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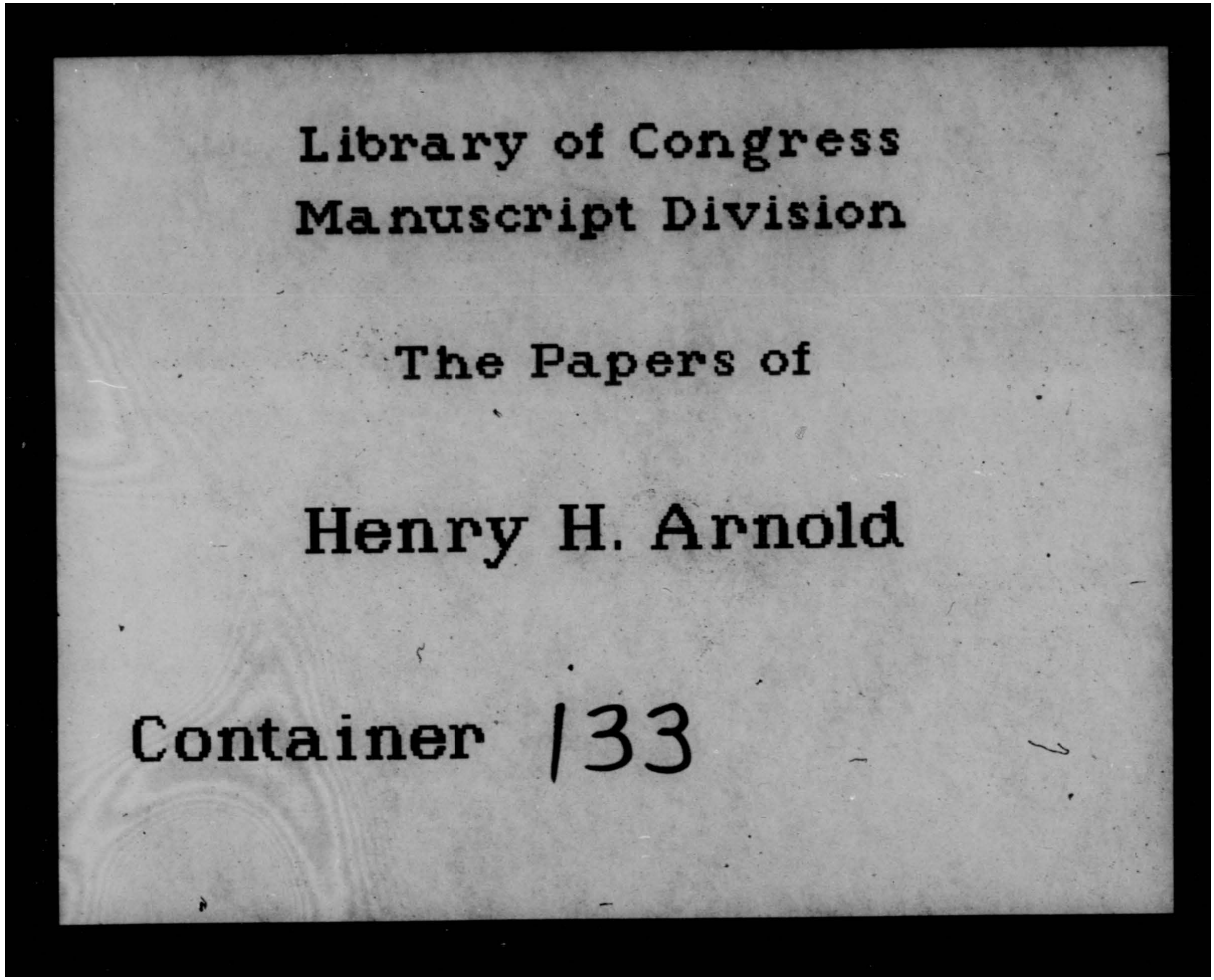

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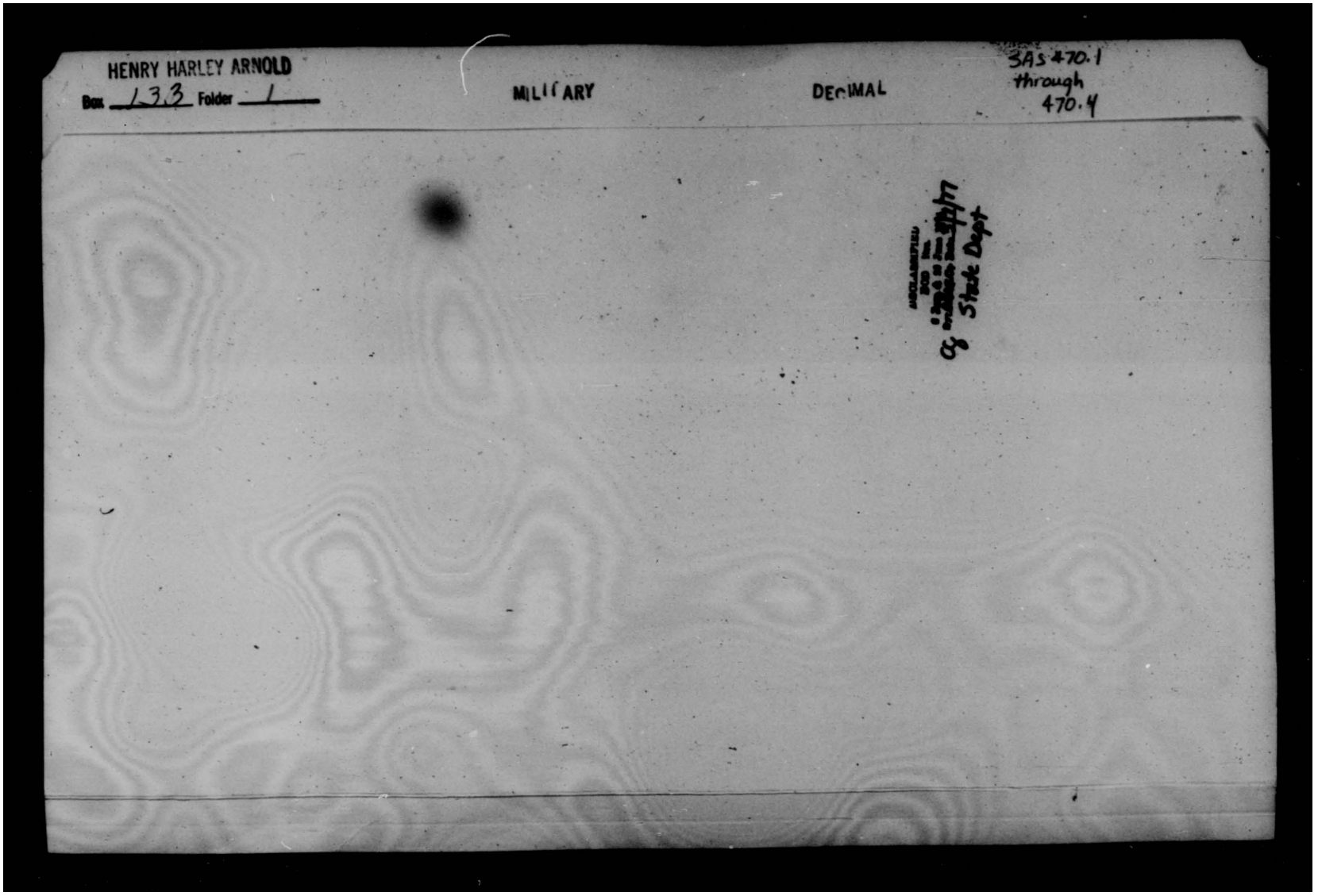

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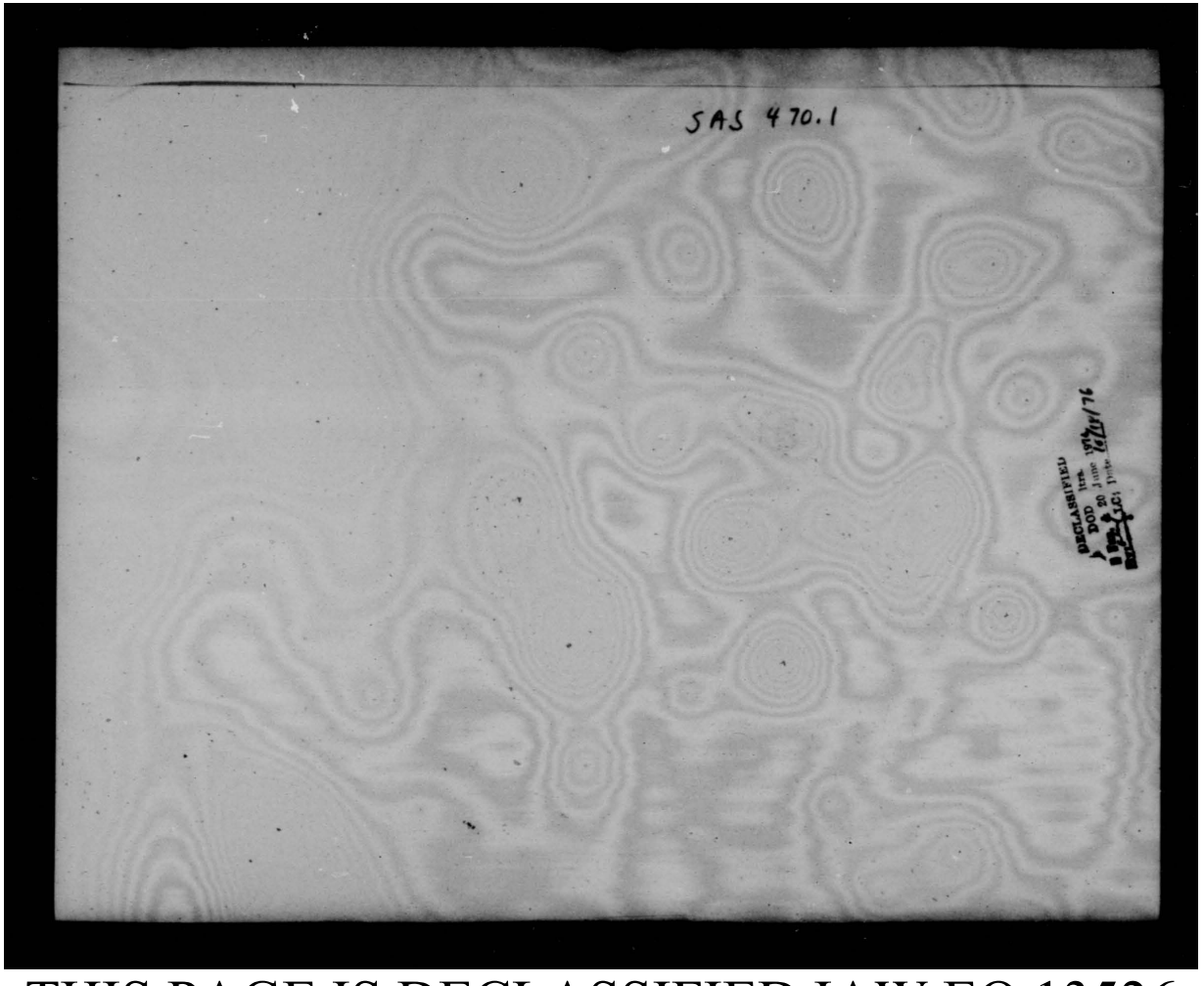

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DOD ltrs.
5 Jan. & 30 June 1954
By: [illegible] Date: 10-18-76

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31 JAN 1945

MEMORANDUM FOR THE CHIEF OF STAFF

SUBJECT: Critical Shortage of Aluminum Sheet

1. The present estimates of the War Production Board as to the extent of the aluminum sheet shortage in the first six months of 1945 are: (All figures in millions of pounds.)

	Estimated Requirements	Estimated Production (without military labor)	Indicated Deficit	Estimated Production (with military labor)	Indicated Deficit
1st Quarter	280*	244		251	
2nd Quarter	296	273		310	
Rebuilding inventories	50				
Surplus**		10		10	
Total	626	527	99	571	55

Notes: * It is estimated that first quarter orders for 20,000,000 pounds were shut out by the forced closing of schedules. Actual order placement approximates 260,000,000 pounds.
** Includes British Lend-Lease and Canadian sheet.

2. Disregarding the requirement for rebuilding inventory and the estimated 10,000,000 pound availability of surplus sheet, a deficit of roughly 60,000,000 pounds will exist. The aircraft program is the largest sheet user and Army Service Forces programs the second largest. The aircraft program share of the indicated deficit is estimated at 45,000,000 pounds - 12% of its 370,000,000 pound requirement. A loss of scheduled aircraft production of some 10% by weight seems certain. It is not possible to estimate accurately the probable effect of the shortage in numbers of airplanes. There are 40,934 planes scheduled for production in the second and third quarters of 1945. Assuming that the numerical loss would be greater than the weight loss because of the large size of the most important planes in the program, it is possible that as many as 5,000 planes would be lost.

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3. The Army Air Forces are doing everything possible to minimize the shortage by eliminating all first and second quarter orders for sheet not absolutely essential for production purposes. Substantial relief, however, can only be effected through an immediate increase in sheet output. The Knoxville, Tennessee mill of the Aluminum Company of America, with approximately 30% of the total capacity of the industry, is the key to the solution of the problem. At the present time the mill employs approximately 6800 people and is producing at the rate of about 30,000,000 pounds a month. In order to obtain the required level of 45,000,000 pounds per month an additional labor force of approximately 1500 people will be needed. The establishment of a second shift in the mill is essential to increased output. The Aluminum Company stated, and it is supported by Army Air Forces and Navy Bureau of Aeronautics representatives after full investigation, that in order to establish the second shift it will be necessary for the armed forces to release seventeen key men, twelve from the Army, four from the Navy and one from the Marines. No other trained men are presently available in the industry to operate the continuous hot mill machinery used in the initial fabrication of the sheet. The Navy has already issued orders for the release of its four men.

4. The War Production Board and the Aluminum Company of America have been making aggressive attempts to recruit adequate civilian manpower to build up rapidly the aluminum sheet production needed for war items. The results of these efforts, together with thorough investigation of the civilian hiring potentialities, make it clear that it will not be possible under present conditions to provide labor in adequate numbers to avert a serious sheet shortage. The only alternate means of providing the required labor appears to be the assignment of soldiers on an emergency furlough basis.

5. In accordance with the conditions stated herein, the Army Air Forces on 30 January 1945 have requested the Director, Industrial Personnel Division, Army Service Forces, to take immediate steps to inactivate the twelve key Aluminum Company men now in the Army for a period of six months and to assign 1000 soldiers to the Knoxville, Tennessee sheet mill of the Aluminum Company on an emergency furlough basis.

Signed

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

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31 JAN 1945
AAG

~~CONFIDENTIAL~~

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DECLASSIFIED
DOD Dir. 5 Jan. & 30 June 1974
By Glen MSGT AG Date 10-15-76

DECLASSIFIED

Major A. W. Betts
AFDRE-6/2666/lmc
27 January 1945

MEMORANDUM FOR THE UNDER SECRETARY OF WAR

23 JAN 1945

SUBJECT: Critical shortage of aluminum sheet.

1. Aircraft production in the second and third quarters of 1945 is threatened by the critical shortage of aluminum sheet. Sheet output for the first six months is presently estimated by the War Production Board at 812,000,000 pounds, compared with total requirements of some 976,000,000 pounds without any allowance for rebuilding dangerously low aircraft inventories. The aircraft program share of the indicated 80,000,000 pound deficit will probably approximate 45,000,000 pounds, 12% of its requirement.

2. There is ample mill capacity to produce all the sheet required for war production if sufficient manpower can be secured. The War Production Board and the Aluminum Company are exerting every effort toward that end, and the Army Air Forces have requested the immediate assignment of furloughed soldiers to the Alcoa Tennessee and Chicago sheet mills of the Aluminum Company. Until sheet production can be brought to the necessary level, shipments to critical programs must be insured by eliminating all sheet use not of the highest war necessity.

3. Toward that end the Army Air Forces have made a thorough check on contractor inventories and have directed aircraft contractors to cancel all first quarter 1945 sheet orders placed for the purpose of rebuilding low inventories, and all orders for any quarter that would bring sheet inventories to a level in excess of a 30 day supply. In addition, requirements for AAF items procured by other services - such as aluminum landing mats - are being checked for possible reductions.

4. The requirement for aluminum sheet for the Army Service Forces has increased from about 5,000,000 pounds in the second quarter 1945 to an indicated 29,000,000 pounds in the second quarter 1945. It is suggested you request the Army Service Forces to review production programs using the major portions of their aluminum sheet to determine whether or not any needs could possibly be postponed until such time as sheet production more nearly approximates requirements. The Corps of Engineers' floating bridge program calls for an estimated 5,000,000 pounds of sheet and 21,000,000 pounds of aluminum extrusions in the second quarter 1945. The extrusion requirement is of such magnitude that a 50% increase above first quarter 1945 production will be required and may develop a situation fully as critical as is the production of sheet at the present time.

COPY FOR GENERAL ARNOLD

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

AWB:lmc
AFDRE-6

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23 JAN 1945

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DOD DIR
8 Jan. & 20 June 1974
By [illegible] Date [illegible]

27 JAN 1945

MEMORANDUM FOR THE CHIEF OF AIR STAFF

ATTENTION: Brigadier General P. W. Timberlake

SUBJECT: Critical shortage of aluminum sheet.

1. Attached memorandum to the Under Secretary of War suggests he request the Army Service Forces to review their requirements for aluminum sheet with aim of postponing anything possible until sheet production can be raised to alleviate present critical shortage.

2. Army Service Forces' use has increased from 5,000,000 pounds 2nd quarter 1943 to 20,000,000 pounds 2nd quarter 1945 and impending floating bridge program may well create another critical situation in that form of aluminum.

3. It is requested that the attached memorandum be submitted to the Commanding General, Army Air Forces for signature and transmittal to the Under Secretary of War.

(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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OSD Ltr
8 Jan. & 20 June 1972
By Gen Hqtrs, Dept. of Army 12-11-75

29 JAN 1945

MEMORANDUM FOR THE CHIEF OF STAFF

SUBJECT: Critical shortage of aluminum sheet.

1. The present estimates of the War Production Board as to the extent of the aluminum sheet shortage in the first six months of 1945 are: (All figures in millions of pounds.)

	Estimated Requirements	Estimated Production (without military labor)	Indicated Deficit	Estimated Production (with military labor)	Indicated Deficit
1st. Quarter	280*	244		261	
2nd. Quarter	296	273		310	
Rebuilding inventories	50				
Surplus **		10		10	
Total	626	527	99	571	55

Notes: * It is estimated that first quarter orders for 20,000,000 pounds were shut out by the forced closing of schedules. Actual order placement approximates 280,000,000 pounds.
** Includes British Lend-Lease and Canadian sheet.

2. Disregarding the requirement for rebuilding inventory and the estimated 10,000,000 pound availability of surplus sheet, a deficit of roughly 80,000,000 pounds will exist. The aircraft program is the largest sheet user and Army Service Forces program the second largest. The aircraft program share of the indicated deficit is estimated at 45,000,000 pounds - 12% of its 370,000,000 pound requirement. A loss of scheduled aircraft production of some 10% by weight seems certain. It is not possible to estimate accurately the probable effect of the shortage in numbers of airplanes. There are 40,934 planes scheduled for production in the second and third quarters of 1945. Assuming that the numerical loss would be greater than the weight loss because of the large size of the most important planes in the program, it is [illegible] as many as 5,000 planes would be lost.

3. The Army Air Forces are doing everything possible to minimize the shortage by eliminating all first and second quarter orders for sheet not absolutely essential for production purposes. Substantial relief, however,

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COPY FOR CHIEF OF AIR STAFF

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DECLASS

Major A. W. Betts
AFDRE-6/2696/lmc
27 January 1943

Memo for the Chief of Staff
Subject: Critical shortage of aluminum sheet.

can only be effected through an immediate increase in sheet output. After thorough investigation, it is apparent that present recruiting measures can not provide labor in adequate numbers for the sheet mills. Accordingly, the Army Air Forces has requested the Under Secretary of War to permit assignment of furloughed soldiers to the Alcoa Tennessee and Chicago mills of the Aluminum Company.

4. Unless military labor is placed in the mills, it appears improbable that production of aluminum sheet can be brought to the required levels. A curtailment in the output of all military and naval items requiring the use of aluminum sheet would result and would prevail until other means of manning the sheet mills were developed or requirements reduced.

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

23 JAN 1943

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AFDRE-6

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20 NOV 1943

Honorable K. S. Wherry
United States Senate,
Washington, D.C.

Dear Senator Wherry:

In accordance with your request for information concerning the status of the project for the construction of an Aluminum Extrusion plant at Columbus, Nebraska, you are advised that Mr. Charles E. Wilson, Executive Vice-Chairman of the War Production Board, in a letter dated 10 November 1943 advised the Under Secretary of War that the Aircraft Production Board had concurred in the recommendations of the Facilities Committee, War Production Board, that construction of this project be immediately discontinued inasmuch as the proposed capacity of this plant was not required to meet projected requirements of aluminum extrusions.

The Under Secretary of War was further advised by Mr. Wilson that on 17 November 1943 the Production Executive Committee reaffirmed the decision of the Aircraft Production Board that this project should be cancelled as being unnecessary to meet production requirements.

The Aluminum and Magnesium Division, War Production Board, has the responsibility for production of aluminum and magnesium including projects involving the extrusion and casting of these metals in sufficient quantities to meet the requirements of the war program. The Army Air Forces presented their requirements of aluminum extrusions to the Aluminum and Magnesium Division, War Production Board and was assured that sufficient capacity would be available to meet these requirements. In view of the decision of the War Production Board in this matter, the A Army Air Forces concurred in the cancellation of this project inasmuch as the additional capacity was not required and the continuance of this project would necessitate the expenditure of government funds contrary to the decision of the War Production Board, which is responsible for the aluminum and magnesium production programs.

The Under Secretary of War, in view of the above recommendation, has advised the Reconstruction Finance Corporation that the War Department was withdrawing its joint sponsorship for Defense Plant Corporation financing of this project.

Sincerely,

E S Perrin
Signed
for BARNEY M. GILES
Major General, U.S.A.
Chief of Air Staff

JCVLMM
AFDRE-1

[redacted]

Dispatched 20 NOV 1943

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DOD Dir.
8 Jan. & 30 June 1954
By: [illegible] Date: [illegible]

Request for Metal Crows' Feet (Continued).

Material Command. (Attention: General Meyers) 1-12-43

Deputy Chief of Air Staff. [illegible]

TJH/cmc/6371

Attached is copy of letter which I sent this date to Mr. Hamlin reference delivery of Metal Crows' Feet.

Dispatched
JAN 12 1943
AAG

Incls: Cy.CTI-1088.
Cy.ltr to Mr.Hamlin dtd 1-12-43, subj. as above.
Cy.Secret Memo to Gen.Streett dtd 11-24-42.

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

Air Ab 470.1 (12)

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Air Ab 470.1 (12)

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January 12, 1943.

Mr. E. W. Hanlin, President,
Hanlin Metal Products Company,
Exchange at Water Street,
Akron, Ohio.

My dear Mr. Hanlin:

A short time ago you and Mr. Warren called upon General Arnold and exhibited two types of a confidential item. General Arnold called me into the office and directed me to talk with you as to the possibilities of obtaining these for the Army Air Forces. During this conversation I was informed by either you or Mr. Warren that you were prepared at that time to produce these units at the rate of 100,000 per day.

Based upon this information, I directed the Material Command, Army Air Forces, to place an order with you for 100,000 items for immediate delivery. I am now informed by the Material Command that an effort was made on December 21st to place this contract with you and that they were informed that the engineering design and samples were not sufficiently advanced to permit the manufacture to begin. Repeated contacts were made with your organization until January 4th at which time you arrived at the Material Center with one sample and three prints. The contract was mailed to you on January 6th, calling for delivery at the rate of 30,000 units per week, delivery to commence four weeks from receipt of contract.

I am calling this matter to your attention because I do not like to be told things which are not true. I used the information which you gave me in an official manner and assumed that you knew what you were talking about. The fact that you have not been able to deliver as you stated has caused me much personal embarrassment and has resulted in confusion in the use of this product.

This is a personal letter and expresses my own views as an individual and not as Deputy Chief of the Air Staff.

Yours truly,

T. J. HANLEY, JR.,
Brigadier General, U.S.A.,

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DOD Dir.
8 Jan. & 20 June 1974
By [illegible] Date 10-15-76

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Request for Metal Crows' Feet (continued)

Assistant Chief of Air Staff, A-4 1-7-43

Materiel Command 3

JEA:eb 3616

1. In connection with the above comment, there is forwarded herewith, a copy of Confidential Technical Instructions 1088, dated December 15, 1942, Subject: "Procurement of Metal Crows' Feet," which is the directive from this office to the Materiel Center, Wright Field, providing for the requested procurement. This directive was forwarded December 15, 1942.

2. Materiel Center advises that the necessary paper work was completed by December 21, 1942 and that the matter was turned over to contract negotiator on that day for execution of contract. Hamlin Metal Products Co. was contacted that same day by telephone and the information received was to the effect that engineering design and samples were not sufficiently advanced to permit commencement of manufacture by the contractor. Repeated contacts were made with Hamlin every few days and failed to result in interview until January 4, 1943 upon which date Mr. Hamlin arrived at Materiel Center with one sample and three prints. Negotiations were completed January 4 and Purchase Order No. 43-18871-AF and priority rating AA-1 assigned on January 5, 1943. The contract was prepared and mailed to Hamlin Metal Products Co. on January 6.

3. The contract as negotiated calls for delivery at the rate of 30,000 units per week commencing four weeks from receipt of contract. At the present time the contractor is completing tooling requirements and anticipates bettering delivery schedule with a final proposed verbal delivery schedule of 30,000 units a week commencing January 31, 1943 to continue at the rate of 30,000 each week.

O. P. ECHOLS
Major General, U. S. Army

Incl:
Cy.CTI-1088

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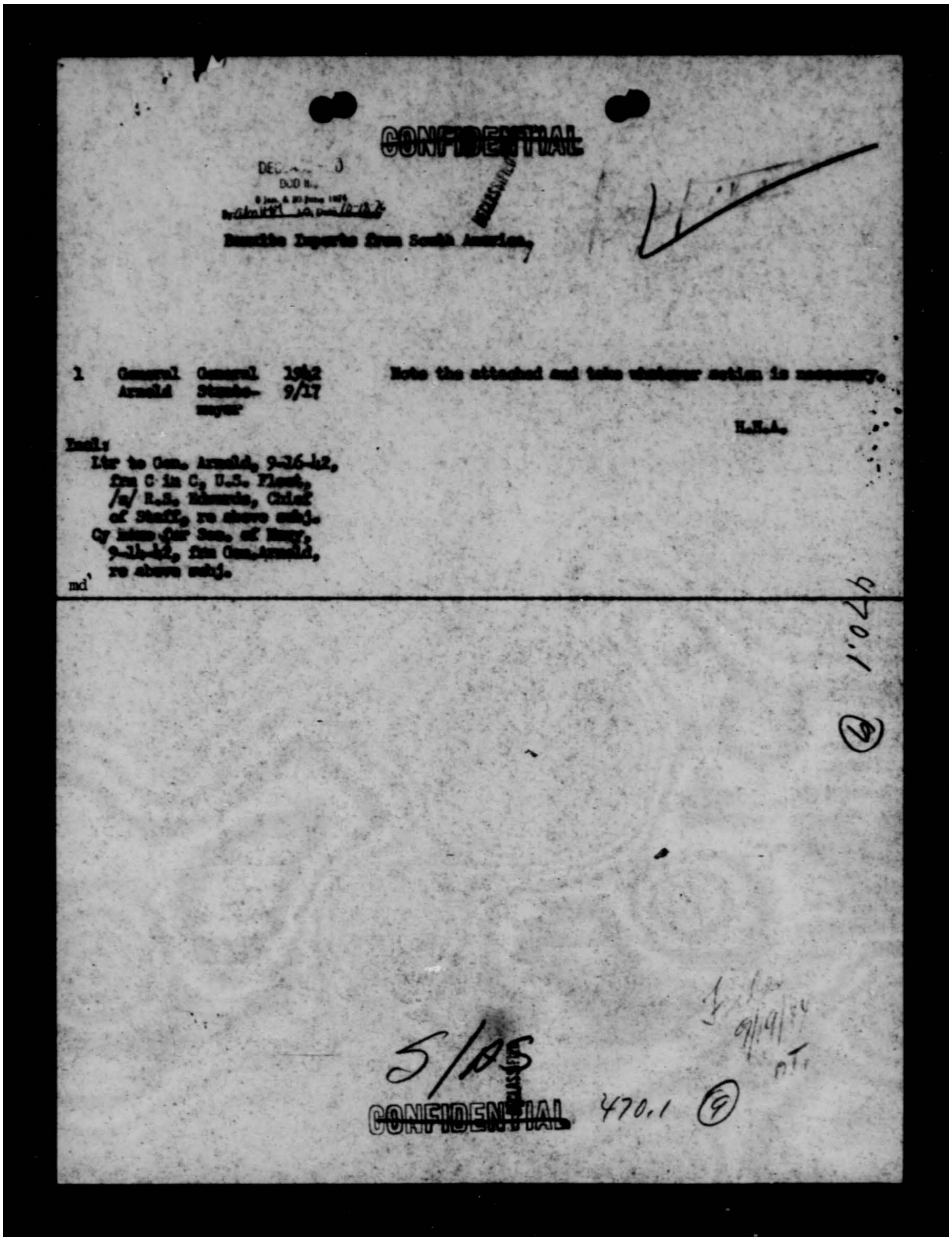

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DEC... D
DOD ...
6 Jan. & 20 June 1974
By ... Date 10-13-74

Bauxite Imports from South America.

1	General Arnold	General Staff-mayor	1942 9/17

Note the attached and take whatever action is necessary.

H.H.A.

Incl:
Ltr to Gen. Arnold, 9-16-42, frm C in C, U.S. Fleet, /s/ R.S. Edwards, Chief of Staff, re above subj.
Cy memo for Sec. of Navy, 9-14-42, frm Gen. Arnold, re above subj.

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THE SECRETARY OF THE NAVY
WASHINGTON

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DOD NTS.
8 Jan. & 30 June 1974
By: [illegible] Date: 10-18-76

CONFIDENTIAL

SEP 16 1942

Lieutenant General Henry H. Arnold, U.S.A.
Chairman, Joint Aircraft Committee
Munitions Building
Washington, D. C.

My dear General Arnold:

The protection of the bauxite convoys is a strategical problem which is handled by Admiral King. I therefore referred your memorandum of September 14 to Admiral King.

Sincerely,

Frank Knox

Frank Knox

Office, C G., A.A.F.
SEP 17 1942
Received

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Serial: 02188

SEP 16 1942

~~CONFIDENTIAL~~

From: The Commander in Chief, United States Fleet.
To : Lieutenant General Henry H. Arnold, U.S.A.,
Chairman, Joint Aircraft Committee.

Subject: Bauxite Imports from South America.

1. Your memorandum of September 14 has been referred to the Commander in Chief, United States Fleet, by the Secretary of the Navy.

2. Admiral King is, of course, fully aware of the importance of the bauxite trade. The Caribbean convoy system placed in effect on the first of September was planned--in consultation with the WSA--primarily for the purpose of protecting bauxite ships and tankers.

3. We have been informed by WSA that the above convoy plan has worked well so far and that the bauxite import quota for the balance of 1942 probably will be approximated closely. However, we can not ignore the fact that it is impossible to give shipping perfect security against submarines in the best of circumstances. Our situation is far from good in view of the small number of anti-submarine ships and planes that can be spared from operations of higher priority. Losses and delays in bauxite movements are inevitable. They may become very serious if the Germans make an all-out effort to interdict bauxite routes.

4. In view of the above it is of the utmost importance that domestic deposits of bauxite be put to use at the earliest possible date in order that we may be independent of imports. It is suggested that it might be appropriate for your committee to press this phase of the matter.

R. S. EDWARDS,
Chief of Staff.

Copy to: SecNav

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JHS:EH

JOINT AIRCRAFT COMMITTEE
Washington, D. C.

September 14, 1942

MEMORANDUM FOR THE SECRETARY OF THE NAVY

SUBJECT: Bauxite Imports From South America

1. The Joint Aircraft Committee has reviewed the present situation in regard to the prospective supply of bauxite necessary for the production of aluminum in the United States and Canada. Mr. A. M. Bunker, Chief, Aluminum and Magnesium Branch, War Production Board, has appeared before the Committee to present facts relative to the supply of bauxite during the balance of the current year. A summary of the remarks of Mr. Bunker to the Committee is appended hereto.

2. The production of aluminum in this country is at a very critical stage. Unless the War Shipping Administration can supply from South America to the United States and Canada 225,000 tons of bauxite in September, 1942, and 300,000 tons in each of the succeeding three months, the supply of aluminum to the aircraft industry in 1943 will be seriously effected. A shrinkage of 50,000 tons per month from the quotas set forth above for four months would result in a loss equivalent to at least 6,000 airplanes at a later date. To date, this year, the War Shipping Administration has failed to make delivery of the required quotas by an average of over 100,000 tons per month. Because of this factor, stock piles and inventories in the United States and Canada are at a critically low point.

3. The Joint Aircraft Committee has been informed that receipt of the bauxite quotas in this country for the next four months is primarily a matter of convoy protection. The capacity of the loading facilities at Trinidad, which, we are informed, is the only loading point at present in operation, is 300,000 tons a month; therefore, any loss of shipping en route cannot be made

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JOINT AIRCRAFT COMMITTEE

Washington, D. C.

up by additional shipping within the period the material is needed in this country.

4. The Joint Aircraft Committee recommends strongly to the Navy Department that all necessary convoy protection be furnished for bauxite shipments from South America in order to insure the receipt of the specified quotas in the United States and Canada. The Committee believes that this is a matter of grave concern because of the possible resultant loss in terms of 1943 aircraft production.

Henry H. Arnold
Lieutenant General, U.S. Army
Chairman, Joint Aircraft
Committee

Incl:
Summary

CC - Chief of the Bur. of Aeronautics
C.G., Materiel Command
Sir Richard Fairey
Mr. A. R. Bunker
Mr. T. P. Wright

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DOD DIR. 5 Jan. & 20 June 1974
By [illegible] LC Date 10-18-76

[redacted]
HEADQUARTERS [redacted] AIR FORCES
ROUTING AND RECORD SHEET

TALLY NO.	
FILE NO.	

SUBJECT: Bauxite Imports from South America

ITEM NO.	FROM	TO	DATE	COMMENTS
				WEH:JT 5265
4	AFCAS	File	1942 9-23	Noted. NDA
				Incls. n/c WILLIAM E. HALL Colonel, G. S. C.

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HEADQUARTERS ARMY AIR FORCES
ROUTING AND RECORD SHEET

File No. 2115

Note — A line will be drawn across sheet after each comment.

Tally No. AAF

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DOD Dir.
8 Jan. & 30 June 1974
By: [illegible] Date: 10-18-74

SUBJECT: Bauxite Imports from South America.

NO.	FROM	TO	DATE	COMMENTS
1	General Arnold	General Strate-meyer	1942 9/17	Note the attached and take whatever action is necessary. H. H. Arnold
Incl: Ltr to Gen. Arnold, 9-16-42, frm C in C, U.S. Fleet, /s/ R.S. Edwards, Chief of Staff, re above subj. Cy memo for Sec. of Navy, 9-14-42, frm Gen. Arnold, re above subj.				
2	AFCAS	Assistant Chief of Air Staff A-4 Atten: Col. Langmead	1942 9-19	3373 GES/hd 1. You will take the necessary action to have the enclosed letter properly processed to the Joint Aircraft Committee. GEORGE E. STRATEMEYER, Major General, U.S.A., Chief of the Air Staff.
Incl: No Change				GB/elm/71172
3.	AFADS	AFACG	1942 9/21	1. Subject letter forwarded to the Recorder, Joint Aircraft Committee. T. J. HANLEY, JR., Brigadier General, U.S.A.
	Hq. Army Air Forces SEP 23 1942 AAF Received			Incls. n/c.

(Do not use reverse side) F-4071, AF. Rev. 8/14/41

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Bauxite Imports from South America.

5. AFADS AFAGC 1942 9/21 1. Subject letter forwarded to the Recorded, Joint Aircraft Committee.

T. J. HANLEY, JR.,
Brigadier General, U.S.A.

Incls. n/c.

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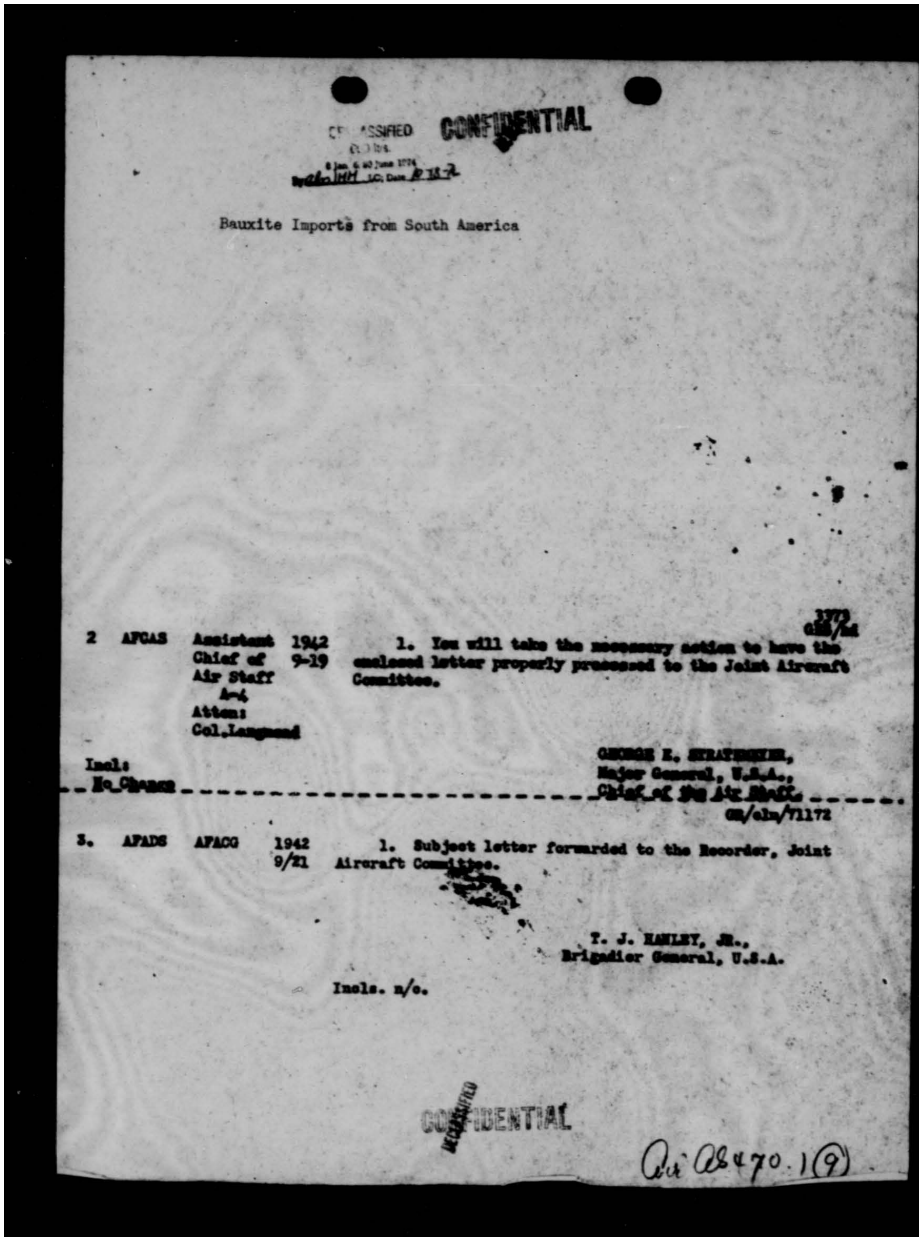

CONFIDENTIAL

Bauxite Imports from South America

2	AFCAS	Assistant Chief of Air Staff A-4 Attn: Col.Langmead	1942 9-19	1. You will take the necessary action to have the enclosed letter properly processed to the Joint Aircraft Committee.

Incl:
No Change

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

GS/eln/71172

3.	AFADS	AFACG	1942 9/21	1. Subject letter forwarded to the Recorder, Joint Aircraft Committee.

T. J. HANLEY, JR.,
Brigadier General, U.S.A.

Incls. n/c.

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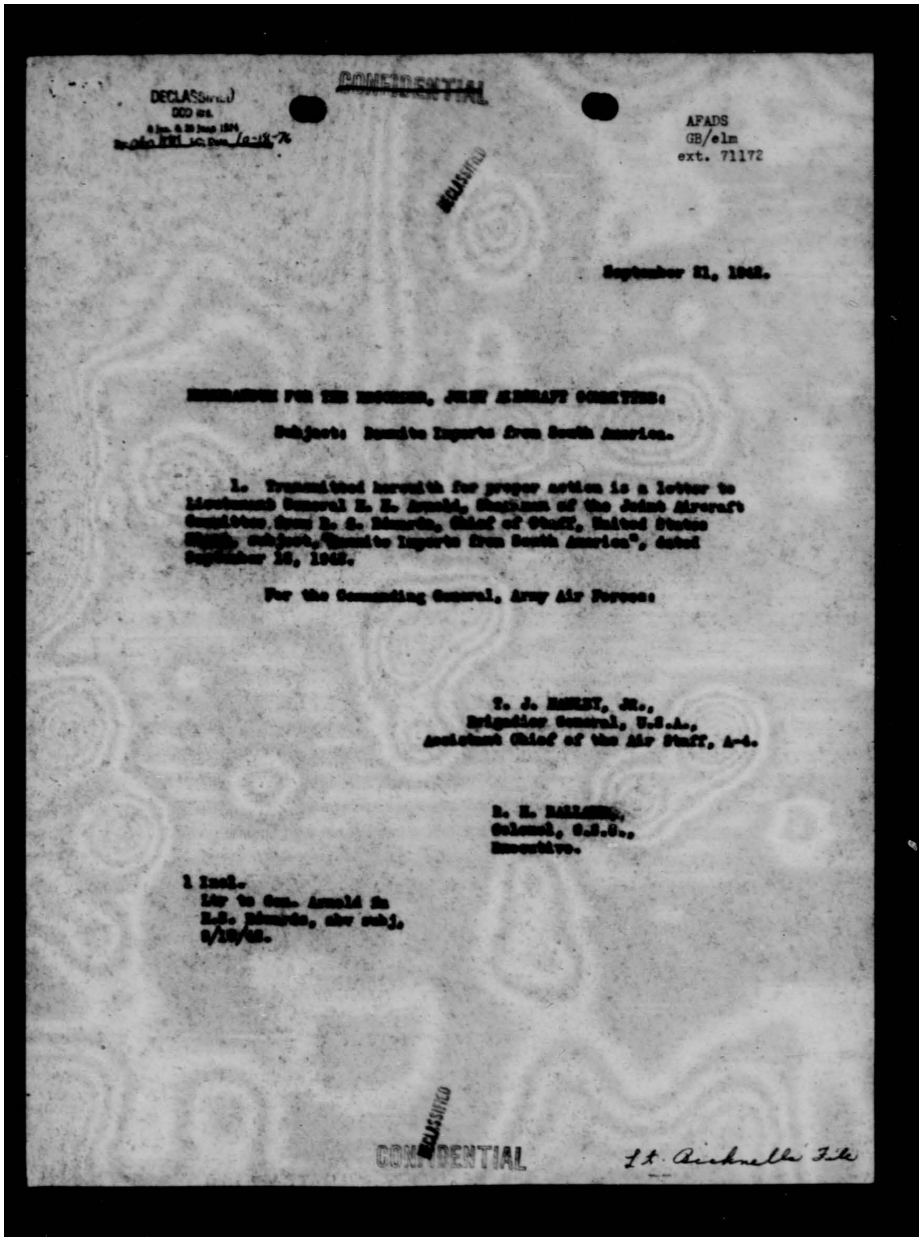

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DOD Dir.
8 Jan. & 20 June 1974
By [illegible] Date 10-18-76

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AFADS
GB/elm
ext. 71172

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September 21, 1942.

MEMORANDUM FOR THE RECORDER, JOINT AIRCRAFT COMMITTEE:

Subject: Bauxite Imports from South America.

1. Transmitted herewith for proper action is a letter to Lieutenant General H. H. Arnold, Chairman of the Joint Aircraft Committee from R. S. Edwards, Chief of Staff, United States Army, subject, "Bauxite Imports from South America", dated September 16, 1942.

For the Commanding General, Army Air Forces:

T. J. HANLEY, JR.,
Brigadier General, U.S.A.,
Assistant Chief of the Air Staff, A-4.

R. H. BALLARD,
Colonel, G.S.C.,
Executive.

1 Incl.
Ltr to Gen. Arnold fm
R.S. Edwards, abv subj,
9/18/42.

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Lt. Aichnelle File

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8 Jan. & 20 June 1974
By abo 1181 LC, Date 12-18-76

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UNITED STATES FLEET
Headquarters of the Commander in Chief
Navy Department, Washington, D.C.

FF1/A14-1 September16, 1942

Serial: 02196

From: The Commander in Chief, United States Fleet.
Lieutenant General Henry H. Arnold, U.S.A.,
Chairman, Joint Aircraft Committee

Subject: Bauxite Imports from South America.

1. Your memorandum of September 14 has been referred to the Commander in Chief, United States Fleet, by the Secretary of the Navy.

2. Admiral King is, of course, fully aware of the importance of the bauxite trade. The Caribbean convoy system placed in effect on the first of September was planned--in consultation with the WSA--primarily for the purpose of protecting bauxite ships and tankers.

3. We have been informed by WSA that the above convoy plan has worked well so far and that the bauxite import quota for the balance of 1942 probably will be approximately closely. However, we can not ignore the fact that it is impossible to give shipping perfect security against submarines in the best of circumstances. Our situation is far from good in view of the small number of anti-submarine ships and planes that can be spared from operations of higher priority. Losses and delays in bauxite movements are inevitable. They may become very serious if the Germans make an all-out effort to interdict bauxite routes.

4. In view of the above it is of the utmost importance that domestic deposits of bauxite be put to use at the earliest possible date in order that we may be independent of imports. It is suggested that it might be appropriate for your committee to press this phase of the matter.

s/ R. S. EDWARDS,
Chief of Staff.

Copy to: SecNav.

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JHS:EH

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DOD 1/2
8 Jan. & 30 June 1974
By: [illegible] Date: 10-18-76

JOINT AIRCRAFT COMMITTEE
WASHINGTON, D. C.

September 14, 1942

MEMORANDUM FOR THE SECRETARY OF THE NAVY

SUBJECT: Bauxite Imports From South America

1. The Joint Aircraft Committee has reviewed the present situation in regard to the prospective supply of bauxite necessary for the production of aluminum in the United States and Canada. Mr. A. H. Bunker, Chief, Aluminum and Magnesium Branch, War Production Board, has appeared before the Committee to present facts relative to the supply of bauxite during the balance of the current year. A summary of the remarks of Mr. Bunker to the Committee is appended hereto.

2. The production of aluminum in this country is at a very critical stage. Unless the War Shipping Administration can supply from South America to the United States and Canada 225,000 tons of bauxite in September, 1942, and 300,000 tons in each of the succeeding three months, the supply of aluminum to the aircraft industry in 1943 will be seriously affected. A shrinkage of 50,000 tons per month from the quotas set forth above for four months would result in a loss equivalent to at least 6,000 airplanes at a later date. To date, this year, the War Shipping Administration has failed to make delivery of the required quotas by an average of over 100,000 tons per month. Because of this factor, stock piles and inventories in the United States and Canada are at a critically low point.

3. The Joint Aircraft Committee has been informed that receipt of the bauxite quotas in this country for the next four months is primarily a matter of convoy protection. The capacity of the loading facilities at Trinidad, which, we are informed, is the only loading point at present in operation, is 300,000 tons a month; therefore, any loss of shipping en route cannot be made

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JOINT AIRCRAFT COMMITTEE
WASHINGTON, D. C.

up by additional shipping within the period the material is needed in this country.

4. The Joint Aircraft Committee recommends strongly to the Army Department that all necessary convoy protection be furnished for bauxite shipments from South America in order to insure the receipt of the specified quotas in the United States and Canada. The Committee believes that this is a matter of grave concern because of the possible resultant loss in terms of 1943 aircraft production.

Henry H. Arnold
Lieutenant General, U.S.Army
Chairman, Joint Aircraft
Committee

Incl.
Summary

CC - Chief of the Bur. of Aeronautics
G.O., Material Command
Sir Richard Fairey
Mr. A. E. Bunker
Mr. T. P. Wright

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DOD Dir.
5 Jan. & 20 June 1972
By [illegible] Date 10-18-76

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COPY

JOINT AIRCRAFT COMMITTEE
Washington, D. C.

September 14, 1942

MEMORANDUM FOR THE SECRETARY OF THE NAVY

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Henry H. Arnold
Lieutenant General, U.S.Army
Chairman, Joint Aircraft
Committee

Incl.
Summary

CC - Chief of the Bur. of Aeronautics
C.G., Materiel Command
Sir Richard Fairery
Mr. A. W. Bunker
Mr. T. P. Wright.

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DOD ltrs.
8 Jan. & 20 June 1974
By: [illegible] LC; Date 10-18-76

UNITED STATES FLEET
Headquarters of the Commander in Chief
Navy Department, Washington, D.C.

FF1/A14-1

September 16, 1942

Serial: 02196

From: The Commander in Chief, United States Fleet.
Lieutenant General Henry H. Arnold, U.S.A.,
Chairman, Joint Aircraft Committee

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s/ R. S. EDWARDS,
Chief of Staff.

Copy to: SecNav.

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DOD ltrs.
8 Jan. & 20 June 1974
By: [illegible] Date: 10-18-76

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Shipment of Russian gold from Nome, Alaska, to Denver, Colorado

RCWB/hk

470.1 (8) B

1. CAS General George 7/30

1. The following is in confirmation of our telephone conversation of this morning:

a. The War Department has approved the shipment of approximately 4 1/2 short tons of gold from Nome, Alaska to Denver, Colorado. This shipment is being delivered by the Russian Government to Nome, Alaska about the end of this month.

b. The Treasury Department was asked to designate a representative of their Department to accompany this flight to take charge of the shipment. I am informed that this representative is a Mr. KM Failor. He has been told to make contact with your Command and that all details will be worked out with you.

Dispatched
JUL 30 1942
AAG

R.C.W.B.
S/AS

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-5	A-Insp.	Budget	Statistics

AAF-39

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DOD ltrs.
8 Jan. & 30 June 1954
Sp. Ltr. IHM 1-3, Date 10-13-76

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WD 580.81 (7-24-42)MS-AFDAS

JUL 27 1942

The Honorable,

The Secretary of the Treasury.

Dear Mr. Secretary:

In regard to your letter of July 24, 1942, I am able to advise you that the Air Force will fly the gold from Nome, Alaska to Denver, Colorado. However, it is believed essential that a representative of the Treasury Department accompany this flight to take charge of the shipment.

I will appreciate it if you will advise me as to the name of this representative. I believe that this representative will then be able to arrange all later details regarding this flight directly with the Air Force authorities.

Sincerely yours,

(Sgd.) HENRY L. STIMSON

Secretary of War

JUL 28 42 PM

DISPATCHED MISC. DIV., AGO
S. & C. SECTION

COPY FOR GENERAL GEORGE
AIR TRANSPORT COMMAND

COPY TO: Secretary of War

COMEBACK COPY
room 2210
CAS

ACTION TAKEN: JULY 28, 1942. Ltr. frm. S/W to S/T. Dispatched in AGO, 7-28-42. LVH/kls - 1705.

JUL 27 1942

JUL 26 1942

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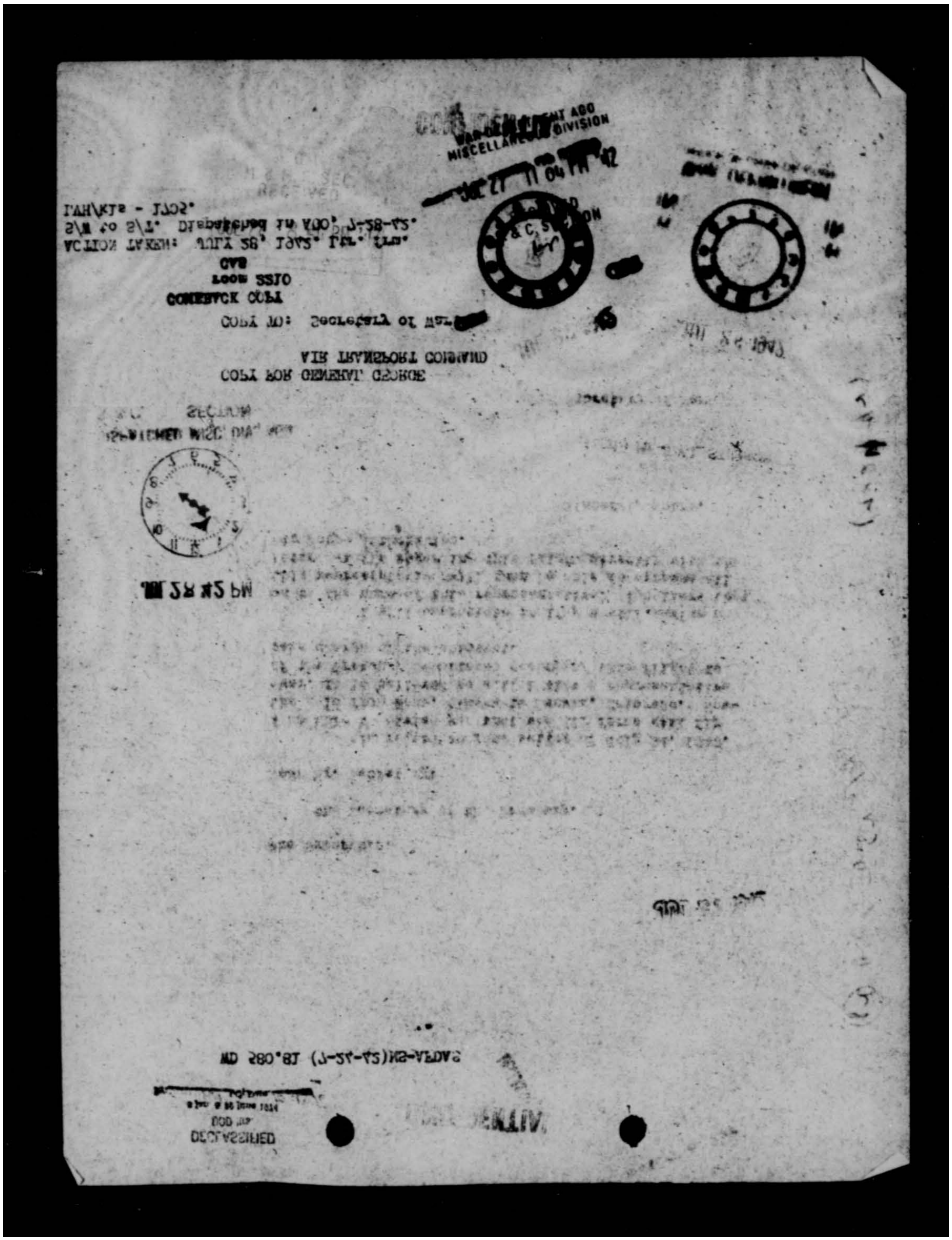

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DOD ltrs.
8 Jan. & 20 June 1974
By: [illegible] Date: 10-18-74

DECLASSIFIED

AFGAS
RCWB/hk

The Honorable,

The Secretary of the Treasury.

Dear Mr. Secretary:

In regard to your letter of July 24, 1942, I am able to advise you that the Air Force will fly the gold from Nome, Alaska to Denver, Colorado. However, it is believed essential that a representative of the Treasury Department accompany this flight to take charge of the shipment.

I will appreciate it if you will advise me as to the name of this representative. I believe that this representative will then be able to arrange all later details regarding this flight directly with the Air Force authorities.

Sincerely yours,

Secretary of War

470.1 (8)

Dispatched
JUL 26 1942
AAG

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HEADQUARTERS ARMY AIR FORCES

Chief of Staff	Sec'y Air Staff	A-1	A-2	A-3	A-4					

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MANUSCRIPT DIVISION

CLASSIFIED ITEMS REMOVED

The following item(s) have been removed from the collections because they contain security classified information:

Series: Decimal

Folder Title: 470.1

Item(s) and Security Classification:

1. Letter, Sec. of Treasury to Sec. of War, 7/24/42, 1p. C.
   Originating Agency: Treasury

PK / GB — 1994 — 10-25-78

Reviewer — Date

85-57 (rev 4/90

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DOD Dir.
8 Jan. & 20 June 1974
By [illegible] NARS, Date 10-18-76

Use of Wood and Plastics in Airplane Construction - Col. Jouett & Lt.Col.Hartney.

AFDAS
LSK:ems

1.	AFDAS	AFAMC (General Echols)	1942 4-3	1. The matter regarding the use of wood and plastics in airplane construction has been presented in detail to the Commanding General of the Army Air Forces who has directed that the plan to induct Colonel Jouett and Lt. Col. Hartney to supervise the further use of wood and plastics be abandoned.

L.S.K.
AFDAS

Dispatched
APR 6 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	

AAF-39

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March 28 1942

MEMORANDUM FOR MR. M. H MCINTYRE

Reference attached letter from Gene Vidal, attention is invited to the fact that at the present time the Army Air Forces has on order something over 13,000 training airplanes and several hundred transports all of which are largely of wooden construction. There are also 1,000 gliders, 9- and 15-place, being built of wood and 26,000 wooden propellers.

Up to the present time, the Air Forces has been reluctant to go to wooden construction for high performance combat type aircraft. As a matter of fact, even in training types, numerous disappointments have occurred such as were encountered in the attempt of Mr. Vidal to build a basic trainer XBT-11 out of wood. After 23 months from contract delivery date, the static test article of this aircraft had failed to pass normal static tests demanded of this type of aircraft.

Every attempt is being made to substitute wood for metal in order to alleviate the shortage of this critical material, and the progress is being believed to be as fast as the more advanced knowledge of the application of wood to aircraft construction will allow.

Signed H.H. Arnold
C-G, AAF

Incl.
letr fr Gene Vidal

Dispatched
MAR 28 1942
AAG

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Vidal Research Corporation
Central Airport
Camden, N.J.

March 14, 1942

Dear Mac;

Last week the Planning Division of the WPB informed me that recent accurate surveys indicated conclusively that due to shortage of aluminum production facilities the President's aircraft program would be reduced by at least 55,000 planes. While the reports of this division recommended quick substitution where most practical of molded plywood for aluminum, concern was expressed over the past and present attitude of Army and Navy officials. It was known that large aircraft manufacturers have been willing to substitute plywood for aluminum but were discouraged by the military services.

It is difficult to understand that this attitude since plywood in aircraft is not new in this country. Until a few years ago when the material was replaced by metal the fastest planes in the US were plywood such as the Lockheeds, and even today planes such a the Beechcrafts in plywood are being purchased by the Army. Abroad, England, Russia, Italy, Japan, Canada and smaller countries have not only plywood training planes but many of their best combat planes are partly or entirely of plywood construction. No Allied nation would object to US airplane parts of this material.

While foreign countries currently employ the old time method of building plywood planes by bending, gluing and nailing flat panel material similar to forming and riveting sheet aluminum, the molding of plastic treated veneer into curved reinforced aircraft structures is a purely American development. It is as important to this field as casting and the use of presses and dies is to the metal art.

A plywood built up airplane is a satisfactory substitute for one in metal; however, both types of construction are slow, complicated and expensive compared to the so-called molded pastic plywood process. Briefly, this more recent development is a method by which plastic treated veneers placed over inexpensive slotted wooden forms are molded under heat and fluid pressure in such a manner as to weld and shape in a single cooking operation a completely reinforced structure such as a fuselage.

This fluid pressure structural molding has been developed by our company during a four year period of designing, experimenting and testing and we now have eight plants in operation or production in the US and Canada. Small and large plane metal fuselages, wings and other parts have been duplicated and final tests have demonstrated that the structures are equal to or greater in strength than the equivalent weight in metal. Also, since the thicker skin surfaces are smoother and more rigid faster speeds and lower landing performances have been obtained.

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is assurance that this process and its material is past the experimental stage, it may be mentioned that our companies after satisfactory tests have on order from larger manufacturers, fuselages, wings, tail assemblies and bomber noses, nacelles, fillets, bomb doors, flaps, wing tips, sideroons, ailerons, etc. Under construction is a Navy transport Glider, an Army converted Basic Trainer and a two motored transition plane. A trainer type plane, a ra radio controlled plane and a two motored plane each with molded wings, fuselage etc. are flying. Fuselages for the small Brocupe and the two motored Anson have been load and flight tested.

For aircraft the expansion of this field present fewer problems than has the expansion of the metal working plants which require presses, dies, jigs, tools, etc. as well as a greater ratio of skilled labor. Furniture, piano and other out of luck wood working plants are available with the equipment and labor, lacking only the easily obtainable used pressure tanks for molding. Th materials, wood and plastic, are plentiful.

Because of the design and engineering involved, an expanded program would follow two courses; one, the duplication at once of certain parts for existing aircraft for immediate relief, the other, duplicating after longer design periods certain complete aircraft.

Naturally, this situation and problem has been studied by myself and our group for some time and I hope that I may be given an opportunity to discuss the subject with the proper official. However, if the individual hasn't sufficient authority to handle the Army Navy attitude, progress may be slow.

Sincerely,

Signed Gene Vidal

Wardman Park Hotel
Washington, D. C.

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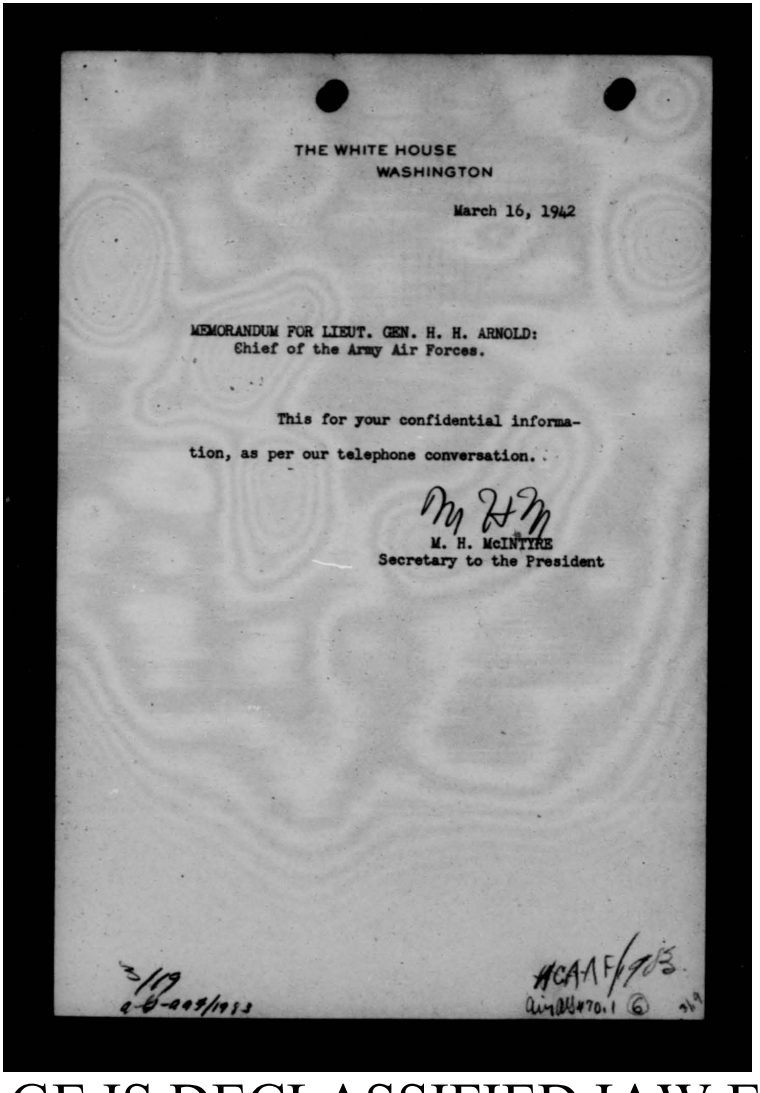

THE WHITE HOUSE
WASHINGTON

March 16, 1942

MEMORANDUM FOR LIEUT. GEN. H. H. ARNOLD:
Chief of the Army Air Forces.

This for your confidential information, as per our telephone conversation.

M H M

M. H. McINTYRE
Secretary to the President

3/19
a-6-AAF/1983

HCAAF/1983
Air AG 470.1 (6)

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HEADQUARTERS ARMY AIR FORCES

ROUTING AND RECORD SHEET

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Tally No. AAF .....

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DOD Rts.
8 Jan. & 20 June 1974
By [illegible] I.C. Date 10-18-72

SUBJECT: Substitution for Aluminum.

NO.	FROM	TO	DATE	COMMENTS
1	General Arnold	General Echols	1942 3/18	Prepare reply to Mr. McIntyre for me. In your reply it is well to state just what use we are making of these semi-plastic facilities. [illegible]
Incl:	Ltr to Gen. Arnold frm M. H. McIntyre, Sec. to the Pres., 3/16/42 incl. ltr to Mr. McIntyre frm Gene Vidal, 3/14/42.			
2.	AFAMC-9	AFACG	1942 3/25	1. Attached hereto is suggested draft of memorandum for Mr. M. H. McIntyre. [illegible] O. P. E. Commanding General, Materiel Command. Incl. Draft of Memo. to M.H.M. including incls. in R&R 1, above.

(Do not use reverse side)

Page No. ----------

W-4071, AC.Rev.8/14/41

3/19

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AGAAF/1983
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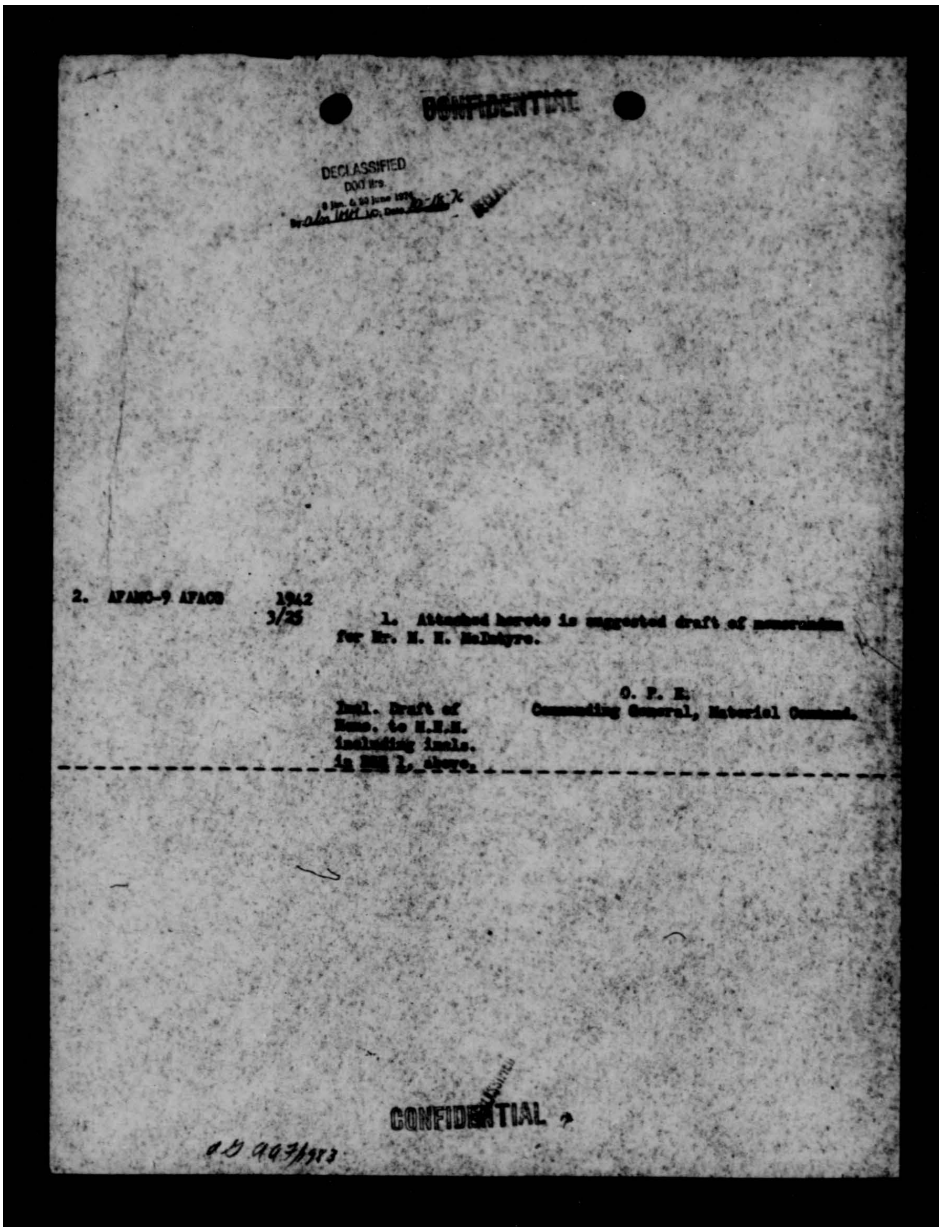

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DECLASSIFIED
DOD Dir.
8 Jan. & 30 June 1976
By [illegible] Date [illegible]

2. AFAMC-9 AFACB 1942
3/25

1. Attached hereto is suggested draft of memorandum for Mr. M. H. McIntyre.

O. P. E.
Commanding General, Materiel Command.

Incl. Draft of Memo. to M.H.M. including incls. in [illegible] 1, above.

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Central Airport
Camden, N.J.

March 14, 1942

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It is difficult to understand that this attitude since plywood in aircraft is not new in this country. Until a few years ago when the material was replaced by metal the fastest planes in the US were plywood such as the Lockheeds, and even today planes such as the Beechcrafts in plywood are being purchased by the Army. Abroad, England, Russia, Italy, Japan, Canada and smaller countries have not only plywood training planes but many of their best combat planes are partly or entirely of plywood construction. No Allied nation would object to US airplane parts of this material.

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As assurance that this process and its material is past the experimental stage, it may be mentioned that our companies after satisfactory tests have on order from larger manufacturers, fuselages, wings, tail assemblies and bomber nose , nabelles, fillets, bomb doors, flaps, wing tips, ailerons, ailerons, etc. Under construction is a Navy transport Glider, an Army converted Basic Trainer and a two motored transition plane. A trainer type plane, a re radio controlled plane and a two motored plane each with molded wings, fuselage etc. are flying. Fuselages for the small Ercoupe and the two motored Anson have been load and flight tested.

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Sincerely,

Signed Gene Vidal

Wardman Park Hotel
Washington, D. C .

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HEADQUARTERS ARMY AIR FORCES

ROUTING AND RECORD SHEET

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Tally No. AAF .....

CONFIDENTIAL

DECLASSIFIED
DOD Dirs.
By Alan Hall NC, Date 12-5-72

SUBJECT: Information on Aluminum.

NO.	FROM	TO	DATE	COMMENTS
1	General Arnold	General Echols	1942 1/29	This information indicates that we will have ample aluminum up to March, 1943 and yet all the information that we receive is that there is not enough aluminum at this moment to meet our aircraft demands for increased production. For instance, I was informed that due to Boeing's increased production we had to take aluminum away from other factories, and even though we would take all surplus, Boeing still cannot reach its possible production. What is the truth? H. H. A.
Incl	Cpy of Memo for Mr. Nelson, 1/27/42 frm. T.P. Wright /w/ subj: Aluminum for Aircraft.	Graphs		
2	(4) General Echols	General Arnold	1942 1/31	1. With reference to the attached chart prepared by Mr. T. P. Wright, entitled "Aluminum for Aircraft", this chart was prepared by Mr. Wright for submission to the War Production Board to convince that Board of the necessity of allocating to aircraft a larger percentage of the total aluminum which is theoretically available. The lower curve, entitled "Aircraft Requirements for Fabricated Aluminum" for 8-H, shows that at the present time we should be allocated 73% of the total aluminum supply in order to meet our present aircraft requirements for 8-H. It is my understanding that we are to be given only 65% of the total aluminum available at this time, and it is for this reason that we are unable to make our Boeing and other schedules. 2. Under the 8-I Program, which is the new program now being made up, and will contain the additional 31,000 airplanes in our so-called Accelerated Program, we must initially be given 81% of the present and planned available aluminum, and

Dispatched FEB 1 1942 AAG

CONFIDENTIAL

(Do not use reverse side)

Page No. 1

AF-4071, AC. Rev. 8/14/41

515,006

2 Encls

Air AG 470.1 (4)

C-140

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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

ROUTING AND RECORD SHEET

DECLASSIFIED
DOD Rs.
8 Jan. & 20 June 1974
By [illegible] Date 10 18 74

(To be filed with correspondence)

Note.—A line will be drawn across sheet after action by each office concerned.

SUBJECT: Information on Aluminum

NO.	FROM	TO	DATE	DATA
2 (Cont'd)	(4) General Echols	General Arnold	1942 1/31	by July, 1943, we must be given 100% in order to meet this schedule. 3. This matter was presented to the War Production Board, I understand, forcibly by Judge Patterson at his last meeting, and I have been informed verbally by Mr. T. P. Wright that Mr. Nelson told him that the War Production Board is going to take some very positive action in this matter, with a view of making available to the aircraft industry a larger percentage of the aluminum capacity. OPE O.P.E. Incl. n/c Asst. for Proc. Services.

