
C	800	292	1092	200	100	300	200			80.0
D	770	270	1040			770				75.1
E	682	229	911			341	341			67.2
F	609	203	812				609			61.3
G	528	220	740				264	264		61.7
H	466	233	699					466		62.0
I	394	296	690					197	197	69.3
J	341	341	682						341	74.4

Conclusions.

1. The greater the percentage of larger gliders (up to 25-place) used, the lower the overall equipment cost. Most economical is using all 20-place gliders, the cost being only 45% of the cost of using transports alone.

2. The greater the percentage of larger gliders (including 30-place) used, the lower the total number of aircraft and pilots needed. (See also attached graph).

* Three gliders towed behind one transport.

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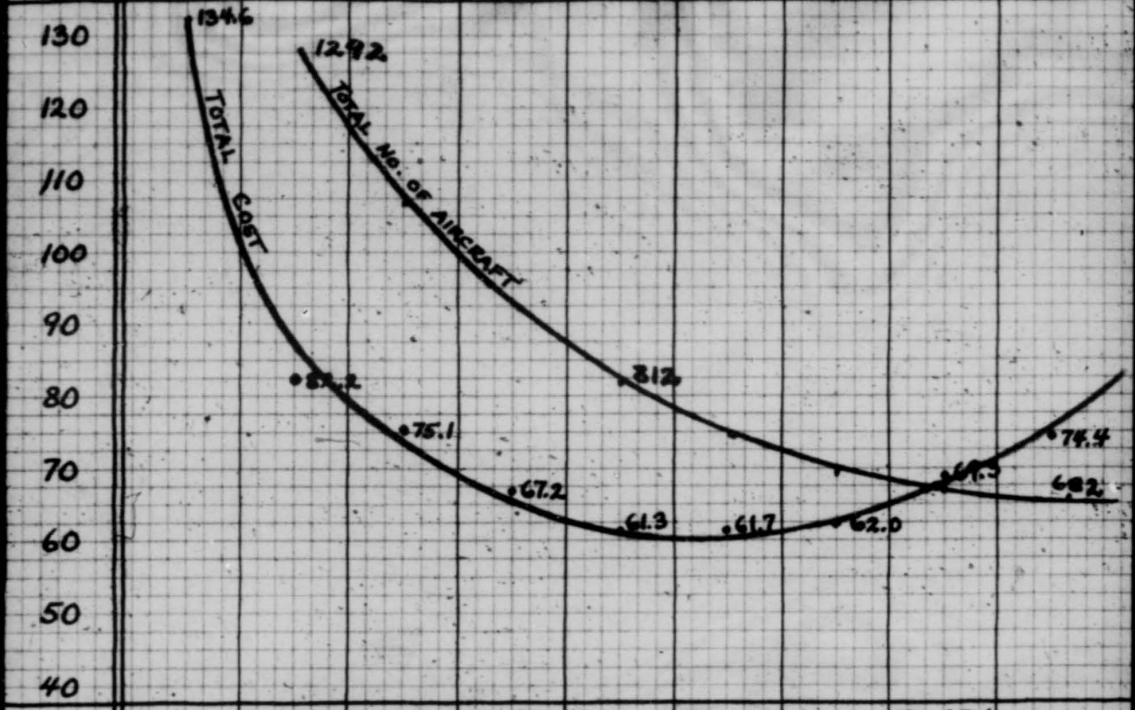
GRAPH SHOWING COMPARATIVE EQUIPMENT COSTS TO TRANSPORT ONE AIR-BORNE DIVISION OF 14,000 MEN



	A	B	D	E	F	G	H	I	J
Gliders	0	500 8-pl. 500 15-pl.	770 15-pl.	341 15-pl. 341 20-pl.	609 20-pl.	264 20-pl. 264 25-pl.	466 25-pl.	197 25-pl. 197 30-pl.	341 30-pl.
Transports	850	292	270	229	203	220	233	296	341
Total No. of Aircraft	850	1292	1040	911	812	740	699	690	682

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DOD Dir. 5200.9
8 Jan. & 20 June 1974
By [illegible] NCI Date 10/15/74

Experimental Glider Procurement.

AAF/A-4
JFW/cmd

5	AAF C/AS	C/AC	12/12	1. It appears that the point of this communication is being lost. As indicated in Paragraph 2 of Item 3, airline operators can discuss commercial gliders of essentially the same characteristics. The point is can Bowlus or anyone else build a glider of essentially the same specifications minus any military features. In other words, what is being restricted for Air line development the case of the glider and construction features OR special features of military nature.

HEADQUARTERS ARMY AIR FORCES COORDINATION

Chief of Staff	Sec'y Air Staff	A.A.G.	A-1	A-2	A-3	A-4	A-WPD	A-Insp.	Budget	Statistics	
									(Continued)		

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8 Jan. & 20 June 1973
By ALA/JLK UC, Date 10/16/76

Experimental Glider Procurement.

AAF/A-4
JFW/cmd

5 Cont.	AAF C/AS	C/AC	1941 12/12	2. It is requested that Bowlus or other sailplane manufacturers be advised that there is no objection to the construction of a glider for airline experimental operations provided essential military features are not disclosed. If necessary these can be stipulated. Since the aircraft industry raised the question it is apparently in need of clarification.

CS
C/AS

HEADQUARTERS ARMY AIR FORCES - COORDINATION

Chief of Staff	Sec'y Air Staff	A.A.G.	A-1	A-2	A-3	A-4	A-WPD	A-Insp.	Budget	Statistics	

AAF-39

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DOD Ltr's
8 Jan. & 30 June 1978
By NARS, Date 10/18/78

2 OCAC Mat. Div. 1941 11/24

For necessary action .

A.S.W.

3. Mat. Div. (4-E-3) 1.OCAC 2.C/AS AAF 11-28-41.

1. The estimated delivery dates of the above-mentioned gliders are as follows:

8-place -- February, 1942
15-place -- April, 1942.

Until these gliders have been delivered to the Air Corps and tested, it is impossible to predict whether or not their eventual value will be sufficient to keep them in a classified status. Only in the event that their usefulness to the Air Corps is negligible should they be considered for removal from classified to unclassified projects, as suggested in Item No. 1 above.

2. It is not evident to this office that the maintenance of these projects in a classified category will hamper any airline operator in discussing commercial gliders of essentially the same characteristics, excepting for the military factors involved. Such practice is generally followed in discussion of airplanes, and this Division sees no reason to relax its policy of safeguarding developments which mat result in military advantages. This can only be accomplished by maintaining experimental projects in a classified status until their military value has definitely been approved.

/s/

O.P.E.
Chief, Materiel Division

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8 Jan. & 20 June 1974
By ACNIR, JC, Date 10/15/76

Experimental Glider Procurement.

4. C/AC Hq.AAF 12-2 (X) HNB/cj

1. There is no restriction on manufacturers discussing with Bowlus non-confidential phases of the production program. This is common knowledge among manufacturers. To single out Bowlus and authorize him to discuss with manufacturers production problems which he is already authorized to discuss would appear to serve no useful purpose but on the other hand would put the Air Corps in a position of partiality.

2. If a specific request is made by Bowlus to the Materiel Division for any authority in which they are doubtful, the Materiel Division will be in a position to reply without causing any resentment among other manufacturers.

3. It is recommended that restriction on discussion of classified projects be not waived in this case.

4. It is further recommended that no further action on this be taken.

M. S. F.,
Executive.

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8 Jan & 20 June 1979
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DEC 2 1941

Written December 1, 1941.

AAF/360

Army Glider Program.

I. G-3 II. G-4 III. WPD

IV. GHQ

X Comment or concurrence

AAF/A-4
LBR/gmd

Incl.:
Memo for C/S, above subj. w/3 Incls.-
Tabs A, B, and C.

For the Chief of the Army Air Forces:

CLAUDE E. DUNCAN,
Lt. Col., Air Corps,
Secretary of The Air Staff.

Dispatched
DEC 2 1941
AAG

HEADQUARTERS ARMY AIR FORCES - COORDINATION											
Chief of Staff	Secy Air Staff	A.A.G.	A-1	A-2	A-3	A-4	A- WPD	A. Insp.	Budget	Statistics	

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AAF-30

(15)

Air AG 452.4 Soldiers

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6 Jan. & 30 June 1974
By AAF/IIK-10, Date 10/14/74

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AAF/A-4
LBB/gwd

Written December 1, 1941.

DEC 2 1941

AAF/360

MEMORANDUM FOR THE CHIEF OF STAFF:

Subject: Army Glider Program.

I. Discussion.

a. This program is based on:

(1) Providing air transport by means of troop airplanes and gliders for one air-borne division at the earliest practicable date. (See Tab A).

(2) Providing air transport by airplanes and gliders for a second air-borne division by expansion or combination of the program as dictated by the experience in providing the air transportation for the first air-borne division.

b. It is estimated that there will be no serious effect or delay on the present aircraft program (Second Aviation Objective), although it is possible that this glider program may conflict with other projected programs. (See Tab A).

c. The training plan is outlined in Tab B, and the overall cost estimates are shown in Tab C.

II. Action Recommended.

The Secretary of War directs that the Chief of the Army Air Forces include the sum of $121,000,000.00 in a supplement to the Preliminary Estimates, F.Y.1942. Actual procurement of the transport aircraft and the gliders contemplated in this program will be made as a result of the conferences now in progress of representatives of the War and Navy Departments, the OPM, and the WPB. The Chief of the Army Air Forces will submit recommendations as to the time this program will be initiated based upon the conferences referred to.

III. Concurrences.

[illegible] } NG } 12/5/41 in lieu of 12/10/41
[illegible] } M }
[illegible] } dgm } 12/12/41
[illegible] } 12/20/41

CARL SPAATZ
Brig. General, Air Corps,
Chief of The Air Staff.

Enclos.:
Tab A "Equipment."
Tab B "[illegible]"
Tab C "[illegible]"

ARMY AIR FORCES - COORDINATION

Chief of Staff	Secy Air Staff	A.A.G.	A-1	A-2	A-3	A-4	A- WPD	A. Insp.	Budget	Statistics	
						JBA					

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Equipment.

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By ALM/LE NO. NNE 10/18/76

Discussion.

The average size of present triangular divisions is 14,000 men. It is estimated that approximately 75% of the personnel and equipment, both individual and organizational, can be carried in the gliders and that the remaining 25% of personnel and equipment can be accommodated in the towing transport planes.

In order to transport the division, 1,000 gliders (half eight-place, and half fifteen-place) and 292 transport planes will be required. 5500 troops will be carried in the 500 eight-place gliders, and 7,000 troops in the 500 fifteen-place gliders. It is expected that 4 eight-place, or 5 fifteen-place, gliders can be towed behind each transport. Of the 292 transport planes carrying twelve men each, 125 will tow 500 eight-place gliders and 167 will tow 500 fifteen-place gliders.

The equipment cost for transporting one division by gliders and transport planes will be approximately $30,000,000.00 (or 27%) less than by transport planes alone, not including the considerable additional saving in operating costs.

It is estimated that the earliest possible date for the completion of the first phase of this program is July 1, 1943. This is based on the following considerations:

1. Procurement of Gliders.

a. One static test and one flight article of both an eight-place and a fifteen-place glider are on order from each of four manufacturers. Delivery of these gliders will be made between December 1, 1941, and March 1, 1942. It is estimated that the experimental program to test and evaluate these gliders after their delivery cannot be completed before July 1, 1942.

b. Due to the lack of experience and engineering knowledge in the aircraft industry for the manufacture of large gliders it is estimated that it will require not less than fifteen months to produce the 1,000 gliders required, following receipt of Air Corps contracts for their manufacture. This is predicated on the belief that orders or letters of intent can be placed on about April 1, 1942, if funds are available.

c. It is estimated that a sufficient number of gliders for an infantry test air-landing battalion can be produced by November 1, 1942; for a regiment by February 1, 1943; and for a brigade by May 1, 1943. This is predicated on sufficient transport airplanes being transferred from other uses for which they are being provided under present plans.

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2. Procurement of Transport Airplanes.

a. The transport airplanes for this program cannot be produced until completion of existing procurement schedules by January, 1945. They can be produced after January, 1945.

b. The Glider Program will interfere with any other projected program which would utilize the facilities of the Douglas Company, now producing C-47 airplanes, between January and June, 1945 for other than glider towing airplanes.

3. Training of Pilots.

It is estimated that there will be no difficulty in completing the training program in the time limit set by the procurement of equipment.

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TAB "B"

Glider Pilot Training Plan.

Discussion.

Due to the degree of skill estimated to be required to pilot these large troop carrying gliders in towed formation at night, under instrument conditions and while landing in small fields it is not contemplated using other than qualified airplane pilots, preferably graduates of the Air Corps Flying Schools.

1. Primary Training.

a. Primary training will be given in a four weeks course by civil schools, operating under contract to the Air Corps, with an annual training capacity of 1000 pilots. It is estimated that a maximum of four schools will be needed.

b. This training will include auto, winch, and airplane tow in two-seater training gliders. The general pattern for these schools will follow that of the civil schools contracting for primary airplane training. The school will provide airport facilities, food, housing, instruction, flying and launching equipment, storage and maintenance. The Air Corps will provide the necessary supervisory and medical personnel.

c. The graduates of these schools will receive the rating of Glider Pilot. No Air Corps gliders, outside of the primary schools, will be flown except by pilots with this rating.

2. Advanced Training.

a. Only one school for advanced glider training will be necessary. At this school graduates of the primary glider schools will receive thorough instruction in the flying and military use of the large troop carrying gliders. This training will include night flying and the actual carrying of ground troops and landing them under simulated war conditions.

b. Personnel.

(1) 1 Base Group (479-688)
(2) 4 School Squadrons (Transport) (200 men per squadron)

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c. Equipment.

(1) 26 Transports (C-47)
(2) 20 Training Towplanes (C-48)
(3) 52 Eight-place Gliders
(4) 39 Fifteen-place Gliders
(5) 80 Two-place Training Gliders

d. Increase in Personnel Required for Training.

(1) Air Corps : 1114 Pilots (Officers)
1458 Enlisted Men
(2) Services: 52 Officers
456 Enlisted Men

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By NNRK NC, Date 10/4/84

TAB "C"

Overall Cost Estimate.

Discussion.

The following budget estimate for a Supplement to the 1943 Preliminary Estimates covers the equipment and school facilities needed to carry out the first phase of the program. Items marked with an asterisk (*) include the cost of equipment plus 20% for spare parts. Additional data on these items follow the budget.

1. Training.

a.	180 two-place training gliders (including instruments and ground trailers)	@	$ 3,000.	$ 540,000.*
b.	70 tow planes (O-49).	@	$ 22,406.	$ 1,568,104.*
c.	100 glider tow and equipment cars.	@	$ 2,000.	$ 240,000.*
d.	20 winches	@	$ 2,800.	$ 60,000.*
e.	Miscellaneous accessories (tow-lines, pulleys, releases, etc.)			$ 100,000.
f.	230 short wave radios	@	$ 200.	$ 46,000.
g.	Experimental development			$ 100,000.
h.	One station school and organization equipment			$ 5,000,000.
				$ 7,968,104.

2. Troop Carrying.

a.	500 eight-place gliders	@	$ 25,000.	$ 18,000,000.*
b.	500 fifteen-place gliders	@	$ 35,000.	$ 21,000,000.*
c.	292 transport planes (C-47)	@	$158,220.	$ 46,[illegible]
d.	1300 short wave radios	@	$ 400.	$ 520,000.
e.	Miscellaneous accessories			200,000.
f.	Experimental development			$ 800,000.
g.	Additional Civilian Personnel (20)			$ 52,000.
				$ 53,[illegible]

3. Transport Stations.

Four Air Corps transport stations	@	$7,500,000.	$ 30,000,000
TOTAL			$121,[illegible]

NOTE: Supplement to 1942 Preliminary Estimates for the sum of $595,000.00 to train 1,000 glider pilots has already been requested.

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Additional data on the foregoing budget:

1. Training.

a. From the experience gained in training several classes of Air Corps pilots, it has been determined that one two-place training glider is needed for each two students. This budget includes 80 for training and 100 to be distributed to Air Corps Stations and used in practice flying by Glider Pilots to maintain their proficiency.

b. Tests made at Wright Field have shown that the G-49 is an ideal tow-plane for training. It is estimated that 20 are needed for training and 80 for assignment with gliders to various stations.

c. One heavy type tow car is needed for each training glider, plus one for each two practice gliders. These cars will also carry equipment, such as pulleys, tools, flags, tow-lines, etc.

d. Winch towing is needed to round out the training.

e. This item covers towlines, releases, pulleys, etc.

f. Tests now being made at Wright Field indicate that it will probably be practical to use the light, parachute troop radios, type SCR-536, for intercommunication, in the training gliders. This estimate covers one for each glider and towplane.

g. This covers the estimated cost of experimental development at Wright Field in connection with the training program.

h. This estimate covers the approximate cost of establishing one Advanced Training School, to be similar to the present two-engine Advanced Training School, at a suitable location (preferably in Texas).

2. Troop Carrying.

a. & b. Possible variables may be the carrying of more than 18 men with equipment in each transport and the use of other than transport planes for the towing. It is estimated that the figure of 1,000 transport gliders will allow for an adequate number of spares.

c. It has been determined from the standpoints of (1) availability, and (2) suitability that the C-47 type transport airplane should be used as the standard towplane of the troop-carrying gliders.

d. The standard field service type radio SCR-195 is being used in experiments at Wright Field and is expected to serve the dual

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purpose of intercommunication between tow-plane and glider in flight and communication between the troop combat unit and other infantry forces on the ground after landing. This estimate provides one for each glider and towing transport plane.

g. This estimate cover tow-lines, releases, etc.

f. This estimate covers necessary experimental development at Wright Field.

g. It is estimated that this number of additional civilian personnel, @ $2,600 per year, will be needed to carry out the experimental development.

3. Transport Stations.

a. It is contemplated that one air transport group equipped with approximately 73 transport airplanes and 250 transport gliders will be stationed in each of the four Air Force areas. This group can transport 3500 ground troops.

b. It is considered impracticable to utilize stations devoted to combat aircraft for the operations of this number of transports and gliders. Therefore, four additional group stations will be required.

c. Housing facilities at each station will include quarters for one battalion of air-borne infantry which will be rotated during successive periods of training.

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HEADQUARTERS ARMY AIR FORCES

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8 Jan & 20 June 1974
By ALM/NARS Date 10/15/76

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File No. .....

Tally No. AAF .....

SUBJECT: Army Glider Program

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NO.	FROM	TO	DATE	COMMENTS	AAF/AWPD KNWiep
1	AAF AWPD	AAF C/AS	1941 11/17	I. DISCUSSIONS	

1. Reference is made to the memorandum for the Chief of Staff prepared by the A-4 Division on the above subject. The memorandum recommends the allocation of $121,869,992 in a Supplemental to the preliminary estimates FY 1943, to take care of this program. The program in substance, contemplates the building of 1000 gliders, together with 292 transport planes. The memorandum under discussion indicates that the glider program will interfere with any other projected program utilizing the facilities of the Douglas Company which produces C-47 airplanes. It notes further, that the transport plane in question can be produced after January, 1943.

2. While not so stating, it is assumed that the construction of gliders will interfere with no program. This is believed to be the case if the so-called plastic wood glider is constructed, the production of which can be undertaken by agencies not now concerned with the construction of the metal airplanes.

3. At this time conferences are under way between OPM, SPAB, Army, Navy, and British representatives on the ultimate production program for the United States Armed Forces and for defense aid. The document, A-WPD/1 has included therein the construction of 1520 transport airplanes and 3000 gliders. The priority which will be assigned to the production of these aircraft will depend largely upon the priority of the use of the equipment in combat operations. It is obvious that in any offensive operations against Germany, the initial stages will involve primarily, bombardment and pursuit airplanes operating from the British Isles and the Near East. The use of gliders and transports for movement of air infantry will not take place until Germany is sufficiently "softened" to enable the prosecution of a land invasion. With the exception of possible minor opera-

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HEADQUARTERS ARMY AIR FORCES

ROUTING AND RECORD SHEET

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File No. .....

Tally No. AAF .....

SUBJECT: Army Glider Program (Con't)

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NO.	FROM	TO	DATE	COMMENTS
(con't) 1	AAF AWPD	AAF C/AS	1941 11/17	tions in Dakar or Brazil, for example, the construction of the aircraft under consideration should take a relatively low priority in the aircraft production program. II. RECOMMENDATIONS 4. It is recommended that the following change be made under "II. ACTION RECOMMENDED" by adding this sentence: "Actual procurement of the transport aircraft and the gliders contemplated in this program will be made as a result of the conferences now in progress of representatives of the War and Navy Departments, the OPM, and the SPAB. The Chief of the Army Air Force will submit recommendations as to the time this program will be initiated based upon the conferences referred to." 1 Incl for H.L.G. Incl. 1: H.L.G. Memo for Ch. S. C/AWPD Subject: Army Glider Program with incls. as listed thereon KNW
2	AAF C/AS	AAF A-4	11/26	Asked para as recommended in comment #1 above OCAF

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DOD ltr
8 Jan & 20 June 1974
By ... NARS, Date ...

AAF/A-4
LBB/gwd
Written Nov. 3, 1941.

MEMORANDUM FOR THE CHIEF OF STAFF:

Subject: Army Glider Program.

I. Discussion.

1. This program is based on:

a. Providing air transport by means of troop airplanes and gliders for one air-borne division at the earliest practicable date. (See Tab A).

b. Providing air transport by airplanes and gliders for a second air-borne division by expansion or continuation of the program as dictated by the experience in providing the air transportation for the first air-borne division.

2. It is estimated that there will be no serious effect or delay on the present aircraft program (Second Aviation Objective), although it is possible that this glider program may conflict with other projected programs. (See Tab A).

3. The training plan is outlined in Tab B.

4. Overall cost estimates are shown in Tab C.

II. Action Recommended.

The Secretary of War directs that the Chief of the Army Air Forces include the sum of $121,869,992.00 in a supplement to the Preliminary Estimates, F. Y. 1943.

III. Concurrences.

A. C. of S., G-3 ( )
A. C. of S., G-4 ( )
A. C. of S., WPD ( )
C. of S., GHQ ( )

Recruiting 12/1/41

HEADQUARTERS ARMY AIR FORCES - COORDINATION

Chief of Staff	Secy Air Staff	A.A.G.	A-1	A-2	A-3	A-4	A- WPD	A. Insp.	Budget	Statistics	
Enclosures:											
Tab A - "Equipment"											
Tab B - "Glider Pilot Training Program."											
Tab C - "Material Cost."											

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WAR DEPARTMENT
HEADQUARTERS ARMY AIR FORCES
DISPOSITION FORM

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DOD ltrs
8 Jan. & 20 June 1974
By AGAFAK, NC Date 10/15/74

Date DEC 2 1941

AG

AAF/360

SUBJECT: Army Glider Program.

	USW	ASW	ASWA	B-LP	BOWD	BPR
	C/S	G-1	G-2	~~I. G-3~~	~~II. G-4~~	~~III. WPD~~
	Sec.G/S	NGB	JAG	1G	QMG	SG
TO:	OCAC	CSO	Fin.	Ord.	Ex.R.A.	ENGR
	AFCC	Inf	FA	Cav	CAC	CWS
	TAG	~~IV. GHQ~~				

FOR:
SW directs
Draft of reply attached
Approved
Disapproved
File

X Comment or concurrence
Direct reply made
Inviting attention to
See notation of
Information

Information for reply
Ind. approved
Primary interest
~~Notation and~~ return to Air Staff
Noted

AAF/A-4
LBB/gwd

Incl.:
Memo for C/S, above subj. w/3 Incls.-
Tabs A, B, and C.

For the Chief of the Army Air Forces:

CLAUDE E. DUNCAN,
Lt. Col., Air Corps.
Secretary of The Air Staff.

DEC 11 41 AM
IN
WPD. WDGS

DEC 14 41 PM

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G.H.Q. U.S. ARMY
AG OFFICE

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ROUTING AND RECORD SHEET

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Tally No. AAF/ _____

Subject: Construction of a glider that can be used as a jeep also.

NO.	FROM	TO	DATE	COMMENTS
1.	OCAC (4-E-3)	C/AAF	11/24/41	1. Reference is made to Routing and Record sheet, above subject, General Arnold to General Spaatz, dated 8/18/41, copy attached. 2. In accordance with the directive contained in the referenced Routing and Record sheet, studies have been completed on: a. A jeep fitted with wings to take off and land as a glider, the wings and tail to be dropped after landing, upon which the jeep would proceed under its own power. b. A 15-place glider providing space and quick loading and discharging arrangements for a standard jeep (1/4 ton, 4 x 4 truck). 3. A detachable glider component for the jeep outlined in par. 2a. is not considered practical for the following reasons: a. The present tires on the jeep do not have sufficient capacity to withstand the loads imposed on landing, nor does it seem possible to arrange the center of gravity of the combination so that it will fall between the front and rear wheels of the jeep. b. Requirements for a quickly detachable glider structure and the characteristics of the running gear of the jeep do not provide a good aerodynamic form. The size of the glider required is uneconomical from the standpoint of the number of personnel and equipment that are accomodated. c. The construction of a special jeep and of special glider components will require additional burden in connection with supply and maintenance of this type of equipment. It is recommended that no further consideration be given to the design of the detachable glider components for a jeep.

452.4 Planes (14)

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ROUTING AND RECORD SHEET

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Tally No. AAF/ _____

Subject: Construction of a glider that can be used as a jeep also. (cont'd)

NO.	FROM	TO	DATE	COMMENTS
1.	(cont'd)			4. Reference par. 2b. above. Studies have been made to determine the practibility of providing space and quick loading and discharging arrangements for the standard 1/4 ton jeep in the four 15-place gliders now under contract. It is found that the Waco design for the 15-place glider can be modified to accomodate a standard jeep and provide the necessary space and quick loading and discharging arrangements without extensive changes or delay. 5. The contract with the Waco Aircraft Company has been modified to cover the procurement of two 15-place gliders which will be capable of carrying internally the standard jeep and a crew of 6 men. O. P. E. Acting Chief, Air Corps 1 Incl. Cy.R&R 8/18/41.

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Air 03452.0 Gliders (14)

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Subject: Construction of a glider that can be used as a jeep also.

1.	General Arnold	General Spaatz	8/18 1941	What man is responsible for the development of gliders. I would like very much to have a small light jeep constructed, using light materials wherever possible, jeep to carry two men and have light armor and guns. This jeep should be designed and constructed with a view of fitting wings to it so that we can take it off as a glider and drop it as a glider. Having dropped as a glider, it lands on a field somewhere, sheds it wings and goes around as a jeep. /s/ H.H.A.
2.	Chief of Air Staff	A-4	8-19	Necessary steps will be taken to develop a small light jeep, using light materials wherever possible, to carry two men, light armor and guns, with wings to enable it to be towed as a glider. /s/ Chief of the Air Staff.
3.	Ch.of A.S.	Ch.A.C.	8-27	1. Reference Item 1 above and pending the determination of military requirements including carrying capacity of a new light jeep in armor, arms, ammunition and personnel, it is desired that an immediate study be made to determine the practicability of providing space and quick loading and discharging arrangements for the now standard jeep (1/4 ton 4 x 4 truck), in the 15 man glider now under development. 2. The 1/4 ton, 4 x 4 is a production article which is very sturdy and apparently has been found to be exceedingly capable in cross-country work and would be more readily available than one, the specifications of which are still to be developed and production plans completed. 3. The Glider Specialist in the Materiel Division is Maj. Frederick Dent. /s/ Chief of the Air Staff

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C O P Y

Subject: Construction of a glider that can be used as a jeep also.

4.	Chief of Air Corps (4-E-3)	Chief of Air Staff	1941 9/2	1. The study directed in Paragraph 1, Item 3, above, has been initiated.

G. H. B.

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WAR DEPARTMENT
OFFICE, CHIEF OF THE AIR CORPS
FORM No. 178
(Rev. Aug. 15, 1936)

OFFICE OF THE CHIEF OF THE AIR CORPS

1194

ROUTING AND RECORD SHEET

(To be filed with correspondence)

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DOD ltrs.
8 Jan. & 20 June 1974
By ALAIRK, LC. Date 10/18/76

SUBJECT: Troop Gliders

452.14 Gliders (13)

NO.	FROM	TO	DATE	DATA
3.	Materiel Division (4-R-3)	1. C/AC 2. C/AS	1941 11-24	1. Higher wing loadings and design towing speeds have been under consideration for some time and in order to accumulate more information on this subject, Major F. R. Dent is now in England with expected return in the near future. 2. An existing Air Corps contract is being modified to cover procurement of two (2) Air Corps XCG-4 gliders modified to carry internally a standard "jeep" and crew of six (6) men. 3. Copy of above communication and inclosure has been forwarded to Wright Field for consideration. O.P.E. Chief, Materiel Division X-ASB:br
1 Incl.: n/c				
4.	OCAC	AAF C/AS	1941 11/25	1. Forwarded. M. S. F. Executive
Incl. n/c				

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HEADQUARTERS ARMY AIR FORCES

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ROUTING AND RECORD SHEET

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8 Jan. & 20 June 1974
By AIA/LK NC. Date 10/8/74

File No. .....

Tally No. AAF .....

SUBJECT: Troop Gliders

NO.	FROM	TO	DATE	COMMENTS
1	AAF C/AS	C/AC	1941 11/13	AAF/A-4 LBB/cec 1. It is desired that serious consideration be given to the procurement of experimental troop gliders with higher wing loadings and higher design towing speeds than those now on order. Reasons for this are: (a) The probable use of the C-47 transport airplane as a standard towplane. This airplane will cruise above 150 mph whereas present designs under procurement are for 120 mph maximum towing speeds. (b) Smaller size, which will permit: 1. Smaller ground trailers. 2. Greater ease of assembly. 3. Less drag in towed flight. 4. Greater maneuverability in gliding flight 5. Less cost. 2. Particular attention is invited to the transport glider designed by the A.G.A. Corporation, Pitcairn Field, Willow Grove, Pa. A memorandum of this design by Mr. Lewin B. Barringer, Glider Specialist, Air Staff is attached. CS C/AS Incl. Rpt "AGA Aviation Corp. Troop Glider."
2	orac	Mmt. Div.	11/19	A.A.B.

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DOD Dirs
8 Jan. & 20 June 1974
By ALM/LLC UC Date 10/18/76

A.G.A. AVIATION CORPORATION TROOP GLIDER

1. A single-place, 1/3 scale flying model of a proposed 24-place Seaplane Glider for the Navy was examined and flown by the undersigned at Pitcairn Field, Willow Grove, Pa. November 6, 1941. A modification of this design, with 87' 7" span, will be capable of transporting the following:

a. One "jeep", 50 gal. gasoline and 4 men with equipment, or
b. One "jeep", one 37 mm gun, 50 gal. of gasoline, and 500 rounds of ammunition, or
c. 15 troops with full military equipment and parachutes, and 250# of extra equipment, or
d. 3800# of high explosives, 3 men with full equipment, and 2 machine guns and ammunition.

2. Important features determined from examination of plans and engineering data are:

a. 200 mph design towing speed.
b. Wing Loadings: (1) troop carrier 11.5# per sq. ft.
(2) equipment carrier 13.5# per sq. ft.
c. Stalling speeds of 47-51 mph (not too high).
d. Ease of getting "jeep" in and out of central nacelle under its own power.
e. Possibility of protection from a machine gun in nose and one in rear of nacelle.
f. Simplicity of structure, permitting rapid production and low cost.
g. 2-wheel, retracting gear, which seems more practical for operations than the 2-wheel detachable gear jettisoned after take-off (landing for attack will be made on skids with wheels retracted).

3. Important characteristics determined from taxi and flight tests are:

a. Unlike other gliders, ship rests on even keel on ground. This will be of particular importance for the large size, as it will obviate the necessity of a man holding the wings level for take-off.

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A.G.A. Aviation Corporation Troop Glider. (Cont'd)

b. The wide tread between the wheels makes the ship very stable on the ground.
c. Pilot visibility is excellent.
d. Although, due to weather conditions, only low flights up to 20 feet were possible, the ship seemed quite stable and the glide flat (possibly as much as 20 to 1).
e. Although stalled off, there was no tendency for a wing to drop (possibly due largely to built-in wing tip slots.)
f. Landing was very easy, the ship practically landing itself.
g. The landing speed was about 45 mph with a wing loading of 6.5# corresponding to a loading of 16# in the 15-place glider.

4. Conclusion:

a. This design has enough good, if not outstanding, features to merit serious consideration for the placing of a contract for experimental prototypes of 15-place capacity.

Lewin B. Barringer

Lewin B. Barringer,
Glider Specialist, Air Staff

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Encl
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By ALW/LK NC, Date 8/6/74

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Troop Gliders

452.4 Gliders (13)

1 AAF C/AC 1941 AAF/A-4
C/AS 11/13 LRB/ccc

1. It is desired that serious consideration be given to the procurement of experimental troop gliders with higher wing loadings and higher design towing speeds than those now on order. Reasons for this are:

(a) The probable use of the C-47 transport airplane as a standard towplane. This airplane will cruise above 150 mph whereas present designs under procurement are for 120 mph maximum towing speeds.