Noted

File
SMA
1 July 42

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U. S. GOVERNMENT PRINTING OFFICE 16—10530

Page No. 2.

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S-140

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DECLASSIFIED
DOD Dir.
8 Jan. & 20 June 1974
By [illegible] IHM, LC, Date 10-13-76

(4)

2	General Echols	General Arnold	1942 1/31

1. With reference to the attached chart prepared by Mr. T. P. Wright, entitled "Aluminum for Aircraft", this chart was prepared by Mr. Wright for submission to the War Production Board to convince that Board of the necessity of allocating to aircraft a larger percentage of the total aluminum which is theoretically available. The lower curve, entitled "Aircraft Requirements for Fabricated Aluminum" for 8-H, shows that at the present time we should be allocated 73% of the total aluminum supply in order to meet our present aircraft requirements for 8-H. It is my understanding that we are to be given only 65% of the total aluminum available at this time, and it is for this reason that we are unable to make our Boeing and other schedules.

2. Under the 8-I Program, which is the new program now being made up, and will contain the additional 31,000 airplanes in our so-called Accelerated Program, we must initially be given 81% of the present and planned available aluminum, and

C-140

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Air Obj 470.1

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Information on Aluminum

2 (Cont'd)	(4) General Echols	General Arnold	1942 1/31	by July, 1943, we must be given 100% in order to meet this schedule.

3. This matter was presented to the War Production Board, I understand, forcibly by Judge Patterson at his last meeting, and I have been informed verbally by Mr. T. P. Wright that Mr. Nelson told him that the War Production Board is going to take some very positive action in this matter, with a view of making available to the aircraft industry a larger percentage of the aluminum capacity.

O.P.K.
Incl. n/c Asst. for Proc. Services.

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Gen. Echols.

W&P-797

January 27, 1942.

MEMORANDUM FOR: Mr. Donald M. Nelson,
Director General,
War Production Board.

SUBJECT: Aluminum for Aircraft.

At the meeting of the Joint Aircraft Committee yesterday, discussion took place on the subject of possible restrictions to the aircraft program because of shortages of aluminum. Current shortages were discussed, and as well, the proportion of the available supply going to the aircraft industry as compared to that going to other defense requirements. This proportion was compared to the percentage which maintains in England and emphasis was laid upon the larger percentage of the total supply going to aircraft in England than in this country.

Suggestion was made that curves of supply vs. demand might be of use to the members of the War Production Board at its meeting this afternoon, at which meeting it is understood further discussions of this subject will take place.

The enclosed graphs give this data. Included is: Ingot supply in terms of both availability as initially produced and also as finally available to aircraft manufacturers (the difference representing the time in fabricating into sheets, extrusions, forgings, etc.); also, aircraft demand in terms of our latest scheduled programs and an estimated graph showing the program necessary to attain ten thousand airplanes per month production by December, 1943 (an approximation to the President's program).

T. P. Wright,
Assistant Chief,
Aircraft Branch.

Attach: Graphs

Copy - General H. H. Arnold
Mr. W. L. Batt
Mr. W. H. Harrison
Mr. M. C. Meigs
Admiral J. H. Towers

(with copies of Graphs to each)

C-140

Encl
Away 470.1 (4)

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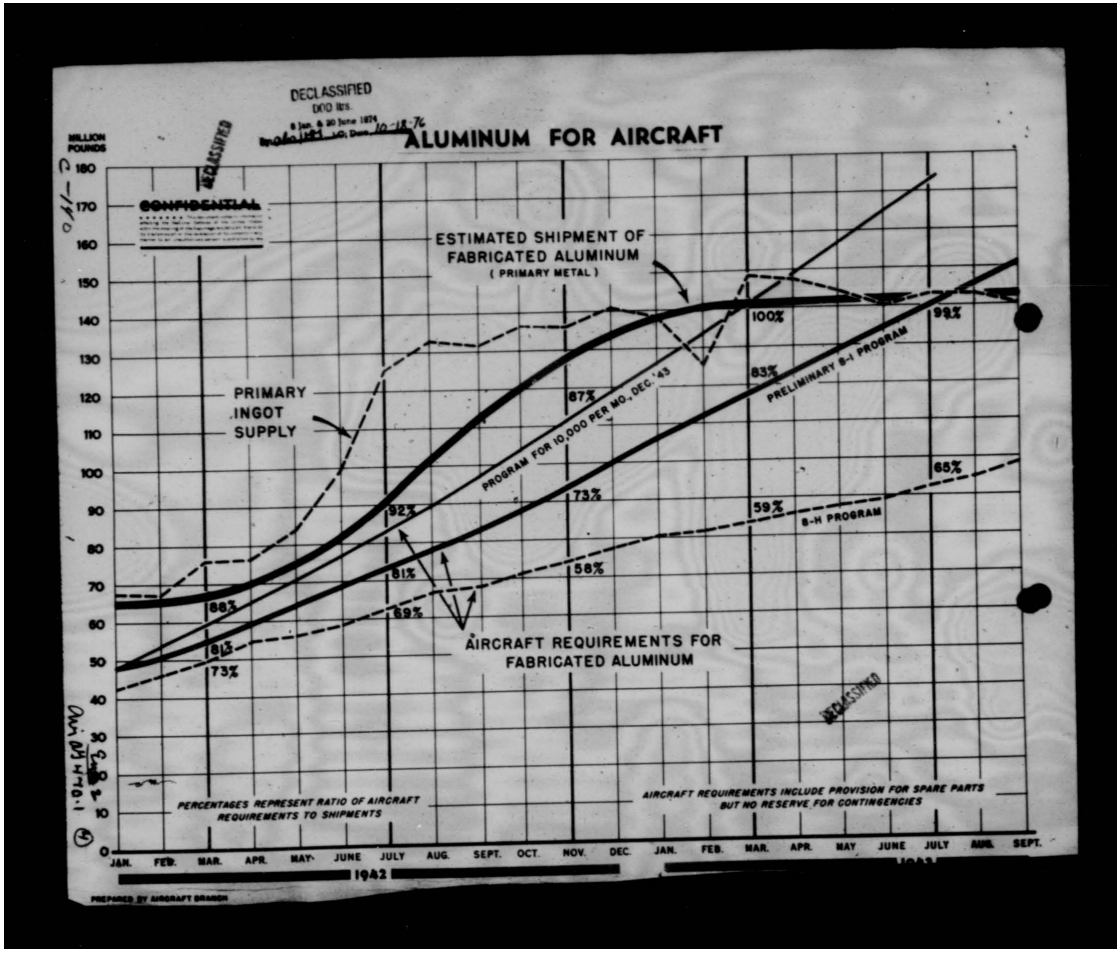

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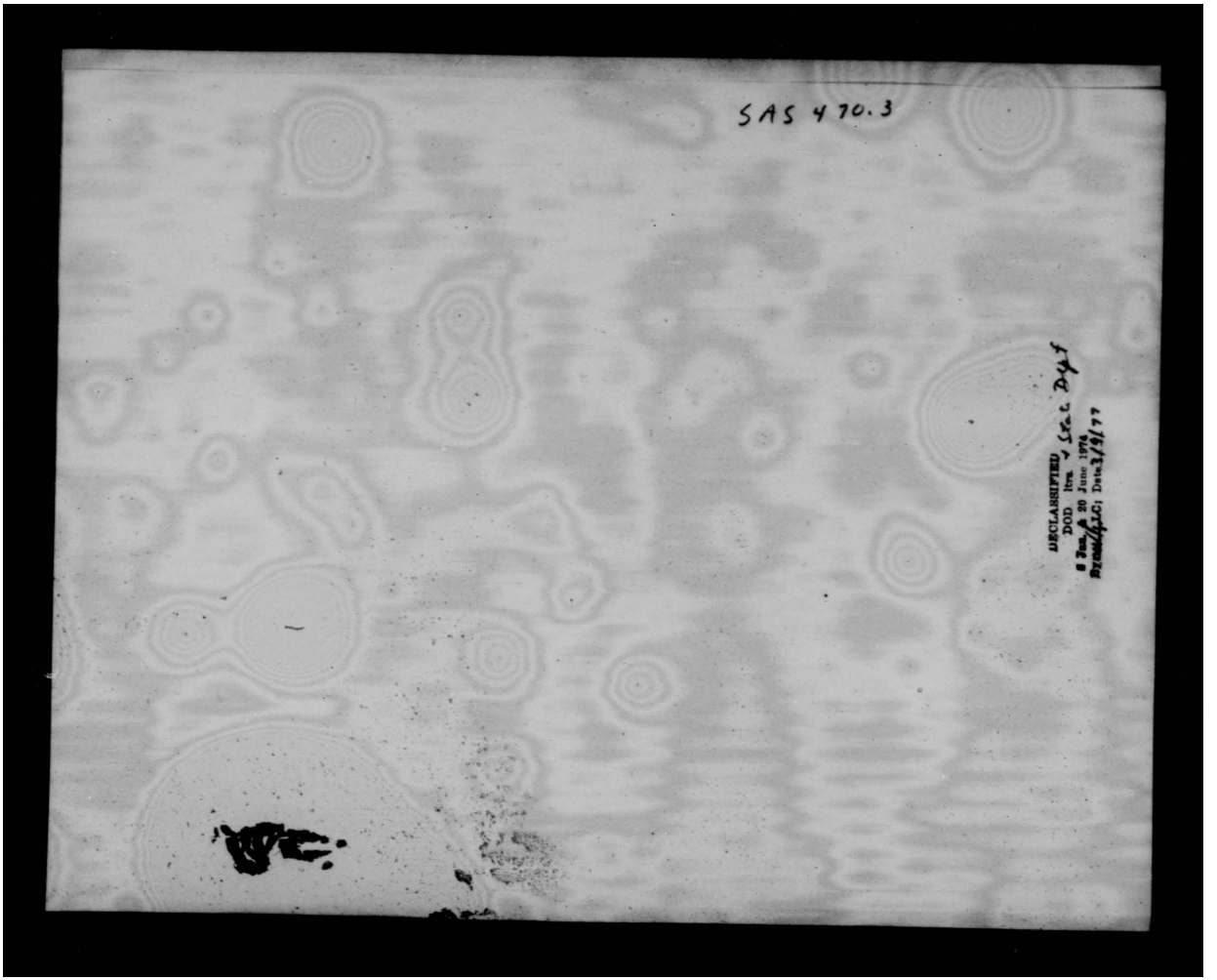

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DECLASSIFIED
DOD Dir.
8 Jan. & 20 June 1974
By: HW/HM J.C. Date: 5-9-77

SECRET
BY AUTHORITY OF A. C. OF S. 3567

Date

WPD 3173-14

January 20, 1942.

MEMORANDUM FOR THE CHIEF, PRODUCTION BRANCH, OFFICE OF THE UNDER SECRETARY OF WAR:

Subject: 24-Inch Searchlights for Beach Defense.

1. The following confirms a telephone conversation of January 7, 1942, between Mr. Curley, of your office, and Col. Russell, War Plans Division, regarding 24-inch searchlights for beach defense.

2. There are 126 of these lights on order; 45 on A1A priority and 81 on A1C priority. Fifty-five complete units are available for delivery.

3. It is understood that the completion of additional lights is dependent upon the availability of certain bearings. The production of such bearings is extremely limited. Identical bearings are necessary in the production of bombers. The future allotment of any of these bearings to searchlight production would retard corresponding bomber production.

4. The War Plans Division recommends that the production of 24-inch searchlights for beach defense be suspended to the extent necessary to prevent delay in bomber production.

470.3 (8)

G. R. CRAWFORD
Brigadier General, G.S.C.

Concurrence:
A.C. of S., G-4 (B.S.) 1-21-42

L. T. GEROW,
Brigadier General,
Assistant Chief of Staff.

MEMORANDUM FOR RECORD:

By Memo. for the Chief, Production Branch, Office of the Under Secretary of War, dated Dec. 16, 1941 (WPD 3173-14), WPD recommended that every effort be made to expedite the delivery of searchlights for beach defense. Of the 126 on order, 50 are required for Hawaii, 36 for the Philippines,

JAN 24 42

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(Copy for C/AAF)

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and 40 for Puerto Rico. There are none on hand. The 55 now available will more than satisfy the requirements of the Hawaiian Department. It is unlikely that these lights could be sent to the Philippines in the near future or that the requirement originally set up still holds. The need for beach defense lights in Puerto Rico does not appear to be of such urgency as to justify a delay in the production of bombers.

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DOD ltrs.
6 Jan. & 20 June 1974
By: [illegible] LC; Date 3-9-77

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Hellmore Light.

1.	(4-E) Exec OC&C	Army Air Forces	10-10 1941	1. Arrangements made with Sperry Gyroscope Company to send an engineer to obtain information on this piece of equipment.

1 Incl.
Cable #559.9-30-41. fr London M.S.F.

470.3 (5)

AAF/A-2
MCC/ekp

2	AAF A-2	AAF A-4	10/15	Primary interest.

M.F.S.
C/A-2.

GG:lw

1 Incl.
n/c

To Mail & Record Room
Date
EXECUTIVE
ADMINISTRATIVE
B & G
CIVILIAN PERS.
FISCAL
INSPECTION
INTELLIGENCE
LEGAL
MATERIEL
MEDICAL
MILITARY PERS.
PLANS
TRAIN. & OPER.
W. COM. AERO BD.

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HEADQUARTERS ARMY AIR FORCES

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DOD ltrs.
8 Jan. & 20 June 1974
By: [illegible] Date: 3-9-77

ROUTING AND RECORD SHEET

CONFIDENTIAL

(To be filed with correspondence)

Note.—A line will be drawn across sheet after action by each office concerned.

SUBJECT: Cablegram to Lieutenant Colonel Cummings

2734

NO.	FROM	TO	DATE	DATA
				AFF/ A-2 MFS/cmm
1.	A-2	OCAC Intelligence Division	1941 9/10	Requested that a cablegram substantially as follows, be sent to the Military Attache, London, England. Attention Lieutenant Colonel Cummings. "IT IS UNDERSTOOD THAT THE BRITISH HAVE MADE A SEARCHLIGHT INSTALLATION ON A DOUGLAS DB - 7B STOP THEY CALL THIS TYPE, THE HELLMORE STOP REQUEST AVAILABLE INSTALLATION AND TEST DATA ON THIS PROJECT BE FURNISHED TO MATERIEL DIVISION". M. F. S. M. F. S. Air Staff, A-2 Once ac. 143
2.	O.C.A.C. Intell. Division (2-B3) GTF:tk	Air Staff A-2	9/12 1941	A cablegram substantially as written in comment 1, above, was forwarded to G-2 at 1:18 p.m., September 11, for transmittal to Military Attache, London. G.14. J. G. TAYLOR, Lieutenant Colonel, Air Corps, Chief, Intelligence Division.

RECEIVED FOR LONDON SEC. COMM.

470.3 (H)

file

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Air Co 470.3 (H) A-2-9/12

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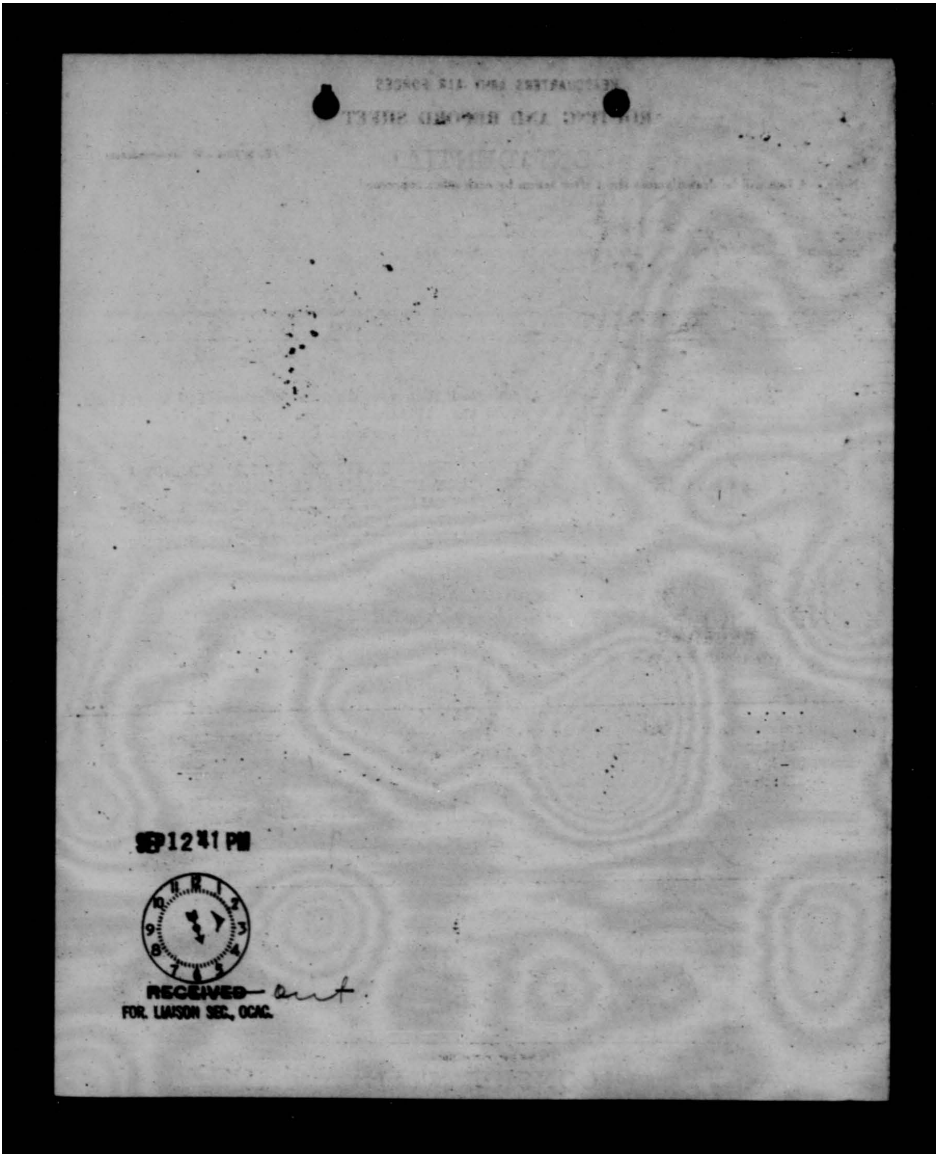

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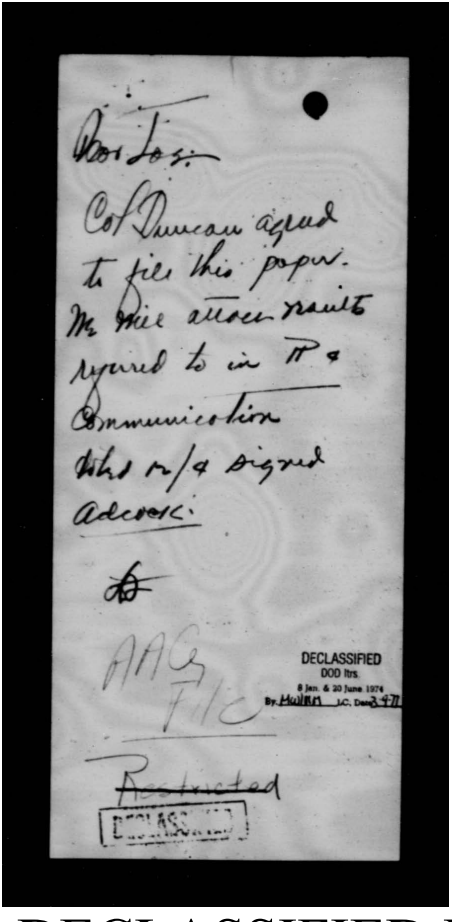

Dear Jos:

Col Duncan agreed to file this paper. We will attach results required to in ¶ 4 Communication dated 12/4 signed Adcock.

AAG
File

Restricted

DECLASSIFIED
DOD ltrs.
8 Jan. & 20 June 1974
By Mullen J.C. Date 3-4-77

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WAR DEPARTMENT
Headquarters Army Air Forces
Office, Chief of the Air Staff
Washington, D. C.

Date 12/11

FROM: TO:

___ ___ Chief, A-3 Division
___ ___ Executive, A-3 Division
___ ✓ Air Defense Section
___ ___ Org. & Equip. Section
___ ___ Training Section
___ ___ Current & Misc. Section
___ ___ Operations Section
___ ___ Civil Aeronautics Section
___ ___ Ground Liaison Section
___ ___ Chief Clerk, A-3 Division

* *

___ ___ Chief, A-1 Division
___ ___ Chief, A-2 Division
___ ___ Chief, A-4 Division
___ ___ Chief, AWP Division
___ ___ Air Adjutant General
___ ___ Sec'y Air Staff

FOR:

___ Information
___ Coordination
___ Comment
✓ Necessary Action
___ File
___ Note and Return
___ Prepare Reply
___ Primary Interest
___ Recommendations

REMARKS:

Maj. Armstrong.
Here it is again — what shall we do with it? Col. Duncan said to — Lill - Hold for results mentioned in P4 Communication dated 12/4/41 EA -

A 3 Division
AIR STAFF

AAF-341

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DOD Ltr
8 Jan. & 20 June 1974
By [illegible] LC, Date 3-9-77

666/FM-3 1st Ind. 9

War Department, Office, Chief of Coast Artillery, December 8, 1941. - To: Chief of the Army Air Forces, Washington, D. C.

Noted.

For the Chief of Coast Artillery:

George W. Ricker
GEORGE W. RICKER,
Lieut. Colonel, C.A.C.,
Assistant.

4 Incls. - n/c

470.3 (1)

Inclosure filed in envelope -

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air 470.3 (1)

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21st St. & Va. Ave., N. W.

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

WAR DEPARTMENT
OFFICE OF THE CHIEF OF ENGINEERS
WASHINGTON

Room 2116, New War Dept.Bldg.(Dev.)
REFER TO FILE NO. 070 2198

6-D
December 4, 1941.

Subject: Counter Lighting in Antiaircraft Defense.

RESTRICTED
By order of the Chief of Engineers

MEMORANDUM for Secretary, War Department General Staff.

DECLASSIFIED
DOD ltr
8 Jan. & 20 June 1972
By: HW/HM LC, Date 5-9-77

12-4-41
(Date)

1. Reference is made to Disposition Form, Office, Secretary, War Department General Staff, dated October 23, 1941.

2. A copy of the report of tests on Illumination Camouflage Experiments, carried out at Hybla Valley Airfield on November 3-5, 1941, is inclosed. The tests were carried out by the General Electric Company under a contract with the National Defense Research Committee. Personnel of the Engineer Board at Ft. Belvoir, Va., cooperated with the National Defense Research Committee on the tests.

3. The tests have indicated the desirability of obtaining further data. This will be secured by additional work to be performed by the General Electric Company under the supervision of the National Defense Research Committee.

4. Until the final report and conclusions have been prepared and submitted by the General Electric Company, it is not considered essential that any further investigations on this matter are necessary.

5. It is the informal opinion of this office that this method of camouflage is too ponderous and expensive to be practical except, perhaps, in special instances.

For the Chief of Engineers:

DEC 5 1941
NOTED-DEPUTY CHIEF OF STAFF M
MD2

C. L. Adcock
C. L. Adcock,
Lt. Col., Corps of Engineers,
Executive Assistant.

666/FM-3 Incl. 1

6-Incls.
Disposition Form, 10-23-41
Sub 1 of Ser.2198 in quin.w/Disp. Form, 9-25-41.
Ser.2142 w/Let.5-22-41.
Sub 1 of 467(SP-314)134.
Ser. 2198

RESTRICTED

T-34, 10/16

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OCS/15310-28

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WAR DEPARTMENT GENERAL STAFF
DISPOSITION FORM

AG
G-
SUBJECT:

Date 10/23

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	X CAC	___ENGR	___CG	_____Dept.
___ORD	___QMG	___CSO	___SG	___FIN	[redacted]	
___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 |

2 OCCA

For such comment as you care to make.
MDT

M.D. Taylor
Major, General Staff
Asst. Secretary, General Staff

1-7 RECD OCT 24 1941 OCCA 3 Inds.

666/FM-1

666/FM-2

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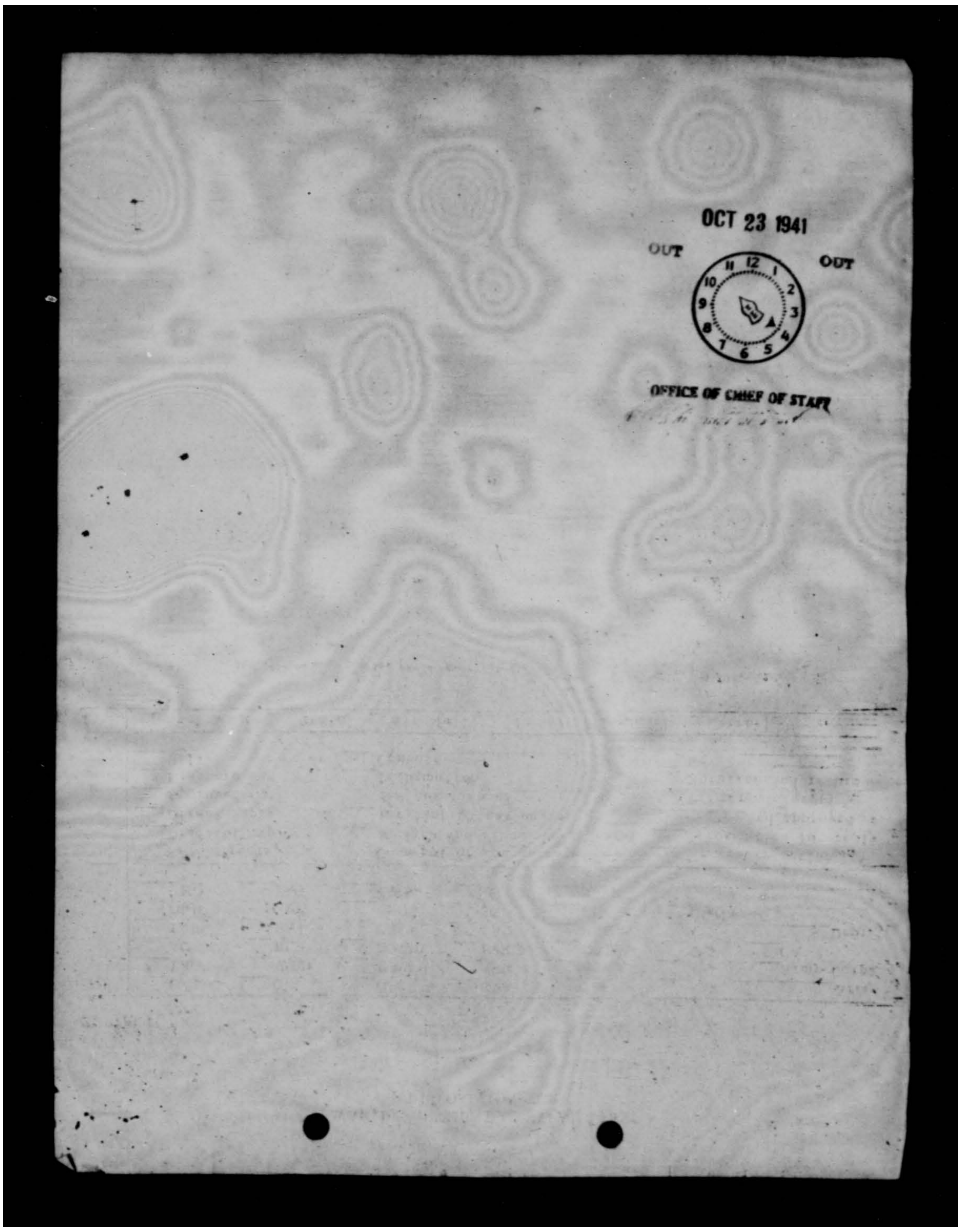

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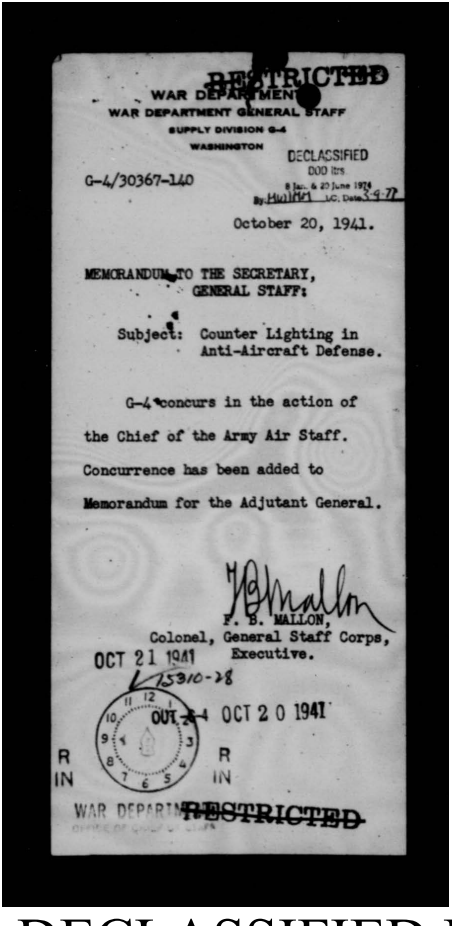

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WAR DEPARTMENT
WAR DEPARTMENT GENERAL STAFF
SUPPLY DIVISION G-4
WASHINGTON

DECLASSIFIED
DOD ltrs.
8 Jan. & 20 June 1974
By HWHM LC, Date 3-9-77

G-4/30367-140

October 20, 1941.

MEMORANDUM TO THE SECRETARY,
GENERAL STAFF:

Subject: Counter Lighting in Anti-Aircraft Defense.

G-4 concurs in the action of the Chief of the Army Air Staff. Concurrence has been added to Memorandum for the Adjutant General.

F. B. MALLON,
Colonel, General Staff Corps,
Executive.

OCT 21 1941

15310-28

OUT G-4 OCT 20 1941

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WAR DEPARTMENT
OFFICE OF CHIEF OF STAFF

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DOD ltrs
8 Jan. & 20 June 1975
By [illegible] LC, Date 5-4-77

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G-4/30367-140

G-4
RRR

October 20, 1941.

MEMORANDUM TO THE SECRETARY,
GENERAL STAFF:

Subject: Counter Lighting in
Anti-Aircraft Defense.

G-4 concurs in the action of the Chief of the Army Air Staff. Concurrence has been added to Memorandum for the Adjutant General.

F. B. MALLON,
Colonel, General Staff Corps,
Executive.

dhm

Lwh 070-2198

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DOD Dir.
8 Jan. & 20 June 1974
By [illegible] Date 5-9-77

WAR DEPARTMENT
OFFICE OF THE CHIEF OF THE ARMY AIR FORCES
WASHINGTON

OCT 16 1941

OFFICE CHIEF OF ENGINEERS
OCT 31 1941
070 - 2198/1

MEMORANDUM FOR THE ADJUTANT GENERAL:

Subject: Counter Lighting in Anti-Aircraft Defense.

The Secretary of War directs:

That the Corps of Engineers be designated as a developing arm for the purpose of investigating the merits of the basic proposal, and that the attached correspondence be referred to the Chief of Engineers for appropriate action accordingly.

OCT 17 1941

Concurrence:
A.C.of S. G-4
(RRN)

R IN

WAR DEPARTMENT
OFFICE OF CHIEF OF STAFF

For the Chief of the Army Air Staff:

CLAUDE E. DUNCAN,
Lt. Col., Air Corps,
Secretary of The Air Staff.

666/FM-1 Incl. 1

MEMORANDUM FOR RECORD: The basic communication proposes a system of defense measures, the determination of whose merits, if any exist, is definitely a problem of interest to the ground forces. However, this subject is by no means a new one. It was presented during the first World War and again some four years ago. The idea does have some value as an anti-aircraft defense. The length of time required in providing the necessary light, power lines, etc., and the cost thereof renders a practicable application prohibitive. The 6th Indorsement is in complete agreement with previous action taken by the War Department on a previous presentation of the idea.

2 Incls.
1-WPD 3793-146 of 9-25-41
w/incl. AG 070 (5-29-41) w/incl
as stated and 6 incls.

RESTRICTED

T-34, 10/18

ocs/15310-28

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WAR DEPARTMENT GENERAL STAFF
DISPOSITION FORM
WAR PLANS DIVISION

W. P. D., G.S.

DECLASSIFIED
DOD Rts
8 Jan. & 20 June 1974
By: MWHM, LC, Date 3-9-77

AG AG 070 (5-29-41)
WPD 3793-146
SUBJECT: Counter Lighting in Anti-Aircraft Defense.

Date September 25, 1941

TO:							
	___C/S	___G-1	___G-2	___G-3	___G-4	___Air Staff	
	___TAG	___WPD	___USW	___ASW	___ASWA	___CG	___Army
	___AC	___BLP	___BOWD	___ExRA	___NGB	___CG	___Army Corps
	___INF	___FA	___CAV	___CAC	___ENGR	___CG	___CA
	___ORD	___QMG	___CSO	___SG	___FIN	___CG	___Dept.
	___GHQ	___JAG	___CWS	___IG	___B/PR	✓ Chief of Army Air Forces	

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 ___	✓X Primary interest
	___Disapproved	___Information	___Notation and return
	___File	___Consult ___	Noted ___

By: ___Spcl Msgr | ___Radio | ___Air Mail | ___Immed Action Ltr | ___Letter

It is believed that subject project merits further investigation.

3465

CK Gailey
Major, G.S.
Executive

R. W. CRAWFORD
Colonel, General Staff
Acting Assistant Chief of Staff.

1 Incl.
AG 070 (5-29-41) w/incl.
as stated & 6 inds.

21-4/30367-140

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A9-24(7-a) A-2467

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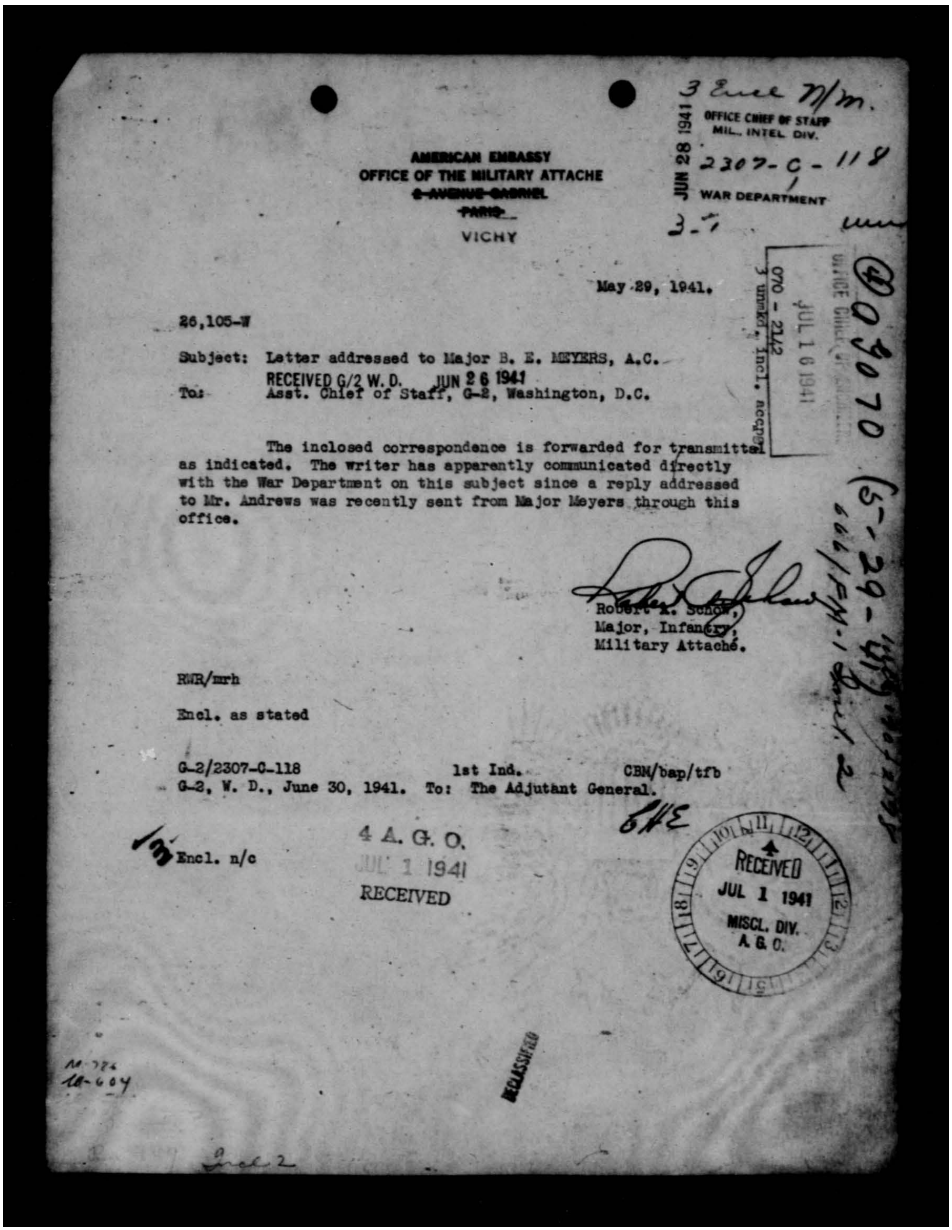

3 Encl n/m.

OFFICE CHIEF OF STAFF
MIL. INTEL. DIV.
JUN 28 1941
2307-C-118
WAR DEPARTMENT

AMERICAN EMBASSY
OFFICE OF THE MILITARY ATTACHE
~~2 AVENUE GABRIEL~~
~~PARIS~~
VICHY

3-7

May 29, 1941.

26,105-W

Subject: Letter addressed to Major B. E. MEYERS, A.C.
RECEIVED G/2 W.D. JUN 26 1941
To: Asst. Chief of Staff, G-2, Washington, D.C.

The inclosed correspondence is forwarded for transmittal as indicated. The writer has apparently communicated directly with the War Department on this subject since a reply addressed to Mr. Andrews was recently sent from Major Meyers through this office.

Robert A. Schow,
Major, Infantry,
Military Attaché.

RWR/mrh

Encl. as stated

G-2/2307-C-118 1st Ind. CBM/bap/tfb
G-2, W. D., June 30, 1941. To: The Adjutant General.

CHE

Encl. n/c

4 A. G. O.
JUL 1 1941
RECEIVED

RECEIVED
JUL 1 1941
MISCL. DIV.
A. G. O.

OFFICE CHIEF OF STAFF
JUL 16 1941
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(4) 03070 (5-29-41)
666/FM-1 Incl. 2

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AG 070 (5-29-41) MB 2nd Ind. MJP:iy

War Dept., A. G. O., July 2, 1941 - To: The Chief of the Air Corps.

For remark, no record of previous correspondence having been found in this office from Mr. R. H. Andrews concerning his method of anitaircraft defense by the use of Counter-Lighting.

By order of the Secretary of War:

Adjutant General.

3 Incls.

[redacted]

Subject: Letter addressed to Major B. E. MEYERS, A.C. (4-E-3)

400.111

3rd Ind.

War Department, Air Corps, Materiel Division, Wright Field, Dayton, Ohio, JUL 15 1941

To: The Chief of Engineers.

1. Forwarded as a matter believed to pertain to your office.

For the Chief of the Materiel Division

3 Encls.

F. I. ORDWAY, JR.
Major, Air Corps
Asst. Exec.

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OFFICE
CHIEF OF ENGINEERS
WASHINGTON

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Ra-183
Ra-149

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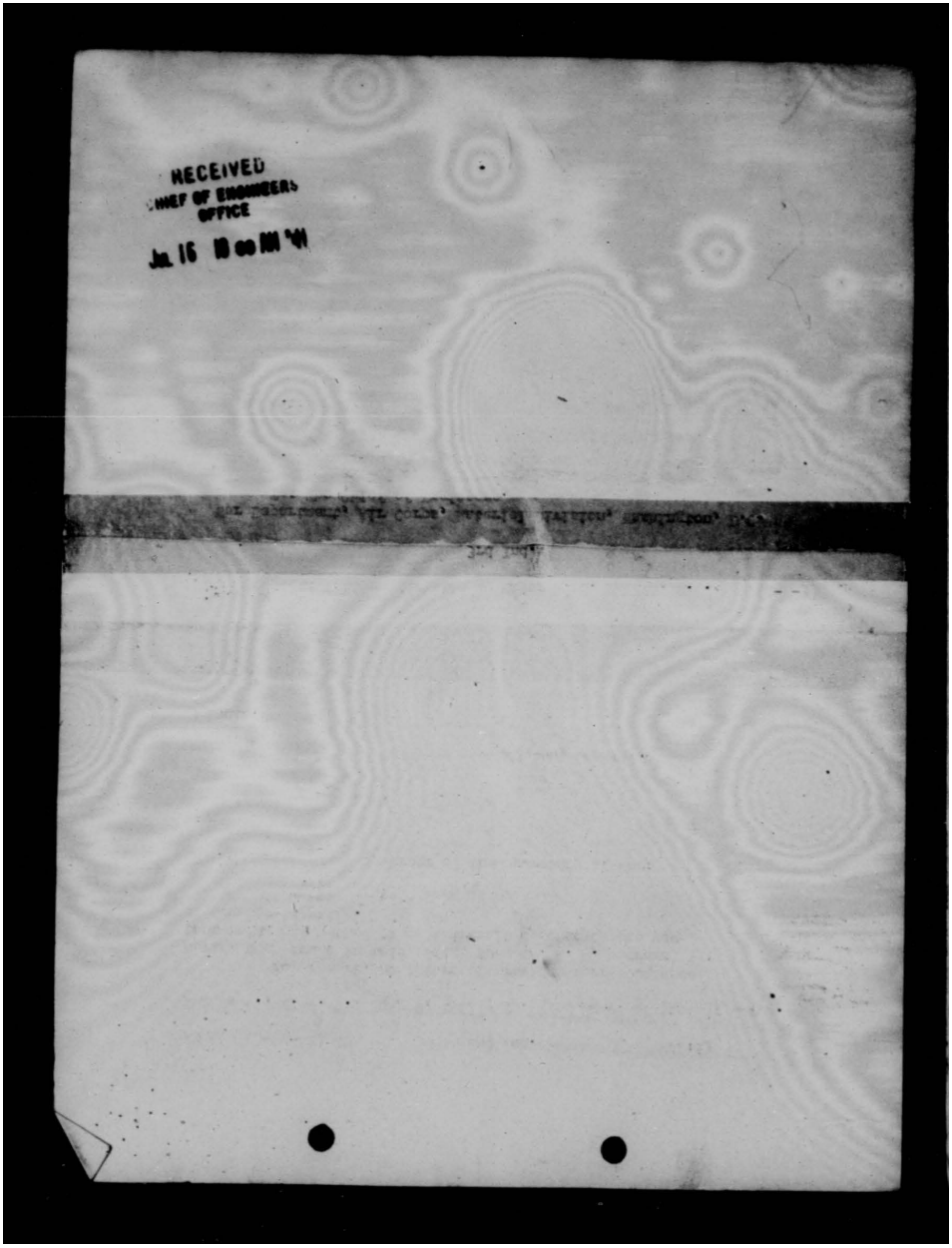

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070.2142 SUBJECT: Letter Addressed to Major B. B. Meyers, A. C.

4th Ind. 6-D

Office, C. of E., Room 2116, New War Dept. Bldg., 21st St. & Va. Ave., N. W. (Dev.), August 1, 1941. - TO: THE ADJUTANT GENERAL.

1. It is believed that Mr. Andrews' idea for antiaircraft defense as expressed in the inclosed correspondence has merit and should be investigated further.

2. This office is prepared to undertake the investigation if the Corps of Engineers is designated as the developing arm. The National Defense Research Committee would undoubtedly be helpful.

3. Considerable funds would be required for such a development.

For the Chief of Engineers:

9 A. G. O.
AUG 2 1941
REC'D BACK

C. L. Adcock,
Lt. Col., Corps of Engineers,
Executive Officer.

Incls. n/c.

RECEIVED
AUG 2 1941
MISCL. DIV.
A. G. O.

AG 070 (5-29-41) MB 5th Ind. JWB:WRH:iy

War Dept., A. G. O., August 7, 1941 - To: The Chief of the Air Corps.

For remark.

By order of the Secretary of War:

Adjutant General.

3 Incls.
n/c.

M. R. AIR C... AUG 7 1941

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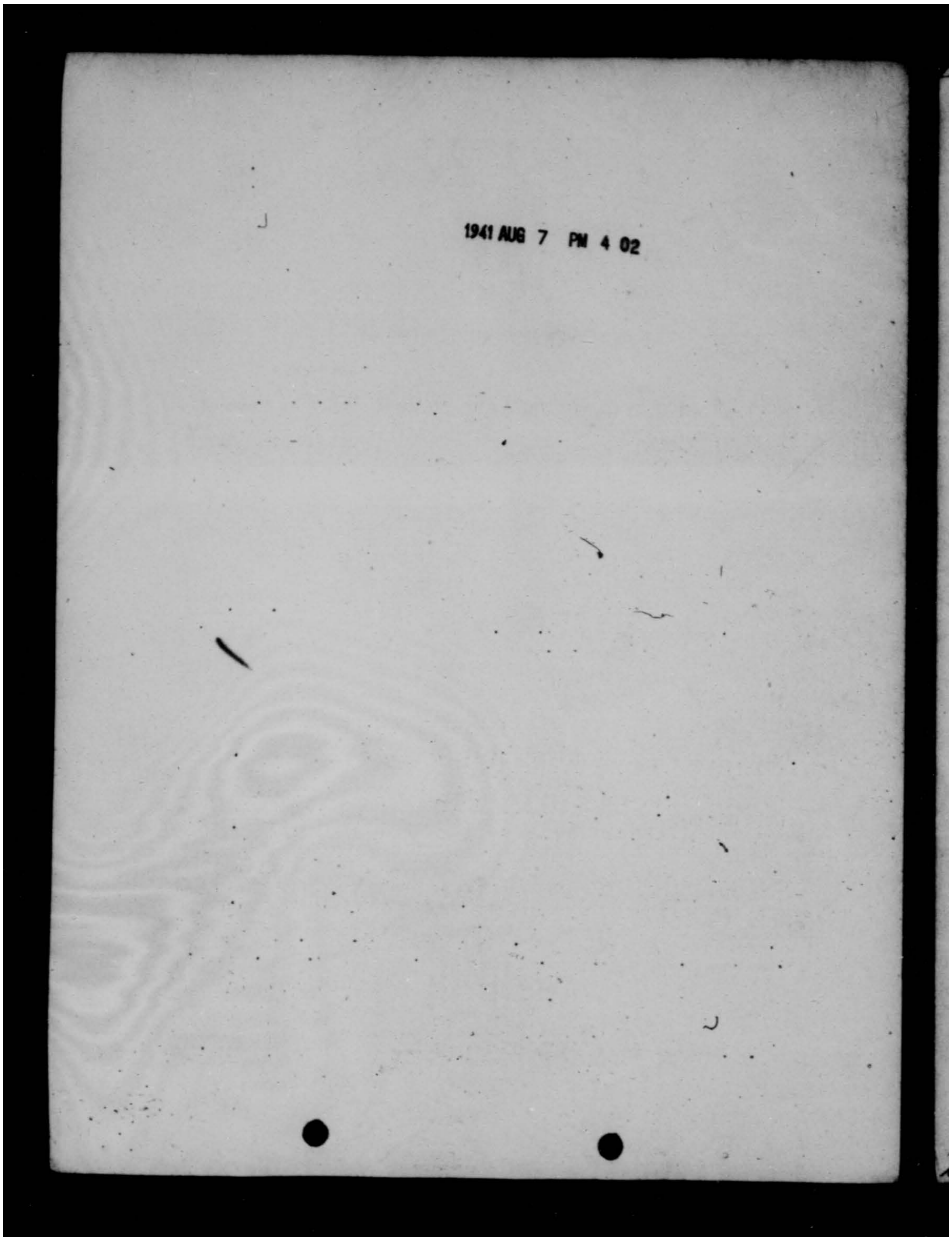

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DOD ltrs.
8 Jan. & 20 June 1974
By: [illegible] LC, Date 3-9-77

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SEP 19 1941

Subject: Anti-aircraft Defense
by Counter-Lighting.

6th Ind. (4-E-3)

War Department, Office of the Chief of Air Corps, Washington, D. C.
TO: The Adjutant General.

1. The following comments of the Chief, Air Staff, are quoted for your information:

"Since the use of lights for the purpose suggested by Mr. R. H. Andrews is theoretical, except for limited British experience in 1918, it is believed this is a matter for investigation by the National Defense Research Committee, both as to practicality and determination of results secured by the British."

2. In view of Paragraph 2 of 4th Indorsement above and the similarity of the proposed project to others now handled by the Chief of Engineers, it is recommended that this development be assigned to the latter office.

For the Chief of the Air Corps

F. I. Ordway Jr.

F. I. ORDWAY, JR.,
Major, Air Corps,
Asst. Exec., Mat. Div.

32 AGO
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SEP 22 1941

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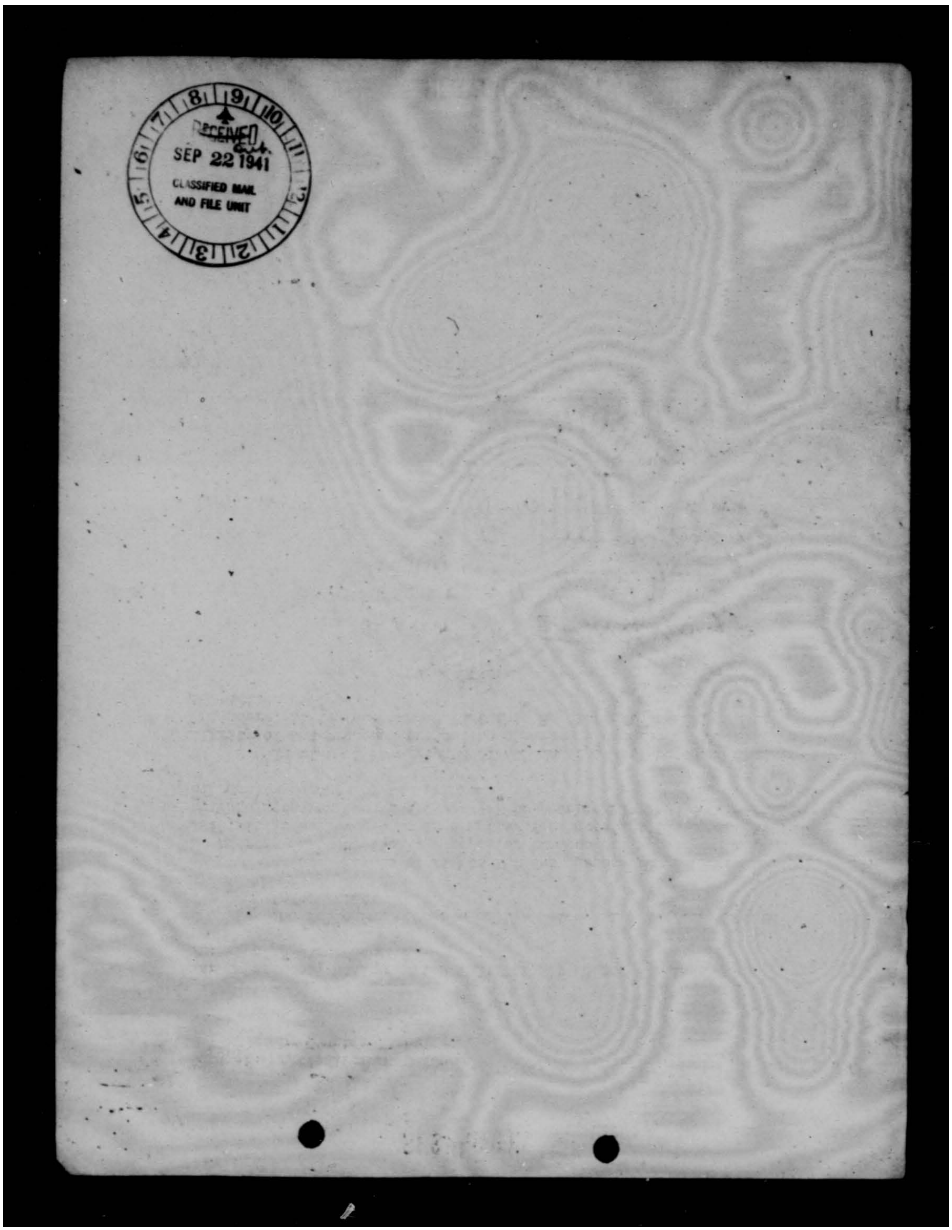

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RICHARD H. ANDREWS
INGÉNIEUR CONSEIL
XXXXXXXXXXXXXXXXXXXX

Saint-Laurent-des-Hommes, Dordogne,
May 22nd, 1941.

United States Air Corps,
War Department,
WASHINGTON,
D. C.

Attention Major B. E. Meyers.
Re: Anti-aircraft defense
by Counter-Lighting.

Dear Major,

Your letter of February 3rd, 1941, answering mine of July 4th, 1940, came duly to hand a few weeks ago, for which please accept my thanks. I regret that yours of Aug. 17, 1940, never reached me; but this is not suprising, in view of the extreme difficulty of corresponding with the occupied zone of France.

Your statement that proposals similar to mine had been the object of considerable study by the U. S. Army was no surprise to me. The French War Department first turned down my proposal in terms very similar to those of your letter; and I have further learned that the British Army made tests of a similar nature on a considerable scale in 1918, and subsequently abandoned the idea.

In spite of this, I was able, (after a hard fight, I admit), to bring the French General Staff to reverse their decision, by proving to them that previous trials in England and elsewhere had never covered, in one system, the complete combination of three elements which I now propose, to wit:

1 - Counter-lighting searchlights forming a continuous dazzling zone;

2 - Means for shifting and distorting this zone with respect to the objective to be defended;

3 - Means for preventing navigation between the luminous zone and the ground.

The last two items are as vital as the first to the effectiveness of the defense. Without the second item, the enemy will rapidly map out the system and spot the objective therebelow. Without the third, the attacking planes can descend out of the zone of action of the searchlights and bomb their objective at close range better than if the counter-lights were extinguished, thanks to the appreciable diffusion of the searchlight beams.

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Therefore the triple combination should be applied in its entirety, or not at all.

According to the information supplied me:

a) The British trials of 1918 comprised neither the 2nd nor the 3rd items. They were therefore doomed to failure.

b) In France, anti-aircraft research has been strictly limited, on one hand to the synchronization of sound detectors, searchlights and guns; and, on the other hand, to the use of polarized light.

c) German developments appear to have been limited this far to multiplying the number of searchlights placed in service, and also to the applications of polarized light.

Assuming this information to be correct, and in the absence of specific information to the contrary, kindly excuse me if I conclude that my proposal has not been given the study it deserves.

In reality, I am beginning to realize that I have been "putting the cart before the horse", and that the value of counter-lighting really lies in its ability to revalorize the balloon barrage.

The nearest thing developed this far to a positive defense against night raiding is the balloon barrage. It holds, in aerial warfare, the place of barbed wire in infantry operations and of concrete and steel against tanks.

The balloon barrage has proved a failure to-date because, under the triple handicap of: a) its cost; b) its weakness before high wind velocities; c) the weight of the cable; all of which factors increase rapidly with the altitude, the balloon has lost the altitude race against the bombing plane.

Counter-lighting, by reducing the altitude to be defended by the balloon to less than a quarter of the altitude attainable by the plane, will very greatly increase the effectiveness of the former while reducing its cost and vulnerability to high winds.

Regarding the blinding effect that may be expected from counter-lighting, kindly refer to the passage of the attached memo referring to the work of an American engineer of General Electric Company, Holladay, who developed an empirical formula for computing the blinding effect of lights. Before moving from Paris recently, I hastily attempted a rough experimental verification of the figures given by this formula, on a model built to the scale of 1 foot equal to 750 feet. Unfortunately, I was unable to finish the tests, which were extremely crude. But the possibility of blinding an observer with luminous intensities of the order proposed appeared amply verified. It may be that the energy consumption of 28 kilowatts per square mile is some 30% too low or too high ... but within this wide

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margin of error, I am convinced that adequate results may be obtained.

As to the installation cost of such a system, it can be estimated roughly at 5 to 10 times less than that of a street lighting system, which is far from prohibitive.

To the best of my knowledge, aside from the revolving shields provided on the Canal locks, which are effective only against the first bomb, no positive defense against night raiding has yet been devised.

In view of the great danger of night bombing raids on the Panama Canal and on our naval bases of Hawaii, the Philippines, Guam, Singapore, etc., I again suggest, with the utmost insistance, that the decision of the Department be reversed and that I be given the means of trying out this project. It is simple and obvious, in direct line with present trends of anti-aircraft defense; it involves no new or unproven scientific principles or laws. Therefore the risk involved in such tests would be small, and, in case of success, the results would be far reaching. Furthermore, the soundness of the underlying principles may be proved at a very moderate cost, with an observation balloon and 3 sets of searchlights of different powers.

It is practically impossible for me now to correspond directly with private American companies. May I therefore request your assistance, possibly through the medium of the Department of Commerce, in placing the material submitted by me on counter-lighting at the disposal of the following parties:

The Honorable Wendell Wilkie,

The General Electric Company, (Attention Mr. A. G. Darling.)

The Sperry Gyroscope Co. Inc. 40, Flatbush Ave., Brooklyn, N.Y.

The Benjamin Electric Mfg. Co., Desplaines, Ill.

and any others you think might be likely to take an interest in the matter.

Thanking you heartily in advance for your cooperation, I remain,

Yours sincerely,

R. H. Andrews

R. H. Andrews.
(Formerly 1st Lieut. Engrs. A.E.F.)

Poste Restante,
Saint-Laurent-des-Hommes,
Dordogne, France.

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St. Laurent-des-Hommes, Dordogne,
May 22, 1941.

Major B. E. Meyers,
United States Air Corps,
War Department,
WASHINGTON,
D. C.

PERSONAL

Dear Major,

Allow me to add a little "local color" to the enclosed official matter, which will help to explain its unelegant presentation.

I live at St. Antoine-sur-l'Isle, Gironde, in the occupied zone of France, from which all correspondence with the unoccupied zone and foreign countries is strictly forbidden, except on printed cards bearing such indications as: "Father is ..... Mother is ..... I need ..... etc."

I hold an "Ausweis", or permit to cross the boundary, provided I carry a sum of money not exceeding the equivalent of $ 0.75, and no written material.

The enclosed material was therefore typed in distinctly bucolic surroundings, my "office" consisting in a drafty barn in a small village some 18 miles from my home, which distance I travel hither and yon, morning and evening, on a prosaic bike, my car being marooned in Paris, under the kindly eye of the "Hauptkommandantur". I smuggled an old typewriter across the border, the ribbon of which is a wonderful contraption of ink-impregnated wood fibre symbolic of the "New Order" in Europe.

All of this should have no bearing whatever on the bare facts: 1 - That night raiding is fast attaining terrific proportins; because no effective protection has yet been devised against it;

2 - That counter-lighting, in combination with balloon and artillery barrages, seems to offer a solution to the problem.

Hoping to obtain your cooperation in this matter, I am,

Your sincerely,

R H Andrews.
~~R. H. Andrews.~~

Incl 2

RA-604
RA-550
Ra-183
RA-786

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COUNTER-LIGHTING,
A rational means of protection
against nocturnal air raids.

PRESENT STATUS OF COUNTER-LIGHTING:

This method of protection was accepted:

1 - By the French Anti-Aircraft Service, in February 1940, for trial at the important railroad junction at Challerange, Ardennes, east of Reims;
2 - By the Research Service of the "Ministère de l'Armement", on June 5, 1940, for laboratory study on a small-scale model;
3 - At the request of said Research Service, by the French Power and Light Trust, "l'Union d'Electricité", (President, Ernest Mercier), for trial on a substation of the Paris-Orleans Railroad, and later in Morocco.

All of these tests were abandoned, owing to the German invasion.

PRESENT STATUS OF NIGHT BOMBING:

At least in Britain, Germany and France, the trend of aerail warfare during recent months has been towards night raiding on an ever-increasing scale. This shows:

1 - That both Britain and Germany consider daylight raiding too dangerous;

2 - That, in spite of the elaborate defensive systems built up by both opponents, neither has yet found anything approaching an effective defense against night raiding.

Unless new weapons or methods are developed, it is safe to conclude that nothing short of a positively prohibitive increase in the density of anti-aircraft fire will have the slightest chance of even slowing up night raiding. As to night chasing, interesting as it undoubtedly appears, it is still in its infancy.

Under these conditions, there is no reason to expect that the Panama Canal, with all that it represents to the safety of the Nation, could be defended at night more effectively than the British and German aerodromes, docks, etc., or the Suez Canal.

Obviously, no effort to correct such a situation can be wasted effort, nor would any reasonable expenditure therefor be unjustified. Counter-lighting is therefore thoroughly worthy of considerable experimental study.

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Ra 183
Ra 786

Encl 3

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THE ESSENCE OF COUNTER-LIGHTING:

The purpose of counter-lighting is:

a) to prevent night raiding planes from attempting low-altitude bombing;

b) to make precision bombing from high altitudes impossible, by rendering the objectives invisible from such altitudes.

Although originally intended for the simple function of illuminating the raiding planes, to direct the fire of the artillery, the anti-aircraft searchlight automatically performs a second function - that of dazzling the aviators to such an extent that everything on the ground becomes invisible to them within a given radius around it which is a function of the luminous intensity of the beam.

The great increase in the number and the speed of the planes used in this war, coupled with the inefficiency of existing methods of defense, have given the dazzling function an importance undeniably greater than that of the illuminating function. It is self-evident that, in the face of a mass bombing raid that we are unable to stop, our first care should be to hide the objectives to be protected, and our second, to shoot down the raiders, if possible.

Unfortunately, the two functions require of the searchlight diametrically-opposed characteristics. The illuminating function requires a beam of tremendous luminous intensity and range, therefore of very small divergence. On the contrary, the dazzling function requires between 150 and 200 times less luminous intensity, but a wider angle of divergence, in order to encompass as many planes as possible.

I therefore propose:

1 - To separate the two functions, entrusting each to devices having characteristics adapted to that function : that of illuminating the planes to the present type of high-powered field searchlight, and that of blinding the aviators, to a considerably greater number of low-powered stationary searchlights so arranged that their beams intersect, forming above a certain altitude, say 3000 to 4500 feet, a continuous luminous zone from which all objects on the ground will be invisible to all planes flying in that zone;

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2 - To make this luminous zone mobile relative to the objective to be protected, and preferably to modify its outlines, either intermittently or continuously, in order to throw the attacking planes off their bearings and to prevent their estimating the true position of the objective, by alternately lighting and extinguishing certain groups of searchlights, according to a pre-established plan controlled by one or more automatic controllers.

3 - To make navigation between the luminous zone and the ground as dangerous and nearly impossible as can be, by means of barrages of artillery and/or of small balloons, designed for a maximum altitude of the order of 3000 to 4000 feet. Also to impair the visibility in this lower zone, by means of powerful field searchlights, revolving lights, or other effective low-altitude defensive means.

CHARACTERISTICS OF THE DAZZLING SEARCHLIGHTS:

These devices would be of simple and cheap construction, similar to that of those used for flood-lighting.

Using the formula developed by Holladay (General Electric Company), units equipped with a 1000-watt incandescent lamp, emitting a beam of about 10° and spaced 1000 feet apart, thus requiring about 28 units per square mile covered, would produce a dazzling effect sufficient to completely blot out white objectives receiving double the illumination radiated by the full moon at its zenith, under conditions of maximum visibility and contrast.

The consumption of electrical energy would therefore be less than 30 kilowatts per square mile - a very moderate figure, probably less than one tenth that of the average street lighting system.

DISTRIBUTION NETWORK:

In order to reduce the cost of the distribution system and to simplify the construction of the automatic controller, whenever possible, the individual searchlights would be connected directly to a local lighting system - as, for example, to the branch line supplying a private ~~big~~ house or a street lighting system - through the medium of an automatic remote-control switch. The control wires could therefore be strung exactly like field telephone lines.

FIELD OF APPLICATION:

Counter-lighting is not expected to prevent bombing of objectives of large area, such as cities, but merely to prevent the raiders from picking out in such cities certain specific objectives of military value, such as docks, bridges, railroad stations, factories, etc.

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In general, it should prove advisable to group as many objectives as possible under one continuous system, for the larger the system, the easier it would be to make the raiders lose their bearings.

On the other hand, such objectives as the Panama Canal are by far the easiest to defend in this manner, owing to their narrow width, to the small dimensions of the vital structures, and to the simplicity of the balloon barrages required to defend them.

COUNTER-LIGHTING AS AN AID TO NIGHT-CHASING:

On a clear night, a counter-lighting system with the characteristics proposed above - that is, 26 1000-watt units per square mile - would produce at 10,000 feet an illuminating effect of about 0.055 lux, therefore comparable to one quarter of maximum moonlight.

It is not impossible that this would prove sufficient to make close range fighting possible.

PREVIOUS EXPERIMENTS IN COUNTER-LIGHTING:

Information supplied by the French Staff seem to indicate that counter-lighting was tried out on a considerable scale by the British Army in 1918, and subsequently abandoned. The reason for this decision was apparently that Items 2 & 3 of the present proposal had been omitted; that is, that no means had been provided for shifting and distorting the luminous zone with respect to the objective, or for preventing the attacking planes from descending below the luminous zone.

Obviously, this robbed the system of most of its possibilities of success.

R H Andrews.

R. H. Andrews.

St. Laurent-des-Hommes, Dordogne,
May 21st, 1941.

Mailing Address:

R. H. Andrews,
Poste Restante,
St. Laurent-des-Hommes,
DORDOGNE, FRANCE.

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WAR DEPARTMENT

OFFICE OF THE CHIEF OF COAST ARTILLERY

WASHINGTON

9 October 29, 1941

OFFICE CHIEF OF ENGINEERS
OCT 31 1941
070 - 2198
Sub. 1 and 2 unmkd. incls. accmpg.

2. O.C.C.A.

666/FM-2

SUBJECT: Counter Lighting in Anti-Aircraft Defense.

MEMORANDUM for Secretary, War Department General Staff.

1. Reference is made to Disposition Form, Office, Secretary, War Department General Staff, dated October 23, 1941 (OCCA 666/FM-1).

2. It is understood from the Office of the Under Secretary of War (Colonel St. Clair Streett) that the National Defense Research Committee has made preparations to conduct a practical test of a counter lighting system at the Hybla Valley Airport (north of Fort Belvoir) on Monday night, November 3, 1941.

3. In view of the foregoing the Chief of Coast Artillery has no comment to submit, but would be interested to learn the results.

For the Chief of Coast Artillery:

George W. Ricker

GEORGE W. RICKER,
Lieut. Colonel, C.A.C.,
Assistant.

Incl.- Disposition Form
10/23/41, w/3 Incls.

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WAR DEPARTMENT GENERAL STAFF
DISPOSITION FORM

AG
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SUBJECT:

Date 10/31/41

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	----------	
	___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

For further comment following the scheduled test at the Hyde Valley Airport, Nov 3, 1941

OCT 31 1941

MD2

OUT OUT

M.D. Taylor
Major, General Staff
Asst. Secretary, General Staff

OFFICE OF CHIEF OF STAFF

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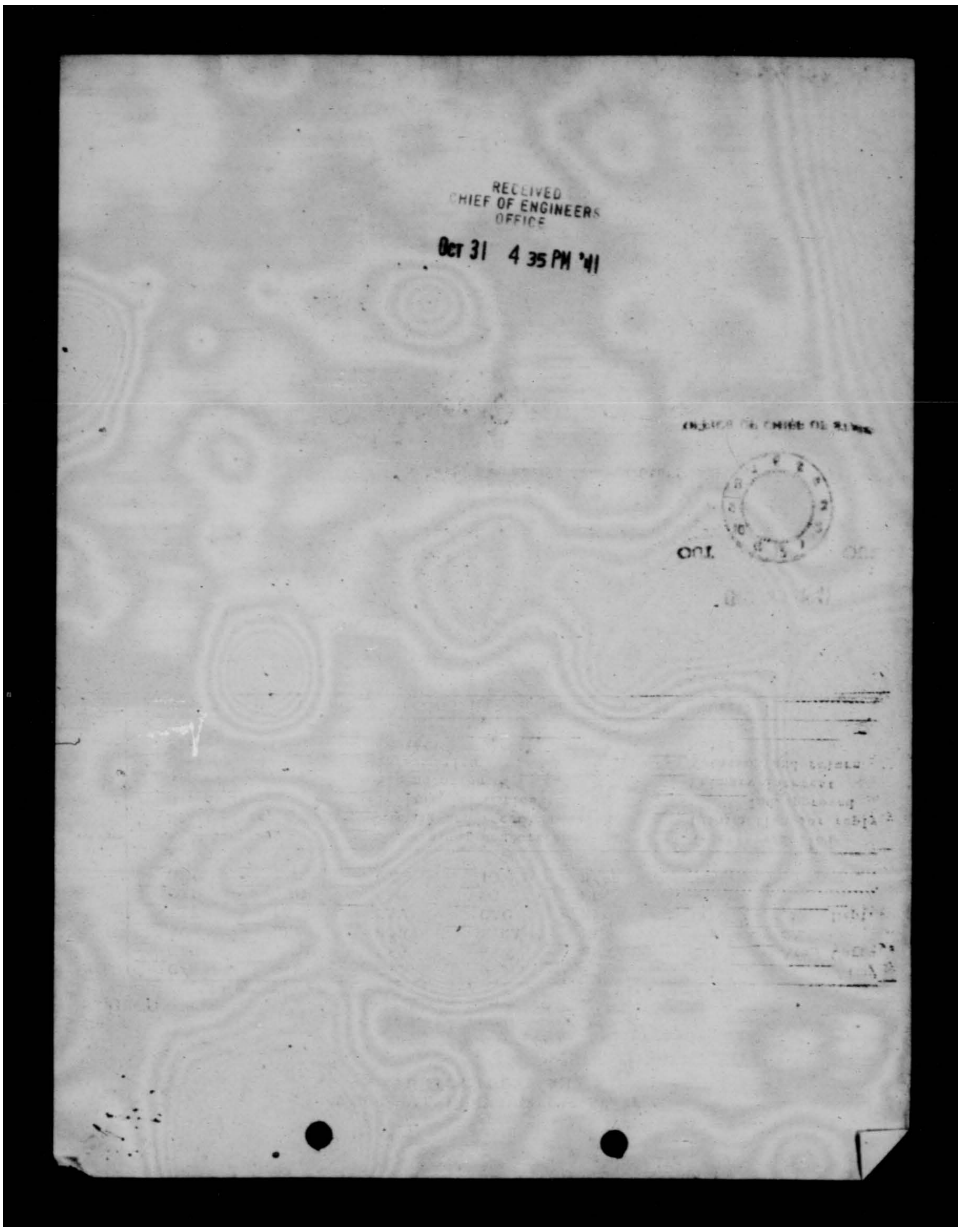

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DOD ltrs.
8 Jan. & 20 June 1974
By Bullock, LC, Date 3-9-77

OCT 16 1941

MEMORANDUM FOR THE ADJUTANT GENERAL:

Subject: Counter Lighting in Anti-Aircraft Defense.

The Secretary of War directs:

That the Corps of Engineers be designated as a developing arm for the purpose of investigating the merits of the basic proposal, and that the attached correspondence be referred to the Chief of Engineers for appropriate action accordingly.

For the Chief of the Army Air Forces:

C[illegible] R. DU[illegible],
Lt. Col., Air Corps,
Secretary of The Air Staff.

470.3 (1)

MEMORANDUM FOR RECORD: The basic communication proposes a system of defense measures, the determination of whose merits, if any exist, is definitely a problem of interest to the ground forces. However, this subject is by no means a new one. It was presented during the first World War and again some four years ago. The idea does have some value as an anti-aircraft defense. The length of time required in providing the necessary light, power lines, etc., and the cost thereof renders a practicable application prohibitive. The 6th Indorsement is in complete agreement with previous action taken by the War Department on a previous presentation of the idea.

2 Incls.
1-WPD 2788-146 of 9-26-41
w/incl. AG 070 (5-29-41) w/incl
as stated and 6 incls.

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8 Jan. & 20 June 1974
By [illegible] LC, Date 3-9-77
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Oct. 7, 1941

470.3 (1)

Counter Lighting in Anti-Aircraft Defense.

~~TAG~~ thru WPD

(Air AG)

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For the Chief of the Army Air Forces:

Dispatched
OCT 8 1941
AAG

WILLIAM W. DICK
Lt.Col., A.G.D.
Air Adjutant General.

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DOD Dir.
9 Jan. & 20 June 1974
By Hwl Mrl AC, Date 3-9-77

WWD JMD

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OCT 14 1941

MEMORANDUM FOR: THE ADJUTANT GENERAL

SUBJECT: Counter Lighting in Anti-Aircraft Defense.

The Secretary of War directs that the Corps of Engineers be designated as a developing arm for the purpose of investigating the merits of the basic proposal, and that the attached correspondence be referred to the Chief of Engineers for appropriate action accordingly.