(b) Smaller size, which will permit:

1. Smaller ground trailers.
2. Greater ease of assembly.
3. Less drag in towed flight.
4. Greater maneuverability in gliding flight
5. Less cost.

2. Particular attention is invited to the transport glider designed by the A.G.A. Corporation, Pitcairn Field, Willow Grove, Pa. A memorandum of this design by Mr. Lewin B. Barringer, Glider Specialist, Air Staff is attached.

CS
C/AS

Incl.
Rpt "AGA Aviation Corp. Troop Glider."

HEADQUARTERS ARMY AIR FORCES - COORDINATION

Chief of Staff	Sec'y Air Staff	A.A.G.	A-1	A-2	A-3	A-4	A-WPD	A-Insp.	Budget	Statistics	

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AG 452.6 (9-25-41)MC-C RSA

November 17, 1941

X201

Captain Frank Kowalski, Jr.,
18th Quartermaster Battalion (Armored),
Pine Camp, New York.

Dear Captain Kowalski:

Reference is made to your letters of September 10, 1941, and November 8, 1941, addressed to the Director, New Weapons Division, relative to an idea for transporting and landing troops and equipment by means of a gyro-glider.

The War Department has given careful consideration to the idea you proposed. It has been concluded that, while the idea is feasible, the gyro-glider would be a less efficient means for accomplishing the desired end than other equipment now under development.

Your interest and zeal in the development of new means for national defense is, however, appreciated by the War Department.

Very truly yours,

X021

E. S. Adams

Major General,
The Adjutant General.

COPY TO: Chief of the Army Air Forces, ref. his memo, Air AG 452.4 Gliders, 11-3-41, to A.C. of S., G-3.

452.4 Gliders (11)

air AG 452.4 Gliders (11)

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8 Jan. & 20 June 1974
By ALM/NHC, NC. Date 10/15/76

4521

Copy

Gyro-Glider.

1 AAF C/AS OCAC (Mat.Div) 1941 10/21

AAF/A-4
LRB/ahh

1. Concurrence is requested in the attached memorandum for the Assistant Chief of Staff, G-3.

2. Please return this memorandum to A-4 Division of the Air Staff as soon as practicable.

4521

X452.1

Autogyro

1 Incl.-
Memo for AC/S,G-3
w/5 incls.

CS
C/AS

4521.4 Gliders (10)

Incl. attached to original only.

Dispatched
OCT 23 1941
AAG

HEADQUARTERS ARMY AIR FORCES - COORDINATION

Chief of Staff	Secy Air Staff	A.A.G.	A-1	A-2	A-3	A-4	A- WPD	A. Insp.	Budget	Statistics	

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5 Jan. & 20 June 1974
By ACSIDC, DC, Date 10/15/76

AAF/A-4
LBB/mhh
(Written October 16, 1941)

NOV 3 1941

X016

MEMORANDUM FOR THE ASSISTANT CHIEF OF STAFF, G-4.

SUBJECT: Gyro-Glider.

1. Comments on the technical questions involved in the attached letter describing a gyro-glider for transporting and landing airborne troops and equipment are as follows:

a. The idea of transporting and landing troops and equipment in a gyro-glider is practicable. (For further information see Tab A).

b. A gyro-glider would be a less efficient means of transporting and landing troops and equipment than (1) the transport airplane and parachutes, (2) gliders. (For further information see Tab B).

For the Chief of the Army Air Forces:

EDWARD P. CURTIS,
Major, Air Corps,
Secretary of The Air Staff.

Incls.-
Tab A
Tab B
Memo for C/AAF 9/25/41 w/
Memo for Ch.Plan Br.9/15/41 w/
Ltr.fr.18th QM Bn.9/10/41& 3 Incls.-
Gyro-Glider, Sketch, 5 photos.

Dispatched
NOV 3 1941
AAG

HEADQUARTERS ARMY AIR FORCES - COORDINATION											
Chief of Staff	Sec'y Air Staff	A.A.G.	A-1	A-2	A-3	A-4	A-WPD	A-Insp.	Budget	Statistics	
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8 Jan & 20 June 1974
By ALAJUE UC Date 10/8/76

TAB A

Discussion on Practicability of Gyro-Glider

From the knowledge gained from the designing and building of auto-gyros it is safe to say that it would be possible to design and build a troop carrying gyro-glider which could be taken off and towed behind an airplane, then released by the pilot of the gyro-glider and landed in a limited area such as a small field.

However, quite aside from the considerations of efficiency (which are discussed in Tab B) the objections to such a scheme are considerable. They are as follows:

1. A rotating wing aircraft is a more complex piece of equipment than a fixed wing aircraft. Therefore the development of gyro-gliders would be very costly and take too long for present considerations.

2. Training of pilots for gyro-gliders would take longer and be more costly than for gliders (glider piloting is fundamentally the same as airplane piloting).

3. There would be very serious complications and delays in getting the motors up to speed before towed take off. (This could not be done by slipstream of towplane, as suggested, particularly if a train of gyro-gliders was towed.

4. There would be greater danger in possible collision of two gyro-gliders towed beside each other through turbulent air at night. (Colliding motor blades would mean loss of both ships and break-up of the train whereas gliders could brush wing tips without mishap).

5. There would be very serious complications about attachment of towlines,(while accelerating the line of pull would have to be from center of gravity - necessarily low in a gyro-glider - and when up to speed at the center of drag, which is higher).

To sum up, these objections are sufficient to conclude that a gyro-glider would be definitely inferior to a glider from the standpoint of practicability.

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Discussion of Efficiency of Gyro-Glider

The objections to the use of gyro-gliders as compared to gliders on a basis of efficiency are as follows:

1. Considering higher drag for load carried, making it impossible to tow a train of gyro-gliders at the same speed with the same power expended as a train of gliders of equal capacity.

2. Low gliding ratio of about 6. (A high gliding ratio of 15 to 20 is one of the great advantages of the glider which can be released many miles from the objective).

Possible advantages of the gyro-glider would be:

1. Ability to land nearly vertically in total darkness without injuring occupants or damaging equipment even if landed in trees. (Yet if a roter should strike a pole or other high obstruction, the resulting fall would be sufficient to cause fatalities).

2. Ability to land in smaller and more restricted areas and therefore possibly closer to the objective. (Small gliders have been crash landed in trees without injury to the pilots. This could conceivably be done in case of emergency with large troop carrying gliders stalling in at 35-40 mph air speed at night).

The point made by the proponent of the gyro-glider that the use of gliders is predicated on the previous occupation of suitable airfields is based on a misconception. Gliders, even large troop carrying types, can be brought down and landed in small, rough fields due to their ability to be dived in steeply without excessive speed (through the use of dive brakes) and come to a stop without overturning in a very short distance (due to design of landing skid).

Since the idea of multiple rotors for the gyro-glider seems impracticable, the diameter of a single rotor of a large troop carrying gyro-glider would be too large to permit landings on the average road with telephone lines or other obstructions on either side. The margin of possible advantage of the gyro-glider over the glider in landing in limited areas would therefore seem to be small.

To sum up, the objections are sufficient to outweigh the possible advantages so that it can be concluded that a gyro-glider would be definitely inferior to a glider from the standpoint of efficiency.

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DOD Ltr
8 Jan. & 20 June 1974
By MARA NC, Date 10/15/74

WAR DEPARTMENT
War Department General Staff
Operations and Training Division G-3
Washington

G-3/46041

September 25, 1941.

MEMORANDUM FOR CHIEF OF ARMY AIR FORCES:

Subject: Gyro-Glider.

1. The attached letter describes a gyro-glider for use in transporting and landing air-borne troops and equipment.

2. Your comments are desired as to the technical questions involved:

a. Is the idea of transporting and landing troops and equipment in a gyro-glider practicable?

b. Would a gyro-glider, such as is proposed herein, be a more efficient means of transporting and landing troops and equipment than (1) the transport airplane and parachutes, (2) gliders?

/s/
W. E. CHAMBERS,
Colonel, General Staff,
Acting Assistant Chief of Staff.

BY:

H. L. KARNEST,
Lt. Col., General Staff,
Acting Executive.

Incls.
Memo for Ch., Plan. Br.
9-15-41, w. Ltr fr CO,
18th QM Bn., 9-10-41 & 3 incls.

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DOD DIR
6 Jan & 20 June 1974
By ADHQ DC Date 10/15/76

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WAR DEPARTMENT
War Department General Staff
Operations and Training Division G-3
Washington

September 15, 1941.

MEMORANDUM FOR THE CHIEF, PLANNING BRANCH:

Subject: Gyro-Glider.

The question involved in attached proposal is a technical one involving the comparative performance characteristics of the glider and the gyro-gliders and is one which this Branch is not qualified to comment upon. It is not believed that new tactical doctrines are involved, because there should be little difference in the use of the gyro-gliders and gliders.

/s/ ALDEN H. WAITT,
Lt. Col., General Staff,
Chief, Miscellaneous Branch.

Encls.
Ltr fr CO, 18th QM
Bn (9-10-41)

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DOD ltr's
8 Jan. & 30 June 1972
By NNWK NC, Date 10/18/76

HEADQUARTERS
18TH QUARTERMASTER BN. (ARMORED)
Pine Camp, New York

September 10, 1941

SUBJECT : Gyro-Glider

TO : Director, New Weapons Division, Munitions Building, Washington, D. C.

1. I am forwarding for your information and consideration a paper on the Gyro-Glider, a new type of air vehicle which is particularly designed to transport and land troops, weapons and equipment in support of parachute attacks.

2. In view of the nature of my regular duties, my practical experiments with the Gyro-Glider principle have been necessarily limited. However, I feel that I have the germ of an idea which under favorable circumstances can be developed into a practical accomplishment.

3. It is my hope, of course, that I be given an opportunity to develop the Gyro-Glider idea. In making this request, I feel that I should support it with a brief statement of my qualifications for development work. I am a Regular Army officer, Infantry, detailed in the Quartermaster Corps. I have had four years experience in the Ordnance Department, including the Ordnance School. I hold a patent for an automatic target scoring device, have two patents pending, and have at present a device being investigated by the Armored Force Board. In the case of the Gyro-Glider principle, I have been studying it for months, and after very limited experiments with my model, I am satisfied that the principle is sound.

4. I believe that if I were afforded the time and means for experimental work, I could build a successful Gyro-Glider.

/s/ FRANK KOWALSKI, JR.
Captain, QM. Corps

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GYRO-GLIDER

DECLASSIFIED 10/16/96

This discussion is concerned with the theory, construction, technique and tactics of a new type of air vehicle, which, for a better name, I shall call Gyro-Glider. Before going into a detailed discussion of the Gyro-Glider, I would like to bring out something of its need and development.

The present war has produced one outstanding new development in the theory of warfare; namely, envelopment of the enemy from the air. This new principle can not be too strongly stressed. It will be just as revolutionary in its affect on warfare of the future as the musket was in the battles against the knights of old. It can be logically predicted that during the present war, and in the years to come, every alert military leader and technician will reach out in all directions for new methods of attack from the air and for new means to accomplish this third dimensional envelopment.

An analysis of the war in Europe indicates that envelopment from the air has taken many forms and has been tried with several types of air vehicles. In some instances it has been highly successful, in others its failure will be historical in effect. In Poland, in Belgium and in Holland, envelopment from the air, primarily a projectile envelopment, was successful particularly because it was strongly supported by ground troops with heavy armament. On the other hand, the historical failure of the air attacks on the British Isles was due primarily to the inability of the Germans to land troops and heavy supporting armament on the island.

Here is the weakness, the Achille's heel in the present development of the envelopment from the air - it must be supported with troops and heavy equipment. To nurse this new principle of warfare from infancy to adolescence, ways must be found to effectively support the air envelopment with men, armament and equipment from the air. Let us see the trend of development and its limitations.

A spectacular, and at the same time very successful, development has been Parachute Infantry. Both the Russians and Germans have expended years of energy in its development. Large bodies of troops have been trained in this mode of warfare. Parachute Infantry has been successfully employed in Belgium, Holland and particularly in Crete. However, it is primarily Parachute Infantry. Individual soldiers, and even comparatively large bodies of troops, can be successfully dropped, but in the present state of development tanks, heavy armament, trucks, etc., cannot be dropped by parachutes. Due to this lack of proper support, there are many instances where Parachute Infantry was quickly wiped out by enemy tanks, scout cars and even determined civilians. The Germans are reported to have thousands of parachute troops, but because they have not yet produced a means to support these troops with the necessary heavy armament from the air, the Germans have failed to use them in a concentrated all out air envelopment.

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More recently the Germans have employed gliders in their attack on Crete and other points. The Russians also have experimented with gliders for years, and have developed technique which has made it possible for them to tow several gliders behind one airplane. However, the effective use of gliders and air borne troops is predicated on the previous occupation of suitable airfields on which to land. This means first that satisfactory airfields must be available at the point of attack; and second, they must be captured and held by friendly civilians or parachute troops. Obviously that is difficult to accomplish against a determined enemy.

It is apparent then that although under certain favorable conditions gliders and air borne troops can be used to assist parachute troops, this type of support is unpredictable and cannot be considered immediate. With the tremendous potentiality and power of dropping thousands of parachute troops in the rear of the enemy, a way must be found to provide immediate and physically available support for these troops. This paper proposes one way which appears susceptible of practical accomplishment.

I propose the Gyro-Glider as the air vehicle which can be used to transport and land troops and armament in immediate support of parachute troops. As I envision it, the Gyro-Glider can be made to carry heavy loads and land in small clearings or on roads.

The Gyro-Glider would embody all the principles of the autogiro except that it would be towed behind an airplane instead of being propelled through the air by means of an engine and propeller. It would, in effect, be an autogiro without engine and propeller and with proper attachment for towing behind an airplane in the same manner that military gliders are now towed. By comparison, the Gyro-Glider is to the autogiro what the glider is to the airplane.

The enclosed photographs illustrate the general construction of the small Gyro-Glider model that I constructed. It is provided with two rotor blades (a) which can rotate or freely gyrate on a suitable pylon (b). In order to provide stability in flight, the rotor blades are hinged at points (c) and (d) permitting the blades to "flap" up and down and allowing a limited independent motion in the plane of gyration. This flexibility counteracts any forces set up due to gyroscopic action. The proposed Gyro-Glider would be piloted by tilting the axis of gyration with respect to the load. In the model under discussion, lever (e) is mounted in a suitable universal joint (f) and through universal joint (f) extends to form an axis (b) on which the rotor blades may rotate. Lever (e) may be moved to any desired position, setting the rotor blades at various angles with respect to the frame pontoon or carriage (h). In order to carry a maximum load, the body or carriage (h) is constructed of light simple framing. The load would be mounted in this framing for transportation. In the forward end of the Gyro-Glider there would be provided a suitable attachment for a towing cable. To add to the stability in flight, tail surfaces might have to be provided.

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In operation and flight the Gyro-Glider would be similar to any autogiro. The Gyro-Glider would be prepared with its load and attached to an airplane by means of a towing cable. On turning over the airplane propeller, the motion of the air past the rotor blades of the Gyro-Glider would cause the rotor blades to rotate freely or autogyrate. On developing the required speed of rotation in the rotor blades, the airplane would taxi down the field preparatory to take-off. The Gyro-Glider operator would pilot his Gyro-Glider in the same way that the autogiro pilot takes-off and flies his autogiro by tilting the axis of gyration with respect to the load. On reaching the destination, the towing cable would be released and the Gyro-Glider would be flown and landed by its pilot. That is a brief description of the proposed construction and operation of the Gyro-Glider.

The first question, of course, is - will it work? Although I have made a partially successful small model, I have not made a full scale Gyro-Glider. However, analytically it appears feasible. Autogiros, of course, are an accomplished fact, and fly every day. They can land with the engine running and propeller turning, or they can land with the engine and propeller stalled. If, while in the air, we then imagine that the engine and propeller of an autogiro are changed to an equivalent static load, we have in effect a Gyro-Glider, which can be piloted and landed like an autogiro with engine stalled. But, can it be towed behind an airplane, and will it rise into the air with an airplane? The answer appears to be 'yes'. There are in the field now minature captive autogiros used by youngsters as kites. These small autogiro kites have been flown by youngsters like any other kite with cable or string from a standstill or while walking or running. It appears logical, therefore, that the Gyro-Glider is oretically and practically sound.

Enlarging on the Gyro-Glider principle, I have illustrated in Figure 1 the tremendous load carrying capacity inherent in a modified Gyro-Glider. Although theoretically the load that a simple Gyro-Glider could carry would depend on the size or diameter of the rotor, practically, mechanical considerations would limit the size of the rotor. With this limitation in mind, I show in Figure 1 a battery of mechanically effective rotors, mounted on a suitable frame. The sketch is only diagramatic to show the general principle of using multiple rotors to increase the load carrying capacity of a Gyro-Glider. The rotors would be mounted so as to permit independent autogyration and would all provide accumulative support for the load. Suitable steering linkage and mechanism would be incorporated to permit the tilting of the axis of gyration with respect to the frame or load. A Gyro-Glider built in accordance with the above general design could carry enormous loads.

Now let us see how the Gyro-Gliders would be used in an air envelopment.

Disregarding the role that the Air Force would play in support of an air envelopment, the actual attack would start with the landing of

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parachute troops. Accompanying the parachute attack would come small Gyro-Gliders carrying machine guns, set up for action, with ammunition and manned by gun crews. In the air the crews would select suitable gun positions, pilot the Gyro-Gliders as near as possible to the selected positions, and on landing would be ready for immediate action.

Larger Gyro-Gliders would land small groups of Infantry soldiers. These small fighting units, coordinated under non-commissioned officers, and officers, would be available for concentrated attacks on points which held up the parachute troops. In support of the Infantry would come Gyro-Gliders carrying anti-tank guns, mounted ready for instant action with ammunition and gun crews for use against enemy mechanized counter-attacks. Then would come still larger Gyro-Gliders carrying scout cars, armored vehicles, motorcycle troops, and weapon-carrying cars. These would be reinforced by artillery, light transportation, light tanks, and supplies. In this way powerful combat teams supported by heavy weapons and equipment would literally come down from the sky.

As I visualize it, the Gyro-Glider would be particularly suited for carrying the necessary troops, weapons and equipment to support an envelopment from the air. It could be towed behind an airplane to the general locality for attack and there released to land in support of parachute troops. Embodying the basic principles of the autogiro, it could be landed in small clearings, on roads, or practically anywhere that it could slip into. Unlike attacks by air borne troops and gliders, there would be no need for airfields on which to land. The Gyro-Glider would be independent of landing fields. It would be extremely simple in construction, amounting in effect to two rotor blades mounted on a suitable axis on a light load carrying frame. The load carrying capacity could, as has been pointed out above, be increased by increasing the size of the rotors or adding additional rotors or banks of rotors. In an attacke the Gyro-Glider would have another important advantage in that the gun or equipment that was transported could readily rid itself of the Gyro-Glider. In other words, the simple, inexpensive, load carrying shell - the Gyro-Glider - could be readily shed by the gun or troops which it just landed. The autogiro could also perform all the above discussed missions, but being much more complex in construction, it does not lend itself to the production of numbers required in all out air envelopment.

After a careful study of the problem of adequate support for an air envelopment, and after limited experiments with model Gyro-Gliders, I feel that the Gyro-Glider principle deserves a thorough investigation. In the Gyro-Glider, I believe is the means of expanding and developing this new theory of warfare --envelopment from the air.

s/Frank Kowalski, Jr.
FRANK KOWALSKI, JR.
Captain, QMC

Pine Camp, New York
August 24, 1941

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HEADQUARTERS ARMY AIR FORCES

10/22

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DOD ltrs
8 Jan & 20 June 1974
By NNRC, DC, Date 10/18/74

File No. .....

Tally No. AAF .....

SUBJECT: Gyro-Glider.

259

NO.	FROM	TO	DATE	COMMENTS
1	AAF C/AS	OCAC (Mat.Div).	1941 10/21	AAF/A-4 LBB/mhh 1. Concurrence is requested ~~on~~ the attached memorandum for the Assistant Chief of Staff, G-3. 2. Please return this memorandum to A-4 Division of the Air Staff as soon as practicable. 1 Incl.- Memo for AC/S,G-3 w/5 incl. LBB C/AS
2.	O.C.A.C. (4-E-3)	C/AS AAF	1941 10-27	1. Proposed memorandum for the Assistant Chief of Staff, G-3, is concurred in. M. S. F. 1 Incl. n/c

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DOD Ltrs.
8 Jan. & 20 June 1974
By ALAS/IUK NG Date 10/15/76

AAF/A-4
LEE/mhh
(Written October 16, 1941)

MEMORANDUM FOR THE ASSISTANT CHIEF OF STAFF, G-4.

SUBJECT: Gyro-Glider.

1. Comments on the technical questions involved in the attached letter describing a gyro-glider for transporting and landing airborne troops and equipment are as follows:

a. The idea of transporting and landing troops and equipment in a gyro-glider is practicable. (For further information see Tab A).

b. A gyro-glider would be a less efficient means of transporting and landing troops and equipment than (1) the transport airplane and parachutes, (2) gliders. (For further information see Tab B).

Incls.-
Tab A
Tab B
Memo for C/AAF 9/25/41 w/
Memo for Ch.Plan Br.9/15/41 w/
Ltr.fr.18th QM Bn.9/10/41& 3 Incls.-
Gyro-Glider, Sketch, 3 photos.

COPY FOR:
AIR ADJUTANT GENERAL

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8 Jan. & 20 June 1974
By KLM/LK LC; Date 10/18/76

TAB A

Discussion on Practicability of Gyro-Glider

From the knowledge gained from the designing and building of auto-gyros it is safe to say that it would be possible to design and build a troop carrying gyro-glider which could be taken off and towed behind an airplane, then released by the pilot of the gyro-glider and landed in a limited area such as a small field.

However, quite aside from the considerations of efficiency (which are discussed in Tab B) the objections to such a scheme are considerable. They are as follows:

1. A rotating wing aircraft is a more complex piece of equipment than a fixed wing aircraft. Therefore the development of gyro-gliders would be very costly and take too long for present considerations.

2. Training of pilots for gyro-gliders would take longer and be more costly than for gliders (glider piloting is fundamentally the same as airplane piloting).

3. There would be very serious complications and delays in getting the motors up to speed before towed take off. (This could not be done by slipstream of towplane, as suggested, particularly if a train of gyro-gliders was towed.

4. There would be greater danger in possible collision of two gyro-gliders towed beside each other through turbulent air at night. (Colliding motor blades would mean loss of both ships and break-up of the train whereas gliders could brush wing tips without mishap).

5. There would be very serious complications about attachment of towlines,(while accelerating the line of pull would have to be from center of gravity - necessarily low in a gyro-glider - and when up to speed at the center of drag, which is higher).

To sum up, these objections are sufficient to conclude that a gyro-glider would be definitely inferior to a glider from the standpoint of practicability.

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8 Jan. & 20 June 1974
By ACNTUS, OC, Date 10/16/74
PAR B

Discussion of Efficiency of Gyro-Glider

The objections to the use of gyro-gliders as compared to gliders on a basis of efficiency are as follows:

1. Considering higher drag for load carried, making it impossible to tow a train of gyro-gliders at the same speed with the same power expended as a train of gliders of equal capacity.

2. Low gliding ratio of about 6. (A high gliding ratio of 15 to 20 is one of the great advantages of the glider which can be released many miles from the objective).

Possible advantages of the gyro-glider would be:

1. Ability to land nearly vertically in total darkness without injuring occupants or damaging equipment even if landed in trees. (Yet if a rotor should strike a pole or other high obstruction, the resulting fall would be sufficient to cause fatalities).

2. Ability to land in smaller and more restricted areas and therefore possibly closer to the objective. (Small gliders have been crash landed in trees without injury to the pilots. This could conceivably be done in case of emergency with large troop carrying gliders stalling in at 35-40 mph air speed at night).

The point made by the proponent of the gyro-glider that the use of gliders is predicated on the previous occupation of suitable airfields is based on a misconception. Gliders, even large troop carrying types, can be brought down and landed in small, rough fields due to their ability to be dived in steeply without excessive speed (through the use of dive brakes) and come to a stop without overturning in a very short distance (due to design of landing skid).

Since the idea of multiple rotors for the gyro-glider seems impracticable, the diameter of a single rotor of a large troop carrying gyro-glider would be too large to permit landings on the average road with telephone lines or other obstructions on either side. The margin of possible advantage of the gyro-glider over the glider in landing in limited areas would therefore seem to be small.

To sum up, the objections are sufficient to outweigh the possible advantages so that it can be concluded that a gyro-glider would be definitely inferior to a glider from the standpoint of efficiency.

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Gliders - Report No. BES - 210

AAF/A-2
GCMcD-eh

1	AAF A-2	OCAC Intel.	1941 9/17	1. It is desired that the Military Intelligence Division, War Department General Staff, Report No. BES - 210, August 8, 1941 subject: "Gliders", be transmitted without delay to Major Chidlaw in the Materiel Division, Office Chief of Air Corps.

M. F. S.
C/A-2

45.2.44 Gliders (9)

HEADQUARTERS ARMY AIR FORCES - COORDINATION

Chief of Staff	Secy Air Staff	A.A.G.	A-1	A-2	A-3	A-4	A- WPD	A. Insp.	Budget	Statistics	
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8 Jan. & 20 June 1974
By ACL/NAC, NC, Date 10/18/76

AAF/A-4
LBB

SEP 27 1941

Dr. Karl D. Wood,
Professor of Aeronautical Engineering,
Purdue University,
Lafayette, Indiana.

Dear Professor Wood:

Thank you for your letter of September 11th. It is very fine of you to make such a contribution to our experimental work on the troop carrying gliders. Your technical report will undoubtedly prove valuable to Major Dent and others charged with the development of this program.

It is noted with interest that you will be available now and then for consultation on these problems. We will keep this in mind and appreciate very much the spirit of cooperation of the University Authorities.

It is hoped that you may be able to arrange with the National Advisory Committee of Aeronautics for a suitable airplane for the tests of towing a light airplane less propeller.

Thanking you again for your splendid contribution to our National Defense, I am

Sincerely yours,

mhh

H. H. ARNOLD
Major General, U.S.A.
Chief of the Army Air Forces

Copy for:
Gen. Arnold
Rm. 2018

Dispatched
SEP 29 1941
AAG

452.4 Gliders (8)

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PURDUE UNIVERSITY
School of Mechanical Engineering
Lafayette, Indiana
September 11, 1941

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DOD Ltr
8 Jan. & 20 June 1974
By A(AD)/JC SC Date 10/18/74

General H. H. Arnold
Deputy Chief of Staff
Munitions Building
Washington, D. C.

Dear General Arnold:

My summer's work on troop carrying gliders has just been concluded with the submission of an Air Corps Technical Report which should reach you soon thru official channels. I believe I have made a contribution to this work thru my calculations, based on Army and NACA data, relating to take-off, performance, and stability of towed gliders including the problem of selection of suitable towing cables and shock absorbers.

I am writing to express my appreciation of the cordial cooperation of the technical staff at Wright Field, particularly of Major F. R. Dent and his assistants with whom I have been most closely associated, and to assure you of my desire to be of whatever further assistance I can in the development of this project and related projects.

Dean A. A. Potter, who directs my work at Purdue, advises me that while my teaching and research program is considered a full time job, he believes I can be spared for an occasional day or two of consulting work if needed, possibly as much as several days a month, and it is my desire to keep in as close touch as possible with the Army program of development of aircraft. If the Purdue University airport and laboratories can be of assistance in connection with your program, I am sure that the University authorities will be pleased to cooperate to the fullest possible extent. Development work on contract can probably be arranged.

Mr. S. Paul Johnston of the NACA advises me that our research contract on propeller efficiency of light airplanes in flight has been definitely approved, and we hope that an Army observation airplane can be assigned early this fall to cooperate on the related tests involving towing of the light airplane without propeller behind the Army ship. My studies this summer should enhance our safety in this enterprise as well as our prospects of getting some significant data on towing cable loads as well as airplane drag.

Very truly yours,
s/Karl D. Wood
Karl D. Wood, Professor of
Aeronautical Engineering

KDW/GP

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8 Jan & 20 June 1974
By NNIA, NC, Date 10/18/76

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Tally No. AAF/ _____

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Subject: Glider Training

NO.	FROM	TO	DATE	COMMENTS AAF/A-3 ECK/aea
1	Ch., Air Staff	Ch., Air Corps	1941 8/22	1. As a result of an inquiry by this headquarters as to the size of gliders desired by the ground arms, the following recommendation has been made by the A. C. of S., G-3: With reference to the size of glider to be provided, it is recommended that each have a capacity of fourteen men, exclusive of the pilot. This will provide for the transportation of one complete rifle squad plus two men in each glider to build up the platoon, company and battalion headquarters. The equipment of each infantry rifleman weighs 54 pounds and it is necessary that whatever the size of the glider which is constructed, provision should be made for carrying this amount of equipment for each soldier. This weight includes ammunition. In the event that a glider of this size cannot be constructed, the minimum size recommended is eight, exclusive of pilot. A glider of this size can accommodate the machine gun squad which consists of from five to eight men. 2. The above recommendation should be considered in the future development of gliders. G. S. Chief, Air Staff
2	Exec	(1) T+O (2) Mat Div	8/26/	To T+O for information + to forward to Mat. Div for necessary action. H.H.A.
3	T & O (3B-50) eas	Materiel Div.	1941 8/28	1. Comment No. 1 above noted. G. E. S., Brig. Gen., A. C., Chief, T & O Division

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OFFICE OF THE CHIEF OF THE AIR CORPS

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ROUTING AND RECORD SHEET

(To be filed with correspondence)

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SUBJECT: Glider Training

NO.	FROM	TO	DATE	DATA
4.	Materiel Division	1. T. & O. 2. Executive 3. Ch., Air Staff thru OCAC	1941 9-3	1. The Air Corps has contracted for the procurement of four 8-place gliders (8 including the pilot) the delivery of the first unit scheduled for October 15, 1941 and the fourth unit December 30, 1941. Also, contracts have been let for the procurement of four 15-place gliders (15 including the pilot), the delivery of which range from December 15, 1941 to March 1, 1942. The design of the above gliders provides for a carrying capacity of approximately 250 pounds per man. This weight per man is intended to be equal to the weight of an average man plus approximately 80 pounds of equipment per man. 2. The recommendations contained in the first indorsement of this R. & R., from Chief of Air Staff to Chief, Air Corps, are being forwarded to Wright Field, in order that these considerations may be kept in mind in connection with future glider procurement. T.D.O. O.P.E. Chief, Materiel Division

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File No.

Tally No. AAF

Subject: Glider Training

O.	FROM	TO	DATE	COMMENTS 3B-50/az
5.	Chief of Air Corps	Chief of Army Air F.	1941 9/9	1. Contents of Comment #4 noted. 2. It is believed that much delay and changes can be avoided in the construction of troop-carrying gliders if the following information reference the equipment to be carried with the air-borne troops is furnished: Types of equipment Weight Dimensions Shape How carried - that is, on the individual, on a rack, in containers, etc? For H. S. F. Brig. General, A.C. Executive.
6	AAF C/AS	C/AC	12/19	AAF/A-4 LBB/emd 1. Referring to paragraph 2 of No. 5 above, it is requested that this information be secured directly from the Chief of Infantry. 2. The attached copy of a report on equipment to be carried by air-borne ground forces is the latest information this office has at hand. 3. The present tentative Army Glider Program calls for the carrying of one division by transport planes and gliders at the earliest practicable date. 4. It is suggested that the most practical method for determining the placing and attachment of (Continued)

Hq. Army Air Forces DEC 1941 AAG Received

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HEADQUARTERS ARMY AIR FORCES

ROUTING AND RECORD SHEET

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Tally No. AAF

SUBJECT: Glider Training.

NO	FROM	TO	DATE	COMMENTS
				AAF/A-4 LBB/emd
6 (Cont)	AAF C/AS	C/AC	1941 12/19	the equipment to be carried in the transport gliders is to obtain samples of such equipment for the Glider Unit of the Experimental Engineering Section at Wright Field. Incls: Cy ltr frm Ft.Houston 11/30/40 w/Tabs A-1,2,3;b,w/Table; Tabs C & D.
7	C/AC	Mat Div	12/24	
8	Mat. Div. (4-E-3)	C/AS A-4	12/30 41.	1. Information referred to in Item No. 6 above, has been withdrawn and forwarded to Wright Field for information and necessary action. 2. It is anticipated that no difficulty will be encountered in carrying the type of equipment indicated in the referenced Board report inasmuch as this Division has already taken steps to incorporate provisions for carrying Air-Borne Task Force materiel in some of the gliders now contemplated. O. P. E. Chief, Materiel Division
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(Do not use reverse side) W-4071, AC. Rev. 8/14/41

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8 Jan. & 20 June 1974
By: AGM/R LC, Dwd 6/19/20

Glider Training

(handwritten)

2 Exec (1) T&O 8/26/
(2) Mat. 41
Div.

To T&O for information and to forward to Mat. Div. for necessary action.

s/ MWB

---

3. T&O
(3B-50) Mat. Div. 8/28
eas

1. Comment No. 1 above noted.

s/G. E. S.,
Brig. Gen., A.C.
Chief, T&O Division

---

4 Mat. Div. 1.T&O
2.Exec.
3.C/ASthru
4.OCAC

1. The Air Corps has contracted for the procurement of four 8-place gliders (8 including the pilot) the delivery of the first unit scheduled for October 15, 1941 and the fourth unit December 30, 1941. Also contracts have been let for the procurement of four 15-place gliders (15 including the pilot), the delivery of which range from December 15, 1941 to March 1, 1942. The design of the above gliders provides for a carrying capacity of approximately 250 pounds per man. This weight per man is intended to be equal to the weight of an average man plus approximately 80 pounds of equipment per man.

2. The recommendations contained in the first indorsement of this R&R, from Chief of Air Staff to Chief, Air Corps, are being forwarded to Wright Field, in order that these considerations may be kept in mind in connection with future glider procurement.

O. P. E.
Chief, Materiel Division

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Glider Training.

5. Chief of Air Corps — Chief of Army Air F. — 1941 9/9

1. Contents of Comment #4 noted.

2. It is believed that much delay and changes can be avoided in the construction of troop-carrying gliders if the following information reference the equipment to be carried with the air-borne troops is furnished:

Types of equipment
Weight
Dimensions
Shape
How carried - that is, on the individual, on a rack, in containers, etc?

M. S. F.
Brig. General, A.C.
Executive

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By ACMIC, IC, Date 10/18/76

Glider Training

4.	Materiel Division	1. T. & O. 2. Executive 3. Ch., Air Staff thru OCAC	1941 9-3	1. The Air Corps has contracted for the procurement of four 8-place gliders (8 including the pilot) the delivery of the first unit scheduled for October 15, 1941 and the fourth unit December 30, 1941. Also, contracts have been left for the procurement of four 15-place gliders (15 including the pilot), the delivery of which range from December 15, 1941 to March 1, 1942. The design of the above gliders provides for a carrying capacity of approximately 250 pounds per man. This weight per man is intended to be equal to the weight of an average man plus approximately 80 pounds of equipment per man. RRG:bml 2. The recommendations contained in [illegible] indorsement of this R. & R., from Chief of Air Staff to Chief, Air Corps, are being forwarded to Wright Field, in order that these considerations may be kept in mind in connection with future glider procurement. O.P.R. Chief, Materiel Division

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QQZX

Fort Sam Houston, Texas
November 30,1940

Subject: Air Landing Forces

To: Commanding General, 2nd Division
Fort Sam Houston, Texas

1. Pursuant to your informal instructions the Board of Officers consisting of:

Brigadier General W. N. Simpson, U. S. A.
Lt. Colonel W. M. Robertson, 9th Infantry
Lt. Colonel J. C. Short, G.S.C.

met at various times during the period October 18,1940 and November 30, 1940. Various types transport and bombardment planes were examined and test loadings were conducted on the B-18 and C-39. The various factors involved and discussed below:

2. a. Personnel to be transported:
Tab A-1, which is self explanatory, shows:
(1) Personnel of an Infantry Battalion which should be transported by air and personnel which should be left behind. Figures are based upon premises stated in par. 3 of Immediate Action letter, AGO 320.2 (8-12-40) M-C, subject: "Air Landing Forces", dated September 21,1940 and Tables of Organization dated October 1,1940.

(2) Tab A-2. Personnel for command echelon (regimental or higher headquarters) of more than one Infantry Battalion, if required. This personnel is limited to that needed for a regiment as it is believed that such an echelon will also provide temporarily for any higher commander who may be present with the task force. There is also included data for the Anti-Tank Company which under many situations would be an essential element for a task force even the size of an Infantry Battalion.

(3) Tab A-3. Personnel of supporting arms and services:
Under the premises stated for a task force the size of a regiment it is the opinion of the Board that supporting arms and services would not be required, except to meet special needs. Possible requirements are shown in Tab A-3. While Tab A shows in considerable detail personnel to be transported the Board is of the opinion that a detail breakdown such as shown in Tab A and B is not only unnecessary, but is in fact undesirable for general publication because:

-1-

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(1) Tables of Organization undergo frequent changes.
(2) Actual field strengths and organization will rarely be in accord with Tables of Organization.

Leeway should be left for the constitution of each task force in accordance with specific needs.

b. Loadings:

The Board desires to emphasize that the loadings for air transport of infantry except for the Anti-Tank Company present fundamentally no different nor more difficult problems than the entrucking of similar units for a tactical movement by motor transport. Two requirements must be met in each instance, i.e. utilizing to the full weight capacity of the airship and at the same time so far aspossible maintaining the tactical integrity of each shipload. Both of these are practical field problems. Field approximations in weight will normally provide sufficiently accurate data as to weight capacities. Weight rather than cubic dimensions for elements of an infantry regiment is the controlling factor in transport planes, but cubic capacity is the limiting factor in the B-18. As to maintaining the tactical integrity of unit loads, the Board believes that this should be left to the field commander of the task force for reasons stated in par. 2 a (3) above, and for the added reason that the capacities of airships in the required quantity even for the transport of a battalion of infantry will not be uniform - in fact may be expected to vary between wide limits. Standardized loadings would therefore be academic and even if published would at best provide only a rough guide for field commanders. Various combinations of data shown in Tab C indicate the ease with which loadings may be effected for any given ship capacity.

the 37 mm Anti-Tank gun (weight 950 lbs.) presents somewhat of a problem in loading. This weapon with the pintle detached can be loaded into or unloaded from a C-39 transport in about five (5) minutes. The fit is very close for rapid handling as there is less than 6 inches of clearance for this type of ship. The gun can be much more easily loaded with the trail detached, but the gun is not well designed for rapid reassembly and requires about 15 minutes to accomplish. This is due apparently to unnecessary engineering precision in the pinions joining the trails to the cradle to the axle. The gun, crew, and a reasonable quantity of ammunition comprise one shipload with some space and weight capacity left available for other personnel and cargo.

2. a Equipment and supplies to be transported:

In general the amount of equipment and supplies to be transported will vary appreciably in accordance with each specific situation. As an example the figures shown in Tab B provide for a war strength battalion of infantry capable of somewhat limited combat action for a twenty-four hour period. Data for units other than an infantry battalion included in Tabs C and D was similarly computed. The several factors are discussed below:

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(1) Personnel and individual equipment. As can be seen in the consolidation of Tab B a large part (87.4%) of the cargo capacity is required for personnel. Two figures only are believed to be required as basic data for personnel, i. e.

(a) Average weight of an enlisted man with light marching pack, armed with rifle, 40 pounds of ammunition and 1 emergency ration - 210 pounds.

(b) Average weight of officer and enlisted man, same as above except armed with pistol - 190 pounds.

Overhead should be held to the minimum, but is not unduly important since every man transported is in fact capable of combat. In the last analysis therefore the problem will revolve itself in to the question of how many men are required and can be transported by air. Their detailed composition and organization can then be determined.

(2) Organization equipment. This is fairly uniform for type combat units. Combat units can readily complie these figures. However the basic data shown in Tabs D and C would be of material assistance to them. Headquarters, Signal and Medical equipment (Tab B) require relatively little cargo capacity. These will vary for each situation. The basic figures shown provide a guide only.

(3) Ammunition. This item readily runs into very considerable weight, and like the personnel problem, requirements should be carefully studied for each operation. Subsequent supply will be the controlling factor. Conditions being known, basic data shown in Tab D will provide ready means for computations of weight.

(4) General Supplies. Rations and water may be required either initially or for early subsequent supply. The specific situation will determine this requirement. Concentrated foods or emergency rations are particularily suited for this type of operation. A limited amount of general purpose tools are included. Their mimimum weight is relatively small.

4. The airplane load (capacity) will vary with the type and usable capacity of airships, the number of each type available for a specific operation, and the length of the trip. For example: the capacity load of a bombardment airplane cannot be fully used due to interior arrangement of the fuselage and will vary materially as between types of bombardment airplanes. The B-18 by overcrowding can carry about the same air infantry load as the C-39 except for the 37 mm anti-tank units.

The number of Army transport planes now in service are inadequate to move even 1 battalion of infantry. In the event that air landing operations of any magnitude are to be undertaken in the near future recourse will probably have to be made to commercial passenger ships, which vary materially as to cargo capacity.

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Even if absolutely uniform ships were to be provided for air landing operations, their loads would vary for length of trip (gas load) and character of landing and take off fields. For example the standard transport plane C-39 varies its cargo between 3200 - 4000 pounds according to the above conditions. The board is of the opinion therefore that no attempt should be made by the W.D. to attempt to set up standardized loadings. With the aid of simple basic data, field commanders need experience no difficulty in making up proper loads after receiving full data as to the type operation projected and facilities for and airships to be placed at their disposition. Referring to weights of small units(Tab C) it will be seen, for example, that the C-39 , no difficulty need be experienced in affecting tactical unit loads for the minimum (3200), maximum(4000), or intermediate load of the ship. Where tactical units do not fully maximize utilize the full authorized ship capacity, individuals from Headquarters units and detachments and cargo can be filled in. The problem is simplified when it is recalled that 87.4% by weight of the infantry battalion is personnel.

2. a. Summary of the attached tables.
(1) The detailed data shown in Tab A and B are included in this report in order to show:
(a) the composition in men and material of the units for which test loadings were conducted.
(b) To indicate the method by which the Board arrived at the weights of the units listed in Tab C.
(c) To assist the Board in arriving at a conclusion as to what data should be set up as basic maximum data.
(2) Tab C is a tabulation of the eights of units computed from Tabs A and B for the Infantry battalion. Weights of other units were similarly computed. Tab C might be of value to higher commanders and their staffs in making estimates in the large for projected air transport operations. Due to the many variable factors involved it is doubtful whether this table should be given even limited publication.
(3) Tab D is a tabulation of those items which the Board believes should be included as basic data and which should be given such publication as the W.D. may deem expedient. Much of this data is available to field units but publication of a consolidated sheet would be a time saver and would tend toward uniform maximum computations. (4) Tab E is a sub-report on the practicability of transport by air of the 75 mm field gun.
(5) Tab F contains photographs of some of the test loading conducted by the board.

3. The answers to the questions outlined in paragraph 2 basic communication are submitted ad seriatum below:

a. An infantry battalion and attached units consisting of 31 officers

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and 838 enlisted men (combat elements only) will require approximately 50 transport planes of the C-39 type using the maximum load of 4000 pounds and 63 such planes using the minimum load of 3200 pounds. The bombardment airplane of the B-18 type (only type available to the board) is uneconomical for air transport of infantry due to lack of usable cubic capacity. By overcrowding it can take all infantry loads except the 37 mm gun about on a par with the C-39 transport plane. Personnal to be transported is shown in detail in Tab A-1. It consists essentially of command, communication and combat individuals. Practically all motor transport and rear echelon elements should be left behind. Some motor personnel should be included if there is a possibility of requisitioning or capturing motor equipment upon landing. All combat equipment should be transported together with sufficient ammunition for the specific operation planned. In general about 50% of ammunition now carried in the infantry regiment is believed to be a fair estimate for the type operation outlined.

Detailed loading will be subject to so many variables that it is not deemed practical to set up standardized loadings. This detail can and should be left to the discretion of the task commander.

b. If more than one infantry battalion is required a maximum of eight officers and 81 enlisted men from the regimental Headquarters and Headquarters Company will be required for commandand communication purposes. This group will provide necessary personnel for a headquarters higher than that of a regiment if such a headquarters is required. It may be considerably reduced depending on the task projected. As set up this headquarters will require about 6 airplanes of the C-39 type with maximum loadings.

Anti-tank units will be essential in many situations even with an infantry battalion. A single 37 mm gun, crew and ammunition requires 1 C-39 transport and the Anti-Tank Company(12 guns, 5 officers, 125 enlisted men) requires 13 C-39 transports.

g. The air transport, in any present type of military aircraft, of the 75 mm field gun is impracticable (see Tab E).

d. The most probable supporting services which may be required by a task force are:

(1) Detachment Signal Corps from Division Signal Company, equipped for long range and air ground communications. It would be most advantageous to include such a detachment with any task force. A suitable detachment consisting of one officer, 5 enlisted men and 2 SCR 177 radio sets(weight 3500) will require 1 transport plane.

(2) Enginner Troops equipped for demolition, repair, or construction of obstacles in many situations would be essential. The size and equipment of such a detachment would depend entirely upon the operation projected and should not be included unless its need is definitely foreseen. A suitable component would be a platoon (1 officer, 41 enlisted men) for an infantry battalion weighing with suitable equipment about 10,610 pounds and requiring about three cargo ships of the C-39 type. (See Tab A-3 and C)

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4. Operational Procedure.

The Board is of the definite opinion that standardized operational procedure is not practicable due to the many variables involved. Nor is it believed that it is desirable as the air transport of infantry is a relatively simple problem, which in its major aspects parallels motor movements.

The normal procedure therefore in effecting transport movements should be to inform the field commander of the task, together with all available information relative thereto, including particularily the number type and capacities of airships to be placed at his disposal; the loading and landing fields available; and his military objective; and then delegate to him the composition of the task force, its organization, order of movement, detail loadings and other similar matters.

5. Basic Data.

Basic data particularily for infantry elements is essentially a compilation of unit weights. The Board has listed those believed to be most useful in Tab D. Much of this information is available to field units. A compiled list would be useful to field commanders and their staffs. In addition for higher commanders and their staffs the data shown in Tab C would be very useful, in planning operations in the large. In the last analysis air transport operations must be based on wieights involvedp and all decisions involved in planning and execution must fully recognise this fact.

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TAB A-1

INFANTRY BATTALION AND DETACHMENTS

Organization	Personnel to be transported by air		Personnel to remain	
	Officers	Men	Officers	Men
Bn Hq and Hq Det	4	25		23 (a)
Com Sec	1	12		5 (b)
Medical Sec	2	20		7 (c)
Rifle Company	6 x 3	203 plus 2 Med		14 (d)
Heavy Weapons Company	6	164 plus 2 Med		41 (e)
Aggregate	31	838		118

(a) Includes: 1 clerk Hqs; 2 clerks, record; 14 ammunition carriers; 6 chauffers. - Total 23.

(b) Arbitrary reduction of 5 enlisted men.

(c) Includes: 1 motorcycle chauffer and 6 privates. - Total 7

(d) Includes: 1 Sgt., Mess; 1Sgt, Supply; 1 corporal, clerk; 1 corporal, transport; 1 armorer; 2 chauffers; 7 cooks and cooks helpers. - Total 14.

(e) Includes: 1 Sgt., Mess; 1 Sgt., Supply; 1 Sgt., Transport; 1 corporal, clerk; 4 corporals, transport; 23 chauffers; 7 cooks and cooks helpers; 1 moter mechanic; 2 armorers- Total 41

(f) Company aid men accompany the companies to which normally attached.

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TAB A-2

COMMAND ECHELON INFANTRY REGIMENT AND ANTI-TANK CO.

Organization	Personnel to be transported by air		Personnel to remain	
	Officers	Men	Officers	Men
Anti-Tank Company	5	125		50 (a)
Regimental Hq and Hq Co	8	81		35 (b)
Aggregate	13	206		85

(a) Includes: Supply, Transport, Mess Sgts. (3); 33 chauffeurs and motorcyclists; 3 transport corporals; 3 mechanics; 1 corporal, clerk; Total 50.

(b) Includes: 3 Sgts. (mess, Supply, Transport); 1 Corporal, clerk; 1 Art.; Bugler; 16 chauffeurs; 7 cooks and helpers; 2 motor mechanics; 4 basics. - Total 35.

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TAB A-3

SUPPORTING ARMS AND SERVICES

	Personnel to be transported by air		Personnel to remain	
	Officers	Men	Officers	Men
Signal Corps. Det. from Div. (Equipped with two SCR-177 sets, Radio)	1	5		
Engineers:				
Operating Unit (Squad)		13		1 (a)
Platoon (To accompany Inf. Bn)	1	41		7 (b)
Company (To accompany Inf. Regt.)	4	132		44 (c)
Aggregate	6	191		52

(a) One chauffeur

(b) Five chauffeurs; 1 motorcyclist; and 1 tool Sgt.corporal.

(c) Includes: 1 Staff Sgt. (motor); 1 Sgt., mechanic; 1 Sgt., Mess; 1 Sgt, Supply; 1 corporal, clerk; 2 Auto mechanics; 5 chauffeurs; 7 cooks and helpers; 1 motorcyclist; 1 operator (compressor); 1 Store keeper and tractor driver.

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TAB B Infantry Battalion and Detachments

1	2	3	4	Rounds per organization 5	6	7	8	9
No.		Lbs per item	Basis	T/O 7-16 10-1-40 Bn Hq Det	T/O 7-12 10-1-40 Com Sec	T/O 727 3-1-40 Med Sec	T/O 7-17 10-1-40 Rifle Co	T/O 7-18 10-1-40 Hvy Wp Co.
286	Off. & Nal. Man (Pistol)	190	Includes light pack: pistol, ammo, 1 ration	(9) 1710	(13) 2470	(22) 4180	(84) 10,260	(188) 20,210
505	Nal. Man (rifle)	210	Incl. light pack 40: rnds. ammo & 1 ration	(20) 4200			(157) 32,770	(14) 2,940
505	Extra Ammunition	4.2	1 bandolier, 60 rnds per rifle	84'			628	59
	Reserve Ration	1.75	Not required on initial trip					
44	Cans, water 10 gal.	106	1 gal. per man if required	(3) 318	(1) 106	(2) 212	(21) 2,226	(17) 1,802
	Ordnance Equipment and Ammunition							
8	MG Br. Cal..30 complete	137						1068
96	Chests, Cal..30 MG ammo.	20	250 rounds per cht: 12 chests per gun					1920
4	MG Br. Cal..50 complete	124						496
40	Chest, Cal..50 MG ammo.	35	100 rounds per cht: 10 chests per gun					1400
4	Mortars, 81-mm complete	138						552
240	Rounds, 81-mm Mortar ammunition (light)	7.5	60 rounds per mortar					1800
80	Rounds, 81-mm Mortar ammunition (heavy)	16	20 rounds per mortar					1280
32	Rifle, Auto Br. Cal. .30 M-1918 A-2	18.7	8 per Hvy Wp Co. 8 per Rifle Co.			8	150	150
32	Arm. for Auto-rifle	4.2	5 bandoliers (300 rds per rifle)				168	168
6	MG Light, complete	50					100	
72	Chest, Cal..30 MG ammunition (light)	20	12 chests per gun 250 rnds per chest				480	

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Tab B (Cont'd.)

9	Mortars, 60-mm complete	40	3 per Rifle Co.				120		
							788		
675	Rnds 60-mm mortar amm.	3.5	75 rnds per weapon				263.x3		
6	Projectors, Ground Sig.	4.2		4.	4.		4.		4.
150	Signals, gr. asstd.	.175	25 per unit	25.	25.		25.		25.
9	Pistols, Very	2.5					5.		
225	Cartridges, Very asstd.	.12					5.		

QM Equipment

10	Axes, handled	4	2 per unit		1	8	8		8
6	Bags, Water Sterilized	16.75	1 per unit	17		17	17		17
12	Picks, handled	6	2 per unit	12		12	12		12
12	Shovels, gen. purpose	4.5		9		9	9		9

Medical Equipment

2	Buckets, canvas					4			
2	Chests, MD (99280)	121				242			
1	Chest, MD (99281)	150				150			
12	Litters	15				180			
2	Sets, splints	50				100			
2	Sets, blankets	138				276			
2	Sets, lantern	30				60			

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Consolidation of above Table by Organization and Type (lbs)

	Bn Hq Det	Comm. Sec.	Med. Sec.	Rifle Co.	Hvy Wp Co.	Total for Bn	% of Whole (lbs)
Personnel & Ind. Equipment	8910	2470	4180	43.030	33.180	174.800	87.4%
Organization Equipment				370	2.266	3.276	1.4%
Ammunition	84			2.084	6.568	12.554	6.1%
Quartermaster Equipment	38		46	46	46	268	
Medical Equipment			1.012			1.012	.4%
Signal Equipment	29	780		42	29	944	.3%
Water	318	106	212	2.226	1.802	9.116	4.3%
Total Weights by Unit	6,379	3,336	5,450	47,778 x 3 = 143,334	43,861	202,360	
Percent by Unit	3.0%	1.5%	2.5%	71.2%	21.8%		100%

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TAB C

Weights of Component Units

Rifle Company

Squad	2,570
Auto-rifle Squad	1,697
Rifle Platoon	11,491
Lt. MG Squad	1,190
Lt. MG Section	3,213
60 mm Mortar Squad	1,203
60 mm Mortar Section	4,442
Weapons Platoon	8,543

Heavy Weapons Company

30 Cal. MG Squad	1,707
30 Cal. MG Section	3,644
30 Cal. MG Platoon	9,046
81 mm Mortar Squad	2,238
81 mm Mortar Section	4,666
81 mm Mortar Platoon	11,042
50 Cal MG Squad	1,804
50 Cal MG Section	3,838
50 Cal.MG Platoon	9,220

The above weights will remain fairly uniform except that it may be advisable to increase ammunition above, which provide: 100 rounds per rifleman; 300 rounds per Auto-rifle; 5000 rounds per 30 Cal. MGs; 1000 rounds per 50 cal. MG; 75 rounds per 60 mm Mortar; and 80 rounds per 81 mm Mortar.

Infantry Battalion Units

Bn Hq.	6,379
Comm. Sec.	3,336
Med. Sec.	5,450
Rifle Co.	47,014
Hvy Sp. Co.	43,861

Infantry Regt'l Units

Anti-Tank Co. (37 mm)	
Squad	2,238
Section	4,676
Platoon	12,848
Company	42,193
Regt'l xxxx Hq. and Hq. Co.	20,924

Supporting Arms and Services

Det. from Div. Sig. Co. (includes 2 SCR 177 sets)	3,480
1 Engineer Squad	3,279
1 Engineer Platoon	10,610
1 Engineer Company	33,796

(Above weights include reasonable quantities of Engineer equipment and supplies)

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TAB D - Basic Data

1 Officer and Enlisted man (pistol) individual equip. 1 rations	190 lbs
1 Enlisted man (rifle) individual equipment, 1 ration	210 lbs
1 Reserve ration	1.7 lbs
1 Water can (16 gallons)	106 lbs

Weapons

1 Auto-rifle	18.7 lbs
1 30 Lt. Cal. MG complete	30.0 lbs
1 30 Cal. Hvy MG cpl.	137.0 lbs
1 50 Cal. MG complete	124.0 lbs
1 60 mm Mortar cpl.	40.0 lbs
1 88 mm Mortar cpl.	138.0 lbs
1 37 mm (Anti-Tank)	950.0 lbs

Ammunition

1 Bandolier Cal. 130, 60 rnds	4.2 lbs
1 Chest 30 Cal. MG, 250 rnds	30.0 lbs
1 Chest 50 Cal. MG, 100 rnds	35.0 lbs
1 Round 60 mm Mortar	3.5 lbs
1 Round 81 mm Mortar, light	7.5 lbs
1 Round 81 mm Mortar, heavy	16.0 lbs
1 Round 37 mm	3.6 lbs

For a rough estimate of infantry armed, equipped and supplied for limited combat operation for a twenty-four hour period use a weight of 235 lbs per man

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By AGO/ltr. NO. Date 10 Jan 75

Glider Training.

AAF/A-4
LBB/emd

AAF C/AS — C/AC — 12/19

1. Referring to paragraph 2 of No. 5 above, it is requested that this information be secured directly from the Chief of Infantry.

2. The attached copy of a report on equipment to be carried by air-borne ground forces is the latest information this office has at hand.

Attached
DEC 24 1941
AAG

3. The present tentative Army Glider Program calls for the carrying of one division by transport planes and gliders at the earliest practicable date.

4. It is suggested that the most practical method for determining the placing and attachment of

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8 Jan. & 29 June 1973
By RLN/LLGC Date 10/18/76

Glider Training.

AAF/A-4
LBB/cmd

6 (Cont)	AAF C/AS	C/AC	1941 12/19	**the equipment to be carried in the transport gliders is to obtain samples of such equipment for the Glider Unit of the Experimental Engineering Section at Wright Field.**

Incls:
Cy ltr frm Fort Houston, 11/30/40
w/Tabs A-1,2,3; w/Table;
Tabs C & D.

CS
C/AS

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By NNRK NC, Date 10/16/76

Glider Training

(handwritten)

2 Exec (1) T&O 8/26/
(2) Mat. 41
Div.

To T&O for information and to forward to Mat. Div. for necessary action.

s/ MWB

---

3. T&O
(3B-50) Mat. Div. 8/28
eas

1. Comment No. 1 above noted.

s/G. E. S.,
Brig. Gen., A.C.
Chief, T&O Division

---

4 Mat. Div. 1.T&O
2.Exec.
3.C/ASthru
4.OCAC

1. The Air Corps has contracted for the procurement of four 8-place gliders (8 including the pilot) the delivery of the first unit scheduled for October 15, 1941 and the fourth unit December 30, 1941. Also contracts have been let for the procurement of four 15-place gliders (15 including the pilot), the delivery of which range from December 15, 1941 to March 1, 1942. The design of the above gliders provides for a carrying capacity of approximately 250 pounds per man. This weight per man is intended to be equal to the weight of an average man plus approximately 80 pounds of equipment per man.

2. The recommendations contained in the first indorsement of this R&R, from Chief of Air Staff to Chief, Air Corps, are being forwarded to Wright Field, in order that these considerations may be kept in mind in connection with future glider procurement.

O. P. E.
Chief, Materiel Division

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By NNRMC, NSC, State 10/8/76

Glider Training

3B-50/as

5.	Chief of Air Corps	Chief Air F.	1941 9/9

1. Contents of Comment #4 noted.

2. It is believed that much delay and changes can be avoided in the construction of troop-carrying gliders if the following information reference the equipment to be carried with the air-borne troops is furnished:

Types of equipment
Weight
Dimensions
Shape
How carried - that is, on the individual, on a rack, in containers, etc?

M. S. F.
Brig. General, A.C.
Executive.

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C-1742 TAG 9/9/41

air a/s 452 gliders (1) B

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NARS, Date 10/15/96

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Glider Training

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AAF/A-3
ECK/ecn

1 Ch., Air Staff — Ch., Air Corps — 1941 8/22

1. As a result of an inquiry by this headquarters as to the size of gliders desired by the ground arms, the following recommendation has been made by the A. C. of S., G-3:

> With reference to the size of glider to be provided, it is recommended that each have a capacity of fourteen men, exclusive of the pilot. This will provide for the transportation of one complete rifle squad plus two men in each glider to build up the platoon, company and battalion headquarters. The equipment of each infantry rifleman weighs 54 pounds and it is necessary that whatever the size of the glider which is constructed, provision should be made for carrying this amount of equipment for each soldier. This weight includes ammunition. In the event that a glider of this size cannot be constructed, the minimum size recommended is eight, exclusive of pilot. A glider of this size can accommodate the machine gun squad which consists of from five to eight men.

2. The above recommendation should be considered in the future development of gliders.

C. S.
Chief, Air Staff

4524 Gliders (1)

HEADQUARTERS ARMY AIR FORCES - COORDINATION											
Chief of Staff	Secy Air Staff	A.A.G.	A-1	A-2	A-3	A-4	A- WPD	A. Insp.	Budget	Statistics	
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AAF-39

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HENRY HARLEY ARNOLD

Box 129 Folder 7

MILITARY

Decimal

SAS 452.4 Gliders
(46-129)

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Military Characteristics of Gliders.

Secretary of Air Staff

15 APR 1945

1

AC/AS, OCAR

Major Hayes/ks/73830

The attached letter to the Commanding General, Army Ground Forces, subject as above, is forwarded for signature.

1 Atteach.
Ltr to CG, AGF, subj
as abv w/2 incls.

Signed
DONALD WILSON,
Major General, U. S. Army,
Asst. Chief of Air Staff,
Operations, Commitments & Requirements

SAS 452.1 Gliders (20)

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By Authority of The Commanding General Army Air Forces
24 Mar 45 Date
25 MAR 1945 Initials

~~SECRET~~

Glider Production After V-E Day

Secretary of the Air Staff

1

AC/AS, Operations, Commitments, & Requirements

Major Hayes/rl/72830

Forwarded for signature.

WILLIAM F. McKEE
Brigadier General, U.S.A.
Deputy, Asst. Chief of Air Staff,
Operations, Commitments and Requirements

1 Incl
Memo for Chief of Staff,
(S-4 Division)

COPY FOR [redacted] CHIEF OF AIR STAFF

SAS 452 Gliders (US)

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SAS 452 Gliders (US)

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Authority of
The Commanding General
Army Air Forces
24 Mar 45 ..... WHB ....
Date Initials

AFRET
Major Noyes/bc/73830
24 March 1945

3/27/45

AFRET

MEMORANDUM FOR CHIEF OF STAFF: (Attention: O-4 Division)

SUBJECT: Glider Production After V-E Day.

DISCUSSION

1. Production of gliders is being increased to approximately seven hundred twenty (720) (CG-4A/15A) per month in accordance with a directive from WDGS G-4 to the Commanding General, Army Air Forces, subject: "Glider Requirements", dated 25 November 1944. In addition, the production of five hundred (500) CG-10A gliders has been authorized in accordance with WDGS G-4 directive to the Commanding General, Army Air Forces, subject: "Procurement of CG-10A Gliders", dated 15 February 1945. An order for the first one hundred (100) of these has been placed. Production schedules of both types are attached as Tab "A".

2. At the present time, all gliders to be produced through August 1945 have been allocated to ETO. Shipping space is currently being made available by ETO for these gliders so that no backlog is piling up at ports or in storage.

3. CBI has stated that sufficient gliders are on hand for all currently planned operations. (CBAF 2496 CM-IN-29771 30 Jan 45) The War Dept has stated that sufficient gliders are on hand until August 1945 when a new statement of requirements will be submitted. (W 86977 CM-IN-28048 17 Mar 45) All evidence available to the Army Air Forces indicates that few if any gliders will be required by either of these theaters in the future.

4. It is assumed that no gliders will be required in ETO after V-E day. Gliders will therefore begin to accumulate in the United States at a rate of over seven hundred (700) per month from V-E day on.

RECOMMENDATION

That post V-E day glider requirements be reviewed and that this Headquarters be informed of such revised requirements so that appropriate action may be taken at that time.

DISPATCHED
27 MAR 194[illegible]
AFSAC

FOR THE COMMANDING GENERAL, ARMY AIR FORCES: Signed
PATRICK W. TIMBERLAKE
Brigadier General, U. S. Army
Acting Chief of the Air Staff

AFRET AFREQ AFOUR [illegible] [illegible] AFMEP

1 Attach.
Tab "A" - Prod. Sched.

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TAB "A"

PRODUCTION SCHEDULES of C-4A/15A and C-10A

1945

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year's Total
C-4A/15A Estimated	358	463	473	497	602	668	722	760	788	809	786	807	7534
Actual	285	337											
C-10A Estimated								1	1	1	5	12	20

1946

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year's Total
C-4A/15A Estimated	823	799	815	815	823	807	823	823	807	823	815	807	9780
C-10A Estimated	20	25	35	35	35	35	35	35	35	35	35	35	395

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Date Initials

25 MAR 1945

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Glider Production After V-E Day

Secretary of the Air Staff

AS/AS, Operations, Commitments, & Requirements **Major Hayes/rl/78830**

Forwarded for signature.

1 Incl
Memo for Chief of Staff,
(G-4 Division)

WILLIAM F. McKEE
Brigadier General, U.S.A.
Deputy, Asst. Chief of Air Staff,
Operations, Commitments and Requirements

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Glider Requirements Versus Production

The Secretary of Air Staff

23 MAR 1945

AC/AS, Materiel and Services

1

Major Hoyt/bts/1hg/72176

1. Attached for signature is a suggested memorandum for the Chief of Staff, attention O-4 Division, in reply to subject memorandum from WDGS, O-4, suspense date [redacted].

2. Information was requested on steps being taken to increase glider production to meet schedules consistently, the answer is briefly as follows:

a. A review is made of the fact that disposal of CG-4A production jigs, and tooling was authorized in July 1944, because no requirement existed for additional CG-4A gliders.

b. Overtime has been authorized, and special expediters have been assigned in order to relieve difficulties in retooling and materials shortages. The B-29 schedule is being revised to provide schedules consistent with the manufacturers' ability to produce.

(Signed) O. P. Echols

O. P. ECHOLS
Major General, U.S.A.,
Asst. Chief of Air Staff,
Materiel and Services

AAS 452.4 Gliders (11)

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452.4 Gliders (11)

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By Authority of
The Commanding General
Army Air Forces
AFDAL ... Initials
Date

4 MAR 1945

(12)

MEMORANDUM FOR ASSISTANT CHIEF OF STAFF, WDGS, OPERATIONS DIVISION

Subject: CG-4A/15A Glider Requirements

I. Discussion.

1. Reference is made to Top Secret cable S-75137 from ETO dated 15 January 1945, and to Top Secret Disposition Form OPD 452.1 26 dated 15 January 1945.