H. H. ARNOLD
Major General, U.S.A.
Deputy Chief of Staff for Air.

NOTE FOR RECORD: The basic communication proposes a system of defense measures, the determination of whose merits, if any exist, is definitely a problem of interest to the ground forces. However, this subject is by no means a new one. It was presented during the first World War and again some four years ago. The idea does have some value as an anti-aircraft defense. The length of time required in providing the necessary light, power lines, etc., and the cost thereof renders a practicable application prohibitive. The 6th Indorsement is in complete agreement with previous action taken by the War Department on a previous presentation of the idea.

2 Incls.
1-WPD 3793-146 of 9-25-41
w/incl. AG 070 (5-29-41) w/incl
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DOD Ltr.
8 Jan. & 20 June 1974
By [illegible] Date 3-9-77

Oct. 7, 1942

DECLASSIFIED

Counter Lighting in Anti-Aircraft Defense

TAG

(Air AG)

The basic communication proposes a system of defense measures, the determination of whose merits, if any exist, is definitely a problem of interest to the ground forces. However, this subject is by no means a new one. It was presented during the first World War and again some four years ago. The idea does have some value as an anti-aircraft defense. The length of time required in providing the necessary light, power lines, etc., and the cost thereof renders a practicable application prohibitive. The 6th Indorsement is in complete agreement with previous action taken by the War Department on a previous presentation of the idea.

For the Chief of the Army Air Forces:

WILLIAM H. DICK
Lt.Col., A.G.D.
Air Adjutant General.

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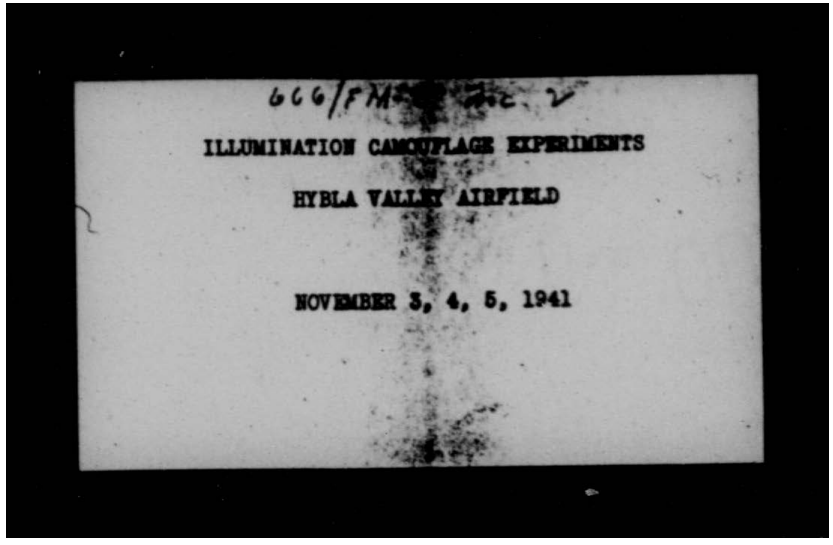

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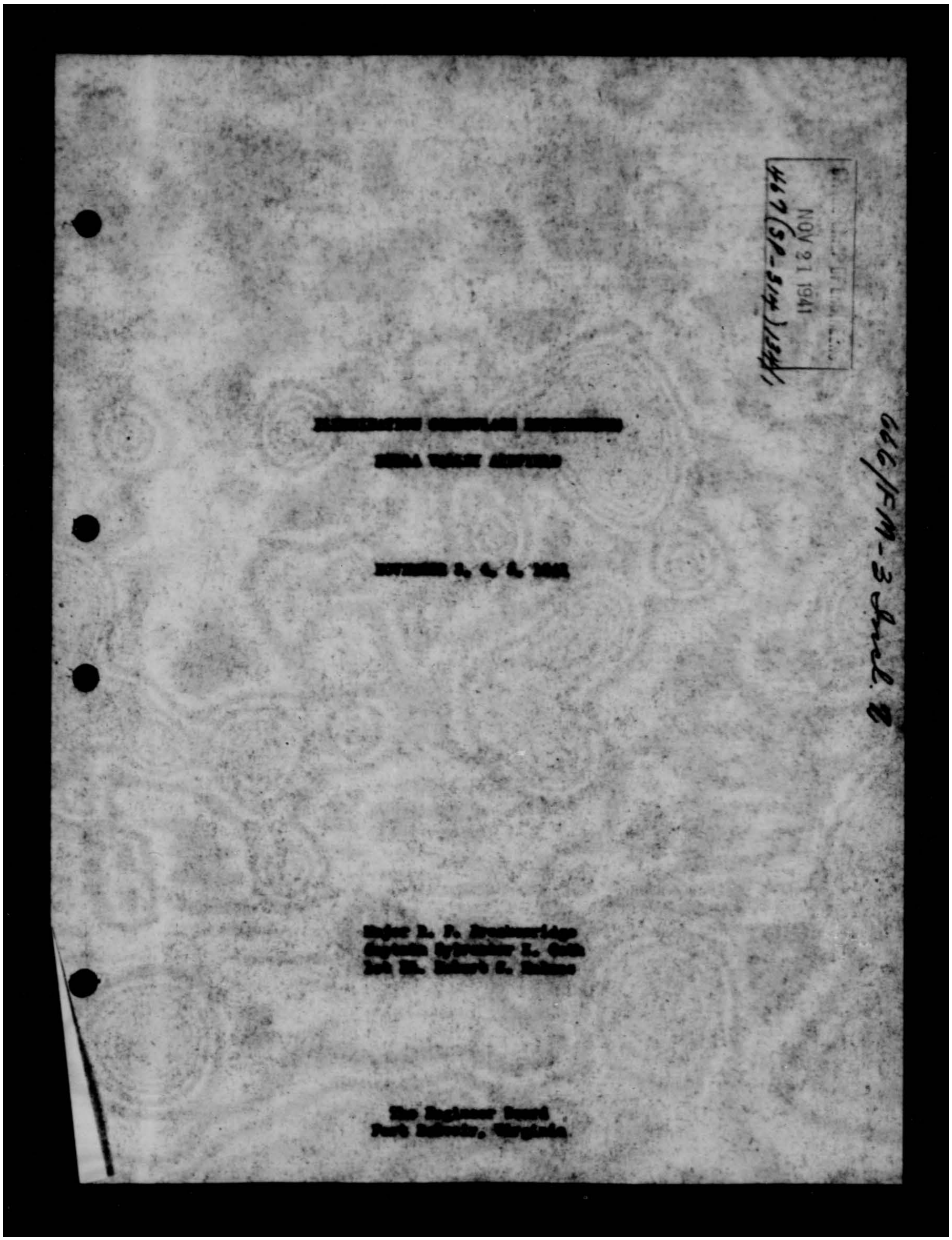

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REPORT OF ILLUMINATION CAMOUFLAGE EXPERIMENTS, HYDLA VALLEY AIRFIELD

NOVEMBER 3, 4, and 5, 1941.

HISTORY.

At the invitation of the Office of Production Management, representatives of industry and the several branches of the Army and Navy met on September 30, 1941, to discuss the organization of research and investigation into the use of illumination for camouflage and protective concealment against night bombers. A sub-committee was appointed at that time under the chairmanship of Mr. Kirk H. Reid, General Electric Company, to select a proper location for such tests and to carry them to completion. Appendix A (Report No. 1, dated October 7, 1941) and Appendix B (Report No. 2, October 23, 1941) outline the directive and assignment of the sub-committee.

PRELIMINARY TESTS.

A considerable amount of preliminary work had been done at the Moreland Hills field tests in July, and in the laboratory by Professor Timoshenko of Connecticut University and Mr. Kirk H. Reid of the General Electric Company. It was felt that a further preliminary field test would contribute to the success of the experiments. On October 14th four glare sources of two different general types were tested at Fort Belvoir. Two-way ship-to-ground radio communication was arranged with an observer in the air, Colonel Epling of the Air Force Combat Command. The results of these tests indicated that:

1. Both spotlamps and floodlamps should be used in the tests.

2. A slightly irregular pattern should be used in the layout of the glare sources.

3. Observation periods should be of short duration for any one observer in the air, because of the fatigue factor which appeared to interfere seriously with the validity of observations after a short time.

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THE NATIONAL DEFENSE RESEARCH COMMITTEE.

On October 10th, we were advised by Mr. H. Ben Paul of the Office of Production Management that his organization was unable to supply the necessary funds, approximately $8,000, for carrying out the experiments as originally planned. At the suggestion of Dr. H. H. Ives of the National Defense Research Committee it was arranged with Dr. Vannevar Bush, its Director, to take over the experiments as a project. A contract was then drawn up between the General Electric Company, Cleveland, and the National Defense Research Committee, which permitted expenditures up to the amount of $8,000. Thereafter, Dr. Ives and Dr. Bryan O'Brien represented the National Defense Research Committee and Mr. Kirk H. Reid was appointed test director by the General Electric Company.

THE LOCATION.

Through the cooperation of the Navy Department, permission was obtained to use the Hyhla Valley Naval Reserve Airfield for the experiments. This was confirmed by a letter dated November 3, 1941, from Lt. Comdr. J. H. Carson, Commanding Officer of the U. S. Naval Reserve Aviation Base, Anacostia, D. C.

THE GLARE SOURCES.

The sources of illumination consisted of 80 rotating light standards, each having three 500-watt reflector lamps producing a beam through an angle from the vertical to approximately 60° from the vertical. These assemblies were constructed by the General Electric Company and were designed to be rotated by hand. Two types of lamps were provided for these standards, reflector spotlamps and reflector floodlamps. Both types were used.

In addition, several special lamps were also provided by the General Electric Company and by Westinghouse and these were used during various phases of the tests. (See Appendix C for "Instructions to Light Operators")

THE TARGET.

For accurate determination of visibility, three squares of white oilcloth were laid out on the ground and illuminated by lamps suspended overhead. These squares were 100 feet, 50 feet and 25 feet, respectively, and the variable brightnesses ranged from .002 to 2-foot lamberts.

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AIR CORPS OBSERVERS.

By arrangement with the Office of the Assistant Secretary of War, a group of four B-8S bombers were sent from the 2nd Bombardment Group of Langley Field under the command of Captain Fred H. Lay. Arrangements were made with Bolling Field for two-way ship-to-ground radio communication and two observers in each plane reported their observations throughout the tests. Four observers from the Navy Department participated, in addition to Mr. Charles F. Fitter, Jr., who observed with special instruments for the National Defense Research Committee. (See Appendix B for list of personnel on all observation flights.)

OTHER ARRANGEMENTS.

With the assistance of an "AA" Office of Production Management priority rating, 40,000 feet of No. 6 copper wire were obtained and installed by the Virginia Public Service Company, whose organization cooperated with all phases of these tests. Arrangements were made with the Fort Belvoir Military Police and the Virginia State Police to handle traffic and to refuse admittance to the Airfield to all vehicles without a special pass.

Details from the Engineer School Service Command supplied the manpower for rotating the glare sources throughout the tests and for laying out, operating and removing the targets and target lighting. This cooperation was valuable and contributed to the success of the tests. Clearance for the observation planes during the tests was arranged with the Washington office of the Civil Aeronautics Authority.

RECONNAISSANCE FLIGHT.

On the evening of October 30th, most of the equipment had been set up and through the cooperation of the Goodyear Tire and Rubber Company four observation flights were made in the Goodyear Airship. Representatives of the Office, Chief of Engineers, the Office of Civilian Defense, the National Defense Research Committee, the Navy Department, and the Engineer Board participated. (See Appendix E.)

THE TESTS.

The experiments were conducted on the evenings of November 3rd, 4th and 5th. After consultation with Dr. H. E. Ives and Dr. Bryan O'Brien of the National Defense Research Committee, the schedules outlined in Appendix F were adopted, showing the various stages of

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illumination of the field and of the target. All conferences between the observers and the ground were recorded by two stenographers and their transcript will be found in Appendix G.

VEHICLES.

Observations were also made on six vehicles equipped with blackout headlamps and sealed beam headlights. Reports were obtained on these vehicles, stationary and moving, and with varying illuminations.

CONFERENCES.

After the experiments on the evenings of November 3rd and 5th, conferences were held in the Office, Chief of Engineers with all pilots, observers and members of the ground crew. Valuable information was obtained from this interchange. (For attendance at conferences, see Appendix H)

CONCLUSIONS.

The final report and conclusions will be prepared by the General Electric Company after consultation with the Engineer Board and submitted to the National Defense Research Committee in accordance with their contract. In general, however, it may be stated that the experiments were successful in that they provided considerable data on illumination camouflage which was desired and which was hitherto lacking.

In brief, the test findings may be summarized as follows:

1. Glare sources consisting of a rotating narrow wedge of light as produced by a fan of three reflector spotlamps and spaced on 250-foot centers reduce the visibility of ground targets, illuminated to the brightness of full moonlight, at all altitudes, and completely conceal them at altitudes of 7500 feet or more.

2. With such glare sources spaced on 500-foot centers only a slight reduction of visibility of targets is afforded.

3. The rotating glare source was at no time less effective for concealment than was

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the same light aimed in a fixed position in the direction of the observer.

4. A rate of flashing (or rotation) between 5 and 10 per second is more disturbing, more concealing, and the sources appear brighter than with speeds faster or slower.

For the Board:

R. P. Breckenridge,
Major, Corps of Engineers,
Camouflage Section.

Sylvester K. Guth,
Captain, Military Intelligence,
Electrical Section.

Robert S. Holmes,
1st Lieutenant, Ordnance,
Traffic Control Section.

8 Incls:
Appendix A to H, incl.

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10/30/41

INSTRUCTIONS TO LIGHT OPERATORS

AFTERNOON

1. Obtain from your circuit commander and learn your station number.

2. Roll out the heavy wire to your station with the other men of your circuit detail (each circuit detail has a different letter, A, B, C, etc.). You will find your roll of wire along the fence line at point marked with your circuit detail letter shown on attached map.

3. Pick up at the storage hangar the cardboard carton with your station number on it and carry it to your station.

4. Pick up at the storage hangar the light having your station number on it and carry it to your station.

5. Drive in the three (3) guy stakes and tighten the gwy ropes on your light.

6. Plug your light into the socket on heavy wire.

7. Screw the lamp bulbs into the sockets to see if they all work. Report immediately any failure.

NOTE: Some lamps are heavily frosted and others are lightly frosted.

8. Practice putting on the copper wire screen and tying it over the lamp bulbs.

9. Practice rotating your light by means of the cord.

10. At the command, place all lamp bulbs and wire screening back in your cardboard carton and return it to hangar.

EVENING

1. Pick up at the storage hangar the cardboard carton with your station number on it and carry it to your station.

2. Follow all instructions. The following may be given over the loud speaker

"Screw in lamp bulbs with the light frosting".
"Screw in lamp bulbs with the heavy frosting".
"Tie on wire screens".
"Remove wire screens".
"Rotate lights".
"Stop rotating lights".
"Circle stations - disconnect lights".
"Circle stations - connect lights".

3. When the tests are over for the evening, place all lamp bulbs, screen and loose items in your carton. Take carton back to the storage hangar.

4. Disconnect your light and take it to the storage hangar.

5. Roll up your wire and place it near the fence where you found it.

C.

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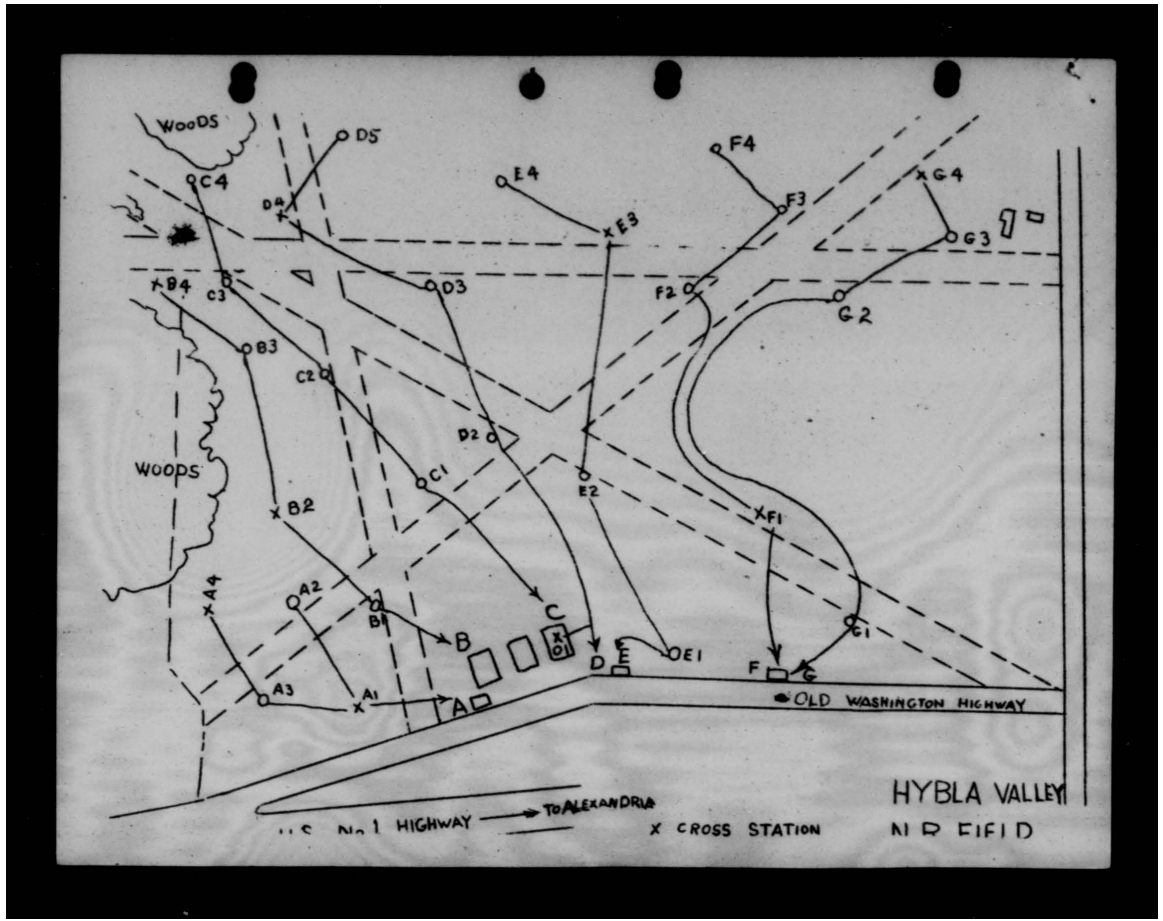

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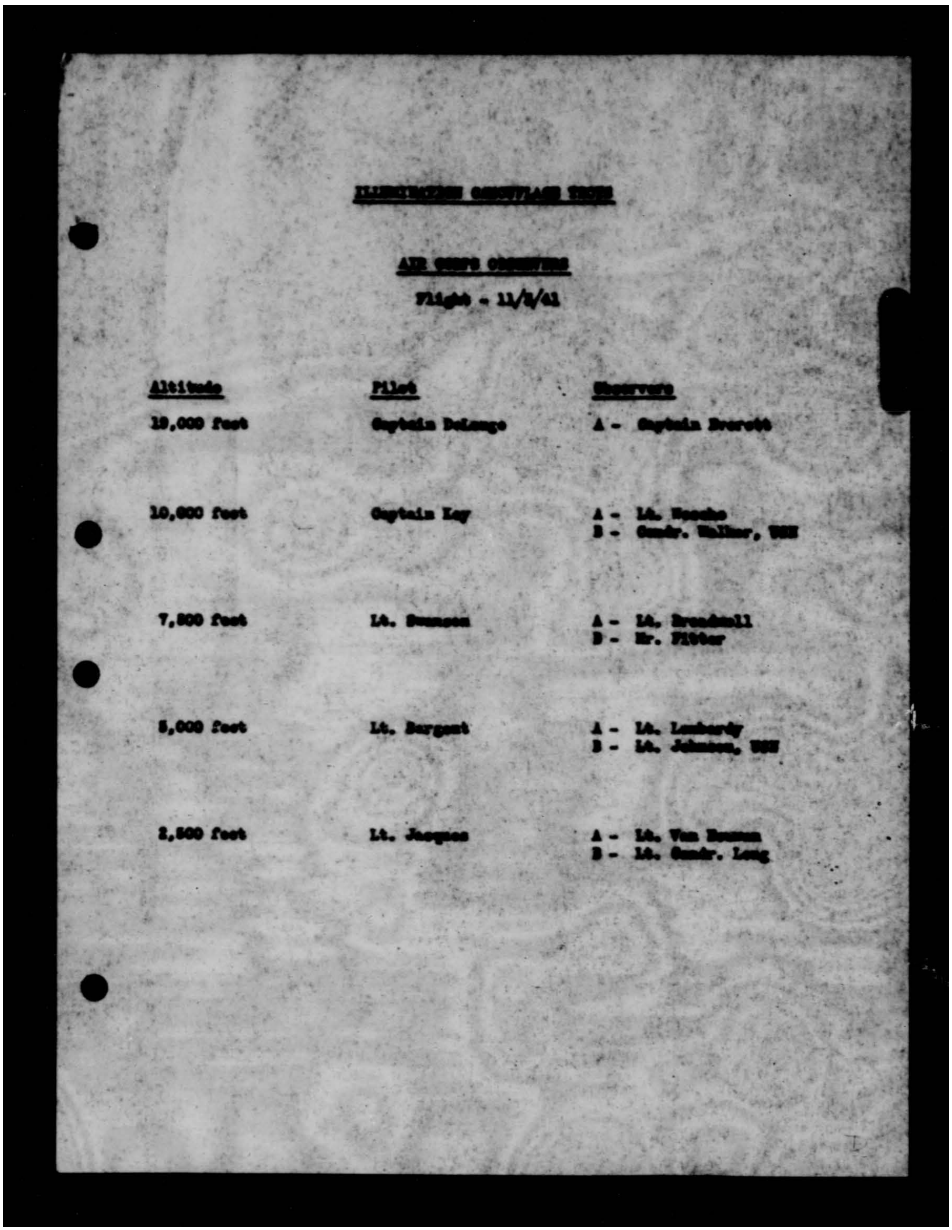

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AIR CORPS OBSERVERS

Flight - 11/2/41

Altitude	Pilot	Observers
12,000 feet	Captain Delange	A - Captain Everett
10,000 feet	Captain Kay	A - Lt. Roache B - Comdr. Walker, USN
7,000 feet	Lt. Swanson	A - Lt. Brookhill B - Mr. Fisher
5,000 feet	Lt. Sargent	A - Lt. Lamberdy B - Lt. Johnson, USN
2,500 feet	Lt. Jacques	A - Lt. Van Bauman B - Lt. Comdr. Long

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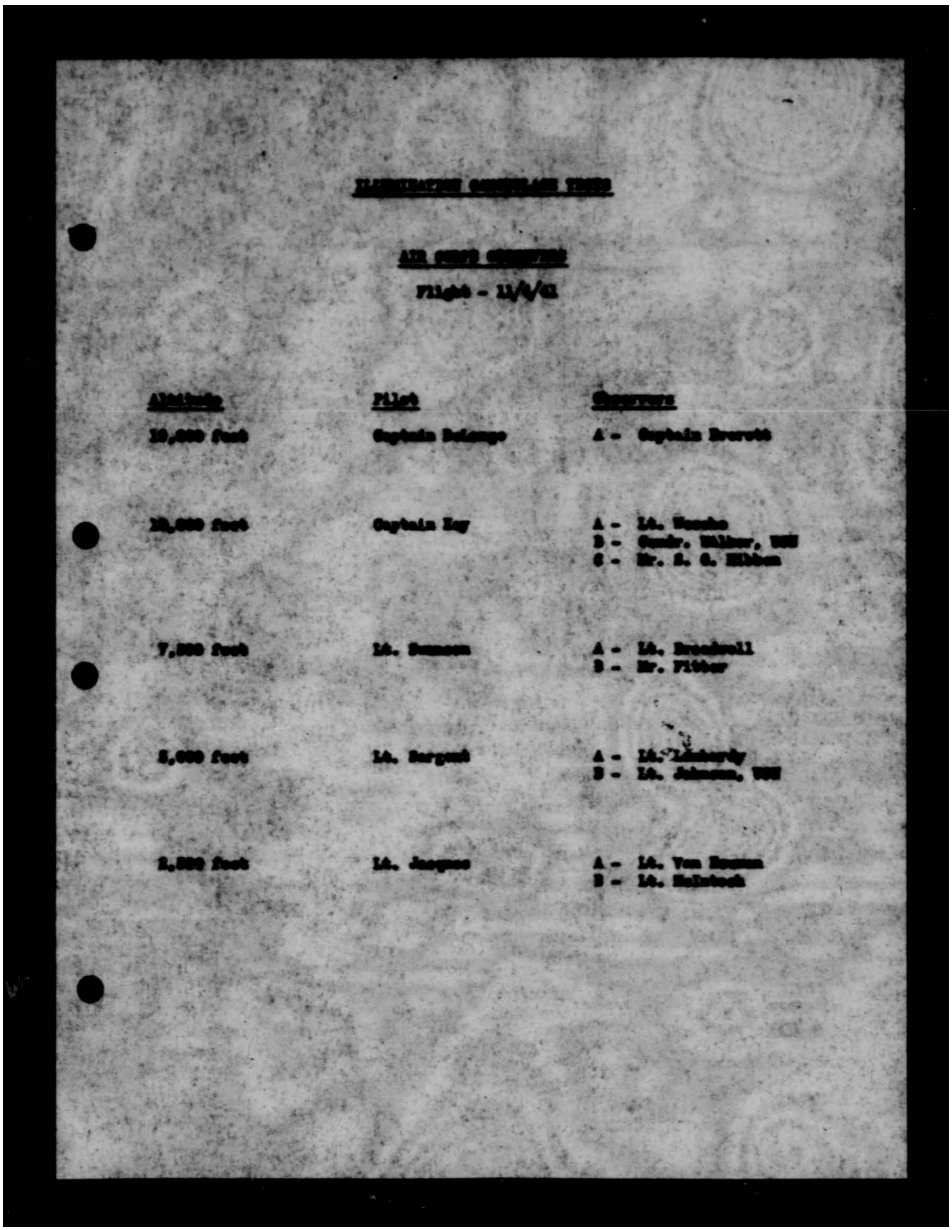

ILLUMINATION CAMOUFLAGE TESTS

AIR CORPS OBSERVERS

Flight - 11/4/41

Altitude	Pilot	Observers
10,000 feet	Captain DeLonge	A - Captain Everett
10,000 feet	Captain Key	A - Lt. Wesche B - Comdr. Walker, USN C - Mr. S. G. Hibben
7,500 feet	Lt. Swanson	A - Lt. Broadwell B - Mr. Fitter
5,000 feet	Lt. Sargent	A - Lt. Lamberdy B - Lt. Johnson, USN
2,500 feet	Lt. Jacques	A - Lt. Van Bouwen B - Lt. McIntosh

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AIR CORPS OBSERVERS

Flight - 11/5/41

Altitude	Pilot	Observers
10,000 feet	Captain DeLongs	Lt. Hotaler
10,000 feet	Captain Ray	A - Lt. Wasche. B - Comdr. Walker, USN
7,500 feet	Lt. Swanson	A - Lt. Brundrett B - Mr. Pitter
5,000 feet	Lt. Sargent	A - Lt. Lamberdy B - Lt. Johnson, USN
2,500 feet	Lt. Jacques	Lt. Van Buuren

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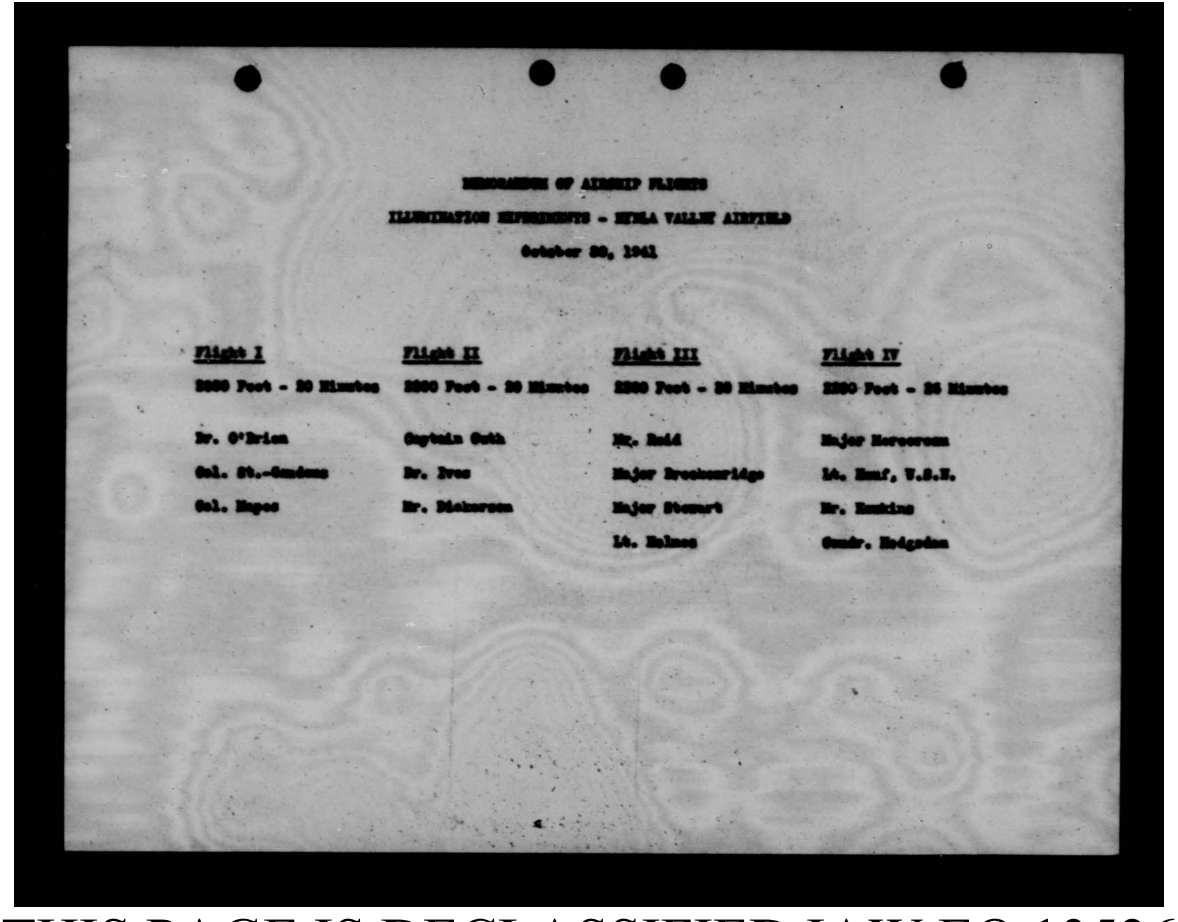

MEMORANDUM OF AIRSHIP FLIGHTS

ILLUMINATION EXPERIMENTS - HYDLA VALLEY AIRFIELD

October 30, 1941

Flight I	Flight II	Flight III	Flight IV
2000 Feet - 20 Minutes	2000 Feet - 20 Minutes	2000 Feet - 30 Minutes	2000 Feet - 25 Minutes
Dr. O'Brien	Captain Guth	Mr. Reid	Major Morcoran
Col. St.-Gaudens	Dr. Ives	Major Breckenridge	Lt. Hunf, U.S.N.
Col. Mapes	Mr. Dickerson	Major Stewart	Mr. Hawkins
		Lt. Holmes	Comdr. Hodgsdon

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BLACKOUT LIGHTING TEST.

TEST SERIES.

The order of tests will be as given on page 1 as ordered by the control room.

A. No glare.

B. Glare - Reflector Floods with screens, 500 foot centers.

C. Glare - Reflector Floods without screens, 500 foot centers.

D. Glare - Reflector Spots with screens, 500 foot centers.

E. Glare - Reflector Spots without screens, 500 foot centers.

F. Glare - Reflector Spots without screens, 1,000 foot centers (Circle stations turned off).

G. Glare - Reflector Floods without screens, 1,000 foot centers.

H. Glare - Single floods at C_1, C_2, D_2, D_3.
Double flood at E_3.
Fresnel flood at B_2.
All other glares turned on.

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BLACKOUT LIGHTING TEST.

ORDER OF TESTS FOR EACH SERIES.

NO.	CONDITIONS.	ILLUMINATION	TEST SQUARE.
1.	Moonlight	None	All
2.		.002	25
3.		.02	25
4.		.002	50
5.		.02	50
6.		.002	100
7.		.02	100
8.		.2	25
9.		.7	25
10.		2.0	25
11.		.2	50
12.		.7	50
13.		2.0	50
14.		.2	100
15.		.7	100
16.		2.0	100
17.	Vehicle - blackout headlights.		
18.	Vehicle - parking lights.		
19.	Vehicle - depressed beam hooded.		
20.	Vehicle - driving beam hooded.		

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7:04 P.M.

Grnd to 75: Check in when you are over the area.

75: We are over the area. Go ahead.

Grnd to 75: Stand by.

Grnd to 5: Check, please.

Grnd to 5: Check 1, 2, 3, 4, 5.

75: 5 is just taking off. Will be in position in about 3 minutes.

Grnd to 75: O.K.

25: 10 is calling you. He has been calling you for some time.

Grnd to 25: O.K.

Grnd to 10: Come in, please. Go ahead.

10-A: We are flying at the 5,000 ft. level. 15 called the Bolling Tower for take-off instructions and probably will be over the area in a few minutes.

Grnd to 10: O.K.

Grnd to 10: You're still a little higher on your frequency.

Grnd to 10: You're approximately 10 kilocycles high. Please check by your radio.

5-A: Go ahead.

Grnd to 5: Check, please. Come in. Go ahead.

5-A: We are now over the area at 1,000. Will be in position in about 2 or 3 minutes. Go ahead.

Grnd to 5: Your frequency is a little off - about 10 kilocycles high. Please check your radio.

5-A: We just checked on our radio by frequency meter. We have just checked with Bolling Tower.

Grnd to 10: Will check. Just a minute, please.

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Grnd to All Planes: You are not all on the same frequency. Will check the planes starting at lowest altitude. Check in and we will make the proper adjustment. Go ahead, 25.

25-A: You were just making a call to our ship. Please repeat your call.

Grnd to 25: All planes are not on the same frequency and we are going to check the radio starting at lowest altitude. Will you check, please, so we can check our receiver.

25-A: 1, 2, 3, 4, 5, etc.

Grnd to 25: O.K.

5-A: 1, 2, 3, 4, 5, etc.

Grnd to 5: O.K.

75-A: 1, 2, 3, 4, 5, etc.

Grnd to 75: O.K.

Grnd to 10: Please check in. Go ahead.

10-A: 1, 2, 3, 4, 5, etc.

Grnd to 10: O.K.

Grnd to 15: Check in, please. Go ahead.

15:A: I'm now at 11,000 feet and there is a light snow. I don't think I'll be able to do any observing because I can't get any higher.

Grnd to All Planes: Is our ground frequency O.K.? If any of you have any comment, come in, please.

25: R 5 S 5. Go ahead.

5: R 5 S 5. Go ahead.

75: R 5 S 5. Go ahead.

10: R 5 S 5. Go ahead.

15: R 5 S 5. Go ahead.

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Grnd to 15: We received your message. Stand by, please.

Grnd to 15: Stay in the area for a short while if you can. Use your own judgment when you return to Balling. Come in, please.

15: I will stand by and see how the weather holds out.

Grnd to All Planes: At what altitude is Mr. Ribben flying? Come in, please.

Grnd from 10-A: Go ahead.

Grnd to 10-A: Go ahead.

10-A: I think the gentleman you are referring to is in our ship, observing in the bombardier's compartment.

Grnd to 10: O.K.

7:20 P.M.

Grnd to 25: Please report general conditions, visibility, etc. Go ahead.

25-A: Visibility is very good up here.

Grnd to 25: O.K.

Grnd to 5: Please report general weather conditions, visibility, etc.

5: The ground is a bit darker due to the lack of floodlights, slight haze and smoke. Visibility about 6 miles.

Grnd to 5: O.K.

Grnd to 75: Your report, please.

75-A: Visibility is good. Very little haze and visibility is about 15 miles.

Grnd to 10: Make your report, please. Go ahead.

10: Visibility is very bad up here. -----visibility 15 miles. In other directions I can't very well ----- . We're flying at 1800 feet right now and just maintained position below the level of the overcast which is -----.

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Grnd to 10: O.K.

Grnd to 15: Stand by.

15: I'm now at 9000 ft. Over Bolling Tower, just about 200 feet below the overcast at this point. I believe I will return to Bolling because I can't get above 10,000.

Grnd to 15: O.K.

Grnd to 10: Please report again.

10-A: We're flying now at 9000 feet. Visibility is somewhat restricted in almost all directions. We're flying not more than 200 or 300 feet below the level of the overcast. Visibility directly below us is also restricted.

Grnd to 10: O.K. Stand by.

TEST A-1. No Lights.

Grnd to All Planes: Test A-1. Can you see the target? Can you see the runways? When you are ready to report start at the lowest altitude and make your report.

25: We can see the target and the runways.

Grnd to 25: O.K.

Grnd to 5: Are you ready to report? Go ahead.

5-A: The target visibility is 3, runways, 1. Go ahead.

Grnd to 5: O.K.

Grnd to 75: Report, please. Go ahead.

75-A: Wait just one second, please.

Grnd to 75: O.K.

75-A: We can make out the area but cannot distinguish either the target or the runway.

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Grnd to 75: O.K.

Grnd from 75-B: Go ahead.

Grnd to 75-B: Go ahead.

75-B: Can just barely make out runway and target with binocular glasses. If I did not know where to look it would be impossible.

Grnd to 75: O.K.

Grnd to 10: Report, please. Go ahead.

10-B: We cannot make out the target or the runways. We can see ----- directly over the area probably.

Grnd to 10: Repeat the latter part of the message, please.

10-B: We can just see the light of a plane flying over the area, probably the 5 plane.

Grnd to 10: O.K.

TEST A-2.

Grnd to All Planes: We now have Test A-2. Make your observations and see if you can observe the target. Will ask for reports in a few seconds.

Grnd to 25: Make your report when ready. Go ahead.

25: Yes, I can see the target. Visibility is 3.

Grnd to 25: What observer are you? Go ahead.

25:A: Observer 25-A. Does that answer your question? Go ahead.

Grnd to 25: O.K.

Grnd to 5: Report when ready. Go ahead.

5-A: Flying over target area at an angle of about 70° from the ground. Target is 3, runways, 3. Go ahead.

Grnd to 5: O.K.

Grnd to 75: Go ahead.

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75-A: We cannot see the target nor runways. Go ahead.

Grnd to 75: O.K.

Grnd to 10: Go ahead.

10-A: Our position is over Alexandria. Cannot see the target nor the runways. Visibility of target is 0 and visibility of runways is 0.

Grnd to 10: O.K.

Grnd fr. 75-B: Go ahead.

Grnd to 75: Go ahead.

75-B: Have just seen target and runways with aid of glasses.

Grnd to 75: Make your reports reporting your unit classification 0-1-2-3, please.

75-B: Visibility about .5.

Grnd to 75: O.K.

TEST A-B.

25-B: Visibility of runways is 3. Visibility of target is 3.

Grnd to 25: O.K.

Grnd to 75: Test A-B. Can you see the target? Go ahead.

75-A: Visibility of target is 0.

Grnd to 75: O.K.

Grnd to 75-B: Can you see the target?

75-B: Visibility of target .5. Visibility of runways .5. Target slightly less than runways.

Grnd to 75-B: With or without binoculars?

75-B: Without binoculars. Observing at about 70°.

Grnd to 75: O.K.

Grnd to 10: Test A-B. Can you see the target? Go ahead.

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10-B: We can see the ground. Cannot see the target. Visibility of target is 0. Go ahead.

Grnd to 10: O.K.

10-A: The ship at 15,000 feet has been trying to call you. Go ahead.

Grnd to 10-A: We are trying to contact the ship at 15.

Grnd to 15: Long call, please. Go ahead.

Grnd to 15: Give us a long call, please.

Grnd to 10: We cannot get 15. Can you get a report from them and relay it to us?

10: It has been suggested that Ship 15 might have been calling Belling Tower and he may have gone in and landed, but he was out out a moment ago. The ship [redacted] at 2500 ft. cut him out.

Grnd to 10: O.K. Thank you.

TEST A-4.

Grnd to All Planes: Test A-4. We will call for reports in a few minutes.

Grnd to All Planes: Disregard the light source on this test. Make your observation and see if you can observe the target. 25 go ahead when you are ready.

25-A: Visibility 5. We can see all three targets.

Grnd to 75: Report when ready. Go ahead.

75-A: We cannot see any of the targets. Visibility of target is 0.

Grnd to 75: O.K.

Grnd to 10: Report when ready. Go ahead.

10-B: We cannot see any target. Visibility 0.

TEST A-5. 143 Volts

Grnd fr. 75-A: I can now make out one target.

Grnd to 75-A: What is the visibility of this target? Go ahead.

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75-A: Visibility of target is 1.

Grnd to 75: O.K.

Grnd to All Planes: We are only asking for observations from the higher flying planes until we get the results we want. The two lower planes please stand by.

Grnd to 10: Can you see the target? Go ahead.

10-A: Visibility of target is 0. Cannot see the target. The haze has increased at this altitude. The general visibility has been cut down to, I'd say, about 9 or 10 miles. Go ahead.

Grnd to 10: O.K.

10-A: I think we can make out the target now. Visibility of 1.

Grnd to 10: O.K.

TEST A-6. 60 volts on the 100 foot target.

Grnd to 75-B: Go ahead.

75-B: When flying on the river side of the field the lights are ---- and the single light on the field whatever it is obscures the target and the runway to a certain extent, whereas to the north visibility level is between 0 and 1.

Grnd to 75: O.K.

75-B to Grnd: Go ahead.

Grnd to 75-B: Go ahead.

75-B: Those observations are without any aid of glasses.

Grnd to 75: O.K.

Grnd to 75: Test A-6. Can you now see the target? What is the visibility?

75-A: The visibility of the target is .2. I can see the target but I cannot distinguish it to any extent.

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Grnd to 75: O.K.

Grnd to 10: Can you see the target? Go ahead.

10-A: We just flew over the target or a little to the north and we could just see it and then lost it again. Now we are over the river and cannot see the target. Go ahead.

Grnd to 10: O. K.

TEST A-7. 145 volts on 100 foot square.

Grnd to 75: Test A-7. Can you now see the target? Make your report when ready.

75: Visibility of target is 1.

Grnd to 85: What observer, please?

75-A: Observer A.

Grnd to 10: Can you now see the target? Go ahead.

10-A: Yes, we can see the tanget. Visibility of the target is 2. There is one point I'd like to add. Visibility is getting worse and worse. We're having to drop down to a lower altitude of 8000 feet to stay out of the overcast. We had some light snow at this altitude.

Grnd to 10: We received your message. You are now at 9000. Please stand by.

Grnd to 75: Will you report the last message again, please.

75-A: My last report on the target before this one was looking through the propeller and gave you 1 as visibility, but I could see about 2.5 visibility.

TEST CC-7.

Grnd to All Planes: Test C-7. Will ask for reports in a few seconds.

Grnd to 25: Report when ready, go ahead.

25-A: Visibility of the target has been improved by the lights. They are strong 5.

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25-B: Visibility of target is 3. Visibility of runway is 0. Go ahead.

Grnd to 25: O.K.

Grnd to 5: Can you see the target? Go ahead.

5-A: Target 3. Runway 0. Go ahead.

Grnd to 5: O.K.

Grnd to 75: Report when ready. Go ahead.

75-A: Visibility of target 1; visibility of runway is 0.

Grnd to 75: O.K.

Grnd to 10: Report when ready. Go ahead.

10-B: Visibility of target improved somewhat. We have come down to 9800 feet now. Visibility of target is 1. Visibility of runway is 0.

Grnd to 10: O.K. Elevation of altitude 9800 feet.

Grnd to All Planes: Please stand by.

10-A: Go ahead.

Grnd to 10: Go ahead.

10-A: We're down to 3,000 feet now and there is light snow and the ceiling appears to be coming down. I notice now that in this haze there is a definite glow effect around the lights, that visibility of the target has been cut to 0 now and there is a glowing effect around the lights. Go ahead.

Grnd to 10: O.K.

10: Go ahead.

Grnd to 10: Go ahead.

10: The overcast is getting thicker and thicker. Would it be all right if we went to 8,000? If not, we're going to have to go back.

Grnd to 10: We will keep the other three planes. You may return to Rolling Field if you want. Go ahead.

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Grnd from 10: Stand by just a minute.

Grnd to 10: O.K.

Grnd from 10: Go ahead.

Grnd to 10: Go ahead.

10: We are going to return to Bolling Field.

Grnd to 10: O.K. You can return to Bolling Field. Please check out when you leave.

10-A: We're now over Alexandria heading back to Bolling Field.

Grnd to 10-A: O.K.

PLANE LEFT AT 7:55 P.M.

Grnd fr. 75: Go ahead.

Grd to 75: Go ahead

75-B: Visibility of ground in general has changed now. Cannot distinguish field at all outside of glare area. Could do that earlier.

Grnd to 75: O.K.

TEST CC-8.

Grnd to All Planes: Test C-8. Make your observations and we will ask for a report shortly.

Grnd to 25: Report when ready. Go ahead.

25-A: Visibility on target is 3. Visibility of runway is 1. Go ahead.

Grnd to 25: O.K.

Grnd to 5: Report, please. Go ahead.

5-A: Visibility of target is 3 - of runway is 0. The lights seem to have a glowing effect and at consequently xxx will light the area generally.

Grnd to 5: O.K.

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Grnd to 75: Report. Go ahead.

75-A: Visibility of runway is 0. Visibility of target, the small target, is 1. Didn't then make out a very small target with a visibility of 1.

Grnd to All Planes: Stand by while we prepare for the next test.

TEST 17-K. Blackout headlights on vehicles - stationary.

Grnd to All Planes: This is Test 17-K. Can you see any vehicles on the runway? Can you see any vehicle lights on the runway? Please make this observation and we will ask for a report in a minute.

Grnd to 25: Make your report when ready.

25-A: We can see two vehicles on the northwest corner of the runways.

Grnd to 25: Circle field and see if you can be observe more than 2 vehicles.

25-A: Will make another report in a few seconds.

Grnd from 75: We're getting a light snow at 7000 feet. Go ahead

Grnd to 75: O.K. Stand by.

Grnd to 25: When you make your report, let us know if you see any vehicle with lights on the runway.

25-A: I believe I see 4 vehicles. However, 2 of them are all that are showing lights. Just a minute, I think I see another one. There is another one north of the other. I now see [redacted] vehicles. Go ahead.

Grnd to 25: What observer, please?

25: Observer 25-A. These vehicles are very indistinct. I believe you have two of them with lights probably a little brighter than the others. These are the only 2 I'm absolutely sure of. Go ahead.

Grnd to 25: When you make your next report talk a little slower, please, so the stenographers can take it down.

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Grnd to 5: Can you see any vehicles on the runway with lights?

5-A: Yes, there seems to be two vehicles with lights at the intersection of runways approximately 800 feet south of the target moving in a northerly direction. Go ahead.

Grnd to 5: O.K.

TEST SS-6.

Grnd fr. 5: Go ahead.

Grnd to 5: Go ahead.

5: We are getting snow.

Grnd to 5: O.K. stand by.

Grnd to 75: What is the weather condition now? Go ahead.

75: Snow at 7500 feet is very strong. We have dropped to 6500 feet.

Grnd to 75: You may return to Bolling Field. Check out when you prepare to leave the area.

75: We're checking out now - returning to Bolling Field.

Grnd to 75: O.K.

PLANE LEFT AT 8:10 P.M.

Grd to 5: Test S-6. Can you see the target? Report when ready. Go ahead.

5-A: Target, 3. We're at 9500 feet - have been forced down because of snow.

Grnd to 5: You may return to Bolling Field. Check out when you leave.

5-A: Checking out over target area right now.

Grnd to 5: O.K.

PLANE LEFT AT 8:12 P.M.

Grnd to 25: Can you see the target? Report when ready.

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25-A: Target visibility is 3. Go ahead.

Grnd to 25: O.K.

Grnd to 25: Return to Rolling Field. Check out when you leave.

25-A: Checking out.

Grnd to 25: O.K.

PLANE LEFT AT 8:12 P.M.

TEST ENDED AT 8:13 P.M.

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11/8/51

TESTS STARTED AT 7:00 P.M.

Grnd to All Planes: Give us weather reports, general visibility, starting at lowest altitude; as soon as 25 has made his report please 5 make his, then 75 and 10. Go ahead 25.

25-A: Visibility hazy. Not as good as previous nights. Go ahead.

Grnd to 25: O.K.

5-A: General visibility slightly hazy. A low layer of clouds at approximately 3500 feet that moves over the target at periods. There is a large area of clouds over target right now.

Grnd to 5: O.K.

75-A: Visibility 15 miles. Scattered clouds at about 3500 feet or 4000 ft.

Grnd to 75: O.K.

10-A: General visibility approximately 15 to 20 miles. Slight haze. Seems to be stratified somewhat and very small clouds below us, approximately 5000 feet, I'd say. There is one bank of clouds over target right now. Go ahead.

Grnd to 10: O.K.

Grnd to 15: Come in, please.

15: I'm now at 1405 feet. There is a haze towards the ground from here. There seems to be a higher layer of clouds above yet. I'm proceeding to a higher altitude.

Grnd to 15: O.K.

TEST A-1

Grnd to All Planes: Test A-1. Can you see the target? The Runways? Go ahead 25. Report when ready.

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25-A: Visibility of target is 2; visibility of runway is 2. Go ahead.

Grnd to 25: O.K.

Grnd to 5: Report when ready. Go ahead.

5: Visibility of runway is 1. Visibility of Target is 1. Go ahead.

Grnd to 5: What observer, please?

5-A: Observer 5-A.

Grnd to 5: O.K.

Grnd to 75: Go ahead.

75-A: Visibility of runways is 0. Visibility of target is 0.

Grnd to 75: O.K.

Grnd to 10: Go ahead.

10-A: Visibility of target is 0. Visibility of runways is 0. Go ahead.

Grnd to 10: O.K.

TEST A-2 60 Volts.

Grnd to All Planes: Test A-2. We will ask for a report in a minute or two. Please stand by.

Grnd to 25: Can you see the target? Go ahead.

25-A: The target is difficult to see, due to the light you have on it. Visibility is 2.

Grnd to 25: Give us another report, please.

25-A: Visibility of target is 2. Go ahead.

Grnd to 25: O.K.

Grnd to 5: Go ahead.

5-A: Visibility of runway is 2. Visibility of target is 2 when flying east of target. Go ahead.

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Grnd to 5: O.K.

Grnd to 75: Go ahead.

75-A: Visibility of target 0. Visibility of runway 0.

Grnd to 75: O.K.

Grnd to 10: Go ahead.

10-B: Visibility of runway 0. Visibility of target 0. I just saw a flare on the ground about 1/2 minute ago where the target should be.

Grnd to 10: Disregard the light source you just saw. O.K. stand by.

TEST A-2

Grnd to All Planes: Test A-2. 25 go ahead when ready.

25-A: Visibility of target 2. Visibility of runway 2.

Grnd to 25: O.K.

Grnd to 5: Report when ready. Go ahead.

5-A: Visibility of target is 1. Visibility of runway 0. Go ahead.

Grnd to 5: O.K.

Grnd to 75: Go ahead.

75-A: Visibility of target 0. Visibility of runway 0.

Grnd to 75: O.K.

Grnd to 10: Go ahead.

10-A: Visibility of target is 0. Visibility of runway is 0. There is something more I would like to add. Since the moon has come up the haze seems to have increased slightly.

Grnd to 10: O.K. Stand by.

NOTE: The brightness of the targets from all angles due to the moon is less than .002. The time is 7:12 P.M.

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TEST A-4.

Grnd to All Planes: Test A-4. 25 report when ready. Go ahead.

25-A: Position directly over field. Target is 3. Runway is 3. Go ahead.

Grnd to 25: O.K.

Grnd to 5: Report when ready. Go ahead.

5-A: Visibility of runway is 1. Visibility of Target is 1. Go ahead.

Grnd to 5: O.K.

Grnd to 75: Report when ready. Go ahead.

75-A: Visibility of runway 0. Visibility of target .1.

Grnd to 75-A: Do you mean visibility 1 or 0.1? Go ahead.

75-A: 0.1.

Grnd to 75: O.K.

Grnd to 10: Report when ready. Go ahead.

10: Visibility of target and runway 0. There is now a slight layer of clouds coming between us and where the target should be.

Grnd to 10: O.K.

Grnd to 10: What observer, please?

10-A: Observer 10-A.

10-B: Visibility of target is 0. Visibility of runway is 0. It is still as above. We have now passed over that area and there are no small clouds.

Grnd to 10: O.K.

10-B: Go ahead.

Grnd to 10: Go ahead.

10-B: Visibility of target is 1. We have now come around into the moon. Visibility of target 1 plus. Visibility of runway 0. Visibility of target is getting better - maybe 2 now. Go ahead.

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Grnd to 10: O.K.

TEST A-5

Grnd to All Planes: Test A-5. 25 report when ready.

25-A: Visibility of target 8. Visibility of runway 3. Go ahead.

Grnd to 25: O.K.

Grnd to 5: Go ahead.

5-A: Visibility of target 3. Visibility of runway 2. Go ahead.

Grnd to 5: O.K.

Grnd to 75: Go ahead.

75-A: Visibility of target 1.7. Visibility of runway .6. Go ahead.

Grnd to 75: O.K.

Grnd to 10: Go ahead.

10-A: Visibility of target is 1. Visibility of runway 1 mimm. We're flying over the target now so as to observe it at an angle of 70° to the ground.

Grnd to 10: O.K.

Grnd to 15: Report your altitude, weather conditions, and if you can see the target. Go ahead.

15: We are now at 1806 feet -----

Grnd to 15: Give us a long call, please. Go ahead. We got part of your message, but it was cut off.

15: We are now at 1806 feet. Visibility of target and runway 0.

Grnd to 15: O.K.

TEST RE-1 No lights on the target - glare source only.

Grnd to All Planes: Test E-1. We will ask for reports in a minute if you can see the target. Stand by.

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Grnd from 25: Did you receive my report?

Grnd to 25: We were temporarily cut off. Go ahead.

25-A: Visibility of target 1. Visibility of runway 1. Go ahead.

Grnd to 25: O.K.

Grnd to 5: Report when ready. Go ahead.

5-A: Visibility of target 0. Visibility of runway 0. Go ahead.

Grnd to 5: O.K.

Grnd to 75: Go ahead.

75-A: Visibility of target and runway 0.

Grnd to 75: O.K.

TEST [redacted]-4

Grnd to All Planes: We do not need observations at higher altitudes on that test. Test [redacted]-4 coming.

Grnd to 25: Report when ready. Go ahead.

25-A: Visibility of target is 2. Visibility of runway is 1.

Grnd to 25: O.K.

25-A: I'd like to retract that statement. From one point of observation there the target is 2. However, now it is 0. I'd like to qualify that - 1 for the target.

Grnd to 25: O.K.

Grnd to 5: Go ahead.

5-A: Visibility of target 0. Visibility of runway .5. Go ahead.

Grnd to 5: O.K.

Grnd to 75: Go ahead.

75-A: Visibility of target and runway 0.

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Grnd to 75: O.K.

Grnd to All Planes: We are preparing to turn out all glare sources. Please observe the ground and target immediately after the lights are turned off and see what effect there is; how well you can see the target immediately after the glare sources are turned off; how quickly the target comes into view. We will ask for reports as soon as the glare sources are off and you have had time to make this observation. Stand by for the glare sources to be turned off.

Grnd to All Planes: The glare sources will be turned off in about 10 seconds.

Grnd to 25: Go ahead.

25-A: Visibility very clear after lights were turned out. Very clear. Visibility of runway now 5. Visibility of target is 3. Go ahead.

Grnd to 25: O.K.

Grnd to 5: Go ahead.

5-A: ----------after glare sources were out to see the runway and target. Visibility of 5.

Grnd to 5: Repeat.

5-A: It took approximately 7 or 8 seconds and then glare sources were all out to see distinguish runways and target to visibility of 5. Go ahead.

Grnd to 5: O.K.

Grnd to 75: Go ahead.

75-A: Visibility of runways .6. Visibility of target is .2. That is 0.6 and 0.2, immediately after lights were turned out. Go ahead.

Grnd to 75: O.K.

Grnd to 10: Go ahead.

10-B: Visibility of target and runways 0 after lights were turned out.

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Grnd to 10: O.K.

Grnd to 15: Please report. Go ahead.

15: We are now at 20,000 feet. At the time the glare sources were turned off a lower cloud obstructed vision. Glare sources distinctly visible through cloud layer which was at about 12,000 feet. That is all. Visibility of target and nearby runways 0.

Grnd to 15: O.K.

25-A: I could pick out the runway and target immediately. In fact, they stood out very clear. I could pick them out immediately when the majority fragment of the lights went out.

Grnd to 25: O.K.

Grnd to 10-A: Go ahead.

10-A: There is still an extensive layer of very thin stratus clouds about 2000 feet below us extending west and south of the area. It is totally impossible to distinguish the area from the west and south portions. The layer seems to be moving in a northerly direction. Will keep you advised if visibility becomes more restricted. We are now at the southwest of the field and cannot locate the area at all.

Grnd to 10: O.K. Stand by.

NOTE: Brightness of target due to moonlight is still less than .002, but there is an increase in brightness when viewing towards the moon in comparison with viewing away from the moon.

TEST 25-6.

Grnd to All Planes: Test 2-6. 25 report when ready. Go ahead.

25-A: Visibility of target 0. Visibility of runway 1. Go ahead.

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Grnd to 25: O.K.

Grnd to 5: Go ahead.

5-A: Visibility of target 5. Visibility of runway 1. Go ahead.

Grnd to 5: O.K.

Grnd to 75: Go ahead.

75-A: Visibility of runway and target 0.

Grnd to 75: O.K.

Grnd to 10: Go ahead

10-A: Visibility of the target and runway 0. There is a slight halo or glow effect due to a layer of haze below us. The layer of clouds I mentioned before is still moving to the northwest apparently and as present we can only make observations from the east side of the field.

Grnd to 10: O.K.

5-A: There is a layer of very thin clouds at about 6500 feet, and I think that is what is obstructing 10's visibility.

Grnd to 5: O.K.

TEST EE-6. 60 Volts on 100 ft. square

Grnd to All Planes: Test E-6. 25 report when ready.

25-A: The large target is 2. The small targets are 1; the runways are 1.

Grnd to 25: O.K.

Grnd to 5: Report when ready. Go ahead.

5-A: Visibility of target and runways 0, at a 30° angle.

Grnd to 5: O.K.

Grnd to 75: Go ahead.

75-A: Visibility of target and runway 0.

Grnd to 75: O.K.

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TEST [illegible]-7.

Grnd to All Planes: Test E-7. 25 report when ready.

5-A: Did you get 25-A's report?

Grnd to 5: We did not hear 25-A. Stand by.

Grnd to 25: We did not get your report. Come in, please.

25-A: Visibility of large target is 3; visibility of runway is 1.

Grnd to 25: O.K.

Grnd to 5: Go ahead.

5-A: Visibility of large target 3; visibility of runway 1.

Grnd to 5: O.K.

Grnd to 75: Go ahead.

75-A: Visibility of target 2; visibility of runway 0.

Grnd to 75: O.K.

Grnd to 10: Go ahead.

10-B: Visibility of target 1. We are now going into clouds and are obstructed [illegible] but visibility when we were to the north of the target and just previous to going into this [illegible] cloud area was about 2 or 3minus. Visibility of runway 0. Some of the lights appear not to blink but to stay [illegible] steady.

Grnd to 10: O.K.

Grnd to 15: Can you see the target? Go ahead.

15: I am now.---

Grnd to 15: You were cut off. Repeat.

15: We are now at 13,000 feet. There is an overcast between us and the target. We cannot see the target or the runways. Visibility 0.

Grnd to 15: O.K.

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Grnd to All Planes: When lights are stationary do not observe; do not observe unless we ask for a report. Stand by.

NOTE: The glare sources on the inner circle are changed to the single unit flood lights, one double flood light and one Procnal unit.

TEST I-6.

Grnd to All Planes: Test I-6. When you make this report we have some additional information we want on this test. Please compare the 4 light sources nearest the target with each other. What effect do these 4 lights around the target have with each other and with the other light sources. We will ask for a report in a few minutes. Please note the 4 light sources nearest the target and compare them with each other and with the other light sources around the field. Stand by.

Grnd to 25: Report when ready.

25: The light nearest the target is not as bright or illuminating as the other lights. I believe you have some kind of a flare, possibly waving, but the way it looks up here I would say the lights on the other side were doing a much better job. Visibility of the target 2; visibility of the runway 1.

Grnd to 25: Do you notice any difference between the 4 lights around the target?

25: There is a difference between the 4 lights around the target. They are not lighted as brilliantly as those on the outside. I believe you are using a different effect of lighting; the way it looks up here they flick, much faster and not as effective as the third.

Grnd to 25: There are 3 different types of lights around the target. We would like a comparison between these sources if you can detect any difference.

25: The lights on the south end of the target are the brightest. The

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light on the left end is also very bright. The light on the north end is the weakest, southwester than the light on the east sideand is not quite as bright.

Grnd to 2S: O.K. Was that observer A or B?

2S: This is observer A. B is not here.

Grnd to 2S: O.K.

Grnd to 5: When you report please compare the lights around the target with each other and with the lights over the field. Go ahead.

5-A: The lights that are north and or the eastern light around the target of the 4 is the least brightest. Also it seems to appear from here to be a little lower than the others. The light north of the target and west is the brightest, while the lights to the south and west are about the same intensity;all lights on the field appear to be approximately the same intensity.

Grnd to 5: What is the visibility of the target?

5-A: Did you get that? The visibility of the target is 1.

Grnd to 5: O.K.

Grnd to 7S: Go ahead.

7S-A: Visibility of target and runway is 0. I have found there are more lights around the target. There appears to be a flicker and appears to be much lower than the other 3 lights with northwest and southeast lights glowing more often than the southwest lights. The southwest lights, however, appear to be a little brighter. Wait just a minute. The rest of the lights seem to be about the same. Go ahead.

Grnd to 7S: O.K.

Grnd to 10: Go ahead.

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10-A: It's almost impossible to make observations since there is an overcast hmmm below us a couple of thousand feet. Is the target located in a diamond shape pattern of lights?

Grnd to 10: Approximately a diamond shape. Go ahead.

10-A: If you will stand by a few minutes I may be able to give you an observation, but we're southwest of the field right now and there is a solid overcast below us. However, when we get towards the east I may be able to give a report. Stand by and we'll see what happens.

Grnd to 10: We'll get the report from 15 and come back to you.

Grnd to 15: Go ahead.

15: I'm now at 1808 feet and there is an overcast below me practically solid. I can see the flashing of the lights on this overcast which attracts the eye to that point over the entire overcast. I guess I have seen the planes silhouetted against the overcast below me.

Grnd to 15: O.K.

Grnd to 10: Do you have a report? Go ahead.

10-A: ~~xxx~~ We're somewhere northwest of the target . I cannot pick it up yet. Alexandria is coming into sight directly below us. Wait two minutes and we ~~xxx~~ are approaching the edge of a cloud bank below us. Stand by, please.

Grnd to 10: O.K.

LIGHTS WERE SET FOR B-6.

10-A: I am not exactly sure where the target is in relation to the light, but if it's where I think it is, it appears to be that the lights on the east and west side of the target are the dimmest. The light at the south end appears to be the strongest and the light at the north end is slightly dimmer. Go ahead.

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Grnd to 10: O.K. Stand by.

REPEAT-TEST EE-6

Grnd to All Planes: Test E-6. 25 report when ready.

25-A: Visibility of target is 1. Visibility of runway is 1. Go ahead.

Grnd to 25: O.K.

Grnd to 5: Go ahead.

5-A: Visibility of target 0. Visibility of runway .5. Go ahead.

Grnd to 5: O.K.

Grnd to 75: Go ahead.

75-A: Visibility of target and runway 0.

Grnd to 75: O.K.

REPEAT ON TEST EE-7.

Grnd to All Planes: Test E-7. 25 Report when ready.

Grnd to All Planes: We are ging the operators of the glare sources a brief rest. Stand by until we ask for a report.

NOTE: At no time did the brightness of the target, due to the moon, reach a measurable value. The brightness meter reads only to a minimum of approximately .002.

Grnd to 25: Report when ready. Go ahead.

25-A: I have already made my report. State what you want.

Grnd to 25: We did not receive your report. Repeat, please.

25-A: Visibility of target 3. Visibility of runway 1.

Grnd to 25: O.K.

Grnd to 5: Go ahead.

5-B: Visibility of target 3. Visibility of runway 1.

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Grnd to 8: O.K.

Grnd to 75: Go ahead.

75-A: Visibility of target S.S. Visibility of runway O.

Grnd to 75: O.K.

Grnd to 10: Go ahead.

10-B: We cannot see much, but if you will stand by for a second now we are coming into the edge of the clouds now. Stand by, for 30 minutes. We are just coming out of the cloud.

Grnd to 10: O.K. We are standing by. Report when ready.

10-B: The target will be S. Visibility of runway O. Almost can make it out. Hold minus. This is the best I have been able to see it all night. I can just see the runways now. We are flying over the river looking down on an angle of about 45°. Visibility of target is now the best we have seen all night. Go ahead.

Grnd to 10: O.K.

NOTE: All the glare sources are being pointed at the moon.

Grnd to All Planes: We have now pointed all of the light sources in the direction of the moon. All light sources are now pointed in the direction of the moon. Please circle the field once and come directly across the field from the moon into the light sources. From the moon, away from the moon fly directly across the field. We will ask for observations when you have circled the field. From the direction of the moon fly directly across the field directly away from the moon.

TEST #-7.

Grnd to 25: Report when ready.

25-A: What is it you want me to report?

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Grnd to 26: When you came over the field could you see the target? What is the visibility of the target when you came over the field?

26: The target visibility was 5. The runway was 1.

Grnd to 26: O.K.

Grnd to 6: If you have made your run directly across the target, report the visibility of the target.

6-B Visibility of target when directly over field was 3.

Grnd to 6: Report.

6-B: Visibility of target when 5 miles at edge of 22km field was 2. Visibility of target when directly over field was 3. Visibility of runway was .5. Go ahead.

Grnd to 6: O.K.

Grnd to 75: Are you ready to report? Go ahead.

75-A: Visibility of runway 0. Visibility of target on side opposite moon 2. Flying across the field visibility of target .7. Observer B may have a better report over the runway. I didn't get a look at it.

Grnd to 75-A: O.K.

Grnd to 75-B: Do you have a report away from the moon?

75-B: No additional report. Flying over the target away from the moon visibility was about 1 on the target.

Grnd to 75-B: O.K.

Grnd to 10: Could you make the observation we asked for? Go ahead.

10-B: We have just flown over the target. Looking down directly from the south. The visibility of the target was 0 as we approached the target until we got directly over it. Then the visibility became 3. Visibility of runway was about 1.

Grnd to 10: O.K.

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Grnd to 15: Do you have anything more to report? Go ahead.

15: I have not made a complete circle of the field yet, but I do notice that the glare sources are much less conspicuous stationary above overcast than when they are blinking.

Grnd to 15: O.K.

NOTE: On the I condition the glare source east of the target was the Procyon units. The one west of the target was the double flood and the one to the north and south were the single floods.

Grnd to 15: Are you ready to report? Go ahead.

15: I have no particular information to add, except the target does not show up as well through broken clouds as when lights are blinking.

Grnd to 15: Repeat.

15: I have nothing further to add, except that lights are not as conspicuous through overcast as when they are mmmt blinking. I am now at 1605.

Grnd to 15: O.K.

Grnd to All Planes: This test is a field test. We now have vehicles moving on the runway. Can you see any vehicles or vehicle lights moving on the runway? Circle the field once and then report. 25 report when ready.

25-A: 2 lights. One is going northeast with lights. He is going northeast but the other which is further up at the southwest end also has his lights on. Only 2 vehicles that I see.

Grnd to 25: Do you see any more than 2 vehicles? Look again and see if you see any more than 2 vehicles. Go ahead.

25-A: I'm sure I see 3 vehicles. Another just mm turned - lights on. I now see 4 vehicles.

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Grnd to 2S: Continue to observe and I'll ask for another report on the number of vehicles in a few minutes. Stand by.

Grnd to S: Can you see any vehicles or vehicle lights on the runway? Go ahead.

S-B: Vehicle lights observed going in an opposite direction on the northeast and southwest runway. Go ahead.

Grnd to S: How many vehicles, please?

S-B: There appears to be one vehicle going in each direction.

Grnd to S: O.K.

Grnd to 7S: Can you see any vehicles or vehicle lights on the runway? Go ahead.

7S-A: I see no vehicles nor vehicle lights on the runway.

Grnd to 7S: O.K.

Grnd to 2S: Do you see any more than 4 vehicles on the runway? Go ahead.

2S-A: We are just approaching another airplane. MayI hold my report up for another minute?

Grnd to 2S: O.K.

2S-A: I'm sure of 4 cars. If You can see the lights when they make their turn. There are 2 of those cars with brighter lights than the others and are all visible at all times. However, the others can only be seen when they make their U turns. I wouldn't be surprised if there were 1/2 dozen cars - can see them when they make their turns. I am, however, sure of 4 cars.

Grnd to 2S: O.K.

TEST 10-I. - with HE Glare

Grnd to All Planes: Can you see any vehicles moving on the runway? 2S report when ready.

2S-A: Moving in opposite directions, southwest and northeast.

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Grnd to 25: Repeat.

25-A: There are 6 vehicles on the runway, 3 going each way. Three are now making a U turn. 3 going in the direction of northeast.

Grnd to 25: O.K.

Grnd to 5: Can you see any vehicles on the runway?

5-A: I see 6 vehicles with lights approximately on northeast end of runway in two groups of 3 each moving in opposite direction.

Grnd to 5: O.K.

Grnd to 75: Go ahead.

75-A: I can see 6 vehicles on the runway - 3 moving north through south.

Grnd to 75: O.K.

Grnd to 10: Can you see any vehicles on the runway?

10: The other 3 are moving in a northerly direction now.

Grnd to 10: Repeat

10-A: Yes, I can see 6 vehicles very plainly. 3 are now moving in a northerly direction. The other 3 are just about to make U turns at the south end of the runway. As these 3 make U turns, I can see the flash of their ~~hundit~~ headlight quite plainly.

Grnd to 10: O.K.

TEST 19-X - with HE Glare.

Grnd to All Planes: Can you see the vehicles when stationary? 25 Go ahead.

Grnd to 25: I did not get that report. Go ahead.

25-A: The vehicles are now stationary. Go ahead.

Ground to 25: O.K.

Grnd to 5: Go head.

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6-A: The 6 vehicles previously observed are now stationary.

Grnd to 6: O.K.

Grnd to 75: Go ahead.

75-A: I can see the 6 stationary vehicles.

Grnd to 75: O.K.

Grnd to 10: Go ahead.

10-A: I can see 6 stationary vehicle with their lights on. Go ahead.

Grnd to 10: O.K.

TEST 17-K - with NO Glare.

Grnd to All Planes: Can you see any vehicles on the runway? Any vehicles or vehicle lights? 25 go ahead - report when ready. This test is to determine if you can see any vehicles or vehicle lights on the runway.

25-A: The vehicles on the runway are stationary. I am only able to see 2 vehicles.

Grnd to 25: Do you see the vehicle lights or the light from glare sources on the field and what position along the runway are the vehicles, north or south?

25-A: The glare sources I see are from the lights on the vehicles on the runway - have blackout lights on. No glare from glare lights at all. Position of the vehicles are on the south end of the southwest runway quite near, not so far to the end, but about 1/3 of the way down the runway. 2& Those cars are stationary. They are not moving as far as I can tell.

Grnd to 25: O.K.

Grnd to 8: Go ahead.

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S-A: Can see no vehicles or vehicle lights on the runway.

Grnd to S: O.K.

Grnd to 7S: Go ahead.

7S-A: Cannot observe any vehicles or vehicle lights.

Grnd to 7S: O.K.

[redacted] TEST 17-Y - with XE flat Glare

Grnd to All Planes: Can you see any vehicles moving on the runway? 2S report when ready.

2S-A: Yes, I can see all 6. I can see 6 vehicles moving on the runway. They are just passing each other now, each going in different directions. I'd like to check that number again, please. I believe the ones at the south end are making their turns now. They are now making their turns. I believe that I see 6 vehicles moving on the runway. However, the lighting effect does make it harder to ascertain. The lights blinking are very annoying to the eye.

Grnd to 2S: O.K.

Grnd to S: Go ahead.

[redacted]

S-B: No vehicles or vehicle lights observed.

Grnd to S: O.K.

Grnd to 7S: Go ahead.

7S-A: I cannot observe any vehicles or vehicle lights.

Grnd to 1S: Do you have any further report? Go ahead.

1S: We are now about 20 miles south of Fort Belvoir at 16,000 feet. The blinking lights are very visible from here.

Grnd to 1S: O.K.

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TEST A-1 - No glare.

Grnd to All Planes: Test A-1. 25 report when ready.

25-A: Automobiles on the runway.

Grnd to 25: No, they are not targets. The vehicles are returning to Fort Belvoir. We want target and visibility. Go ahead.

25-A: Runway and visibility are both 2. I notice the cars are now turning off. Go ahead.

Grnd to 25: O.K.

Grnd to 5: Report visibility of target and runway.

5: Runway 2 - visibility of target 2.

Grnd to 5: What observer, please?

5-B: Observer 5-B.