2. The status of CG-4A/15A gliders in ETO as of 26 February 1945 is as follows:

On Hand	2716
Enroute	53
Being Prepared	44
TOTAL	2813

CG-4A/15A production scheduled for assignment to ETO by month is as follows:

March	495
April	331
May	523
June	668
July	495
August	483
TOTAL	3995

3. Although the above numbers do not entirely stated requirements of the theater, sufficient priority has not been established by the theater to ship all the gliders presently available at Ports of Embarkation. Gliders from production are now being sent to storage due to the accumulation of gliders awaiting shipping space at the ports.

II. Recommendation.

In view of the above situation, as well as the fact that after 31 August 1945 there are no further stated requirements for gliders, it is recommended that overall glider requirements be reviewed for the purpose of determining possible reductions in the production program.

FOR THE COMMANDING GENERAL, ARMY AIR FORCES:

WILLIAM [illegible]. McK[illegible]
Brig[illegible] General, U.S.A.
Assistant Chief of Staff
Operations, Commitments and Requirements

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SM 452.4 Gliders (116)

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By [illegible]

AFRET
Col. Bell-Ef 73616

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21 JAN 1945

MEMORANDUM FOR THE CHIEF OF STAFF: (Attention: A.C. of S., S-4)

Subject: Requirement for CG-10A Gliders

1. Discussion

a. A difference of opinion has arisen between this Headquarters and that of the Army Ground Forces concerning quantity production of the CG-10A glider. The correspondence bearing on this matter (appended as Tab A) may be summarized as follows:

(1) The Headquarters AGF has recommended establishment of a procurement program for 800 CG-10A gliders.

(2) This Headquarters has advised the Headquarters AGF that large-scale procurement of the CG-10A is currently considered impracticable.

(3) The Headquarters AGF, believing that failure to program the CG-10A is prejudicial to the best interest of AGF airborne units and in conflict with established policies and agreements, has indicated the intention of presenting this matter to the Chief of Staff for decision and has requested that the confirmed attitude of the AAF be prepared for presentation to the Chief of Staff.

b. The AAF attitude may be stated as follows:

(1) The AAF is a partner in airborne operations, has an intense interest in the future uses for this new form of warfare, and would be glad to see the early operational use of heavy cargo gliders.

(2) The Headquarters AAF, on the basis of preliminary tests, considers that the CG-10A glider will prove operationally and tactically suitable to carry a payload of approximately 10,000 pounds, using C-82 aircraft as tugs. (It is estimated that this glider, in quantity production, would have a unit cost of $70,000, plus $8,000 for export crating, and would pack for export at 2800 cubic feet in air separate boxes.)

(3) Notwithstanding the foregoing, large-scale pro-

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surement of the CG-10A at this time is considered impracticable in terms of presently established requirements for other type gliders, available production facilities, and the probable course of the war.

3. WDGS planning-factors governing the production of gliders (considered 100% operationally expendable) indicate a requirement for providing glider lift to each airborne division once each quarter (see WDGS, G-4, Supply Division Memorandum for the Commanding General, AAF, dated 11 Oct 44, subject: "Glider Requirements"). No other firm basis upon which to compute glider requirements is known. Airborne divisions as presently organized each require the lift of 794 CG-4A/15A gliders per operation. Under the new T/O's, 800 such gliders will be required unless the CG-10A is introduced, in which case the division glider lift would be 600 CG-4A/15A's and 100 CG-10A's. (See Tab C.) Glider manufacturing facilities are insufficient to meet the requirement for a total of 3970 CG-4A/15A gliders needed for the quarterly operational lift of the five airborne divisions. The maximum production goal for these glider types has been set by G-4 WDGS directive at 720 per month, or 2160 per quarter, a total which falls short both of the staff planning requirement for gliders and of stated theater requirements, but which represents the maximum glider production effort heretofore considered practicable.

4. It cannot be considered that the initial requirement for 500 CG-10A gliders stated by the Headquarters AAF represents a total requirement. Introduction of this glider into operational use would require continuing production of a like number each quarter, or a number proportionate to the production of other glider types, to meet staff planning requirements.

5. By using available glider manufacturing facilities, it is estimated that maximum production effort would yield a total of 500 CG-10A gliders 22 months from date of contract, at a maximum monthly rate of 60 articles, and at a cost which will amount to 240 CG-4A gliders per month approximately six months after the date of contract. (See Tab D.) Since the maximum directed production of standard glider types is now inadequate to meet our requirements, a substantially lessened production can scarcely be justified.

6. By using other manufacturing facilities (not now building gliders but possessing sufficient space and necessary skilled wood-workers, such as Universal Molded Products or Great Northern Furniture Co.) plus the Leister-Kauffmann Co., it is estimated that 500 CG-10A gliders could be produced in 21 months at a cost of $50,000,000.00.

7. The time which would be required to produce even an

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initial quantity of 500 CG-10A gliders makes operational use of this glider in Europe most unlikely. Requirements for the Pacific war are conjectural. We would not, it is believed, be justified in curtailing CG-4A production or in opening new facilities to acquire a quantity of heavy gliders with which we have insufficient service test experience and which may well be excess to our requirements by the time they can become available.

8. As an alternative solution to the problem of providing heavy fighting equipment to airborne divisions, it is suggested that the C-82 cargo airplane might provide an answer within the time limits by which the CG-10A could be available in quantity. The C-82 in preliminary tests has indicated its operational and tactical suitability for troop carrier use. Its capacity is greater than the CG-10A, its landing speed is similar, and its metal construction provides a high safety factor in crash landings. A total of 1000 C-82's are under contract, the last 400 at a unit cost of $95,100. This airplane is scarcely more expensive than the CG-10A, would require no ship space in reaching the theater, could be economically employed prior to an airborne operation in the theater, and gives indications of being, with its engines removed, a better glider than the CG-10A. Although there would be a natural reluctance to expend a high proportion of C-82's used in quantity as gliders, the promise of decisive results in the campaign or war might well justify a theater commander in determining upon just such emergency use for a large quantity of these airplanes.

9. This Headquarters desires to leave no means unexplored by which our airborne capabilities might further be exploited. The Laister-Kauffmann Co., designers of the CG-10A, are currently under contract to reach their maximum production capability of CG-4A's, 34 per month. At the loss of these 34 CG-4A's, effective in April, it is estimated that the Laister-Kauffmann could produce within two years a service test quantity of 100 CG-10A gliders, 40 the first year and 60 the second. In terms of the desirability of exploring the heavy cargo glider field, it is considered that this minor loss to CG-4A production is justified.

10. This Headquarters is aware of no policy or agreement with which its past action or present views conflict. The gist of the principal references cited in this connection by Headquarters AGF (paragraph 4, 3d indorsement to AAF letter, dated 7 October 1944, Tab A) was presented to the Chief of Staff in an AAF Summary Sheet dated 7 October 1944, copy of which is attached as Tab B.

11. Action recommended

That production of service test quantity of 100 CG-10A gliders only be directed at this time, and that presently directed pro-

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duction of maximum of 720 CG-4A/15A monthly be reduced accordingly to a maximum of 686.

For the Commanding General, Army Air Forces:

Signed

BARNEY M. GILES,
Lieutenant General, U. S. Army,
Deputy Commander, Army Air Forces and
Chief of Air Staff

4 Incls
Tab A - Ltr to AGF, dtd 7 Oct 44, subj: Improved TC Aircraft, w/4 indorsements
Tab B - Ltr Summary Sheet to WDGS & S/S, dtd 7 Oct 44, subj: Future Airphibious Warfare.
Tab C - Composition & Lift Requirements of A/B Divisions
Tab D - Glider Production Estimates

21 JAN 1945

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HEADQUARTERS, ARMY AIR FORCES
Washington

AFRDQ

7 Oct 44

SUBJECT: Improved Troop Carrier Aircraft

TO: Commanding General
Army Ground Forces
Army War College
Washington 25, D. C.

1. Reference is made to your letter of 27 September 1944, subject: "Future Airphibious Warfare," file number 353(Airborne) (2) (27 Sep 44) GNHQT-11/99280, and specifically to Paragraph 1a(2) in which you propose immediate development of an improved intermediate type troop carrier airplane.

2. It is not considered practicable to initiate at this time development of an airplane which will meet without deviation all of the characteristics you suggest as desirable. A new airplane developed to meet these exact requirements could scarcely become operational in less than two to three years, and, in all likelihood, would thus become a post-war rather than an intermediate development. For post-war purposes, it is considered most desirable to attempt the most advanced development which can now be considered practicable in terms of aeronautical engineering.

3. The Army Air Forces have now under development and scheduled for limited procurement an airplane whose characteristics closely approximate those you suggest as desirable in an intermediate type troop carrier airplane. This is the C-82, which is now flying and will shortly undergo operational and tactical suitability tests. Present indications are that the C-82 will meet all your proposed characteristics, except as to the desired weight and cubage of lift, in which it will meet only about 80% of your desired capabilities. The C-82 is designed to transport eight tons of cargo in a displacement of approximately 2100 cu. ft.

4. The C-82, provided it fulfills its present promise in tests, will be given a high priority by this Headquarters. Tests on this airplane should include joint tests with your Airborne Center and this Headquarters will inform you of developments leading to this end.

For the Commanding General, Army Air Forces:

/s/ Barney M. Giles

BARNEY M. GILES,
Lieutenant General, U. S. Army,
Chief of the Air Staff

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AG 452.1/118 (R)(7 Oct 44)
GNRGS-11/1272

1st Ind.

HEADQUARTERS ARMY GROUND FORCES, Army War College, Washington, D. C.
8 November 1944

TO: Commanding General, Army Air Forces, Washington, D. C., Attention: Assistant Chief of Air Staff, Materiel, Maintenance and Distribution.

1. Reference is made to letter this headquarters, subject: Future Airphibious Warfare, file 353 (Airborne)(R)(27 Sep 44) GNRGS-11/99300, and to Memorandum for the Chief of Air Staff, subject: Report of Joint Conference to Determine the Military Characteristics of a Heavy Cargo, Troop Carrier Aircraft, AFRDQ, 26 August 1944.

2. Army Air Forces and Army Ground Forces are in agreement that future airborne and airlanding operations should be considered in three phases, as follows:

a. Phase I - The seizure of initial airheads and limited objectives by airborne forces used in an assault role.

b. Phase II - The expansion of the initial airheads and limited objectives by airlanding infantry divisions.

c. Phase III - The final development of the situation by the airlanding of elements of corps and army troops.

d. The entire operation to be supplied and maintained through air transport for an operational period of 8-21 days.

3. The C-82 airplane, provided it fulfills its present promise in tests, is acceptable to the Army Air Forces from the standpoint of operational and tactical suitability, and is produced in sufficient quantity, will make Phase II operations possible during the current war. It is the belief of this headquarters that the accomplishment of this objective should be given highest possible priority. Accordingly, this headquarters will concur in the necessary action to expedite tests and development, and a production program. Studies developed by this headquarters indicate that a minimum of 500 C-82 airplanes should be procured initially for airborne-troop carrier use.

4. The acceptance of the characteristics of the C-82 airplane in lieu of the characteristics of the intermediate development proposed by this headquarters in paragraph 1 a (3) of letter cited in paragraph 1 apply only to this project. Development of two types of future aircraft should continue: one with the capability of transporting a piece of equipment 20 tons in weight and 3500 cubic feet in displacement, and one with the capability of transporting a piece of equipment 45 tons in weight and 4800 cubic feet in displacement. (Reference paragraph 1 a (c), letter cited in paragraph 1).

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GNHQ-11/1272

1st Ind. (Continued)

5. This headquarters is interested in the XCG-10A as a glider project. There is a requirement for this type of aircraft in present airborne operations. It is recommended that a development and procurement program comparable to that indicated for the C-82 be given consideration.

For the COMMANDING GENERAL:

/s/ R. A. Meredith

R. A. MEREDITH
Lt. Col., A.G.D.
Asst. Ground Adj. Gen.

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Subject: Improved Troop Carrier Aircraft

2nd Ind.

Hq Army Air Forces, Washington 25, D. C. 28 Nov 1944

TO: Commanding General, Army Ground Forces, Army War College
Washington 25, D. C.

For various reasons the large-scale procurement of the XCG-10A glider does not appear practicable at this time. It is believed that this matter can be better discussed in conference than by correspondence. For that reason, it is requested that you contact Brigadier General Marvin K. Gross, Chief, Requirements Division, Office of AC/AS OC&R to arrange a conference at your convenience.

For the Commanding General, Army Air Forces:

/s/ William F. McKee

WILLIAM F. McKEE
Colonel, G.S.C.
Acting, Asst. Chief of Air Staff
Operations, Commitments & Requirements

452.1/118 (R)(7 Oct 44)
GSAGF-11/7371 3rd Ind.

HEADQUARTERS ARMY GROUND FORCES, Army War College, Washington, D. C.
27 Dec 1944
TO: Commanding General, Army Air Forces, Washington, D.C., Attention:
Assistant Chief of Air Staff, Materiel, Maintenance and Distribution.

1. In accordance with the suggestion contained in preceding 2nd indorsement, a conference was held on 11 December 1944 between representatives of the Army Air Forces and Army Ground Forces.

2. In the above mentioned conference, Army Ground Force representatives were advised that the recommended procurement of C-82 airplanes was approved, but that Army Air Forces had rejected the proposed procurement program on 500 XCG-10A gliders for airborne use.

3. It is the opinion of Army Ground Forces that failure to program the XCG-10A glider is prejudicial to the best interests of Army Ground Force units involved in airborne operations and that establishment of a program is essential to further progress in the tactical development of airborne forces.

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452.1/118 (3)(7 Oct 44)
GNRGT-11/7371

3rd Ind. (Continued)

4. Attention is invited to the following correspondence:

a. Memorandum for the Chief of Air Staff, subject: Report of Joint Conference to Determine the Military Characteristics of a Heavy Cargo Troop Carrier Aircraft, AFREQ, 26 August 1944.

b. Memorandum for the Commanding General, Army Air Forces, subject: Future Airphibious Warfare, AFREQ 4677, 14 September 1944.

c. Letter, Headquarters Army Ground Forces, subject: Future Airphibious Warfare, file 353 (Airborne)(3)(27 Sep 44) GNRGT-11/99280, dated 27 September 1944.

d. Memorandum for the Commanding General, Army Ground Forces and the Commanding General, Army Air Forces, subject: Policy Relative to Providing for the Aerial Delivery of Army Ground Forces Equipment, Headquarters Army Service Forces, file SPSNP, dated 29 March 1944.

5. The action of the Army Air Forces in rejecting the procurement program on CG-10A gliders is in conflict with the policies and agreements established in the above cited correspondence and it is the intention of this headquarters to present this matter to the War Department for further consideration. It is requested that the views of the Army Air Forces in rejecting this program be appended hereto in order that the confirmed attitude of both Army Air Forces and Army Ground Forces may be presented to the Chief of Staff, U. S. Army.

For the COMMANDING GENERAL:

/s/ R. A. Meredith

R. A. MEREDITH
Lt. Col., A. G. D.
Asst. Ground Adj. Gen.

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SUBJECT: Improved Troop Carrier Aircraft

4th Ind. AFDRT

21 JAN 1945

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

TO: Commanding General, Army Ground Forces, Army War College, Washington 25, D. C.

Reference is made to the request of paragraph 5, 3rd Indorsement, above. The views of this Headquarters are being submitted separately in a memorandum for the Chief of Staff (Attention: Assistant Chief of Staff, G-4), copy of which is attached for your information.

For the Commanding General, Army Air Forces:

Signed

BARNEY M. GILES,
Lieutenant General, U. S. Army,
Deputy Commander, Army Air Forces and
Chief of Air Staff

21 JAN 1945

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SUMMARY SHEET

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TO: I WDD
II C/S

FOR: INFORMATION

AFREQ

Col Giffin 4627
7 Oct 1944

SUBJECT: Future Airphibious Warfare

SUMMARY

1. This Headquarters has approved and transmitted to the Air Technical Service Command for necessary developmental action the Military Characteristics for transport type aircraft capable of transporting and air-landing all essential ground fighting equipment. These Military Characteristics were determined as the result of a joint committee meeting of AAF and AGF officers convened at this Headquarters on 21 and 22 August 1944. The committee found that there was a definite military requirement for such aircraft and that development of two types should be initiated, one a Troop Carrier Aircraft (Heavy Cargo) with maximum payload of 40,000 pounds and designed to meet all troop carrier requirements, the other a Troop Carrier Aircraft (Special) capable of transporting service type medium tanks. Military Characteristics, envisaging a 750-mile radius of action, have been approved for both types.

2. The following quotation from the agenda prepared for the committee meeting will serve to indicate the line of thought resulting in this action:

"The Problem: To determine the military characteristics to be incorporated into the design of a future cargo type aircraft to meet the needs of the Air Forces in effecting the air landing of standard components of the Army.

"Discussion:
Past practice in the matter of moving combat troops by aircraft has been to train and specially equip selected airborne units conforming to the cargo capabilities of already available aircraft. Because of weight lifting limitations and cubic and/or entrance dimensional limitations, only especially designed or small and light standard ground force equipment is capable of movement by air transport. Troops with such equipment are capable only of limited action when placed in a combat area. Immediate reinforcement is essential to exploit gains made initially by specially trained airborne troops. At present, the principal limitation to carrying out full scale airphibious operations is the lack of a cargo type aircraft capable of transporting the heaviest type battle equipment essential to the division and corps in battle. The re-design of heavy equipment assigned to a standard division and corps, for transport in present cargo aircraft, is clearly not practicable, although such design limitations should be given full consideration in future. The potentialities of airphibious operations are unlimited if the Army Air Forces and the Army Ground Forces can successfully exploit the possibilities in future design of both aircraft and equipment."

3. As a further result of the joint committee meeting, the following guides in the development of future military gliders have been adopted:

a. A payload of 10,500 pounds as the upper limit, in view of the long take-off and large landing area requirements of heavier gliders.
b. Increased development and use of light metal construction and deceleration devices.

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c. Further consideration of very large gliders at such time as the development of deceleration devices permits short take-offs and use of small landing areas.

d. Emphasis on development work in the field of removable power units for large gliders, with the ultimate view of attaining air delivery and maximum use for an essentially uneconomical item.

COORDINATION

4. The above has been coordinated by the Army Ground Forces and the Assistant Secretary of War for Air.

FOR THE COMMANDING GENERAL, ARMY AIR FORCES:

(Signed)
RAY L. OWENS
Brigadier General, U.S.A.,
Deputy Chief of the Air Staff

MEMORANDUM FOR RECORD: The Headquarters, Army Ground Forces, in coordinating substantially the Summary Sheet above, proposed one change which has been incorporated in this paper. The following further suggestions of the Headquarters, Army Ground Forces, resulting from coordination of the above paper, will be the subject of further separate action by this Headquarters:

a. Suggested specific weight and cubage capacities in connection with the Military Characteristics discussed above.

b. Proposed immediate development of a new intermediate troop carrier type aircraft resembling in characteristics the C-82.

Noted by Deputy Chief of Staff
Oct 19, 1944

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I & E "C"

COMPOSITION AND LIFT REQUIREMENT OF A/B DIVISIONS

A. A/B Division (T/O & E 71, 1 Aug 44)

Composition: 2 Glider regiments of 2 Battalions each
1 Parachute regiment of 3 Battalions

Strength: 8500 troops

Air-lift: Glider combat elements require 774 CG-4A gliders.
Parachute elements require 180 C-47 sorties.

B. Augmented A/B Division (T/O & E 71-T, 16 Aug 44)

Composition: Triangular Division
1 Glider regiment of 3 full-sized battalions
2 Parachute regiments of 3 full-sized battalions.

Strength: 12,600 troops plus heavy equipment (1½ and 2½ ton trucks, 105 and 155 mm howitzers).

Air-lift: Glider combat elements require 800 CG-4A gliders (with no provision for carrying heavier equipment than is now transportable) or: 600 CG-4A's and 100 CG-10A's (A/B Division plus assigned heavy equipment).

Parachute elements require 250 C-47 sorties, or 200 C-46 sorties.

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EXHIBIT "F"

GLIDER PRODUCTION ESTIMATES

A. CG-10A Production, Utilizing Glider Manufacturing Facilities Presently Engaged in Glider Production.

1. Production Estimate. (Based on procurement of 600 articles).

a. Maximum total production 12 months from date of contract - 210 CG-10A gliders.

b. Maximum total production 24 months from date of contract - 600 CG-10A gliders.

c. Estimated maximum monthly rate of production - 60 articles.

d. Based on 600-article contract, unit cost would be approximately $70,000.00 plus $5,000.00 for export crating, each article, or a total of $44,100,000.00.

e. Estimate 6 to 8 months required for production tooling.

f. Estimate that CG-10A can be crated for export shipment in six boxes with no dimension over 24 feet, having total capacity of 8500 cubic feet and a total weight of 60,000 lbs.

g. Estimated production by Laister-Kauffman Co., only, (designer of the CG-10A) would yield 40 articles first year, and 100 articles by end of second year, at a maximum rate of 20 per month.

2. Effect on CG-4A Production.

a. By placing contract with Laister-Kauffman Co., only, a loss of 24 CG-4A's per month beginning in April 1945 would result.

b. By diverting other glider manufacturers from CG-4A production to CG-10A production, 240 CG-4A's would be lost each month from the date of contract less the equivalent of approximately four months production in process and completed during the CG-10A production tooling period. 100% re-tooling would be required.

B. CG-10A Production, Utilizing New Manufacturing Facilities Possessing Adequate Space and Skilled Wood Workers.

1. Production Estimate. (Based on initial contract of 800 articles).

a. Maximum total production 21 months from date of contract - 800 CG-10A gliders.

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b. Estimated maximum monthly rate of production - 186 articles.

c. Estimate 8 to 10 months required for production tooling.

d. Initial cost for first 500 articles is estimated at $80,000,000.00, unit cost thereafter is estimated at $70,000.00 plus $3,600.00 for export crating.

2. Proposed Production Plan.

a. Award contract to Laister-Kauffman Co. (Engineering Contractor) for 100 CG-10A gliders.

b. Another contract would be awarded to a larger contractor who would obtain engineering assistance from Laister-Kauffman. This contractor might be Universal Molded Products, or Great Northern Furniture. These facilities have the necessary space with necessary skilled woodworkers.

3. Effect on CG-4A Production

a. Loss of 34 CG-4A gliders per month beginning in April, 1945. (Current Laister-Kauffman schedule).

C. Present Production Schedule for Combat Gliders.

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	Until V-E Day
CG-4A	326	400	459	484	520	595	685	685	etc.
CG-13A	40	54	65	65	65	65	65	65	etc.
Totals	366	454	524	549	585	660	720	720	etc.

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By AUTH/GSA Date 10-11-76

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Troop Carrier Gliders

TO: AC/AS, Operations, Commitments and Requirements

DATE 25 October 44
CONCUR No. 2
JMC:JT 72467

FROM: Chief of the Air Staff

1. It is felt that we should not use paragraph 2 of the proposed 2nd Ind., as our sole excuse for turning down the request of the Commanding General, Eleventh Air Force, for five troop carrier gliders inasmuch as the quantity requested is negligible. It is suggested that mention be made of the fact that in the event the situation in the Alaskan Department becomes critical this headquarters would take immediate steps to allocate and send not five troop carrier gliders but materiel and equipment in sufficient quantities to repel any attack. This refers back to the Commanding General's first paragraph in the basic letter.

2. Further comment might be made on his pargraph 3 that while the desire to train crews in that theatre to dest the practicability of employing gliders is appreciated, it is felt that such a small quantity would not prove decisive as regards their use against any large scale enemy attack.

JMC

25 OCT 1944
AAG

for F. H. SMITH, JR.,
Brigadier General, U. S. Army,
Deputy Chief of the Air Staff.

Incl.
n/c

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AAS 452.4 Gliders (10)

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DOD Dirs.
8 Jun. & 30 June 1974
By AGAFRC UC; Date 10-11-76

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Establishment of a Board to Evaluate the XCG-16 Glider Project

AC/AS, Operations, Commitments and Requirements — 14 Oct 44

Chief of the Air Staff — PWT/eva/5265 — 1

1. Attached is a memorandum for the Chief of the Air Staff on the status of the XCG-16 glider project. This memorandum makes a recommendation that a board of officers be convened to ascertain whether or not this project has sufficient merit or whether it should be terminated at this time. This recommendation was approved by General Giles on 13 October.

2. It is understood that a tactical suitability board is now testing the subject glider; however, it is felt that an impartial board should study this project from beginning to end, starting with the original proposal and ending with the production possibilities, tactical suitability and whether or not the glider can be effectively employed in this war.

3. It is directed, therefore, that the necessary action be taken to convene such a board consisting of one operational representative (Colonel Cochran), one AAF Board representative, one Troop Carrier representative, one representative of glider projects, Wright Field (Colonel Bruce Price) and one wood structures man, Wright Field (name to be furnished). The last two members may be made non-voting members if placing them on that status will lend the board a more impressive air of impartiality.

1 Incl
Memo to CAS frm M&S this subj
11 Oct 'Approved EMG'

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

COPY TO
AC/AS, M&S

14 OCT 1944
AAG

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ADDRESS REPLY TO
COMMANDING GENERAL, ARMY AIR FORCES
WASHINGTON 25, D. C.
ATTENTION:
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000 ltrs.
6 Jan. & 30 June 1976
By AL NARA Date 10-18-76

HEADQUARTERS, ARMY AIR FORCES
WASHINGTON

FOR VICTORY BUY UNITED STATES WAR BONDS AND STAMPS

File

5 OCT 1944

MEMORANDUM FOR CHIEF OF THE AIR STAFF

SUBJECT: Status of the XCG-16 Glider.

1. Pursuant to your request this date, the following status report pertaining to the XCG-16 glider project is submitted:

a. The wing as incorporated on the 1st flight article failed at 75% designed gross weight, and the majority of the flight testing of this article has been accomplished at a corresponding reduced weight. A new, reinforced wing for the static test article has now been received and tested to 100% designed gross weight. Subsequent to the tests on this reinforced wing, the decision was made by the A.T.S.C. to fly the 1st flight article at design gross, and several flights have been accomplished in favorable weather and under carefully controlled conditions.

b. Flight tests have shown that elevator and rudder stick forces are excessively high and that a large amount of wheel movement is necessary to affect aileron control. Tests indicate that tow of this glider at designed gross weight can be accomplished by the C-46, C-54 and B-17 type aircraft, but that tow by the C-47 airplane can only be accomplished with the glider at a reduced gross weight.

c. Approximately 13 hours of testing remain on the 1st flight article after which it will be returned to the contractor for incorporation of redesigned outer wing panels and the incorporation of a revised surface control system found necessary to reduce control stick forces. Inclement weather is currently holding up completion of these tests, and the modifications at the contractor's plant will require approximately one month. Construction of the 2nd flight article is continuing and will have incorporated all revisions found necessary to date. Anticipated delivery date for this 2nd article is 1 December 1944.

452.1 Gliders (10)

O P Echols

O. P. ECHOLS
Major General, U.S.A.,
Asst. Chief of Air Staff,
Materiel and Services

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10/4/44 Date Initials

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

ATTENTION:

DECLASSIFIED DOD ltr 8 Jan. & 30 June 1974 By AUL/PLC/C, Date 10-18-76

HEADQUARTERS, ARMY AIR FORCES
WASHINGTON

3 OCT 1944

MEMORANDUM FOR THE CHIEF OF AIR STAFF:

Subject: Past Difficulties in Determining Glider Requirements

1. In view of the glider shortage with which we are now faced, it is believed you should be familiar with the situation which led to this shortage.

2. Glider requirements have been based on the airborne unit troop basis, but it has never been possible to determine the number of operations in which airborne units would be involved. In May 1943, OPD WDGS stated a requirement for gliders to carry 12 airborne divisions with ancillary units. A production requirement for 12,826 CG-4A gliders (by June 1944) was approved in June 1943.

In July 1943, OPD WDGS, as a result of theater cables, approved deletion of 600 gliders from the program.

In August 1943, OPD, WDGS stated that due to a reduced activation schedule, glider production should be reduced to provide projected lifts for only five airborne divisions with ancillary units. Procurement was then halted at a total of 10,500 CG-4A gliders.

3. In anticipation of increased glider requirements in Europe, radiogram R-8335 signed Marshall was dispatched to London on 20 January 1944, requesting CG-4A requirements by quarters, number of airborne lifts planned, and number of gliders required per lift. The reply (CM-IN 4896, dated 4 February 1944, signed Eisenhower) stated that two lifts of 700 gliders each were planned for 1944, and that 500 gliders were required in each of the last three quarters of 1944 for a total of 1500 CG-4A's. Production was geared to these requests and to a reasonable reserve. Shipment of the 1500 gliders proceeded ahead of schedule.

4. Shipment of a sudden and unanticipated request from the Far East for 800 gliders was met from reserves.

5. On 18 August 1944 we received from London, a request (CM-IN 16517) for 2200 additional CG-4A's. Against this request, OPD WDGS authorized shipment of 750 from reserves and production.

6. Two other points are significant to the glider requirement picture:

a. Until the Normandy operation, theater interest in gliders centered around the problem of storage and transport. So difficult was the

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storage problem in UK, and so limited was the ETO interest in glider operations, that serious suggestions were advanced that gliders stored in the UK be dismantled and burned.

b. This Headquarters has felt that a percentage of gliders could be recovered for re-use after an operation and has taken action designed to accomplish this result. A detachment of 64 glider mechanics and 24 mobile glider repair sets was shipped to UK in June 1944. Equipment is designed to be transported by glider to the vicinity of damaged gliders, where repair is accomplished and the repaired glider and the mobile repair sets then retrieved by pickup. A total of 108 C-47's equipped with pickup gear were sent to UK together with installation and maintenance technicians. The Ninth Air Force has apparently made no serious attempt to utilize these facilities in reclaiming operational gliders. In this connection, recommend that the attached proposed radio be signed and forwarded.

William F McKee

WILLIAM F. McKEE
Colonel, G.S.C.
Acting, Asst. Chief of Air Staff
Operations, Commitments & Requirements

1 Incl
Proposed Radio

Cable to Cable Sent for Info dated 4 Oct 44

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By [illegible] NARS, Date 12-18-96

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20 September 1944

MEMORANDUM FOR GENERAL ARNOLD:

Subject: Gliders for Southwest Pacific

1. Reference message from General MacArthur's Headquarters requesting certain glider and glider crew shipments, you asked me "Can we do it?"

2. The answer is that we can do it, and we are making the necessary arrangements.

H. A. CRAIG
Major General, U. S. Army
Assistant Chief of Air Staff
Operations, Commitments, and Requirements

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Sub 452,4 Gliders (104)

Gen Giles

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Glider Requirements

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DOD Dirs.
5 Jan. & 20 June 1974
By A+N/RI-S.C. Date 10-11-76

452.4 Glider (103)

TO: AG/AS, WDS

FROM: Chief of the Air Staff

DATE 26 September 1944
COMMENT NO. 5
FMS,JP:JT 6371

For compliance with paragraph 8 of Comment No. 4.

Incls.
n/c

27 SEP 1944

Signed
F. H. SMITH, JR.,
Brigadier General, U. S. Army,
Deputy Chief of the Air Staff.

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By ALM/PK NARA Date 10-12-76

Glider Requirements

AC/AS, Operations, Commitments and Requirements 18 Sept 44

Chief of the Air Staff

3

FHS,Jr:JT 6371

1. I find considerable difficulty in finding the complete answer to our glider situation in the attached memorandum. Paragraph 4 indicates that one major airborne operation can be carried out in 1945.

2. I believe that we should anticipate airborne operations of a relatively large scale in the Far East Theatre until the campaign has progressed to and includes Luzon. I further believe that we should write off insofar as substantial redeployment is concerned those gliders now in the ETO.

3. The questions to be answered appear to be as follows:

a. Have we sufficient gliders on hand in the United States to satisfy current commitments for the CBI and for the Far East?

b. Will present production supply to those Theatres sufficient gliders for the early exploitation of favorable opportunities for airborne operations which can be envisaged as occuring in line with current progress of the two campaigns.

c. Should we increase current production in order to build up sufficient reserves here or in the Far East and CBI Theatres to give commanders flexibility in planning successive airborne operations.

4. It is not believed that the conclusions reached in paragraph 7 of the basic communication answer these questions.

Signed
F. H. SMITH, JR.,
Brigadier General, U. S. Army,
Deputy Chief of the Air Staff.

Incl.
n/c

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19 SEP 1944
AAG

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452.4 Gliders (103)

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6 Jan. & 20 June 1974
by AFHRC/DOC Date 10-18-76

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Capt Sawyer/vc/6109
AFRAL

23 AUG 1944

MEMORANDUM TO THE SECRETARY, MUNITIONS ASSIGNMENTS COMMITTEE (AIR):

Subject: Delay in Delivery of CG-4A Gliders to the British

1. It is requested that the Munitions Assignments Committee give consideration to revising the allocations of CG-4A gliders to the British so as to permit deferment of further deliveries of gliders until January 1945.