Grnd to 5: O.K.

Grnd to 75: Go ahead.

75-A: Visibility of runway 1.5 - just a second, I want to see if I can get another crack at the target.

[redacted]

75-A: Visibility of target 0.

Grnd to 75: O.K.

Grnd to 75-B: Do you have any instruments or telescopes for observation tonight?

75-B: The most important instruments - the one which shows up the most - has been sent back to Rochester. The others do not aid a great deal.

Grnd to 75-B: O.K.

Grnd to 10: Go ahead.

10-B: Visibility of target 0. Visibility of runway 0. I just saw a light flash where the target might be, but I can't see the target now.

Grnd to 10: O.K.

[redacted]

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TEST A-4.

Grnd to All Planes: In the next test or two, we will ask for reports only from those plane we feel will be necessary. All planes stand by.

Grnd to 75: Can you see the target? Go ahead.

75-A: Visibility of target 0.4.

Grnd to 75: O.K.

Grnd to 5: Go ahead.

5-B: Visibility of target is 1.

Grnd to 5: O.K.

Grnd to 10: Can you see the target? Go ahead.

10-A: No, I cannot see the target. Visibility of target is 0.

Grnd to 10: O.K.

Grnd to 5-A: Can you see the target? Go ahead.

5-B: Target is obscured at present. I will give you a report later.

Grnd to 5: O.K.

Grnd to 5: Areyou ready to report? Go ahead.

5-B: 20 is trying to call you.

Grnd to 5: Did you say 20? Do you mean Plane 15? Go ahead.

10-A: Not, that was 10-A calling. I just wanted to say that 15-A tried to call a few minutes ago. Go ahead.

Grnd to 10: O.K.

Grnd to 15: Give us a long call, please. Come in, please.

15-A: 1,2,3,4, Go ahead.

Grnd to 15: Go ahead.

15-A: Do you have the glare sources rotating now or are they all off?

Grnd to 15: The glare sources are now off.

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15-A: Are you going to turn them on anywhere soon?

Grnd to 15: Yes, we are going to turn on the glare sources in about 5 minutes.

15-A: O.K. I'll stand by, if the oxygen holds out, to make another test on them on a long shot over the overcast.

Grnd to 15: O.K.

Grnd to 6-A: Can you make a report?

6-B: Visibility of target is 1.

Grnd to 6-B: We would like to have a report from 6-A, please. Go ahead

Grnd to 6-A: Please give us a report on target visibility.

6-A: Target visibility is 1-1/2; runway visibility is 1-1/2. Go ahead.

Grnd to 6-A: O.K.

TEST A-5.

Grnd to All Planes: Test A-5. Be report when ready.

25-A: Visibility of target is 3; visibility of runway is 3.

Grnd to 25: O.K.

Grnd to 6: Report when ready.

6-B: The target is obscured, by clouds; I'll give you a report when field is visible.

Grnd to 6: O.K.

Grnd to 75: Go ahead.

75-A: Clouds are obscuring the target.

Grnd to 75: O.K.

10-A: I can give you a report on the target.

Grnd to 10: O.K. - go ahead.

10-A: Visibility of target is between 1 and 2.

Grnd to 10: O.K.

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Grnd to 75: Are you ready to report? Go ahead.

75-A: Visibility of target is 2.5; visibility of runway is 2.

Grnd to 75: O.K.

Grnd to 5: Are you ready to report? Go ahead.

5-B: Visibility of target is 2.

Grnd to 5: O.K.

TEST E-1.

Grnd to All Planes: Test E-1. Can you see the target? 25 report when ready.

25-A: Visibility of target is 2; visibility of runway is 2.

Grnd to 25: O.K.

Grnd to 5: Go ahead.

5-B: Visibility of target is .8; of runways, 1. Go ahead.

Grnd to 5: O.K.

Grnd to 75: Go ahead.

75-A: Visibility of target is 0; visibility of runway is 0.2.

Grnd to 75: O.K.

Grnd to 10: Go ahead.

10-B: Visibility of target and runway is 0.

Grnd to 10: O.K.

Grnd to 15: The glare sources are now on and rotating. The glare is now on and rotating. Do you have a report to make? Go ahead.

15-A: We are now at 16,000 feet about, I should say, 5 miles south of Washington. The clouds over me --the glare sources -- field through the clouds opposite the blinking glare sources show up very clearly. That is all. We are now going to Bolling for lack of oxygen.

Grnd to 15: O.K. Thank you very much. You are now returning to Bolling.

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Glare source A-3 turned on in place of B-3. B-3 apparently not operating.

TEST B-4.

Grnd to All Planes: Test B-4. 25 report visibility of target when ready.

25-A: Visibility of target 3; visibility of runway is 2.

Grnd to 25: O.K.

Grnd to 5: Go ahead.

5-B: Visibility of target is 0; visibility of runway is 1.

Grnd to 5: O.K.

Grnd to 75: Go ahead.

75-A: Visibility of target and runway is 0.

Grnd to 75: O.K.

Grnd to 10: Go ahead.

10-A: Visibility of target and runway is 0.

Grnd to 10: O.K.

TEST B-5.

Grnd to All Planes: Test B-5. 25 report target visibility when ready.

25-A: Visibility of target is 3 - very clear. Visibility of runway is 2.

Grnd to 25: O.K.

Grnd to 5: Go ahead.

5-B: Visibility of target is 2.

Grnd to 5: O.K.

Grnd to 75: Go ahead.

Grnd to 10: Repeat.

10: There was some ship very close to me between 9500 and 10000 feet.

Grnd to 10: O.K. Thank you.

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Grnd to 75: Go ahead.

75-A: Visibility of target is 1.8. Visibility of runway is 0.

Grnd to 75: O.K.

Grnd to 10: Report visibility of target. Go ahead.

10-A: Visibility of target is 8-plus; visibility of runway is 1.

Grnd to 10: O.K.

TESTS ENDED AT 9:27 P.M. - 11/8/41.

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NIGHTTIME BARRAGE TESTS AT MIRA VALLEY AIRPORT, NOVEMBER 5, 1941.

(Starting Time: 7:00 p. m.)

Ground to All Planes:	Please give us weather reports, general visibility, etc., starting at lowest altitude. Go ahead 25.
Ground from 25-A:	Visibility hazy but as good as any previous night.
Ground to 5-A:	Go ahead.
Ground from 5-A:	General visibility slightly hazy. There is a lower layer of clouds at approximately 3500 ft. that moves over the target. There is a large layer of clouds over the target right now.
Ground to 75:	Go ahead.
Ground from 75-A:	Visibility 15 miles. Clouds at about 3500 or 4000 ft.
Ground to 10:	Go ahead.
Ground from 10-B:	General visibility approximately 18 to 20 miles. Slight haze, seems to be stratified somewhat. Small clouds at 1000 ft. There one bank of clouds over the target right now.
Ground to 15:	Come in please.
Ground from 15:	I am now at 14.5. There is a haze towards the ground from the here. There seems to be a higher layer of clouds above here. I am proceeding to a higher altitude.
Ground to 15:	O. K.

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TEST A-1. (No lights.)

Ground to All Planes:	This is Test A-1. Can you see the target or the runways? Go ahead. 25 report them ready.
Ground from 25-A:	Visibility of target 2. Visibility of runways 2.
Ground to 5:	Report them ready. Go ahead.
Ground from 5:	Visibility of runway 1. Visibility of target 1.
Ground to 5:	What observer, please?
Ground from 5:	5-A.
Ground to 75:	Go ahead.
Ground from 75-A:	Visibility of runway is zero. Visibility of target zero.
Ground to 10:	Go ahead.
Ground from 10-A:	Visibility of target zero. Visibility of runway zero.
Ground to 10:	O. K.

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[redacted] A-2. (60 volts on 25 (?) ft. square).

Ground to All Planes:	We are about to start Test A-2. Will ask for a report in a minute or two.
Ground to 25:	Can you see the target? Go ahead.
Ground from 25-A:	Visibility of target is 3. Go ahead.
Ground to 5:	Go ahead.
Ground from 5-A:	Visibility of runway is 2. Visibility of target 2, when flying east of the target.
Ground to 75:	Go ahead.
Ground from 75-A:	Visibility of target zero. Visibility of runway zero.
Ground to 10:	Go ahead.
Ground from 10-B:	Visibility of runway zero. Visibility of target zero. I just saw a flare on the ground where the target should be.
Ground to 10:	Disregard the light sources. Stand by.

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TEST A-3.

Ground to All Planes:	This is Test A-3. Be go ahead when ready.
Ground from 25-A:	Visibility of target is 9. Visibility of runway 2.
Ground to 5:	Report when ready. Go ahead.
Ground from 5-A:	Visibility of target 1. Visibility of runway is zero.
Ground to 75:	Go ahead.
Ground from 75-A:	Visibility of target zero. Visibility of runway zero.
Ground to 10:	Go ahead.
Ground from 10-A:	The visibility of target is zero. Visibility of runway is zero. There is something I would like to add. The base is lifting. The [illegible] ceiling has increased slightly.
Ground to 10:	O. K.

NOTE: Brightness of the targets from all angles due to the moon is less than .002. (7:13 p. m.)

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TEST A-4.

Ground to All Planes:	This is Test A-4. 25 report when ready.
Ground from 25-A:	Position is directly over field. Visibility of target is 3. Visibility of runway 3.
Ground to 5:	Please report when ready.
Ground from 5-A:	Visibility of runway 1. Visibility of target is 1.
Ground to 75:	Go ahead.
Ground from 75-A:	Visibility of runway is zero. May be .1. Visibility of target .1.
Ground to 75:	Do you mean visibility is 1 or 0.1
Ground from 75:	0.1.
Ground to 10:	Report when ready.
Ground from 10-B:	Visibility of target and runway is zero. There is ah a slight layer of clouds coming between us and where the target should be.
Ground from 10-B:	Visibility of target is now 1. We have just come around looking into the moon. Visibility of target is 1 plus and visibility of runway zero.

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TEST A-5.

Ground to All Planes:	This is now Test A-5. 25 report when ready.
Ground from 25-4:	Visibility of target is 3. Visibility of runway 3.
Ground to 5:	Go ahead.
Ground from 5-4:	Visibility of target 3. Visibility of runway is 2.
Ground to 75:	Go ahead.
Ground to 75-4:	Visibility of target 1.7. Visibility of runway .5.
Ground to 10:	Go ahead.
Ground from 10-4:	Visibility of target is 1. Visibility of runway 1mile We are flying over the target now so as to observe it at an angle of 70° to the ground.
Ground to 15:	We are now at 10.5 Report your altitude, weather conditions and whether you can see the target.
Ground from 15:	We are now at 10.5. Visibility of target and runways zero.

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[redacted]. (No lights on target and all glare sources on and rotating.)

Ground to All Planes:	This is Test [redacted]. We will ask for a report on whether you can see the target. 25 report when ready.
Ground from [redacted]:	Visibility of target is 1. Visibility of runway 1.
Ground to [redacted]:	Report when ready. Go ahead.
Ground from 5-A:	Visibility of target is zero. Visibility of runway zero.
Ground to 75:	Go ahead.
Ground from 75-A:	Visibility of target zero. Visibility of runway zero.

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TEST RR-4.

Ground to All Planes: We did not need observers from higher altitudes on that test. This is test RR-4. All planes report when you can see the target.

Ground from 25-A: Visibility of target 2. Visibility of runway 1. I would like to retract that statement. From one point of observation that target is zero. I would like to qualify that schedule visibility as 1.

Ground to 5: Go ahead.

Ground from 5-A: Visibility of target zero. Visibility of runway .5.

Ground to 75: Go ahead.

Ground from 75-A: Visibility of target and runways is zero.

Ground to All Planes: We are preparing to turn out all glare sources. Please observe the ground and target immediately after the lights are turned off and see what effect there is, how much you can see the target and how quickly the target comes into view when the glare sources are turned off. Stand by for the glare sources to be turned off.

Ground to 25: Go ahead.

Ground from 25-A: Visibility very clear after lights were turned off. Visibility of runway 3. Visibility of target 3.

Ground to 5-A: It took approximately 7 to 8 seconds after the glare sources were out to distinguish the runway and target to a visibility of 3.

Ground to 75: Go ahead.

Ground from 75-A: Visibility of runway .4. Visibility of target .2 immediately after lights were turned out.

Ground to 10: Go ahead.

Ground from 10-B: Ground visibility of target and runway zero after lights were turned off.

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TEST HB-4 (Cont.)

Ground to 15: Please report. Go ahead.

Aboard from 15: We are now at 20,000 ft. At the point the glare sources were turn off a lower cloud layer obscured vision. Glare sources were distinctly visible through cloud layer. Visibility of target and runways zer.

Ground from 25-A: I could pick target out immediately after lights were turned out.

Ground from 10-A: There is now an extensive layer of very thin clouds from 20,000 feet below us extending west of the area. It is totally impossible to distinguish the area from the western portion. The layer seems to be moving in a northerly direction. We are now S. W. of the field and cannot locate the area at all.

Ground to 10: O. K.

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TEST HE-4

NOTE: Brightness of target due to moon light is still less than .002 but there is an increase in brightness when viewing towards the moon in comparison with viewing away from the moon.

Ground to All Planes:	This is Test HE-5. 25 report when ready.
Ground from 25-A:	Visibility of target 3. Visibility of runway 1.
Ground to 5:	Go ahead.
Ground from 5-A:	Visibility of target 3. Visibility of runway 1.
Ground to 75:	Go ahead.
Ground from 75-A:	Visibility of runway zero. Visibility of target zero.
Ground to 10+	Visibility of target zero. Visibility of runway zero. There is a slight halo or glow effect due to a layer of haze below us. The layer of clouds as I mentioned before is steadily moving to the N. W. apparently and we can only make observation from the east side of the field.
Ground from 5A:	There is a layer of very thin clouds at about 6500 ft. and I think that is what is obstructing 10's visibility.
Ground to 5-A	Thank you. O. E.

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TEST E-6

Ground to All Planes:	This is Test E-6. 25 please report when ready.
Ground from 25-A:	The large target is 2. The small target is 1 and runway is 1.
Ground to 5:	Go ahead.
Ground from 5-A:	Visibility of target zero. Visibility of runway zero, at a 90° angle.
Ground to 75:	Go ahead.
Ground from 75-A:	Visibility of target and runway zero.

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TEST EE-7. (143 volt lights in 100 ft. square.)

Ground to All Planes:	This is Test E-7. 25 report when ready.
Ground to 25:	We did not get your report. Please come in.
Ground from 25-A:	Visibility of large target is 3. Visibility of runway 1.
Ground to 5:	Go ahead.
Ground from 5-A:	Visibility of large target 3. Visibility of runway 1.
Ground to 75:	Go ahead.
Ground from 75-A:	Visibility of target 2. Visibility of runway zero.
Ground to 10:	Go ahead.
Ground from 10-B:	Visibility of target 1. We are now going into clouds and are obstructed by visibility of when we were just north of the target and just previously to going into this cloud was about 2 or 3 miles. Visibility of runway zero. Some of the lights appear not to blink but to stay steady.
Ground to 15:	Please report.
Ground from 15:	I am now at 19,000 feet. There is an overcast between us and the target. We cannot see the target or the runway. Visibility is 2.
Ground to All Planes:	When lights are stationary do not observe unless we ask for a report.

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[redacted] BARRAGE TEST AT HYDE VALLEY AIRPORT, NOVEMBER 5, 1941.

Attention Light Operators at the First Stations Immediately Around Targets:

Change your glare sources to the other target. Pull out your plugs on the ones you have been using and switch to other target.

Glare sources on the inner circles are changed to flood lights, one double flood light and one for a frennel unit.

TEST 1-6.

Ground to All Planes: When you make this report we have some additional information we want on this test. Please compare the four lights sources nearest the target with each other. What effect do these four lights around the target have on each other and on the other light sources? We will ask for a report in a few minutes. Please note the four lights sources nearest the target and compare them with each other and the other light sources around the field. Stand by.

Ground to 25: Please report when ready.

Ground from 25: The lights near the target are not as bright as the other lights. I believe you have some kind of flag waving between the lights. The lights on the other side are much better. Visibility of target is 2. Visibility of taxi runway is 1.

Ground to 25: Do you notice any difference between the four lights around the target?

Ground from 25: There is a difference. Those around the target are not flashing as brightly as those on the outside. The flicker is much faster and not as effective.

Ground to 25: There are 3 different types of lights immediately around the target. We would like your comparison between these sources if you can distinguish any difference.

Ground from 25: The light at the right side of the target is brightest. The light on the east is not so bright. The light on the north end is weakest. The south and west lights are the strongest.

Ground to 25: Ok K. What observer, A or B.

Ground from 25: Observer A. B is not here tonight.

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NOTE: Under TEst I-6 conditions the glare sources east of the target was the fresnel unit. The one west of the target was the double flood and the ones to the north and south were the single floods.

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TEST I-6 (cont.)

Ground to 5:	When you report please compare the lights around the target with each other and with the lights on the field. Go ahead.
Ground from 5-A:	The light that is north and easterly or the east light is the least bright. Although it seems to appear from here to be a little lower than the others the light north of the target is brightest. The lights on the south and west are about equally bright.
Ground to 5:	What is the visibility of the target? Go ahead.
Ground from 5:	Visibility of target is 1.
Ground to 5:	O. K.
Ground to 75:	Go ahead.
Ground from 75-A:	Visibility of targets and runways is zero. However, one light appears to be much lower than the other 3 lights with the N. W. and S. E. glowing more than the S. W. lights. The S. W. light however appears to be a little brighter. The rest of the lights seem to be about the same.
Ground to 75:	O. K.
Ground to 10:	Go ahead.
Ground from 10-A:	It is almost impossible to make observations since there is an overcast below us a couple of thousand feet. Is the target located in a diamond shaped pattern of lights? Go ahead.
Ground to 10:	Approximately a diamond shape. Go ahead.
Ground from 10-A:	If you will stand by for a few minutes I may be able to give you an observation but we are S. W. of the field right now and cannot see the area at all. However when we get around toward the east I may be able to give you a report.
Ground to 10-A:	We will come back.
Ground to 15:	Go ahead.
Ground from 15:	I am now at 18.5 and there is overcast below me practically solid. I can see the flashing of the lights which attract the eye to that point under over the overcast. I have seen no planes silhouetted against the overcast below me.
Ground to 15:	O. K.

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Ground to 10: Do you have a report? Go ahead.

Ground from 10-A: We are somewhere N. E. of the target. I cannot see pick it up yet. Alexandria is coming into sight directly below. We are approaching the edge of the cloudbank below us.

Ground to 10-A: O. K.

(The following statement was made after the lights were set for Test E-6.)

Ground to 10-A: Go ahead.

Ground from 10-A: I am not exactly sure where the target is in relation to the lights but it appears to me that the lights on the east and west sides of the target are the dimmest. The light at the south end appears to be the strongest and the light at the north end is slightly dimmer.

Ground to 10-A: O. K. Stand by.

[redacted]-E-6.

Ground to All Planes: This is Test E-6. 25 report when ready.

Ground from 25-A: Visibility of target 1. Visibility of runway 1.

Ground to 25-A: O. K.

Ground to 5: Go ahead.

Ground from 5-A: Visibility of target is zero. Visibility of runway is .5. Go ahead.

Ground to 5-A: O. K.

Ground to 75: Go ahead.

Ground from 75-A: Visibility of target and runway is zero.

Ground to 75-A: O. K.

NOTE: At no time did the brightness of the target due to the moon reach a measurable value. The brightness meter reads only to a minimum of approximately .002.

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TEST E-7.

Ground to 25: Go ahead when ready with your report. This is E-7 repeated.

Ground from 25-A: Visibility of target is 3. Visibility of runway 1.

Ground to 25: O. K.

Ground to 5: Go ahead.

Ground from 5-B: Visibility of target 3. Visibility of runway 1.

Ground to 5: O. K.

Ground to 75: Go ahead.

Ground from 75-A: Visibility of target is 2.2. Visibility of runway is zero.

Ground to 75: O. K.

Ground from to 10: Go ahead.

Ground from 10-B: We can only see an occasional light through the clouds but if you will stand by I think we can make a report. We are coming out of the cloud. Target is 2. Visibility of runway is zero, maybe 1. This is the best I have been able to see them all night. We are flying over the river looking down at an angle of 45°. Visibility of target is now best we have seen all night.

Ground to All Planes: We are now pointed all of the light sources in the direction of the moon. Please circle the field one and some directly across the field from the moon & into the light source away from the moon. We will ask for observations when you have circled the field coming directly away from the moon.

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TEST 5-7. (All Glare Sources pointed toward the moon.)

Ground to 25: Please report when ready.

Ground from 25: What do you want us to report?

Ground to 25: When you came over the field what was the visibility rating of the target?

Ground from 25: The target visibility rating was 3; the runway was 1.

Ground to 5: If you have made your run directly across the target report visibility of the target.

Ground from 5: Visibility of target when directly over field was 3. Visibility of runway was .5.

Ground to 75: Go ahead.

Ground from 75-A: Visibility of runway is zero. Visibility of target on side opposite moon is 2. Flying across the field visibility of target was 0.7. Observer B may have a better report over the runway.

Ground to 75-B: Do you have a report on the target away from the moon?

Ground from 75-B: No additional report. Flying over the target away from the moon visibility was about 1.

Ground to 10: Could you make the observation we asked for?

Ground from 10-B: We have just flown over the target looking down directly from the tow. The visibility of the target was zero as we approached the target until we got directly over it when the visibility became 3. Visibility of runways was about 1.

Ground to 15: Do you have anything more to report. Go ahead.

Ground from 15: I have not made a complete circle of the field yet but I do notice that the glare sources are much less conspicuous above the overcast than stationary them when they were blinking. I have now made a circle of the field and have nothing more to add. I am now at 16.5.

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TEST 19-E.

Ground to All Planes: This test is a vehicle test. We now have vehicles moving on the runway. Can you see any vehicles or vehicle lights moving on the runway? Circle the field once and then report. 25 report when ready.

Ground from 25-4: I see 3 vehicles. Another one just turning its lights on. I now see four vehicles.

Ground to 25: Continue your observation and I will ask for another report. Stand by.

Ground to 5: Can you see any vehicles or vehicle lights on the runway? Go ahead.

Ground from 5-8: Vehicle lights now going in opposite direction on the E. W. and S. W. runway.

Ground to 5: How many vehicles please?

Ground from 5: 1 going in each direction.

Ground to 75: Can you see any vehicles or vehicle lights on the runway?

Ground from 75-4: Yes I see no vehicles or vehicle lights on the runway.

Ground to 25: Do you see any more vehicles on the runway?

Ground from 25: Will you hold up my report for another moment?

Ground to 25: O. K. Go ahead.

Ground from 25: I am sure of 4 cars. We can see their lights when they make the turn. Two of these cars have brighter lights than the others and are visible at all times. However, others can be seen when they make their turns. I am sure of 4 cars and there may be six.

-6-

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[redacted] with MX glare.

(All vehicles turn out blackout lights; turn on low beam headlights. Turn on all glare lights and rotate.)

Ground to All Planes: Can you see any vehicles moving on the runway? If report them ready.

Ground from 25-A: There are six vehicles moving in opposite directions S. W. and N. E. Three moving each way.

Ground to 25: O. K.

Ground to 5: Can you see any vehicles on the runway?

Ground from 5-A: I see six vehicles. Lights are observed on N.E.--S.W. runway in two groups of three each moving in opposite directions.

Ground to 5-A: O. K.

Ground to 75: Go ahead. Can you see any vehicles on the runway?

Ground from 75-A: I can see six vehicles on the runway three moving north, three south.

Ground to 75: O. K.

Ground to 10: Can you see any vehicles on the runway?

Ground from 10-A: I can see six vehicles quite plainly. Three are now moving in a northerly direction. The south other three are just about to make a U-turn at the south end of the runway. As they make a U-turn I can see the flash of their headlights quite plainly.

Ground to 10: O. K.

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[redacted] with [redacted] flares.

Ground to All Planes: Can you see the vehicles when stationary? If so ahead.

Ground from 25-A: Yes, the vehicles are now stationary.

Ground to 5: Go ahead.

Ground from 5-A: The six vehicles are now stationary.

Ground to 75: Go ahead.

Ground from 75-A: I can see the six stationary vehicles.

Ground to 10: Go ahead.

Ground from 10-A: I can see six stationary vehicles with their lights on.

Ground to 10: O. K.

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TEST 17-X with ES Glare.

Ground to All Planes:	This test is to determine if you can see any vehicles on the runway -- any vehicle or vehicle lights. 25 report when ready.
Ground from 25-A:	The vehicles on the runway are stationary. I am only able to see two cars -- two vehicles are all that I can see.
Ground to 25:	Can you see the vehicle lights or the lights from glare sources on the vehicles and what position on the runway are the vehicles, North or South?
Ground from 25:	There is no glare from the glare lights. The position of the vehicles are on the end of the S. W. runway about 1/3 of the way up the runway. Those cars are stationary.
Ground to 5:	Go ahead.
Ground from 5:	No vehicles or vehicle lights on the runway.
Ground to 75:	Go ahead.
Ground from 75-A:	Cannot observe any vehicles or vehicle lights.
Ground to 75-A:	O. K.

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TEST 17-I with [illegible] Glare.

Ground to All Planes:	Can you see any vehicles moving on the runway? 25 report when ready.
Ground from 25-A:	I can see all six vehicles moving on the runway 3 each going in different directions. I would like to check that number again on the turn. Those at the south end of the runway about to make their turn now. There are now six vehicles moving on the runway. However, the lighting effect does make it hard to estimate and it is very annoying to the eye.
Ground to 5:	Go ahead.
Ground from 5-B:	No vehicles or vehicle lights observed.
Ground to 75:	Go ahead.
Ground from 75-A:	I cannot observe any vehicles or vehicle lights.
Ground to 15:	Do you have any further report to make? Go ahead.
Ground from 15:	We are now 20 miles south of Fort Belvoir and at 16,000 feet. The blinking lights are very visible from here.
Ground to 15:	O. K.

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TEST A-1. (Repeated)

Ground to All Planes:	This is Test A-1. 25 report when ready.
Ground from 25:	I see a lot of vehicles crossing the runway now.
Ground to 25:	The vehicles are returning to Fort Belvoir. We want target and runway visibility.
Ground from 25-A:	Target and runway visibility both 3.
Ground to 5:	Please report visibility of target and runway.
Ground from 5-B:	Visibility of target 2. Visibility of runway 3.
Ground to 75:	Go ahead.
Ground from 75-A:	Visibility of runway 1.5. Just a second. Want to get another crack at target. Visibility of target is zero.
Ground to 75-A:	O. K.
Ground to 75-B:	Do you have any instruments or telescope for observation tonight?
Ground from 75-B:	The one which shows up most was sent back to Rochester. Others do not aid a great deal.
Ground to 10:	Go ahead.
Ground from 10-B:	Visibility of target is zero. Visibility of runway zero. I just saw a light flashing where the target might be but cannot see the target now.
Ground to 10-B:	O. K.

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TEST A-4.

Ground to All Planes:	In the next test or two we will ask for reports only from those planes which we feel will be necessary. All planes stand by.
Ground to 75:	Can you see the target? Go ahead.
Ground from 75:	Visibility of target 0.4.
Ground to 75:	What observer please?
Ground from 75:	75-A.
Ground to 5:	Go ahead.
Ground from 5-B:	Visibility of target is 1.
Ground to 10:	Can you see the target? Go ahead.
Ground from 10-A:	No. Visibility of target is zero.
Ground to 5-A:	Can you see the target? Go ahead.
Ground from 5-B:	Target is obscured at present. I will give you a report later.
Ground from 20-A:	Plane 20 is trying to call the ground station.
Ground to 10-A:	Did you say "20"? Do you mean 15?
Ground from 10-A:	15-A tried to call five minutes ago.
Ground to 15:	Give us a long call. Go ahead.
Ground from 15:	Do you have the glare sources two- rotating now?
Ground to 15:	The glare sources are now off.
Ground from 15:	Are you going to turn them on any time soon?
Ground to 15:	Yes we are going to turn them on in about 5 minutes.
Ground from 15:	O. K. I will stand by if the oxygen holds out to make another test on the lights from over the overcast.
Ground to 5:	We would now like to have a report on target visibility from 5-A. Go ahead 5-A.
Ground from 5-A:	Target visibility 1-1/2. Runway visibility 1-1/2.
Ground to 5-A:	O. K.

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TEST A-5.

Ground to All Planes:	This is Test A-5. 25 report when ready.
Ground from 25-A:	Visibility of target is 3. Visibility of runway is 3.
Ground to 5:	Report when ready. Go ahead.
Ground from 5:	Target is obscured by cloud. I will give you a report when target is visible.
Ground to 75:	Go ahead.
Ground from 75:	There are clouds between target and plane.
Ground to 10-A:	Can you report?
Ground from 10-A:	I can now give you a report on the target. Visibility of target between 1 and 2.
Ground to 75:	Are you ready to report?
Ground from [redacted]:	Visibility of target is 2.5. Visibility of runway is 2.
Ground to 5:	Are you ready to report?
Ground from 5-B:	Visibility of target is 3.
Ground to 5:	O. K.

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TEST No1.

Ground to All Planes:	This is Test S-1. Can you see the target? If so report when ready.
Ground from S-4:	Visibility of target is 2. Visibility of runway 2.
Ground to 5:	Go ahead.
Ground from 5-S:	Visibility of target .5. Visibility of runway 1.
Ground to 75:	Go ahead.
Ground from 75-4:	Visibility of target zero. Visibility of runway 0.2.
Ground to 10:	Go ahead.
Ground from 10-S:	Visibility of runway zero. Visibility of runway zero.
Ground to 15:	The glare sources are now on and rotating. Do you have a report to make? Go ahead please.
Ground from 15-4:	We are now at 16,000 feet about 5 miles east of Fort Belvoir. 5 miles north of Washington. Flying through the cloud openings the glare sources show up very clearly. We are now going back to Bolling for lack of oxygen.
Ground to 15:	O. K.

NOTE: Glare source 4-3 was turned on in place of G-2. G-2 apparently not operating.

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TEST B-4.

Ground to All Planes:	This is test B-4. 25 report visibility of target when ready.
Ground from 25-A:	Visibility of target is 3. Visibility of runway 2.
Ground to 5:	Go ahead.
Ground from 5-B:	Visibility of target zero. Visibility of runway is 1.
Ground to 75:	Go ahead.
Ground from 75-A:	Visibility of target is zero. Visibility of runway zero.
Ground to 10:	Go ahead.
Ground from 10-A:	Visibility of target zero. Visibility of runway zero.

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TEST B-5.

Ground to All Planes:	This is Test B-5. 25 report target visibility when ready.
Ground from 25-A:	Visibility of target is 3; very clear. Visibility of runway is 2.
Ground to 5:	Go ahead.
Ground from 5-B:	Visibility of target is 2.
Ground to 75:	Go ahead.
Ground from 10:	Some plane came very close to us between 9000 and 10,000 feet.
Ground from 75-A:	Visibility of target 1.8. Visibility of runway zero.
Ground to 10:	Report visibility of target. Go ahead.
Ground from 10-A:	Visibility of target 2 plus. Visibility of runway is 1.
Ground to All Planes:	The tests for tonight are now over. This will be all the tests for tonight.

(Tests ended at 9:27 p. m.)

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ATTENDANCE AT ILLUMINATION CAMOUFLAGE CONFERENCE, OSR, 1 P.M., NOVEMBER 4, 1941.

Name	Grade	Organization
Samuel G. Hibben		Westinghouse Company
Sylvester L. Guth	Capt., M.I.	Engineer Board
Robert S. Holmes	1st Lt., Ord.	Engineer Board
Ignatius Sargent	1st Lt., AC	2nd Bomb. Gp.
Frederick F. Wuesho	2nd Lt., AC	Langley Field
Theodore R. Svanson	1st Lt., AC	90th Bomb., Langley Field
Fred M. Ley	Capt., AC	2nd Bomb. Gp.
F. B. Jacques	1st Lt., AC	20 Bomb. Sq.
Bennie L. Lamberty	2nd Lt., AC	90th Bomb., Langley Field
H. L. Johnson	Lt., USN	Navy Dept.
W. J. Broadmill	2nd Lt., AC	90th Bomb., Langley Field
John W. Hodgdon	Lt. Comdr., USN	Navy Dept.
Stanley McCandless	Civilian Specialist	Camouflage Section
Charles H. Van Bouren	2nd Lt., AC	Langley Field
H. M. Cornell	1st Lt.	Signal Corps
Warren S. Brevett	Capt., C.E.	Engineer Board
Frederick B. Vincent, Jr.	1st Lt., C.E.	Engineer Board
Wm. Harrison		General Electric Co., Cleveland
Charles Fitter, Jr.		NDRC
H. E. Delonge	Capt., C.E.	Engineer Board

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ATTENDANCE AT ILLUMINATION CAMOUFLAGE CONFERENCE, OCE, 1 P.M., NOVEMBER 3, 1941.

Name	Grade	Organization
Robert S. Holmes	1st Lt., Ord.	Engineer Board
Ignatius Sargent	1st Lt., AC	2nd Bomb. Gp.
Fred Key	Capt., AC	" " "
Fred F. Wesche	2nd Lt., AC	" " "
P. D. Jacques	1st Lt., AC	20 Bomb. Sq.
T. B. Swanson	1st Lt., AC	96th Bomb., Langley Field
W. J. Broadwell	2nd Lt., AC	" " " "
B. L. Lombardy	2nd Lt., AC	" " " "
R. L. Johnson	Lt., USN	Navy Dept., Bur. of Aeron.
H. D. Hauf	Lt.(CEC) USNR	Navy Dept., Bur. Yds & Docks
Samuel S. Walker	Lt. Comdr.	U.S.N.R.
H. M. Cornell	1st Lt.	Signal Corps
F. B. Vincent, Jr.	1st Lt., C.E.	Engineer Board
Charles F. Fitter, Jr.		[illegible]
M. E. DeLonge	Capt., AC	Engineer Board
Sylvester E. Guth	Capt., M.I.	Engineer Board

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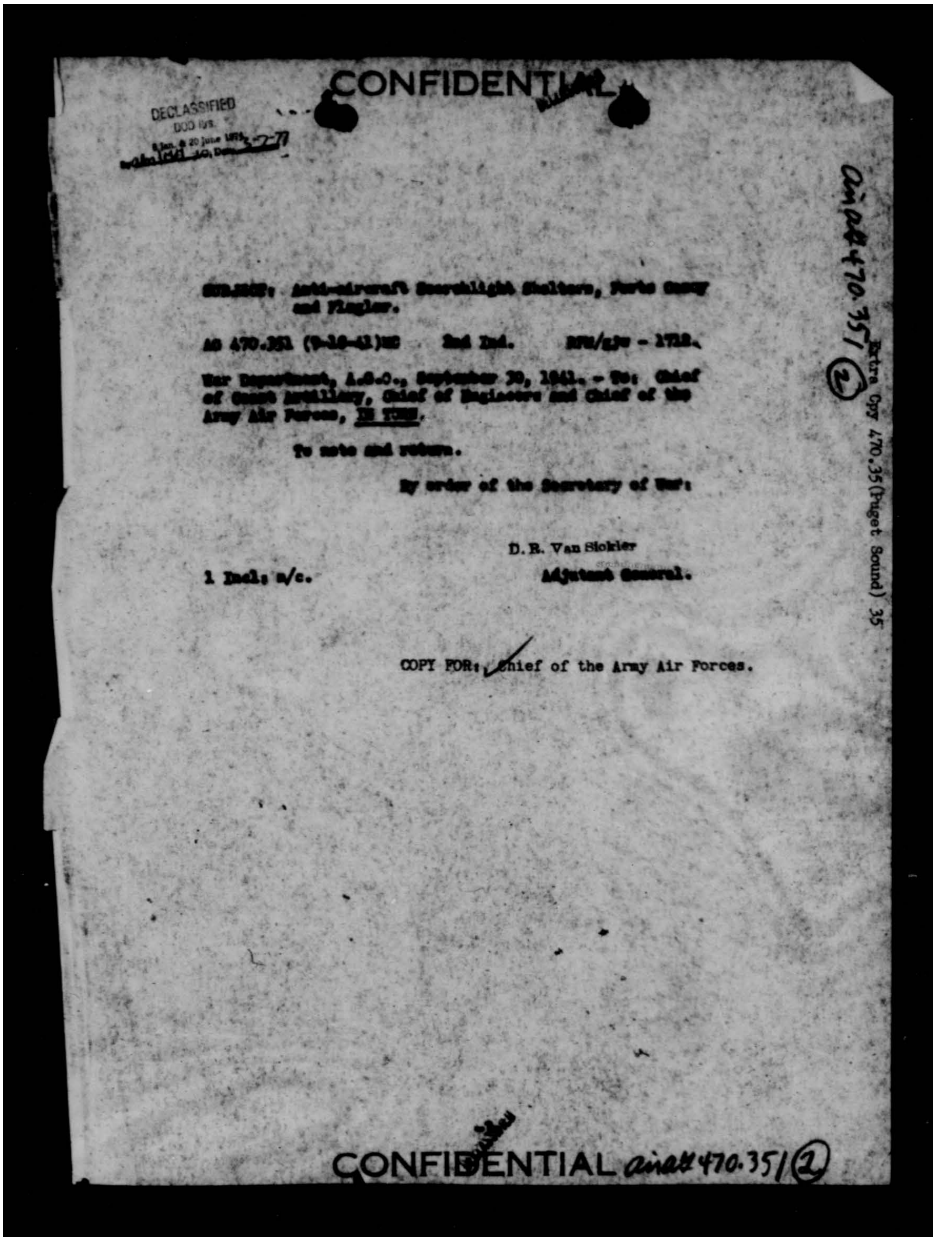

CONFIDENTIAL

DECLASSIFIED
DOD 1/3
8 Jan. & 20 June 1975
By [illegible] Date 5-7-77

ainA# 470.351 (2)

Extra Cpy 470.35 (Puget Sound) 35

SUBJECT: Anti-aircraft Searchlight Shelters, Forts Casey and Flagler.

AG 470.351 (9-16-41)MC 2nd Ind. RPM/gjw - 1712.

War Department, A.G.O., September 30, 1941. - To: Chief of Coast Artillery, Chief of Engineers and Chief of the Army Air Forces, IN TURN.

To note and return.

By order of the Secretary of War:

D. R. Van Siekler
Adjutant General.

1 Incl: a/c.

COPY FOR: Chief of the Army Air Forces.

CONFIDENTIAL ainA# 470.351 (2)

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DECLASSIFIED
DOD DIR
8 Jan. & 20 Nov. 1972
By [illegible] Date 3-7-77

IMMEDIATE ACTION

SUBJECT: Anti-aircraft Searchlight Shelters, Forts Casey and Flagler.

AG 470.351 (7-7-41)MS-D 11th Ind. LFL/vcd-1712.

War Department, A.G.O., September 18, 1941. - To: Commanding General, Ninth Corps Area.

It is desired that the request contained in basic communication be resubmitted in view of the fact that permanent searchlight shelter has been provided at Fort Worden, to include plans and cost estimates based on the following considerations:

a. Minimum shelter for the actual number of searchlights, both anti-aircraft and portable seacoast, to be maintained at each fort.

b. Temporary construction of minimum cost, preferably frame construction with corrugated steel roofs and sides and dirt or cinder floors.

By order of the Secretary of War:

CARL ROBINSON

3 Incls. n/c Adjutant General.

COPIES TO:
The Quartermaster General,
as Incl. to ltr. 9-18-41.
Chief of Coast Artillery, ref.
his 6th Ind, 8-11-41, OCCA
633.5/25-E, w/cys. 8th, 9th, 10th Inds.
Chief of Engineers, ref. his 7th Ind.
8-19-41, C of E 470.35(Puget Sound)33
w/cys. 8th, 9th, 10th Inds.
Chief of the Army Air Forces, ref. his
10th Ind. 9-4-41 to TAG.

470.351 (1)

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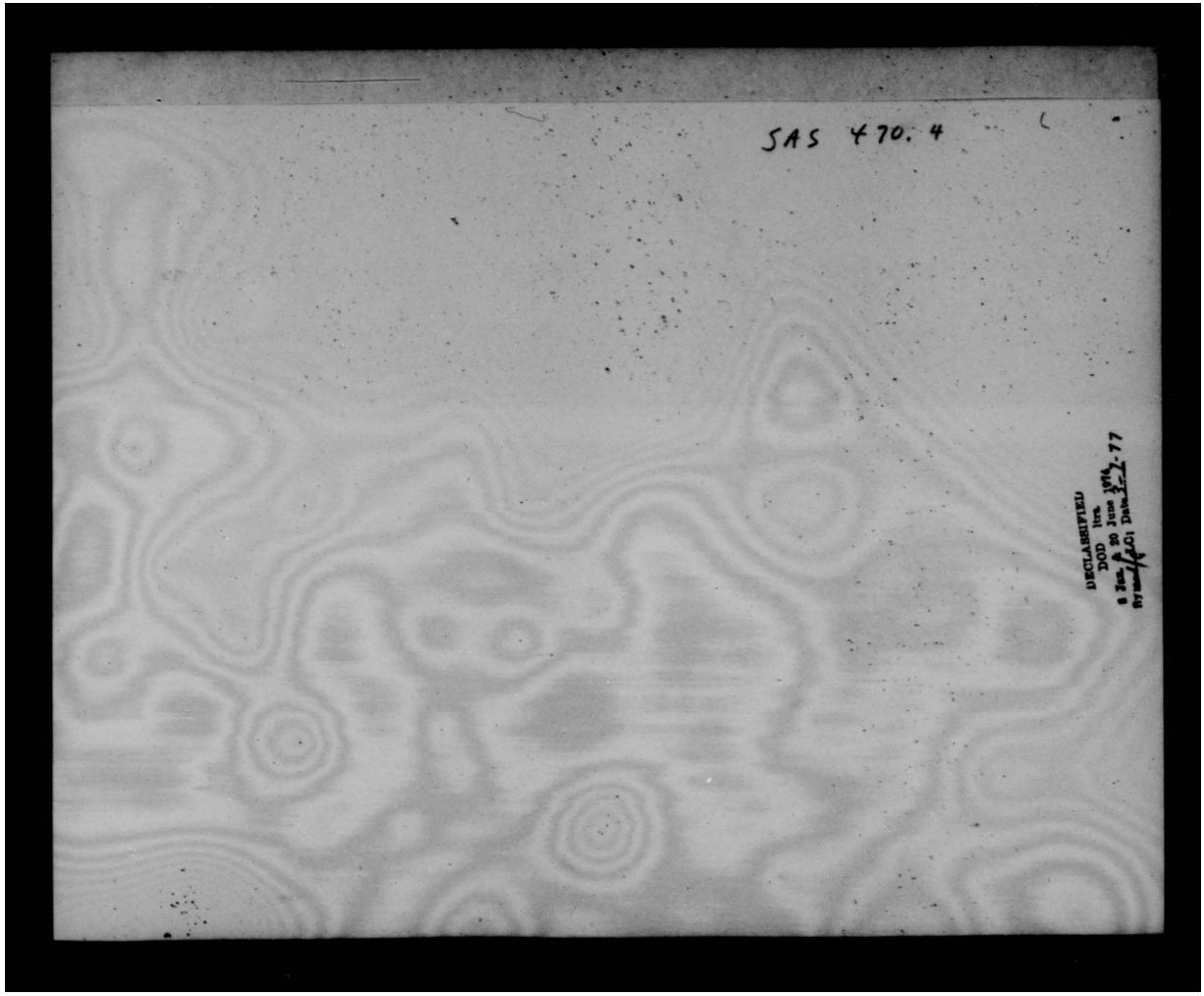

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DECLASSIFIED
DOD Ltr.
8 Jan. & 20 June 1974
By [illegible] LC, Date 3-7-77

Jan. 8, 1942.

Confirmation of Approval to Release Maxson Mechanical Turret Control Unit.

~~I Sec. G/S~~

AAF/A-4
JYY/mmb

I. The Chief of the Army Air Forces concurs.

For the Chief of the Air Staff;

Incl:
Ltr to C/AC, 12/14 frm.
G-2 w/1 Ind. and 1 Incl:
Copy ltr to Air Marshal
Hill frm Capt. Heard U.S.N.
12/1/41

THOMAS J. HANLEY, Jr.,
Colonel, Air Corps,
Assistant Chief of the Air Staff, A-4.

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	

Dispatched
JAN 10 1942
AAG

AAF-39

Air ab 470.4 (1)

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DECLASSIFIED
DOD Dir.
8 Jan. & 20 June 1974
By: [illegible] LC, Date: [illegible]

WAR DEPARTMENT
WAR DEPARTMENT GENERAL STAFF
Military Intelligence Div. G-2
Washington

December 15, 1941

MEMORANDUM FOR THE CHIEF OF AIR CORPS:

Subject: Confirmation of Approval to Release Maxson Mechanical Turret Control Unit.

1. Request confirmation of approval by Chief of Air Corps for the British Air Commission to negotiate contract for one Maxson mechanical turret control unit, and to release same to the United Kingdom. Such statement of approval will be necessary for us to include in routine directive to the Adjutant General.

2. Information is likewise requested as to name and address of unit manufacturer.

For the Acting A. C. of S., G-2:

B. B. McMAHON
Lieut. Col., General Staff Corps,
Coordinating Section.

Encl: 1

~~U. S. CONFIDENTIAL~~

~~BRITISH SECRET~~

DECLASSIFIED
JCS Memo
2 Jan. 1975
By: [illegible], LC; Date [illegible]

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DECLASSIFIED
DOD Dis.
8 Jan. & 20 June 1974
By HWiHM NO. Date 5-7-77

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Subject: Confirmation of Approval to Release Maxson Mechanical Turret Control Unit. (4-B-1)

1st Ind.

War Department, Office, Chief of the Air Corps, Washington, D. C., January 1, 1942. To: The Chief of Staff

1. The Chief of the Air Corps has no objection, on the basis of military secrecy, to the British Air Commission negotiating a contract for one (1) Maxson mechanical turret control unit and to the release of such equipment to the United Kingdom, with the understanding that the British Government will include provisions suitable to the manufacturer for the protection of any U. S. patents involved.

2. This unit is manufactured by the W. L. Maxson Corporation, 460 West 34th Street, New York City.

For the Chief of the Air Corps

F. I. ORDWAY, JR.,
Major, Air Corps,
Asst. Exec., Mat. Div.

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Cm-221

Air AG 470.4 (1)
OCS/21183-635

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DOD Dir.
6 Jan. & 20 June 1974
By: HUDMM I/O Date 3-7-77

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Office of the Chief of Naval Operations

Op-16-F-x/jm.
(SC)A8-3/EF13
A8-3/EF/13
Serial No. 01438316
CONFIDENTIAL

December 1, 1941

Dear Air Marshal Hill:

Reference is made to your letter of November 8 reference S17M-5-4, S1920/ASF, addressed to the Chief of the Bureau of Aeronautics, relative to obtaining one Maxson mechanical turret control unit.

In accordance with Aeronautical Board Case No. 34, this matter has been coordinated with the Army Air Corps and it is the opinion of both the Chief of the Bureau of Aeronautics and the Chief of the Air Corps that there is no objection, on the basis of military secrecy, to the British Air Commission negotiating contract for one Maxson mechanical turret control unit, and to the release of such equipment to the United Kingdom, with the understanding that the British Government will include provisions suitable to the manufacturer for the protection of any United States patents involved.

Sincerely,

W. A. Heard,
Captain, U. S. Navy,

Air Marshal R. M. Hill
British Air Commission
Washington, D. C.

CC: Aero Board
War Dept. G-2

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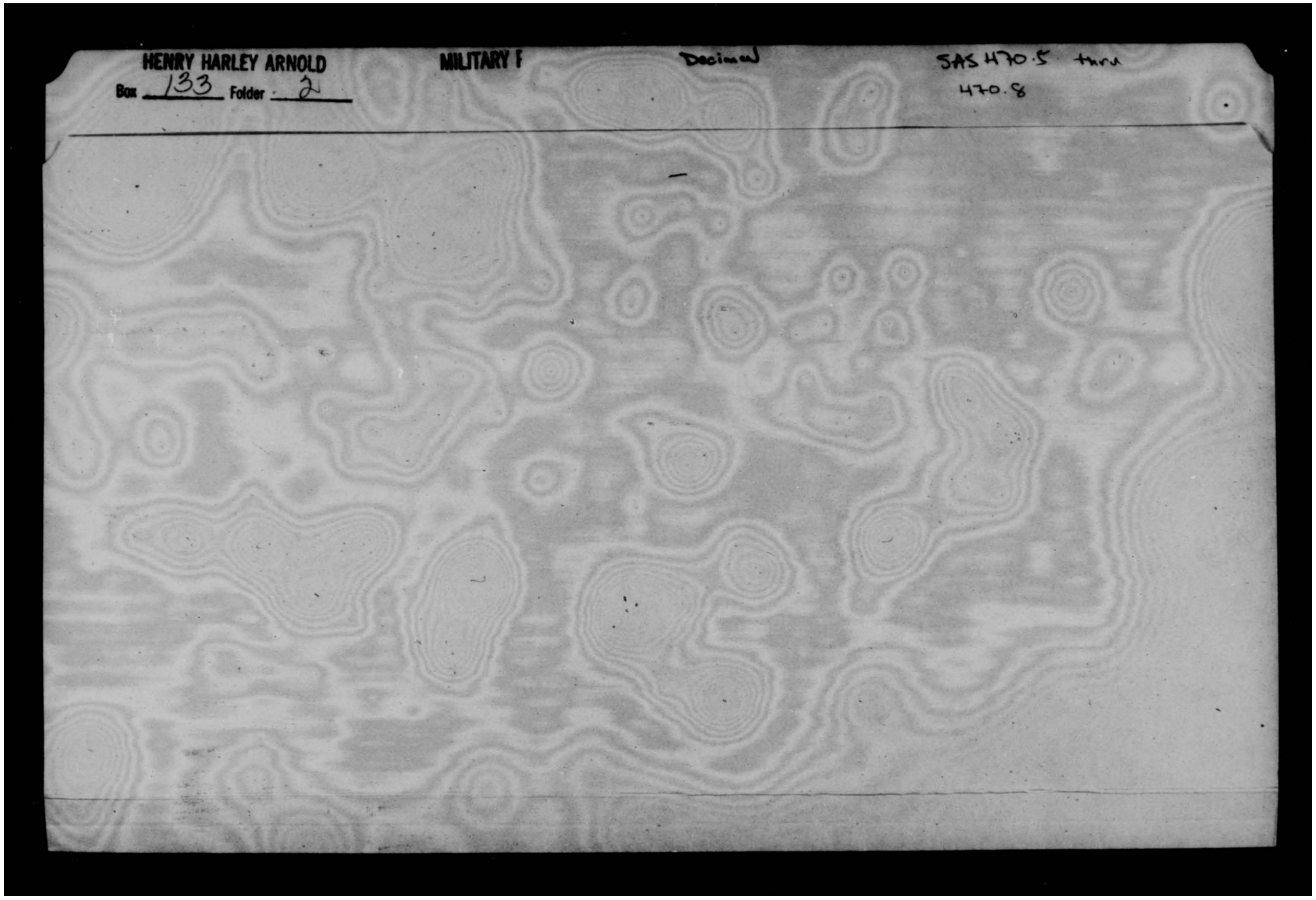

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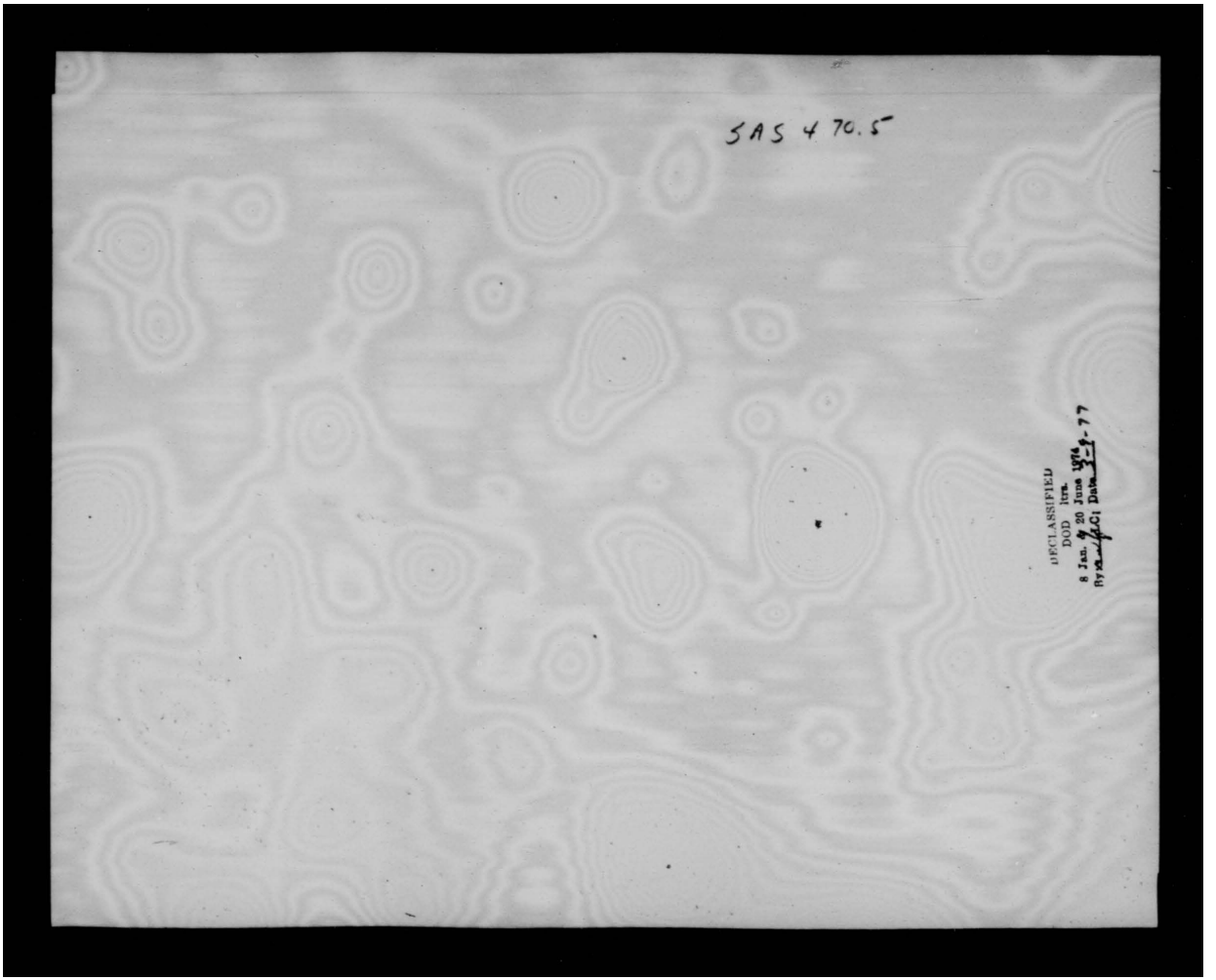

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DCD ltrs.
6 Jan. & 20 June 1974
By [illegible] Date 3-9-77

SECRET

Installation of eight 50 caliber fixed machine guns in the nose of the B-17 and the B-24.

Commanding General, Materiel Command. 1-22-43

Deputy Chief of the Air Staff. #1
TJH/cmc/6371

1. It is desired that study be started to determine the proper installation of eight 50 caliber fixed machine guns in the nose of the B-17 and the B-24. Bombsights may be removed for this purpose.

2. This is not a directive for installation but simply to prepare the necessary drawings and perform the experimental work necessary.

Dispatched
JAN 23 1943
AAG

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

air ab 470.5 (12)

File c. 1/24/43

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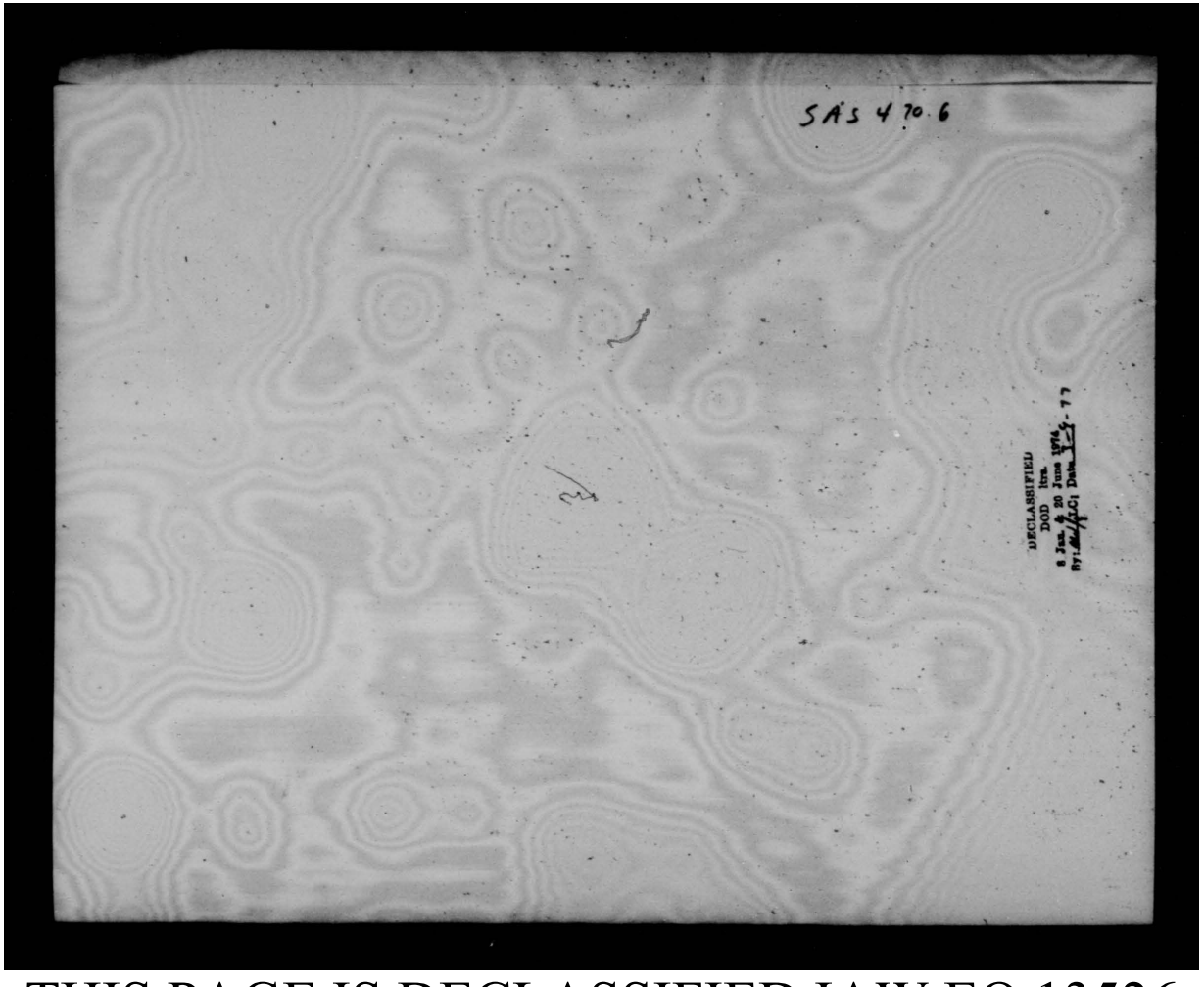

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Misc. - C.W.S. & Ordnance

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AFADS
HSV/gwd
Ext. 5265
Written 18 January 1944.

DECLASSIFIED
DOD Dir.
8 Jan. & 29 June 1974
By: McLean LC, Date: 3-9-77

DECLASSIFIED

Major General W. H. Porter,
Chief of the Chemical Warfare Service,
War Department,
Washington 25, D. C.

My dear Porter:

I am having our Air Chemical Officer, General Montgomery, confer with Air Plans Division on the whole chemical situation, as it affects the Army Air Forces. They are very carefully going into the problem of personnel, materiel and equipment.

The results of this study should be mutually beneficial, indicating the remaining tasks which the Army Air Forces and the Chemical Warfare Service must undertake in order to be prepared should it become necessary to employ war gasses against the Axis.

You may rest assured that as soon as the results of our examination are available we will contact your people in order that the loose ends may all be tied together, and that we may receive your further comments.

I appreciate very much your informative letter.

Sincerely,

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

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DECLASSIFIED
DOD ltrs.
8 Jan. & 20 June 1974
By HWHM LC, Date 3-9-77

7 January 1944

381 European Theaters

General H. H. Arnold
Commanding General, Army Air Forces
Room 3 E 1009 Pentagon Building
Washington, D.C.

My dear General Arnold:

Within the next few months operational plans in the European theaters are likely to produce conditions which make gas warfare more probable than has been the case heretofore.

The Germans are fully prepared, offensively and defensively, for large scale gas warfare operations. The occasion of a major invasion of the European continent would be the logical time for war gases to be employed against the Allies.

If the issue is not forced by the Germans it appears probable that it will be brought about in the Asiatic and Pacific Theaters due to one or more of the following factors:

The Japanese, having used war gases against the Chinese on several occasions and thereby having abrogated any claim to immunity from retaliation, now have transferred the initiative in the employment of gas warfare to the United Nations.

These incidents have caused the Chinese press to demand that President Roosevelt and Prime Minister Churchill implement their public statements in which they have promised prompt retaliation in kind and in full measure if war gases were used against any of the Allies.

Portions of the American press already have advocated the use of war gases against the Japanese and have justified their retaliatory employment by the numerous instances of the use of this weapon against the Chinese. (See Tab. "A".)

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SECRET

As a most effective means of shortening the war and saving the lives of thousands of United States soldiers, the American people may demand the use of war gas in the Japanese theaters of war.

With these ideas in mind, I prepared the attached statement on the Use of Gas in the Pacific Theaters of War, which I forwarded to General McNarney with the request that, after his review, it be brought to General Marshall's attention. General Handy replied substantially to the effect that there will be no change in U.S. policy with respect to the initiation of gas warfare at this time as the military disadvantages of initiating gas warfare in the Pacific in the near future (i.e., German retaliation and vulnerability of the civil populations of our allies) outweigh the advantages; but the United States must be prepared to conduct gas warfare on all active fronts in the event it is decided to retaliate for its use by our enemies.

This reply is in exact accord with my purpose in submitting the statement which was intended to show the capabilities of gas in the Pacific, and was in no sense a recommendation for initiating gas warfare at this time.

In view of the peculiar requirements of war in the Pacific which necessitate the attack of many small outposts which must first be reduced by air attack, I feel that you should be acquainted with my views.

Sincerely yours,

WILLIAM N. PORTER
Major General
Chief of the Chemical Warfare Service

Inclosures (2)
1-Gas Warfare in Pacific Theaters
2-Japanese use of War Gas

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DOD Dir.
8 Jan. & 30 June 1974
By [illegible] Date 3-9-77

Theater Plans for Chemical Warfare

Secretary of the Air Staff

AC/AS, Materiel, Maintenance and Distribution

4 JUL 1944

Col. Tisdale:mml:72345

Recommend that the attached memorandum for the Chief of Staff, be signed and forwarded.

1 Incl.
Memo for Ch/Staff,
subject as above.

(sgd)
O.P. Echols
Maj. Gen. U.S.A.
Asst C/AS
MM&D

SAS 470.6 (3)

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8 Nov. & 30 June 1978
By Auth DNA Ltr, Dtd 3-9-77
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By authority of the Chief, CWS.
Date..... Initials.....

ENCS for. 12 (Engs - Amer. C.W.) Supply Programs
of December 1943

MEMORANDUM TO: Brig. General E. Montgomery, Army Air Forces. (For Brig. General Wm. E. Hall), Brig. General A. E. Uhl and Captain J. A. Rochlenberg, Ordnance USNRS.

SUBJECT: Coordinated Anglo-American Chemical Warfare Procurement and Supply Program (Logistic Factors for the Dispersal of Gas by Aircraft).

1. References:

(a) Item 8, Minutes Meeting USCMC held 8 December 1943.

(b) Item 4, Minutes Meeting USCMC held 22 December 1943.

(c) USCMC 62, transmitted to the CG, AAF, through the CG, ASF.

2. The activities described in References 1 (a), (b) and (c) all relate to retaliatory action in the event that gas warfare starts. It is generally agreed that the primary reaction will be from the air. Reference (a) recognizes the necessity for the submission of suitable logistic factors for the dispersal of gas by aircraft.

3. A unit under the direction of the Chief, Chemical Warfare Service, is now engaged in establishing and compiling munition requirements for the performance of specific tasks with chemical agents.

4. The Army Air Forces and U. S. Navy have a special interest in the tactics and logistics of gas spray attack by formations of aircraft. Accurate data may be obtained through actual tests by an adequate number of Army and Navy aircraft.

5. Colonel Reaves, USAS (for USN), Major Somerby, CWS, and Major Smith, AAF, have been requested to submit a suitable project for the Army Air Forces and the U. S. Navy, on or before 7 January 1944.

For the Chairman, United States Chemical Warfare Committee.

J. K. JAMES
Lt. Colonel, CWS
Secretary, USCMC

Col. Reaves
Maj. Somerby
Maj. Smith

Filed
JK
1/24/44

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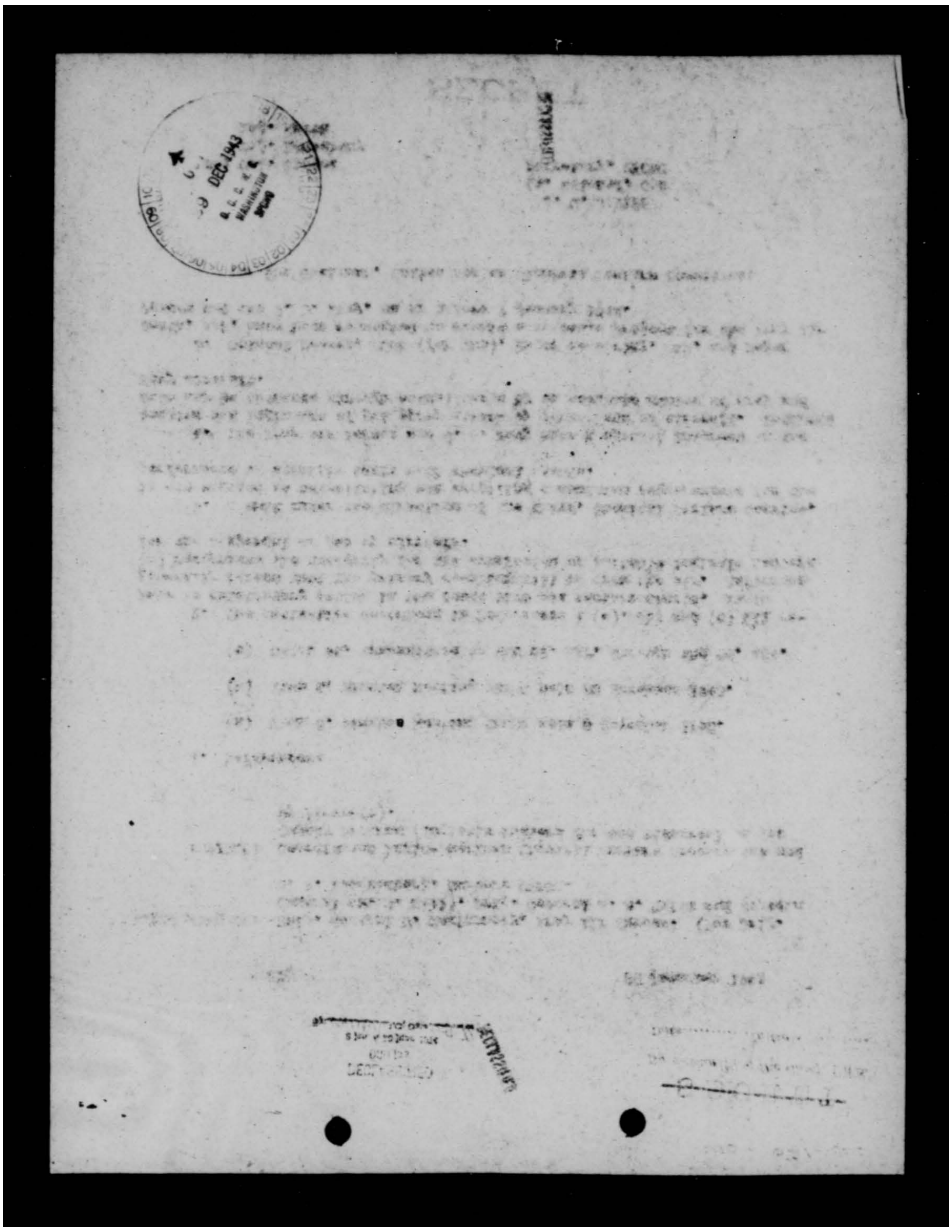

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RECEIPT FOR CORRESPONDENCE

Brig. Gen. E. Montgomery
Army Air Forces
(Office)

File:

SPC [illegible]

(Date)

SUBJECT: coo an an ch wa pr an su pr

To: Chief of the Chemical Warfare Service, War Department, Washington, D. C.

1. Receipt is acknowledged of classified correspondence on the above subject as follows:

Ltr dtd Dec. 28, 1943
re coo an an ch wa pr an su pr

cc: [illegible] Leonard Smith, AAF
Rm. 3E 1023 Pentagon

Col. L. A. Dosses,
U.S. Marine Corps,
Rm 2610 Navy Dept. Constitution Ave.

Capt. J.A. Snackenberg
BuOrd. Rm 0312 Navy Dept.

Brig. Gen. Wm. Hall, AAF
Rm 3E [illegible], Pentagon Bldg.

470.6 (2)

(Signature)

NOTE: Please execute promptly and return.

(Rank)

Dec. 30, 1943

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DEC... D
DOD Dir.
8 Jan. & 20 June 1974
By Hall Hrt. AO, Date 3-4-77

DECLASSIFIED

AFADS
HSV/gwd
Ext. 5265
Written 18 January 1944.

20 JAN 1944

Major General W. N. Porter,
Chief of the Chemical Warfare Service,
War Department,
Washington 25, D. C.

My dear Porter:

I am having our Air Chemical Officer, General Montgomery, confer with Air Plans Division on the whole chemical situation, as it affects the Army Air Forces. They are very carefully going into the problem of personnel, materiel and equipment.

The results of this study should be mutually beneficial, indicating the remaining tasks which the Army Air Forces and the Chemical Warfare Service must undertake in order to be prepared should it become necessary to employ war gasses against the Axis.

You may rest assured that as soon as the results of our examination are available we will contact your people in order that the loose ends may all be tied together, and that we may receive your further comments.

I appreciate very much your informative letter.

Sincerely,

Sgd. H. H. Arnold

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

Dispatched
20 JAN 1944
AAG

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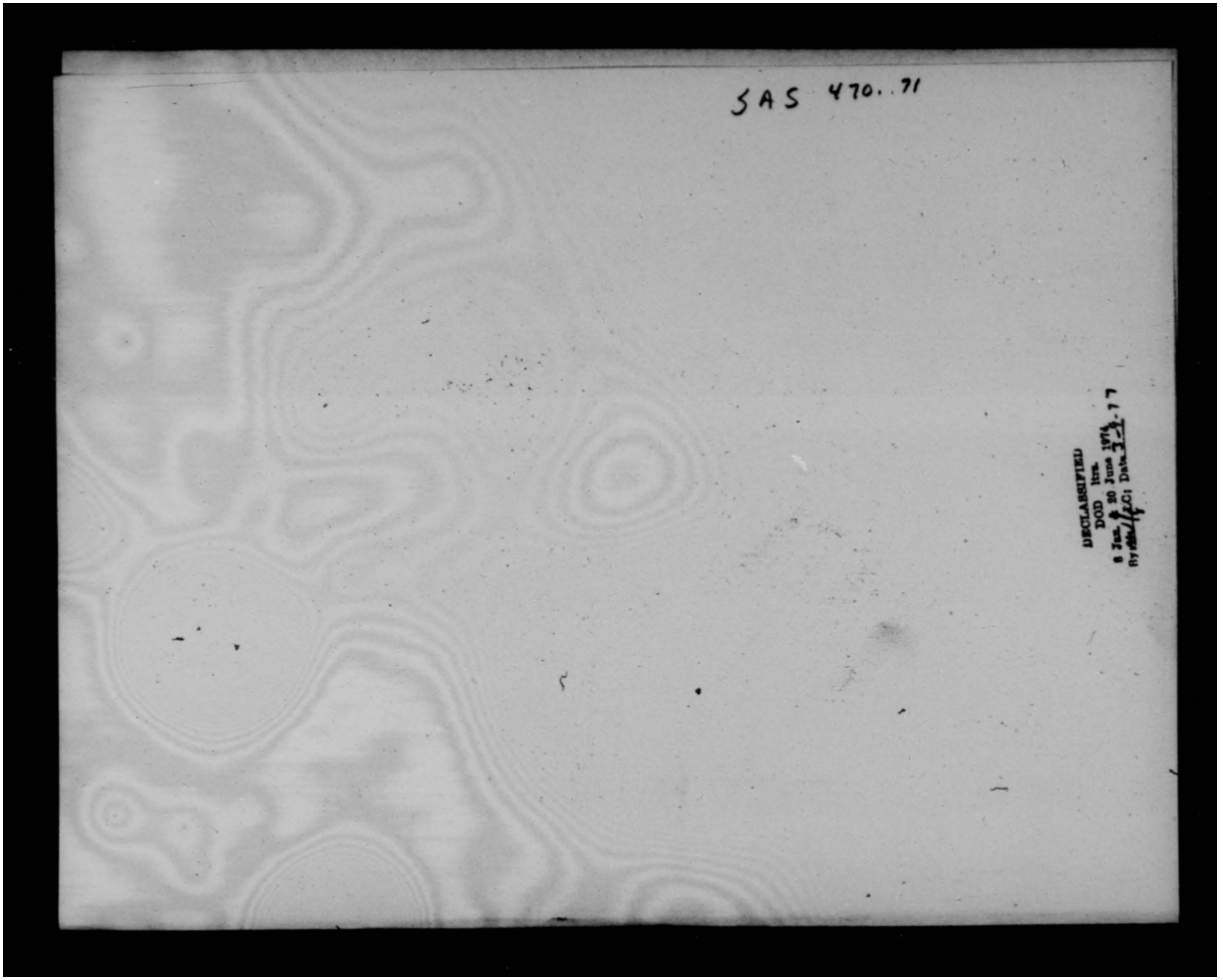

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DOD Ltrs.
8 Jan. & 20 June 1974
By [illegible] Date 3-4-77

SECRET

30 Sep 44

LS/ddb/71076
SECRET
By Authority of
The Commanding General
Army Air Forces
Date Initials

Copy for office of signature

SUBJECT: Airborne or Remote Control Flame Munitions

TO: Brigadier General Walter B. Pyron, Army-Navy Petroleum Board, Munitions Building, Washington, D. C.

1. With reference to your memorandum dated 12 Sep 44 on the above subject, it is desired to express our appreciation for the suggestion received concerning development of a butane-filled munition. This suggestion has been carefully studied and the opinion reached that the proposed weapon has sufficient merit to warrant its being placed on a development program. However, based on preliminary dropping tests conducted at Edgewood Arsenal and certain basic requirements that every airplane-carried munition must meet before it is acceptable for use by the Army Air Forces, it is considered that the use of butane in the form of an improvised shipping container bomb will not fulfill the requirements for economic loading and aimability. This means that a special bomb or loading arrangement must be devised.

2. Another difficulty in the employment of the proposed munition which will require extensive experimentation will be the determination of the optimum delay for the igniter. For example, if the bomb is used under conditions when the air is turbulent, an explosive mixture will be reached more quickly than under conditions when the air is stable. Furthermore, no igniter is now available incorporating the 1 to 2 minute delay, and additional investigation will be required in the development of this item. The possibility also exists that when used in fairly strong winds the gas cloud may be carried beyond the effective range of the igniter.

3. In view of the foregoing, it is doubtful that even with a high priority this project will be capable of completion and that procurement and distribution to the using theaters can be accomplished in a reasonable period of time. Because of the urgency of the demand from the theaters for fire bombs which are presently being used with satisfactory results against targets of the type contemplated for the butane bomb, it is believed that the butane bomb should be considered a long term project and actual development should be held in abeyance until personnel can be spared from other projects now being investigated under high priorities.

For the Commanding General, Army Air Forces:

Signed

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

Downgraded
3 OCT 1944
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SAS 470.71 (16)

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DOD Dir.
8 Jan. & 20 June 1958
By [illegible] Date 3-4-77

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Requirement for M33 Spray Tanks.

Asst. Chief of Air Staff, A-4 — 24 Feb. 43

Deputy Chief of the Air Staff — 3

MAL/mdg/5265

1. The Deputy Chief of the Air Staff approves the recommendation stated in Par. 2, preceding item.

2. You will take the necessary action to issue the procurement directive required.

MILLARD A. LIBBY,
Lieut. Colonel, G. S. C.

Incl. n/c

Air ao 470.71 (12)

Dispatched
FEB 24 1943
AAG

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Air ao 470.71 (12)

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DEC
8 Jan. & 20 June 1974
By [illegible] LC, Date 3-4-77
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RES-13 C452.11(Spray Tanks)
February 16, 1943

TO: Deputy Chief of the Air Staff

FROM: Base Services of the Air Staff

Comment No. 2
RES-13/JEM/ddh/72375

1. The Director of Military Requirements, in letter to the Commanding General, Services of Supply, subject: "Basis for Computation of Procurement Requirements of Army Air Force for Army Air Force - Ordnance and Army Air Force- Chemical Warfare Equipment", dated January 8, 1943, states that a reserve of 7500 M-33 airplane smoke tanks is deemed sufficient to satisfy present needs. The associated fittings and nozzles for the required number of M33 smoke tanks to be as follows:

a. Tanks for B-25 airplanes - - - - - - - - - - - - - - - - 1750 assemblies
b. Tanks for B-26 airplanes - - - - - - - - - - - - - - - - 4250 assemblies
c. Tanks for B-24 airplanes - - - - - - - - - - - - - - - - 1500 assemblies
d. Auxiliary bomb bay panels are required for the B-24 airplanes, one (1) set of four (4) per airplane.

2. It is recommended that a procurement directive be issued to the Chemical Warfare Service authorizing the procurement of the quantities of airplane smoke tanks, M33, nozzles, fittings and panels as cited in paragraph 1 above.

1 Incl n/c

L. P. WHITTEN
Brig. Gen., U.S.A.

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8 Jan. & 20 June 1974
By [illegible] Date 3-4-77

DECLASSIFIED

Requirement for M33 Spray Tanks.

Director of Base Services 15 Feb. 43

Deputy Chief of the Air Staff 1

MAL/mdg/5265

Recommendations reference the attached are desired.

MILLARD A. LIBBY,
Lieut. Colonel, G. S. C.

Att: Memo for CG, AAF
fm. Gen. Waitt, 1/16/43.

Dispatched
FEB 15 1943
AAG

air ab 470.71 (12)

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8 Jan. & 20 June 1974
By [illegible] Date 3-9-77

HEADQUARTERS ARMY AIR FORCES
ROUTING AND RECORD SHEET

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File No. _____

Note -- A line will be drawn across sheet after each comment.

Tally No. AAF _____

SUBJECT: Conference on High Altitude Spray at Dugway Proving Grounds, Utah.

NO.	FROM	TO	DATE	COMMENTS
4	AFROM G-5 mld	AFCAS	1942 6/25	1. Noted. 2. This Directorate will take the necessary action to make the required airplanes available when requests are made by the proving grounds. 1 Incl. n/c H.P. Brig.Gen.,USA, Dir., WO&M.

Hq. Army Air Forces
JUN 27 1942
AAG RECEIVED

File. RLO

File per above
Ai 6/30/42

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U-4071, AP. Rev.8/14/41

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Page No. - 2 -

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HEADQUARTERS ARMY AIR FORCES
ROUTING AND RECORD SHEET

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8 Jan. & 30 June 1974
Op. Ltr. 1/C, Date 3-9-77

File No. _____

Tally No. AAF _____

SECRET

SUBJECT: Conference on High Altitude Spray at Dugway Proving Grounds, Utah.

NO.	FROM	TO	DATE	COMMENTS
1	AFCAS	1. AFACT 2. AFADS	1942 6/17	To note. WJF W.J.F. Secy/ A.S. 1 Incl. Memo for CG AAF, fr Col.Epler, dated 6/12/42
2	AFACT	AFADS	6/18	JJO'S:vme 1. Noted. 2. Request that this communication be forwarded to the Director of War Organization and Movement for his information. The availability of airplanes, of the type mentioned, for temporary assignment is a function of his ~~Headquarters~~. directorate. Van H. S. V. C/AFACT 1 Incl. n/c
3.	AFADS	AFROM	6/20	1. Noted. Rbb M. F. S. Act'g C/A-4 1 Incl. n/c

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F-4071.AF Rev.8/16/41

Page No. _____

Air AG 470.71 (11)

TO MAIL & RECORD ROOM
Date 6-24-42
EXECUTIVE
ADMINISTRATIVE
AIR SERVICE COMMAND
B & RGC/hmh
CIVILIAN PERS.
COMMUNICATIONS
FERRY COMMAND
FISCAL
INSPECTION
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DOD Dir.
By Auth. of 20 June 1972 Sec. Def. Ltr. Dtd. 3-9-77

WAR DEPARTMENT
HEADQUARTERS OF THE ARMY AIR FORCES
WASHINGTON

SECRET
By Authority of
The Commanding General
Army Air Forces
AFHQ88
6/13/42
Date Initials

June 12, 1942

MEMORANDUM FOR THE COMMANDING GENERAL, ARMY AIR FORCES:

Subject: Conference on High Altitude Spray at Dugway Proving Grounds, Utah.

1. The undersigned attended a conference in the Office of the Chief, Chemical Warfare Service at 1:00 p.m., this date, pertaining to the Joint Army Air Forces-Chemical Warfare Service-Signal Corps High Altitude Chemical Spray Mission to be conducted at Dugway Proving Grounds. The following personnel were present:

Colonel W. C. Kabrich, C.W.S.
Colonel F. W. Gerhard, C.W.S.
Lt. Colonel J. R. Burns, C.W.S.
Lt. Colonel C. Otto, C.W.S.
Lt. Colonel O. C. Maies, S.C.
Lt. Colonel R. B. Epler, A.A.F.
Major N. Adams, C.W.S.
Captain Waldorf, S.C.
Captain E. Lewis, C.W.S.
Captain O. Chistophenson, C.W.S.
Captain W. R. Arford, S.C.
1st Lieut. J. H. Ritter, C.W.S.
2nd Lieut. Dice, S.C.
Mr. H. O. Huss, Engineer, C.W.S.
Mr. G. Lukes, Engineer, S.C.
Mr. D. Brenstien, Engineer, S.C.
Mr. R. Kingan, British Representative

2. The purpose of the meeting was to coordinate personnel and equipment necessary to conduct High Altitude Spray Tests.

3. Colonel J. R. Burns, Commanding Officer, Dugway Proving Grounds, will request that the B-25 airplane now stationed at Edgewood Arsenal for installation of the spray tank be sent to Dugway Proving Grounds. A pilot, co-pilot, bombardier, and maintenance crew will be requested to accompany this airplane for these tests. Two or three additional B-25s will be requested later when technique of spraying has been developed with one airplane.

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4. Colonel Burns stated that the Chemical Warfare Service would request one A-20A airplane to be assigned to Dugway Proving Grounds for bombing tests.

Hq. Army Air Forces
JUN 4 1942
AAG Received

ROBIN B. EPPER,
Lt. Colonel, A.A.F.,
Army Air Forces Detachment,
Edgewood Arsenal, Maryland.

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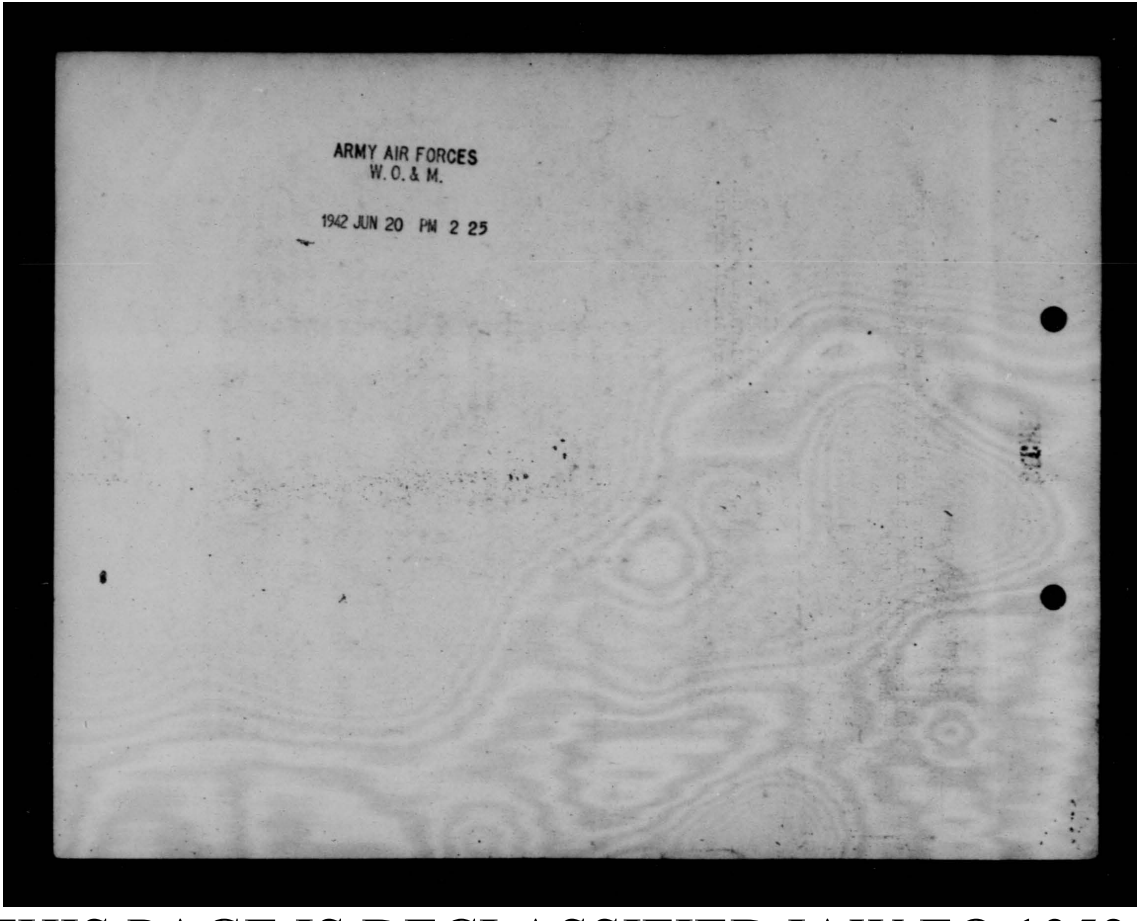

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DOD Hrs.
8 Jan. & 20 June 1974
By [illegible] LC, Date 3-9-77

WAR DEPARTMENT
HEADQUARTERS OF THE ARMY AIR FORCES
WASHINGTON

June 8, 1942

File
Capt. Hager

MEMORANDUM FOR Deputy Chief of Air Staff

Subject: Chemical Tank Situation, etc.

1. The only airplanes in the AAF which have chemical spray tanks already developed and available for use are the A-20, A-20B, and A-24 airplanes. There are only 26 chemical tanks for the A-24 airplanes; all of the A-24 and the 26 tanks therefor are on foreign stations. There are 2,225 tanks in the United States and 390 tanks in Hawaii for the A-20 and A-20B airplanes. As 4 tanks comprise a set, there are sufficient tanks in the United States for 556 airplanes and in Hawaii sufficient tanks for 97 airplanes.

2. 100-lb. Chemical Bombs: There are sufficient 100-lb. chemical bomb cases now available to meet practically any demand. The Ordnance Department is delivering to the Chemical Warfare Service today 15,000 cases for loading. The Operations Division, General Staff, has directed the loading and shipment of chemical bombs to New Caledonia and Hawaii. (Chemical bombs can be stored loaded for approximately 2 years without deterioration).

3. Tests conducted last Fall show that chemicals now can be sprayed from airplanes flying at medium altitudes (7,000 to 10,000 feet). Therefore, medium and heavy bombardment aircraft can be used for dropping chemicals from large tanks. Chemical Warfare Service is testing today and tomorrow the installation of 500 and 2,000-pound tanks which will be carried in A-20C, DB-7, B-25, and other medium and heavy bombardment types. If the installation proves satisfactory, production of the tanks will commence immediately.

Air OB 470.71 (10)

Muir S. Fairchild

MUIR S. FAIRCHILD,
Brigadier General, U.S.Army,
Director of Military Requirements.

Hq. Army Air Forces
JUN 9 1942
AAG Received

FOR DEFENSE
BUY
UNITED STATES SAVINGS BONDS AND STAMPS

Hq. Army Air Forces
JUN 12 1942
AAG Received

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Air OB 470.71 (10)

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8 Jan. & 20 June 1974
By [illegible] LC, Date 3-9-77 (AFMAG)

DATE INITIALS

DECLASSIFIED

March 19, 1942

MEMORANDUM FOR THE ASSISTANT CHIEF OF THE AIR STAFF, A-4.

Subject: Requirement for smoke (chemical spray) tanks.

1. Attention is invited to the attached Memorandum for the Chief of Staff, March 8, 1942, above subject, and allied papers. The Memorandum was approved, as amended, by the Chief of Staff on March 14th.

2. Pursuant to Section II of the memorandum, a directive has been sent to the Chief of the Chemical Warfare Service, copy attached. The papers are now being referred to you for appropriate action with respect to paragraph 5, Section II.

470.71 (9)

WILLIAM W. DICK
Colonel, A.G.D.
Adjutant General, A.A.F.

3 Incls.-
Incl. #1-Memo for C/S, 3-11-42, w/incls
Incl. # 2-Cpy letter to C/CWS, 3-19-42
Incl. # 3-OCS 17874-53, 12-19-42.

DECLASSIFIED
MAR 20 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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DOD DIR
8 Jan. & 23 June 1954
By [illegible] Date 5-4-77

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SECRET
BY AUTHORITY OF THE
CHIEF OF THE ARMY AIR FORCES
DATE INITIALS

March 19, 1942

SUBJECT: Requirement for smoke (chemical spray) tanks.

TO : The Chief of the Chemical Warfare Service.

1. A military requirement exists for chemical tanks for heavy and medium bombardment airplanes.

2. The Chief of Chemical Warfare will develop, standardize, and, upon approval of the Chief of the Army Air Forces, procure during calendar year 1942:

a. Chemical tanks for all of the bombardment airplanes produced or to be produced for use of the Army Air Forces by the end of calendar year 1942 (number to be adjusted as necessary in keeping with overall production estimates and foreign allocations) at the rate of one set of tanks for each two mission loads as follows:

Heavy Bombardment	-	5	Mission	Loads	per	airplane
Medium "	-	10	"	"	"	"
Light "	-	15	"	"	"	"
Dive "	-	15	"	"	"	"

b. 100 pound chemical bombs for a like number of mission loads for the same numbers of bombardment airplanes.

c. Appropriate chemicals for filler for all bombs procured and for two (2) fillings for all spray tanks procured.

3. Tanks will be designed to be carried on standard bomb racks and will be dropable. They will be developed, if practicable, in approximately 1000 lb. and 2000 lb. sizes to be carried singly or in multiples where load carrying capacity permits.

4. Chemicals will continue to be regarded as an alternate loading and its procurement in increased quantities will not serve to change the basis on which procurement of bombs is calculated.

5. [illegible] 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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for the computation of Requirements for Standard Air Corps Ordnance and Standard Chemical Warfare Service Items," as approved by Memorandum OSC 17874-53, dated December 19, 1941, for the Chief of the Army Air Forces, Subject: "Revision of Basis for Computation of Requirements for Items of Air Corps - Ordnance Equipment," will be amended accordingly.

By order of The Secretary of War:

WILLIAM W. DICK
Colonel, A.G.D.
Adjutant General, A.A.F.

Dispatched
MAR 20 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-MPD	A-Insp.	Budget	Statistics	

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SECRET

February 11, 1942

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DOD ltrs.
8 Jan. & 20 June 1974
By [illegible] Date 3-9-77

AAF/D/Bomb.-1

Requirements for smoke (chemical spray) tanks.

(2) ~~G-3~~ (3) ~~G-4~~ (1) ~~WPD~~

~~comment or concurrence~~

[redacted] Return to
XXXX D/Bomb. -Rm. 4321

AAF/D/Bomb.
EPS/ls

Dir. AS 470.71 (9)

MAR 6 1942
AAG Received

For the Chief of the Air Staff:

Edgar P. Sorensen,
Colonel, Air Corps,
Director of Bombardment.

1 Incl.
Memo to C/S

HEADQUARTERS—ARMY AIR FORCES—COORDINATION

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Central Files

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DEC... DOD ltrs. 8 Jan. & 20 June 1974 By ____ LC, Date ____

SECRET

DECLASSIFIED DOD ltrs. 8 Jan. & 20 June 1974 By [illegible] LC, Date 3-9-77

AAF/D/Bomb.-1

MEMORANDUM FOR THE CHIEF OF STAFF:

Subject: Requirement for smoke (chemical spray) tanks.

I. Discussion.

1. If chemical munitions are ever to be used in combat it is believed to be imperative that both material and pertinent equipment be available in adequate quantities for unstinted application.

2. Procurement at present includes smoke (chemical spray) tanks for light bombardment airplanes, light case 100 pound chemical bombs which can be carried on any type bomber, and some 30 pound bombs to be carried by light bombardment and pursuit together with appropriate chemicals for each.

3. Based upon current approved estimates of combat life and munitions expenditure rates the following procurements are being made:

100 pound chemical bombs:

Bombardment	(Heavy)	- 1	Mission	(1/25th	of	Combat	Bombing	Mission	Life)
"	(Medium)	- 1	"	(1/50th	"	"	"	"	"
"	(Light)	- 1	"	(1/75th	"	"		"	"
"	(Dive)	- 1	"	(1/75th	"	"		"	"

Smoke (chemical spray) Tanks:

Bombardment (Light) - 5 Missions (1/15th of Combat Mission Life)

4. In order that we may be prepared for execution of a major offensive effort with chemical warfare munitions it is believed essential that mission and procurement rates and quantities be increased and that smoke (chemical spray) tanks be provided for use in heavy and medium bombardment airplanes.

5. Development of combination impact and time fuzes and air bursters for chemical bombs should continue.

II. Action recommended.

The Secretary of War directs:

1. A military requirement exists for chemical tanks for heavy and medium bombardment airplanes.

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. The Chief of Chemical Warfare will develop, standardized, and, upon approval of the Chief of the Army Air Forces, procure during calendar year 1942:

a. Chemical tanks for all of the bombardment airplanes produced or to be produced for used of the U.S. Army Air Forces by the end of 1942 (number to be adjusted as necessary in keeping with overall production estimates and foreign allocations) in quantities as follows:

Heavy Bombardment	-	5	Mission	Loads	per	airplane
Medium	"	-10	"	"	"	"
Light	"	-15	"	"	"	"
Dive	"	-15	"	"	"	"

b. 100 pound chemical bombs for a like number of mission loads for the same numbers of bombardment airplanes.

c. Appropriate chemicals for filler for all bombs procured and for two (2) fillings for all spray tanks procured.

3. Tanks will be designed to be carried on standard bomb racks and will be droppable. They will be developed, if practicable, in approximately 1000 lb. and 2000 lb. sizes to be carried singly or in multiples where load carrying capacity permits.

4. Chemicals will continue to be regarded as an alternate loading and its procurement in increased quantities will not serve to change the basis on which procurement of bombs is calculated.

5. Tab "B" entitled "Basis for the computation of Requirements for Standard Air Corps Ordnance and Standard Chemical Warfare Service Items," as approved by Memorandum dated OSC 17674-53, December 19, 1941, For the Chief of the Army Air Forces, Subject: "Revision of Basis for Computation of Requirements for Items of Air Corps - Ordnance Equipment," will be amended accordingly.

III. Concurrences:

A.C. of S., WPD ( )
A.C. of S., G-3 ( )
A.C. of S., G-4 ( )

For the Chief of the Air Staff:

NOTED EPC 3/7/42
Office Chief of the Air Staff

Edgar P. Sorensen,
Colonel, Air Corps,
Director of Bombardment

Dispatched
MAR 8 1942
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DOD Dirs.
8 Jan. & 30 June 1954
By WHSR/ISD Dec 3-9-77

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Minutes of a Meeting of the Board Appointed to Determine "Basis of Computation of Requirements for Items of Ordnance Equipment Recently Standardized" Appointed on February 2, 1942.

A Board meeting at 1:30 P.M. on February 5, 1942. Members of the committee present were Col. William E. Lynd, Col. Edgar P. Sorensen, Col. David R. Stinson, Lt. Col. Richard C. Coupland, Lt. Col. James H. Doolittle, Lt. Col. Ford L. Fair, 1st Lt. Roy E. Rayls. Members absent were Lt. Col. John G. Moore, Lt. Col. Gordon P. Saville, and Lt. Col. Oliver S. Picher. In addition to the members present, there were two representatives from the office of the Chief of Chemical Warfare--Lt. Col. Kellogg and Major Burns. Also present were the following officers from the A-4 Division: Col. Max F. Schneider, Lt. Burt, and Lt. Badanes.

This was the first meeting of the Board following its appointment and was considered primarily as an orientation meeting. There were several items of business, however, that were rather pressing and these were discussed and conclusions reached. Col. Coupland presented a list of items which should ultimately be reviewed and revised. Since no agenda had been prepared for the meeting and the items listed by Col. Coupland have not been prepared for discussion or for advance presentation to members of the Board, it was found impracticable to properly present any of them for action.

The two Chemical Warfare officers have been invited to be present in order to discuss requirements for chemical tanks in medium and heavy bombers. It was agreed that if the situation should demand the use of chemicals in the present war, that it was mandatory that materials and equipment in sufficient quantity must be available to permit unstinted application.

The Chemical Warfare Service is charged with the development and procurement of tanks for dispensing chemicals from aircraft. It is necessary for them to know to what extent tanks should be procured and in what airplanes they are to be carried.

It was the consensus of opinion that spray tanks should be provided for medium and heavy bombers as well as for light bombers.

The next question discussed was that of the expenditure rate of tanks as well as chemicals. The present policy of the Air Corps is to jettison tanks when the chemicals have been sprayed from them. This policy was apparently based upon the considerations of safety and a belief that tanks supposedly empty might not be entirely so and fumes from them might endanger personnel on landing. It was the consensus of opinion that the danger to personnel in the airplane had been overemphasized and

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that while it was desirable to be able to drop the tanks from the airplane at any time, it was entirely likely that a substantial proportion of the tanks would be returned with the airplanes to their operating bases and could be used again by refilling. On this basis it was decided that while tanks should be provided for the accomplishment of a number equal to one-fifth of the estimated bombing missions during the combat life of bombing airplanes, the chemicals to be procured would be sufficient for two complete fillings for that number of tanks in order that additional missions could be accomplished if circumstances demanded and if tanks were returned with the airplanes.

It was agreed that as it was unlikely that chemicals would be used in all theaters of operation and might be concentrated in any one or more, that a reasonable degree of preparedness would result from providing tanks for one-fifth of the estimated bombing missions, as stated above. Such an estimate would result in the procurement of tanks for five mission loads for each heavy bombardment airplane, ton for each medium, fifteen for each light and each dive bomber. This expenditure could be doubled provided all tanks were returned from the first mission with tanks aboard.

Present procurement of planes calls for the procuction of 100# chemical bombs in sufficient quantity to conduct one mission with each of the bombardment airplanes of all categories. It was agreed that the 100# bomb was a very desirable munition particularly when supplied with a time fuse and burster which could be set for bursting at any predetermined height above the ground. It was agreed that the numberof mission loads of 100# bombs should be the same as provided above for spray tanks.

It was agreed that chemicals should continue to be considered as an alternate loading and thus should not influence in itself any reduction in the quantity of high explosive bombs procured for the combat life of the airplanes.

It was the understanding of the Board that while the program being prepared was for the calendar year 1942 and would be sufficient to establish a good basis of procurement and provide reasonable preparation for use of chemicals by the end of this year, it would be necessary to review the situation in the light of later developments and procurement porgram in order to adjust the plans to the needs of 1943.

It was the consensus of opinion that while wing tanks have been developed for light bombers, that inthe interest of speed, the future development and procurement would tend toward internal tankage.

The number of tanks to be procured for medium and heavy bombers particularly was to be based upon production estimates reduced by approved

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allocations to foreign governments. It was believed most practicable to ask the Chemical Warfare people to confer, when necessary, with the A-4 Division of the Staff in order to keep their procurement quantities in proper adjustment.

It was agreed that development should continue in an effort to secure a satisfactory time fuse and air burster for chemical bombs which would permit of time adjustment by the bombardier in the air during a mission. This feature is desirable because of the fact that missions will frequently have to be conducted at altitudes which cannot be planned in advance of arrival at point of attack. A fuze of this character is understood to have been developed for use with flares.

The requirements for 30# chemical bombs were discussed. These were used in the cellular racks previously employed in A-17 and A-20 airplanes. Procurement of these racks have been discontinued but the requirements still exist for a means of carrying and launching fragmentation bombs of parachute type as well as the small chemical bombs. Some effort has been made to cluster the 30# chemical bombs with apparent success. It was decided that further discussion or any effort to prepare recommendations with respect to improved means of carrying and launching these bombs would, of necessity, be referred to a later meeting.

The next question presented was the matter of a procurement of torpedoes of the Navy type to be launched from aircraft. The Navy has offered to develop sources of manufacture for an additional supply of torpedoes and needs to know the immediate requirements for same as well as the monthly production required. The Secretary of the Navy had stated by letter that he could develop the additional facilities for manufacture and would do so with funds available to the Navy.

It was the consensus of opinion that it should be made possible to carry and launch a Naval type torpedo from medium and light bombers including dive bombers. It appears that Mr. Lovett had given an estimate of 5,000 torpedoes as the required number for war reserve and a production rate of 500 per month as desirable. The Board agreed that an expenditure rate of torpedoes to accomplish one and one-half missions per airplane of those types to be fitted to carry them would be adequate. It was, therefore, agreed that the reply to the Secretary of the Navy with respect to requirements for torpedoes should be based upon the procurement rate of pertinent airplanes to the extent of one and one-half missions for each. It was estimated that on this basis the requirements of torpedoes during 1942 would be about 3,500, and a monthly production proportional to that of the carrying airplanes, which will be about 600 airplanes per month by December, 1942.

Statement was made by Col. Schneider that bombs were now being procured on the basis of maximum loads per airplane for all of the estimated missions of its combat life. It was his recommendation that and adjustment be made in the basis of calculations since maximum bomb loads will rarely be carried. With the increasing size of bombardment

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airplanes and their consequent greatly increased loads coupled with the great difference between the maximum load and the normal load, it appeared evident that a considerable surplus of bombs would be accumulated. The capacity required in bomb case construction as well as an explosive for filling are such as to demand as accurate an estimate as can be made in order to avoid pre-empting production capacity which is badly needed for other war time equipment. It was decided that a paper should be prepared for consideration of this Board at an early meeting with the views toward adjusting bomb requirements of a more realistic basis.

Col. Coupland suggested the necessity of early action on revision of our requirements for bomb fuzes. Certain fuzes have been standardized as between Army, Navy, and the British. Having been standardized, it is now our problem to determine to what extent we want each or all of the standardized types. It was agreed that a paper should be prepared and presented to a subsequent meeting of this Board in order to have it for a proper basis on which to take action. It was suggested that representatives of the Navy and the British be invited to attend in order to offer such considerations as may have influenced them in their determination of requirements for each of the several types. Col. Coupland stated that he would ask Col. Stribling, Ordnance Department, Group Captain Crawford, and Commander Schoeffel of the Navy to be present at the next meeting for this purpose.

It was determined that it would be necessary to secure an officer to do the work of a secretary to this Board. He should have stenographic assistance and office space. It was believed that it would require the full time duty to prepare the agenda for each meeting and, following the meeting, to prepare minutes and action papers when required as a result of the conclusions reached in the meetings. It was decided that, for the present, weekly meetings would be held and that normally they would be on Thursdays at 1:30 P.M.

For the President of the Board:

/s/ Ford L. Fair

FORD L. FAIR,
Lt. Col., Air Corps,
Acting Recorder

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WAR DEPARTMENT
HEADQUARTERS ARMY AIR FORCES
DISPOSITION FORM

Date February 11, 1942

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DOD ltrs.
9 Jan. & 20 June 1974
By [illegible] 1-D, Date 3-9-77

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AG

AAF/D/Bomb.-1

SUBJECT: Requirements for smoke (chemical spray) tanks.

	USW	ASW	ASWA	B-LP	BOWD	BPR
	C/S	G-1	G-2	(2) G-3	(3) G-4	~~(1) 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					

FOR: SW directs
Draft of reply attached
Approved
Disapproved
File

Comment or concurrence
Direct reply made
Inviting attention to
See notation of _____
Information

Information for reply
_____ Ind. approved
Primary interest
[redacted] return to
[redacted] D/Bomb. -Rm. 4321

AAF/D/Bomb.
EPS/is

For the Chief of the Air Staff:

Edgar P. Sorensen

Edgar P. Sorensen,
Colonel, Air Corps,
Director of Bombardment.

1 Incl.
Memo to C/S

~~[illegible] 1942~~
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REC'D. G-3 FEB 23 1942
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WAR DEPARTMENT
HEADQUARTERS OF THE ARMY AIR FORCES
WASHINGTON

(AFMAC)

~~SECRET~~
BY AUTHORITY OF THE
CHIEF OF THE ARMY AIR FORCES
20/9/42 M.P.S.
DATE INITIALS

DECLASSIFIED

March 19, 1942

DECLASSIFIED
DOD Rts.
8 Jan. & 20 June 1974
By: [illegible] Date: 3-9-77

MEMORANDUM FOR THE ASSISTANT CHIEF OF THE AIR STAFF, A-4.

Subject: Requirement for smoke (chemical spray) tanks.

1. Attention is invited to the attached Memorandum for the Chief of Staff, March 8, 1942, above subject, and allied papers. The Memorandum was approved, as amended, by the Chief of Staff on March 14th.

2. Pursuant to Section II of the memorandum, a directive has been sent to the Chief of the Chemical Warfare Service, copy attached. The papers are now being referred to you for appropriate action with respect to paragraph 5, Section II.

W. W. Dick

WILLIAM W. DICK
Colonel, A.G.D.
Adjutant General, A.A.F.

470.71

3 Incls.-
Incl. #1-Memo for C/S, 3-11-42, w/incls
Incl. # 2-Cpy letter to C/CWS, 3-19-42
Incl. # 3-OCS 17874-53, 12-19-42.

Note: "Buck slip" from Director of Military Requirements to A-4 states:
"Action so far as concerns Mil. Req. has been taken" MEG
"This may now go to files" MEG

FOR DEFENSE
BUY
UNITED STATES SAVINGS BONDS

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WAR DEPARTMENT
HEADQUARTERS, SERVICES OF SUPPLY
WASHINGTON, D. C.

March 11, 1942.

DECLASSIFIED
DOD ltrs.
8 Jan. & 20 June 1974
By: MWIMM LC Date: 3-9-77

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MEMORANDUM FOR THE CHIEF OF STAFF:

Subject: Requirement for smoke (chemical spray) tanks.

1. Reference AAF/D/Bomb.-1, March 8, 1942, attached, paragraph II., 2 a, does not clearly indicate the quantities of chemical spray tanks to be provided. Informal conference with the Chief of the Army Air Forces (Colonel Miller and Colonel Schneider, A-4) indicated that one set of tanks is required for each two missions and provision was made for these amounts in Supplemental Estimates "E", 1942.

2. Action recommended:-

That paragraph II., 2 a, be amended as follows:-

"a. Chemical tanks for all of the bombardment airplanes produced or to be produced for use of the Army Air Forces by the end of calendar year 1942 (number to be adjusted as necessary in keeping with overall production estimates and foreign allocations) at the rate of one set of tanks for each two mission loads as follows:"

43 AGO
MAR 14 1942
Received

C. G. HELMICK,
Colonel, General Staff,
Assistant Executive

Encls:
AAF/D/Bomb.-1,
of 3-8-42.

For: ARTHUR H. CARTER,
Brigadier General,
Chief, Budget and Financial Administration.

MAR 14 42 PM

MAR 11 1942

FOR VICTORY BUY UNITED STATES BONDS AND STAMPS

RECEIVED MISC. DIV., AGO.
S. & C. Section

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DOD Rts.
8 Jan. & 20 June 1974
By: [illegible] Date: 3-4-77

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WAR DEPARTMENT
HEADQUARTERS OF THE ARMY AIR FORCES
WASHINGTON

MAR 8 1942

AAF/D/Bomb.-1

MEMORANDUM FOR THE CHIEF OF STAFF:

Subject: Requirement for smoke (chemical spray) tanks.

I. Discussion.

1. If chemical munitions are ever to be used in combat it is believed to be imperative that both materiel and pertinent equipment be available in adequate quantities for unstinted application.

2. Procurement at present includes smoke (chemical spray) tanks for light bombardment airplanes, light case 100 pound chemical bombs which can be carried on any type bomber, and some 30 pound bombs to be carried by light bombardment and pursuit together with appropriate chemicals for each.

3. Based upon current approved estimates of combat life and munitions expenditure rates the following procurements are being made:

100 pound chemical bombs:

Bombardment	(Heavy)	- 1	Mission	(1/25th	of	Combat	Bombing	Mission Life)
"	(Medium)	- 1	"	(1/50th	"	"	"	" "
"	(Light)	- 1	"	(1/75th	"	"	"	"
"	(Dive)	- 1	"	(1/75th	"	"	"	"

Smoke (chemical spray) Tanks:
Bombardment (Light) - 5 Missions (1/15th of Combat Mission Life)

4. In order that we may be prepared for execution of a major offensive effort with chemical warfare munitions it is believed essential that mission and procurement rates and quantities be increased and that smoke (chemical spray) tanks be provided for use in heavy and medium bombardment airplanes.

5. Development of combination impact and time fuzes and air bursters for chemical bombs should continue.

II. Action recommended.
The Secretary of War directs:

1. A military requirement exists for chemical tanks for heavy and medium bombardment airplanes.

(3) OCS 470.7 (3-8-42)
(3) OCS 471.6 (3-8-42)

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2. The Chief of Chemical Warfare will develop, standardized, and, upon approval of the Chief of the Army Air Forces, procure duing calendar year 1942:

a. Chemical tanks for all of the bombardment airplanes produced or to be produced for use of the Army Air Forces by the end of calendar year 1942 (number to be adjusted as necessary in keeping with overall production estimates and foreign allocations) at the rate of one set of tanks for each two mission loads as follows:

Heavy Bombardment	-	5	Mission	Loads	per	airplane
Medium "	-	10	"	"	"	"
Light "	-	15	"	"	"	"
Dive "	-	15	"	"	"	"

MDZ

b. 100 pound chemical bombs for a like number of mission loads for the same numbers of bombardment airplanes.

c. Appropriate chemicals for filler for all bombs procured and for two (2) fillings for all spray tanks procured.

3. Tanks will be designed to be carried on standard bomb racks and will be dropable. They will be developed, if practicable, in approximately 1000 lb. and 2000 lb. sizes to be carried singly or in multiples where load carrying capacity permits.

4. Chemicals will continue to be regarded as an alternate loading and its procurement in increased quantities will not serve to change the basis on which procurement of bombs is calculated.

5. Tab "B" entitled "Basis for the computation of Requirements for Standard Air Corps Ordnance and Standard Chemical Warfare Service Items," as approved by Memorandum dated OSO 17874-53, December 19, 1941, For the Chief of the Army Air Forces, Subject: "Revision of Basis for Computation of Requirements for Items of Air Corps - Ordnance Equipment," will be amended accordingly.

III. Concurrences:

A.C. of S., WPD (DC) FEB 17 1942
A.C. of S., G-3 (IHS) FEB 16 1942
A.C. of S., G-4 (BAM) IN 2/26/42 OUT 2/27/42

For the Chief of the Air Staff:

Edgar P. Sorensen
Edgar P. Sorensen,
Colonel, Air Corps,
Director of Bombardment

MAR 1 1942
APPROVED as amended
By order of the Secretary of War
Wm. BRYDEN
Deputy Chief of Staff

NOTED 3/7/42
CHIEF OF THE AIR STAFF

By M. B. TAYLOR
Lt. Col., G. S. C., Asst. Sec. W. D. G. S.

NOTED-DEPUTY-CHIEF OF STAFF B
NOTED-CHIEF OF STAFF

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DOD Ltrs.
8 Jan. & 20 June 1974
By [illegible] Date 3-9-77

AAF/D/Bomb.-1 MAR 8 1942

MEMORANDUM FOR THE CHIEF OF STAFF:

Subject: Requirement for smoke (chemical spray) tanks.

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"	(Light)	- 1	"	(1/75th	"	"	"	"
"	(Dive)	- 1	"	(1/75th	"	"	"	"

Smoke (chemical spray) Tanks:

Bombardment (Light) - 5 Missions (1/15th of Combat Mission Life)

4. In order that we may be prepared for execution of a major offensive effort with chemical warfare munitions it is believed essential that mission and procurement rates and quantities be increased and that smoke (chemical spray) tanks be provided for use in heavy and medium bombardment airplanes.

5. Development of combination impact and time fuzes and air bursters for chemical bombs should continue.

II. Action recommended.

The Secretary of War directs:

1. A military requirement exists for chemical tanks for heavy and medium bombardment airplanes.

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2. The Chief of Chemical Warfare will develop, standardized, and upon approval of the Chief of the Army Air Forces, procure during calendar year 1942:

a. Chemical tanks for all of the bombardment airplanes produced or to be produced for use of the Army Air Forces by the end of calendar year 1942 (number to be adjusted as necessary in keeping with overall production estimates and foreign allocations) at the rate of one set of tanks for each two mission loads as follows:

Heavy Bombardment	-	5	Mission	Loads	per	airplane
Medium	"	- 10	"	"	"	"
Light	"	- 15	"	"	"	"
Dive	"	- 15	"	"	"	"

b. 100 pound chemical bombs for a like number of mission loads for the same numbers of bombardment airplanes.

c. Appropriate chemicals for filler for all bombs procured and for two (2) fillin s for all spray tanks procured.

3. Tanks will be designed to be carried on standard bomb racks and will be dropable. They will be developed, if practicable, in approximately 1000 lb. and 2000 lb. sizes to be carried singly or in multiples where load carrying capacity permits.

4. Chemicals will continue to be regarded as an alternate loading and its procurement in increased quantities will not serve to change the basis on which procurementof bombs is calculated.

5. Tab "B" entitled "Basis for the computation of Requirements for Standard Air Corps Ordnance and Standard Chemical Warfare Service Items," as approved b Memorandum dated OSC 17874-53, December 19, 1941, For the Chief of the Army Air Forces, Subject: "Revision of Basis for Computation of Requirements for Items of Air Corps - Ordnance Equipment," will be amended accordingly.

III. Concurrences:
A.C. of S., WPD ( )
A.C. of S., G-3 ( )
A.C. of S., G-4 ( )

For the Chief of the Air Staff:

Edgar P. Sorensen,
Colonel, Air Corps
Director of Bombardment

MAR 14 1942

MAR 14 1942

NOTED.....
Office Chief of the Air Staff

APPROVED as amended
By order of the Secretary of War
Wm. BRYDEN
Deputy Chief of Staff

By H. B. TAYLOR
Lt. Col., G. S. C., Asst. Sec. W. D. G. S.
NOTED-DEPUTY CHIEF OF STAFF B
NOTED-CHIEF OF STAFF

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8 Jan. & 30 June 1976
By: H.O. IMH LC, Date: 3-4-77

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Minutes of a Meeting of the Board Appointed to Determine "Basis of Computation of Requirements for Items of Ordnance Equipment Recently Standardized" Appointed on February 2, 1942.

A Board meeting at 1:30 P.M. on February 5, 1942. Members of the committee present were Col. William E. Lynd, Col. Edgar P. Sorensen, Col. David R. Stinson, Lt. Col. Richard C. Coupland, Lt. Col. James H. Doolittle, Lt. Col. Ford L. Fair, 1st Lt. Roy E. Rayle. Members absent were Lt. Col. John G. Moore, Lt. Col. Gordon P. Saville, and Lt. Col. Oliver S. Picher. In addition to the members present, there were two representatives from the office of the Chief of Chemical Warfare— Lt. Col. Kellogg and Major Burns. Also present were the following officers from the A-4 Division: Col. Max F. Schneider, Lt. Hurt, and Lt. Badanes.

This was the first meeting of the Board following its appointment and was considered primarily as an orientation meeting. There were several items of business, however, that were rather pressing and these were discussed and conclusions reached. Col. Coupland presented a list of items which should ultimately be reviewed and revised. Since no agenda had been prepared for the meeting and the items listed by Col. Coupland have not been prepared for discussion or for advance presentation to members of the Board, it was found impracticable to properly present any of them for action.

The two Chemical Warfare officers have been invited to be present in order to discuss requirements for chemical tanks in medium and heavy bombers. It was agreed that if the situation should demand the use of chemicals in the present war, that it was mandatory that materials and equipment in sufficient quantity must be available to permit unstinted application.

The Chemical Warfare Service is charged with the development and procurement of tanks for dispensing chemicals from aircraft. It is necessary for them to know to what extent tanks should be procured and in what airplanes they are to be carried.

It was the consensus of opinion that spray tanks should be provided for medium and heavy bombers as well as for light bombers.

The next question discussed was that of the expenditure rate of tanks as well as chemicals. The present policy of the Air Corps is to jettison tanks when the chemicals have been sprayed from them. This policy was apparently based upon the considerations of safety and a belief that tanks supposedly empty might not be entirely so and fumes from them might endanger personnel on landing. It was the consensus of opinion that the danger to personnel in the airplane had been overemphasized and

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that while it was desirable to be able to drop the tanks from the airplanes at any time, it was entirely likely that a substantial proportion of the tanks would be returned with the airplanes to their operating bases and could be used again by refilling. On this basis it was decided that while tanks should be provided for the accomplishment of a number equal to one-fifth of the estimated bombing missions during the combat life of bombing airplanes, the chemicals to be procured would be sufficient for two complete fillings for that number of tanks in order that additional missions could be accomplished if circumstances demanded and if tanks were returned with the airplanes.

It was agreed that as it was unlikely that chemicals would be used in all theaters of operation and might be concentrated in any one or more, that a reasonable degree of preparedness would result from providing tanks for one-fifth of the estimated bombing missions, as stated above. Such an estimate would result in the procurement of tanks for five mission loads for each heavy bombardment airplane, ten for each medium, fifteen for each light and each dive bomber. This expenditure could be doubled provided all tanks were returned from the first mission with tanks aboard.

Present procurement of planes calls for the production of 100# chemical bombs in sufficient quantity to conduct one mission with each of the bombardment airplanes of all categories. It was agreed that the 100# bomb was a very desirable munition particularly when supplied with a time fuse and burster which could be set for bursting at any predetermined height above the ground. It was agreed that the number of mission loads of 100# bombs should be the same as provided above for spray tanks.

It was agreed that chemicals should continue to be considered as an alternate loading and thus should not influence in itself any reduction in the quantity of high explosive bombs procured for the combat life of the airplanes.

It was the understanding of the Board that while the program being prepared was for the calendar year 1942 and would be sufficient to establish a good basis of procurement and provide reasonable preparation for use of chemicals by the end of this year, it would be necessary to review the situation in the light of later developments and procurement program in order to adjust the plans to the needs of 1943.

It was the consensus of opinion that while wing tanks have been developed for light bombers, that in the interest of speed, the future development and procurement would tend toward internal tankage.

The number of tanks to be procured for medium and heavy bombers particularly was to be based upon production estimates reduced by approved

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allocations to foreign governments. It was believed most practicable to ask the Chemical Warfare people to confer, when necessary, with the A-4 Division of the Staff in order to keep their procurement quantities in proper adjustment.

It was agreed that development should continue in an effort to secure a satisfactory time fuse and air burster for chemical bombs which would permit of time adjustment by the bombardier in the air during a mission. This feature is desirable because of the fact that missions will frequently have to be conducted at altitudes which cannot be planned in advance of arrival at point of attack. A fuse of this character is understood to have been developed for use with flares.

The requirements for 30# chemical bombs were discussed. These were used in the cellular racks previously employed in A-17 and A-20 airplanes. Procurement of these racks have been discontinued but the requirements still exist for a means of carrying and launching fragmentation bombs of parachute type as well as the small chemical bombs. Some effort has been made to cluster the 30# chemical bombs with apparent success. It was decided that further discussion or any effort to prepare recommendations with respect to improved means of carrying and launching these bombs would, of necessity, be referred to a later meeting.

The next question presented was the matter of a procurement of torpedoes of the Navy type to be launched from aircraft. The Navy has offered to develop sources of manufacture for an additional supply of torpedoes and needs to know the immediate requirements for same as well as the monthly production required. The Secretary of the Navy had stated by letter that he could develop the additional facilities for manufacture and would do so with funds available to the Navy.

It was the consensus of opinion that it should be made possible to carry and launch a Naval type torpedo from medium and light bombers including dive bombers. It appears that Mr. Lovett had given an estimate of 5,000 torpedoes as the required number for war reserve and a production rate of 500 per month as desirable. The Board agreed that an expenditure rate of torpedoes to accomplish one and one-half missions per airplane of those types to be fitted to carry them would be adequate. It was, therefore, agreed that the reply to the Secretary of the Navy with respect to requirements for torpedoes should be based upon the procurement rate of pertinent airplanes to the extent of one and one-half missions for each. It was estimated that on this basis the requirements of torpedoes during 1942 would be about 3,500, and a monthly production proportional to that of the carrying airplanes, which will be about 600 airplanes per month by December, 1942.

Statement was made by Col. Schneider that bombs were now being procured on the basis of maximum loads per airplane for all of the estimated missions of its combat life. It was his recommendation that and adjustment be made in the basis of calculations since maximum bomb loads will rarely be carried. With the increasing size of bombardment

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airplanes and their consequent greatly increased loads coupled with the great difference between the maximum load and the normal load, it appeared evident that a considerable surplus of bombs would be accumulated. The capacity required in bomb case construction as well as an explosive for filling purposes such as to demand as accurate an estimate as can be made in order to avoid pre-empting production capacity which is badly needed for other war time equipments. It was decided that a paper should be prepared for consideration of this Board at an early meeting with the views toward adjusting bomb requirements of a more realistic basis.

Col. Gaupland suggested the necessity of early action on revision of our requirements for bomb fuses. Certain fuses have been standardized as between Army, Navy, and the British. Having been standardized, it is now our problem to determine to what extent we want each or all of the standardized types. It was agreed that a paper should be prepared and presented to a subsequent meeting of this Board in order to have it for a proper basis on which to take action. It was suggested that representatives of the Navy and the British be invited to attend in order to offer such considerations as may have influenced them in their determination of requirements for each of the several types. Col. Gaupland stated that he would ask Col. Stribling, Ordnance Department, Group Captain Grandard, and Commander Schoeffel of the Navy to be present at the next meeting for this purpose.

It was determined that it would be necessary to secure an officer to do the work of a secretary to this Board. He should have stenographic assistance and office space. It was believed that it would require the full time duty to prepare the agenda for each meeting and, following the meeting, to prepare minutes and action papers when required as a result of the conclusions reached in the meetings. It was decided that, for the present, weekly meetings would be held and that normally they would be on Thursdays at 1:30 P.M.

For the President of the Board:

/s/ Ford L. Fair

FORD L. FAIR,
Lt. Col., Air Corps,
Acting Recorder

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DOD Dir.
5 Jan. & 30 June 1954
By: [illegible] Date: 3-9-77

SECRET
BY AUTHORITY OF THE
CHIEF OF THE ARMY AIR FORCES
DATE INITIALS

March 19, 1942

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SUBJECT: Requirement for smoke (chemical spray) tanks.

TO : The Chief of the Chemical Warfare Service.

1. A military requirement exists for chemical tanks for heavy and medium bombardment airplanes.

2. The Chief of Chemical Warfare will develop, standardize, and, upon approval of the Chief of the Army Air Forces, procure during calendar year 1942:

a. Chemical tanks for all of the bombardment airplanes produced or to be produced for use of the Army Air Forces by the end of calendar year 1942 (number to be adjusted as necessary in keeping with overall production estimates and foreign allocations) at the rate of one set of tanks for each two mission loads as follows:

Heavy	Bombardment	- 5	Mission	Loads	per	airplane
Medium	"	- 10	"	"	"	"
Light	"	- 15	"	"	"	"
Dive	"	-15	"	"	"	"

b. 100 pound chemical bombs for a like number of mission loads for the same numbers of bombardment airplanes.

c. Appropriate chemicals for filler for all bombs procured and for two (2) fillings for all spray tanks procured.

3. Tanks will be designed to be carried on standard bomb racks and will be dropable. They will be developed, if practicable, in approximately 1000 lb. and 2000 lb. sizes to be carried singly or in multiples where load carrying capacity permits.

4. Chemicals will continue to be regarded as an alternate loading and its procurement in increased quantities will not serve to change the basis on which procurement of bombs is calculated.

5. Tab "B" copies of which were furnished you, entitled "Basis

Incl FOR: ~~The Director of Bombardment re memo for C of S. Mar. 8 1942~~

#2

~~Per Ep Sorensen~~

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for the computation of Requirements for Standard Air Corps Ordnance and Standard Chemical Warfare Service Items," as approved by Memorandum OSC 17874-53, dated December 19, 1941, For the Chief of the Army Air Forces, Subject: "Revision of Basis for Computation of Requirements for Items of Air Corps - Ordnance Equipment," will be amended accordingly.

By order of The Secretary of War:

WILLIAM W. DICK
Colonel, A.G.D.
Adjutant General, A.A.F.

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8 Jan. & 20 June 1974
By: [illegible] Date: 3-9-77

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BY AUTHORITY OF THE
CHIEF of the ARMY AIR FORCES
DATE INITIALS

MAR 3 1942

AAF/A-WPD 80-1

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MEMORANDUM FOR THE CHIEF OF STAFF.

SUBJECT: Chemical Spray for High Altitudes.

I. Discussion:

1. The test of high altitude spraying of chemicals as carried out by the Chemical Warfare Service at Muroc Lake, California, proved the method to be practicable and should be developed.

2. A board of officers consisting of representatives from the Air Corps, G-4, Signal Corps and Chemical Warfare Service was organized on January 28, 1942 and made certain recommendations, Tab. A and B.

II. Action Recommended:

The Secretary of War directs that:

1. The Adjutant General will issue an order constituting a Board of Officers for the study and development of "Chemical Spray for High Altitudes."

2. The following named officers will be appointed as members of the Board:

Lt. Col. E. T. Rundquist	Air Corps
Lt. Col. A. F. Hersweather	Air Corps
Major Wm. F. Center	Air Corps
Lt. Col. Raymond R. Robbins	G-4
Lt. Col. O. C. Maier	Signal Corps
Capt. C. W. Arford	Signal Corps
Lt. H. G. Dice	Signal Corps
Dr. C. J. Brasefield	Signal Corps
Mr. G. D. Lukes	Signal Corps
Lt. Col. R. W. Mufford	Chemical Warfare Service
Major J. R. Burns	Chemical Warfare Service
Major C. E. Otto	Chemical Warfare Service

For the Chief of Air Staff

MAR 5 1942

NOTED EPC 3/4/42
Chief of the Air Staff

2 Incls Tab A & B.

H. L. GEORGE
Col., Air Corps
Assistant Chief of the Air Staff, A-WPD

ACTION TAKEN AS DIRECTED
OFF. 1505
Miller, 3-21-42

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OFFICE OF CHIEF OF STAFF

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III. Consideration of non-concurrence.

G-4 Division of the General Staff concurs with the exception that the name of Lt. Col. A. C. McAuliffe, G-4, be substituted for that of Lt. Col. Raymond R. Robins, G-4.

IV. Final action recommended.

Same as II except that the name of Lt. Col. A.C.McAuliffe, G-4, be substituted for that of Lt. Col. Raymond R. Robins, G-4.

For the Commanding General, Army Air Forces:

H. A. CRAIG
Colonel, Air Corps,
Assistant Chief of the Air Staff, Plans

MAR 19 1942

APPROVED.
By order of the Secretary of War
JOSEPH T. M[illegible]ARNEY
Deputy Chief of Staff

By C. V. ALLAN
Lt. Col. G.S.C., Asst. Sec. W.D.G.S.

2 Incls. n/c
1 Incl. added - Tab C.

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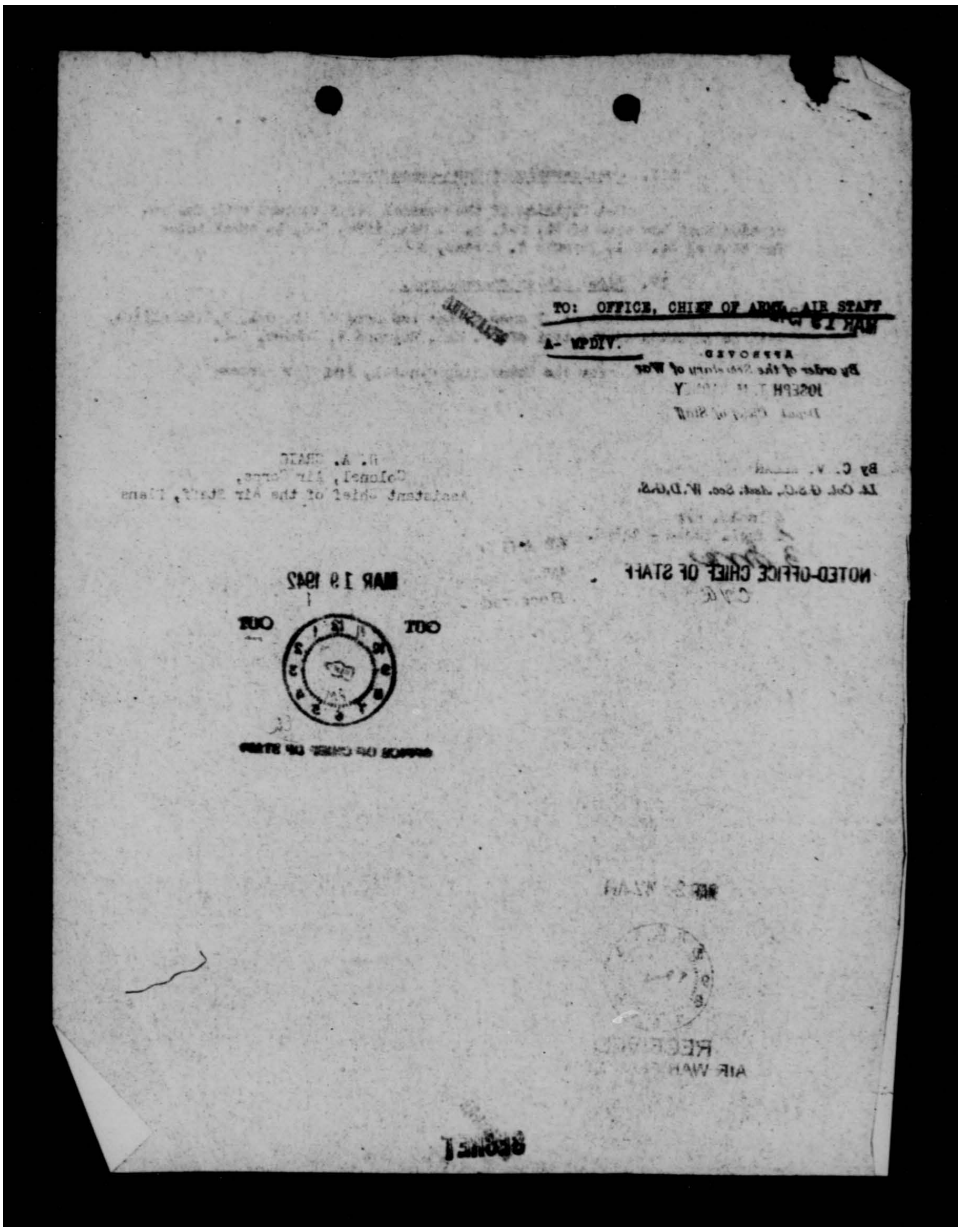

TO: OFFICE, CHIEF OF ARMY AIR STAFF

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BY AUTHORITY OF THE
CHIEF of the ARMY AIR FORCES
DATE INITIALS

AAF/A-WPD
DWK/egh
Written 2/27/42

[redacted]
MAR 3 1942

AAF/A-WPD SO-1

MEMORANDUM for Chief of Staff.

SUBJECT: Chemical Spray for High Altitudes.

I. Discussion:

1. The test of high altitude spraying of chemicals as carried out by the Chemical Warfare Service at Muroc Lake, California, proved the method to be practicable and should be developed.

2. A board of officers consisting of representatives from the Air Corps, G-4, Signal Corps and Chemical Warfare Service was organized on January 28, 1942 and made certain recommendations, Tab. A and B.

II. Action Recommended:

The Secretary of War directs that:

1. The Adjutant General will issue an order constituting a Board of Officers for the study and development of "Chemical Spray for High Altitudes."

2. The following named officers will be appointed as members of the Board:

Lt. Col. E. T. Rundquist	Air Corps
Lt. Col. A. F. Merewether	Air Corps
Major Wm. F. Carter	Air Corps
Lt. Col. Raymond R. Robbins	G-4
Lt. Col. O. C. Maier	Signal Corps
Capt. C. W. Arford	Signal Corps
Lt. H. G. Rice	Signal Corps
Dr. C. J. Brasefield	Signal Corps
Mr. G. D. Lukas	Signal Corps
Lt. Col. R. W. Rufford	Chemical Warfare Service
Major J. R. Burns	Chemical Warfare Service
Major G. E. Otto	Chemical Warfare Service

For the Chief of Air Staff

Hq. Army Air
MAR 5 1942
Act Reserve

NOTED EPC 3/4/42
Chief of the Air Staff

Air AS 470.71 (8)

HEADQUARTERS ARMY AIR FORCES - COORDINATION

Chief of Staff	Sec. Air Staff	A.A.G.	A-1	A-2	A-3	A-4	A-WPD	A. Insp.	Budget	Statistics	
		Dispatched MAR 5 1942 AAG									

Incls Tab A & B.

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H. L. GEORGE
Col., Air Corps
Assistant Chief of the Air Staff, A-WPD

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8 Jan. & 20 June 1974
By: [illegible] Date: 3-9-77

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(15-B4)
(Written 1/16/42)

January 19, 1942

Chemical Spray for High Altitudes.

Lt. Col. Albert T. Rundquist,
Commanding Officer,
Air Corps Detachment,
Edgewood Arsenal, Maryland.

1. Reference is made to attached copy of communication from Office of the Chief Signal Officer to Chief of Air Corps and Chief of Chemical Warfare Service, in turn, under date of November 19, 1941, subject:-"Chemical Spray for High Altitudes" and particularly to Para. 5 wherein it was recommended that an experimental group be headed by an Air Corps officer.

2. Attention is invited to copy of attached 1st Indorsement to basic communication designating Lt. Col. Albert T. Rundquist, Commanding Officer, Air Corps Detachment, Edgewood Arsenal, Maryland, as the Air Corps officer to head the experimental group to coordinate the inter-branch work.

3. You are authorized to take any matter pertaining to this project up directly with Office of the Chief Signal Officer and Chief of Chemical Warfare Service. This office should be advised of actions taken and progress made.

By Order of the Chief of the Air Corps:

Wm. F. PEARSON,
Colonel, A.G.D.,
Adjutant General.

Incls.
Cpy.ltr.to CAC & CWS,
in turn, 11/19/41,and
outline of proposed
method of solution.
1st Ind.,OCAC to CWS.

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(15-a)

1st Indorsement

War Department, Office, Chief of the Air Corps, Washington, D. C.
To: Chief of Chemical Warfare Service, 32nd and B Streets, N. W., Washington, D. C.

1. Reference is made to Para. 5 of basic communication.

1A. Col. Albert F. Hemsley, Commanding Officer, Air Corps Detachment, Edgewood Arsenal, Maryland, is designated as the Air Corps Officer to head the experimental group to coordinate the inter-branch work.

2. One B-18 airplane and necessary operating crew and supplies therefor are available for this project. Also one forecasting unit for the field and one officer forecaster to work jointly with the development section will be available.

3. It is requested that this office be advised the time and place the airplane and necessary Air Corps personnel for this project will be needed.

Encls.
1Ltr. to CAC and C/CWS,
in turn, 11/19/41, subj.
Chem.Spray for High Altitudes.
Outline of proposed method
of solution.

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In reply refer to: WAR DEPARTMENT
413.6 Met. OFFICE OF THE CHIEF SIGNAL OFFICER
WASHINGTON

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M-7-F-6
November 19, 1941

SUBJECT: Chemical Spray for High Altitudes.

TO: Chief of Air Corps, Chief of Chemical Warfare Service
IN TURN

1. Reference is made to letter, file CCSigO 335.11, dated October 6, 1941, and radiogram dated October 7, 1941, regarding the visit to the Signal Corps Laboratories on October 9, 1941, by Colonel Earl S. Hoag, General Staff, G-4, and Dr. R. Kingan of the British Central Scientific Office, in connection with meteorological development for the Chemical Warfare Service.

2. On November 12, 1941, the following personnel met to discuss the agenda contained in memorandum for Director, Field Laboratory No. 2, dated October 16, 1941, for the purpose of recommending means and measures for carrying out necessary research and development required by the chemical spray problem:

Air Corps:

Major Arthur F. Morewether, Office Chief of Air Corps
Major John B. Ackerman, Air Corps Weather Research Center, Bolling Field, D. C.

Chemical Warfare Service:

Lt. Colonel James W. Rice, President, Chemical Warfare Board, Edgewood Arsenal, Maryland.
Lt. Colonel R. W. Mefford, Chemical Warfare Service.
Major J. R. Burns, Office Chief of Chemical Warfare Service.
Major R. Bourket, Office Chief of Chemical Warfare Service.
First Lieutenant R. Beverly Caldwell, Chemical Warfare School, Edgewood Arsenal, Maryland.
First Lieutenant L. S. Taylor, Office Chief of Chemical Warfare Service
Mr. B. F. Smith, Technical Division, Edgewood Arsenal

General Staff, G-4

Major R. R. Robins, G-4

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(OCSigO 413.6 Met., subject: Chemical Spray for High Altitudes, to GAS, OCMS, in turn, page 2)

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Signal Corps:

Major H. O. Bixby, Office Chief Signal Officer
Major O. G. Maier, Signal Corps Laboratories
Captain L. B. McConaghy, Office Chief Signal Officer
Captain Wallace A. Waldorf, Signal Corps Laboratories
Mr. James W. Goodin, Senior Meteorologist, Signal Corps Laboratories
Mr. George D. Lukes, Meteorologist, Signal Corps Laboratories
Mr. C. J. Brasefield, Radio Engineer, Signal Corps Laboratories
Mr. C. G. Cambridge, Assoc. Elec. Engineer, Office Chief Signal Officer

British Central Scientific Office:

Dr. R. Kingan, British Central Scientific Office

3. It was the consensus of opinion of those present that the maximum size of the area to be covered by the attack would have a probable diameter of 5 miles, with a normal area 1 to 2 mile in diameter; that the primary target for chemical spray will be troops or groups of workers in close concentration, such as may be found in docks, harbors, highways, or railroad yards. The minimum concentration of chemicals required for effective contamination was assumed to be 20 drops of mustard gas per square meter, the drops to be not less than 1.75 millimeters in diameter. Further research work is required on the physical characteristics of the gas or smoke, in order to insure successful spraying. With that in view, a mobile or field test group should be set up to continue the work that is now being done, so that further data is obtained on gases and non-poisonous substitutes to be used for the purposes of training and experiment.

4. With respect to the limitations as to quantities of chemicals, data at hand indicates that one plane spraying simultaneously from two 25-gallon tanks at a rate of 18 seconds for the discharge of each tank, with a plane speed of 200 miles per hour, a cross-wind speed of 10 miles per hour, and a plane height of 1,000 feet, the area covered was 1,760 yards by 250 yards. This was the neutralized area. The harrassed area and the effective total area affected is 1,760 yards long and 500 yards wide. In order to cover an area indicated as a maximum five-mile diameter, not less than two light bombardment groups will be required. The desired height from

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which attacks might be launched is of the order of 20,000 feet. The jet spray method of releasing gas seems indicated for low-speed aircraft, and the gravity method of release seems indicated for high-speed aircraft.

5. In order to solve expeditiously the chemical spray problem, it is recommended that an experimental group headed by an Air Corps officer be designated to coordinate the inter-branch work. The various branches would supply the following equipment and/or personnel:

a. Air Corps:

(1) One forecasting unit for the field;

(2) One officer forecaster to work jointly with the development section;

(3) The required airplanes and pilots, gasoline, and other supplies;

(4) Sufficient maintenance personnel to permit daily operation.

b. Chemical Warfare Service.

(1) One field test unit or mobile laboratory for the purpose of studying droplet size, surface tension, dispersion, viscosity, and other factors pertaining to the chemical research problem;

(2) Necessary gas containers, chemicals, and loading equipment;

(3) Officer and enlisted personnel, as well as technical personnel from Edgewood Arsenal, as are required for the work at hand.

c. Signal Corps:

(1) One mobile or field meteorological group for the purpose of developing such meteorological equipment as may be required for the solution of this problem;

(2) Specialized forecasting techniques and charts required by the problem.

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(CCSigO 413.6 Met., subject: Chemical Spray for High Altitudes, to CAC, CCMS, in turn, page 4.)

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6. Inclosed herewith is an outline of the proposed method of solution of the problem.

For the Chief Signal Officer:

/s/ James A. Code, Jr.,
James A. Code., Jr.,
Lt. Colonel, Signal Corps,
Executive.

1 Incl.
Outline of proposed method of solution (in dup.)

-4-

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DOD ltrs.
8 Jan. & 20 June 1974
By HW/MM/ID, Date 5-9-77

WAR DEPARTMENT
WASHINGTON

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CWS 319.1/2254 Secret January 28, 1942

Subject: Chemical Spray for High Altitudes.

To: The Chief of the Air Corps.
Thru: The Chief of the Chemical Warfare Service, and
The Chief Signal Officer.

1. In accordance with letter of January 19, 1942, Office of the Chief of the Air Corps, To Lt. Colonel Elmer T. Rundquist, and verbal instruction from Lt. Colonel Earl S. Hoag, G-4, on January 28, 1942, the following representatives of the Air Corps, Signal Corps, and Chemical Warfare Service, met in the office of the Chief of the Chemical Warfare Service, for the purpose of setting up an organization and preparing a plan to carry out the necessary research and development work required by the chemical spray problem.

Lt. Col. E. T. Rundquist	Air Corps
Lt. Col. A. F. Merriwether	Air Corps
Major Wm. F. Center	Air Corps
Lt. Col. Raymond R. Robbins	G-4
Lt. Col. O. C. Maier	Signal Corps
Capt. C. W. Arford	Signal Corps
Lt. H. G. Dice	Signal Corps
Mr. C. J. Brasefield	Signal Corps
Mr. G. D. Lukes	Signal Corps
Lt. Col. R. W. Hufford	Chemical Warfare Service
Major J. R. Burns	Chemical Warfare Service
Major C. E. Otto	Chemical Warfare Service

2. An experimental group was organized as follows:

Colonel E. T. Rundquist	Supervisor of Inter-Branch Coordination.
Major	O-C, Field Operations
3 Civilians	Clerical Help
Lt. Walter Snell	Weather Officer
6 Enlisted Men	Weather Observers
Operating Crew	For 1 B-18

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CWS 319.1/2004 Secret
To: The Chief of the Air Corps January 28, 1942

Chemical Warfare Service

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Major J. H. Burns — Coordinator for Chemical Warfare Service.
10 Civilians and Military personnel — Technical and Clerical Assistants

Signal Corps

Lt. H. G. Rice — C-6, Field Laboratory
15 Civilians — Technical and Clerical Assistants

3. A plan for initiating work on this project is outlined as follows:

a. Air Corps - Will supply equipment and personnel (including one B-18 with operating crew) at Aberdeen and Edgewood Arsenal for short range objective.

b. Chemical Warfare Service - Will supply equipment and personnel at Edgewood Arsenal for short range objective.

c. Signal Corps - Will supply equipment and personnel at Edgewood Arsenal with liaison at Aberdeen for short range objective.

d. Operations to begin February 5, at Edgewood Arsenal.

e. Operations will be extended to CWS Proving Ground, Utah, (approximately April 1st) when additional equipment should be available.

f. Medium and long range objectives may be modified as a result of this work.

4. The following is an estimate of the funds which will be required for the remainder of this fiscal year and for fiscal year 1943:

Air Corps	FY 42	FY 43
a. Salaries, Travel per diem b. Materials c. Equipment	- 75,000	100,000
Chemical Warfare Service		
a. Salaries, Travel per diem b. Materials c. Equipment	- 75,000	100,000

-2-

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CWS 319.1/2254 Secret
To: The Chief of the Air Corps

January 28, 1942

Signal Corps	FY 42	FY 43
a. Salaries, Travel per diem b. Materials c. Equipment	125,000	200,000

5. It is recommended that the proposed organization and plan for the execution of this work be approved, and that the funds called for in paragraph 4 be requested and when available be alloted as shown.

6. An A1-a preference rating is requested in order to solve expeditiously the chemical spray problem.

/s/ E. T. Rundquist
Elmer T. Rundquist
Lt. Colonel, Air Corps.

CWS 319.1/2254 Secret 1st Ind.
War Dept. CC-CWS January 30, 1942, To: The Chief of the Air Corps.

1. Recommend approval of the proposed organization and plan for execution of the necessary work in connection with this project.

2. Funds set up for the work to be done by the Chemical Warfare Service are believed to be sufficient.

3. It is believed that this project is of sufficient importance to justify at least an A1-a preference rating.

For the Chief of the Chemical Warfare Service:

/s/ H. L. Barker
H. L. Barker
Colonel, C.W.S.
Chief, Technical Service.

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-3-

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2nd Ind. (15-83)

War Department, Office, Chief of the Air Corps, Washington, D. C. Feb.,3, 1942 To: Chief Signal Officer.

For remark and recommendation, inviting attention to 1st. Indorsement, with request that reply be expedited.

SECRET

For the Chief of the Air Corps:
/s/ H. S. Kenyon
H. S. Kenyon
Lt. Colonel, A. C.
Executive
Army Air Traffic Services

OCS 319.1/2254 Secret 3rd Ind 2
(1-28-42)

War Department, OCSigO, Washington, D. C., February 4, 1942. To: The Chief of the Air Corps.

1. Recommend approval of the proposed organization and plan for execution of the project as outlined in basic communication.