2. The foregoing revision is requested as a result of the urgent requests from the European Theater of Operations for additional CG-4A gliders which the AAF cannot meet with its present availabilities.

For the Commanding General, Army Air Forces:

Kenneth P. Bergquist
Colonel, Air Corps
Executive, Asst Chief of Air Staff
Operations, Commitments & Requirements

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8 Jan. & 20 June 1974
By ALM/NHC, NG, Date 10-15-76

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16 AUG 1944

MEMORANDUM FOR THE CHIEF OF AIR STAFF

SUBJECT: Possibility Study of Hamilcar and P-38J Combination

1. Reference is made to your comment on page 274 of General Arnold's Log of Messages dated 12 August 1944.

2. As indicated to AC/AS, OCAR, Requirements Division by R&R dated 12 August 1944 (copy attached), this office is awaiting comment from OCAR before pursuing the "pick-a-back" project further. As brought out in the Material Command report referred to, the efficiency of this "pick-a-back" combination can be no greater than that of a P-38 towing the CG-10A by the normal tug-glider method. It is possible that even this may not be feasible due to the high power required which might result in excessive engine temperatures.

3. Under no condition, either "pick-a-back" or normal tow, could a P-38 provide power necessary to operate the Hamilcar glider because of its large size.

(Signed) O. P. Echols

Encls.
Memo 13 Aug 44 to Gen. Echols from Col. Shearer w/subject Message No. W-69907, CM-IN 11269 12 Aug 44 from London attached - cable not sent to.
Copy R&R 8/12/44 orig. cable to Jon file -

O. P. ECHOLS
Major General, U.S.A.,
Asst. Chief of Air Staff,
Materiel and Services

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COMMANDING GENERAL, ARMY AIR FORCES,
WASHINGTON, D. C.

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By ALW/PLC, Date 10-12-76

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WAR DEPARTMENT
HEADQUARTERS OF THE ARMY AIR FORCES
WASHINGTON, D. C.

6 MAY 1944

MEMORANDUM FOR CHIEF OF AIR STAFF

SUBJECT: Status of XCG-16 (Criz Bowlus) Glider.

1. Following status report pertaining to the XCG-16 glider project is submitted:

a. General Airborne Transport Company has failed to meet original contract delivery dates pertaining to this project. Following is a chart indicating original contract delivery dates and the latest delivery dates as now stated by the contractor:

	Original Contract Delivery Date	Latest Contractor's Estimated Delivery Date
Static Test Article	15 Feb 1944	1 May 1944
1st Flight Article	30 Mar 1944	15 June 1944
2nd Flight Article	15 Apr 1944	1 Aug 1944

The empennage and wing panels for static test were shipped from contractor's plant 28 April 1944 and the wing center section and tail booms for this article are scheduled for shipment 8 May 1944. Delivery to Wright Field will take approximately 10 days.

b. Recent audit of the books of the General Airborne Transport Company indicated that the contractor has spent to date approximately $200,000 over the original contract price. It is estimated that the total cost of the two flight articles and the static test article will be at least $1,264,000. The original contract price was $601,000 and it is now necessary to increase these funds approximately $663,000 to complete this project.

c. Efforts are continuing towards the completion of this project at the earliest possible date. Additional funds will be made available as required in view of the urgency expressed in the original directive received by this office.

SC 66 [illegible] at ½ tow power

noted B. M. G. 9 May 44 P. W. T.

B. E. MEYERS
Major General, U. S. A.
Deputy Assistant Chief of Air Staff,
Materiel, Maintenance & Distribution

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DOD Dirs.
E.O. 8 20 June 1974
By ALNPC NC. Date 10-12-76

AFSAG
PEO/dl 0545
28 July 1943

1 August 1943

Lieutenant General Jacob L. Devers
Commanding General
European Theatre of Operations
London, England

My dear Devers:

I am very gratified to see the healthy attitude that you have toward gliders as expressed in your letter of 3 July 1943. I believe that the glider will be the vital factor in your initial assault operation as you visualize it.

We have made considerable progress in recent weeks in developing the ability of our glider pilots to handle the CG-4A glider. This should mean that the glider pilots who will be sent to your theater will have attained a much higher proficiency than any glider pilots produced heretofore. I have not rushed your glider pilots to you because I feel that they can be trained much more economically here than there and each day here means a better product for you. These glider pilots will begin to flow with the Troop Carrier units which are already scheduled in order that training may continue after their arrival in your theater.

Steps have already been taken to send your additional 300 gliders to arrive beginning in October. We have never permitted the shipment of gliders to interfere with any essential cargo for your bomber program. All gliders have gone over as opportune cargo in space which otherwise would have been unused.

Realizing the shipping situation I read with some interest the accounts of the ferrying of the CG-4A glider by the C-47 to U. K. We ran tests here last January to determine the feasibility of ferrying and although we found it to be quite feasible it is not practical in view of the opportune shipping space available and the number of aircraft which would be required to ferry the contemplated number of gliders. It may be of interest to you in this connection to know that prior to this flight to U. K. we had one ferry flight of 3560 miles in Africa last April conducted entirely by American crews with American equipment. A few weeks ago we had a non-stop flight in this country of 1243 miles.

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In order to equip your B-17's to tow the CG-4A's action has been taken to produce 400 kits here to arrive in U. K. by 1 November 1943 to permit each of your B-17's to tow two gliders. These kits can be installed in about two hours each.

Early reports from the African theatre indicate that the Sicilian air-borne operations were generally successful, but that an inexcusable thing happened which resulted in the loss of possibly some 42 of our transports, some of which were loaded. These losses were inflicted by our own and the Royal Navies in spite of the fact that the high command echelons knew exactly what flight plan the transports were to follow as to altitude, time, route and light identification. This cannot happen again or morale in the air-borne outfits will cease to exist. The entire tragedy was obviously due simply to a lack of preliminary planning and failure to inform the lower echelons who unfortunately were the men with the guns. I hope that this will be a lesson to all of us controlling air-borne operations.

I appreciated your letter very much and would like to keep in close contact with you on this subject. I will supply you with any new developments here which will be of benefit.

Sincerely.

Signed

H. H. ARNOLD,
General, U. S. A.,
Commanding General, Army Air Forces.

Dispatched
1 AUG 1943
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Air Ag 452.1 Gliders (27)

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8 Jan. & 30 June 1976
By ALM/NARS, Date 10-15-76

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Ltr to Air Marshal Welsh re CG-4A Gliders.

Chief of the Air Staff. 10 April 44

Assistant Chief of Air Staff, Plans. 1
WMB/kmh/74058

The inclosed letter, in answer to Air Marshal Welsh, has been prepared for your signature.

G. C. JAMISON
Brigadier General, U. S. A.
Chief, Logistical Plans.

Incls:
Ltr to A/M Welsh.
Ltr fm A/M Welsh dtd 29 Mar 44.

AAG 452.4 Gliders (95)

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WGB/hmb/74055
Wsn 10 Apr 44

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DOD Dir. 5 Jan. & 30 June 1974
By AUG/NARS, Date 10-18-74

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File

14 APR 1944

Air Marshal W. L. Welsh
British Joint Staff Mission
Offices of the Combined Chiefs of Staff
Washington, D. C.

My dear Freddie:

The availability of CG-4A gliders is such that the Air Forces can support your request for the assignment of 500 as set forth in your letter of 29 March.

I do not know how the other members of the Munitions Assignments Committee (Air) will feel about assigning gliders for an operation that has not as yet been approved.

There is an obvious advantage in having the gliders available for shipment to India when the economical use of shipping is a factor of major importance in this theater.

I suggest that you present this case for the consideration of the Munitions Assignments Committee (Air) at an early date and include such facts as are available concerning the latest data on the operational plans for airborne troops in this theater.

Yours sincerely,

BARNEY M. GILES
Major General, U. S. A.
Chief of the Air Staff.

Dispatched
14 APR 1944
AAG

AAG 452.1 Gliders (95)

COPY FOR GENERAL GILES

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AAG 452.1 Gliders (95)

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BRITISH JOINT STAFF MISSION
OFFICES OF THE COMBINED CHIEFS OF STAFF
WASHINGTON

AIR STAFF

~~SECRET~~

29th March, 1944

DECLASSIFIED

My dear Barney:

Early this year we requested assignment of 2,000 WACO CG/4A gliders for the South East Asia Command based on the SupremeCommander's proposed employment of four airborne divisions during the winter 1944/45, but M.A.C. (Air) would not recommend this assignment until future operational plans for this Command had been approved by the Combined Chiefs of Staff. However, it was agreed that 150 gliders should be assigned for training purposes and these have been released for shipment.

As you know the future strategy for this theatre is under active discussion but it seems likely to be some time before an operational plan is approved.

Meanwhile with the agreement of the British Chiefs of Staff, India is raising and training an Indian airborne division. Whatever operations are undertaken in South East Asia in the coming winter, there will undoubtedly be an ultimate requirement for this division although it is not possible at present to say when or where it will be employed. Our aim is therefore to have it ready for operations by the beginning of October 1944, even though circumstances may dictate its use at a later date.

The purpose of this letter is to enlist your support to assignment of 500 WACO CG-4A gliders for this division in advance of the Combined Chiefs of Staff decision as to its employment. Quantity production of WACO gliders is being terminated in August and I understand that a cut-back in this programme is contemplated. I am therefore afraid that unless allowance for this requirement is now made in production plans, we may later be faced with an inadequate supply of gliders for approved operations.

This matter has been discussed with Meyers who, I understand would be glad to reduce the number of WACO's now in storage, and also with Jamison who has suggested that this approach to you would be better than direct submission of a further request to M.A.C.(Air).

Yours sincerely,

/s/ Freddie

DECLASSIFIED

~~SECRET~~

Major General Barney M. Giles,
Chief of the Air Staff,
U. S. Army Air Forces
Room 3-E-1007,
Pentagon Building

AAG 452.1 Gliders (95)

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Wtm 10 Apr 44

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14 APR 1944

Air Marshal W. L. Welsh
British Joint Staff Mission
Offices of the Combined Chiefs of Staff
Washington, D. C.

My dear Freddie:

The availability of CG-4A gliders is such that the Air Forces can support your request for the assignment of 500 as set forth in your letter of 29 March.

I do not know how the other members of the Munitions Assignments Committee (Air) will feel about assigning gliders for an operation that has not as yet been approved.

There is an obvious advantage in having the gliders available for shipment to India when the economical use of shipping is a factor of major importance in this theater.

I suggest that you present this case for the consideration of the Munitions Assignments Committee (Air) at an early date and include such facts as are available concerning the latest data on the operational plans for airborne troops in this theater.

Yours sincerely,

[signature]

RAMEY M. GILES
Major General, U. S. A.
Chief of the Air Staff.

Declassified
14 APR 1944
AAG

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AAG 453.4 Gliders (95)

AAG 453.4 Gliders (95)

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& Inc. & 30 June 1955
By [illegible] Date 10-12-76

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Gliders

IN TURN: (1) AC/AS, MR&D
(2) AC/AS, Plans
XXXX (3) Special Projects

23 Mar 44

1

ESP/eva/6371

FROM: Special Projects

(1) For comment and concurrence.

(2) and (3) For comment and action where possible. It is requested that a report of action taken be submitted to this office by 30 March.

1 Incl
Ltr to CG, AAF frm Gen.Frank, ASC, dtd 19 Mar 44 this subj.

EDWIN S. PERRIN,
Brigadier General, U.S.A.,
Deputy Chief of Air Staff.

Dispatched
24 MAR 44
AAG

AAG 453.4 Gliders (23 Mar 44)

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1 Cir 453.4 Gliders

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By AWHQ Date 4-12-76

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Gliders

8 JUN 1944

AC/AS, WSED

AC/AS, Operations, Commitments & Requirements

1 (cen)

1. Although 20½ TC groups will be deployed in 1945, the best available information at this time from WSED, OPD and OCS representatives indicate airborne plans are not sufficiently firm to justify glider procurement beyond the expiration of present contracts. Completed plans for further airborne operations beyond first quarter of 1945 are expected but future procurement must await completed plans and contemplate the CG-13, CG-15 or CG-20 gliders.

ATHEQ

H. A. Craig
Major General, U. S. Army
Asst. Chief of Air Staff
Operations, Commitments & Requirements

SAS 452.4 Gliders (93)

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SAS 452.4 Gliders
(93)

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6 Jan. & 30 June 1974
By: AUTH/JC, JC, Date 12-13-76

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Gliders.

AC/AS, MSRD thru D CAS (Gen Timberlake) 8 JUN 1944

AC/AS, Operations, Commitments & Requirements

1
Gen. Gross:ctp/3020

1. This sums up twelve RAR Sheet items and the memorandum (attached) of 30 March 1944, all relating to the attached letter from General Frank (ASC) above subject, dated 19 March 1944.

2. General Frank's letter has not yet been answered. A proposed 1st Indorsement is furnished herewith.

3. RAR Sheet, subject "Gliders" of 3 June 1944 to AC/AS, MSRD (copy attached) set forth a shipment schedule of gliders which you had previously expressed agreement and which will immediately approximately halve the domestic storage requirements and provides for continued gradual reduction thereof to approximately 373 by 1 Jan. 1945.

4. The following policy on T.O. storage and disposition of gliders is hereby established and will be implemented by this Office:

a. In general, shipment of gliders to theaters of operations will be made only from U. S. Intra T.O. shipments will be made only under exceptional circumstances.

b. Allocations and shipments will be directed as nearly as practicable to scheduled requirements in order to necessitate minimum storage.

c. Army Air Forces will be advised that careful maintenance of gliders held in storage is expected until either used or disposition directed.

d. Army Air Forces will be caused to report surplus gliders and their condition to this Headquarters. Based upon contemplated plans of operations and overall requirements, directives will be issued for further storage or disposition in accordance with current salvage and disposal procedures.

5. Glider Requirements: -

a. Total known glider requirements for training and operations from April 1942 through first quarter of 1945 vs. present production contracts:

	CG-4A	CG-13
Required	10,331	285
Production contracts	10,331	600
Surplus	0	+315

b. Although 20½ TC groups will be deployed in 1945, the best available information at this time from MSRD, OPD and CCS representatives indicate airborne plans are not sufficiently firm to justify glider procurement beyond the expiration of present contracts. Completed plans for further airborne operations beyond first quarter of 1945 are expected but future procurement must await completed plans and contemplate the CG-15 CG-16 or CG-10 gliders.

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25 May 1944

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

Subject: Deterioration as Affecting CG-4A Glider Requirements

1. Communication referenced in General Timberlake's attached informal Memorandum to Asst. C/AS, OC&R, dated 23 May 1944, is believed to be a personal letter, dated 14 March 1944, from Major General Joseph Swing, Commanding General of the 11th Airborne Division in South West Pacific, to General Arnold wherein it was stated that, in order not to suffer the deteriorating effects of the South West Pacific climate, Lt. General Kenney had decided to ask for only a few CG-4A gliders for training purposes and to have two hundred (200) there and flyable shortly after 1 August 1944.

2. In this regard attention is invited to Paragraph 4 of Comment No. 10 of R&R attached hereto from AC/AS, OC&R to Deputy Chief of the Air Staff, dated 19 May 1944, Subject: Gliders. The Commanding General of the Fifth Air Force has now expressed by Cable No. A 53858, dated 23 May 1944, a requirement for the three hundred and seventy (370) CG-4A's and fifty (50) CG-13A gliders previously stated to be available. There is, therefore, no change in the glider requirements in attached R&R except that total CG-4A requirements now equal total availabilities rather than having an overage of three hundred and seventy-three (373). Possible deterioration would generally have the effect of governing rate of shipment instead of reducing total numbers required.

3. If CG-4A gliders are not regularly inspected (and aired, if crated), deterioration consisting of rust, mold, warpage, and separation of joints will result. Properly maintained, an average useful life of six months may be expected considering the deterioration factor alone. Colonel Alison reports that no glider deterioration difficulties were experienced in C.B.I. by the 1st Air Commando Force in its use of gliders although this will probably not be the case during the monsoon season.

Signed

WILLIAM F. McKEE
Colonel, A.C.,
Deputy Asst. Chief of Air Staff,
Operations, Commitments & Requirements

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OFFICE SYMBOL	1 AFRET	2 AFREQ	3 AC/AS OC&R	4	5	6
SIGNATURE OF RESPONSIBLE OFFICER	Dennett	G. Cochran	McKee			
INTERNAL OFFICE COORDINATION	Hap Wors			SAS 45 2 4	Shedd (93)	

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AAF 452.1 Gliders (93)

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DATE 30 May 44

COMMENT NO. 481

Approved.

TO: AC/AS, OC&R

FROM: Deputy Chief of Air Staff

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

6 Incls
4 incls n/c
Added--Note frm Gen. Timberlake to OC&R 23 May
Memo frm OC&R to Gen. Timberlake 25 May

Dispatched 31 MAY

452.4 Orders (93) SAS

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8 Jan & 20 June 1979
By: ALAPLEO, Date 10-12-76

Gliders

SEP 7 1944

Deputy Chief of Air Staff (General Perrin)

AC/AS, Operations, Commitments & Requirements

Rq/311/6109

6

3. CONTINUED -

1944		Sent to Theater	Production	In Crates in U.K.
JUL	British Request	500	200	250
AUG	CHX	200	200	250
SEP	CHX	200	200	250
OCT	CHX	200	200	350
NOV	CHX	125	200	400
DEC		0	64	
	TOTAL	3,187	2,064	

AFCAS Out 45-41 Glider 93

3 Attachs
Attachs #1 & #2 - n/c
Attach #3 - Tab "A"

WILLIAM F. McKEE
Colonel, Air Corps
Deputy Asst. Chief of Air Staff
Operations, Commitments & Requirements

AFRAL _____

AFRGM _____

AFRMT _____

TO: AC/AS, Operations, Commitments & Requirements
FROM: Chief of the Air Staff

DATE 26 April
COMMENT NO. 7

Your recommendations as stated in Par 1 of the preceding comment have been approved by the Deputy Chief of Air Staff.

DECLASSIFIED

Ac/S 45-4 Glider ~~SECRET~~ 93

M. A. LIBBY
Colonel, G.S.C. Sec., Air Staff

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8 Jan. & 30 June 1978
By A.L.H.K. NARS, Date 1h-18-7h

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Gliders

APR 1 1 1944

Deputy Chief of Air Staff (General Perrin)

AC/AS, Operations, Commitments & Requirements

RS/312/6109

1. Attached is Tab "A" showing pertinent CG-4A Glider production, storage, and distribution figures. It will be noted that if the Air Commando Group Glider requirements are added to earlier requirements stated by CNI (for 950 CG-4A's during the dry season of 1944 and 1945), and if the current British request for 500 is approved, the over-production of CG-4A Gliders will be only 288.

2. On 1 April 1944, there were 1,460 CG-4A Gliders in domestic storage. The inside letter sets the figure at approximately 2,000; these apparently including the 77½ TG-Type Gliders which, on 16 November 1943, this Office reported to the AC/AS, Material, Maintenance, and Distribution, as surplus to Army Air Forces needs. In answer to paragraph 1, Comment No. 3, there were unfulfilled theater requirements, as of 31 March 1944, for 1,963 CG-4A Gliders, as follows:

1944		
2nd Quarter	263	UK
3rd Quarter	500	UK
	288	CNI (ACSF's)
4th Quarter	500	UK
	96	CNI (ACSF's)
	316	CNI (CPD Memo)
TOTAL	1,963	

3. As a means of reducing the number in storage, it is recommended that, beginning in May, the production of CG-4A Gliders be changed to permit an availability, to the Army Air Forces, of 200 a month; and that CG-4A Gliders be shipped to theaters, in accordance with the following schedule:

1944		Sent to Theater	Production	In Crates in U.S.
MAR		-	-	1,986
APR	263 to UK; 288 to CNI	551	537 (prod schedule)	1,972
MAY	500 to UK; 412 to CNI	912	200	860
JUN	500 to UK	500	200	560
TOTAL		1,963		

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By AUD, NARS, Date 10-12-76

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Gliders

AC/AS, OC&R

5 Apr 44

Deputy Chief of Air Staff

5

ESP/eva/6371

1. Referring to attached memorandum from AC/AS, M&D, can't we send these to some of the theaters in which they may be used?

2. Concur with paragraph 2 of Comment No. 4.

2 Incls
#1--n/c
#2--Memo for CAS frm
AC/AS, M&D dtd 30 Mar 44
"CG-4A Gliders in Storage."

EDWIN S. PERRIN,
Brigadier General, U.S.A.,
Deputy Chief of Air Staff.

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By ALM/RL Date 10-18-90

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To: Deputy Chief of the Air Staff

April 3, 1944
Comment No. 4
CEG:bsm 2843

From: Special Projects

1. This office has examined basic communication and comments from AC/AS, MM&D and AC/AS, Plans as they affect the general post war problem of disposal of surplus aircraft and components.

2. Reference is made to Comment No. 4, dated 3 April 1944, to R&R subject, "Return of War Weary Airplanes from Overseas Theaters". In line with this comment it is recommended that there be a declaration of policy advocating disposal by the Theater Commander of deteriorated gliders within his theater. Gliders should not be returned to this country if they are or will not be needed.

3. This office concurs with recommendations contained in comments of AC/AS, MM&D.

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Incl: n/c

~~SECRET~~

F. TRUBEE DAVISON
Colonel, Air Corps
Chief, Special Projects

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5 Jan. & 30 June 1976
By: ALAFPLSC, Date 10-18-76

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30 March 1944

MEMORANDUM FOR THE CHIEF OF AIR STAFF:

Subject: CG-4A Gliders in Storage

1. At the present time there are approximately 1,000 CG-4A crated gliders in inside storage using approximately 750,000 square feet of floor space that is desperately needed for the storage of other Army Air Forces supplies. We are continually being called upon to expand our storage facilities, as evidenced by three leases this month, totalling approximately 250,000 square feet of floor space.

2. The glider program calls for the production of an additional 2,000 CG-4A gliders between 1 April and the completion of the contracts in August of this year.

3. Recent communications to your office from the Assistant Chief of Air Staff, OC&R, indicated that there would be an excessive production of approximately 1,300 CG-4A gliders over and above known requirements. However, at a recent meeting of the Army Air Forces Aircraft Requirements Board, a decision was rendered to the effect that these gliders would be produced.

4. The United Kingdom has been persistent in their demand for the allocation of approximately 2,000 of the subject gliders but request has not been favorably considered by the Munitions Assignment Committee (Air), due to the fact that United Kingdom does not have an approved operational plan calling for the use of this quantity of gliders.

5. Efforts of this office to secure a definite fix on the overall glider program requirements have, as of this date, been unsuccessful.

6. The crating of each CG-4A glider consumes approximately 9,000 board feet of lumber and costs an average of approximately $1,800; also, to ship one crated glider, two railroad freight cars are required. This is a very serious and urgent matter, as the overall efforts to ship crated and store CG-4A gliders is tremendous.

7. In view of the above, it is urgently recommended that definite action be taken for the disposal of the approximate 1,000 CG-4A gliders now in inside storage and that the gliders coming off the production line be shipped direct to using organizations or flown to some designated stand-by stations in close proximity to where the gliders are being manufactured and stored in the open.

8. In addition to the foregoing, this office is endeavoring to expeditiously dispose of approximately 800 training gliders now in storage.

(Signed) B. E. Meyers

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B. E. MEYERS
Major General, U. S. A.
Deputy Assistant Chief of Air Staff,
Materiel, Maintenance & Distribution

AAF AD 452.4 Gliders

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Gliders

AC/AS, OC&R

5 Apr 44

Deputy Chief of Air Staff

ESP/eva/6371 5

1. Referring to attached memorandum from AC/AS, MM&D, can't we send these to some of the theaters in which they may be used?

2. Concur with paragraph 2 of Comment No. 4.

2 Incls
#1--n/c
#2--Memo for CAS frm
AC/AS, MM&D dtd 30 Mar 44
"CG-4A Gliders in Storage."

EDWIN S. PERRIN,
Brigadier General, U.S.A.,
Deputy Chief of Air Staff.

Dispatched
6 APR 1944
AAG

Air Ag. 452.4 Gliders (93)

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CG-4A Glider Production

AC/AS, MM&D

28 Mar 44

Deputy Chief of Air Staff

ESP/eva/6371 1

In view of the recent decision to organize additional commando units, all CG-4A type gliders can be utilized.

1 Incl
Memo for CAS frm MM&D
dtd 25 Mar 44 w/2 incls
this subj.

EDWIN S. PERRIN,
Brigadier General, U.S.A.,
Deputy Chief of Air Staff.

Declassified
29 MAR. 1944
AAG

AAG 452.4 Gliders (92)

FILE 3/29/44

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Production of XCG-16 Glider

AC/AS, MMAD

7 Mar 44

Deputy Chief of Air Staff

1

ESP/eva/6371

In accordance with the decision of the Requirements Board this date, the Army Air Forces will not sink the $10,000,000 in the CG-16 glider production until such time as it has been tested and approved for use.

1 Incl
Memo for CAS frm MMAD
4 Mar 44 this subj
w/incls.

EDWIN S. PERRIN,
Brigadier General, U.S.A.,
Deputy Chief of Air Staff.

Dispatched
8 MAR 1944
AAG

452.4 Bibliography (9D)

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By [illegible], Date 10-18-96

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TO: General Kuter

FROM: General Perrin

DATE 29 Feb 44

COMMENT NO. 2
ESP/eva/6371

452.4 Bidders (D)

This matter was taken care of at the Aircraft Requirements Board Meeting of 23 February at which General Jamison was present.

EDWIN S. PERRIN,
Brigadier General, U.S.A.,
Deputy Chief of Air Staff.

Incl n/c

Dispatched
1 MAR 1944
AAG

file
C.A. Spaatz

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Auth: OPD ltr 452.4 Bidders (D)

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HEADQUARTERS OF THE ARMY AIR FORCES
WASHINGTON, D. C.

FEB 12 1944

SUBJECT: Military Characteristics of Aircraft.

TO: Assistant Chief of Air Staff, Material, Maintenance and Distribution.

1. The following principal characteristics of glider type aircraft are approved:

GLIDER - LIGHT TRANSPORT

A. Class. 15 minimum-place glider.

B. Mission - The mission of this type aircraft is the transportation, through the media of towed and free flight, of armed troops and their equipment, airborne task force equipment, cargo, and airborne utility units.

C. Requirements

(1) Performance (with Design Useful Load)

		Attainable	Desired
(a)	Top Tow Speed	180 m.p.h.	220 m.p.h.
(b)	Stalling Speed	55 m.p.h.	48 m.p.h.
(c)	Rate of Sink with Flaps at 85 m.p.h.	1100 ft./min.	1500 ft./min.
(d)	Length of run on paved runway after landing at minimum speed.	500 ft.	250 ft.
(e)	Thrust Horsepower required per pound of payload at 140 m.p.h.	.07 THP	.05 THP

(2) Flying Characteristics - It is desired that this aircraft have satisfactory controllability, stability, and maneuverability under all design conditions of take-off and landing, and towed or free flight.

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Asst. Chief of Air Staff,
Material, Maintenance and Distribution
"Military Characteristics of Aircraft -
Glider - Light Transport"

(3) Armament - None Required.

(4) Crew - Pilot and co-pilot.

(5) Cargo - One of the following:

(a) Fifteen (15) troops, fully equipped.

(b) Truck, 1/4-ton, 4 x 4, and personnel.

(c) 37 mm. anti-tank gun with crew and ammunition.

(d) An alternate useful load of airborne task force equipment or cargo.

(e) Total design useful load - Acceptable - 4,000 lbs.
Desired - 5,000 lbs.

(6) Equipment

(a) Instruments - Minimum Flight Instruments:

(1) Air Speed Indicator

(2) Turn and Bank Indicator

(3) Compass

(4) Altimeter

(5) Rate of Climb Indicator

(6) Clock

(b) Safety belts for each occupant.

(c) Radio - Provisions for installation of two-way radio and tow line intercommunication for intercommunication between gliders and also between Towplane and gliders.

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Materiel, Maintenance and Distribution
"Military Characteristics of Aircraft -
Glider - Light Transport"

(7) Structure and Design Features

(a) Satisfactory combination of wheels and skids to accomplish tactical glider landings on all types of terrain.

(b) Suitable tie down provisions.

(c) Provisions for quick easy exit and for loading and unloading task force equipment.

(d) Provisions for "breakdown" of the aircraft into components of such size as will permit overseas shipment and transportation on highways.

(e) Quick, easy assembly of the elements in 7 (d), above.

(f) Provisions for dual controls.

2. The above characteristics supersede any existing characteristics for 15-place military gliders.

WILLIAM F. McKEE
Colonel, A.C.,
Deputy Asst. Chief of Air Staff,
Operations, Commitments & Requirements

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CG-13 Glider Requirements

16 Dec 1943

Secretary of the Air Staff

1

AG/AS, OCAR

Capt Sawyer/61/72596

Letter, same subject, addressed to Commanding General, Army Ground Forces, is forwarded for signature.

WILLIAM F. McKEE
Colonel, Air Corps
Deputy Asst. Chief of Air Staff
Operations, Commitments & Requirements
Acting Commanding Officer

1 Incl
Ltr to CG, AGF

OCR, Req. Div. _____
Glider Branch _____

452.1 Gliders (85)

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452.1 Gliders (85)

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DECLASSIFIED

(15 December 1943)
AFSAG
Major Blomquist/jbb/72596

23 DEC 1943

SUBJECT: CG-13 Glider Requirements

TO: Commanding General, Army Ground Forces
Washington, D. C.

Attention: Special Projects Division, Airborne Branch

1. One hundred (100) CG-13 gliders have been contracted for and are under construction. These gliders will be produced under the following schedule:

Jan 44	Feb 44	Mar 44	Apr 44	May 44	Jun 44	Jul 44	Aug 44	Sep 44	Oct 44
7	9	11	14	21	11	6	8	8	5

2. The production schedule of CG-4A gliders is meeting the War Department General Staff, Operations Division, commitments for the first three quarters of 1944, and it is expected that the manufacture of CG-4A gliders will cease in July or August 1944.

3. There are three gliders under development to meet the tactical needs of the Army Air Forces, Army Ground Forces, and Army Service Forces as expressed in Theater reports and requirements. The requirements for a heavy equipment carrying glider are also under study at this time with the objective of providing for the movement of standard Divisional equipment and for the air movement of aviation engineers' equipment.

a. The XCG-14 is a clean, highly efficient 15-place glider that is designed to be towed by single engine aircraft and carry five thousand (5,000) pounds of payload and all of the equipment now carried by the CG-4A. If approved, this glider will supplant the CG-4A.

b. The XCG-16 has been designed to carry ten thousand (10,000) pounds of payload or the standard 105 howitzer, a ¼ ton truck, a partial unit of five and a crew of eight, or a heavy weapons platoon, consisting of thirty-seven (37) men (besides the two pilots), two 81 mm. mortars, two heavy machine guns plus a unit of fire for each. This glider will tow behind any twin engine aircraft and is designed to have landing characteristics that are somewhat better than the CG-4A.

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AIR ADJUTANT GENERAL

452.4 Gliders (85)

Orig 452.4 Gliders (85)

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Ltr CG, AAF to CG, AGF
Subject: CG-13 Glider Requirements

4. The present CG-13 production schedule can be expanded to meet the often expressed desire for a glider to carry the more bulky equipment that would permit greater ground mobility of airborne troops.

5. War Department General Staff, Operations Division, has expressed (in conference) a need for CG-13's to move equipment into certain areas in the far east.

6. It is requested that the Army Ground Forces express the airborne requirements for the CG-13, keeping in mind the other new glider developments which, if approved, should be in production some time after July 1944. There is a performance sheet on the CG-13 attached which should be of some assistance in evaluating the CG-13.

7. It will be necessary to reach a decision at the earliest possible date if an early expansion in CG-13 production is contemplated.

For the commanding General:

Signed

W. A. CRAIG,
Brig. General, U.S.A.
Acting Chief of Air Staff.

1 Incl
Performance Sheet

Downgraded
3 DEC 1945
AAG

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Performance of CG-13 (8,000 lb. and 10,000 lb. Payload) with 26,000 lb. C-47 tow

15 December 1943

	Payload 8,000 lb.	10,000 lb.
Take-off distance to clear 50'	4980 ft.	5920 ft.
Initial rate of climb with normal BHP at 105 I.A.S.	266 ft/min	177 ft/min
Service ceiling (100 ft/min climb)	10,500 ft.	5,000 ft.
Time to climb to service ceiling	58 min.	37 min.
Percent normal BHP at 105 mph cruising (sea level)	79	85
Rate of sink with flaps at 85 mph	1100 ft/min	1100 ft/min
Stalling I.A.S. with flaps	59 mph	63 mph
Landing roll with brakes on paved runway	565 ft	640 ft

List of equipment that can be carried:

- 3/4 ton 4 x 4
- 1½ ton 6 x 6
- 1½ ton 4 x 4
- T 16 Universal track carrier
- M-51 trailor with Maxson turret
- M-2 Bofors
- 105 MM M-2 howitzer gun

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Priority for CG-14 Glider Engineering and Breakdown Tests

11 Nov 43

AC/AS, MMD

Chief of Air Staff

1
Major du Pont/dl/6545

It is requested that the engineering work and breakdown tests on the CG-14 wing type glider be given high priority at the Engineering Laboratory, Wright Field. It is highly desirable to complete the test work and procure aircraft of such performance as this to meet tactical demands at an early date.