2. Estimate of funds required for the work to be performed by the Signal Corps are believed to be sufficient, and are available.

For the Chief Signal Officer:

/s/ Wm. D. Hamlin,
Wm. D. Hamlin,
Major, Signal Corps,
Assistant Executive.

-4-

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E.O. 11652
8 Jan. & 20 June 1974
By NARS, Date 3-28-77

4th Ind. SECRET (15-R3)

War Department, Office, Chief of the Air Corps, Washington, D. C., February 20, 1942; To: Chief, Army Air Forces.

1. Referring to the Special Project "Chemical Spray for High Altitudes," and to the attached copy of interbranch instructions for accomplishment of same, it is recommended that this Project be approved, including estimated cost of the Air Corps share. Funds in the amount of $75,000 can be made available for this Project by diversion from other projects.

2. Attention is invited to 1st and 3rd Indorsements of basic letter in which Chemical Warfare Service and the Chief Signal Officer approve the Project for those respective branches and indicate that their share of funds will be made available.

3. In addition to authority to provide the necessary Air Corps funds in the manner mentioned above, it is further requested that authority be granted to transfer such funds to the Chemical Warfare Service, which branch is set up to handle all necessary expenditures involving travel, transportation, special equipment, etc.

4. Considerable ground work has already been undertaken by the three branches involved in preparation for this test. Immediate action on the above request is, therefore, requested in order that the program of initial tests at Edgewood, Maryland may be undertaken.

For the Chief of the Air Corps:

1 Incl.
Cy R&R

/s/ Chas. A. Horn
Chas. A. Horn,
Lieut. Col., A.C.
Operations Services

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ROUTING AND RECORD SHEET

DECLASSIFIED
DOD Dir.
8 Jan. & 30 June 1976
By: Hwilford, Date: 3-9-77

DECLASSIFIED
SECRET

Subject: Chemical Spray for High Altitudes.

(15-83)

1. OCAC Opera. Div. — OCAC Fiscal Officer — 1942 2/7

1. Inviting attention to attached correspondence relating to program and plans for proposed High Altitude Spray Tests, and requesting information as to availability of funds to meet the Air Corps portion of estimated cost.

2. This test is regarded as highly desirable by various Air Force agencies, including the Air Force Combat command, and this Division desires to recommend approval.

3. Immediate reply to this R&R, with statement as to whether funds in the amount estimated are available for allocation to this Project.

1 Incl.
Ltr fr CWS, 1/28/42
above subj. w/3 Incls.

O.S.F.
Col., A.C.
Asst.

---

2. Fiscal officer OCAC (5A) — Opera. Div. OCAC — 1942 2/12

1. Funds in the amount of $75,000 can be made available for this purpose, but in so doing it will be necessary to divert them from other projects.

2. In connection with the above, it is the understanding of this Division, based on information received from the Chemical Warfare Service and War Plans, Air Staff, that similar research and development work relative to high altitude chemical spray had been completed by the Air Corps and the Chemical Warfare Service, and as a result thereof, funds are now included in Supplemental Estimates "E", F.Y. 1942 for spray tanks, etc., to equip not only light and dive bombers, but also medium and heavy bombers.

A. W. M.
Lt. Col., A.C.
Fiscal Officer, OCAC

Incl. n/c/

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III. Consideration of non-concurrence.

G-4 Division of the General Staff concurs with the exception that the name of Lt. Col. A. C. McAuliffe, G-4, be substituted for that of Lt. Col. Raymond R. Robins, G-4.

IV. Final action recommended.

Same as II except that the name of Lt. Col. A.C.McAuliffe, G-4, be substituted for that of Lt. Col. Raymond R. Robins, G-4.

For the Commanding General, Army Air Forces:

H. A. CRAIG,
Colonel, Air Corps,
Assistant Chief of the Air Staff, Plans

2 Incls. n/c
1 Incl. added - Tab C.

Dispatched to Sec G5
MAR 18 1942
AAC

470.71

(8)

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	
							[illegible]				
							[illegible]				

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DOD DIR 5200.10
8 Jan & 20 June 1974
By [illegible] Date 3-9-77

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AAF-39

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DECLASSIFIED
DOD ltrs.
8 Jan. & 20 June 1974
By HWHM LC Date 3-4-77

AAF/A-WPD
DWK/egh
Written 2/27/42

5th Ind.

DECLASSIFIED

Headquarters, Army Air Forces, War Department, Washington, D. C.,
To: Chief of the Air Corps. MAR 5 1942

1. The status of such a board is questioned and an action paper to the Chief of Staff has been prepared directing the Adjutant General to issue orders creating the board and appointing the officers as listed in basic communication.

2. The A-WPD considers the research and development of chemical spray for high altitudes essential and should be carried to completion.

3. It is recommended that the Air Corps funds available should be transferred as suggested in Paragraph 3, 4th Indorsement.

1 Incl n/c

By Command of Lieutenant General Arnold

JOHN B. COOLEY
Lt. Colonel, A. G. D.,
Assistant Air Adjutant General.

470-71 (1)

Hq. Army A
MAR 5 1942
AAG Receiv

Dispatched
MAR 5 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	
WJF							DWK				

AAF-39

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DECLASSIFIED
DOD Dir.
8 Jan. & 20 June 1974
By: Hudson, J.C. Date: 3-9-77

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4th Ind. (15-B3)

War Department, Office, Chief of the Air Corps, Washington, D. C.,
FEB 20 1942 TO: Chief, Army Air Forces.

1. Referring to the Special Project "Chemical Spray for High Altitudes," and to the attached copy of interbranch instructions for accomplishment of same, it is recommended that this Project be approved, including estimated cost of the Air Corps share. Funds in the amount of $75,000 can be made available for this Project by diversion from other projects.

2. Attention is invited to 1st and 3rd Indorsements of basic letter in which Chemical Warfare Service and the Chief Signal Officer approve the Project for those respective branches and indicate that their share of funds will be made available.

3. In addition to authority to provide the necessary Air Corps funds in the manner mentioned above, it is further requested that authority be granted to transfer such funds to the Chemical Warfare Service, which branch is set up to handle all necessary expenditures involving travel, transportation, special equipment, etc.

4. Considerable ground work has already been undertaken by the three branches involved in preparation for this test. Immediate action on the above request is, therefore, requested in order that the program of initial tests at Edgewood, Maryland may be undertaken.

For the Chief of the Air Corps:

1 Incl.
Cy R&R

CHAS. A. HORN,
Lieut. Col., A. C.,
Executive,
Operations Services.

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WAR DEPARTMENT
WASHINGTON

SECRET

DECLASSIFIED
DOD Ltr.
6 Jan. & 20 June 1974
By [illegible], Date 3-9-77

CWS 319.1/2254 Secret

January 28, 1942

Subject: Chemical Spray for High Altitudes.

To: The Chief of the Air Corps.
Thru: The Chief of the Chemical Warfare Service, and
The Chief Signal Officer.

1. In accordance with letter of January 19, 1942, Office of the Chief of the Air Corps, To Lt. Colonel Elmer T. Rundquist, and verbal instruction from Lt. Colonel Earl S. Hoag, G-4, on January 28, 1942, the following representatives of the Air Corps, Signal Corps, and Chemical Warfare Service, met in the office of the Chief of the Chemical Warfare Service, for the purpose of setting up an organization and preparing a plan to carry out the necessary research and development work required by the chemical spray problem.

Lt. Col. E. T. Rundquist	Air Corps
Lt. Col. A. F. Morrisother	Air Corps
Major Wm. F. Center	Air Corps
Lt. Col. Raymond R. Robbins	G-4
Lt. Col. O. C. Maier	Signal Corps
Capt. C. W. Arford	Signal Corps
Lt. H. G. Dice	Signal Corps
Dr. C. J. Brasefield	Signal Corps
Mr. G. D. Lukes	Signal Corps
Lt. Col. R. W. Hufford	Chemical Warfare Service
Major J. R. Burns	Chemical Warfare Service
Major C. E. Otto	Chemical Warfare Service

2. An experimental group was organized as follows:

Colonel E. T. Rundquist	Supervisor of Inter-Branch Coordination.
Major	O-C, Field Operations
3 Civilians	Clerical Help
Lt. Walter Snell	Weather Officer
6 Enlisted Men	Weather Observers
Operating Crew	For 1 B-18

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CWS 319.1/[illegible] Secret
To: The Chief of the Air Corps

January 28, 1942

Chemical Warfare Service

Major J. R. Burns	Coordinator for Chemical Warfare Service.
10 Civilians and Military personnel	Technical and Clerical Assistants

Signal Corps

Lt. H. G. Dice	O-C, Field Laboratory
15 Civilians	Technical and Clerical Assistants

3. A plan for initiating work on this project is outlined as follows:

a. Air Corps - Will supply equipment and personnel (including one B-18 with operating crew) at Aberdeen and Edgewood Arsenal for short range objective.

b. Chemical Warfare Service - Will supply equipment and personnel at Edgewood Arsenal for short range objective.

c. Signal Corps - Will supply equipment and personnel at Edgewood Arsenal with liaison at Aberdeen for short range objective.

d. Operations to begin February 5, at Edgewood Arsenal.

e. Operations will be extended to CWS Proving Ground, Utah, (approximately April 1st) when additional equipment should be available.

f. Medium and long range objectives may be modified as a result of this work.

4. The following is an estimate of the funds which will be required for the remainder of this fiscal year and for fiscal year 1943:

Air Corps	FY 42	FY 43
a. Salaries, Travel per diem b. Materials c. Equipment	- 75,000	100,000
Chemical Warfare Service		
a. Salaries, Travel per diem b. Materials c. Equipment	- 75,000	100,000

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CMS 319.1/2254 Secret
To: The Chief of the Air Corps

January 30, 1942

Signal Corps

		FY 42	FY 43
a. Salaries, Travel per diem b. Materials c. Equipment	}	125,000	200,000

5. It is recommended that the proposed organization and plan for the execution of this work be approved, and that the funds called for in paragraph 4 be requested and when available be allotted as shown.

6. An AA-1 preference rating is requested in order to solve expeditiously the chemical spray problem.

/s/ E. T. Rundquist
Elmer T. Rundquist
Lt. Colonel, Air Corps.

CMS 319.1/2254 Secret 1st Ind.
War Dept. CC-CMS January 30, 1942, To: The Chief of the Air Corps.

1. Recommend approval of the proposed organization and plan for execution of the necessary work in connection with this project.

2. Funds set up for the work to be done by the Chemical Warfare Service are believed to be sufficient.

3. It is believed that this project is of sufficient importance to justify at least an AA-1 preference rating.

For the Chief of the Chemical Warfare Service:

/s/ H. K. Benner
H. K. Benner
Colonel, C.W.S.
Chief, Technical Service.

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2nd Ind. SECRET (15-83)

War Department, Office, Chief of the Air Corps, Washington, D. C. Feb. 3, 1942 To: Chief Signal Officer.

For remark and recommendation, inviting attention to 1st. Indorsement, with request that reply be expedited.

For the Chief of the Air Corps:
/s/ H. S. Kenyon
H. S. Kenyon
1st. Colonel, A. C.
Executive
Army Air Traffic Services

OCS 11911/2254 Secret 3rd Ind 2
(1-28-42)

War Department, OCSigO, Washington, D. C., February 4, 1942. To: The Chief of the Air Corps.

1. Recommend approval of the proposed organization and plan for execution of the project as outlined in basic communication.

2. Estimate of funds required for the work to be performed by the Signal Corps are believed to be sufficient, and are available.

For the Chief Signal Officer:

/s/ Wm. D. Hamlin,
Wm. D. Hamlin,
Major, Signal Corps,
Assistant Executive.

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DOD Dir.
8 Jan & 20 June 1974
By [illegible] Date 3-4-77

4th Ind. SECRET (15-B3)

War Department, Office, Chief of the Air Corps, Washington, D. C., February 20, 1942; To: Chief, Army Air Forces.

1. Referring to the Special Project "Chemical Spray for High Altitudes," and to the attached copy of interbranch instructions for accomplishment of same, it is recommended that this Project be approved, including estimated cost of the Air Corps share. Funds in the amount of $75,000 can be made available for this Project by diversion from other projects.

2. Attention is invited to 1st and 3rd Indorsements of basic letter in which Chemical Warfare Service and the Chief Signal Officer approve the Project for these respective branches and indicate that their share of funds will be made available.

3. In addition to authority to provide the necessary Air Corps funds in the manner mentioned above, it is further requested that authority be granted to transfer such funds to the Chemical Warfare Service, which branch is set up to handle all necessary expenditures involving travel, transportation, special equipment, etc.

4. Considerable ground work has already been undertaken by the three branches involved in preparation for this test. Immediate action on the above request is, therefore, requested in order that the program of initial tests at Edgewood, Maryland may be undertaken.

For the Chief of the Air Corps:

1 Incl.
Cy R&R

/s/ Chas. A. Horn
Chas. A. Horn,
Lieut. Col., A.C.
Operations Services

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ROUTING AND RECORD SHEET

DECLASSIFIED
DOD DIR.
8 Jan. 6 20 June 1974
By [illegible] Date 5-4-77

Subject: Chemical Spray for High Altitudes

(15-23)

1.	OCAC Opera. Div.	OCAC Fiscal Officer	1942 2/7

1. Inviting attention to attached correspondence relating to program and plans for proposed High Altitude Spray Tests, and requesting information as to availability of funds to meet the Air Corps portion of estimated cost.

2. This test is regarded as highly desirable by various Air Force agencies, including the Air Force Combat command, and this Division desires to recommend approval.

3. Immediate reply to this B&R, with statement as to whether funds in the amount estimated are available for allocation to this Project.

1 Incl.
Ltr fr CWS, 1/28/42
above subj. w/3 Incls.

O.S.F.
Col., A.C.
Asst.

2.	Fiscal officer OCAC (5A)	Opera. Div. OCAC	1942 2/12

1. Funds in the amount of $75,000 can be made available for this purpose, but in so doing it will be necessary to divert them from other projects.

2. In connection with the above, it is the understanding of this Division, based on information received from the Chemical Warfare Service and War Plans, Air Staff, that similar research and development work relative to high altitude chemical spray had been completed by the Air Corps and the Chemical Warfare Service, and as a result thereof, funds are now included in Supplemental Estimates "E", F.Y. 1942 for spray tanks, etc., to equip not only light and dive bombers, but also medium and heavy bombers.

A. W. M.
Lt. Col., A.C.
Fiscal Officer, OCAC

Incl. n/c/

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ADDRESS REPLY TO
CHIEF OF THE AIR CORPS
WAR DEPARTMENT
WASHINGTON, D. C.

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DOD Dir.
8 Jan. & 20 June 1974
By: [illegible] Date: 3-4-77

WAR DEPARTMENT
OFFICE OF THE CHIEF OF THE AIR CORPS
WASHINGTON

(14-8)

FEB 13 1942

SUBJECT: Emplaced Flame Throwers.

TO: The Chief of the Army Air Forces.

1. Reference is made to attached letter, same subject as above, dated January 6, 1942.

2. No requirement exists for the subject flame throwers in the Army Air Forces.

F. F. Watson

1 Incl.
Ltr. 1/6/42 w/7 incls.

F. F. WATSON,
Major, Air Corps,
Ass't Executive, Air Service Command

Hq. Army Air Forces
FEB 13 1942
AAG RECEIVED

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(14-8)

FEB 13 1942

Replaced Plane Throwers. CONFIDENTIAL DECLASSIFIED

The Chief of the Army Air Forces.

1. Reference is made to attached letter, same subject as above, dated January 6, 1942.

2. No requirement exists for the subject Plane Throwers in the Army Air Forces.

F. F. WATSON.
Major, Air Corps,
Asst Executive, Air Service Command

1 Incl.
Ltr. 1/6/42 w/7 incls.

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8 Jan. & 20 June [redacted]
By: [illegible] LC, Date: 5-4-72

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The Chief of the Air Corps

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WAR DEPARTMENT
The Adjutant General's Office
Washington

AG 470.71 (12-18-41)MSC-D-M January 6, 1942.

SUBJECT: Emplaced Flame Throwers.

TO: The Commanding Generals,
Armies, Departments; Defense Commands;
The Chief of the Army Air Forces,
The Chief of the Armored Force,
The Commanding Officers,
Base Commands.

1. The flame thrower, emplaced, M1, has recently been standardized and the Chemical Warfare Service is charged with the procurement, storage, and issue of this item.

2. A description of the apparatus, with photographs is inclosed.

3. In addition to the uses mentioned in the description, comments are desired as to other situations or locations where this flame thrower may be used to advantage.

4. It is also desired that this office be informed as to the number of these flame throwers and the quantity of fuel required for the defense of your command.

By order of the Secretary of War:

E. S. Adams

Major General
The Adjutant General

7 incls.
1 - descr. of Flame Thrower.
2 - 6 Photos. of Flame Thrower.

COPY FURNISHED:
Liaison Officer of the Armored Force.

~~CONFIDENTIAL~~

Action

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DOD dir.
8 Jan. & 20 June 1954
By: [illegible] Date: 5-8-77

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DESCRIPTION OF EMPLACED FLAME THROWER

1. General Description.

The emplaced flame thrower manufactured by The Kincaid Company is described as follows:

a. Housing.

The principle operating compotents of this unit are inclosed in a rectangular sheet steel box 2 ft. 5 in. wide, 3 ft. 1 in. long, and 5 ft. 5 in. deep. (Photo. #8834, Part No. 1). The housing has a manhole on top and a handhole in the side (Photo. #8834, Part No. 5 and 6). Hoisting eyes are provided for handling (Photo. #8835, Part No.2).

b. Fuel Container.

This consists of a 60 gallon cylindrical, single compartment, sheet steel tank (Photo. #8835, Part No. 28).

c. Pressure System.

Nitrogen pressure is supplied from two commercial nitrogen cylinders (Photo. #8836, Parts No. 14), each containing 220 cu. ft. of gas at an initial pressure of 2100 p.s.i. Nitrogen is drawn from the cylinders through the hose (Photos. #8835 and #8837, Part No. 13) and individual regulating valves, (Photos. #8835 and #8836, Part No. 16), set to supply nitrogen to the fuel tank at the operating pressure of 300 p.s.i.as indicated on the gage. (Photo. #8835, Part No. 24).

d. Ignition System.

Hydrogen, supplied from a 15 lb. cylinder (Photo. No. 8836, Part No. 18), through a regulator (Photo. #8836, Part No. 20) which reduces the pressure from 1000 p.s.i at the cylinder to 100 p.s.i as indicated on the gage (Photo. #8836, Part No. 17) is used as the igniting medium. The hydrogen gas is piped to a pilot burner on each nozzle within the nozzle aperture (Photos. #8835, 8839, Part No. 11) where it is ignited by an automotive type spark plug. High tension current for the spark plugs is furnished by Ford model T type spark coils (Photos. #8835 and 8836, Part No. 12). Automotive ignition wires carry the current to the spark plugs (Photos. #8835, 8836, 8837, Part No. 36).

e. Nozzles.

The flame thrower was originally supplied with two 5/16 in. nozzles in a horizontal position 180° apart and one 5/16 in. in a vertical

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position in the same vertical plane as the horizontal nozzles. This was later changed to provide two 1/2 in. nozzles in the horizontal position 180° apart.

The nozzles are situated in a turret or dome (Photos. #8836, #8839, Part No. 8) which lies flush with the ground when idle and is raised by an hydraulic jack when operation is desired. The dome is protected and guided by a cylindrical sleeve (Photos. #8834, 8835, 8836, 8836, 8839, Part No. 3).

Provision has been made for attaching three semi-portable nozzles which may be placed near the flame thrower. When these are used the nozzles in the emplaced flame thrower do not operate. As yet no firing tests with these nozzles have been made. Valves have been provided for the control of fuels to these nozzles (Photo. 8835, Part No. 26 and 27).

f. Control System

There are a number of manually operated valves (Photos. #8835 and 8836, Parts Nos. 15, 19, 21, 22, 23 and 25) within the flame thrower. These are provided for use in filling, for adjusting pressures, and to shut off the gas cylinders for changing. The actuating valves are solenoid operated by remote control. One valve (Photo. #8837, Part No. 33) admits nitrogen to the fuel tank and dome raising jack. A second valve (Photo. #8837, Part No. 34) controls the flow of hydrogen to the pilot burners and a third valve (Photo. #8837, Part No. 32) controls the flow of fuel to the nozzles.

The three solenoid valves are operated by separate switches on a remote control box (Photo. #8838, Part No. 10). A fourth switch for operating the spark ignition system is also provided. A 24 volt electrical system is used to operate the emplaced flame thrower. This system is activated by two 12 volt storage batteries connected in series. The storage batteries are contained in the control box which is connected to the flame thrower by a cable (Photos. #8838 and 8839, Part No. 9) of any desired length. The cable provided with the present flame thrower is 75 feet long. The cable plugs into a socket on the side of the flame thrower (Photo. #8834, Part No. 7).

2. Operation.

The flame thrower is installed in a pit with the dome flush with the ground when in the lowered or inoperative position.

After preliminary settings of the manual valves have been made, the flame thrower can be fired by remote control as desired. Nitrogen is first admitted to the fuel tank. This also raises the nozzle head. The hydrogen is then admitted to the pilot burners, followed by the spark ignition and finally the nozzle control valve is opened. This projects oil

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through the nozzle where it is ignited, and emerges from the nozzle as a burning stream of liquid.

The flame thrower is usually operated in short bursts of a few seconds duration. The total flame duration per charge is about 50 seconds.

Most firings to date have been made with No. 3 Diesel oil but other fuels may also be used.

With the three 5/16 in. nozzles horizontal ranges up to 30 yards have been obtained. The vertical range was about 33 yards.

With two 1/2 in. horozontal nozzles, ranges up to 40 yards have been obtained. Photo. #8840 shows the flame thrower in operation with the two 1/2 in. nozzles.

3. Filling Operation.

Filling the emplaced flame thrower comprises three operations. Filling the fuel tank, replenishing the nitrogen supply for the pressure system, and replenishing the hydrogen supply for the ignition system.

The fuel tank is filled from drums or a portable tank by gravity flow. A filling plug (Photo. #8834, Part No. 4) is provided on top of the housing. A vent valve (Photo. #8835, Part No. 25) is provided for venting residual nitrogen pressure before filling and for venting entrapped air while filling. The valves (Photos. #8836 and 8837, Parts 15 and 33) between the nitrogen cylinders and the fuel tank are closed before filling.

Access to the gas cylinders is provided by a manhole (Photo. #8834, Part No. 5) on the top of the flame thrower housing.

The supply of nitrogen is replenished when the nitrogen pressure in the cylinders drops below 900 p.s.i. The cylinders are replaced by fresh ones having a gas pressure of 2100 p.s.i. Refilling the nitrogen cylinders is not a field operation. The cylinders are replaced by breaking a union connection, removing the used cylinder with a hoist, and installing fully charged cylinders in their place.

The hydrogen must be replenished when the pressure drops below 300 p.s.i This is done by removing the cylinder from the flame thrower, connecting it to a commercial cylinder of hydrogen and filling to a pressure of 1800-1500 p.s.i. The hydrogen cylinder is small enough to be removed and replaced by hand.

4. Probable Uses

It has been suggested that the emplaced flame thrower be installed in

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airports to prevent the landing of enemy planes or use of the airport by the enemy in the event abandonment should be necessary. For the latter application remote control by radio or an electrical system would be necessary.

It has also been proposed that the flame throwers be installed along coastlines to prevent establishment of bridgeheads by enemy forces. The emplaced flame throwers might also be used as road blocks by installation in narrow defiles.

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9884

OBJECT: To develop a fixed flame thrower for defense purposes.

DESCRIPTION: The flame thrower complete ready for installation in pit.

1 - Housing (8ft.5 in. x 5 ft.1 in. x 5 ft. 8in.)
2 - Hoisting eyes.
3 - Guide for nozzle door.
4 - Fuel Filling plug.
5 - Manhole.
6 - Hand hole.
7 - Socket for remote control connections.

PROJECT: M 8.5-1, Emplaced Flame Thrower (1942 Project Program)

DATES: This emplaced flame thrower was received at Edgewood Arsenal, Md., from the Kinnaid Company May 25, 1941. Photographed at Edgewood Arsenal September 18, 1941 at the request of the Chief, Chemical Warfare Service.

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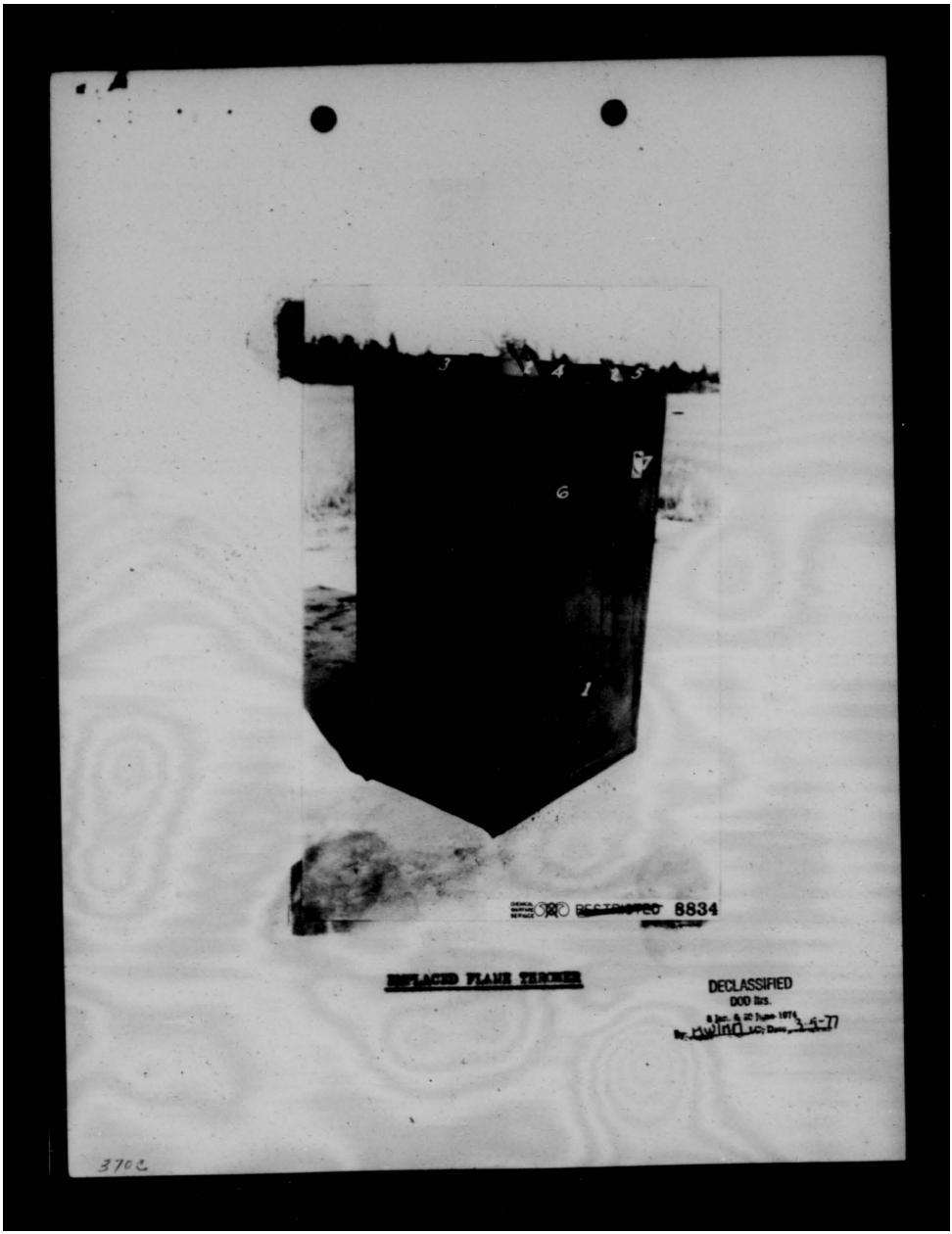

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8686

OBJECT: To develop a fixed flame thrower for defense purposes.

DESCRIPTION: Interior view of flame thrower looking diagonally down through top manhole to show control valves.

1 - Housing.
8 - Guide for nozzle dome.
9 - Nozzle dome. Encloses nozzles.
11 - Nozzle aperture.
12 - Ignition coils.
13 - Nitrogen hose to fuel tank.
15 - Nitrogen shut-off valve.
16 - Nitrogen regulator valves.
20 - Hydrogen regulator valve.
21 - Fuel filling valve. Effects double closure when fuel is under nitrogen pressure.
22 - Hydrogen valve.
23 - Valves for fuel to nozzles.
24 - Nitrogen pressure gage.
25 - Vent valve for fuel tank.
26 - Hydrogen valve for external nozzles which can be attached to this flame thrower.
27 - Valve for fuel for external nozzles.
28 - Fuel tank.

PROJECT: E 8.3-1, Emplaced Flame Thrower (1942 Project Program)

DATES: This emplaced flame thrower was received at Edgewood Arsenal, Md., from the Kinnaid Company May 23, 1941. Photographed at Edgewood Arsenal, September 10, 1941 at the request of the Chief, Chemical Warfare Service.

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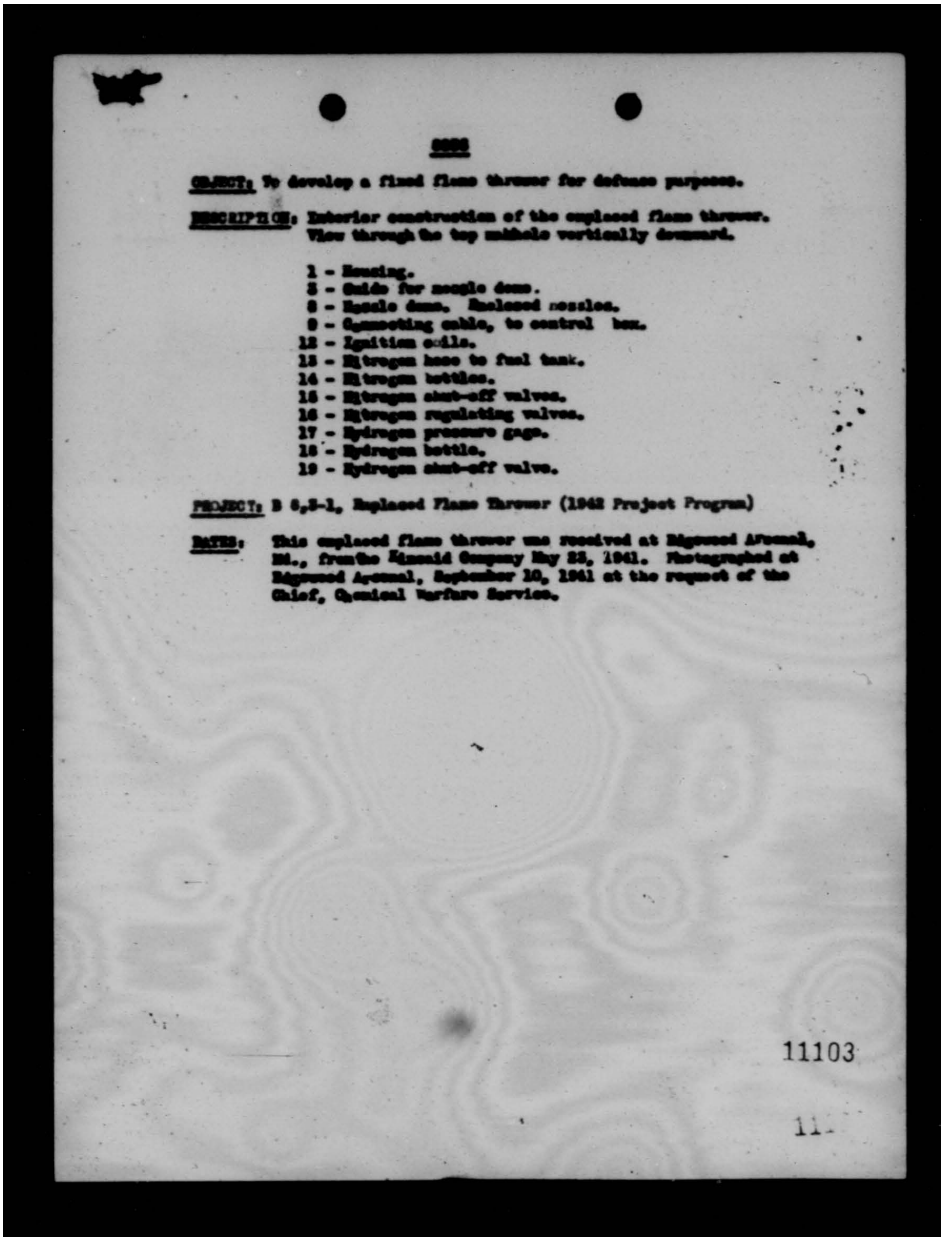

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OBJECT: To develop a fixed flame thrower for defense purposes.

DESCRIPTION: Exterior construction of the emplaced flame thrower. View through the top manhole vertically downward.

1 - Housing.
3 - Guide for nozzle dome.
8 - Nozzle dome. Emplaced nozzles.
9 - Connecting cable, to control box.
12 - Ignition cable.
13 - Nitrogen hose to fuel tank.
14 - Nitrogen bottles.
15 - Nitrogen shut-off valves.
16 - Nitrogen regulating valves.
17 - Hydrogen pressure gage.
18 - Hydrogen bottle.
19 - Hydrogen shut-off valve.

PROJECT: B 8,3-1, Emplaced Flame Thrower (1942 Project Program)

DATES: This emplaced flame thrower was received at Edgewood Arsenal, Md., from the Kinnaid Company May 23, 1941. Photographed at Edgewood Arsenal, September 10, 1941 at the request of the Chief, Chemical Warfare Service.

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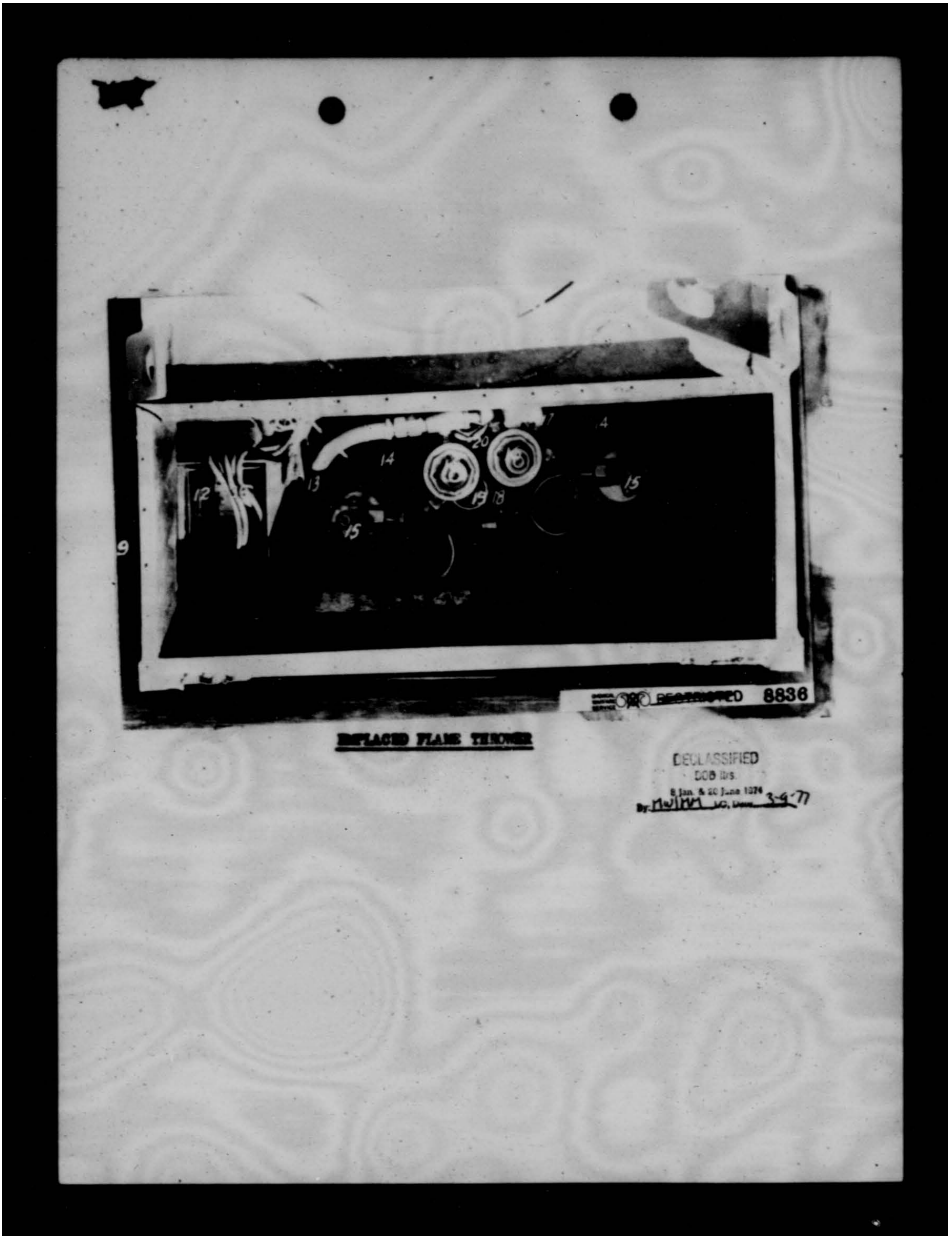

REPLACED FLAME THROWER

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8837

OBJECT: To develop a fixed flame thrower for defense purposes.

DESCRIPTION: View looking horizontally through side hand hole to show solenoid control valves.

1 - Housing.
13 - Nitrogen high-pressure hose to fuel tank.
28 - Fuel tank.
29 - High-pressure fuel line from tank to solenoid valve.
30 - High-pressure fuel line from solenoid valve to nozzle.
31 - Fuel filling pipe.
32 - Solenoid valve controlling oil.
33 - Solenoid valve controlling nitrogen to fuel tank.
34 - Solenoid valve controlling hydrogen to pilot burners.
35 - Junction box for solenoid control wires.
36 - High-tension wires to spark plugs.

PROJECT: B 8.3-1, Emplaced Flame Thrower (1942 Project Program)

DATES: The emplaced flame thrower was received at Edgewood Arsenal, Md., from the Kincaid Company May 23, 1941. Photographed at Edgewood Arsenal, September 10, 1941, at the request of the Chief, Chemical Warfare Service.

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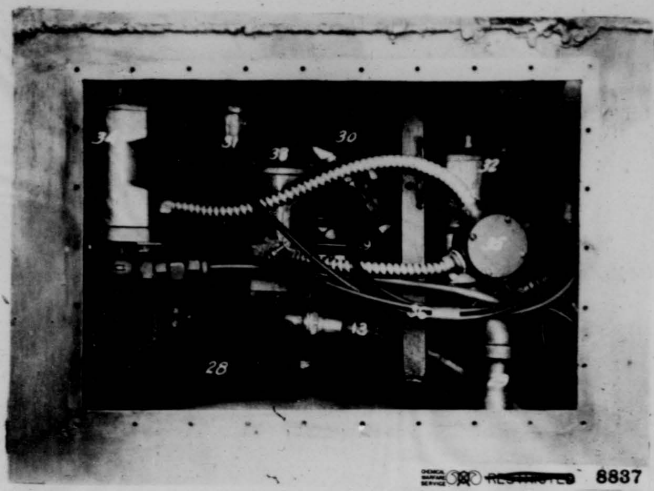

EMPLACED FLAME THROWER

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8 Jan. & 29 June 1974
By: MWIHM LC, Date: 3-9-77

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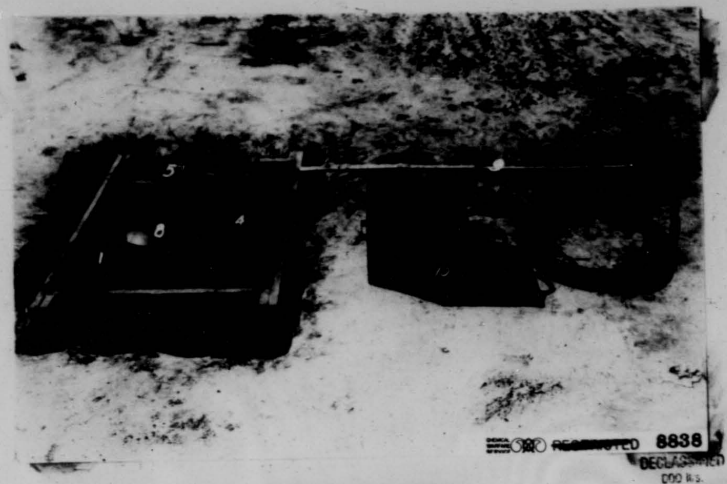

RESTRICTED 8838
DECLASSIFIED
DOD R.S.
8 Jan. & 20 June 1974
By: MWIMM LC, Date: 3-9-77

EMPLACED FLAME THROWER

OBJECT: To develop a fixed flame thrower for defense purposes.

DESCRIPTION: Flame thrower in pit with nozzle dome in non-operating position. Shown with remote control box and connecting cable.

1 - Housing.
3 - Guide for nozzle dome.
4 - Fuel filling plug.
5 - Manhole cover.
8 - Nozzle dome, encloses nozzles.
9 - Cable from control box.
10 - Remote control box.

PROJECT: B 8.3-1, Emplaced Flame Thrower (1942 Project Program)

DATES: This emplaced flame thrower was received at Edgewood Arsenal, Md., from the Kinsaid Company May 23, 1941. Photographed at Edgewood Arsenal, September 10, 1941, at the request of the Chief, Chemical Warfare Service.

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RESTRICTED 8840

DECLASSIFIED
DOC. NO.
8 Jan. & 20 June 1958
By: [illegible] Date: 3-4-77

EMPLACED FLAME THROWER

OBJECT: To develop a fixed flame thrower for defense purposes.

DESCRIPTION: The flame thrower is charged with 60 gallons of no. 3 Diesel oil. Pressure is supplied by compressed nitrogen. The oil is ignited by a hydrogen pilot flame activated by an electric spark. Range of each flame, about 40 yards. Calm day, no measurable wind.

PROJECT: B -8.3-1, Emplaced Flame Thrower (1942 Project Program)

DATES: This emplaced flame thrower was received at Edgewood Arsenal, Md., from the Kincaid Company, May 23, 1941. Photographed at Edgewood Arsenal, September 4, 1941, at the request of the Chief, Chemical Warfare Service.

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CWS 470.71
(1-28-42)

1st Ind.

CLASSIFIED
DOD dtd.
By NNRMS, Date 3-9-77

War Department, OC-CWS, April 13, 1942. To: The Commanding General, Army Air Forces.

1. Reference paragraph 3, basic communication, January 28, 1942, subject, High Altitude Chemical Spray and Internal Bomb Bay Chemical Tanks, attention is invited to the Air Forces expenditure program pertaining to the Sixth Supplemental National Defense Estimate, Fiscal Year 1942 submitted to your office on April 7, 1942.

For the Chief, Chemical Warfare Service

John J. Hayes.

JOHN J. HAYES
Captain, Chemical Warfare Service
Assistant

Hq. Army Air
APR 16 1942
AAG Received

MEMORANDUM FOR RECORD: The Chemical Warfare Service prepared a chart on April 7, 1942 showing the Chemical Warfare requirements for high altitude chemical spray and an expenditure program pertaining to the 6th Supplemental National Defense Appropriation Act, Fiscal Year 1942.

This estimate of the necessary funds requested to cover the cost of tanks and chemical agent was approved for the Commanding General Army Air Force by Col. T. J. Hanley, Assistant Chief of Air Staff, A-4 on April 24, 1942.

In brief the estimated amount of funds to make up the shortages by which our present supplies failed to meet the requirements are as follows:

		APPROXIMATE
Chemical Agent CNS	18,000 Tons	$27,000,000
Chemical Agent FS	17,000 Tons	1,700,000
Chemical Agent HS	75,000 Tons	30,000,000
Chemical Agent MI	70,000 Tons	140,000
100 lb. Incendiary Bomb	1,600,000	24,000,000
4 lb. Incendiary Bomb Cluster 1 ton steel container	* 240,000	47,000,000
Airplane Supply Tank M 1	15,000	6,500,000
Airplane Supply Tank M 3	85,000	36,000,000
Airplane Supply Tank M 10	14,000	2,000,000
Airplane Supply Tank M 20	No shortage	
Airplane Supply Tank M 21	No shortage	

*Quantity to be procured will be determined from the amount of funds in an appropriated status made available for this purpose.

858983 APR 16 1942
CENTRAL MAIL SECTION A.A.F.

SECRET

Cleared for files
Lt. McPherson
Chem. Div.

RM# 901319

Air AD 470.71 (3)

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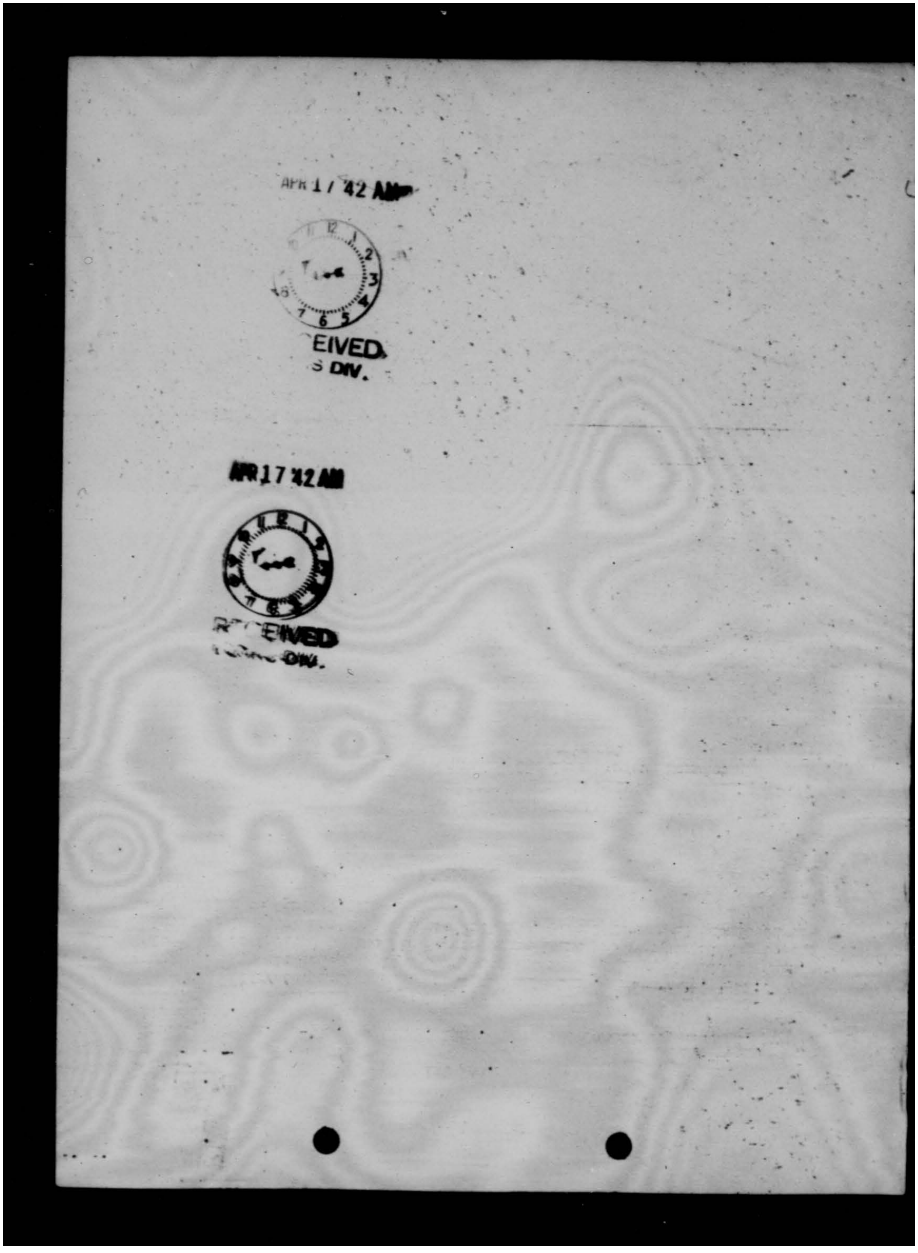

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DOD Ltr.
8 Jan. & 30 June 1954
By: [illegible] Date: 3-9-77

WAR DEPARTMENT
HEADQUARTERS OF THE ARMY AIR FORCES
WASHINGTON

JAN 28 1942

CWS 470.8/4

SUBJECT: High Altitude Chemical Spray and Internal Bomb Bay Chemical Tanks.

To: Chief Chemical Warfare Service, Washington, D.C.

1. Reference is made to communication from your office dated January 20, 1942, above subject, file CWS 470.8/4.

2. The test of high altitude spraying of chemicals carried out by the Chemical Warfare Service at Muroc Lake, California, proved the method to be practicable.

3. In view of the results obtained, and preparations being made for an all-out chemical war should it be forced upon us, the Air Force requests that the Chemical Warfare Service prepare an estimate of the necessary funds required to cover the cost of tanks and chemical agent.

FOR THE CHIEF OF THE ARMY AIR FORCES

John B. Cooley,

JOHN B. COOLEY
Lt. Colonel, A. G. [illegible]
Assistant Air Adjutant General

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JAN 30 1942
OFFICE CHIEF, CWS
WASHINGTON

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CENTRAL MAIL SECTION A.A.F.

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air AD 470-71 (5)

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DOD Ltr.
8 Jan. & 20 June 1974
By: [illegible] LC, Date: 3-9-77

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War Department

AAF/A-WPD
DWK/aa

Headquarters of the Army Air Forces
Washington

DECLASSIFIED

Written 1/27/42

JAN 28 1942

SUBJECT: High Altitude Chemical Spray and Internal Bomb Bay Chemical Tanks.

To: Chief Chemical Warfare Service,
Washington, D.C.

1. Reference is made to communication from your office dated January 20, 1942, above subject, file CWS 470.8/4.

2. The test of high altitude spraying of chemicals carried out by the Chemical Warfare Service at Muroc Lake, California, proved the method to be practicable.

3. In view of the results obtained, and preparations being made for an all-out chemical war should it be forced upon us, the Air Force requests that the Chemical Warfare Service prepare an estimate of the necessary funds required to cover the cost of tanks and chemical agent.

FOR THE CHIEF OF THE ARMY AIR FORCES

JAN 28 1942
AAG Received

Dispatched
JAN 30 1942
AAG

JOHN B. COOLEY
Lt. Colonel, A. G. D.,
Assistant Air Adjutant General

470.71 (5)

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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000 lbs.
8 Jan. & 20 June 1974
By Hulitt LC, Date 3-9-77

SECRET
Authority of the Chief, of CWS.
Date 1/20/72 Initials E.M.

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WAR DEPARTMENT
OFFICE CHIEF CHEMICAL WARFARE SERVICE
WASHINGTON, D. C.

In reply refer to CWS 470.8/4

January 20, 1942

SUBJECT: High Altitude Chemical Spray and Internal Bomb Bay Chemical Tanks

1. The present method and equipment used to spray persistent vesicant chemical agents by airplane is to use the light bombardment airplane A-20 with four wing tanks, each with a capacity of 32 gallons. While these four tanks will have considerable capacity, the method is unsatisfactory according to present thought, due to the necessity of flying at low altitudes to get the material where it is wanted. Also, the method of using heavy tanks on the under side of the wings is not desirable.

2. Theoretically, the use of heavy bombers with a capacity load of vesicant chemical agents carried in large internal bomb bay tanks to spray at high altitudes, with the object of covering large areas with suitably sized drops of agent, has always seemed to present great possibilities.

3. Some years ago the Navy Department, recognizing these possibilities, requested the Chemical Warfare Service to do some work in a preliminary way to investigate such high altitude sprays. This work was not carried beyond the preliminary stage and was inconclusive.

4. The British developed a system of spraying from high altitude bombers, and have developed the apparatus which is designated "SCI". Three sizes have been developed, manufactured and proven satisfactory by practical tests in Great Britain. The sizes now standard in the R.A.F. are 500-lbs., 1,000-lbs., and 2,000-lbs. SCI's.

5. At the request of the Air Corps, the Chemical Warfare Service carried out comprehensive tests ar Muroc Lake, California, of the high altitude method, using both external and internal chemical tanks. Over 25 missions were flown at various altitudes. The method of using the mean wind direction and velocity up to the altitude from which the liquid is sprayed, and flying a course downwind in the direction of the target, and sighting directly on the target by means of the bombsight, proved very successful. Conclusions of the Muroc Lake test were that high altitude spray is entirely practicable.

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PLEASE ADDRESS ALL COMMUNICATIONS TO "CHIEF OF THE CHEMICAL WARFARE SERVICE, WAR DEPARTMENT, WASHINGTON, D. C."

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6. With the experience of the British and ourselves to indicate the practicability of the method of high altitude spraying of chemicals, it seems that we should get into immediate action in preparation for an all-out chemical war. The first step is the obtaining of funds necessary to procure the tanks and concurrently to manufacture the chemical agent. Since the tanks have never been standardized, and no requirement, therefore, having been set up, special authority is required before the Chemical Warfare Service can include the necessary funds in their estimates. Such authority would be automatic if the Commanding General, Army Air Forces, requested the Chemical Warfare Service to estimate for the necessary funds to satisfy the requirements of the Air Forces for tanks and chemical agent. In the meantime, the necessary action to standardize the equipment would be taken.

E. Montgomery

E. MONTGOMERY
Colonel, C. W. S.
Chief, Field Service

JAN 20 '42 PM

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AIR WAR PLANS DIV.

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Air AB 470.71 (5)

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OSD ltr.
8 Jan. & 20 June 1974
By: [illegible] Date: 3-9-77

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(Air AG)

January 23, 1942

SUBJECT: Emplaced Flame Throwers

TO : The Adjutant General

1. In compliance with paragraph 3, AG 470.71 (12-18-41) MSC-D-M, January 6, 1942, Subject: "Emplaced Flame Throwers", it is not believed that the installation of emplaced flame throwers of this type around an airport would prevent enemy landings or deny the airport to the enemy after abandonment, due to the short duration of the flame - 50 seconds - and the short range - 40 yards.

2. A cheaper and more effective method of combatting enemy landings of both airplanes and parachute troops is to furnish medium and heavy tanks for defense of the airdrome. These could run into airplanes landing and run over parachute troops, whose armament is light.

For the Chief of the Army Air Forces:

JOHN B. COOLEY
Lt. Col., A.G.D.
Assistant Air Adjutant General.

Received
JAN 23 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	
	WJF				/						
	TMC	JMC									

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AG AG 470.71 (1)

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8 Jan. & 20 June 1974
By: HWHM LC: Date 3-9-77

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Emplaced Flame Throwers.

AAF/A-3
OSP-ds

1 AAF A-3 AAF AAG 1942 1/21

Request the following comments be transmitted to the AG in compliance with paragraph 3, AG 470.71 (12-18-41) MSC-D-M, January 6, 1942 Subject: Emplaced Flame Throwers:

1. It is not believed by this Headquarters that the installation of emplaced flame throwers of this type around an airport would prevent enemy landings or deny the airport to the enemy after abandonment, due to the short duration of the flame - 50 seconds - and the short range - 40 yards.

2. A cheaper and more effective method of combatting enemy landings of both airplanes and parachute troops is to furnish medium and heavy tanks for defense of the airdrome. These could run into airplanes landing and run over parachute troops, whose armament is light.

1 Incl.
mimeo ltr frm TAG to CG's Armies ELN
Depts: Def. Commands. CAAF. C/A-mored Fc & CO. Base Comms C/A-3

Incl returned to A-3.
1/23/42

no copies made of incl

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 Ltr.
8 Jan. & 30 June 1974
By: [illegible] Date: 3-4-77

HEADQUARTERS ARMY AIR FORCES
ROUTING AND RECORD SHEET

File No. . . . . .

Tally No. AAF . . . . . .

Note.-- A line will be drawn across sheet after each comment.

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SUBJECT: Emplaced Flame Throwers.

NO.	FROM	TO	DATE	COMMENTS ~~AAF/A-3~~ OSP-ds
1	AAF A-3	AAF AAG	1942 1/21	Request the following comments be transmitted to the AG in compliance with paragraph 3, AG 470.71 (12-18-41) MSC-D-M, January 6, 1942 Subject: "Emplaced Flame Throwers: 1. It is not believed ~~by this Headquarters~~ that the installation of emplaced flame throwers of this type around an airport would prevent enemy landings or deny the airport to the enemy after abandonment, due to the short duration of the flame - 50 seconds - and the short range - 40 yards. 2. A cheaper and more effective method of combatting enemy landings of both airplanes and parachute troops is to furnish medium and heavy tanks for defense of the airdrome. These could run into airplanes landing and run over parachute troops, whose armament is light. 1 Incl. mimeo ltr frm TAG to CG's Armies ELN C/A-mored Fc & CO, Base Comms C/A-3 WJF

JAN 22 1942

Depts: Def. Commands, CAAF.

(Do not use reverse side) Y-4071, AC.Rev.8/14/41

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DOD Dir.
By ...

(Air AG)

January 16, 1942

SUBJECT: Characteristics and Tactical Employment of Portable Flame Thrower, M-1

TO : The Adjutant General

1. In accordance with AG 470.71 (12-9-41) MR-C dated December 13, 1941 subject as above, no portable flame thrower type M-1 are desired included in Tables of Basic Allowances for any Air Corps unit.

For the Chief of the Army Air Forces:

JOHN B. COOLEY
Lt. Col., A.G.D.
Assistant Air Adjutant General.

JAN 16 1942
AAG

HEADQUARTERS ARMY AIR FORCES — COORDINATION											
Chief of Staff	Sec'y A. Staff	AAG	A 1	A 2	A 3	A 4	A WPD	A Insp	Budget	Statistics	

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DOD ltrs.
8 Jan. & 30 June 1976
By: [illegible] Date: 3-9-77

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AAF/A-3
OSP/jg

January 14, 1942

MEMORANDUM TO THE ADJUTANT GENERAL:

Subject: Characteristics and Tactical Employment of Portable Flame Thrower, M-1.

1. In accordance with AG 470.71 (12-9-41)MC-C dated December 13, 1941 subject as above, no portable flame thrower type M-1 are desired included in Tables of Basic Allowances for any Air Corps unit.

1 Incl.
Ltr frm AG to C/AAF
1/15/42 - AG 470.71 (12-9-41)
MC-C--Subj. as abv.
[illegible] G/Inc.

No copies of Incls. made

For the Chief of the Army Air Forces;

JOHN B. COOLEY
Lt. Col., A.G.D.
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	Sta [illegible]	
	WJF				Ezr						
					OSP						

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AAF 39
Air Ab 470.71 (3)

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8 Jan. & 20 June 1974
By: MWIMMLC, Date: 3-4-77

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WAR DEPARTMENT
OFFICE OF THE CHIEF OF THE ARMY AIR FORCES
WASHINGTON

January 14, 1942

MEMORANDUM TO THE ADJUTANT GENERAL:

Subject: Characteristics and Tactical Employment of Portable Flame Thrower, M-1.

1. In accordance with AG 470.71 (12-9-41)MC-C dated December 13, 1941 subject same as above, no portable flame throwers type M-1 are desired included in Tables of Basic Allowanzes for any Air Corps unit.

1 Incl.
Ltr frm AG to C/AAF
1/15/42--AG470.71 (12-9-41)
MC-C--Subj: as abv.

For the Chief of the Army Air Forces;

JOHN B. COOLEY
Lt. Col., A.G.D.
Assistant Air Adjutant General.

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Air Ab 470.71 (3)

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DOD ltrs.
8 Jan. & 20 June 1974
By: [illegible] LC; Date 3-9-77

2111

WAR DEPARTMENT
THE ADJUTANT GENERAL'S OFFICE
WASHINGTON

IN REPLY REFER TO AG 470.71 (12-9-41)MC-C LFL/jmh-1712 (1-15-42)

December 13, 1941.

SUBJECT: Characteristics and Tactical Employment of Portable Flame Thrower, M-1.

TO: Chief of the Army Air Forces,
Chief of the Armored Force,
Chief of Cavalry,
Chief of Chemical Warfare Service,
Chief of Coast Artillery,
Chief of Engineers,
Chief of Field Artillery,
Chief of Infantry,
Chief of Ordnance,
Chief Signal Officer,
The Quartermaster General.

1. The characteristics and tactical employment of the standardized Portable Flame Thrower, M-1 are enunciated in the inclosed paper entitled "Characteristics and Tactical Employment of Portable Flame Thrower, M-1".

2. It is desired that you restudy your needs for this weapon, based on the tactical doctrine enunciated, and forward to this office not later than January 15, 1942, your recommendations for changes in the allotment of portable flame throwers to be made in Tables of Basic Allowances for the various elements of your arm or service.

By order of the Secretary of War:

Carl Grosse
Adjutant General.

1 Incl.
As listed above.

RECEIVED
DEC 16 1941
DECLASSIFIED MAIL AND FILE UNIT

Hq. Army Air Forces
DEC 16 1941
AAG Received

A 12/16 (22-B)

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an AG 470.71 (3)

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8 Jan. & 20 June 1974
By [illegible] NCI Date 3-9-77

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CHARACTERISTICS AND TACTICAL EMPLOYMENT
PORTABLE FLAME THROWER M-1

1. Characteristics.—The portable flame thrower M-1, consisting of a fuel tank unit and a flame gun, weighs 28 pounds with the fuel tanks empty, 57 pounds with the fuel tanks loaded. Under normal conditions it is capable of throwing a flame 25 to 30 yards. The weapon may fire one continuous stream of fire for 15 seconds or it may fire a series of short bursts. Each full loading of fuel permits 15 seconds of fire. Reloading may be accomplished in the field in about four minutes. The tactical value of the weapon is derived from the heat of the flame and the dense black smoke produced.

2. Limitations.—Although the maximum range of the portable flame thrower is 30 yards, only slight burning or destroying effect can be expected within tanks, bunkers, or concrete pill boxes, when the range is greater than 15 yards and then only when the fire stream is directed at the embrasures or slits. When fired against a wind with a velocity of 10 miles per hour or greater the heat and smoke become unbearable to the operator. The stream of fire from one flame thrower should not be crossed with that from another flame thrower at a range of less than 20 yards.

3. Concealment and Cover.—The contour of the flame thrower and its position on the back of the carrier provide a characteristic silhouette. In the prone position this silhouette is higher than that of the soldier with normal equipment. Consequently, the operator must make the maximum use of natural and artificial concealment and cover to reduce the possibility of hostile recognition.

4. Firing.—The flame thrower will usually be fired in short bursts of one or two seconds duration. The effect of the fire against a fixed target is cumulative and against either fixed or moving targets the operator is able better to observe the striking point of the flame and adjust his aim for succeeding bursts.

5. Missions.—The portable flame thrower may be used as an assault weapon against fortifications, such as concrete, steel, timber and earth emplacements, to blind observation and prevent fire being delivered from embrasures, as a demoralizing agent against personnel, or as a weapon to assist in mopping-up bunkers and emplacements against which demolitions have been used. It may be used as an incendiary.

6. Tactical Employment:

(a) Attack.—The flame thrower has its principal tactical use in the attack of fortified localities and particularly in the reduction of permanent or semi-permanent emplacements. It may also be used effectively against groups occupying buildings and barricades in cities or towns. Flame throwing personnel may constitute important elements of assault detachments (See Par. 780, FM 100-5). The flame thrower is employed to prevent observation or firing from the emplacement and thus permit the demolitions party to place demolition charges at the embrasures or slits of the emplacements. Where there are two or more openings in the emplacement, one flame thrower should be used against each opening or embrasure.

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In the attack of such emplacements, as soon as the supporting fires are lifted the flame thrower operator rushes to the position previously selected from which fire can be delivered on the target. This position must be within 15 yards of the target to obtain the most effective results. The operator normally fires the entire charge of the flame thrower in one or two second bursts. Upon the completion of the fire (normally one charge of the flame thrower, since time will not usually permit a reload), the demolition party should be ready to place their charges.

Because of its weight when loaded, the short duration of the fire from one loading, and the very limited opportunity for use, the flame thrower is not suited for the use of attacking troops in open warfare situations other than as indicated above.

(b) Defense.—Although the flame thrower is a weapon of extremely short range it may find suitable employment in defense areas against hostile personnel, either on the ground or in vehicles, who advance within range of the flame thrower. Provision is made for an adequate supply of fuel at the position of the weapon.

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DOD Ltrs.
8 Jan. & 20 June 1974
By [illegible] Date 3-9-77

AAF/A-4
WRB/mhh
(Written Dec. 10, 1941)

DEC 13 1941

Chemical Spray Tanks for "Plum."

The Chief of the Chemical Warfare Service.

1. Reference is invited to "secret" memorandum dated November 27, 1941, subject as above, in which the requirement for the Army Air Force at "Plum" was set forth.

2. You are herewith advised that the requirement has been corrected to:

520 wing tanks (A-24 airplanes)
260 belly tanks (A-24 airplanes)

3. Previous shipping instructions as set forth in the memorandum cited in paragraph 1 above are superseded by the request that this office be contacted for new instructions when the tanks in question become available.

470.71 (2)

For the Chief of the Army Air Forces:

Disposed
DEC 14 1941
AAG

EDWARD P. CURTIS,
Major, Air Corps,
Secretary 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	
	[illegible]					[illegible]					

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November 4, 1941.

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DOD ltrs.
8 Jan. & 20 June 1974
By: [illegible] Date 3-9-77

Tactical Doctrine for and Technique of Employment of Flame Throwers.

TO: G-3

470.71 (1)

AAF/A-3
OSP-cpb

1. This headquarters does not believe that portable flame throwers should be made an article of issue to Air Corps troops, as suggested in Par. 6(b)(2), for use as a defense weapon, due to its short range, and short period of fire.

For the Chief of the Army Air Forces:

1 Incl.
D/F to AAF frm G-3,
10/24/41, abv subj.
w/Incl.

Dispatched
NOV 6 1941
AAG

EDWARD P. CURTIS,
Major, Air Corps,
Secretary of The Air Staff

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	
	[illegible]				[illegible]						

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DOD Ins.
6 Jan. & 20 June 1974
By: [illegible] Date: 2-4-77

WAR DEPARTMENT GENERAL STAFF
DISPOSITION FORM
G-3

G- 3/43052
Subject: Tactical Doctrine for and Technique of Employment of Flame Throwers.

Date: October 24, 1941

TO : ARMY AIR FORCES

FOR: Remark and recommendation

It is proposed to enunciate tactical doctrine for the employment of portable flame throwers as a basis for determining the needs of the various branches for this equipment, which has been standardized. A copy of the proposed doctrine on the characteristics and employment of portable flame throwers is attached. It is requested that it be returned to G-3 with your remark and recommendation at the earliest practicable date.

HARRY L. TWADDLE,
Brigadier General,
Assistant Chief of Staff.

By: /s/ W. H. Maris

W. E. CHAMBERS,
Colonel, General Staff,
Executive

Enclosure.
Draft of "Characteristics & Employment of Portable Flame Thrower, M-1".

mg

FOR RECORD:
G-3 considered 1,000 flame throwers inadequate for an army of 1,750,000. G-4 recommended (approved by Chief of Staff) that G-3 issue instructions governing tactical employment of flame throwers followed by restudy within using arms to determine their needs and recommend changed in TBA. Draft of doctrine prepared by C/Engrs, in collaboration with C/Inf. G-3 revised draft and returned it to C/Engrs. and C/Inf. and sent it to C/S, GHQ, C/CA, C/AAF, C/AF, and C/CWS for comment.

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6 Jan. & 20 June 1974
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CHARACTERISTICS AND EMPLOYMENT OF
PORTABLE FLAME THROWER M-1

1. Characteristics.--The portable flame thrower M1, consisting of a fuel tank unit and a flame gun, weighs 28 pounds with the fuel tanks empty, 57 pounds with the fuel tanks loaded. Under normal conditions it is capable of throwing a flame 20 to 25 yards. The weapon may fire one continuous stream of fire for 15 seconds or it may fire a series of short bursts. Each full loading of fuel permits 15 seconds of fire. Reloading may be accomplished in the field in about four minutes. The tactical value of the weapon is derived from the heat of the flame and the dense black smoke produced.

2. Limitations.--Although the maximum range of the portable flame thrower is 25 yards, only slight burning or destroying effect can be expected within tanks, bunkers, or concrete pill boxes, when the range is greater than 15 yards and then only when the fire stream is directed at the embrasures or slits. When fired against a wind with a velocity of 5 miles per hourler greater the heat and smoke become unbearable to the operator. Similar conditions exist if two weapons are so sited that the fires cross each other at a range of 15 yards or less from one or both operators. A prolonged burst through the stream of another flame thrower can not be accurately directed by the operator.

3. Concealment and Cover.--The contour of the flame thrower and its position on the back of the carrier provide a characteristic silhouette. In the prone position this silhouette is higher than that of the soldier with normal equipment. Consequently, the operator must make the maximum use of natural and artificial concealment and cover to reduce the possibility of hostile recognition.

4. Firing.--The flame thrower will usually be fired in short bursts of one or two seconds duration. The effect of the fire against a fixed target is cumulative and against either fixed or moving targets the operator is able better to observe the striking point of the flame and adjust his aim for succeeding bursts.

5. Missions.--The portable flame thrower may be used as an assault weapon against fortifications, such as concrete, steel, timber and earth emplacements, to blind observation and prevent fire being delivered from embrasures, as a demoralizing agent against personnel, or as a weapon to assist in mopping-up bunkers and emplacements against which demolitions have been used. It may be used as an incendiary.

6. Tactical Employment:

(a) Attack.--The flame thrower has its principal tactical use in the attack of fortified localities and particularly in the reduction of permanent or semi-permanent emplacements. Flame throwing personnel may

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constitute important elements of assault detachments (See Par. 780, FM 100-5). The flame thrower is employed to prevent observation or firing from the emplacement and thus permit the demolitions party to place demolition charges at the embrasures or slits of the emplacements. Where there are two or more openings in the emplacement, one flame thrower should be used against each opening or embrasure.

In the attack of such emplacements, as soon as the supporting fires are lifted the flame thrower operator rushed to the position previously selected from which fire can be delivered on the target. This position must be within 15 yards of the target to obtain the most effective results. The operator normally fires the entire charges of the flame thrower in one or two second bursts. Upon the completion of the fire (normally one charge of the flame thrower, since time will not usually permit a reload), the demolition party should be ready to place their charges.

Because of its weight when loaded, the short duration of the fire from one loading, and the very limited opportunity for use, the flame thrower is not suited for the use of attacking troops in open warfare situations other than as indicated above.

(b) Defense.--(1) Although the flame thrower is a weapon of extremely short range it may find suitable employment in defense areas against hostile personnel, either on the ground or in vehicles who advance within range of the flame thrower. It may be employed as an auxiliary weapon in bunkers or pill boxes to combat the operations of enemy assault detachments, which seek to overcome the emplacements following the bombardment by air and ground weapons.

(2) In the defense of air bases, the portable flame thrower may be employed in close defense of important installations and in reinforcing the crews of pill boxes and other defensive emplacements. Flame throwers may be particularly valuable in the defense of installations which are necessary to the operation of the base and which a potential enemy may seek to seize with minimum damage to the installation.

(3) The basic doctrine of coast defense is the defeat of the enemy prior to landing or while he is attempting to land. In defensive plans and preparations provision is made for automatic weapon and antitank gun emplacements along the beach. As an adjunct of other defensive fires, flame throwers may be effectively employed against enemy personnel or vehicles which succeed in approaching within range of the weapons.

(4) In all defensive situations, the personnel operating flame throwers must be carefully concealed and protected against hostile ground fire; weapons are sited preferably to fire on covered routes of possible enemy approach. Provision is made for an adequate supply of fuel at the position of the weapon.

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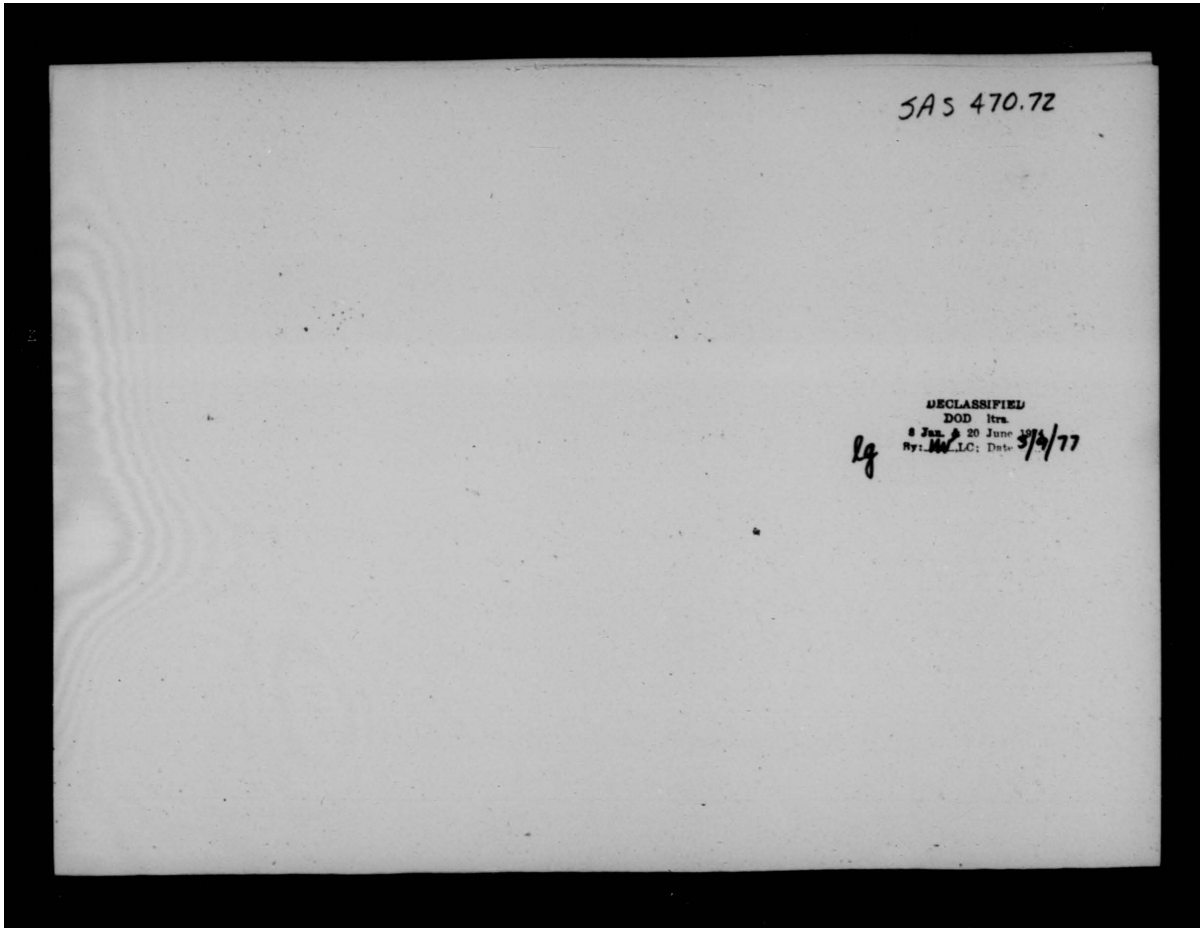

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DOD Ltr.
8 Jan. & 20 June 1974
By [illegible] 1C, Date 3-9-77

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WAR DEPARTMENT
OFFICE CHIEF CHEMICAL WARFARE SERVICE
WASHINGTON D. C.

5 - 3
D4.2-9

470.72/155 Conf.

February 18, 1942.

Subject: Military Requirement for Military Characteristics for, and Standardization of Disinfectant, Gas Mask, M1.

To: The Adjutant General.
Through: The Under Secretary of War.

1. There is forwarded enclosed one copy of an approved subcommittee report of the Chemical Warfare Technical Committee dated February 3, 1942, subject: same as above.

2. In accordance with the recommendations of the Chemical Warfare Technical Committee, Item No. 454, February 10, 1942, it is requested that the action outlined [illegible] be approved.

3. It is recommended that:

a. A military requirement be established for a gas mask disinfectant.

b. The following military characteristics for a gas mask disinfectant be approved.

(1) It must give satisfactory disinfection in a dilution of 1:1000 when applied to the mask according to the prescribed procedure.

(2) It must not discolor, fog, or otherwise alter the lenses.

(3) It must not cause deterioration of the mask or of component parts thereof.

(4) It must be cheap and readily available.

(5) It must not require special equipment or special skill to prepare or use.

(6) It must not emit obnoxious or irritating fumes nor impart an objectionable odor to the mask.

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(7) Its use must permit the mask to be worn again in the shortest possible time without causing discomfort or hazard to the wearer.

(8) The disinfectant and solutions of the same must not deteriorate when subjected to extremes of temperature encountered in the field.

g. The item described in the attached report and considered to meet the proposed military characteristics be classified as

Required type
Adopted type
Standard article

and be designated as

Disinfectant, Gas Mask, Ml.

h. The basis of issue for this item be as follows:

1 bottle (approximately 4 ounces of one to ten dilution) per Company, Battery, Troop, or similar unit or quarter.

i. The item be classed as current supply, critical item.

j. The Chemical Warfare Service be charged with the procurement, storage and issue of the item.

For the Chief of the Chemical Warfare Service.

/s/ M. E. BARKER,
Colonel, C.W.S.
Assistant.

1 Incl. - Copy of subcommittee report, February 3, 1942.

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1st Ind.

War Department, Office of the Under Secretary, Washington, D. C., February 21, 1942. To: The Assistant Chief of Staff, G-4, Washington, D. C.

1. The following item is cleared for procurement as to type:

Disinfectant, Gas Mask, M1

2. The Chemical Warfare Service is charged with the procurement of these items.

By direction of the Under Secretary of War:

/s/ BYRON A. FALK,
Colonel, Signal Corps,
Chief, Standards Division.

1 Incl. n/c

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SUBJECT: Standardization of Disinfectant, Gas Mask, M1*.

AG 438.7 (2-18-42)MSC-D 2nd Ind. MNE/emk-1705.

War Department, A.G.O., February 28, 1942. To: Chief of Chemical Warfare Service.

1. A military requirement for a gas mask disinfectant is established.

2. The military characteristics for a gas mask disinfectant as contained in Paragraph 3 b, basic letter, are approved.

3. The item Disinfectant, Gas Mask, M1* is classified as follows:

a. Required type
Adopted type
Standard article.
b. Current supply, critical, essential item.

4. You are charged with the storage and issue of this item.

5. The basis of issue is approved as follows:

One (1) bottle (approximately 4 ounces) per Company, Battery, Troop, or similar unit per quarter.

By order of the Secretary of War:

R. G. [redacted]

1 Incl. n/c. Adjutant General.

INFORMATION COPIES TO: (w/cy of Basic and 1st Ind.)
Under Secretary of War;
Chief of Naval Operations;
Commandant, U. S. Marine Corps;
Chief of the Army Air Forces;
Chief of the Armored Force;
Liaison Officer of the Armored Force;
Chief of Cavalry;
Chief of Field Artillery;
Chief of Infantry;
Chief of Coast Artillery;
Chief of the Air Corps;
Chief of Engineers;
Chief of Ordnance;
Chief Signal Officer;
The Quartermaster General;
The Surgeon General.

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ADDRESS REPLY TO
CHIEF OF THE AIR CORPS
WAR DEPARTMENT
WASHINGTON, D. C.

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DOD Ltr.
8 Jan. & 20 June 1974
By: [illegible] Date: 5-9-77

WAR DEPARTMENT
OFFICE OF THE CHIEF OF THE AIR CORPS
WASHINGTON

(14-8)

~~SECRET~~
By Authority of
the Chief of the Air Corps
FEB 16 1942
Date Initials

SUBJECT: Oxygen Masks.

TO: The Chief of the Army Air Forces.

FEB 16 1942

1. As directed in your letter, same subject as above, dated February 6, 1942, 50 oxygen masks have been shipped by air to the American Volunteer Group, Rangoon. These masks are being shipped in Army B-24A airplane, number 40-2375, which departed Bolling Field February 10, 1942. These masks will be marked for General Magruder.

For the Chief of the Air Corps:

W. T. Hefley

Hq. Army Air Forces
FEB 17 1942
AAG RECEIVED

W. T. HEFLEY
Lt. Col., Air Corps.
Executive, Air Service Command

470.72

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Acc. to 470.72 (7)

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(Air AG)

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DOD ltrs.
8 Jan. & 20 June 1974
By: MWHM LC; Date 3-9-77

~~SECRET~~
BY AUTHORITY OF THE
CHIEF of the ARMY AIR FORCES
DATE INITIALS

February 13, 1942.

SUBJECT: Gas Masks for Troops (Shortages at New York P. of E)

TO: The Chief of the Air Corps.

1. Attention is invited to the inclosed copy of a letter from The Adjutant General to the Chief of the Army Air Forces, relative to gas mask shortages in organizations involved in Shipment 6814.

2. Necessary action will be taken to properly equip troops under your control, involved in Movement Orders and as directed in much Movement Orders.

By command of Lieutenant General ARNOLD:

JOHN B. COOLEY
Lt. Col., A.G.D.
Assistant Air Adjutant General

Incls:
Cy ltr AGO to C/AAF,
AG 426.4 1/30/42, with
incl.
Cy ltr N.Y.P.E. Fort
Chemical Officer to
G-4, CWS 470.6, 1-24-42.

470.72 (7)

FEB 14 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	
	WJF										

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HEADQUARTERS [illegible] AIR FORCES

ROUTING [illegible] RECORD SHEET

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DOD ltrs.
6 Jan. & 20 June 1974
By: [illegible] Date: 3-4-77

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File No.....

Tally No. AAF.....

Note.--A line will be drawn across sheet after each comment.

SUBJECT: Gas Masks for Troops (Shortages at New York P. of E)

AAF/A-4
DPG/esg

NO.	FROM	TO	DATE	COMMENTS
1.	AAF A-4	AAF AAG	1942 2/10	1. Request a directive substantially as follows be sent to the Chief of the Air Corps, with copies of attached inclosures: "1. Attention is invited to the inclosed copy of a letter from The Adjutant General to the Chief of the Army Air Forces, relative to gas mask shortages in organizations involved in Shipment 6814. 2. Necessary action will be taken to properly equip troops under your control, involved in Movement Orders and as directed in such Movement Orders." Incls: Cy ltr AGO to C/AAF, AG 426.4 1/30/42, with incl. Cy ltr N.Y.P.E. Port Chemical Officer to G-4, CWS 470.6, 1-24-42. Eq. Army Air Forces FEB 11 [illegible] AAG RECEIVED for FSB Acting C/A-4

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(Do not use reverse side) W-4071, AC. Rev. 8/14/41

Page No._____ [illegible] 470.72 (2)

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8 Jan. & 30 June 1974
By [illegible] LC, Date 3-9-77

(Air AG)

SECRET
BY AUTHORITY OF THE
CHIEF OF ARMY AIR FORCES
DATE INITIALS

February 6, 1942

SUBJECT: Oxygen Masks.

TO: The Chief of the Air Corps.

1. It is directed that fifty (50) oxygen masks (latest type) be shipped immediately, by air, to the American Volunteer Group, Rangoon.

2. These masks are urgently needed by the AV Group as requested in radiogram dated February 2, 1942.

By command of Lieutenant General ARNOLD:

JOHN B. COOLEY
Lt. Col., A.G.D.
Assistant Air Adjutant General

Dispatched
FEB 6 1942
AAG

470.72 (5)

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-[illegible]	[illegible]	[illegible]
		prc				✓				

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HEADQUARTERS [redacted] AIR FORCES

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ROUTING AND RECORD SHEET

DECLASSIFIED
DOD Ltr.
8 Jan. & 30 June 1974
By Hulwick, C. Date 3-4-77

File No.

Tally No. AAF/A-4/69

Note.--A line will be drawn across sheet after each comment.

SUBJECT: Oxygen Masks

AAF/A-4
DPG/asg

NO.	FROM	TO	DATE	COMMENTS
1.	AAF A-4	AAF AAG	1942 2/4	1. Request a directive substantially as follows be sent to the Chief of the Air Corps. "1. ~~Request~~ (50) oxygen masks (latest type) be shipped immediately, by air, to the American Volunteer Group, Rangoon. 2. These masks are urgently needed by the AV Group as requested in radiogram dated February 2, 1942." for TJH, Jr. C/A-4

Hq. Army Air Force
FEB 5 1942
AAG Received

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W-4071, AC. Rev. 8/14/41

Page No. _____ Air AS 470.72 (5)

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AAF/A-4
DPC/eag
wrtn 2/9/42

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DOD Dirs.
5 Jan. & 30 June 1972
By [illegible] NARS, Date 5-9-77

Subject: Gas Masks for Troops (Shortages at New York Port of Embarkation)

1st Ind.

War Department, Headquarters, Army Air Forces, Washington, D. C.
FEB 12 1942 To: Commanding General, Air Force Combat Command, Bolling Field, D. C.

1. Forwarded for necessary action with reference to paragraph 3 above.

By Command of Lieutenant General Arnold

Incl:
Ltr N.Y.P.E. Port Chemical Officer to G-4, GNS 470.8, 1-24-42.

JOHN B. COOLEY
Lt. Colonel, A. G. D.,
Assistant Air Adjutant General

FEB 12 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 Ltr 470.72 (4)

AAF-39

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In reply refer to:

CWS 470.6

WAR DEPARTMENT
Port Chemical Officer
New York Port of Embarkation
1st Avenue & 58th Street
Brooklyn, N. Y.
January 24, 1942

SUBJECT: Gas Masks Issued to Force 6814

TO: Assistant Chief of Staff G-4
Washington, D. C.

1. Four requisitions and/or shipping orders were received by this office, from 2nd and 3rd Corps Areas totalling --

Mask, gas, diaphragm	394
Mask, gas, service	855
	1249

2. During the trpop movement, this section issued supplies for troops from 1st, 2nd, 3rd, 4th, 7th, and 8th Corps Areas and Air Force Combat Command, Mitchell Field, Augusta, Ga., and Baton Rouge, La. The various reasons given for the need of such supplies were:

a. Additional personnel added to organization and arriving unequipped with masks.

b. Units moved in from distant stations without masks and lack of sufficient time to determine what, if any, provisions had been made for supply of masks or other checical warfare material.

c. Masks had been shipped with other checical warfare material to Port Quartermaster, NYPE, and had been stored in hold of ship of which unit was sailing and were not accessible for issue to the troops before sailing.

3. The follwoing units of Force 6814 requisitioned this section for masks and were supplied as follows:

	Diaphragm	Service
A	12	288
B		32
C		8

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	Diaphragm	Service
B	25	
F		120
I		263
J	570	1320
K	1	31
L	159	317
M	9	27
L & M (additional combined requisition)		565
N	1	
O	1	
T	1	2
X	10	171
Y	253	1169
AA	2	2
CC	4	14
EE	13	35
FF	10	20
SS	8	82
TT		197
XX		24
DDD		167
FFF	1	
Force G-4	30	
152nd Med. Det.		27

Three requisitions were filled for I, 26th Signal Company, and three requisitions for K, 51st Ordnance Co. The reason given for these repeated calls on this section was that the commanding officers of these companies could not readily determine the exact number of masks they needed.

4. The total number of masks supplied to force 6814 was --

Mask, gas, diaphragm	1110
Mask, gas, service	4861
	5971

5. In an number of these issues, the number of masks, gas, diaphragm supplied was less than authorized. This was due to our stores being depleted. Diaphragm masks were enroute at the time from Edgewood Chemical Warfare Depot but had been delayed in transit. These masks have now arrived and are in store.

s/s G. W. B.Witten
G. W. B. WITTEN
Lt. Col., C. W. S.
Port Chemical Officer

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8 Jan. & 20 June 1974
By [illegible] LC, Date 3-9-77

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AAF/A-4
JFW/mwb
Wrnt 2/6/42

Civilian Gas Masks.

470.72 (3)

5th Ind.

War Department, Headquarters, Army Air Forces, Washington, D. C.
FEB 9 1942 To The Commanding General, Air Force Combat Command, Bolling Field, D. C.

1. Attention is invited to the preceding 4th Indorsement.

By Command of Lieutenant General Arnold

1 Incl/ n/c.

JOHN B. COOLEY
Lt. Colonel, A. G. D.,
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	
						TJH/mw					

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air ab 470.72 (3)

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4-3

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DOD Dir.
6 Jan. & 20 June 1972
By [illegible] LC, Date 3-9-77

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CWS 470.72/167 C
12-31-41 4th Ind.

War Department, O-C of CWS, February 2, 1942 - To: Chief of the Army Air Forces, Washington, D.C.

1. Attention is invited to the attached inclosure which sets forth the policy of the War Department on the issue of gas masks to civilians.

2. This policy precludes the issue of gas masks to civilians mentioned in basic letter.

For the Chief of the Chemical Warfare Service:

E. MONTGOMERY
Colonel, C.W.S.
Chief, Field Service

Incl. 1

[illegible] 42
CENTRAL MAIL SECTION A.A.F.
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~~CENTRAL MAIL SECTION A.A.F.~~
Ser 470.72

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DOD ltrs.
8 Jan. & 30 June 1974
By: MWHM LC, Date 3-4-77

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AAF/A-4
AW/mwb

Wrtn 1/28/42

SUBJECT: Civilian Gas Masks.

3rd Ind.

War Department, Headquarters, Army Air Forces, Washington, D. C.
JAN 30 1942 To The Chief of Chemical Warfare Service.

1. Inviting attention to basic communication and following indorsements. This Headquarters concurs in the statement that civilian employees at the Air Bases within 350 miles of the coasts should be equipped with gas masks. Attention is invited to 1st indorsement of this Headquarters, January 15, 1942 to the Chief of Chemical Warfare Service, subject: "Gas Masks for Civilians on Army Air Bases".

2. Information is requested reference the statement in Paragraph 2, 1st indorsement that the War Department has established a priority on issue of gas masks to civilians.

470.72 (3)

FOR THE CHIEF OF THE ARMY AIR FORCES

WM. W. DICK
Lt. Col., A.G.D.
Air Adjutant General

Dispatched
JAN 31 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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8 Jan. & 20 June 1974
By Mullen, LC, Date 3-4-77

HEADQUARTERS 4TH AIR FORCE
Office of the Commanding General
Hamilton Field, California (0)

470.72 December 31, 1942.

Subject: Civilian Gas Masks.

To: Commanding General, Air Force Combat Command, Bolling Field, D.C.

Through: Commanding General, Western Defense Command, Presidio of San Francisco, California.

1. A study has been made to determine the number of civilian gas masks required in the 4th Air Force. From this study the following figures have been obtained:

Operating bases	2,569
Sacramento Air Depot	12,000
Interceptor Command	3,508
Total	18,077

2. In view of the constant increase of personnel at these installations it is believed that at least 25,000 civilian gas masks should be made available, of which 12,500 should be of a small size suitable for women.

3. These masks should be made available as soon as possible. There is a strong possibility that this coast may be attacked by carrier-borne aviation and the air bases and depot would be objectives of first importance. In addition to the actual danger, it is most destructive to the morale of civilian employees to see the officers and men on duty fully equipped with service gas masks while no provision has been made for the protection of civilians.

For the Commanding General:

/s/ D. M. Wiseman
for G. H. McMANUS, Jr.
Major, A.G.D.
Adjutant General

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8 Jan. & 20 June 1974
By [illegible] LC. Date 3-9-77

470.72 (CWS) 1st Ind.

HEADQUARTERS WESTERN DEFENSE COMMAND AND FOURTH ARMY, Presidio of San Francisco, California, January 2, 1942. To Commanding General, Air Force Combat Command, Bolling Field, D.C.

1. Concur in statements in par. 3 basic letter.

2. The War Department has established a priority on issue of gas masks to civilians.

For the Commanding General:

/s/ J. J. Lappage,
J. J. LAPPAGE,
Major, A.G.D.,
Asst. Adjutant General.

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DOD ltrs.
6 Jan. & 20 June 1974
By HWMcL LC. Date 3-4-77

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ACC 470.72 (12-31-41) 2d Ind. (0-99)

HEADQUARTERS AIR FORCE COMBAT COMMAND, Bolling Field, D. C. JAN 13 1942
To: Chief of the Army Air Forces, Washington, D. C.

1. This headquarters concurs in request contained in basic communication. In this connection, reference is made to letter from this headquarters to the Chief of the Army Air Forces, file number ACC 470.71, subject Gas Masks for Civilians on Army Air Bases, dated December 31, 1941.

2. The total number of gas masks that will be required for civilians working on or residing on Army Air Bases within 350 miles of the East and West coasts and within 300 miles of the Gulf coast of the United States is not yet known to this headquarters. Pending receipt of more accurate information, it is believed that for planning purposes it may be assumed that approximately 180,000 gas masks may be needed for civilians whose occupation requires them to remain on or in the immediate vicinity of Army Air Bases lying within the areas mentioned above. More accurate information concerning the actual number of masks that may be required will be forwarded as soon as it is obtained.

For the Commanding General:

C. W. [illegible]
Brigadier General, G.S.C.,
Chief of Staff.

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air ACC 470.72 (3)

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DOD ltrs.
9 Jan. & 20 June 1974
By [illegible] NC, Date 3-9-77

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AAF/A-4
JFH/mrh
Wrnt 2/6/42

Gas Masks for Civilians on Army Air Bases.

170.72 (2)

3rd Ind.

War Department, Headquarters Army Air Forces, Washington, D. C.
FEB 9 1942
To the Commanding General, Air Force Combat Command, Bolling Field, D. C.

1. Attention is invited to the preceding 2nd Indorsement.

By Command of Lieutenant General Arnold

1 Incl. n/c

JOHN B. COOLEY
Lt. Colonel, A. G. D.,
Assistant Air Adjutant General

FEB 9 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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8 Jan. & 20 June 1974
By HW/HM, LC, Date 3-9-77

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4-5

CWS 470.72/147 C
12-31-41 2nd Ind.
War Department, O-C of CWS, February 2, 1942 - To: Chief of the Army Air Forces, Washington, D.C.

1. Attention is invited to the attached inclosure which sets forth the policy of the War Department on the issue of gas masks to civilians.

2. This policy precludes the issue of gas masks to civilians mentioned in basic letter and in the First Indorsement.

For the Chief of the Chemical Warfare Service:

E. MONTGOMERY
Colonel, C.W.S.
Chief, Field Service

Incl 1

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CENTRAL MAIL SECTION A.A.F.

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Air WS 470.72 (2)

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AAF/A-4
AW/lml

Written January 13, 1942.

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DOD ltrs.
8 Jan. & 20 June 1974
By: HWMM, LC; Date 3-9-77

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Subject: Gas Masks for Civilians on Army Air Bases.

1st Ind.

War Department, Headquarters, Army Air Forces, Washington, D. C.
Jan. 15, 1942. To: Chief of Chemical Warfare Service.

1. Inviting attention to basic communication. It is believed that civilian employees of air bases within 350 miles of the Atlantic, Pacific and Gulf Coasts should be equipped with gas masks as early as practicable. This should include families of employees actually residing upon the bases.

2. If a basis of issue can be established, requisitions will be submitted without delay.

For the Chief of the Army Air Forces,

JAN 15 1942
Dispatched
JAN 15 1942
AAG

JOHN B. COOLEY,
Lt.Col., A.G.D.,
Ass't. 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	
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6 Jan. 4000 June 1974
By HWIMM LC: Date 3-9-77

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ACC 470.71

(0-104)
DEC 31 1941

Gas Masks for Civilians on Army Air Bases.

Chief of the Army Air Forces.

1. Experience has shown that military air establishments are among the first targets struck by hostile air attack. Such an attack may be made with gas as well as with high explosive or incendiary bombs. A possibility of gas attack exists, therefore, for the military objectives on the east, west and gulf coasts of the United States.

2. Military personnel are equipped with service gas masks. Civilian personnel are not as yet provided with this form of protection. In view of the fact that military air establishments within the continental United States employ large numbers of civilians and further in view of the fact that should such establishments suffer a gas attack, the civilian components would be exposed to the effects of the gas to the same extent as would the military personnel, it is believed that steps should be taken at once to provide gas masks for all civilians whose duty requires them to reside or remain on any Army air base, within a distance of 350 miles of the east and west coasts and 300 miles of the gulf coast.

3. In this connection it is realized that such civilian personnel will be equipped eventually with whatever type of mask is provided for the protection of the civil population at large, but it should be borne in mind that the general protection of civilians may be normally expected to materialize only as the result of the threatened or actual use of gas and that civilian employees on air bases will probably be among the victims of the first chemical attacks.

4. This headquarters does not know of any authority that will permit the issue of gas masks to civilian employees on Army air bases. It is, therefore, recommended that steps be taken to secure authority for the issue of gas masks to those civilian employees whose duty requires them to remain on Army air bases located within 350 miles of the

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AGC 740.72 (Continued) DECLASSIFIED

east and west coasts and 300 miles of the gulf coast of the United States. In this connection, it is suggested that the training masks, until recently supplied to troops, may furnish a ready supply of serviceable masks for immediate issue.

For the Commanding General:

JAN 1 1942

C. T. [illegible],
Brigadier General, U.S.C.,
Chief of Staff

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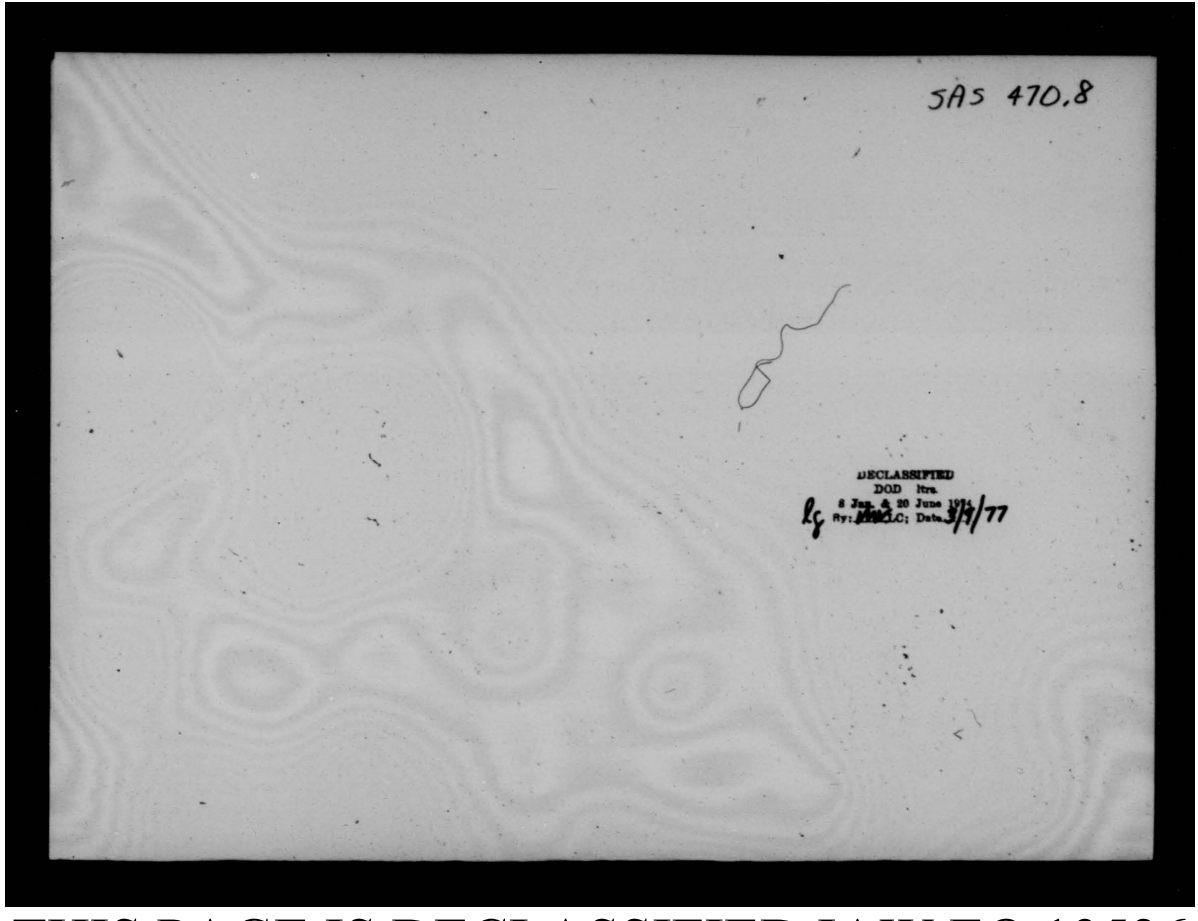

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9 Jan. & 20 June 1974
By: [illegible] LC, Date 3-9-77

HEADQUARTERS ARMY AIR FORCE DECLASSIFIED

ROUTING AND RECORD SHEET

TALLY NO.	
FILE NO.	

SUBJECT: Canvass Stressed Paper Tanks for P-47 Airplanes.

TO: General Perrin, Deputy Chief of Air Staff
Washington, D. C.

DATE 17 July 1943

FROM: Asst C/AS, MM&D, Materiel Division

COMMENT NO. 1
WAW:sma/3563

Reference telephone conversation with Colonel Sessums attached hereto is a copy of Cable number A2898 relative Canvass Paper Tanks for P-47 Airplanes built in the United Kingdom.

1 Incl.
Cpy of Cable number
A2898 (re.Canvass Paper
Tanks for P-47 airplanes)

J. W. SESSUMS, JR.
Colonel, Air Corps
Chief, Production Branch

noted P

File
ci 19 July 43

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Air ab 470.8 (6)

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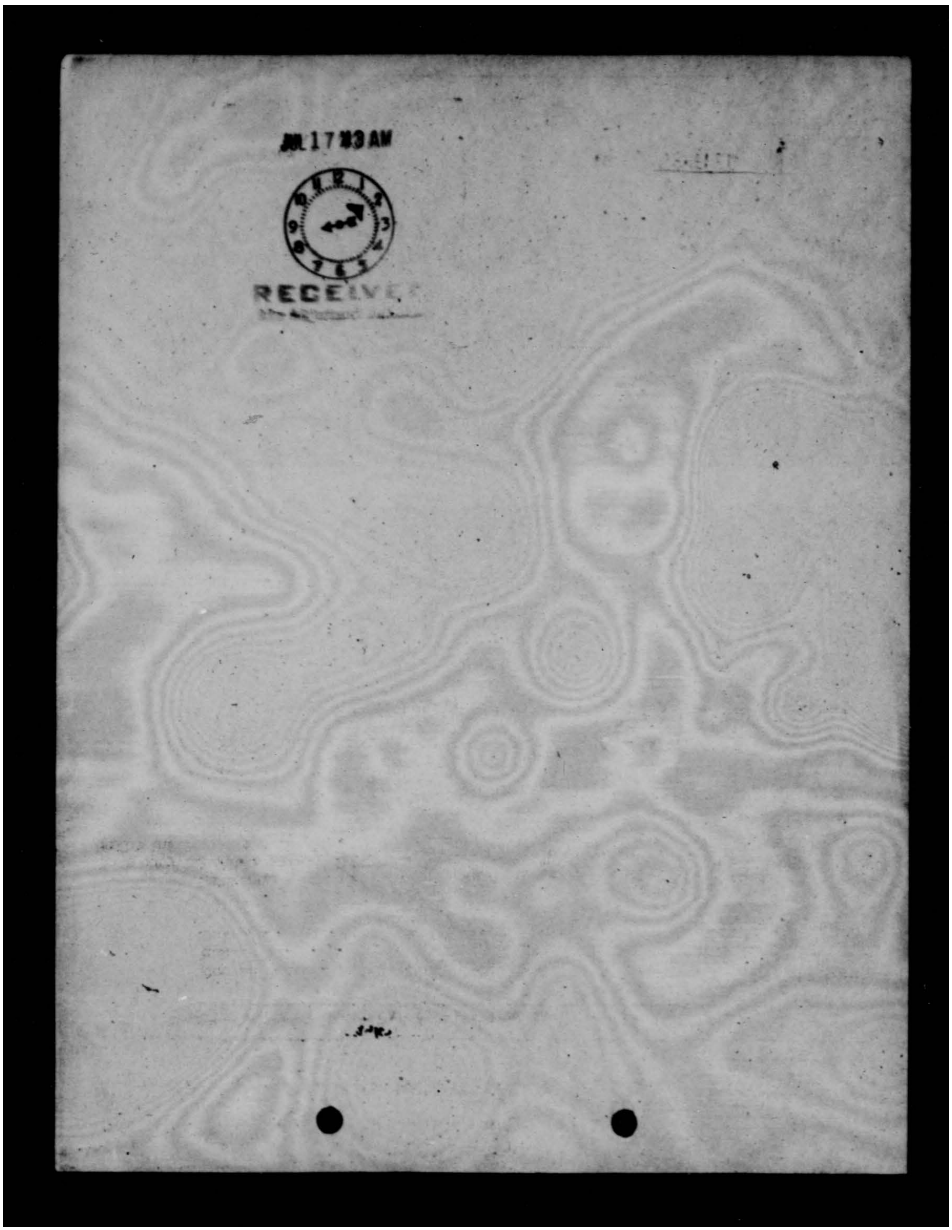

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6 Jan. & 20 June 1974
By [illegible] LC, Date 3-9-77

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WAR DEPARTMENT
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OUTGOING MESSAGE

HQ AAF, AC/A [illegible] D AFDMA-4D
Capt W. A. Weaver/ihg

July 13, 1943

CG, 8th AIR FORCE
USAWW LONDON ENGLAND

Number A 2898

Tanks and drawings desired in this country for test reference H 5872 July 9. To Miller from AFDMA signed Arnold. Request shipment of 108 gallon, torpedo shaped, stressed paper, fabric covered P-47 tanks with complete instructions to this country and to 5th Air Force, 5 to each, for tests. This does not constitute necessary action requested in aforementioned cable

AC 975

ORIGINATOR: CG AAF

CM-OUT-5425 (14 July 43) 0048Z mjc

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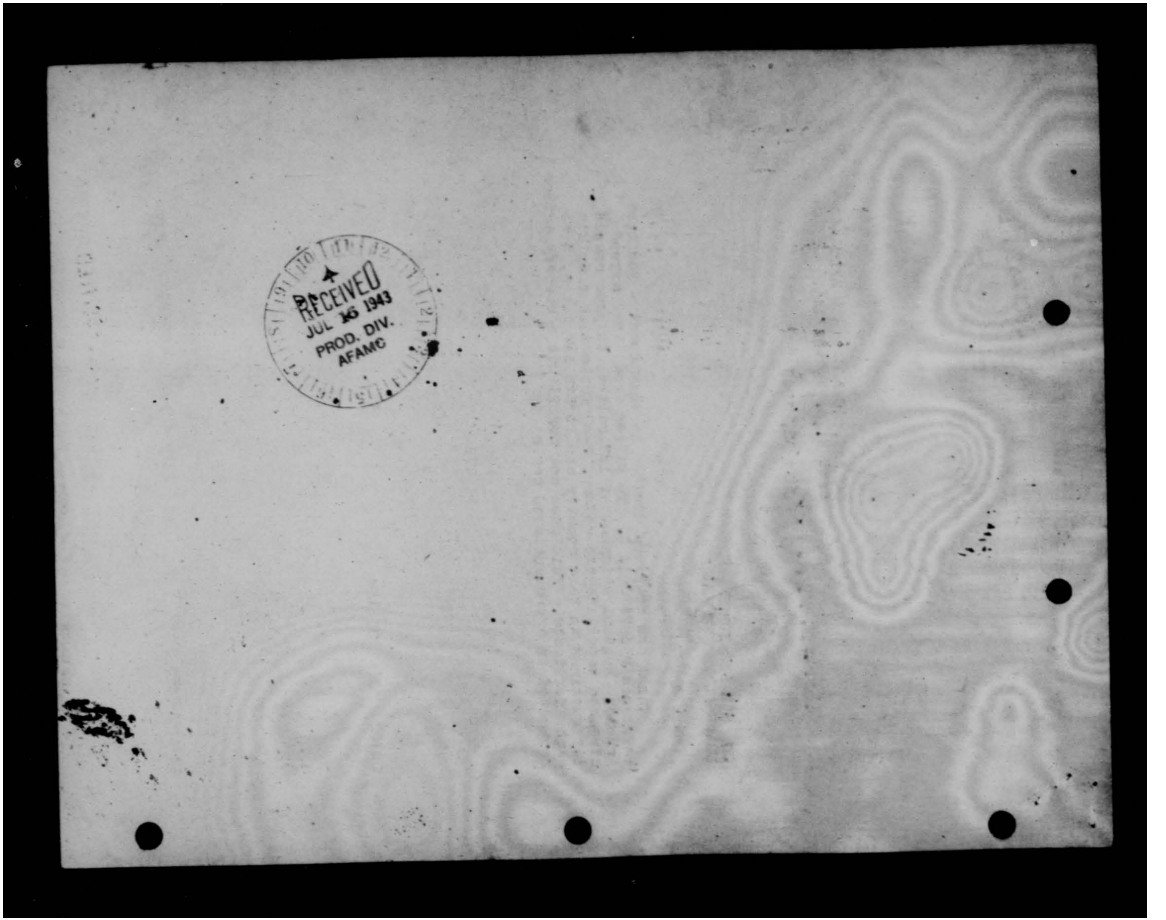

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6 Jan. & 20 June 1974
By [illegible] LC; Date 3-9-77

February 16, 1942

MEMORANDUM FOR ASSISTANT CHIEF OF STAFF, G-4:

Subject: Tank Development.

Please note the attached. There may be something in what Knerr says.

Accordingly, I am sending it to you for your information and such action as you may desire to take.

470.8 (5)

H. H. ARNOLD
Lieutenant General, U.S.A.
Deputy Chief of Staff for Air

Dispatched
FEB 17 1942
AAG

Incl: Memo for Gen. Arnold
2/16/42 frm. H. J. Knerr

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.000 Sec.
6 Jan. & 20 June 1974
By [illegible] Date 3-9-77

/348

Christie Air-Borne Tank

1 [illegible] 2 [illegible]

470.8 (1)

[redacted]

[redacted]

For the Chief of the Army Air Forces:

CLAUDE E. DUNCAN,
Lt. Col., Air Corps,
Secretary of The Air Staff.

Incl.
Memo for G/S, AAF/348,
11/13/41, abv subj.,
w/Tabs A thru D.

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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OCAC 4-E-3 JFP
(written 10-27-41)

A.A.F./348

NOV 13 1941

MEMORANDUM FOR THE CHIEF OF STAFF:

Subject: Christie Air-Borne Tank

I. Discussion.

1. The question is whether or not the Air Corps shall develop a new type airplane to carry the proposed J. W. Christie tank.

2. a. By letter of February 21, 1941, the Secretary of War ordered the Chief of Air Corps to collaborate with the Chief of Ordnance in investigating the problem of transporting tanks by air and preparation of military characteristics if deemed desirable. (Tab A).

b. Throughout the ensuing studies, military personnel recommended that no new airplane or major modification of existing airplane should be allowed to interfere with existing or contemplated heavy bomber programs. (Tabs B 1--4).

c. A Joint Ordnance-Armored Force-Air Corps conference at Wright Field, June 11, 1941, has resulted in provisions being made to carry the Ordnance Department T-9 tank, Military Characteristics for which were approved by The Adjutant General, July 29, 1941 (Tab C), in all C-54A (DC-4) airplanes, now under procurement.

d. Mr. Christie has repeatedly proposed an airplane carried tank to be released upon contact with the ground--the airplane continuing its flight without landing. A caterpillar type landing gear, similar to the Dowty type now being investigated by the Air Corps is also proposed. Mr. Christie's proposals have been lacking in factual substantiation and when furnished with drawings of the B-17C airplane at his request and for his studies, his tank application resulted in such extreme modifications that such cannot be approved due to their magnitude.

e. The proposed Christie tank does not conform to approved military characteristics and cannot fit on the C-54A airplanes but requires development of an entirely new type airplane for carrying it. (Tab D).

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Date
EXECUTIVE
FINANCE
RESERVE
TRAIN. & OPER
W. COM. AERO BD.

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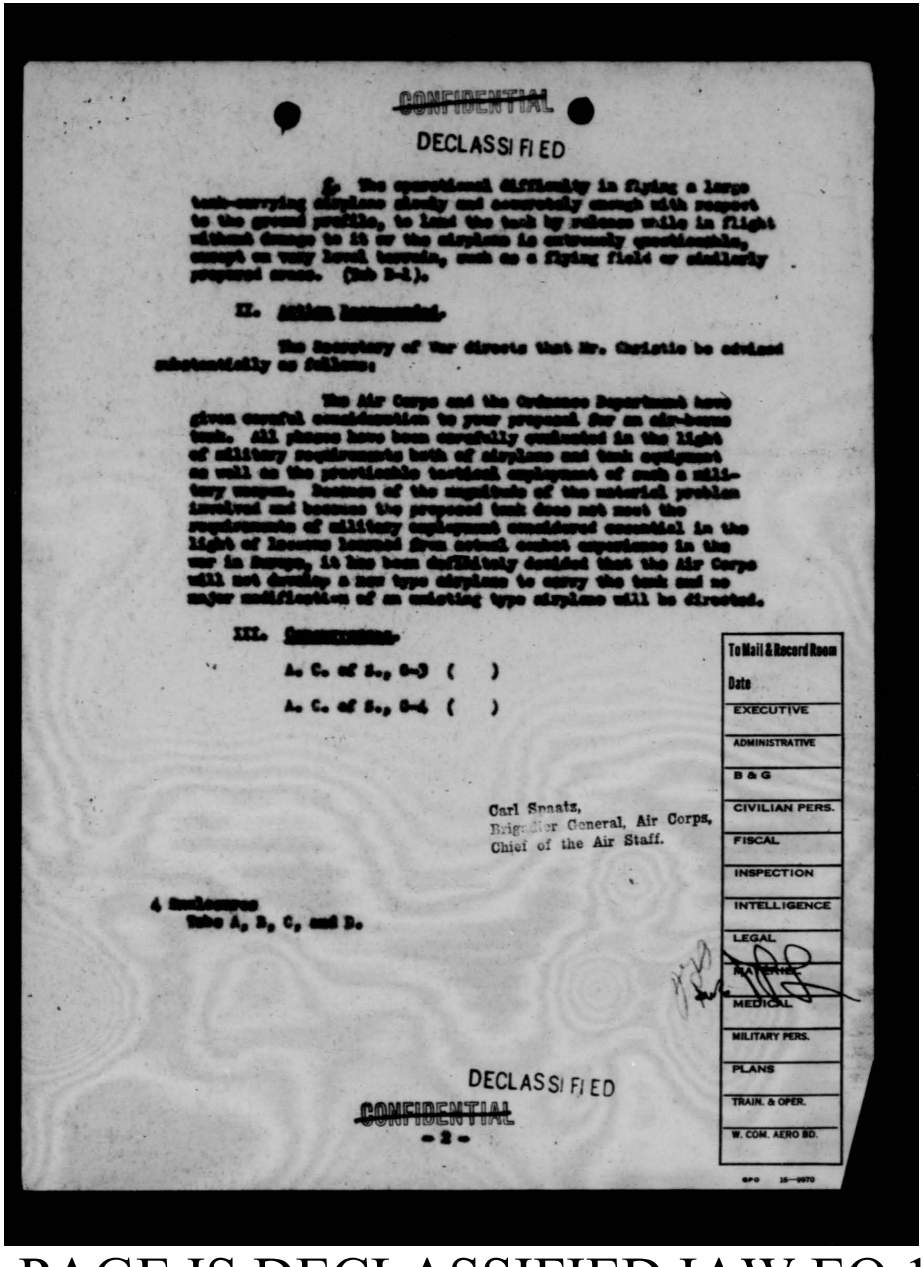

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5. The operational difficulty in flying a large tank-carrying airplane closely and accurately enough with respect to the ground profile, to land the tank by release while in flight without damage to it or the airplane is extremely questionable, except on very level terrain, such as a flying field or similarly prepared areas. (Sub 3-d).

II. Action Recommended.

The Secretary of War directs that Mr. Christie be advised substantially as follows:

The Air Corps and the Ordnance Department have given careful consideration to your proposal for an air-borne tank. All phases have been carefully evaluated in the light of military requirements both of airplane and tank equipment as well as the practicable tactical employment of such a military weapon. Because of the magnitude of the material problem involved and because the proposed tank does not meet the requirements of military equipment considered essential in the light of lessons learned from actual combat experience in the war in Europe, it has been definitely decided that the Air Corps will not develop a new type airplane to carry the tank and no major modification of an existing type airplane will be directed.

III. Recommendation.

A. C. of S., G-3 ( )

A. C. of S., G-4 ( )

Carl Spaatz,
Brigadier General, Air Corps,
Chief of the Air Staff.

4 Enclosures
Tabs A, B, C, and D.

To Mail & Record Room
Date
EXECUTIVE
ADMINISTRATIVE
S & G
CIVILIAN PERS.
FISCAL
INSPECTION
INTELLIGENCE
LEGAL
MATERIEL
MEDICAL
MILITARY PERS.
PLANS
TRAIN. & OPER.
W. COM. AERO BD.

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(written 12-15-41)

DEC 17 1941

IV. Consideration of Non-Concurrences.

The non-concurrence expressed by A. C. of S., G-3 (Tab E) takes exception to that part of Paragraph II, "Action Recommended," which expressed the belief that "the proposed tank does not meet the requirements of military employment considered essential in the light of lessons learned from actual combat experience in the war in Europe."

The recommended advice to Mr. Christie, as proposed by the A. C. of S., G-3, in Paragraph II (Tab E) generally conforms to the action recommended in Paragraph II above.

V. Final Action Recommended.

The Secretary of War directs that Mr. Christie be advised generally as follows:

The War Department has given careful consideration to your proposal for an air-borne tank. As you are aware, your proposed tank does not conform to approved military characteristics as it cannot be carried on any existing airplane. For many reasons it is not practicable at this time to develop an entirely new type airplane or to make major modification of an existing type. It is very desirable that development should result in a tank capable of being carried in a cargo type such as the C-54A rather than a bombardment type airplane.

Admittedly there exists a need for an air-borne tank, but the War Department is presently unable to regard favorably any proposal which fails to utilize existing planes without major alteration.

VI. Concurrences.

A. C. of S., G-3 ( )

A. C. of S., G-4 ( ) For the Chief of The Air Staff

E. P. CURTIS
Major, Air Corps
Secretary of the Air Staff

5 Enclosures
Tabs A, B, C, D, and E.

Dispatched
DEC 17 1941
AAG

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To Mail & Record Room
Date
EXECUTIVE
ADMINISTRATIVE
B & G
CIVILIAN PERS.
FERRYING COMMAND
FISCAL
INSPECTION
INTELLIGENCE
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MATÉRIEL
MEDICAL
MILITARY PERS.
TRAIN. & OPER.
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f. The operational difficulty in flying a large tank-carrying airplane slowly and accurately enough with respect to the ground profile, to land the tank by release while in flight without damage to it or the airplane is extremely questionable, except on very level terrain, such as a flying field or similarly prepared areas. (Tab B-1).

II. Action Recommended.

The Secretary of War directs that Mr. Christie be advised that no action will be taken by the Air Corps to develop a new type airplane to carry his tank and that inasmuch as Mr. Christie's tank does not conform to the approved Military Characteristics, no major modification of an existing type airplane will be directed.

III. Concurrences.

A. C. of S., G-3 ( )

A. C. of S., G-4 ( )

Air Staff, A-4 ( )

H. H. ARNOLD,
Major General, U. S. A.,
Deputy Chief of Staff for Air.

To Mail & Record Room
Date
EXECUTIVE
FINANCE
INFORMATION
PLANS
RESERVE
TRAIN. & OPER.
W. COM. AERO BD.

4 Enclosures
Tabs A, B, C, and D.

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WAR DEPARTMENT
The Adjutant General's Office
Washington

AG473.1 (2-20-41)M-D AGW/hmh

February 21, 1941.

SUBJECT: Tanks transported by Air.

TO: Chief of the Air Corps.

1. Inclosed for your information is copy of letter, this office, February 20, 1941, AG 473.1 (2-20-41)M-D, subject as above, to the Chief of Ordnance.

2. It is desired that you collaborate with the Chief of Ordnance in the investigation of this development and in the preparation of military characteristics if deemed desirable.

By order of the Secretary of War:

/s/ Wm. W. Dick

Adjutant General

1 Incl.
Qy. ltr., 2-20-41,
to Chief of Ordnance.

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8 Jan. & 20 June 1974
By: MWIMM LC; Date 3-9-77

SUBJECT: Tanks Transported by Air.

1st Ind.

War Department, Office, Chief of the Air Corps, Washington, D. C.
To: The Adjutant General.

1. The comments of the Air Corps are included in 1st Indorsement, Office, Chief of Ordnance to The Adjutant General, dated February 27, 1941; file: O. O. 451.25/3465 - AG 473.1 (2-20-41)M-D.

2. The Air Corps has collaborated with the Ordnance Department and Armored Force representatives in the preparation of above Indorsement. Further action by the Air Corps will be deferred until such time as the feasibility and desirability of establishing this as a development project has been definitely determined.

2 Incls. (1 added)
Cy. ltr., 2-20-41 to Chief, Ordnance.
Cy. 1st ind., 2/27/41, to The Adjutant General.

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AG 472.1 (2-20-41)M-D

February 20, 1941.

SUBJECT: Tanks Transported by Air.

TO: Chief of Ordnance.

1. At a conference held February 19, 1941, with General D. M. Pratt of the British Purchasing Commission and Mr. S. Beckhold, Manager of the Pressed Steel Car Company, Inc., General Pratt made the following statement:

a. A few months ago the British War Office was lukewarm in its interest in air transported tanks. Since then Mr. Beckhold has continued his investigation of the subject and has collaborated with the United States Ordnance Department. The preliminary Drawings (attached hereto as Incls. 1, 2, & 3) of a tank and release device proposed by Mr. Beckhold have been examined by the British War Office and by Mr. L. Carr of the Tank Division of the British Purchasing Commission. Mr. Fred Herman, Chief Engineer of Douglas Aircraft Company has also been consulted concerning the preliminary design.

b. The most recent communication from the British War Office on this subject is to the effect that it is definitely interested in the airborne tank and would like the American General Staff's reaction to the project.

2. General Pratt stated further that negotiations by the British Purchasing Committee with the Pressed Steel Car Company had reached a point where a wooden model was expected to be completed in a few weeks and that the first pilot could be produced in from 90 to 120 days at a cost of about $40,000. He said that it had been the intention of the British Purchasing Committee to purchase such a model from the Pressed Steel Car Company but that the continuance of the negotiations had been stopped by the embargo on British purchases in the United States.

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3. The tank as visualized at present has the following characteristics:

Weight	About 7½ tons
Crew	2 men
Armament	1-37mm gun & 1-.30 cal. machine gun firing forward.
	1-.30 cal. AA machine gun demountable, mounted on roof of tank.
Speed	Top - 30 M.P.H.; Cruising - 45 M.P.H.
Engine	Diesel air cooled 250 HP at 2200 RPM.
Cruising Radius	700 miles.

Capable of being landed either with or without the plane itself being landed.

4. A plane built by the Douglas Aircraft Company is apparently the only one built in the United States at present which can be adapted to carry this tank.

5. Mr. Beckhold stated that the axle, transmission, differential, sprocket shaft, and brake drums which it is planned to use in the tank are all standard parts now in production. He further stated that the British War Office was in possession of reliable information to the effect that the Germans had been manufacturing airborne tanks in the Fokker plant for four months and that the Skoda works were also being used for this purpose.

6. It is desired that the development of this tank be investigated and that if deemed desirable military characteristics be submitted as well as your recommendation relative to the procurement of a pilot from the Pressed Steel Car Company. This report is desired not later than Feb. 28.

7. Mr. L. Carr of the Tank Division of the British Purchasing Commission and Mr. S. Beckhold of the Pressed Steel Car Company, Inc. are available for consultation on this subject. Mr. Fred Herman, Chief Engineer of the Douglas Aircraft Company will be in Washington, Tuesday, February 25 for the same purpose.

8. The Chief of the Armored Force and Chief of the Air Corps are being notified of the above and are being directed in addition to collaborate with you in arriving at a decision.

By order of the Secretary of War:

Wm. W. Dick
Adjutant General.

3 Incls.
#1-Memo., P.S.Car Co., w/b/p attchd.
#2-Preliminary dwg. #1
#3-Preliminary dwg. #2.

- 2 -

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8 Jan. & 20 June 1974
By: HWIMM LC; Date 3-9-77

February 26, 1941.

MEMORANDUM FOR GENERAL BRETT:

THRU: General Echols and General Spaatz

1. Lt. Col. George C. McDonald, Plans Division, O.C.A.C., and Major Benjamin W. Chidlaw, Materiel Division, O.C.A.C., attended a conference on February 26, 1941, in the office of Brig. General R. H. Somers, Ordnance Department, reference the development of a tank-carrying airplane. This conference was called in compliance with a secret directive to the Chief of Ordnance (Chief of Armored Forces and Chief of Air Corps) from The Adjutant General, dated February 21, 1941, AG 473.1 (2-20-41)M-D.

2. Present at the conference were the following:

Brig. General R. H. Somers, Ordnance Department
Lt. Col. F. J. Atwood, Ordnance Department
Donald Douglas, President, Douglas Aircraft Company
John Rogers, Washington Representative, Douglas Aircraft Company
Gordon Brown, Representative of Engineering Department, Douglas Aircraft Company
Lt. Col. Earl Hoag, G-4 Section, General Staff
Major A. C. McAuliffe, G-4 Section, General Staff
Lt. Col. G. K. Cheves, Liaison Officer, Armored Forces
General D. H. Pratt, British Army
S. Berchold, Manager, Pressed Steel Car Company, Inc.
Lt. Col. George C. McDonald, Air Corps
Major Benjamin W. Chidlaw, Air Corps

3. The problem presented to the assembled members of the conference was a determination of and general discussion of the technical elements involved in a joint development by the Ordnance Department and the Air Corps of an armored tank-airplane transport and launching combination. General Pratt and Mr. Berchold presented, in a general way, the British requirements. These, briefly, were the ability to transport and launch, at speeds up to 80-90 miles per hour, a British type 7½ ton light two-man tank, the development of which in this country is tied in with the Pressed Steel Car Company, of which Mr. Berchold is the representative and actively promoting this enterprise.

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4. It had been determined by the British from their earlier calculations that in order to effectively launch these tanks from aircraft while the latter was actually in flight, a maximum drop of only 2 ft. could be permitted. The various angles of the problems involved are

First: The development of a tank which could successfully withstand such violent launching tactics, and

Secondly: The flight technique of handling a 60,000 lb. airplane, at a maximum altitude of 2 ft. over rolling terrain so that the tank track path and the path of the airplane over the ground would be exactly coincidental, together with all the complex problems relating thereto.

5. After discussion, it was agreed, tentatively at least, that the complexity of development both from the tank angle and the aircraft flight angle would quite likely be so great as to preclude any successful joint development along such lines. The British were reluctant to abandon the tank launching angle, but admitted that, while the idea had merit from their point of view, they had very little hope of successfully obtaining the tank-airplane combination which would permit such launching tactics. They likewise admitted that they did not care to undertake this development on their own and expressed the hope that the U. S. War Department would see fit to undertake such a development at the expense of our Government.

6. The discussion ultimately simmered down to the point of the possibility of so modifying a Douglas DC-4 type airplane so that it is physically capable of housing a 7½ ton tank of approximately the following dimensions:

Tank overall width - 8 ft.
Tank overall height - 6 ft.
Tank overall length - 14 ft. 8 in.

7. Representatives of the Douglas Aircraft Company advised that such preliminary studies had been made on the DC-4 type and that by complete modification and lengthening of the undercarriage, together with providing an immense cut-out, embodying the dimensions listed above; providing hoisting apparatus; "beefing up" of structure (2500-3000 lb. estimated), etc.; a tank of these approximate dimensions could be carried.

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Memorandum for General Brett
February 26, 1941.

6. The question was then discussed as to the best means of carrying the tank, that is, slung externally or housed within the fuselage. It was agreed by all concerned that since the problems of launching the tank while in flight looked so great as to be impracticable, the best method of transporting such tank would be within the fuselage where it would not cause aerodynamic complications.

9. At this point, Major Chidlaw questioned General Pratt and Mr. Berchald as to whether their proposition had been coordinated with either the British Air Ministry in England or the British Purchasing Commission in this country. General Pratt advised that it had not, stating that he had discussed this only briefly and in the most informal manner with Sir Henry Self of the British Air Commission. It was apparent that General Pratt and Mr. Berchald had been propositioning various companies throughout the industry on their own, and that Douglas was the only one who cared to play.

10. Douglas has two propositions, one involving a modification of the DC-4, and the other an entirely new design which he calls the Douglas Combat Transport, Model 400, which is basically the two-engine transport type which we turned down because of the development effort it would require. It was then pointed out by the Air Corps Representatives, that such a development project, if carried out, would not only cause considerable diversion of the development effort at the Douglas plant, but, if definitely directed, would necessarily have to be passed upon by the various agencies of Allocation, Priorities of Materials, Office of Production Management.

11. Verbal discussion with General Echols brings out that the commitments of the combined U.S.-British aircraft programs carries straight through to February 1943, and tasks every capacity to its absolute limit. In addition to the diversion of development effort causing further lags at the Douglas plant, it must be realized by our own and the British Government that for each one of these airplanes decided on, one heavy bombardment airplane must be withdrawn from the program.

12. In the preparation of the report, directed by secret directive mentioned above, it is contemplated embodying the gist of this memorandum, unless otherwise directed.

B. E. Chidlaw, Major, A.C.
Material Division, O.C.A.C.

George C. McDonald, Lt. Col., A.C.
Plans Division, O.C.A.C.

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DOD ltrs.
8 Jan. & 20 June 1974
By: HWIHM LC; Date 3-9-77

Subject: Tanks Transported by Air

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O.O. 451.25/3465
AG 473.1 (2-20-41)M-D 1st Ind.

War Department, Ordnance Office, Washington, D. C., February 27, 1941.
To: The Adjutant General, Washington, D. C.

Tab B-2

1. Pursuant to instructions contained in the basic letter, a conference on the subject of an air-borne tank was held on February 26, 1941, attended by the following personnel: Mr. Donald W. Douglas, Mr. Gordon D. Brown and Mr. John M. Rogers of the Douglas Aircraft Company; Mr. S. Bechhold and Mr. Alfred E. Anderson of the Pressed Steel Car Company; Major General D. H. Pratt of the British Purchasing Commission; Lt. Colonel Earl S. Hoag and Major A. C. McAuliffe of the General Staff Corps; Lt. Colonel G. C. McDonald and Major B. W. Chidlaw of the Air Corps; Lt. Colonel G. X. Cheves of the Armored Force; and Brigadier General R. H. Somers and Lt. Colonel F. J. Atwood of the Ordnance Department. The conclusions reached at this conference were that a tank should not be dropped from a moving airplane for the reason that planes of the necessary carrying capacity have a stalling speed of about 81 miles per hour and would, therefore, have to land a tank at a speed of about 90 miles per hour; and that further consideration of the matter would be taken up at a conference in the Ordnance Department on February 27.

2. The second conference was held in the Office of the Chief of Ordnance with the following representatives present: Lt. Colonel McDonald and Major Chidlaw of the Air Corps; Lt. Colonel S. E. Brett and Lt. Colonel G. X. Cheves of the Armored Force; Major B. L. Cummings, Captain Charles M. Buhl and Mr. W. F. Beasley of the Ordnance Department. At this conference, Colonel Brett expressed the views of the Armored Force concerning the military characteristics desired in such a special tank and stressed the desire that any air-borne tank be developed as a special purpose vehicle and should not be considered as modifying any requirement for the normal equipment of the Armored Force. It was further the opinion of those present that it would be impracticable to land a tank by parachute due to the prohibitive dimensions of the parachute required.

3. The military characteristics desired, so far as they can be stated at this time, are as follows:

a. Crew: 3 men.

b. Physical Characteristics:

(1) Weight - 7½ tons, maximum

(2) It is not practicable to give a definite statement of the length, width and height of the vehicle at

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O.O. 451.25/3465 1st Ind. (continued)
To: The Adjutant General
Subject: Tanks Transported by Air
February 27, 1941

this time since sufficient detailed data concerning the airplane to be considered is not available. The airplane characteristics will be studied by the Air Corps and limiting dimensions for the tank will be supplied in the near future.

e. Armor Protection: Protection against caliber .30 or equivalent armor piercing ammunition.

d. Armament: One 37 mm. or 20 mm. gun and one caliber .30 machine gun in combination mount in 360° turrets; and as many additional caliber .30 machine guns as practicable.

e. Ammunition: Maximum permitted by limitations imposed by external dimensions required by air transportation.

f. Power Plant: Diesel engine of sufficient power to maintain a speed of 15 miles per hour on a 10% grade and provide a sustained road speed of approximately 35 miles per hour.

g. Mobility:

(1) Maximum speed on hard level road - 40 miles per hour.

(2) Trench crossing)
Vertical obstacle)
Fording ability) - Maximum practicable within the limits imposed by air transportation.

(3) Ground pressure on hard level surface - 8 pounds per square inch, approximately.

(4) Fuel capacity - Not less than 8 hours at three-quarters throttle.

h. Communication:

(1) Provision for mounting Radio Set SCR-508; space required - 14"x14½"x18". (See note below)

(2) Signal flags - three in carrying case.

(3) Signal lights - service driving lights and combat zone lights.

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Note: The space required for this radio set is excessive for a tank of this type. Efforts should be made to provide for arrangement of the several units to conform to limitations imposed by tank design. The length of 48 inches would seriously hamper design of an air-borne tank.

i. Fire Protection: Fixed fire extinguisher system operated from fighting compartment and portable fire extinguisher in fighting compartment.

j. Vision:

(1) Protectoscope for driver and commander. Provision for direct vision required.

(2) 360° Periscopic device for the Commander.

(3) Pistol ports with protectoscopes.

(4) Adequate interior lighting.

k. Escape Doors: Escape doors required for emergency exit of the crew.

(All openings to be provided with protective beading.)

l. Safety belts, padding and sound-proofing: Adequate padding to be provided for the protection of the crew. Safety belts, seats and body supports to secure effective position to be provided to the maximum practicable extent.

4. The following comments were offered by the Air Corps representatives:

"a. With the present knowledge of the art, it is possible to design and construct an airplane physically capable of carrying a concentrated load of 7½ tons.

"b. There are no aircraft, either now in existence or under development in this country, capable of carrying, either suspended below the fuselage or housed--partially or completely--with in the fuselage, a tank of the general characteristics outlined in the directive without complete modification, re-design and strengthening of the under-carriage, wing carry-through structures: bomb-bay, and/or, cabin fuselage structures.

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O.O. 451.25/3465, 1st Ind. (continued)
To: The Adjutant General
Subject: Tanks Transported by Air
February 27, 1941.

"g. General D. M. Pratt, British representative, and Mr. S. Beckhald, representing the Pressed Steel Car Company, stated, on questioning, that this project had not been officially coordinated with either the British Air Ministry or the British Air Commission. Their visits and discussions with various aircraft manufacturers in this country had not been coordinated with representatives of the respective aircraft subdivisions of the British Purchasing Commission now in this country.

"d. It is desired to stress the point that aircraft development and production effort of the combined United States-British aircraft programs carries straight through until February, 1943, and taxes every capacity- both present and predicted - to the absolute limit. Any diversion of experimental development effort on a project of this magnitude must necessarily handicap current and future development essential to the combined United States-British aviation production programs as currently set up by the Advisory Commission to the Council of National Defense, as well as create a diversion of valuable engineering manpower to the creation of another special project. Further, it must be realized by our own and the British Government that for each airplane of this type carried through on a production basis, one heavy bombardment airplane must be withdrawn from either the British or United States aircraft program."

5. a. It was the consensus of opinion that no existing tank, tank under development or under consideration should be used as a basis of a design for air transportation.

b. If the development of an air-borne tank is desired, it was the consensus of opinion that the Ordnance Department should undertake an entirely new design with a view of complying with the above military characteristics.

6. It is the opinion of this office that the Ordnance Department should initiate a project for the development of a tank to be transported by air in general accordance with military characteristics cited in paragraph 3 above and in accordance with restrictions which may be imposed by the Air Corps.

C. M. WESSON
Major General, Chief of Ordnance

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DOD Hrs.
5 Jan. & 20 June 1974
By [illegible] LC; Date 3-9-77

3rd Ind. GCMcD/aea
(9)

War Department, Office, Chief of the Air Corps, Washington, D.C.
March 10, 1941. To: The Adjutant General.

1. It is estimated that a minimum period of one and a half to two years would be required to develop an airplane of the general characteristics as outlined in paragraph 3, 1st Indorsement.

2. In addition, the cost of a new development would undoubtedly be not less than one and a half million dollars. Production quantity cost per complete airplane would be not less than $250,000.

3. Further, the estimated air transportation requirements to move one 54-tank battalion of 7-1/2 ton tanks would cost not less than $13,500,000 in aircraft alone, not counting the operation and maintenance, personnel, materiel, bases and expense, as well as the proportionate depletion of potential United States heavy bombardment strength.

4. Translating the weight of 54 - 7-1/2 ton tanks into a useful disposable bomb load equals 810,000 pounds of high explosive bombs.

5. Such a project will only result in further aggravating the acute shortage of much needed heavy bombers and production capacity to meet the United States-British program.

6. The creation of such a special airplane development project to carry ground equipment that is of such limited military value is not recommended.

For the Chief of the Air Corps:

H. A. Dargue,
Brig. General, Air Corps,
Assistant Chief of the Air Corps

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DOD ltrs
6 Jan. & 20 June 1974
By: MWHM LC, Date: 3-9-77

March 19, 1941

MEMORANDUM FOR: The Chief of the Air Corps.

SUBJECT: Tanks Transported by Air.

I. The Study Presented

Advisability of undertaking an airplane development project for the purpose of transporting non-existent seven and a half (7-1/2) ton tanks by air, such a project being the equivalent of an additional special heavy bomber development.

II. Facts Bearing Upon the Study.

1. It is appropriate to consider the following:

a. The relative military value of heavy bombers vs. tank-carrying aircraft for any given military operation.

b. Transporting 7-1/2 ton special tank and crew of two or three men with armament of one 37 mm. or 20 mm. gun and one caliber .30 machine gun in combination.

c. Transporting equivalent disposable load of 15,000 to 18,000 pounds of bombs for operations against any type land or sea target.

d. Limitation of aircraft development and production effort for combined United States-British programs.

III. Discussion.

1. The outstanding military need of the United States is adequate air power. The basic arm of air power is heavy bombardment aviation. There is an acute shortage of heavy bombers and production capacity to meet the United States-British program.

2. There are no military airplanes in this country in existence or under development which can carry a tank of the general physical dimensions and weight previously set forth without a major redesign of the landing gear, supporting structure, wing butt structure, spar carry-through, etc. The XB-19 would require the least modification but extensive structural changes would be necessary in the bomb bay section in order to carry the concentrated 7-1/2 ton load. The commercial DC-4 type airplane requires considerable modification of the landing gear and supporting structures. To obtain the maximum efficient

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use of an airplane for the purpose of transporting tanks, a completely new experimental airplane project for such development would be approximately in the same category as undertaking the development of a new heavy bombardment type.

3. The cost of such a new development would undoubtedly be not less than $1,500,000 and would require 1-1/2 to 2 years. Production quantity cost per complete airplane would be not less than $250,000. There are 54 medium tanks per battlaion. The air transportation requirements to move one 54 tank battalion of 7-1/2 ton tanks would cost not less than $13,500,000 in aircraft alone, not counting the operation and maintenance personnel, materiel and bases.

4. Translating the weight of 54 - 7-1/2 ton tanks into a useful disposable bomb load equals 810,000 pounds of high explosive bombs.

5. Lieutenant Colonel S. H. Brett, Executive of the Armored Force, speaking for the Commanding General of the Armored Force, expressed the view "That any air-borne tank developed as a special purpose vehicle should not be considered as modifying any requirement for normal equipment of the Armored Force." From this statement it may be implied that the Armored Force is not particularly interested in the special development of the small light airborne tank except as a special weapon of opportunity to be used only in certain unpredictable circumstances.

6. The aircraft development and production effort of the combined United States-British aircraft programs carries straight through until February 1943, and taxes every capacity - both present and predicted— to the absolute limit. Any diversion of experimental development effort on a project of this magnitude must necessarily handicap and embarrass current and future development essential to the combined United States-British production programs as currently set up by the Advisory Commission to the Council of National Defense as well as create a diversion of valuable engineering manpower. Further, for each airplane of the proposed tank-carrying type carried through on a production basis, one heavy bombardment airplane must be withdrawn from the United States-British aircraft program, creating a condition of frittering away essential air power in favor of another type air service that is of doubtful value.

IV. Action Recommended.

That the tank-carrying airplane forming the basis of this study be not developed.

/s/ CARL SPAATZ,
Brigadier General, Air Corps,
Chief, Plans Division.

Note:
3/25/41
Action approved. Development not sufficiently far advanced at this time to warrant diversion of personnel badly needed for production.
H.H.A.

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6 Jan. & 20 June 1974
By: [illegible] LC; Date: 3-9-77

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SUBJECT: Military Characteristics of Light Tank T9 (Air-borne)

AG 473.1 (5-26-41)MC-D 1st Ind. LFL/mmh - 1712

War Department, A.G.O., July 29, 1941. - To: The Chief of Ordnance.

The military characteristics for the Light Tank T-9, to be capable of transportation by air, are approved as set forth in the inclosed OCM Item 16747. The manufacture of a pilot tank for test is authorized.

By order of the Secretary of War:

(Sgd) CARL ROBINSON

1 Incl. n/c Adjutant General.

COPIES TO:

The Chief of the Air Corps,
w/cys basic and incl;
The Chief of Infantry,
w/cys basic and incl.;
The Chief of the Armored Force,
w/cys basic and incl.;
The Liaison Officer of the Armored Force,
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By: [illegible] LC, Date 3-9-77

AG 473.1 (5-28-41)MC

WAR DEPARTMENT
OFFICE OF THE CHIEF OF ORDNANCE
WASHINGTON

May 28, 1941.

Subject: Light Tank, T9

To: The Adjutant General
Washington, D. C.

1. Reference is made to 1st Indorsement, O.O. 451.25/3465, dated February 27, 1941, and to 2nd Indorsement, O.O. 400.111/4686 (AG 473.1 (5-10-41) MO), dated May 23, 1941, referring to O.C.M. Item 16747, to set up military characteristics substantially as agreed to in the conference reported in the 1st Indorsement referred to above.

2. A copy of Ordnance Committee Minutes Item 16747 is inclosed. This action was taken in view of the growing interest in the matter of transportation of tanks by air. The characteristics set forth in the inclosed O.C.M. Item are for a tank intended to be within the volume and weight limits of airplanes now available. It is believed that the Ordnance Department should be authorized to proceed with the design and manufacture of one pilot tank to comply substantially with the characteristics outlined in the inclosed O.C.M. in order that delay may be avoided when the demand for this type of tank develops.

3. I have approved this action of the Ordnance Committee and recommend that the military characteristics as set forth in the attached O.C.M. be approved and that the manufacture of a pilot tank for test be authorized.

/s/ C. M. WESSON

C. M. WESSON
Major General, Chief of Ordnance.

1 Incl.
Cy. O.C.M. Item 16747

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WAR DEPARTMENT
OFFICE OF THE CHIEF OF ORDNANCE

Project OK..... Item.....16747.....

T.S.T.P..... Date....May.13,.1941.....

From: Sub-Committee on Automotive Equipment

The Ordnance Committee, Technical Staff

Subject: LIGHT TANK, T9 - Development Project

1. REFERENCES:

a. Conference in Ordnance Office on February 27, 1941, to consider characteristics of a light tank and an airplane to transport it. Armored Force, Air Corps, G-4 and the Ordnance Department were represented. Report to The Adjutant General, including suggested military characteristics for the tank, is contained in 1st Indorsement, O.O. 451.25/3465, dated February 27, 1941.

b. Letter from Major General D. H. Pratt, British Purchasing Commission, dated March 19, 1941, transmitting letter from the Pressed Steel Car Company, stating that an airplane can be obtained without major change in design to transport a light tank of the character indicated below.

c. O.O. 451.25/4537, dated March 24, 1941.

d. O.O. 400.111/4686, dated May 10, 1941, from Armored Force on this subject.

2. DISCUSSION:

a. The development of airplanes in sizes which may permit the transportation of special light tanks by them makes it desirable to design a light tank which will be adaptable to transportation by air.

b. The military characteristics of such a tank will be substantially as follows:

(1) Crew - 2 or 3 men, preferably 3.

(2) Weight (for air transport) - 7½ tons, without crew, fuel, ammunition and stripped of all readily removable equipment including armament.

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Subject: LIGHT TANK, T9 - Development Project. DECLASSIFIED

(3) Dimensions (approximate):
(a) Length - 11'6" (b) Width - 7'0"
(c) Height - 8'6", less if practicable

(4) Armament:

(a) One 6-pdr. 2.24" or 37 mm. cannon in combination with caliber .30 machine gun with gyro-stabilizer in 360° turret elevation, -10° to +15° approximately, and as many additional caliber .30 machine guns as practicable.

(5) Ammunition:

(a) 80 rounds caliber 2.24" or 37 mm. A. P. and H. E.

(b) 3200 rounds caliber .30

(6) Armor Protection:

(a) Maximum possible within weight limitation of 7½ tons, as specified in 2 (b) (2).

(b) Latest type protectoscopes and pistol port vision devices to be used.

(7) Performance:

(a) Grade ability - 15 m.p.h. on 10% grade and gearing for 40 m.p.h. on level paved roads.

(b) Trench crossing ability - 5' 0".

(8) Communications:

(a) SCR-528 (receiving and sending) (14x14½x27")

(b) Signal flags.

c. Due to the lack of detailed information as to the particular plane which will be used to transport this tank, it is the opinion of the Subcommittee that the foregoing military characteristics should be approved as approximate only and that the pilot conform only as nearly as practicable to these characteristics.

d. Funds are available in the Industrial Service.

3. RECOMMENDATIONS:

a. That studies of a tank complying substantially with the above characteristics be prepared for Technical Staff approval, after approval of which a pilot tank will be manufactured in general accordance therewith.

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Subject: LIGHT TANK T9 - Development Project.

b. That this vehicle be designated, "Tank, Light, T9"

R. H. SOMERS
Brig. Gen., U. S. Army

W. W. WARNER
Lt. Col., Ord. Dept.

G. M. BARNES
Brig. Gen., U. S. Army

G. X. CHEVES
Lt. Col., (Cav.)
GSC, Armored Force

F. J. ATWOOD
Lt. Col., Ordnance Dept.

DAVID E. WASHBURN
LT. COL., Signal Corps

W. F. LEE
LT. Col., Infantry

H. A. QUIEN
Major, Ord. Dept.

JOHN G. MOORE
Major, Air Corps

R. C. COUPLAND
Lt. Col., Ord. Dept. (A.C.)

W. F. HEASLEY
Ordnance Department.

Action by Technical Staff
Artillery Division, Industrial Service.