BARNEY M. GILES
Major General, United States Army
Chief of Air Staff

Downgraded
13 Nov 1943
AMC

AAF 452.4 Gliders (84)

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HEADQUARTERS ARMY AIR FO

ROUTING SLIP

TO: DATE 11/11

OFFICE OR SYMBOL	BUILDING
Gen Giles	Pent
ATTENTION:	ROOM 3E989

FOR:

	COORDINATION		INVESTIGATION		NEC. ACTION
	INFORMATION		RECOMMENDATION	✓	SIGNATURE
	FILE		CONFERENCE		

REMARKS:

Written as per verbal request by Gen. Giles to Major du Pont.

A. Felix Pont Jr.

FROM:

NAME		OFFICE OR SYMBOL
PHONE	BUILDING	ROOM

3-218, AF

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Cancellationof Glider Contract

TO: Chief of the Air Staff

DATE 11 Nov 43

FROM: AC/AS, OCR, Requirements Division, Glider Branch

COMMENT NO. 2
Major du Pont/dl/6545

Noted.

A. F. du PONT, Jr.,
Major, Air Corps
Chief, Glider Branch

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Cancellation of Glider Contract.

AC/AS, Operations, Commitments & Requirements — 11 November 43

Chief of the Air Staff.

MAL/mdg/5265 1

1. General Arnold, on 8 November 1943, disapproved the recommendations of the Aircraft Requirements Board, calling for the purchase of 1000 Bowlus Gliders. He changed the recommendation to authorize the purphase of three (3) of these gliders at the earliest practicable date for testing purposes with the understanding that if the tests were satisfactory then the order for the 1000 gliders would be placed.

2. The Chief of the Air Staff is of the firm opinion that a definite requirement for this type glider exists in the India, Burma-China Theater.

3. It is directed that the project of procuring the three (3) gliders for tests be expedited and that report of the results thereof be rendered the Chief of the Air Staff with the least practicable delay.

Dispatched
11 /1943
AM

MILLARD A. LIBBY,
Colonel, G. S. C.,
Secretary of the Air Staff.

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AFSAG
Capt Baldwin/dl/73830
2 November 1943

3 NOV 1943

MEMORANDUM FOR Lt. General J. T. McNarney

SUBJECT: Availability of CG-4A Gliders in the Maxton-Camp Mackall, North Carolina, Area.

1. The number of flyable gliders in the Maxton-Camp Mackall, North Carolina, area has increased from 59 as of 21 October 1943 to 110 as of 1 November 1943.

2. The number of grounded gliders in a training area vary greatly from day to day. The CG-4A glider was built for the primary purpose of accomplishing a single tactical mission. Intensive day and night training over rough ground and numerous landings and take-offs impose strains for which the glider was not constructed. Action has been initiated to make numerous changes in production which will make the glider more suitable for training. These changes are being incorporated on gliders in the field.

3. Supplies and trained personnel are now being furnished to the sub-depots in the Maxton-Camp Mackall area in sufficient quantity to overcome outstanding maintenance problems.

4. First Troop Carrier Command has assured this headquarters that 200 flyable CG-4A gliders will be available for use in the Maxton-Camp Mackall, North Carolina, area as of 15 November 1943. First Troop Carrier Command is drawing upon all flyaway production, gliders at other Troop Carrier bases and Training Command gliders to insure an adequate supply of CG-4A gliders in the Maxton-Camp Mackall area for training and for maneuvers.

5. An additional 150 flyaway CG-4A gliders will be made available to the Maxton-Camp Mackall area from the production period 15 November 1943 to 7 December 1943.

For the Commanding General, Army Air Forces:

~~CONFIDENTIAL~~

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Signed
H. A. CRAIG,
Brigadier General, United States Army
Acting Chief of Air Staff

AFSAG AFHEQ AFOCR

Dispatched 3 NOV 1943 AAG

Ltr 11/3/43

AAG 452.4 Gliders (81)

Air AG 452.4 Gliders (81)

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Tactical Glider Exercise

AC/AS, Training

Chief of the Air Staff

25 Aug 43

3

MAL/ee/5265

The Chief of the Air Staff approves recommendation that the maneuver be delayed until the first week in November and that the number of gliders involved be reduced to three hundred (300).

M. A. LIBBY
Colonel, G. S. C.
Secretary, Air Staff

Incl:
n/c

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25 AUG 1943
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Glider Program

AC/AS, O.C.&R.

29 Sep 1943

Secretary of Air Staff

WRB/ia/71589 5

1. It is understood in this office that the subject of the recommendation contained in Comment No. 2 above was covered by General Craig in the course of his conversations with General Brereton, and that an appropriate decision has been given General Brereton by General Arnold.

2. Request that a decision be issued to AC/AS, Training by AC/AS, O.C.&R. appropriate to the conclusions reached in the discussions cited in paragraph 1 above.

WILLIAM R. BURT
Lt. Colonel, Air Corps
Asst Secretary, Air Staff

Incls.
n/c

AAG 452.1 Gliders (8-28-43)

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By AFHRA/DFSC Date 10-18-76

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SUBJECT: Glider Program.

TO: Secretary of the Air Staff

DATE 11 Sept 43

FROM: Asst C/AS, OCAR

COMMENT NO. 4
Lt Col Coe/jr/73616

1. Troop Carrier operations involving the use of gliders require the highest degree of coordination and team work. The revised AAF Training Standard No. 30-2-1 prepared by this office (Inclosure #2) stresses this requirement and the necessity of developing well organized combat teams of which the glider pilot is obviously a key member. The training of Glider Squadrons as separate units rather than as a part of Troop Carrier Units will not contribute to the development of such combat teams.

2. Concur in the recommendations of the Assistant Chief of Air Staff, Training contained in Paragraph 3, Comment #2.

H. A. CRAIG
Brigadier General, U.S. Army

Incls. n/c

Requirements Division_____

Troop Carrier Branch_____

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Glider Program.

AC/AS, Operations, Commitments & Requirements. 10 Sept. 43

Secretary of the Air Staff. 3

WRB/mdg/73691

1. For consideration and comment on the recommendation contained in Item 2 above.

2. Particular reference is invited to General Arnold's directive as set forth in Par. 1 d of Comment 1 above.

W. R. BURT,
Major, Air Corps,
Asst. Secretary of Air Staff.

Incls. n/c

Dispatched
10 SEP 1943
AMC

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Army Air Forces Glider Program

A-3 Feb. 13, 1943

Chief of the Air Staff 1

WEH:JT 5246

1. Attention is invited to attached Board proceedings, recommendations of which are approved.

2. You will take the action necessary to effect the recommendations contained therein.

1 Incl.
Proceedings 2-11-43
w/ Incls

GEORGE E. STRATEMEYER,
Major General, U.S.A.,
Chief of the Air Staff.

Dispatched
FEB 14 1943
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20 June 1943

MEMORANDUM TO MAJOR GENERAL STRATEMEYER, Chief of the Air Staff:

In a recent meeting General Arnold requested that some publicity be given to the Glider Program in the near future. In accordance with this and my other responsibilities I have made the following tentative arrangements:

On or before July 20th a tactical glider demonstration will be conducted in the Laurinburg-Maxton area. The purpose of this demonstration is three-fold:

1. To explore and determine the tactical possibilities of the glider when operated with more highly trained personnel, and when used in conjunction with most recent technical and tactical developments.

2. To provide opportunity for the press to witness and photograph such operations, for purposes of improving the morale of those connected with the Glider Program, and for purposes of arousing and reviving interest in its tactical potentialities.

3. To obtain a nucleus of experienced personnel from which a school of glider tactics can be formed.

The 38th Troop Carrier Squadron has been assigned to this Headquarters for the purpose of working out this maneuver. The training headquarters will be at Camp Mackall.

Richard C du Pont

RICHARD C. du PONT,
Special Assistant, Glider Program.

JUN 21 '43 PM

H.H.A
by

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Air Adjutant Gen.

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Ans as 452 Gliders (24)

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By AUS/Rec'd. Date 10-18-76

452.4 Bladen (72) B

TO: The Air Inspector. DATE March 26, 1943

FROM: Deputy Chief of the Air Staff. COMMENT NO. 2
MAL/is/5265

1. To note paragraph 2, preceding item. It was the understanding in this office that the War Frauds Unit was not to actively proceed with the investigation mentioned until given the "go-ahead" from the Materiel Command or this headquarters.

MILLARD A. LIBBY
Lieut. Colonel, G. S. C.

Dispatched
MAR 27 1943
AAG

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By AUL/RLC, HQ, Dunn AFB

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Report on Study of the Glider Production Program.

Deputy Chief of the Air Staff 3-18-43

Chief of Staff, Material Command 3

1. Before indicating approval for the War Frauds Unit to proceed with the investigation referred to in paragraph 3 of Comment No. 1, it is desired that an investigation be conducted by Lt. Col. William O'Dwyer, Special Inspector, Material Command. Such investigation will be initiated promptly and a report forwarded as soon as possible.

B. E. MEYERS
Brigadier General, USA
Chief of Staff

TO: The Air Inspector DATE 20 March 43

FROM: Deputy Chief of the Air staff COMMENT NO. 4
MAL/mdg/5265

1. Note the foregoing.

2. The Deputy Chief of the Air Staff approves the action indicated in the preceding comment.

Dispatched
MAR 21 1943
AAG

MILLARD A. LIBBY,
Lieut. Colonel, G. S. C.

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2 Air AG 452.4 Gliders (72)

Air AG 452.4 Gliders (72)

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TO: Materiel Command - ATTENTION: General Echols

DATE 16 March 43

FROM: Deputy Chief of the Air Staff

COMMENT NO. 2
MAL/mdw/5665

1. For comment reference last part of last sentence paragraph 3, preceding item (underscored).

2. Original of the report was forwarded your headquarters by 1st Indorsement signed by The Air Inspector and dispatched this date.

DECLASSIFIED

MILLARD A. LIBBY,
Lieut. Colonel, G.S.C.

Incl. w/d

Air AG 452.1 Gliders (72)

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Report on Study of the Glider Production Program.

Chief of the Air Staff — March 14, 1943

The Air Inspector

JFW:mma/2642 1

1. Attached hereto are three copies of report in subject category.

2. As a result of survey in this connection involving twelve separate Glider manufacturers, this report in summary of the program has been derived. There has been sufficient indication of irregular practice on the part of certain Glider manufacturers and their employment of a representative located at Dayton, Ohio as to point to collusion. Information in this connection has been transmitted to the War Frauds Unit, Department of Justice, which has proceeded with an investigation confirming this possibility and requiring assistance from the Materiel Command in ascertaining certain facts in the handling of contracts with certain manufacturers.

3. It is recommended that copies of the underlying report be transmitted to the Materiel Command, as contemplated by prepared 1st Indorsement and that this R&R be returned to indicate approval of the Army Air Forces for the War Frauds Unit to proceed with investigation at Wright Field and the interrogation of certain officers or Civil Service employees in this connection.

JOHN F. WHITELEY,
Colonel, Air Corps,
The Air Inspector.

1 Incl.
Rpt re abv sub (in triplicate)
with 1st ind to Materiel Com

TO: Materiel Command - ATTENTION: General Echols — DATE 16 March 43

FROM: Deputy Chief of the Air Staff — COMMENT NO. 2
MAL/mdg/5665

1. For comment reference last part of last sentence paragraph 3, preceding item (underscored).

2. Original of the report was forwarded your headquarters by 1st Indorsement signed by The Air Inspector and dispatched this date.

Dispatched
MAR 16 1943
AAG

MILLARD A. LIBBY,
Lieut. Colonel, G.S.C.

Incl. n/c

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5 Jan. & 30 June 1979
By AFHRA/IC, Date 12-17-96

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The Honorable
Harris L. Cocke
Head, U. S. Technical Mission to Brazil
Rio de Janeiro, Brazil

Dear Mr. Cocke:

This refers to your letter of November 14, 1942, in regard to a project of the American Technical Mission to Brazil entitled "Cargo Airplane and Glider Utilization."

The subject has been under study for some time by various transportation technicians of the Air Forces who have discussed the problem at length with members of the Mission and others, including members of the Bureau of Economic Warfare.

The general consensus resulting from these discussions is as follows:

Gliders now available in the United States are designed for troop carrying and have short life. Existing types of U. S. gliders are not entirely suitable for operation in tropical climates such as in Brazil, owing to plywood deterioration in humid areas. Landing fields adequate to permit of consistently safe landings by gliders (which are unable to make a second attempt) would have to be larger than those required by small powered aircraft. If surface transportation facilities are inadequate light airplanes, rather than gliders, should be considered for this work. Light aircraft possess many advantages over gliders because of the more varied services they can perform through their independence of operation.

The reasons for the recommended establishment of a direct air line from Rio de Janeiro to St. Louis, Missouri, by way of Natal, Brazil; Valencia, Venezuela; and Santiago, Cuba, are not clearly understood. The relatively small reduction in route mileage that

air ab x52-K Gliders (1)

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results from the crossing of the Amazon regions as compared to following the Rio Amazonas routes are more than off-set by the increased hazards of operation over the Amazon jungles, the difficulties of supplying Amazon basin bases and the reduced cargo capacity of the airplanes resulting from the necessarily longer hops over the Amazon basin area.

Glider use should be confined to military troop carrying operations where gliders are specifically indicated and air cargoes from Rio de Janeiro to the United States should continue to follow established air routes.

Sincerely yours,

Under Secretary of War

Dispatched
FEB 20 1943
AAG

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TO: Deputy Chief of the Air Staff

DATE: 2-26-43
Comment No. 6
JBC:JB 5789

FROM: Air Adjutant General

Attention is invited to comments No. 3 and 5 above.

Dispatched
FEB 26 1943
AAG

JOHN B. COOLEY
Colonel, A.G.D.
Asst. Air A.G.

1 Incl. n-c

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SIGNATURE OF RESPONSIBLE OFFICER						
INTERNAL OFFICE COORDINATION						

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To: Air Transport Command.

From: Air Adjutant General.

Date: Feb 20, 1943

Comment No. 4

MD/cg 6751

1. Attention is invited to comment #3, above.

2. It is requested that a report explaining the seemingly unwarranted delay in preparation of this letter be forwarded to this office without delay.

H. DEUTSCH,
Major, A. G. D.,
Asst. Air A. G.

Incl.
Cy ltr 11-14-42
fr Morris L. Cooke.

TO: Air Adjutant General

FROM: Air Transport Command

Date: Feb. 23, 1943
Comment No. 5
APATC/PR/OSM/cl/6560

1. When Mr. Cooke's letter was received in the Command it was routed to various Divisions for their advice and suggestions before preparing a reply.

2. The officer of A.T.C. who drafted the reply has left on a special A.A.F. mission to Mexico. It is understood that his discussions with representatives of the Board of Economic Warfare indicated that further action direct with Brazil need not be taken since the studies and recommendations of the B.E.W. mission to Brazil now were being handled

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at the Washington headquarters of B.E.W. and their discussions with various agencies of the Government had provided the comments and data which were required.

3. The Command's delay in preparing a reply to Mr. Cooke's letter has been investigated and action has been taken to avoid a recurrence.

H. L. GEORGE
Maj. General, U.S.A.

Incl.
n/c

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air adjutant Gen. & Flight (2)

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By AGO Letter Dtd 18 Jan 71

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Accumulation of Gliders. DECLASSIFIED

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General Hanley. 2/3/43

A-3, Assistant Chief of Air Staff. 1
JJO'B/vmm/6701

1. Reference is made to the attached transcript of your telephone conversation with General Frank.

2. For your information attached hereto is copy of MAR received from Base Services.

3. Based on this information a cablegram was dispatched February 3 to General Eisenhower stating that this space was available and asking him if trans-shipment of the gliders to North Africa was possible. He was further informed that the glider echelon personnel (378 glider pilots and 364 mechanics) of his 3½ Troop Carrier Groups were also available for movement to his theater, and by requesting them he would relieve a serious backlog of trained personnel accumulating here.

452.4 Gliders (6-9)

Encl. Cy R&R frm RBS
Tele. Conv. btn.
Gen. Frank & Gen. Hanley

ROBERT H. HARPER
Colonel, G. S. C.

TO: Air Service Command DATE 2/7/43

FROM: Deputy Chief of the Air Staff COMMENT NO. 2
HAL/mdg/5265

General Hanley desires that the attached be referred to General Frank, personally, then return file to this office.

Dispatched
FEB 8 1943
AAG

Encl. n/c

HILLARD A. LINEY
Lieut. Colonel, G. S. C.

File 2/8/43

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Air AG 452.4 Gliders (6-9)

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Thirty-day Furloughs for Glider Pilot Trainees.

1-29-43

Director of Individual Training.

6

Deputy Chief of Air Staff. TJH/cmc/6371

(Continued)

familiarize glider pilots with the duties they will have to perform in battle after they have landed their gliders on the battlefield. They will thus be better able to understand the tactical problems they will meet in the theater since, after landing, they will have to join the fighting troops because there wont be any way to get them out.

T. J. HANLEY, JR.,
Brigadier General, U.S.A.,
Deputy Chief of Air Staff.

Encl: n/c.

Dispatched
JAN 30 1943
AAG

452.4 Pilots (6-2)

Ltr 2/13/43

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Hold 452.1 Pilots (6-2)

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000 Ltrs
E.O. 12356, Sec. 3.3 & 3.4
By NARA, Date 12-18-96

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Thirty-day Furloughs for Glider Pilot Trainees.

TO: Director of Individual Training. Date: 1/29/43

FROM: Deputy Chief of the Air Staff. Comment No. 6.
TJH/cmc/6371

1. Furloughs for personnel undergoing training would not be in accordance with the policy of the Commanding General, Army Air Forces.

2. The total number of glider pilots committed to the Program appears to be in excess of requirements and it is realized that something must be done with them.

3. It is directed that attempts be made to attach for training all personnel in excess of training capacity to the Air-borne Command for training in air-borne tactics until such time as they can be released for glider training. The result of such action will be to

(Continued)

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A.G. 452.1 Gliders (6-12)

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By AUTHIG, Dec 12-12-76

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Thirty-day Furloughs for Glider Pilot Trainees

Jan. 25, 1943

A-3, Assistant Chief of Air Staff,
A-1, Assistant Chief of Air Staff,
XXXXX Director of Military Personnel, in turn.

4
GBR:mtg 72869

FROM: Director of Individual Training

1. In compliance with paragraph 3 of Item 3 above, the attached communication was sent to the Flying Training Command.

2. Reference is made to the attached weekly report of glider pilot training as of January 3, 1943, compiled by the Director of Military Personnel, wherein the estimated number of glider pilot students in service is fixed at 6,519. Attention is invited to communication from Flying Training Command, dated January 7, copy attached, and particularly to paragraph 5 thereof, indicating a total number committed to glider pilot training of 10,294, and a total number in pools, and in training of 8,834, as of December 28, 1942.

L. S. SMITH
Brigadier General, U. S. A.
Director of Individual Training

4 Incls.
(3 Incls., n/c)
#4 Cy ltr to FTC, 1-25.

TO: Director of Individual Training
THRU Chief of the Air Staff

DATE 1/27/43

COMMENT NO. 5

FROM: Assistant Chief of Air Staff, A-3

JJO'S/ek/6701

1. Attached hereto is the opinion of the Assistant Chief of Staff, OPD, regarding the Glider Pilot Training Program and the construction of tactical gliders (see Tab A).

2. Due to the logistic problem involved in shipping gliders to theaters it is indicated that 6000 gliders and 6000 glider pilots will be sufficient to meet the maximum anticipated demand during 1943.

3. In view of the above it is recommended that:

a. The Glider Pilot training program be reduced to a total of 6000 trained Glider Pilots by December 31, 1943.

b. The flight time now being used to train a Glider Pilot be increased from eight hours to fifteen hours. The Director of Air Support has stated that eight hours is insufficient to properly train a Glider Pilot. (Advanced training stage.)

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A.U.S. 452.1 Gliders (2)

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Thirty-day Furloughs for Glider Pilot Trainees

Director of Individual Training
THRU Chief of the Air Staff
Assistant Chief of the Air Staff, A-3

1/27/43

5

JJO'S/ek/6701

(continued)

3. The excess personnel now in glider pools awaiting training be diverted to meet requirements for liaison pilots, bombardiers and navigators.

4. It is pointed out that unless these steps are taken now that the flow of glider pilots from Flying Training Command will be such that the Troop Carrier Command cannot possibly absorb them. This will present a morale problem even more acture than the one we are confronted with at the present time.

Incl. added:
Tab A

Concurrences:
AFRAS ____

ROBERT W. HARPER
Colonel, G. S. C.

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Thirty-day Furloughs for Glider Pilot Trainees.

Asst. Chief of Air Staff, A-1. 22 Feb. 43

Deputy Chief of the Air Staff 10

MAL./mdg/5265

1. Returned in accordance with your request stated in Par. 2, preceding item.

2. General Hanley comments that strict attention must be devoted to the problem of training only the minimum number of glider pilots required for our actual needs.

3. It is desired that this matter be coordinated with the Director of Management Control, who as you know, is engaged in work on the "scaling-down" project which General Bradley is charged with.

MILLARD A. LIBBY,
Lieut. Colonel, G. S. C.

Incl. n/c

Dispatched
FEB 22 1943
AAG

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6 Jan. & 20 June 1974
By BLWCK LC; Dat 12-18-76

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TO: Deputy Chief of Air Staff

Date: Feb. 19, 1945
Comment No. 9
JMD/ls 71126

FROM: Ass't Chief of Air Staff, A-1.

1. Reference your directive contained in par. 8, Comment # 8, your attention is invited to par. 1, Comment # 7.

2. Request this file be returned to A-1 Division.

3. A-1 Division is now taking action to divert excess glider pilot trainees to other assignments and duties.

F. TRUBEE DAVISON,
Colonel, G. S. C.,
A.C of A.S., A-1.

Encl. n/c

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Revised Glider Pilot Flow Chart

Chief of the Air Staff

1/26/43
JJO'S:ee 6701
3

A-3 Division

1. The Assistant Chief of Staff, OPD, expresses the opinion that 6,000 gliders and 6,000 glider pilots are entirely adequate to take care of maximum anticipated demands during 1943. His opinion is based on the logistic difficulties experienced in moving gliders to theaters. See Tab A.

2. General Barnes has further indicated in attached letter and chart (Tab B) that he cannot absorb the flow of glider pilots and maintain their flying efficiency with Troop Carrier units that will be available for training in 1943.

3. It is therefore recommended that:
a. The Glider Pilot Program be reduced to a total of 6,000 glider pilots and that the flow of graduates be as indicated in chart attached to Tab B.
b. The flight time required for training a glider pilot be increased from eight to fifteen hours.
c. The excess glider personnel backed up in the pool be diverted to liaison pilot training or be used to meet our requirement for navigators and bombardiers.

452.4 Gliders (67)

ROBERT W. HARPER
Colonel, G. S. C.

Incl. added Tab A
Tab B
Chart

DATE 1/30/43

TO: Director of Individual Training.

COMMENT NO. 4
HWG/mdg/5265

FROM: Secretary of the Air Staff.

The Deputy Chief of the Air Staff desires that these papers be considered in connection with Comment 6, M&R from Deputy Chief of the Air Staff to the Director of Individual Training, 1/29/43, Subject: Thirty-day Furloughs for Glider Pilot Trainees, in an effort to achieve a coordinated plan for the solution of this problem.

HAROLD W. GRANT,
Colonel, G. S. C.

Incl. n/c

Dispatched
JAN 30 1943
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6 Jan. & 20 June 1974
By AUWICC, Date 12-12-76

452.4 Dhilon (67)

WHH:af 5265

6. AFCAS AFADS 1942 1. Inviting attention to item No. 5 and further
AFACT 9/13 consideration if considered advisable by you.
in turn

Dispatched
SEP 14 1942
AAG

Incls.

WILLIAM H. HALL
Colonel, G. S. C.

File 6 9/1st Ftr.

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AFDAS/TJH/ovs/6371

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DOD Dirs.
By: [illegible] Date: 10-18-76

January 4, 1943.

Colonel George A. Green,
Office of Lend-Lease Administration,
815 Twenty-second Street,
Washington, D.C.

Dear Colonel Green:

I reported the substance of our conversation to General Arnold who does not agree that this is the proper time to form the suggested committee since the requirements for gliders including types, designs and methods must be based upon the findings of our commanding generals in the theaters.

He has no objection to one or two glider officers going to the United Kingdom to investigate the British glider program. I believe that we have already sent one officer from the office of the Director of Air Support and, if this is correct, we will arrange to send Major Barringer at an early date. Otherwise, an additional officer will be ordered over for this purpose.

Sincerely,

T. J. HANLEY, JR.,
Brigadier General, U.S.A.,
Deputy Chief of Air Staff.

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Air Pick-up and Gliders as Related to Future of Air Cargo.

Director of Air Support 1/4/43

Deputy Chief of Air Staff. 3

TJH/ovm/6371

1. Your attention is invited to copy of letter to Colonel G. A. Green, who is a member of the Harriman party, and also his recommendations contained in the attached memorandum.

2. All action possible should be taken by you to further the recommendations contained in his paragraph #6 except so much of it as calls for a joint committee. The action recommended can be taken through our present standardization committees and other joint committees.

Dispatched
JAN 5 1943
AAG

Incls: Added, Memo dtd 1/2/43 fm Col.G.A.Green, subj, "Suggested Glider Committee- Its Constitution & Activities; cpy ltr to Col.Green dtd 1/4 fm Gen.Hanley.

T. J. HANLEY, JR.,
Brigadier General, U.S.A.,
Deputy Chief of Air Staff.

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Air Pick-up and Gliders as Related to Future of Air Cargo.

1. General Major 1942 — For comment.
Arnold Harringer 12/26

H. H. A.

Incls:
Ltr. to Gen. Arnold 12/21/42
from Mr. Springer.
Report re above subject.

---

2. Major General 1942 — LRH ca 5652
Harringer Arnold 12/29

1. Consider this a realistic study of the practical possibilities of cargo gliders used in conjunction with the pick-up.

2. Attached is my paper presented after that of Mr. deFunk at the same meeting. Col. H. R. Harvin, Chief of Staff, Air Transport Command, was there and seemed pleased with both papers.

3. After studying the reports of communication difficulties in North Africa, we have recommended a study be made of possible use of pick-up units installed in airplanes such as A-20s, as a more rapid as well as secure method of sending messages, maps, etc. between headquarters and advanced units in the theater.

Incls. 1/e
Except addition of
paper subj "Gliders
for Transport by
Maj. L. B. Harringer

L. B. HARRINGER
Major, Air Corps

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1.

airs 452.1 Gliders (6)

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DOD ltrs.
8 Dec. & 30 June 1976
By AFMPC/DPC Date 10-14-76

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September 1, 1942.

MEMORANDUM FOR: Commanding General, Army Air Forces.

SUBJECT: Gliders for training of Airborne Troops.

1. With regard to the verbal request made to Major Barringer, according to the tentative plan being submitted for approval to the Commanding General by Air War Plans, Troop Carrier groups will be made available as follows:

a. Two for Glider Pilot Training; one ready now; one to be ready by October first.

b. Two for Airborne Training; one ready now; one to be ready in November.

2. The first 15-place production glider was delivered yesterday. According to latest production estimate 282 will be produced in September. The tentative plan calls for 156 for the Flying Training Command and 208 for the Troop Carrier for Airborne training.

3. Initial training with 15-place gliders will be of instructors for the four advanced glider schools.

4. It is expected that one Troop Carrier Squadron equipped with gliders and qualified glider pilots will be available for airborne training early in October.

5. Airplanes and gliders will continue to be made available for this training at earliest practicable dates. A schedule will be drawn up in two weeks based on experience gained with first instructions in the large gliders and the latest production estimate at that time.

D. M. SCHLATTER
Colonel, Air Corps
Director, Ground-Air Support.

Orig. to Gen G.

File a/s/b/f

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AG 452.4 Gliders (9-1-42)

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By A. Lippincott, Date 10-18-76

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Glider Program of the Army Air Forces

MAL/imm 5265

1 AFOAS AFRIT 1942 10-15

The attached letter was not dispatched owing to the fact that Colonel Coiner, in Mr. Lovett's office, reported that a letter similar in content had recently been addressed to Mr. Burden.

M. A. LIBBY,
Lt. Col., G.S.C.

Dispatched
OCT 15 1942
AAG

1 Incl.
Ltr prepared by
AFRIT on above subj,
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452.4 Gliders (65)

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8 Jan. & 20 June 1974
By AUWP/SAC Date 10-12-76

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AUG 3 1942

Glider Models - Procurement of for Tests.

The Chief of the Bureau of Aeronautics,
Navy Department, Washington, D. C.

Reference: Letter, July 8, 1942, Chief of the Bureau of Aeronautics to Commanding General, Army Air Forces, Aer-E-15-AK VL.

1. As requested in the reference communication, you are advised that the U. S. Army Air Forces is agreeable to assigning to the Bureau of Aeronautics, U. S. Navy, one each of the early production models of the troop- and cargo-carrying gliders for such tests and studies as may be found desirable in the glider program.

2. These gliders will be assigned to the Bureau of Aeronautics at the earliest practicable date after certain definite commitments of the Army Air Forces have been met.

3. In accordance with this agreement, it is understood that the Bureau of Aeronautics, U. S. Navy, will be prepared to transfer to the Army Air Forces, from production contracts, one of each of the glider models being developed by the Navy for the same purpose.

4. Special equipment, trailers, etc., developed for each glider type will be supplied with each glider assigned to both Services.

H. H. ARNOLD,
Lieutenant General, U.S.A.,
Commanding General, Army Air Forces.

Dispatched
AUG 3 1942
AAG

Army Air
JUL 21 1942
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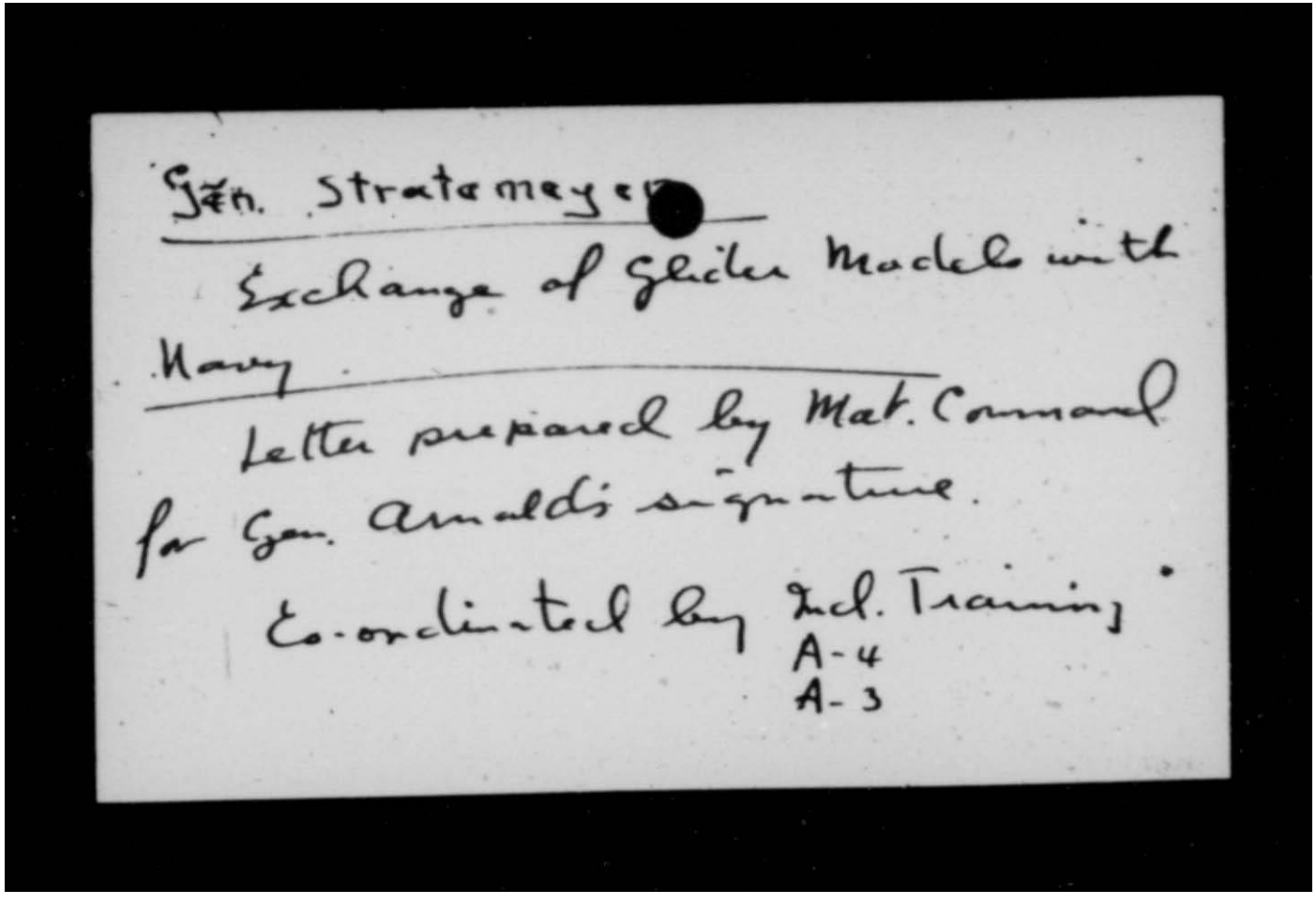

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HEADQUARTERS ARMY AIR FORCES

ROUTING AND RECORD SHEET

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SUBJECT: Glider Models - Procurement of for Tests

NO.	FROM	TO	DATE	COMMENTS
1.	AFCAS	AAF, A-4	1942 7-22	Comment or concurrence. WJF:nl W.J.F. S/AS
2.	AFACT	AFCAS THRU AFADS	7-23	JJO'S:hl 1. Concur. 2. The schedule for delivery of gliders from RM-80 dated June 30 1942 is as follows: Type — July — August — September 15 Place Glider — 46 — 694 — 1,048 9 Place Glider — 1 — 3 — 7 Incl. ltr to Chief of Bureau of Aeronautics, Navy Dep't. H. S. V. C/AFACT
3.	AFADS	AFCAS	7-24	RCC/hmh 1. Concur. for TJHJr C/A-4 1 Incl. n/c Hq. Army Air F... JUL 25 1942 AAG Received
4.	CAS	RIT	7/27	RCWB/hk 1. For comment or concurrence. DECLASSIFIED RCWB S/AS 1 Incl: n/c

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HEADQUARTERS ARMY AIR FORCES
ROUTING AND RECORD SHEET

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SUBJECT: Glider Models - Procurement of for Tests.

NO.	FROM	TO	DATE	COMMENTS
3.	AFRIT:2 TVH:ceh	AFCAS	1942 7-29	1. Concur. L. S. S. Dir. Ind. Tr. Incls: n/c

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199.

AAF 452.1 Gliders (63)

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In reply address not the signer of this letter but Bureau of Aeronautics, Navy Department, Washington, D.C.

Refer to No. Aer-E-15-AK
VL

NAVY DEPARTMENT
BUREAU OF AERONAUTICS
WASHINGTON

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DOD ltrs
8 Jan. & 30 June 1974
By: _____ DC Date _____

C 9391

8 JUL 1942

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From: The Chief of the Bureau of Aeronautics.
To: The Commanding General, Army Air Forces.

SUBJECT: Glider Models, Procurement of for Tests.

1. It is requested that one each of the early production models of the troop and cargo carrying gliders, being developed by the U. S. Army Air Forces, be assigned to the Navy for such tests and studies as may be found desirable in the glider program.

2. This bureau will be prepared to transfer to the Army, from production contracts, one of each of the glider models being developed by the Navy, for the same purpose. Letters of intent have been released for fifty 24-place twin hull amphibian gliders to Snead & Company and one hundred 12-place float wing amphibian gliders to Allied Aviation Corporation.

3. Special equipment, trailers, etc., developed for each glider type will be supplied with each Navy glider delivered to the Army, and it is requested that such equipment be supplied with the Army gliders.

J. H. TOWERS
Rear Admiral U.S.N.
Chief of the Bureau of Aeronautics

Copy to:
NAF
Marine Corp Aviation
Plans Division

RECEIVED
JUL 10 1942
PROD. ENGR. BR.,
O. C. A. O.

FOR VICTORY BUY UNITED STATES DEFENSE BONDS AND STAMPS

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Received JUL 9 1942 A
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GLIDER MODELS - PROCUREMENT OF FOR TESTS

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By ALHQ/K NARS, Date 12-12-76

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Glider Models - Procurement of for Tests

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452.4 Gliders (63)

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COO ltrs.
6 Jan. & 20 June 1974
By AWJ NARS, Date 10-18-76

DECLASSIFIED

WKH:JT

15 AFCAS (1) AFROM 1942
(2) AFRIT 8-13

1. For further remark in view of Item #14, provided it is considered necessary by your office.

2. For reply to letter from FTC.

Dispatched
AUG 13 1942
AAG

Incl.
n/e

W. K. H.
S/AS

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Troop Carrier Program.

JJO'Sak

1 AFACT AFDPU 1942 7-30

For compliance with Paragraph 1 h, attached RAR, with reference to the rescission of orders activating the 8th Troop Carrier Command.

H. S. V.
C/AFACT

Incl:
Cy RAR frm AFDAS to AFACT, 7-15-42

SAS 452.4 Gliders (2)

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SAS 452.4 Gliders (2)

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COPY

Subject: Troop Carrier Program

AFDAS
LBK:pfp

1 AFDAS AFAGF 1942
7-15

1. The decisions rendered in conference in the office of the Deputy Chief of Air Staff on July 15, 1942, with the Air Staff, and the Commander and Staff of the Troop Carrier Command, indicated below are confirmed.

a. The Belero schedule for Troop Carrier groups is modified to authorize a delay in scheduled date of arrival in Belero of 3 months for the 61st Troop Carrier Group. No other change in the present time schedule requirement of the Troop Carrier Command is authorized.

b. The present Troop Carrier Command and staff at Indianapolis is the only command of that type which will be activated. Action already taken toward the activation of the 8th Troop Carrier Command will be rescinded. Troop Carrier groups will normally be assigned to Support Commands in the Air Forces. It is to be expected that Air Force Commanders may from time to time detach Troop Carrier units from the Support Command, for temporary duty with Air Service commands, or with other commands with urgent requirements for special services by transport airplanes.

2. In confirmation of other decisions and remarks made in that conference, and for general information, the following items are made a matter of record:

a. The decision in 1 a. above is to permit an additional group-month to provide tow planes in glider schools for the training of glider pilots and to provide to the Troop Carrier pilot, preliminary training in the towing of gliders. As a result of this additional group-month, groups will move to Fort Bragg to complete their glider training, and to provide for the airborne forces the necessary air support for training of real value.

b. The Director of Ground-Air Support will represent the Commanding General, Army Air Forces, in conference with the Army Ground Forces and endeavor to prepare a training

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462.4 (62)

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Subject: Troop Carrier Program

1 AFDAS AFACT 1942 schedule satisfactory to both. Irreconcilable differences
cont. 7-15 will be prepared infora for decision by the Chief of Staff.
In these discussions the Army Air Forces decision will
include the following:

(1) The Bolero schedule (except for the change in 1 g. above) will not be modified.

(2) Maximum advantage will be made of assigned training in Bolero.

g. Plans and training in the Troop Carrier Command shall not be predicated on a failure of the glider program.

L. S. K.
AFDAS

Copies to A-4, Plans, AFDSR, AFRGS.

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By AGO Ltr. Dec. 10-12-26

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Glider and Towing Airplane Requirements.

13	AFCAS	AFAEP	1942 8-8	1. For recommendation concerning paragraph 4, Item No. 12.	

Incls. n/c

W.E.H. S/AS

Dispatched AUG 8 1942 AAG

A-1/AS
A-2/AS
Intel. S.
A-3/AS
A-4/AS
Plans/AS
Insp/AS
Mil. Req.
A. Def.
Bomb.
Gr. Sup.
Base S.
War O&M
Ind. Tr.
Tech. S.
Comm.
Weather
Traffic
Photo. M&C
Tech. Insp.
Pub. Rel.
Dir. Pers.
Mil. Pers.
Civ. Pers.
Surg.
J. Advoc.
Budget
Fiscal
Mgmt. Con.
Adj. Gen.
Org. Pl.
Stat. Pl.
Leg. Pl.
Mat. C.
A. S. C.
F. C.

452.4 Gliders (62)

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AG 452.4 Gliders (62)

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DOD Dirs.
8 Jan. & 20 June 1974
By AUX/OIC to: Date 10-18-76

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July 16,1942

SUBJECT: Glider and Towing Airplane Requirements.

TO: Commanding Officer, Troop Carrier Command
(Attention: Colonel F. S. Borum)

1. For your remarks and recommendations concerning subject matter contained in Item #7, Routing and Record sheet attached, and return to this headquarters.

FOR THE COMMANDING GENERAL:

William E. Hall,
Colonel, A.C.
Ass't Sec. of the Air Staff

Incls.
Ltr. frm AFTTC to
CG/AAF sub abv.5/21/42.w/incl.
Cy R&R to AFRIT thru AFDMR, dated
5/29/42
R&R to AFCAS dated 7-15-42

Dispatched
JUL 17 1942
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452.4 Bolero (62)

Air AD 452.4 Bolero (62)

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DOD Dir. 5 Jan. & 20 June 1974
By: [illegible] Date: 12-18-76

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Subject: Glider and Towing Airplane Requirements.

A-1/AS
A-2/AS
Intel. S.
A-3/AS
A-4/AS
Plans/AS
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Mil. Req.
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Base S.
War O&M
Ind. Tr.
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Mgmt. Con.
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Stat. Pl.
Leg. Pl.
Mat. C.
A. S. C.
F. C.

452.4 Gliders (3)

WEH:nl

8. AFCAS AFRON 1942 Attention is invited to attached letter, Glider
thru 7-28 and Towing Airplane Requirements, from Hq. Troop Carrier
AFACT Command to AFACG, dated 7-21-42.
AFRIT
AFRGS

Dispatched
JUL 28 1942
AAG

Incls.
Ltr frm AFTC to
CG/AAF sub abv. 5/21/42.w/incl.
Cy R&R to AFRIT thru AFDMR,
dated 5/29/42

W.E.H.
S/AS

7/28/42

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Air AG. 452.4 Gliders (3)

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8 Jan. & 20 June 1974
By AUWP15a Date 10-17-76

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MEMORANDUM FOR THE ADJUTANT GENERAL

JUL 15 1942

Subject: Establishment of an Army Air Forces Glider Replacement Center.

The Secretary of War directs:

I. That an Army Air Forces Glider Replacement Center be established effective this date at Santa Ana, California and placed in an exempted status under the control of the Commanding General, Army Air Forces and under the immediate supervision and jurisdiction of the Commanding General, Army Air Forces, West Coast Training Center.

1. The eventual station of the Army Air Forces Glider Replacement Center will be Kirtland Field, Albuquerque, New Mexico.

II. That the following be notified of this action:
Commanding General, Army Air Forces
Director of Personnel (Col. A.W. Kissner and Lt. Col. G.A. Clark, Jr.)
Director of Statistical Control (Major C.B. Thornton)
Director of Base Services
Director of War Organization and Movement
Chief, Program Planning
The Air Surgeon (Brig. Gen. D.N. Grant)
Materiel Command (Budget Office)
Commanding General, Air Service Command
Commanding General, Army Air Forces
Director of Individual Training
Commanding General, Army Air Forces Flying Training Command
Commanding General, Army Air Forces West Coast Training Center
Commanding General, Services of Supply
Corps of Engineers (Col. G.F. Lewis)
Quartermaster Corps (Transportation Section)
All Divisions of the War Department General Staff and other interested agencies.

For the Commanding General, Army Air Forces:

File a 7/15/42

WM. W. BICE
.. Col., A.G.D.
Air Adjutant General

MEMORANDUM FOR RECORD: This action is in accordance with a request from the Commanding General, Army Air Forces Flying Training Command, July 14, 1942. This Replacement center is necessary to provide for the assignment of personnel before entering glider training.

452.4 Gliders (6)

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Air 452.4 Gliders (6)

Copy for General Arnold, Room 20

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DOD Dir.
5 Jan. & 30 June 1974
By Authority of: Date: 12-7-76

AFRIT-1

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June 18, 1942

SUBJECT: Glider Pilot Training

TO: Commanding General
Air Force Flying Training Command
Maritime Bldg., Washington, D. C.

1. The instructions issued to the Commanding General, Army Air Force Flying Training Command, May 15, 1942, subject as above, are modified as follows:

It is desired that necessary action be taken to train glider pilots in sufficient numbers to make available to the combat units of the Air Force, a total of 3,000 glider pilots by September 26, 1942.

By command of Lieutenant General ARNOLD:

JOHN Y. YORK, Jr.
Col., Air Corps.

452.4 Gliders (6)

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DOD ltrs.
6 Jun. & 20 June 1974
By [illegible] LC; Date 4-12-74
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Glider Pilot Training

RHH/nl

2. CAS RIT 7/6

1. The enclosed file returned to you for such disposition as you deem it advisable. In view of the progress being made in connection with the procurement of glider pilots.

Incl: n/c

R.C.V.B.
S/AS

452.4 Gliders (57)

7 1942
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ai 7/7/42

HEADQUARTERS ARMY AIR [illegible] COORDINATION									
Chief of Air Staff	Deputy Air Chief	A. A. G.	A-1	A-2	[illegible]	[illegible]	[illegible]	[illegible]	

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June 10, 1942

MEMORANDUM FOR THE CHIEF OF STAFF: (ATTENTION G-3 DIVISION)

Subject: Glider Pilot Training

I. Discussion

1. a. In accordance with directives from the Commanding General, Army Air Forces, arrangements for schools and training of glider pilots and the procurement of the materiel have been completed to enable the training of 3,000 glider pilots by September 1, 1942.

b. There are not sufficient volunteers to meet the program at the present time. There are only 229 glider pilots actually in training and there is no reserve list of candidates which means that we are 1,100 candidates behind for the present classes. The Army Air Forces has endeavored without success through various methods to obtain sufficient number of students for the glider training schools. However it is felt that with the program as far behind as it now is that the entire glider training program will be jeopardized unless definite steps are undertaken to insure that qualified personnel are immediately sent to the schools which have been established. It is understood that there are approximately 5,000 officers and enlisted men now in the Army with CAA ratings, who possess qualifications for glider pilot training and who are not now engaged in Air Force activities.

c. The Army Air Forces desire to have this personnel ordered to glider training schools. This is a departure from the peacetime procedure wherein only volunteers are sent to flying schools. However, it is essential that this program be carried on and the only other way personnel for the glider schools could be obtained would be by diverting students who are already in flight training to glider training. If this were done, the flight training program would be seriously handicapped.

d. The Army Air Forces feels that it is necessary during time of war to establish [illegible] procedures when the circumstances would indicate that the war effort would be greatly enhanced by doing so.

Chief of Staff	Asst.	A.C.S.	A-1	A-2	A-3	A-4	A-5	A-6	A-7	A-8	A-9

COORDINATION

AAF-39

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II. Action recommended

The Secretary of War directs that the Adjutant General take necessary action immediately and in the most expeditious manner to order for examination all personnel in the various branches of the Army who are qualified for glider training and are not at the present time engaged in Army Air Force activities.

III. Concurrences.

Assistant Chief of Staff, G-3. ( )

For the Commanding General, Army Air Forces:

L. S. KUTER
Brigadier General, U. S. A
Deputy Chief of the Air Staff

HEADQUARTERS ARMY AIR FORCES - COORDINATION											
Chief of Staff	Sec'y Air Staff	A.A.G.	A-1	A-2	A-3	A-4	A-WPD	A-Insp.	Budget	Statistics	
					- 2 -						

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DOD Dirs.
8 Jan. & 30 June 1954
By AGHRC, WC Date 12-18-86

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Glider Pilot Program

1. AFRIT-1 LSS:LLL — AFCAS thru: AFAAP — 1942 6/4

1. In accordance with directives received verbally from the Commanding General, arrangements for schools and training of glider pilots and the procurement of the material have been completed to enable the training of 3,000 glider pilots by September 1, 1942. The program is now stalled. To date there is in training 229 glider pilots. There is no backlog of candidates.

2. A list of approximately 85,000 CAA rated pilots on record with the CAA was circularized with a questionnaire including a return envelope addressed to the Military Personnel Division for the use of those qualified and interested. Approximately 500 replies are now being received daily.

3. Arrangements were made with The Adjutant General's Office to enlist individuals qualified for glider pilot training in their congregation at seventeen Air Force stations as rapidly as enlisted. A weekly quota of 700 has been allocated to the Civilian Pilot Training Organization for procurement. CPT reports their field is unable to meet this quota.

4. Authority has been obtained to circularize all qualified military personnel and obtain their transfers to the Air Forces upon the request of each individual concerned. Lists secured from CAA showing qualified personnel in the military service have been submitted through Military Personnel to The Adjutant General for direct solicitation from that office for transfer to the Air Forces for this program.

5. There are not sufficient volunteers to meet the program which is now one week behind and short 1,100 candidates for the present classes alone. There was promulgated by A-1 on June 2 the policy to commission a number of personnel qualified in the glider program as officers. This announcement has not been circularized to such an extent as to encourage application to date, in any further delay in securing candidates for training will increase the number of trainees present at each school to such an extent as to over-burden the facilities already authorized and contracted for at the schools concerned.

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Glider Pilot Program

1. AFRIT-1 (Continued) 6/4

16. It appears that there are only two sources of material with which to meet this program:

1. To utilize the available trainnes (enlisted) now enrolled for pilot training of which there are 1,800 between the completion of the primary course on June 1st and the class entering advanced school on June 3rd.

2. To order to glider pilot training a sufficient number of personnel now in the Army who meet the qualifications for glider pilots and who are not now engaged in Air Force activities.

7. It is reported to this office that there are approximately 5,000 officers and enlisted men within this category who are now qualified for this training with CAA ratings. It is realized that this represents a departure from peace-time practice of ordering to flight duty only those who volunteer therefore. It must be realized, however, that all peace-time standards which will interfere with the war effort should be discarded. Of the above two methods of securing the personnel, to adopt number one would seriously disrupt the pilot training program which now cannot meet all the requirements for pilots.

8. It is recommended, therefore, that necessary action be taken to immediately order all qualified personnel to report for examination for this training and that this action be taken by the most expeditious means available.

L. S. S.
Colonel, AAF.

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WAR DEPARTMENT
Headquarters Army Air Forces
Office Chief of the Air Staff
Washington, D.C.

Date 5/29/42

TO: Lt. Col. E. P. Curtis
Room 2212

1. For your information.

YBB.

Louis E. Burlinger, Maj., A.C.
Glider Specialist,
A-4 Div. Air Staff.

AFRGS

A-4 DIVISION

X-225-D, A. C.

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DOD Rtr.
By ALH/PIC, Date 10-12-76

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GLIDER PRODUCTION SCHEDULE FROM WRIGHT FIELD

May 28, 1942

The following is a schedule of glider production received from Wright Field May 28, 1942. This schedule assumes that priority rating for critical materials for gliders are changed from 6 to 1.

Gliders which can be produced by October 31, 1942.

120 -- 2-place gliders (under contract)
100 -- 9-place gliders (under contract)
480 --15-place gliders (under contract)

Also 500 light planes will be converted to 3-place trainers by August 2, 1942.

Noted-file

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Air AD 452.4 Gliders (56)

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DOD Dir. 5 Jan. & 29 June 1971
By [illegible] Date 10-18-86

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AFAAP
JHMcC

1st Ind.

War Department, Headquarters Army Air Forces, Washington, D. C., May 23, 1942.
To: Air Forces Flying Training Command, Washington, D. C.

1. Attention is invited to the enclosed copy of an approved memorandum for the Chief of the Air Staff, subject: Glider Training Program, dated May 23, 1942.

By command of Lieutenant General ARNOLD:

Incl.
C/memo to C/AS,
5/23/42

ab

JOHN B. COOLEY
Lt. Col., A. G. D.
Asst. Air Adjutant General

452.4 Gliders (55)

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ac 5/24/42

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AIR STAFF COORDINATION										
C. of A. S.	SECRETARY	A. A. G.	A-1	A-2	A-3	A-4	A-W.P.D.	INSP.	BUDGET	STATISTICS
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AG 452.4 Gliders (55)

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Glider Pilot Training Program.

AFAAP
WGB:cf

1. AFAAP: AFDAS 1942
AFACT 5/23
AFADS
AFAEP
AFDMR
AFRIT
AFPRO
AFDOP
AFMAG ✓
AFMSP
AFFTC

As a means of facilitating personnel procurement for the Glider Pilot Training Program, the classification secret or confidential is removed from all information relative to this program except the actual number of pilots to be trained. Any publicity in furtherance of the Glider Pilot Program may state that "a considerable number" or "a large force" will be trained.

WGB
Exec. A-1

452.1 AAF 353.9 Gliders (54) B

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AFRIT-2

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DOD dtr.
By AFRIT Sec. Date 10-18-76

JES:hvr

May 15, 1942.

SUBJECT: Glider Pilot Training.

TO: Commanding General, Air Forces Flying Training Command, Maritime Building, Washington, D.C.

The instructions contained in letters from Headquarters, Army Air Forces, above subject, dated May 8 and May 11, 1942, respectively, are revoked, and the following instructions are substituted therefor:

1. It is desired that necessary action be taken to train glider pilots in sufficient numbers to make available to the combat units of the Air Forces a total of 3,000 glider pilots by September 1, 1942. In the accomplishment of this program the following plan will be placed into effect:

a. Trainees will receive flying training as follows:

In Class 1 airplanes (Cub Type Aircraft)	30 hours within 4 weeks
In 1 or 2 place gliders	8 hours within 1 week
In 9 or 15 place gliders	8 hours within 1 week.

b. The facilities of the CAA Civilian Pilot Training Program will be utilized to secure the powered-aircraft instruction.

c. The existing glider schools under contract and existing Air Force schools will be utilized to secure the glider training.

d. Qualifications of trainee candidates will be as follows:

(1) Male Citizens of the United States of America.

(2) Between the ages of 18 and 35 years, inclusive.

(3) Qualified for flying in Class I or Class II as required by AR 40-110.

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AG 452.4 Gliders (5-15-42)

452.4 Gliders (5-15-42) (53)

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(4) Have passed the Army General Classification Test with a score of 110 or more; or Aviation Cadet Qualifying Examination AGCO-4 with a minimum score of 75; or the Aviation Cadet Qualifying Examination AGCO-3 with a minimum score of 65.

(5) Pilot experience.

(a) Should hold a CAA Private Airman Certificate, or any higher CAA Pilot Certificate which is currently effective or did not lapse prior to January 1, 1941; or hold a CAA Commercial Glider Certificate which did not lapse prior to January 1, 1941; or have an authenticated record of having made not less than 200 glider flights.

(b) Shall never have been eliminated from pilot training for flying deficiency in any primary Army, Navy or CAA Pilot Training Course.

e. Airdromes required in addition to those now assigned to the Flying Training Command in the execution of this program will be allocated from those currently assigned to the Air Support Command.

f. Graduates of the Air Force schools and Air Force contract schools may be utilized as instructors in all schools engaged in this program.

g. The numbers of trainees to be entered will be sufficient to reach the objective of the 3,000 glider pilots plus those required to staff the schools plus 20 % of the total to meet attrition in the schools.

h. Air Force officer graduates of the existing Army glider course may be used as instructors and/or supervisors in all schools engaged in this program. Instructors will normally be assigned in the ratio of one instructor per five trainees, in both powered aircraft and glider instruction

i. Aircraft will be provided the Flying Training Command for instructional purposes in the ratio:

Powered aircraft, 1 to 3 trainees
1 or 2 place gliders, 1 to 3 trainees
9 or 15 place gliders, 1 to 3 trainees
Plus sufficient numbers to sustain an attrition rate of 10% per month.

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Photo. Mapping
Tech. Insp.
Pers. Asst.
Dr. Pers.
Ex. Pers.
Ch. Pers.
Secy.
J. Adjutant
Assignment
Fiscal
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Ch. Fl.
Stat. Fl.
Log. Fl.
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4. The Material Command will accelerate the production of powered aircraft and glider aircraft to meet these requirements. The exact numbers are to be determined in conferences between the Flying Training Command and the Material Command. All privately owned gliders in the continental United States that are considered satisfactory types shall be secured by purchase or condemnation immediately and shall be overhauled commercially, for use not later than July 1, 1942.

5. The Material Command will initiate necessary contracts immediately on an hourly or cost-plus basis which will include:

(1) Cost of training
(2) Monetary allowances in lieu of rations and quarters for trainees. (Contractors will be authorized to use tentage where required.)

6. In accomplishment of this program the restrictions imposed on glider pilot qualifications by Army Air Force Regulations 50-10 are waived.

7. This program will be initiated not later than June 1, 1942 and will be continued past September 1, 1942, to make available a total of 6,000 glider pilots to the combat units of the Air Forces by December 31, 1942.

8. The Director of Personnel will begin action at once to procure, classify, and deliver qualified processed trainees to training stations at the rate prescribed by the Flying Training Command for training as glider pilots.

For the Chief of the Air Staff:

N. F. TWINING
Colonel, Air Corps
Secretary, Air Staff.

Distribution:
Flying Training Command
Material Command
Dir. of Military Requirements
Director of Personnel
Fiscal Officer
Public Relations
Mil. Dir. of Civ. Aviation

A-1 AS
A-2 AS
Intel. S.
A-3 AS
A-4 AS
Plans AS
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Base S.
Gar O&M
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ADDRESS REPLY TO
COMMANDING GENERAL
AAF, FLYING TRAINING COMMAND

DECLASSIFIED
DOD Dir. 5 Jan. & 30 June 1979
By [illegible] Date 10-15-76

ARMY AIR FORCES
HEADQUARTERS FLYING TRAINING COMMAND
WASHINGTON

May 13, 1942

SUBJECT: Glider Pilot Training.

TO: Commanding General, Army Air Forces. Thru: Director of Individual Training.

1. It is requested that the following changes and additions be made to the directive from the Commanding General, Army Air Forces, to the Commanding General, Air Forces Flying Training Command, subject as above, dated May 8, 1942:

a. Change paragraph 4 to read "Qualifications of trainee candidates:"

(1) Male citizen of the United States of America.

(2) Between the ages of 18 and 35 years, inclusive.

(3) Qualified for flying in Class I or Class II as required by AR 40-110.

(4) Have passed the Army General Classification Test with a score of 110 or more; or Aviation Cadet Qualifying Examination AC10-A with a minimum score of 75; or the Aviation Cadet Qualifying examination AC10-B with a minimum score of 65.

(5) Pilot experience

(a) Should hold a CAA Private Airmen Certificate, or any higher CAA Pilot Certificate which is currently effective or did not lapse prior to January 1, 1941; or hold a CAA Commercial Glider Certificate which did not lapse prior to January 1, 1941; or have an authenticated record of having made not less than 200 glider flights.

(b) Shall never have been eliminated from pilot training for flying deficiency in any primary Army, Navy, or CAA Pilot Training Course.

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b. Change paragraph 8 to read - "Air Force officers graduated from the existing Army Glider Course may be utilized as instructors and/or supervisors in all schools engaged in this program."

c. Add to paragraph 10 the sentence - "All privately owned gliders in the continental United States that are considered satisfactory types shall be secured by purchase or condemnation immediately and shall be overhauled commercially, for use not later than July 1, 1942."

d. Change "cost-plus basis" in paragraph 11 to read - "hourly or cost-plus basis."

e. Add paragraph 14 to read - "The Director of Personnel will begin action at once to procure, classify, and deliver qualified processed trainees to stations at the rate prescribed by the Flying Training Command for training as glider pilots."

For the Commanding General

A. J. Swann

A. J. Swann
Major, Air Corps,
Asst. Adj. General

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Gliders

Liaison type airplanes (for Field Artillery and our Glider Program)

AFDAS
LSK:cmc

1. AFDAS AFADS 1942 5/15

1. General Arnold has directed that as many of the "4,000" liaison type airplanes referred to by Colonel Lerner in a conference in his office on May 10, 1942, be obtained as may be found necessary to meet the full requirement of the Field Artillery and for our glider program.

2. With reference to the glider program, it has been learned informally, this afternoon, through Colonel Everest of G-3 that the requirements of the Field Artillery for liaison forces are as follows:

460 liaison airplanes on July 1st, 1942.
280 liaison airplanes per month thereafter for the balance of the calendar year.
Total requirement, 1942 - 1,980 liaison type airplanes.

3. Colonel Everest quotes the Requirements Division, Army Ground Forces' statement as of this date that the lack of liaison airplanes is not delaying the inclusion of organic air observation in Field Artillery Units.

4. It is directed that the weekly statement of activities prepared for General Arnold early each Monday morning will contain on Monday, May 25th, a statement of accomplishment as the result of this directive.

Dispatched
MAY 16 1942
AAG

L.S.K.
AFDAS

Copies to AFACT, AFRGS, AFRIT and General Arnold.

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AAF Hq 452.1 Gliders (52)

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May 9 - Gen Yount submitted plan for glider training.

May 15 - Gen Yount submitted report on Status of Glider Training Program

May 17 - Col. Beebe advised Gen Kuter on pencilled transmittal slip that Gen Arnold wanted chart showing production against date for both glider pilot and gliders.

May 19 - Gen Kuter directed preparation of data as desired by Gen A (Attn A-3)

May 23 A-3 of Flying Training Command transmitted data thru A-3 to Gen Kuter

May 29 Gen Kuter directed A-4 to prepare an attachment to data sheet to explain shortage of gliders indicated therein.

June 7 A-4 submitted desired data.

File ready for presentation to Gen A.

WJF

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DOD Dirs.
8 Jan. & 30 June 1954
By AGAFRC, Dated 10-18-76

HEADQUARTERS ARMY AIR FORCES
DECLASSIFIED
ROUTING AND RECORD SHEET

File No. . . . . .

Note A line will be drawn across sheet after each comment.

Tally No. AAF . . . . . .

SUBJECT: Training of Glider Pilots.

NO.	FROM	TO	DATE	COMMENTS
1	AFDAS	AFACT	1942 5/19	AFDAS LSK:pfp 1. For the preparation of a report to General Arnold as indicated by the penciled memorandum from Colonel Beebe, attached. L.S.K. AFDAS Incls. Memo to Gen. Arnold frm Col. York 5/9; Memo to Gen. Arnold frm Gen. Yount 5/15 w/ Incls. Penciled memo frm Col. Beebe.
				MMacC:hma
2	AFACT	AFFTC	5/20	**1. It is requested that a directive be prepared in accordance with the instructions contained in comment 1 above, and submitted through the A-3 Division.** H. S. V. C/AFACT Incls:n/c
				(G-3-16:fg)
3	AFFTC/ G-3	AFACT	1942 5-23	1. The report to General Arnold as indicated by the penciled memorandum from Colonel Beebe is attached herewith. 2. Particular attention is invited to the glider production figures which were supplied by the Materiel Command. The indicated shortages are most serious, and informal contact with Wright Field indicates that the actual situation is even worse than that shown. It is urgently requested that action be taken to enable the Materiel Command to supply the Flying Training Command with the needed gliders and that this Command be informed accordingly. 3 Incl.n/c. 1 Incl.added,Rpt.5/22. for R. F. C., Maj.Gen.,U.S.A.,Commanding

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ROUTING AND RECORD SHEET

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File No. _____

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Tally No. AAF _____

SUBJECT: Training of Glider Pilots.

NO.	FROM	TO	DATE	COMMENTS NMacC:hma
4.	AFACT	AFDAS	5/23	1. Report for General Arnold in accordance with the penciled memorandum is attached hereto. H. S. V. C/AFACT Incls:n/c
				AFDAS LSK:cmc
5.	AFDAS	AFADS	1942 5/29	1. To note. 2. Before submission of this paper to General Arnold, it is believed desirable that you prepare for attachment to the tabulation entitled "Glider Pilot Training" a very brief statement covering the shortages of gliders indicated in that tabulation. L.S.K. AFDAS Incls: n/c
				AFADS TJH/alm
6.	AFADS	AFDAS	1942 6/7	1. The programs of the various glider contractors are still in the stage of facility preparation. The Materiel Command is, therefore, unable to provide at this time an accurate appraisal of glider production during 1942. Until the manufacturers have actually begun production, the only data available for planning are the production objectives set for the industry by the Materiel Command. As the project progresses, it will become possible to determine more accurately the extent to which the production objectives will be met. 2. There are attached hereto Tabs B and C showing estimates of glider deliveries based on April 30, 1942 RW-80. The deficits shown herein are immaterial. The estimate shown in these two tables will be reduced by the production of engineless cub type airplanes, but even if it exists, it (Continued)

deficit

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HEADQUARTERS ARMY AIR FORCES

ROUTING AND RECORD SHEET

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SUBJECT: Training of Glider Pilots.

NO	FROM	TO	DATE	COMMENTS
				AFADS TJH/elm
6.	(Continued) AFADS	AFDAS	1942 6/7	will not be serious in the training program (see Tab B indicating shortage of only three airplanes in June and four in July). It will be serious in the larger type gliders if not corrected. The following steps have been taken to correct this shortage: General Echols, upon representation of this division, has directed the Gould Aeronautical Division, the Timm Aircraft Company, the Ford Company, and the Cessna Company to proceed independently with glider production. a. The advantages of this scheme are: (1) There is no waiting for standard jigs, dyes, and tools which the original plan called for to be delivered by the materiel division. (2) The independent research and production facilities of these large companies have been turned loose on the problem. (3) There will be no loss because they couldn't have started production anyhow until September 15 under the other plan. (4) The chances in favor of their success are many and we should get a considerable production even though it is hand made. b. The disadvantages are: (1) There will be no standardization between this factory production and perhaps no standardization within the gliders made by the same concern. This is considered immaterial.

U.S. Army Air F...

OCT 9 1942

AAG Receiv...

4 Incls, n/c.
2 Incls added.
Tabs B and C.

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HEADQUARTERS ARMY AIR FORCES
ROUTING AND RECORD SHEET

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SUBJECT: Training of Glider Pilots.

NO.	FROM	TO	DATE	COMMENTS
7.	AFDAS	Chief, Program Planning Unit (Col.Moore)	1942 6/11	For incorporation in the Program. Incls: n/c AFDAS LSK:cmc L.S.K. AFDAS
8.	AFDPU	AFDAS	1942 6/16	Noted and will be incorporated in the 224 Group Program. Incls: n/c A.L.M. Chief, Program Planning & Control

For file
Capt. Hayes
for R.C.W.B
6/18/42

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452.1 (6-18-42) Glider (51)

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ADDRESS REPLY TO
COMMANDING GENERAL
AAF. FLYING TRAINING COMMAND

ARMY AIR FORCES

HEADQUARTERS FLYING TRAINING COMMAND

WASHINGTON

AFFTC May 9, 1942.

MEMORANDUM FOR: General Arnold

SUBJECT : Plan for Training Glider Pilots.

1. Flying training will consist of:

a. A four weeks' course of a maximum of thirty (30) hours in light aircraft. All landings will be made with ignition off. Students will be advanced on proficiency basis.

b. A one-week course of eight (8) hours 30 min in two place training gliders.

c. A one-week course of eight (8) hours in nine to fifteen place cargo gliders.

2. Training will be conducted at:

a. Sites selected by representatives of the CAA for the elementary power flying. It is planned to have these in the Midwest.

b. Existing glider schools at 29 Palms, California, Wickenburg, Arizona, Lamesa, Texas, and Elmira, N. Y., for glider training on one or two place, nine and fifteen place gliders.

c. Future Advanced Glider Schools at Amarillo and Dalhart, Texas, for such additional training as time permits. All enlisted graduates of the existing schools will be assembled at these locations.

3. Students for training to be procured by the Director of Personnel from the Armed Forces or enlisted from civilian life if they have the following qualifications:

a. Age 18 to 35

b. Physical Class II

c. Mental score of at least 110 on Army General Classification Test.

d. Pilot Experience:

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(1) Hold a CAA Private Airman Certificate or higher.

(2) ~~Shall not have been eliminated for flying deficiency at any time.~~

4. The method of operation will be as follows:

a. CAA to recommend operators who will furnish instructors and will recommend the training sites for the power training phase.

(1) The Army will negotiate the contracts and make payment on an hourly basis. Army will prepare the curriculum also furnish the airplanes. Essential motor vehicles may have to be furnished.

b. The existing Army Civil Contract Glider Schools will conduct the glider phase.

(1) These will be run as at present, except that the students will be in attendance for only two weeks and will receive instruction on both training and cargo type gliders.

5. The personnel requirements are:

a. CAA Schools - Length of Course 4 Weeks

Students entering per class	640
Total under instruction	2560
Total instructors required	515
Air Corps Supervisors approximately	30

b. Civil Contract Glider Schools - Length of Course 2 Weeks
(To be operated on cost plus basis).

Students entering per class (every week)			545
Total under instruction			1090
Total instructors required			
Civilian	50		
Army	75	Total	125

6. The material requirements are:

a. Light airplanes ~~900~~ 939

b. One and two place gliders ~~125~~ 144

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Memo for Gen. Arnold May 9, 1942.

c. Nine and fifteen place gliders ~~175~~ 150

d. Tow ships - L-1 or equal 50
C-47 or equal ~~100~~ 60 Total ~~150~~ 110

7. Source of light planes: There are 1900 cubs on order, 700 of which have been delivered to date. The Air Support Command has been contacted and state they will release the required number of aircraft for this training program; namely, 900. It may be necessary to replace these airplanes for the Air Support Command as they will be required at a future date for equiping of units. The production rate of cubs is reported as 100 per week.

8. A conference will be held, Tuesday, May 12, 1942, with representatives recommended by the Civil Pilot Training, to conduct this training and for the selection of sites.

9. Representatives of the Air Forces Training Centers will be present for this conference in order to expedite this matter.

10. Due to the fact that this program has to be initiated in such a short space of time, and the magnitude of the operation is so great, it is doubtful if publicity can be withheld; although every effort will be made to restrict this publicity to a minimum. In order to stimulate interest in the public and to place the opportunity before the desired personnel, some publicity will have to be issued.

HHA

Go out & get those owned by private individuals - do not wait for production

- 3 -

HHA

Air AG 452.1 Pilots (5-1)

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ADDRESS REPLY TO
COMMANDING GENERAL
AAF. FLYING TRAINING COMMAND

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DOD Dir. 5200.9
By AAG/RDC Date 10-18-76

ARMY AIR FORCES

HEADQUARTERS FLYING TRAINING COMMAND

Washington

May 15, 1942.

MEMORANDUM TO GENERAL ARNOLD:

Subject: Status of Glider Training Program.

1. On Saturday, May 9, 1942, the Civil Aeronautics Administration was requested to recommend the names of their most competent operators located generally in the central part of the United States in areas free from air congestion, and who would be able to assist in the light plane training phase of the glider training program. A conference was held on Tuesday, May 12, with the contractors recommended by the Civil Aeronautics Administration. The program was explained and a price of $15.00 per hour was agreed upon between the contractors and representatives of the Materiel Command. Tentative assignment of students is shown on the attached sheets marked Inclosure 1.

2. Contracts are being signed this date by operators operating as individuals and partners, where both partners are present. In the case of corporations, the contracts are being mailed inasmuch as the corporate seal must be used and the contract signed by the secretary of the corporation.

3. Representatives of the Training Centers were present at this conference and were informed of their responsibilities in this program. The Training Center representatives will immediately proceed to inspect the sites recommended, and will report by telegraph to this office whether or not these installations are acceptable. If sites are recommended for approval for the number of students shown on the attached Inclosure 1, or modification thereof, airplanes will be dispatched without delay and administrative detachments sent to each site.

4. For the glider training phase, for the first objective ending August 31, 1942, it is planned to operate the present four

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glider contract schools now in operation and under construction, plus the Army School scheduled to open at Dalhart, Texas, which will open temporarily under canvas at Amarillo. In addition thereto, it is planned to open four additional glider schools to be operated by Air Force personnel as shown on Inclosure 2. In this connection, it is planned to use graduates of the glider schools as instructors as fast as they graduate in order that a surplus of instructors will be available so that gliders may be utilized to the maximum during the long summer days.

5. For the second objective, namely, the production of 6000 glider pilots by December 31, 1942, it is planned to reduce the number of contract schools for power training to the number required to produce the pilots specified in the directive, giving preference to those schools located in the southern part of the United States whose operation is such that they warrant consideration. It appears that 5 or 6 schools will be able to handle this phase of the training. For the glider training in the second phase, it is planned to use only the four contract schools and the Army school at Dalhart, Texas, unless conditions warrant the continuance of an accelerated rate of training.

6. It is not believed that any great difficulty will be encountered in placing these schools in operation June 1, 1942. A-4 has been furnished a list of all privately owned gliders of which a record could be found and it has been requested that they procure and make available without delay all those that are suitable for training. Release of light planes (cub type) has been coordinated with the Service Command and 50 are being delivered to the Advanced Flying School at Lubbock, Texas as soon as possible for distribution to contract schools. The C.A.A. is converting an aeronica airplane into a glider by removing the engine mount and substituting a false nose. This glider will be available for test May 19. This may be another possible source of gliders. Minimum requirements of gliders and tow planes will be furnished to A-4 immediately.

2 Incls.
1. List of Contractors.
2. List of Schs.(Glider Trng.)

B. K. Yount,
Major General,
United States Army,
Commanding.

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By AUWPSC Date 8-18-71

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PRELIMINARY GLIDER TRAINING ALLOTTED TO SOUTHEAST AIR FORCES TRAINING CENTER

	Fields	Total Capacity	Entrance Rate
1. Hinck Flying Service, Inc. Elmer M. Hinck, Minneapolis, Minnesota Monticello, Minnesota - Base Mail Address: Minneapolis, Minn. Airport - Phone: Parker - 2612	3	120	30
2. Jolly Flying Service Lester Jolly, Grand Forks, North Dakota Grand Forks, North Dakota Box 883 - Phone 3009	6	240	60
3. North Aviation Co. Tom North, White Bear Lake, Minnesota Base - Stillwater, Minn	3	120	30
4. Morey Airplane Co. Howard Morey, Madison, Wisconsin - Address ~~Lone Rock or Sherman Point~~ Base - Janesville, Wis.	3	120	30
5. Andersen Air Activities E. M. Andersen, Cudahy, Wisconsin - Gen. Mitchel Field ~~Pen Argyl~~ Phone: Sheridan - 1300 Base - Antigo, Wis.	4	160	40
6. L. Miller-Wittig Hibbing, Minnesota - Address ~~Superior, Wisconsin - Base~~ Base - Grand Forks, N.D.	2	80	20
7. Fontana School of Aeronautics - Address Mario Fontana, Rochester, Minnesota Phone: 4729	3	120	30
		960	240

Reduce 20—
Quota - 220 per class

Incl. 1

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Air Assn of Illinois

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PRELIMINARY GLIDER TRAINING ALLOTTED TO
GULF COAST AIR FORCES TRAINING CENTER

	Fields	Total Capacity	Entrance Rate
1. McFarland Flying Service E. H. McFarland, Pittsburg, Kansas P. O. Box 176	3	120	30
2. William A. Ong - Kansas City, Mo. P. O. Box 214 ~~Manhattan, Kansas~~ Base - ~~Superior, Kansas~~ Goodland, Kan. ~~Greenwood, Missouri~~	2 2 2	80 80 80	20 20 20
3. Hunter Flying Service, P.O.Box 183 Dan Hunter, Cedar Rapids, Iowa ~~Shelbyville, Iowa~~ Base - Spencer, Iowa	2 2	80 80	20 20
~~4. Holsinger Flying Service~~ ~~Dan Holsinger, Topeka, Kansas~~ ~~Municipal Airport~~	~~3~~	~~120~~	~~30~~
5. Sooner Air Training Corporation John H. Burke, Oklahoma City, Okla. P.O.Box 1002 Okmulgee, Oklahoma	4	160	40
6. Harte Flying Service George L. Harte, Wichita, Kansas Municipal Airport Hays, Kansas	4	160	40
7. Anderson & Brennan Flying Service P. C. Anderson, Des Moines, Iowa P.O. Box 99 ~~Shelbyville, Iowa~~ Base ~~Centerville, Iowa~~ Aberdeen, N.D.	2 2	80 80	[redacted] 20
8. Kenneth Starnes Flying Service Kenneth Starnes, Conway, Arkansas P.O. Box 509, ~~Conway, Arkansas~~ Base - Loanoke, Ark	2	80	20
		1200	300

(May be increased)

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Reduce quota 30—
Allocated - 270 per class

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9 Jan. & 30 June 1974
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PRELIMINARY GLIDER TRAINING ALLOTTED TO
WEST COAST AIR FORCES TRAINING CENTER

	Fields	Total Entrance Capacity	Entrance Rate
1. Plains Airways - Willis G. Walker, Cheyenne, Wyoming Base - Ft. Morgan, Colo	5	200	50
2. Cutter - Carr Flying Service - Wm. P. Cutter, Box 278, Albuquerque, Base - Belen and Clovis, N. M.	5	200	50
3. Big Spring Flying Service - Arthur H. Wintheiser, Box 1027, Big Spring, Texas Base - Ackerly, Texas	2	80	20
4. Glenn Broadleve Aerial Service - Glenn Broadleve, Box 1435, Lubbock, Texas Base — Plainview, Texas	4	~~160~~ 640	~~40~~ 160

Note: Reduce quota 10
Allocated - 150 per class

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By [illegible] Date 10-17-74

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GLIDER TRAINING PROGRAM

FIRST PHASE FIRST OBJECTIVE (TRAINING ON LIGHT AIRPLANES)

Site	Training Center	Size of Ready-by Class	Maximum No. Glider Instructors	No. of Instructors Required 1-5	No. Gliders Required 1-5
29 Palms, Cal.	WC	60	120	24	40
Winslow, Ariz.	WC	60	120	24	40
Bur School No. 1 Air Force	WC	60	120	24	40 Temporary School for first objective
Lamesa, Tex.	CC	60	120	24	40
Dalhart (Amarillo) Tex.	CC	60	120	24	40
Bur School No. 2 Lubbock #2 Air Force	CC	60	120	24	40 Temporary School for first objective
Bur School No. 3 Waco #2 Air Force	CC	60	120	24	40 Temporary School for first objective
Electra - to move to new location Mobile, Ala	SE	60	120	24	
Bur School No. 4 Air Force Lockbourne, O.	SE	60	120	24	40 Temporary School for first objective
TOTAL		540	1080	216	360

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Incl. 2

Air AG 452.1 (Glider)

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6 Jan. & 20 June 1974
By AGN/ICSC, Date 12-17-74

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GLIDER PILOT PRODUCTION VS. GLIDER AVAILABILITY

1942

	Prior to June	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Pilot Production Monthly	169	131	992	2186	808	808	1010	202
Pilots Available (Cum.)	169	300	1292	3478	4286	5094	6104	6306
1 & 2 Place Gliders								
Available from Production (Monthly). Set back 30 days for delivery.	20	21	23	28	33	43	52	52
Available from Production (Cum.)	20	41	139*	167	200	247	299	351
Required for Training (Cum.)	18	44	144	144	65	65	65	65
Available for Tactical Organizations (Cum.)	2	-3	-5	23	135	192	234	286
9 & 15 Place Gliders								
Available from Production (Monthly). Set back 30 days for delivery.	0	3	12	38	110	267	464	673
Available from Production (Cum.) **	0	3	15	53	163	430	894	1567
Required for Training (Cum.)	0	56	180	180	73	73	73	73
Available for Tactical Organizations	0	-53	-165	-127	90	357	821	1494
3 Place Converted fight airplanes. Set back 30 days for delivery (Cum.)	0	0	102	422	500	500	500	500

* This includes anticipated procurement of 75 1 and 2 place gliders, second-hand from civilian owners.

** One 9 place and 1 15 place left at Wright Field for experiment. This column shows all 9 and 15 place gliders available for both Air Support and Training.

NOTE: Production figures from latest obtainable production schedule, April 30, 1942, RM-80

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Tab B

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RM-80 (4-30-42) ESTIMATED GLIDER PRODUCTION

	Prior to	1942						
- 2 Place -	May	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
TG-2 Schweizer AC	14	4							
TG-3A Schweizer AC	3	6	9	12	12	12	12	9	
TG-4A Laister-Kauffman	2	4	6	8	10	11	12	12	10
TG-1A Frankfort-Sailplane Co.	1	7	8	8	8	8			
TG-3A Schweizer AC					3	6	6	9	11
TG-4A Laister-Kauffman						10	22	22	21
Total 2 Place	20	21	23	28	33	47	52	52	42
Cu. Total		41	64	92	125	172	224	276	318
- 15 & 9 Place -									
CG-4A Aga					1	6	23	50	60
CG-4A Babcock					1	3	25	30	30
CG-4A Cessna						10	30	50	70
CG-4A Ford						10	30	100	100
CG-4A Gen'l Aircraft				1	2	5	12	25	35
CG-4A Gibson					1	2	15	33	72
CG-4A Gould				7	15	30	45	60	90
CG-4A Jenter					2	5	8	12	14
CG-4A Laister-Kauffman					2	24	26	28	30
CG-4A National					1	3	7	9	10
CG-4A Northwestern					2	4	6	10	23
CG-4A Porterfield				1	2	5	6	8	9
CG-4A Pratt Road					1	6	18	25	25
CG-4A Robertson					2	5	14	19	30
CG-4A Timm-Harlow			1	5	25	60	83	97	100
CG-3A Rearwin	1	3	7	9	28	54	65	67	66
CG-3A Waco		1	4	15	25	35	50	50	20
Total 15 & 9 Place	1	4	12	38	110	267	464	673	784
Cum. Totals		5	17	55	165	432	896	1569	2353

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Tab C

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[redacted]

May 22, 1942.
AFFTC-03-16

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GLIDER PILOT TRAINING

(May 15, 1942 Directive)

		Cum. Total	Gliders 1 & 2 Place: Required	Gliders 1 & 2 Place: Avail. by Production	Gliders 9 & 15 Place: Required	Gliders 9 & 15 Place: Avail. by Production**	Total Glider Short or Over
Glider Pilots Produced prior to June:	169	169	18	18	0	0	0
Glider Pilots Graduated during June:	131	300	44	23	56	4	- 25 7 3
" " " " July:	992	1292	144	*133	180	15	- 176
" " " " Aug:	2186	3478	144	161	180	53	- 110
" " " " Sept:	808	4286	65	193	73	162	+ 217
" " " " Oct.:	808	5094	65	240	73	423	+ 525
" " " " Nov.:	1010	6104	65	292	73	871	+1025
" " " " Dec.:	202	6306	65	344	73	1517	+1723

NOTES:
1. Powered Aircraft for Preliminary Schools available, in necessary quantity.
2. Production figures from latest obtainable production schedule.
3. 50 Towing planes for 1 and 2 Place Gliders required, allocated 35.
4. 60 Towing planes for 9 and 15 Place Gliders required, allocated 0.

* This includes anticipated procurement of 75 1 & 2 Place Gliders, 2nd-Hand, from civilian owners

** One 9 Place and one 15 Place left at Wright Field for experiment.
This column shows all 9 and 15 Place Gliders available for both Air Support and Training.

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Dest + file

Glider - Program.

AFDAS
LSK:cmh

8. AFDAS AFMAG 1942 5/15 Noted. Forwarded for file.

LSK
AFDAS

Incls: n/c

AR AG 452.1 Gliders (5-8)

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DOD Dir. 5 Jan. & 30 June 1974
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HEADQUARTERS ARMY AIR FORCES

ROUTING AND RECORD SHEET

787

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Tally No. AAF . . . . . .

SUBJECT: Glider Program.

NO.	FROM	TO	DATE	COMMENTS
				AFDAS LSK:cmc
1.	AFDAS	AFADS and AFDMR In Turn	1942 5/8	To note. These are the data considered by General Arnold in his conference on Gliders in his office at four o'clock P.M., May 7th. [signature] AFDAS
	Incl: Ltr to CG, AAF from Mr. Barringer, Glider Spec., dtd 5/7/42, Subj: Report on Glider Program. (CONF.) Incls: Tabs A, B. & C.			
				AFADS RCC/mhh
2.	AFADS	AFDMR	1942 5/9	1. Noted. Incls. n/c [signature] C/A-4
				BHM:jgr
3.	AFDMR	AFRIT	5/11	1. To note and return to AFDAS. Incls. n/c [signature] M. S. F., D/MR
4.	AFRIT:2 JES:geh	AFDAS	1942 5-12	1. Noted. [signature] L. S. [illegible] Dir. Ind. Tr. Incls: n/c

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W-4071, AC, Rev. 8-1-41

AAG/27

Air AG 452.4 Gliders (50)

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SUBJECT: Glider Program.

NO.	FROM	TO	DATE	COMMENTS
5.	AFDAS	AFMAG	1942 5/13	Noted. Forwarded for file. LSK AFDAS Incls: n/c

AFDAS
LSK:cmc

452.4 Gliders (5-0)

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W-4091,AF, Rev.8/14/41

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5 Jan. & 20 June 1974
By: [illegible] JC; Date 10-17-76

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WAR DEPARTMENT
HEADQUARTERS OF THE ARMY AIR FORCES
GROUND-AIR SUPPORT SECTION
WASHINGTON

May 7, 1942.

MEMORANDUM FOR: Commanding General, Army Air Forces.

SUBJECT: Report on Glider Program.

1. Production:

a. There are a total of 6,090 gliders of all types on production order. These are divided as follows:

(1) 2-place trainers 300

(2) 9-place 500

(3) 15-place 5290

b. According to present estimates the 300 2-place, the 500 9-place and 1778 of the 15-place will be built by December 31, 1942, with the balance by July 1, 1943. Estimated delivery schedule is shown in Tab "A".

c. There are three makes of training gliders. All have been static and flight tested.

d. All 9-place gliders are of the Waco CG-3A type which has passed static and flight tests. They will be used largely as transition trainers.

e. All 15-place gliders are of the Waco CG-4A type. Each can carry as alternate load a jeep or a 75-mm howitzer plus 6 men. Two of these can be towed behind a C-47. Top design tow speed is 150 m.p.h. This glider, which can be broken down for overseas shipment, is now undergoing static test.

2. Pilot Training:

a. At present it is planned to train 2,000 glider pilots by December 31, 1942, and a total of 5,000 pilots by July 1, 1943.

b. A 30-hour four-weeks primary course in 2-seaters will be given at four schools:

(1) 29 Palms, California (now in operation)

(2) Elmira, New York (now in operation)

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(3) Wickenburg, Arizona (starts June 1st)

(4) Lamesa, Texas (starts June 1st)

c. 154 Officers have been trained. 28 Enlisted men are now in training.

d. A 50-hour four-weeks advanced course in the 9-place and 15-place will be given at three advanced schools:

(1) Dalhart, Texas (training starts June 1st at Amarillo, Texas)

(2) (Yet to be located) (Starts Aug. 1st)

(3) (Yet to be located) (Starts Aug. 15th)

e. Estimated flow chart of pilots is shown in Tab "B".

f. Tactical training with the airborne infantry prior to moving into the theatre of operations will be given at four stations soon to be built:

(1) Laurinburg, North Carolina.

(2) Alliance, Nebraska

(3) Ardmore, Oklahoma

(4) Sedalia, Missouri.

g. Requirements for glider pilot candidates are shown in Tab "C".

h. Due to the present shortage of gliders, the training schedule is considered the maximum possible and can be achieved only if production keeps up to present estimates. There are now only 9 training gliders in operation with delivery of 17 expected this month.

3. Experimental Development:

a. Gliders:

(1) 3 designs, 2-seater trainers

(2) 2 designs, 8-place

(3) 1 design, 15-place

(4) 3 designs, 30-place

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b. Equipment:

(1) Winches for training

(2) Pick-up gear for all sizes of gliders.

(3) Nylon tow ropes

(4) Blind flight instruments

(5) Miscellaneous equipment.

c. Flight testing:

(1) Due to crowded and hazardous conditions at Wright Field all glider flight testing is being moved to Wilmington, Ohio. Four hangars plus necessary office buildings will be erected there.

(2) Tests will be run on all suitable airplanes for towing. Tow installation now being put in C-47. All C-47 and C-53 will be so equipped following tests. Towing of 9-place being done by L-1A and B-23.

4. Future Expansion:

a. As the value of large gliders for transport becomes more apparent, it seems advisable to plan on large production of 30-seaters as soon as their development has progressed far enough. The first is expected to fly in September. This size glider will be more practical than the 15-place for the following reasons:

(1) Only one towed by transport or bomber

(2) Design tow speed of 180 m.p.h.

(3) Carrying capacity: 30 men or 15 men, jeep, howitzer or general freight.

(4) Possible to carry and drop paratroops.

b. It would seem to be advisable to continue the production of gliders and the training of pilots at least to December 31, 1943 at the rate established by December 31, 1942. This will be 600 pilots per month or approximately 6000 per year.

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Memo for: Commanding General, AAF.
Subject: Report on Glider Program - 4 - May 7, 1942.

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c. Although all 15 and 30-place gliders are designed for break down for trans ocean shipment, it is recommended that serious consideration be given to the great advantages of towing most of them across.

Lewin B. Barringer
Lewin B. Barringer,
Glider Specialist.

MAY 11 1942

3 Encls.:
TAB "A"
TAB "B"
TAB "C"

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Air AD 452.4 Gliders (50)

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Class Nol	Enter Training	Finish Course	Elmira: 29 N.Y.	Palms: Tex Calif:	Lamesa: Tex	Wickenburg: Ariz	Gliders Available	Approx. No.: Sutdents per ship	Entering per class	Total Trained:	Enter Training:	Fininsh: Course	Dalhart: Texas	ASchool: No. 2	School: No. 3	9-Place: Gliders: Avail.	15-Place: Gliders Avail.	Approx. No.: Students per ship	Entering per class:	Totaling Trained	Elementary Graduates Awaiting: Adv. Trng.
42-1 to 42-6:	Jan.19	Apr 30								154											154
42-7	May 1	May 31:	6	22			12	4.2	28	[illegible]											205
42-8	May 15	June 14:	6	45				4.6	51	223											256
42-9	June 1	June 30:	20	45	6	6	34	3.8	77	310	June 1:	June 30:	20			5	2	4	20	20 3	290
42-10	June 15:	July 14:	20	60	6	6		3.9	92	402	June 15:	July 14:	20					4	20	40 9	362
42-11	July 1	July31	30	60	15	20	53	4.1	125	527	July 1	July 31:	40			15		4	40	80 21	447
42 -12	July 15:	Aug 14	30	60	15	20		3.8	125	652	July 15	Aug 14	90			9		4.1	90	170 36	482
42-13	Aug 1	Aug 31	30	60	50	60	80	4.1	200	852	Aug 1	Aug 31	100	10		38	12	4	110	280 66	572
42-14	Aug 15	Sept 14:	30	60	50	60		4.2	200	1052	Aug 15	Sept 14	100	100	20				220	590 141	552
42-15	Sept 1	Sept 30:	30	60	50	90	112	3.9	240	[illegible]	Sept1	Sept 30:	100	100	100	90	70		300	800 241	492
42-16	Sept 15:	Oct 14	30	60	60	90		3.5	240	1532	Sept 15	Oct 14	100	100	100				300	1100	432
42-17	Oct 1	Oct 31			60	90	158	3.0	240	1772	Oct 1	Oct 31	100	100	100	176	238		300	1400	372
42-18	Oct 15	Nov 14			60	90		2.6	240	2013	Oct 15:	Nov 14	100	100	100				300	1700	312
42-19	Nov 1	Nov 30			60	90	208	2.3	240	2252	Nov 1	Nov 30	100	100	100	285	556		300	2000	252
	Nov 15						259				Nov 15:	Dec 14	100	100	100		1060		300	2300	
	Dec 1						300				Dec 1:	Dec 31	100	100		390			450	2600	
	Dec 15										Jan 1					465	1690	3.5			
	Jan 1																				

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TAB "C"

Glider Pilot Requirements

1. Age: 18-32 inclusive (Shall not have reached his 33rd birthday).

2. Physical Requirements:

a. Must meet Class I as required by AR 40-110, in addition to one of the following:

(1) Are a graduate of CPT Secondary Course.

(2) Hold or have held a CAA Private Airman Certificate or higher, with a 0 to 240 h.p or 2 S rating.

(3) Are a glider pilot with 200 flights or hold or have held a CAA Airman Certificate with commercial glider pilot rating.

b. May meet Class I or Class II as required by AR 40-110 if, in addition, they can meet one of the following requirements:

(1) Have held an effective CAA certificate of competency of private grade or higher, not less than 4 years during the past 6 years and at least one of these certificates shall have been with a 0 to 240 h.p. or 2 S rating.

(2) Have a currently effective Private Airman Certificate, or higher, with a 0 to 240 h.p. or 2 S rating, and have not less than 150 certified and notarized hours as pilot of heavier-than-air aircraft. Enlisted personnel whose Private Airmen Certificates expired not more than six months prior to application and who meet the other requirements of this sub-paragraph, will be eligible.

(3) Are a glider pilot with 20 hours certified glider pilot time.

(4) No candidate who has been eliminated from pilot training in the Army or Navy Air Forces or CPT, will be eligible.

NOTE: These requirements are now up for approval. It is recommended that the requirement for a 0 to 240 h.p. or 2 S rating be omitted and the words "CPT Secondary Course" changed to "CPT Primary Course."

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April 22, 1942.

SUBJECT: Glider Pilot Training.

TO : The Commanding General, Army Air Forces.

1. The letter from the Commanding General, Army Air Forces to the First, Second, and Third Air Forces, the Technical Training Command, the Flying Training Command, the Materiel Command, the Air Service Command and the Ferrying Command, Subject: Army Air Force Mission, dated April 14, 1942 directs that 3,000 9-place gliders or equivalent capacity be procured by September 15, 1942 and pilots to fly them be trained in advance.

2. In a conference between General Arnold and Mr. Barringer, Glider Specialist, on April 1, 1942 it was determined that maximum possible production by December 31, 1942 would be 2,000 gliders (500 9-place, 1,500 15-place) and as a result directives were written calling for 2,000 gliders (500 9-place, 1,500 15-place) to be procured and 2,000 glider pilots to be trained by December 31, 1942.

3. The above directive is being changed, but only as to source of pilot material, not as to the number to be trained and the time when they are to be available.

4. It is recommended that the directive mentioned in paragraph 1 be amended to read "2,000 gliders (500 9-place, 1,500 15-place) be procured and 2,000 glider pilots be trained by December 31, 1942."

D. M. SCHLATTER
Colonel, Air Corps
Director of Ground-Air Support

Ex. Army Air Forces
APR 1942
AAG RECEIVED

A-1/AS
A-2/AS
Intel. S.
A-3/AS
A-4/AS
Plans/AS
Insp. AS
Mil. Req.
A. Def.
Bomb.
Gr. Sup.
War O&M
Int.
Photo. M&C
Tech. Insp.
Pub. Rel.
Air Pers.
Civ. Pers.
Adjutant
Budget
Fiscal
Mgmt. Con.
Adj. Gen.
Org. Pl.
Sat. Pl.
Leg. Pl.
Mat. C.
A. S. C.
F. C.

452.4 (6-7-42)

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By 454/1615 Date 10-18-76

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Towing of Gliders.

JFP:ah

2. AFAMC-9 AFDAS 1942 5-8

1. The production model CG-3A nine-place gliders will have maximum placarded airplane tow speeds of 120 miles per hour. Studies to date indicate it is not practical to successfully tow these gliders by either the P-38 or P-39 airplanes, due to the safe towing speed being too close to the dangerous stalling speed of the airplanes.

2. The placarded towing speed of the CG-4A fifteen-place glider is 150 miles per hour, and tests will be made towing with the P-38 and P-39 as soon as possible after the experimental XCG-4 glider is delivered, accepted, and flight tested at Wright Field. Static test article of this

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AAF AD 452.4 Gliders (46)

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Towing of Gliders.

2. AFAMC-9 AFDAS (continued) 1942 5-8 model glider has been delivered but the flight test article is not expected before May 15th, and the necessary flight tests indicated above will consume approximately three weeks.

O. P. E.
Commanding General, Air Force Materiel Command.

3. AFDAS AFMAG 5/14 Noted by Gen. Arnold - File SSR

AAC 452.1 Gliders (6)

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HEADQUARTERS ARMY AIR FORCES

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SUBJECT: Towing of Gliders.

NO.	FROM	TO	DATE	COMMENTS
				AFDAS LSK:cmc
1.	AFDAS	AFAMC (General Echols)	1942 4-16	1. It is directed that not to exceed three P-39 and three P-38 type airplanes will be diverted from assignment to units of the Army Air Forces to your Command for the purpose of determining the feasibility, technique and all necessary data concerning the towing of gliders by those types of airplanes. 2. This diversion to be accomplished at your discretion if and when a requirement actually exists for that number of airplanes. Upon completion of these tests, the airplanes will be returned to the combat units. The most rapid action practicable is desired. L.S.K. AFDAS
	Copies of this to:	AFACT A-3 AFADS A-5 AFAEP Plans AFDMR Mil Req AFRAD Air Def AFRGS G-4 Hq AFRBS Base Serv AFTTC AFFTC		
				JFP:ah
2.	AFAMC-9	AFDAS	1942 5-8	1. The production model CG-3A nine-place gliders will have maximum placarded airplane tow speeds of 120 miles per hour. Studies to date indicate it is not practical to successfully tow these gliders by either the P-38 or P-39 airplanes, due to the safe towing speed being too close to the dangerous stalling speed of the airplanes. 2. The placarded towing speed of the CG-4A fifteen-place glider is 150 miles per hour, and tests will be made towing with the P-38 and P-39 as soon as possible after the experimental XCG-4 glider is delivered, accepted, and flight tested at Wright Field. Static test article of this

Hq. Army Air Forces
MAY 11 1942
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Air AG 452.4 Gliders (46)

452.4 Gliders (46)

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SUBJECT: Towing of Gliders.

NO.	FROM	TO	DATE	COMMENTS
2.	AFAMC-9 (continued)	AFDAS	1942 5-8	model glider has been delivered but the flight test article is not expected before May 15th, and the necessary flight tests indicated above will consume approximately three weeks. O. P. E. Commanding General, Air Force Materiel Command.
3	AF DAS	AFMAG	5/14	Noted by Gen Arnold – File

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Air AG 452.4 Gliders (46)

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