(Approval by higher authority is required.)

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WAR DEPARTMENT
OFFICE OF THE CHIEF OF ORDNANCE
WASHINGTON

October 23, 1941

Subject: Christie Air-Borne Tank

To: Chief of Air Corps

1. In accordance with a directive from The Adjutant General, the Ordnance Department has initiated a project for the development of Light Tank, T9, a combat vehicle to be transported by air. A contract has been negotiated with the Marmon-Harrington Co., Inc., Indianapolis, Indiana, for the design and manufacture of one pilot model in general accordance with characteristics previously established through the cooperation of the General Staff, the Chief of Air Corps and the Chief of Ordnance. These characteristics were predicated upon the use of the C-54 airplane.

2. During a conference in this office on February 27, 1941, it was emphasized by representatives of the Chief of Air Corps that the status of the aircraft industry is such that the development of a completely new airplane for use as a tank transport would unduly affect other phases of production.

3. In connection with the Air-Borne Tank project, Mr. J. Walter Christie has contacted this office with his design of such a tank. This design is based upon the use of a modified Boeing Bomber and the carrying of the tank within the fuselage of the airplane. Photostats of outline drawings of Mr. Christie's design are inclosed herewith. Attention is invited to the fact that these drawings indicate major design changes in the Boeing Airplane. Although dimensions and details are not included in these drawings, the major characteristics are understood to be as follows:

Length (overall) - 216 inches
Height (overall) - 57 inches
Width of hull - 56 inches
Width (overall) - 181 inches

4. It will be noted that the characteristics of Mr. Christie's proposed tank do not conform to those already established for a tank of this type and that no existing aircraft is available to carry such a vehicle.

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5. Mr. Christie has informed the Ordnance Department that his design will not allow modification to so conform to existing characteristics. Under these conditions, if Mr. Christie's design is to be considered, the development of an airplane for this specific purpose seems to be necessary.

6. From the above, it is apparent that the Ordnance Department can not proceed with Mr. Christie's design unless it can be assured that an airplane of suitable characteristics is or will be available for the transportation of this tank. Information is requested as to whether any changes in Air Corps plans have occurred which contemplate the development of a special airplane suitable for this purpose.

/s/ C. M. Wesson

C. M. WESSON
Major General, Chief of Ordnance

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Incl. 2 - Photostat

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By NNDJHF, NSC, Date 5-9-77

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WAR DEPARTMENT
War Department General Staff
Operations and Training Division G-3
Washington

G-3/47396

November 28, 1941.

MEMORANDUM FOR THE CHIEF OF ARMY AIR FORCES:

Subject: Christie Air-borne Tank.

1. This Division withholds concurrence on the action recommended in basic paper. In view of the fact that the Christie Air-borne Tank has never been tested or even built, it has not been established that the statement "the proposed tank does not meet the requirements of military employment considered essential in the light of lessons learned from actual combat experience in the War in Europe," is correct. It is believed that there is a need for an air-borne tank and that development of the tank and the airplane should be carried out to the extent possible without serious interruption of the current airplane program. Because of the unfavorable characteristics of the proposed T-9 tank which requires the assembly of two portions of the tank on the battlefield, it is believed that further effort should be made to adapt the Christie tank for air-borne purposes. It is realized that the Air Corps itself has no responsibility for the development of the tank but in view of apparently favorable characteristics of the Christie tank as compared to the proposed T-9 tank, it is suggested that Mr. Christie be given an opportunity to so change his tank that it can be carried on existing aircraft such as the C-54A.

2. It is recommended that Mr. Christie be advised generally as follows:

The War Department has given careful consideration to your proposal for an air-borne tank. As you are aware, your proposed tank does not conform to approved military characteristics as it cannot be carried on any existing airplane. For many reasons it is not practicable at this time to develop an entirely new type airplane or to make major modification of anexisting type. It is very desirable that development should result in a tank capable of being carried in a cargo type such as the C-54A rather than a bombardment type airplane.

Admittedly there exists a need for an air-borne tank, but the War Department is presently unable to regard favorably any proposal which fails to utilize existing planes without major alteration.

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Harry L. Twaddle
HARRY L. TWADDLE,
Brigadier General,
Assistant Chief of Staff.

BY: W. E. Chambers,
Colonel, General Staff, Executive

Encls.
AAF DS 348 (11-13-41)
w/encls. as listed.

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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.

SUBJECT: Staff Memorandum on Christie Air-Borne Tank

323

NO.	FROM	TO	DATE	DATA
1.	C.A.C. (4-E-3)	DCS/A	OCT 29 1941	1. In view of the increasingly numerous occasions on which Mr. J. W. Christie has attempted to interest you and higher authorities in his undeveloped schemes revolving around a tank of his design, it is urgently requested that the attached memorandum for the Chief of Staff be forwarded in an attempt to put a stop to the wastage of time which courteous treatment to Mr. Christie demands. 2. While this office believes his proposals to be basically a problem for the Ordnance Department to solve, it is apparent that that Branch alone cannot satisfy Mr. Christie. For that reason and because of Mr. Christie's reputation and background, a decision by the Chief of Staff is recommended.
	1 Attachment (Memo for Chief of Staff)			C. P. E. Acting Chief, Air Corps

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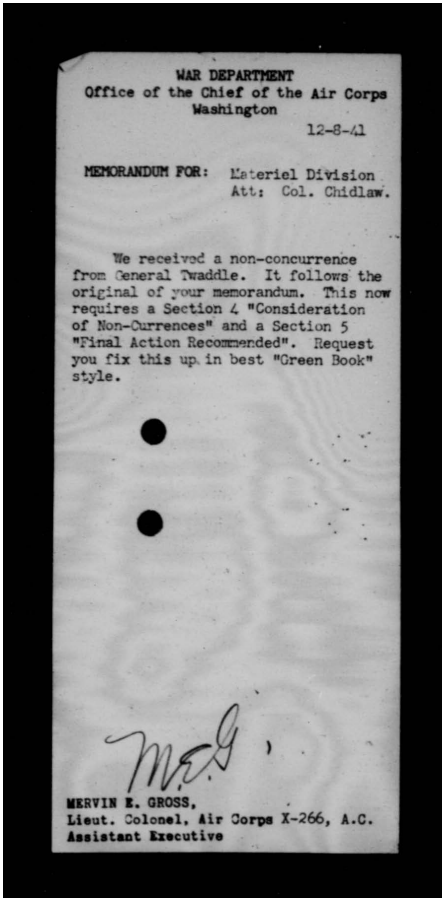

WAR DEPARTMENT
Office of the Chief of the Air Corps
Washington

12-8-41

MEMORANDUM FOR: Materiel Division
Att: Col. Chidlaw.

We received a non-concurrence from General Twaddle. It follows the original of your memorandum. This now requires a Section 4 "Consideration of Non-Currences" and a Section 5 "Final Action Recommended". Request you fix this up in best "Green Book" style.

MERVIN E. GROSS,
Lieut. Colonel, Air Corps X-266, A.C.
Assistant Executive

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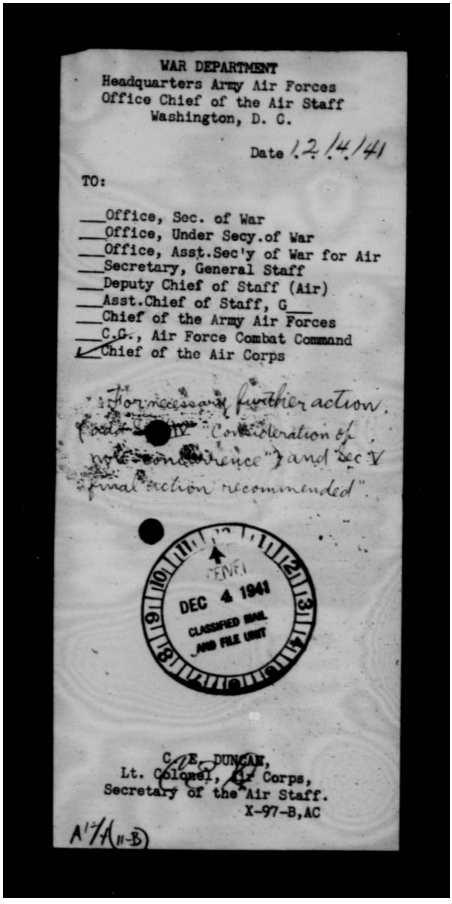

WAR DEPARTMENT
Headquarters Army Air Forces
Office Chief of the Air Staff
Washington, D. C.

Date 12/4/41

TO:

___Office, Sec. of War
___Office, Under Secy.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
___C.G., Air Force Combat Command
✓ Chief of the Air Corps

For necessary further action. (add [illegible] IV "Consideration of [illegible] conference") and "Sec V final action recommended".

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DEC 4 1941
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C. E. DUNCAN,
Lt. Colonel, Air Corps,
Secretary of the Air Staff.
X-97-B,AC

A 17/4 (11-B)

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HEADQUARTERS ARMY AIR FORCES

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DOD Dir. 5200.1 & 5200.10 June 1979
By NNWM NARA, Date 3-9-77

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File No. .....

Tally No. AAF .....

SUBJECT: Incendiary Ammunition.

NO.	FROM	TO	DATE	COMMENTS
1.	AAF A-4.	AAF C/AS	1941 12/6	AAF/A-4 EPS/mwb 1. Reference attached copy of telephone conversation; the following information was obtained from an officer of the Ordnance Department directly concerned with the manufacture of incendiary ammunition, but who requested that he be not quoted on the figures which follow. I believe it is important that this information be not furnished as presented here to the British. 2. I am assured that the statement that the manufacturing now being done is not British design nor is it primarily to fill their requisitions and cannot be said that it belongs to them. 3. Caliber .30 incendiary manufacture has been fairly well established and there are 100,000 rounds now available. Another 50,000 rounds will be available as quickly as an acceptance check can be made of it. Daily production is approximately 15,000 rounds per day. Although our own requirements have not been examined nor established, it is probable that in view of the fact that production seems now to be quite certain that several hundred thousand rounds per month could be diverted to the British. They could also be given the 100,000 rounds now in storage to be applied against their requisitions. 4. Slightly less than 10,000 of .50 caliber incendiaries are now in stock. Another 18,000 rounds are manufactured but not yet accepted. No steady rate of production has yet been established. We will require about 10,000 rounds for our own test at Eglin and Wright Fields, but Ordnance prefer that we test a lot at a slightly later date, that is, that they do not want us to test the first twenty or thirty thousand rounds, even though they state that they are suitable for service use. We could commit about 10,000 rounds now to the British but cannot at this date make any commitment of regular deliveries from now on.

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File No. .....

Tally No. AAF .....

SUBJECT: Incendiary Ammunition.

NO.	FROM	TO	DATE	COMMENTS
1 con't	AAF A-4	C/AS	1941 12/6	AAF/A-4 EPS/mwb 5. Recommendation: It is recommended that no committal be made to Air Marshal A. T. Harris until it is possible to clear the papers through other interested agencies in the War Department. Incl: Copy Tele. Conv. 12/5/41. EPS C/A-4

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Telephone Conversation

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Between Gen. Spaatz and Air Marshal Harris

December 5, 1941

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A.M.H: Hello, Spaatz - How are you? Can you help us at all in - We are desparately in need of some of the .5 and .3 incendiary ammunition and the history of the stuff is that it is all being manufactured in the U.S.A. by our purchases and to our design, and it's our only supply, the U.S.A. I believe that there are 120,000 rounds of .3 already boxed at Frankfort and they are producing about 15,000 per day, and there are 10,000 .5 already boxed to go and they are producing about 5,000, and they wouldn't release any to us and our information, when we tackled the people concerned, is that it is because the Air Corps are reluctant to let us have the stuff at the moment, the story being is that everything they've got so far is ballistic trial. Well 130,000 rounds of .3 and 10,000 rounds of .5 is an enormous amount for ballistic trial, I'm sure you'll agree.

No

Gen. S: Well what was the amount that you said that you thought were there now?

A.M.H. The amount of .3 ready is said to be 120,000 rounds and the production, 15,000 a day. The amount of .5 ready is said to be 10,000 with a production of 5,000.

Gen. S: And you are anxious to get your hands on as much of that as is ready, eh?

A.M.H: It's incendiary.

Gen. S: Incendiary.

A.M.H: We want to get as much as we can of it out in the Middle East as fast as we can.

Gen. S: Yes - well I'll have that run down, Harris.

A.M.H: Would you? I'd be much obliged. I spoke to Mr. Lovett about it but he suggested got on to McCloy because he said it was the Ordnance that had been holding it up, if anybody.

Gen. S: Yes.

A.M.H: I can't get hold of McCloy at the moment, I've been trying all morning and - as a matter of fact my people say it is the Air Corps could put a stopper on it at the moment.

Gen. S: Well I'll have it run down.

A.M.H. I'd be very obliged if you would.

Gen. S: All right, fine.

A.M.H. Will you give me a message some time?

Gen. S: I'll give you a ring back on it.

A.M.H. Thank you so much.

Gen. S: Good-bye.

A.M.H. Good-bye.

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A.A.F./348

NOV 13 1941

MEMORANDUM FOR THE CHIEF OF STAFF:

Subject: Christie Air-Borne Tank

I. Discussion.

1. The question is whether or not the Air Corps shall develop a new type airplane to carry the proposed J. W. Christie tank.

2. a. By letter of February 21, 1941, the Secretary of War ordered the Chief of Air Corps to collaborate with the Chief of Ordnance in investigating the problem of transporting tanks by air and preparation of military characteristics if deemed desirable. (Tab A).

b. Throughout the ensuing studies, military personnel recommended that no new airplane or major modification of existing airplane should be allowed to interfere with existing or contemplated heavy bomber programs. (Tabs B 1—4).

c. A Joint Ordnance-Armored Force-Air Corps conference at Wright Field, June 11, 1941, has resulted in provisions being made to carry the Ordnance Department T-9 tank, Military Characteristics for which were approved by The Adjutant General, July 29, 1941 (Tab C), in all C-54A (DC-4) airplanes, now under procurement.

d. Mr. Christie has repeatedly proposed an airplane-carried tank to be released upon contact with the ground—the airplane continuing its flight without landing. A caterpillar type landing gear, similar to the Dowty type now being investigated by the Air Corps is also proposed. Mr. Christie's proposals have been lacking in factual substantiation and when furnished with drawings of the B-17C airplane at his request and for his studies, his tank application resulted in such extreme modifications that such cannot be approved due to their magnitude.

e. The proposed Christie tank does not conform to approved military characteristics and cannot fit on the C-54A airplanes but requires development of an entirely new type airplane for carrying it. (Tab D).

① 8 Oct 1945

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f. The operational difficulty in flying a large tank-carrying airplane slowly and accurately enough with respect to the ground profile, to land the tank by release while in flight without damage to it or the airplane is extremely questionable, except on very level terrain, such as a flying field or similarly prepared areas. (Sub 2-d).

II. Action Recommended.

The Secretary of War directs that Mr. Christie be advised substantially as follows:

The Air Corps and the Ordnance Department have given careful consideration to your proposal for an airborne tank. All phases have been carefully evaluated in the light of military requirements both of airplane and tank equipment as well as the practicable tactical employment of such a military weapon. Because of the magnitude of the material problem involved and because the proposed tank does not meet the requirements of military employment considered essential in the light of lessons learned from actual combat experience in the war in Europe, it has been definitely decided that the Air Corps will not develop a new type airplane to carry the tank and no major modification of an existing type airplane will be directed.

III. Concurrences.

A. C. of S., G-3 ( )

A. C. of S., G-4 ( )

Carl Spaatz,
Brigadier General, Air Corps,
Chief of the Air Staff.

4 Enclosures
Tabs A, B, C, and D.

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IV. Consideration of Non-Concurrence.

The non-concurrence expressed by A. C. of S., G-3 (Tab H) takes exception to that part of Paragraph II, "Action Recommended," which expressed the belief that "the proposed tank does not meet the requirements of military equipment considered essential in the light of lessons learned from actual combat experience in the war in Europe."

The recommended advice to Mr. Christie, as proposed by the A. C. of S., G-3, in Paragraph II (Tab H) generally conforms to the action recommended in Paragraph II above.

V. Final Action Recommended.

The Secretary of War directs that Mr. Christie be advised generally as follows:

The War Department has given careful consideration to your proposal for an air-borne tank. As you are aware, your proposed tank does not conform to approved military characteristics as it cannot be carried on any existing airplane. For many reasons it is not practicable at this time to develop an entirely new type airplane or to make major modification of an existing type. It is very desirable that development should result in a tank capable of being carried in a cargo type such as the C-54A rather than a bombardment type airplane.

Additionally there exists a need for an air-borne tank, but the War Department is presently unable to regard favorably any proposal which fails to utilize existing planes without major alteration.

VI. Concurrences.

A. C. of S., G-3 ( )

A. C. of S., G-4 ( )

DEC 18 1941

In V APPROVED
By order of the Secretary of War
R. C. MOORE
Deputy Chief of Staff

5 Enclosures
Tabs A, B, C, D, and E.

DEC 19 1941

By M. D. TAYLOR
Major, G. S. C., Asst. Sec. W. D. G. S.

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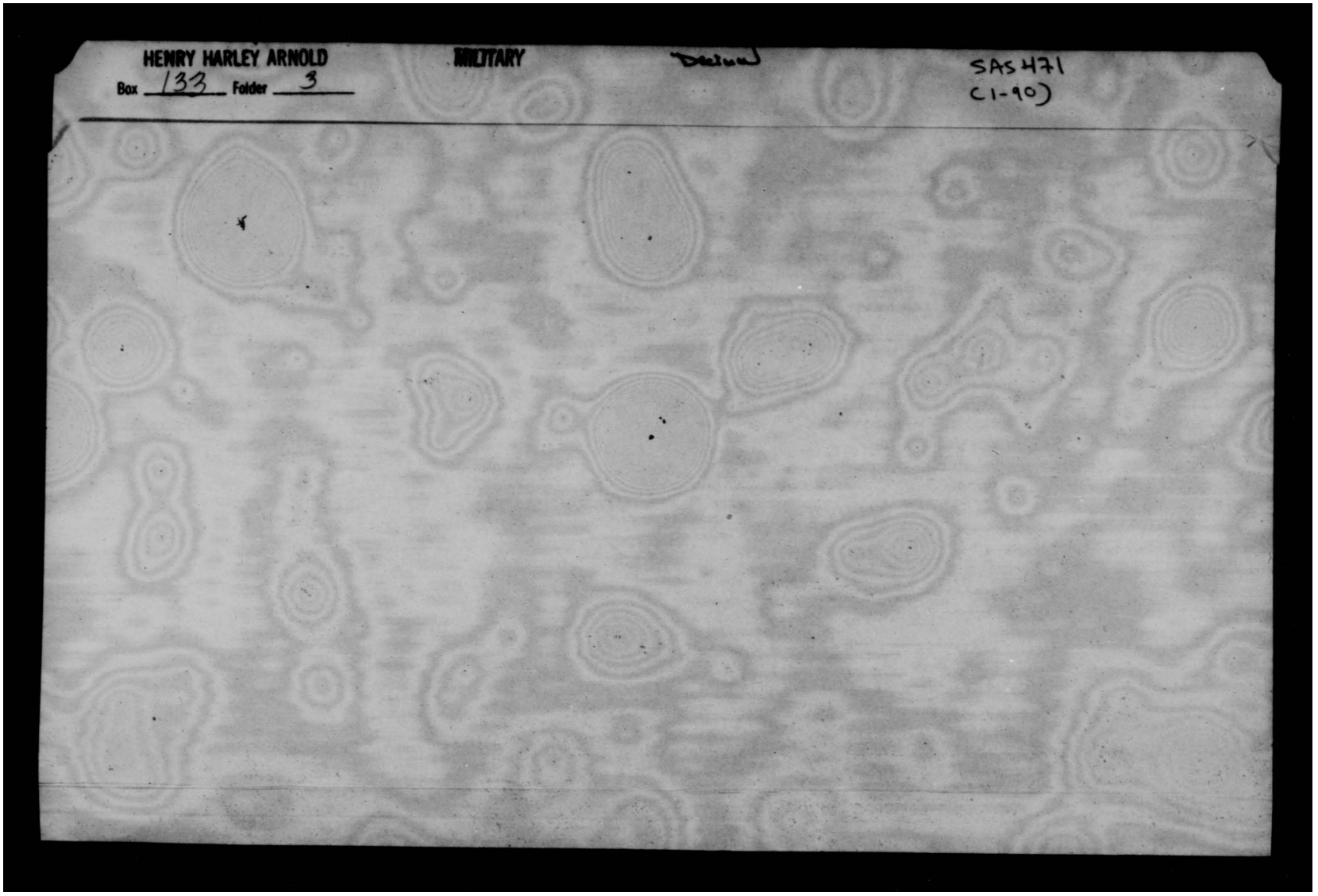

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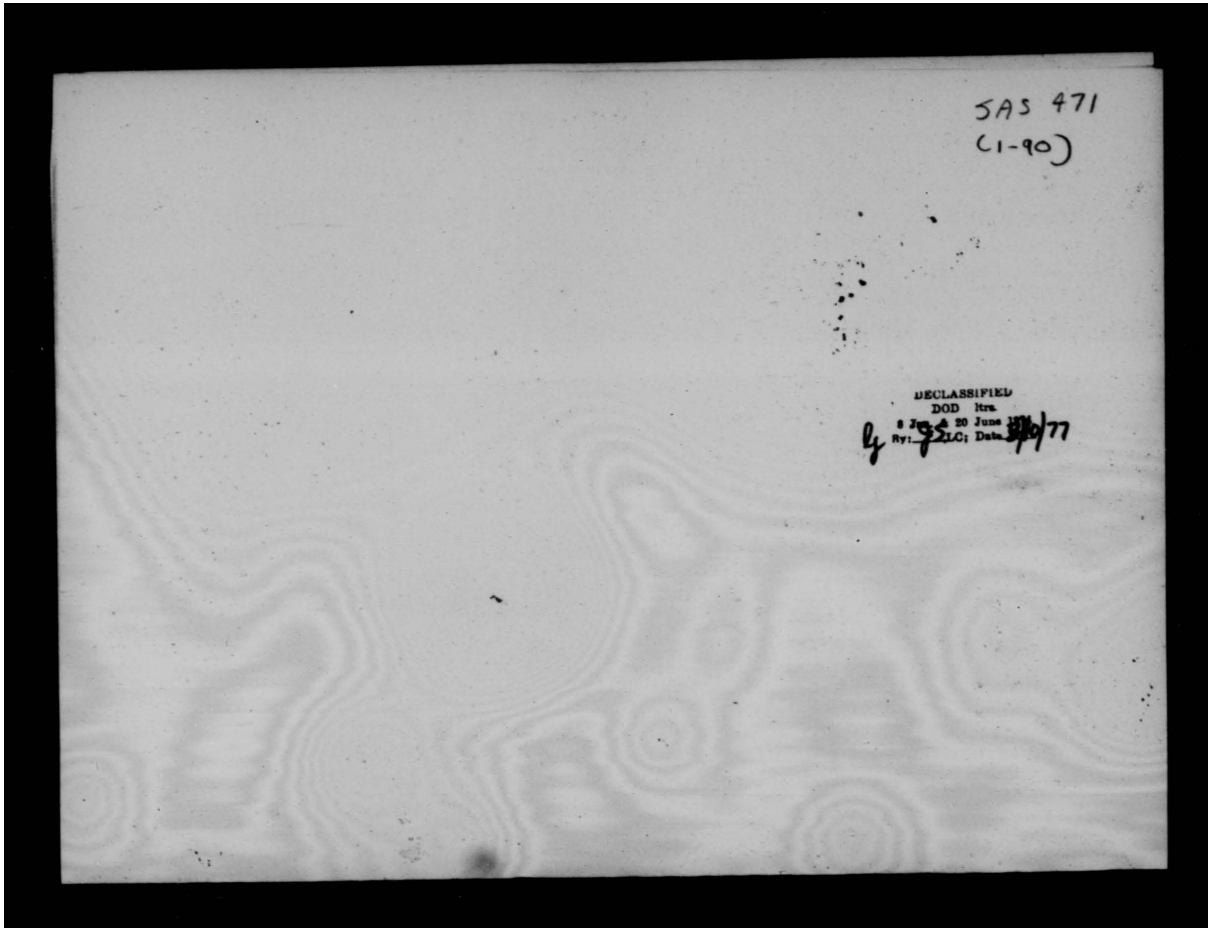

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Directive No. 4-30

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DOD dis.
8 Jan. & 20 June 1974
By JSM MM 3-10-77

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WAR DEPARTMENT
HEADQUARTERS OF THE ARMY AIR FORCES
Washington

January 27, 1942

471 (90)

DIRECTIVE MEMO FOR: A-4.

Subject: Training Ammunition for the 4th Air Force.

1. By General Arnold's direction, it is desired that you note the attached memorandum for Major General R. C. Moore, Deputy Chief of Staff, same subject.

2. It is directed that you study the memorandum and render a report thereon together with an outline of any action which you have taken or can take to further clarify this situation.

By direction of the Chief of the Air Staff.

John Y. York, Jr.,
Colonel, Air Corps,
Secretary of the Air Staff.

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by Sec. A/S

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9 Jan. & 20 June 1974
By: TSMM LC; Date 3-10-77

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File No. . . . . .

Tally No. AAF . . . . . .

Note.-- A line will be drawn across sheet after each comment.

SUBJECT: Training Ammunition for the 4th Air Force.

NO.	FROM	TO	DATE	COMMENTS
1	General Arnold	AAF A-4 A.4	1942 1/26	1. Note the attached. Will you study same and give me a report together with outline of any action which you have made to clarify this situation?
Incl.	Memo. for Gen. R.C. Moore, 1/25/42, re above subj., from Brig. Gen. M.W. Clark.			

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(Do not use reverse side) V-4071, AC.Rev.8/14/41

Page No. _____

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GENERAL HEADQUARTERS, U. S. ARMY

ARMY WAR COLLEGE

WASHINGTON, D. C.

IN REPLY REFER TO:
O DC of S

January 25, 1942

DECLASSIFIED
DOD ltrs.
8 Jan. & 20 June 1974
By: JS/HM LC: Date: 5-10-77

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MEMORANDUM FOR MAJOR GENERAL R C MOORE, DEPUTY CHIEF OF STAFF,
WAR DEPARTMENT, RM 2022 MUNITIONS BLDG,
WASHINGTON, DC.

Subject: Training Ammunition for the 4th Air Force.

1. Pursuant to your telephonic request, this date, the following information is submitted:

2. I was directed by General Marshall to look into the following question: "The issue has been raised by the Chief of Air Corps regarding the failure to give combat firing training to aviation units employed in the theaters. The blame for this is placed on the War Department restrictions as to ammunition, or GHQ restrictions as to ammunition, and on the lack of aggressiveness on the part of air commanders."

3. Below are extracts from my report made to General Marshall yesterday in this connection:

a. Combat firing training for aviation personnel in the 4th Air Force has been neglected. The deplorable condition reported by the Commanding General, Western Defense Command, in his radiogram to you of January 18th, exists.

b. The reasons for this situation may be summarized briefly as follows: First, insufficient training ammunition has been made available by the War Department, particularly caliber .50; second, failure to give many pilots firing practice training in schools prior to joining their tactical commands; third, freezing of all training ammunition by the War Department; fourth, the declaration of war with its attendant confusion; fifth, the transfer of experienced gunners out of old organizations for cadres and task forces; sixth, the necessity for hoarding and accumulating ammunition for combat purposes; seventh, preoccupation of all concerned in other duties, namely, performing combat missions.

c. Even if ammunition had been available in the weeks immediately following the declaration of war, I doubt if it could have been used profitably, due to lack of time and facilities.

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Eno. 1
Air 29471 (90)

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d. One allotment of 3,680,000 rounds of caliber .30 ammunition was made to GHQ on December 30th and several days later two allotments of 81-mm mortar ammunition were made totalling 7,462 rounds. GHQ recommended on January 2d, that this ammunition be suballotted to divisions assigned to task forces. On December 20th, G-4, WD, advised GHQ that 500,000 rounds of caliber .50 ammunition had been allotted to the Eastern and Western Defense Commands at the rate of 50 rounds per machine gun for antiaircraft firing. On January 11th, a radio was received from the CG, WDC, asking for training ammunition for certain ground units. The matter was referred by telephone to Lt. Col. Dubbeldee, Office AC of S, G-3, WD, by Colonel W. B. Augur, G-5 Section, GHQ. The latter was informed that no additional ammunition would be available during the month of January. This information was forwarded to the CG, WDC, on January 13th. In radio January 14th, the CG, WDC, requested immediate reconsideration by the War Department of this decision. The radio was referred to the AC of S, G-4, WD, on January 18th and information as to the action taken by the War Department has not been received at this headquarters. The frantic calls made by the Western Defense Command for ammunition were a result of gradual awakening on the part of the higher commanders (both ground and air) of the Western Defense Command to the gravity of the situation in respect to aerial gunnery training.

e. Steps have been taken to remedy this situation as follows:

(1) 1,000,000 rounds of caliber .30 are now available for training approximately 670 caliber .30 gunners on duty in the 4th Air Force. This will give each a training allowance of approximately 1,500 rounds. This ammunition has been made available by providing 500,000 rounds from ammunition on hand in the Western Defense Command and by providing an additional 500,000 rounds pursuant to War Department instructions. This firing will start immediately.

(2) Caliber .50 ammunition is sorely needed. There are only 6 missions on hand in the 4th Air Force; one of these missions is being taken to supply gunners with partial training. An additional 1,000,000 rounds of caliber .50 is required from sources outside of the Western Defense Command if all caliber .50 gunners are to fire 1,500 rounds, as directed by General Arnold.

f. The means are available within the Western Defense Command for providing airplanes for towing targets, and General DeWitt has issued instructions that airplanes for this purpose be diverted from other missions in order to provide this training. However, steps must be taken by Air Corps procurement agencies if the maximum benefit is to be derived from aerial gunnery, to equip high-speed combat planes to tow targets, to provide suitable tow targets and certain necessary parts for guns and turrets.

Jan 26 a

Note :- I have this date decided that 5 [illegible] rounds cal. .50 Ball from Raritan Arsenal be allotted for Air Corps training Rec

for Gen Arnold

Thanx

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g. Ground units are in an equally unsatisfactory condition as regards firing of many individuals and crew-served weapons. General DeWitt, as a result of my conference, has directed that this situation be corrected by taking appropriate amounts of ammunition from his combat supply in order to give this essential training. This decision, in my opinion, should have been reached earlier, for it is better to expend a part of a small combat supply for training than to have men enter combat before they have fired their weapons.

h. The bulk of the training ammunition, which it is understood will be allotted to GHQ in February, will be suballotted to the Western Defense Command. This should assist materially in correcting the important training deficiency in practice firing in that command.

Mark W. Clark

MARK W. CLARK,
Brigadier General, G. S. C.,
Deputy Chief of Staff.

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8 Jan. & 20 June 1974
By JS/MM LC; Date 3-10-77

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AAF/A-4
HCB/emd

JAN 2 2 1942

MEMORANDUM FOR THE ASSISTANT CHIEF OF STAFF, G-4:

Subject: Stockage of Bombs and Aircraft Ammunition for Western Defense Command.

1. In connection with a request from the Commanding General, Western Defense Command dated December 29, 1941 for bombs and aircraft ammunition for stockage in the Western Defense Command, this division is unable to reconcile the amounts shown on hand, as of that date, with A-4 records showing amounts on hand and shipments and releases to the Western Defense Command since December 13, 1941.

2. A comparison follows:

	A-4 Records	W. D. C. Report
2000# Demolition Bombs	682	341
1000# and 1100# Demolition Bombs	1,598	866
500# and 600# Demolition Bombs	15,695	1,640
300# Demolition Bombs	18,522	9,963
100# Demolition Bombs	24,814	18,881
17# Fragmentation Bombs	0	0
20# Fragmentation Bombs	21,000	0
30# Fragmentation Bombs	0	1,885
.37 mm Aircraft	16,580	11,580
.20 mm Aircraft	0	0
Flares M8	300	0
M8A1	1,200	753
M9	27,810	1,610
M11	27,099	4,016
M13	2,250	88
M14	25,000	520
M15	25,000	790
M16	25,000	542
M17	0	74
M18	0	46
[illegible]	0	86
[illegible]	0	42

HEADQUARTERS ARMY AIR FORCES - COORDINATION

Chief of Staff	Sec. Air Staff	A.A.G.	A-1	A-2	A-3	A-4	A-WPD	A-Insp.	Budget	Statistics	

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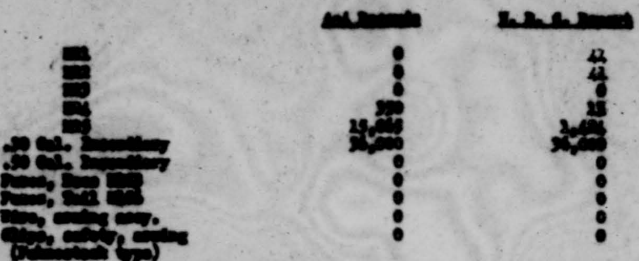
	Ass. Records	[illegible] Report
[illegible]	0	42
[illegible]	0	41
[illegible]	0	0
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
.50 Cal. Incendiary	[illegible]	[illegible]
.50 Cal. Incendiary	0	0
Fuses, Base [illegible]	0	0
Fuses, Tail [illegible]	0	0
Wire, arming assy.	0	0
Chips, safety, arming (Fahnestock type)	0	0



3. It is believed that the figures as reported by the Western Defense Command do not include the items on hand in the 2d Air Force Area which would account somewhat for the discrepancy.

4. It is considered that these items are available to the Western Defense Command for Combat.

For the Chief of the Air Staff:

T. J. [illegible], JR.,
Colonel, Air Corps,
Assistant Chief of the Air Staff, A-4.

JAN 22 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	
						HCB					

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DOD ltrs.
8 Jan. & 20 June 1974
By JS/HH LC; Date 3-10-77

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AAF/A-4
HCB/mhh
(Written Feb. 7, 1942)

471 (83) B

Subject: Post, Camp and Station Stocks of Ammunition.

2nd Ind.

War Department, Headquarters, Army Air Forces, Washington, D. C.
To: The Commanding General, Air Force Combat Command, Bolling Field, D. C.

1. On January 20, 1942, 4,600,000 rounds of cal. .30 ball ammunition was released to the Commanding General Air Force Combat Command to be allocated to the four Air Forces in accordance with their requirements. This release was in lieu of the so-called "forces" stocks of cal. .30 ammunition on hand at the Air Force Combat Command Posts, Camps and Stations as of December 7, 1941, which have since been released to meet combat requirements as indicated in Paragraph 1 of the basic communication.

Dispatched
FEB 10 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	Sta Tables
						HCB MHS				
						TJH				

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DOD Ltrs.
8 Jan. & 20 June 1974
By JS/MM LC Date 3-10-77

~~RESTRICTED~~

3. Report will be made to the Commanding General, Field Forces, by the Commanding Generals, Eastern Theater of Operations, Western Defense Command, Southern Defense Command and Central Defense Command, of the amounts and types of ammunition made available to meet combat requirements in accordance with Paragraph 1 above.

By order of the Secretary of War:

/s/ E. S. Adams

Major General,
The Adjutant General

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The A. C. of S., WPD.

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000 Ltrs.
8 Jan. & 30 June 1974
By JSHM LC Date 3-10-77

ACC 471 (1-20-42) 1st Ind. (E-3)

HEADQUARTERS AIR FORCE COMBAT COMMAND, Bolling Field, D. C. JAN 31 1942
TO: Chief of Army Air Forces, Washington, D. C.

It is noted that no provision has been made for the release of Caliber .30 training ammunition. It is, therefore, requested that paragraph 1 a be amended to read as follows:

"1. a. Caliber .50 and Caliber .30 training ammunition at Air Force Stations."

For the Commanding General:

T. A. FITZPATRICK,
Major, A. G. D.,
Asst Adjutant General

Hq. Army Air Forces
FEB 1
AAG RECEIVED

POSSIBLE FEB 1 42
CENTRAL MAIL SECTION A.A.F.

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DOD Dirs.
5 Nov. & 20 June 1974
By TS/HH LC, Date 3-10-77

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AAF/A-4
MFS/mhh
C C 64
January 20, 1942.

.30 And .50 Caliber Training Ammunition.

The Commanding General,
Air Forces Combat Command,
Bolling Field, D. C.

JAN 1942

1. It is known that many pilots and gunners of the combat air units are lacking adequate gunnery training. Regardless of all other instructions you are hereby authorized to expend per each airman (each pilot and each gunner depending on type airplane) fifteen hundred rounds of caliber .30 or caliber .50 ammunition according to the caliber of the guns of the airplane or gun station.

2. The Chief of the Air Corps is being directed to take exceptional action immediately to assist in remedying shortages (or in improvising in the absence of) towed targets for modern airplane and lack of gun or target installation parts. The obstacles to effecting gunnery training of air combat crews are undoubtedly great but it is believed that exceptional action or improvisation to remedy such conditions is one of the primary responsibilities of commanders of air units at this time. Reports on the status of the gunnery training of the air personnel of your command will be called for in the immediate future.

3. The War Department has released to you four million six hundred thousand rounds of caliber .30 ammunition to be allocated to the First, Second, Third and Fourth Air Forces in accordance with their requirements. This release is in lieu of the so-called "frozen" stocks of .30 caliber ammunition on hand at Air Force Combat Command Posts, Camps and Stations as of December 7, 1941.

4. The stocks of .50 caliber training ammunition on hand at Air Force Post, Camps and Stations as of December 20, 1941 has been released to you for redistribution for training. The Adjutant General is being instructed to notify the Theater and Defense Commands concerned. You will redistribute this ammunition between the Air Forces in accordance with their needs. Additional .50 caliber credits will be made available to you in the near future in accordance with the national emergency.

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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5. Copies of the various letters, telegrams, etc. dispatched recently in connection with the Aerial Gunnery Training of Combat Units are attached hereto for your information.

Incls.
Cy.tele.to CG
Eastern Theater
of Opera.,1/10/42;
Cy.ltr.to C/AC "Gunnery
Training" 1/10/42 frm.
C/AAF; Cy.tele.to C/AAF
frm.Fickel,1/10/42;Cy.
para.frm.Marshall to BD,
1/10/42;Cy.memo to C/AC
1/10/42 frm.AC/Com.Staff.

By command of Lieutenant General ARNOLD:

JOHN B. COOLEY
Lt. Col., A.C.D.
Assistant Air Adjutant General.

Dispatched
JAN 21 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	
	[signature]	Dispatched JAN 21 1942 AAG									

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DOD ltrs
6 Jan. & 20 June 1974
By JS/MR NC. Date 3-10-77

From WAR DEPARTMENT
Bureau Hq., Army Air Forces
Division A-4 Division, Air Staff.

COMMANDING GENERAL,
EASTERN THEATER OF OPERATIONS,
GOVERNORS ISLAND, NEW YORK.

JANUARY 29, 1942.

~~A FOUR DASH TWENTY NINER TWO~~ IT IS KNOWN THAT MANY PILOTS AND GUNNERS OF THE COMBAT AIR UNITS ARE LACKING THE GUNNERY TRAINING PERIOD REGARDLESS OF ALL OTHER INSTRUCTIONS YOU ARE HEREBY AUTHORIZED TO EXPEND PER EACH AIRMAN PARENTHESIS EACH PILOT AND EACH GUNNER DEPENDING ON TYPE AIRPLANE PARENTHESIS FIFTEEN HUNDRED ROUNDS OF CALIBER THIRTY OR CALIBER FIFTY AMMUNITION ACCORDING TO THE CALIBER OF THE GUNS OF THE AIRPLANE OR GUN STATION PARAGRAPH THE CHIEF OF THE AIR CORPS IS BEING DIRECTED TO TAKE EXCEPTIONAL ACTION IMMEDIATELY TO ASSIST IN REMEDYING SHORTAGES PARENTHESIS OR IN IMPROVISING IN THE ABSENCE OF PARENTHESIS TOWED TARGETS FOR MODERN AIRPLANE AND LACK OF GUN OR TARGET INSTALLATION PARTS PERIOD THE OBSTACLES TO EFFECTING GUNNERY TRAINING OF AIR COMBAT CREWS ARE UNDOUBTEDLY GREAT BUT IT IS BELIEVED THAT EXCEPTIONAL ACTION OR IMPROVISATION TO REMEDY SUCH CONDITIONS IS ONE OF THE PRIMARY RESPONSIBILITIES OF COMMANDERS OF AIR UNITS AT THIS TIME PERIOD REPORTS ON THE STATUS OF GUNNERY TRAINING OF THE AIR PERSONNEL OF YOUR COMMAND WILL BE CALLED FOR IN THE IMMEDIATE FUTURE PERIOD THE NECESSARY CREDITS FOR THIRTY CALIBER TRAINING AMMUNITION WILL BE FURNISHED YOU THROUGH THE COMMANDING GENERAL AIR FORCE COMBAT COMMAND PERIOD THE FIFTY CALIBER TRAINING AMMUNITION ON HAND AS OF DECEMBER TWENTY NINETEEN FORTY ONE AT AIR FORCE POST CAMPS AND STATIONS IS TO BE RELEASED TO THE COMMANDING GENERAL AFCC FOR REDISTRIBUTION IN ORDER TO CONDUCT TRAINING PERIOD ADDITIONAL FIFTY CALIBER CREDITS WILL BE PROVIDED LATER PERIOD-SIGNED-ARNOLD

-ADAMS MARSHALL

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DOD Dirs.
6 Jan. & 20 June 1972
By JSMM LC. Date 5-10-71

AAF/A-4
MFS/mhh

January 20, 1942.

MEMORANDUM FOR THE CHIEF OF THE AIR CORPS:

Subject: Gunnery Training.

1. Inclosed herewith is a copy of a telegram from the Chief of Staff to the Commanding General, Eastern Theater of Operations and a copy of a letter to the Commanding General, Air Force Combat Command.

2. You will immediately initiate action in the Eastern Theater and the Air Force Combat Command parallel to that directed January 18, 1942 in connection with the elimination of shortages in the Western Defense Command and will submit a report of your action by 8:15 A.M., January 23, 1942.

Incls.
Cy.tele.to GS
Eastern Theater
of Opers.1/20/42
& Cy.ltr.to AFCC
1/20/42 frm.AAF

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[illegible] AG B
Filed Jan. 16th

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DECLASSIFIED
DOD ltrs.
8 Jan. & 20 June 1974
By: JS/[illegible] LC. Date 3-10-77

TELETYPE

AG-4
January 16, 1942
11:28 PM

FROM: 4AF SAN FRANCISCO CALIFORNIA

Paraphrase

TO: CHIEF OF THE AIR FORCES WAR DEPT FOR GENERAL ARNOLD

NO. 4AF 874A January 16th

In response to your message of January 16, many of our pilots and apprentice gunners have never fired a machine gun. The reasons for neither bombardment nor pursuit's being able to practice machine gun firing are: Lack of tow target airplanes, lack of ammunition, and the lack of gun or target installation parts in the case of many bombers. In the Air Force there is no target-towing plane capable of towing for modern planes.

There is now available for guns installed in this Air Force about one tenth missions of Caliber 50, and 4.8 missions of caliber 38. There are 5.5 missions of caliber 30 and 3.6 missions of 50 caliber available for 3 groups of bombardment and 3 groups of pursuit which were promised their equipment immediately.

Requests for practice ammunition have been submitted to Western Defense Command, Air Service Command, and to Air Force Combat Command without securing ammunition. On January 3 authority was received to use a total of 15,000 rounds to test functioning of guns, and authority to expend our fighting ammunition for gunnery practice was received on Jan. 15. Because of the small amount available, the undersigned disapproved today of using the fighting ammunition for gunnery practice.

Fiskel

Received in Cable Section
9:10 AM January 17, 1942
Paraphrased by [illegible]

DISTRIBUTION

AIR FORCES
General Arnold
General Spaatz
A-4

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ACTION SUBJ. TO A-3

AIR SERVICE
Material
Training

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000 Hrs.
8 Jan. & 20 June 1974
By JS HH LC; Date 3-10-77

PARAPHRASE OF SECRET RADIOGRAM TO C.G., Western Defense Command.
January 18, 1942. Sent by Secretary, General Staff

Greatly surprised to learn from a report on the status of the air units under your command that many gunners and pilots have never fired a machine gun for reasons which include lack of gun or target installation parts, lack of ammunition and absence of target towing planes suitable for gunnery practice for modern combat airplanes. The report indicates also that requests for authority to expend practice ammunition sent from air units to many headquarters have not been made.

Relative to the report mentioned above, since December 24 training ammunition has been available but has not apparently as yet reached air units. You are hereby authorized, regardless of other instructions, to expend 1500 rounds per each air man (each pilot and each gunner depending upon type airplane) of the calibre appropriate to the armament of the airplanes.

A directive to take exceptional action immediately for the assistance in remedying the shortage (or improvising in the absence of) tow targets for modern airplanes as well as the lack of gunner target installation parts is being issued to the Chief of the Air Corps.

The extraordinary low state or absence of training mentioned above have been caused undoubtedly by great obstacles. It is believed that one of the primary responsibilities of the commanders of air units at this time is exceptional action or improvisation to remedy such conditions. In the near future, you will be called upon for further reports on the status of the air personnel of your command.

Marshall

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DOD ltrs.
8 Jan. & 20 June 1974
By: JS/MM LC: Date 3-10-77

January 18, 1942.

MEMORANDUM FOR THE CHIEF OF THE AIR CORPS:

Subject: Gunnery training.

1. Inclosed herewith is a radiogram concerning the gunnery training of the air units on the West Coast and a copy of the direct action taken hereon by the Chief of Staff.

2. You will have a representative on the West Coast immediately, with authority to take direct action, to remedy the shortages, except ammunition, referred to in the radiogram from the West Coast. It is directed that each group on the West Coast will be provided with at least one target towing airplane and necessary accessories with which gunnery training can be conducted.

3. A report on the action that has been taken to remedy this condition will be rendered to this headquarters (attention General Arnold) by 8:15 a.m., January 20, 1942.

By direction of the Deputy Chief of Staff for Air:

L. S. KUTER,
Major, General Staff,
Assistant Secretary, General Staff.

Incl.

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DOD ltrs.
8 Jan. & 20 June 1974
By: JS/HM LC, Date 3-10-77

RECEIPT

DATE _____

SUBJECT: .30 and 50 Caliber Training Ammunition.

1. Received from the Headquarters, Army Air Forces, letter, above subject w/incls:

Cy.ltr.toCG,Eastern Theater of Opera., 1/20/42; Cy.ltr.to C/AC "gunnery Training" 1/20/42 frm. [redacted] Cy.ltr. to C/AAF frm.Fickel,1/16/42;cy.para. frm.Marshall to WD, 1/18/42;Cy.memo to C/AC 1/18/42 frm. AS/Gen.Staff.

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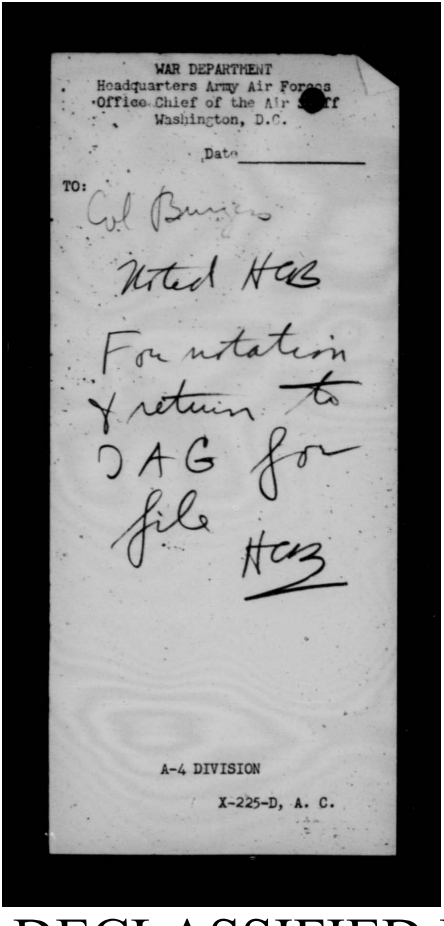

WAR DEPARTMENT
Headquarters Army Air Forces
Office Chief of the Air Staff
Washington, D.C.

Date _____

TO:

Col Burgess

Noted HHA

For notation
& return to
TAG for
file

HHA

A-4 DIVISION

X-225-D, A. C.

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DOD ltrs.
6 Jan. & 20 June 1974
By JSMM JC; Date 3-10-77

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AR DEPARTMENT GENERAL STA

3507

DISPOSITION FORM

AG 471 (11-14-41)
G-4/28664-104

G-4

SUBJECT: Caliber .30 Incendiary Ammunition.

Date JAN 17 1942

TO:	___C/S	___G-1	___G-2	___G-3	___G-4	___Air Staff	
	___TAG	___WPD	___USW	___ASW	___ASWA	___CG	___Army
	___AC	___BLP	___BOWD	___ExRA	___NGB	___CG	___Army Corps
	___INF	___FA	___CAV	___CA	___ENGR	___CG	___CA
	___ORD	___QMG	___CSO	___SG	___FIN	___CG	___Dept.
	___GHQ	___JAG	___CWS	___IG	___B/PR	X Ch.AAF	

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	X Notation and return
	___File	___Consult	~~Noted~~ to TAG for file.

By: ___Spcl Msgr | ___Radio | ___Air Mail | ___Immed Action Ltr | ___Letter

Hq Army Air

JAN 18 1942
AAG Received

Incls:
Ltr fm TAG
(11-14-41)
w/5 Inds.

BREHON SOMERVELL,
Brigadier General,
Assistant Chief of Staff.

L. K. LADUE
Major, General Staff Corps,
Acting Chief, Supply Branch

Ref AG 471 (8-1)

Noted G-4

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Ai AG 471 (8-1)

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000 Hrs.
5 Jan. & 20 June 1974
By: JS/MM LC. Date 3-10-77

SUBJECT: Caliber .30 Incendiary Ammunition.
O.O. 471.41/2834
AG 471 (11-14-41)MSC-D 4th Ind. JMH/kti-1712.

War Department, A.G.O., January 1, 1942. To: Chief of Ordnance.

It is desired that the 16,000 rounds Caliber .30, Incendiary ammunition referred to in Paragraph 2, preceding 3rd Indorsement, be transferred to West Coast storage for shipment to destination "X".

By order of the Secretary of War:

Adjutant General.

5th Ind.

O.O. 471.41/2834 Tiner/is
Attn: Amm.Sup.Div.,F.S.
AG 471 (11-14-41)MSC-D

War Department, Ordnance Office, Washington, D.C., January 7, 1942.
To: The Adjutant General, Washington, D.C.

1. It is advised that the 16,000 rds. of caliber .30 incendiary ammunition referred to above is not available in Field Service stock. The 16,000 rds. referred to in paragraph 2, 3rd indorsement, was included in the shipment of 36,000 rds. to Muroc Lake and Geiger Field on December 8, 1941.

Rec'd back For the Chief of Ordnance:

JAN 13 1942
46 A G O

John H Beltinger
For P. M. SELEEN,
Lt. Colonel, Ordnance Dept.,
Executive Assistant.

JAN 14 42 AM

JAN 16 1942
28664-104

IN IN
G-4 DIVISION
WAR DEPT GEN STAFF

RECEIVED MISC. DIV., AGO.
S. & C. Section

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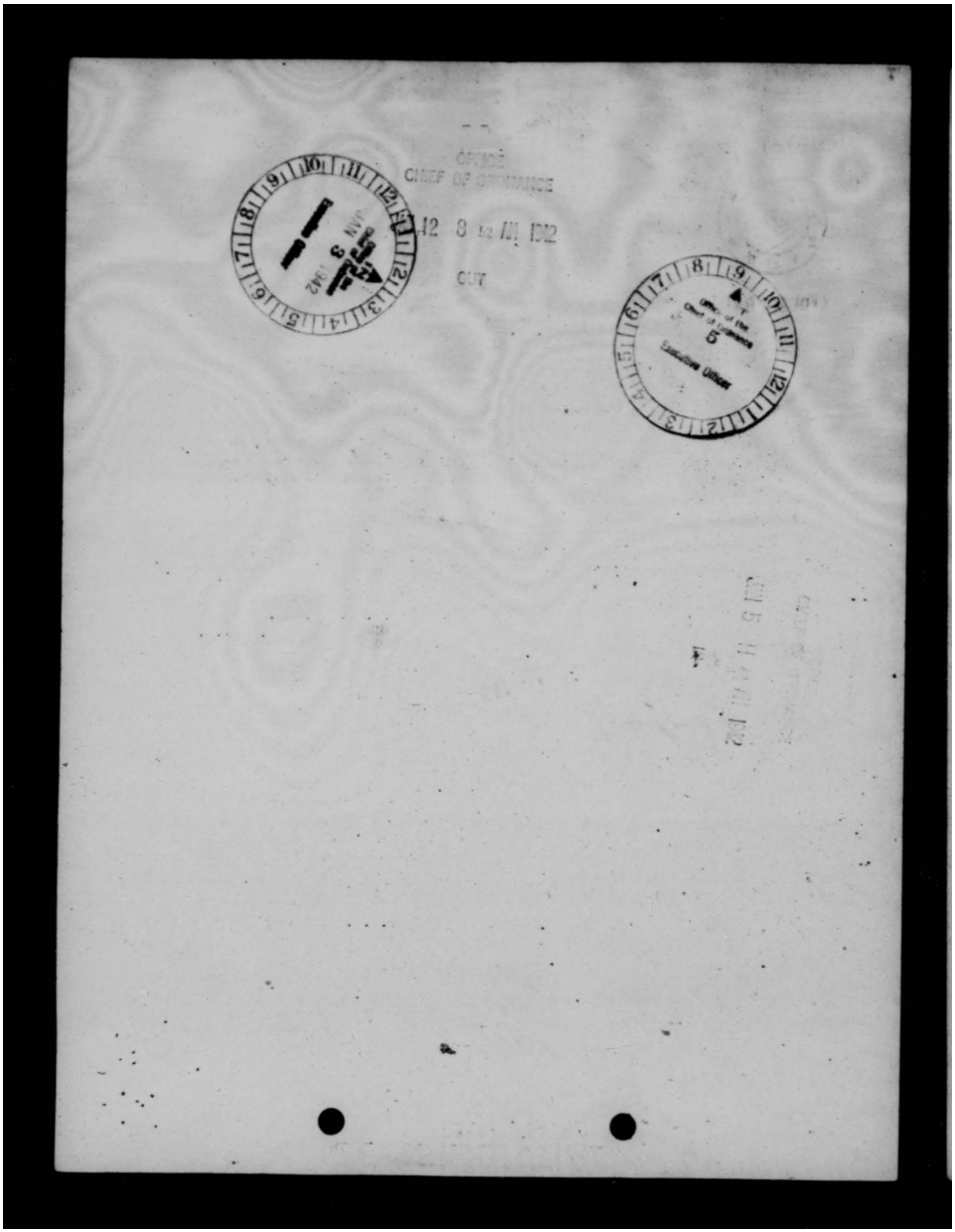

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8 Jan. & 20 June 1974
By JSHM LC. Date 3-10-77

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WAR DEPARTMENT
THE ADJUTANT GENERAL'S OFFICE
WASHINGTON

IN REPLY
REFER TO AG 471 (11-8-41)MC-D

MNE/1f1-1712

O. O. WAR DEPT.
471.41/2834
NOV 18 1941

November 14, 1941

SUBJECT: Caliber .30 Incendiary Ammunition.

TO: Chief of Ordnance.

1. When Caliber .30 Incendiary ammunition becomes available from production it is desired that the following shipments be made in order that necessary tests may be conducted.

a. 5,000 rounds to the Air Corps Materiel Division, Wright Field, Ohio.

b. 5,000 rounds to the Air Corps Board at Eglin Field, Florida.

2. It is further desired that a report be made to this office when deliveries from production have been received in excess of the above requirements.

By order of the Secretary of War:

D. Wardickler
Adjutant General.

(45) Ord 471 (11-14-41)

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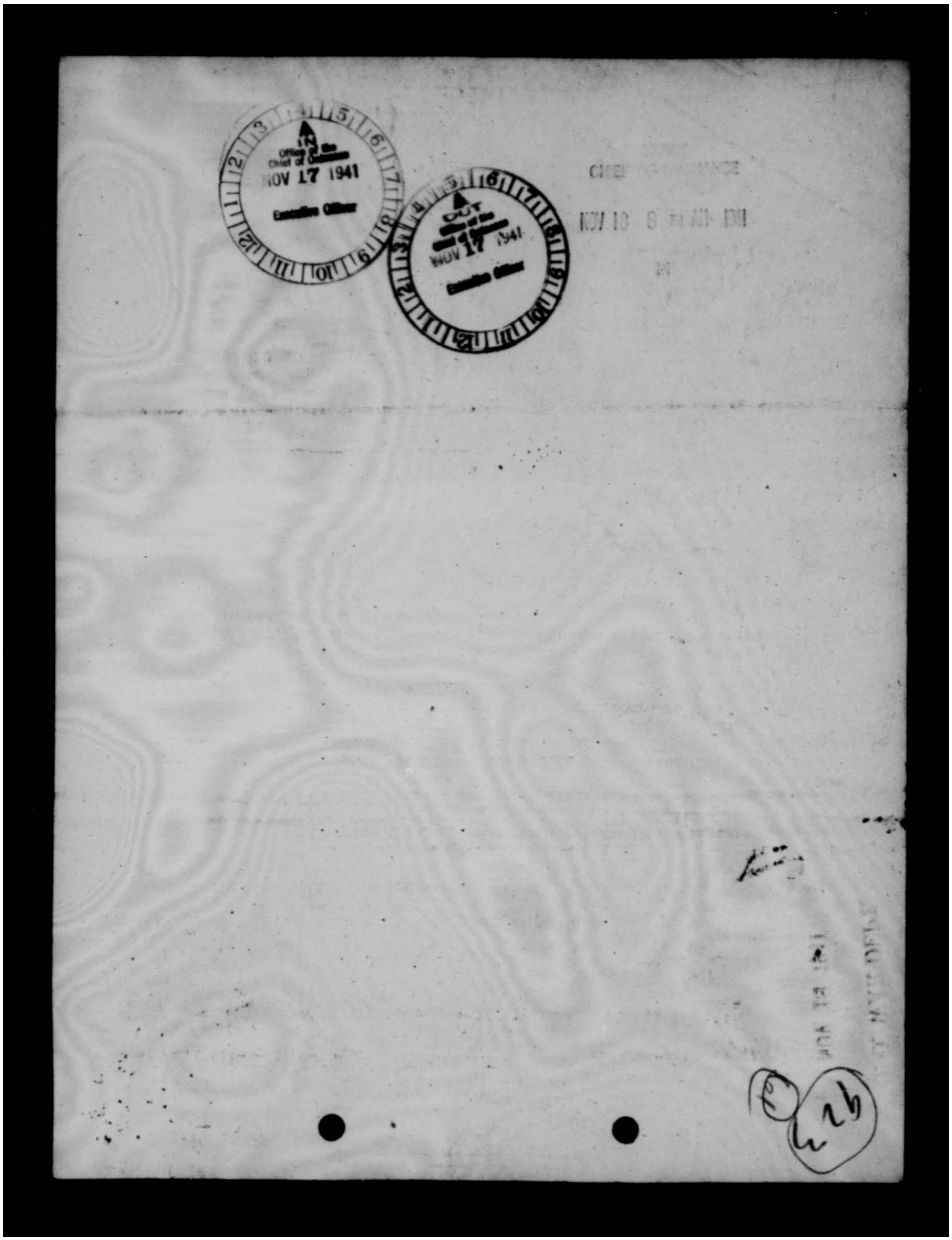

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DOD Dirs.
E.O. Date 3-10-77

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DO 471.41/2834
AG 471 (11-8-41)MC-D 1st Ind. S.L.SMITH/ckc

War Dept., Ordnance Office, Washington, D.C., November 25, 1941.
To: The Adjutant General.

1. The cal..30 incendiary ammunition requested in basic communication is not available in Field Service stock at this time.

2. Return of this correspondence is desired so that report of shipment may be made when cal..30 incendiary ammunition is available, and instructions in par. 2 of basic communication complied with.

For the Chief of Ordnance:

NOV 28 1941

45 AGO
NOV 28 1941
Rec'd Back

P. M. SELLERS,
Major, Ordnance Dept.,
Executive Assistant.

RECEIVED MISC. DIV., A.G.O.
W. D. SUB SECTION

NOV 29 1941
2864-104
IN IN
G-4 DIVISION
WAR DEPT GEN STAFF

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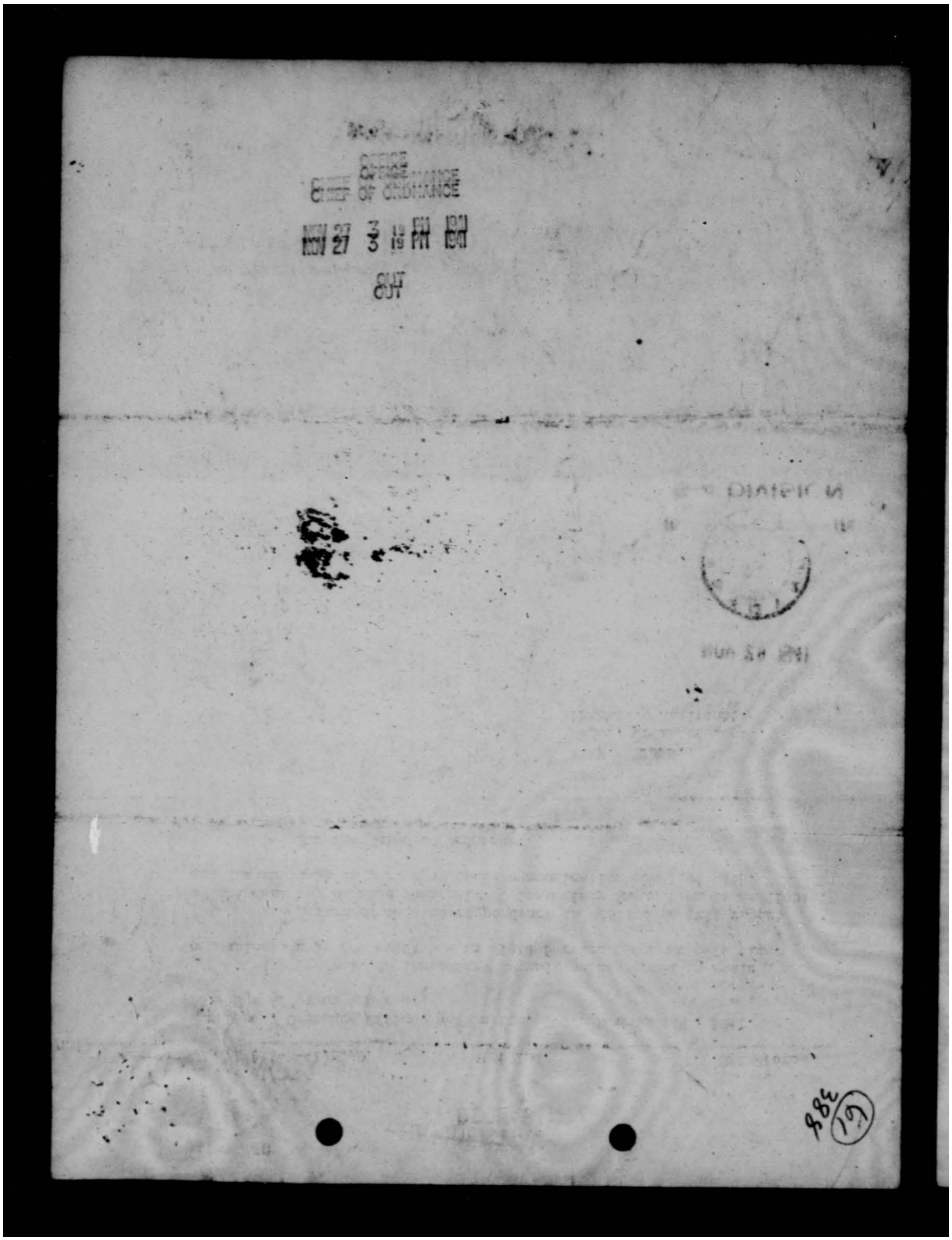

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DOD ltrs.
5 Jan. & 20 June 1974
By JS/HM LC; Date 3-10-77

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SUBJECT: Caliber .30 Incendiary Ammunition.

24

AG 471 (11-14-41)MC-D 2nd Ind. LFL/gc - 1712.

O.O. 471.41/2834

War Department, A.G.O., December 2, 1941. - To: Chief of Ordnance.

Noted and returned as requested in Paragraph 2, 1st Indorsement.

By order of the Secretary of War:

Adjutant General.

O.O. 471.41/2834
Attn:Amm.Sup.Div.,F.S.
AG 471 (11-8-41) MC-D 3rd Ind. Knodel/ih

81

War Department, Ordnance Office, Washington, D.C., December 9, 1941.
To: Adjutant General

1. With reference to basic communication, you are advised that 5,000 rounds, Cartridge, Incendiary, caliber .30 to Wright Field, and 5,000 rounds, Cartridge, Incendiary, caliber .30 to Eglin Field were shipped December 1, 1941. In addition 20,000 rounds, Cartridge, Incendiary, caliber .30 were shipped to Wright Field to apply on Wright Field requisition 42-34, on December 4, 1941.

2. With reference to paragraph 2, a balance of 16,000 rounds, Cartridge, Incendiary, caliber .30 remains in stock.

For the Chief of Ordnance:

Rec'd Back
DEC 15 1941
46 A G O

P. M. Seleen,
Major, Ord. Dept.,
Executive Assistant.

DEC 17 1941
28664-104

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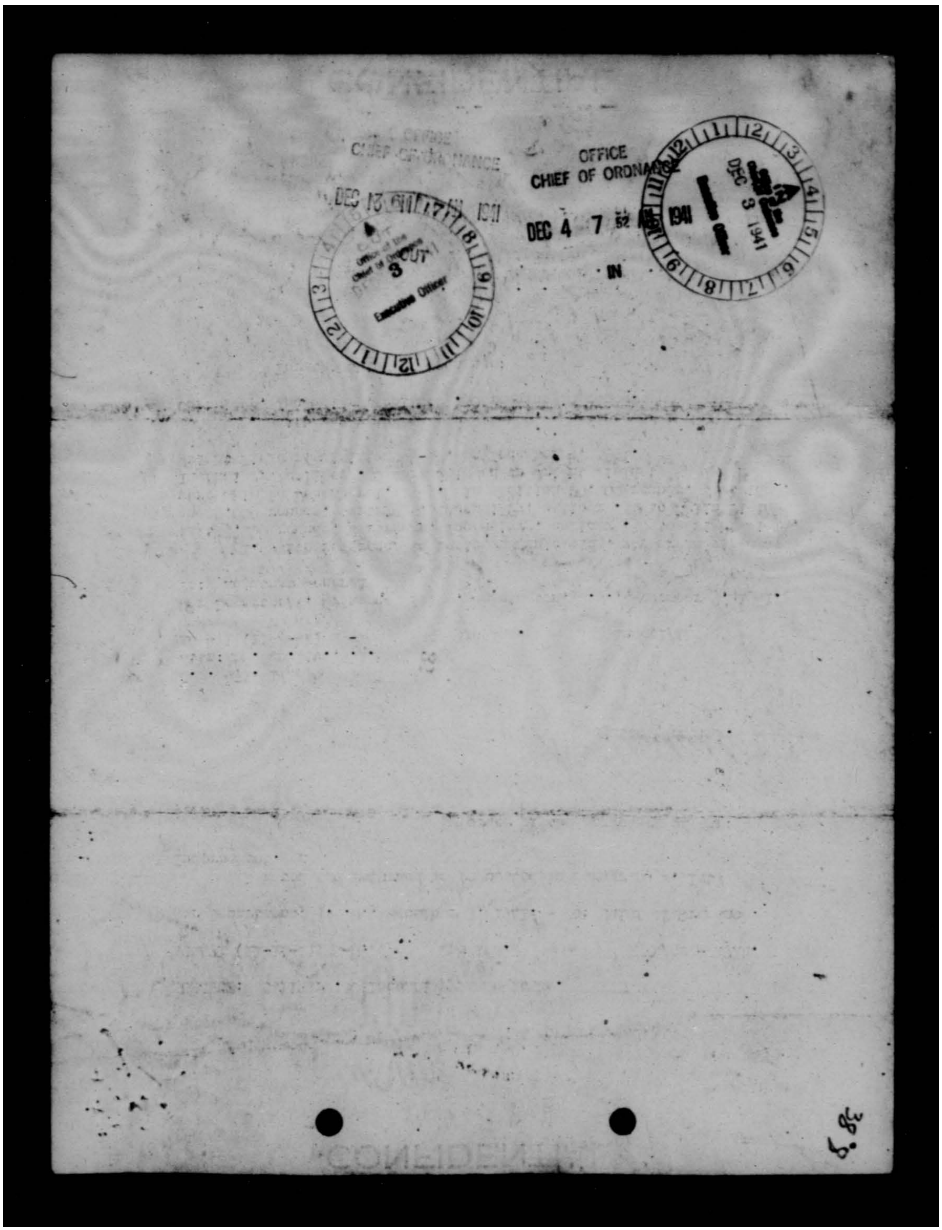

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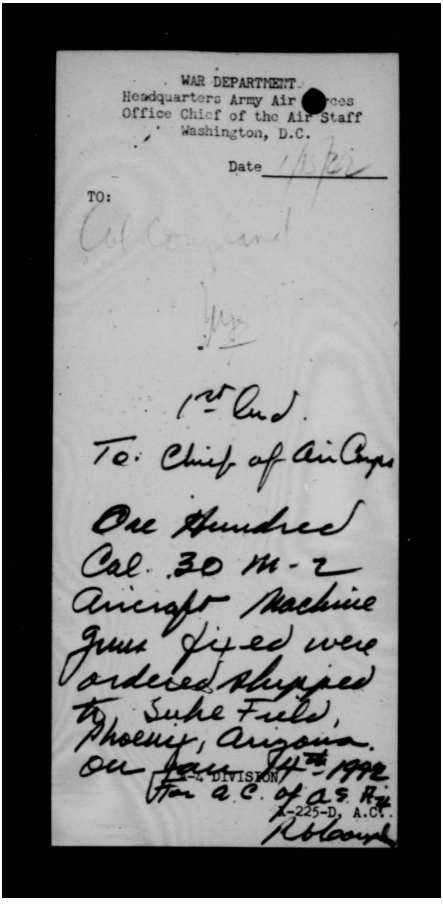

WAR DEPARTMENT
Headquarters Army Air Forces
Office Chief of the Air Staff
Washington, D.C.

Date 1/13/42

TO:

Col Copland

1st Ind.

To: Chief of Air Corps

One Hundred Cal. 30 M-2 Aircraft Machine guns fixed were ordered shipped to Suhe Field, Phoenix, Arizona. On Jan. 14th 1942

A-4 DIVISION
For A.C. of A.S. Air
A-225-D, A.C.
R. Blanchard

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WAR DEPARTMENT
Headquarters Army Air Forces
Office of the Air Adjutant General

Date JAN 1 2 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
___Air War Plans Division
___Budget Section
___Statistics Section
___Air Inspector
___A.F. Files

[redacted]
CHIEF, AIR CORPS
ASSISTANT AIR ADJUTANT GENERAL

AAF-110

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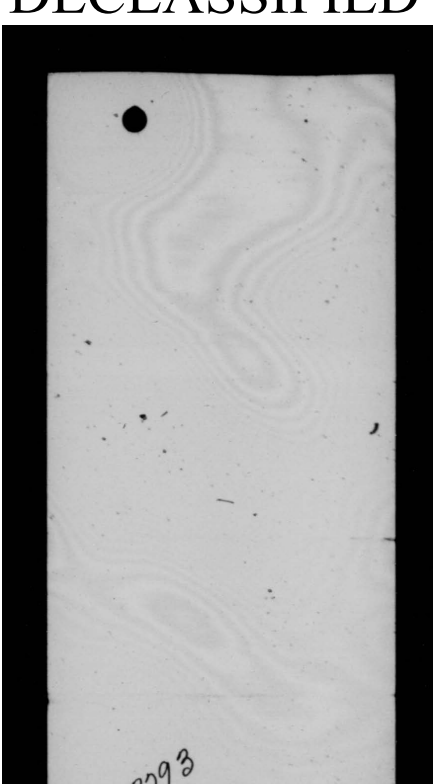

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cy OCM No 17599
forwarded
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AAF/A-4
RCC/mja
written 1/16/42

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DOD ltrs.
8 Jan. & 20 June 1974
By JS/MM LC; Date 3-10-77

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Subject: Cartridge, Tracer, Caliber .30, M2 and Cartridge, Tracer, Caliber .50, M2 - Recommended for Standardization

2nd Ind.

War Department, Headquarters Army Air Forces, Washington, D.C.,
JAN 20 1942 To: Chief of Ordnance

1. Inviting attention to the preceding indorsement, the basis for the computation of requirements of these items is established by airplane model specifications setting forth the number of rounds carried for each gun installed, by airplane type and model designation.

2. The percentage distribution by types of this ammunition is shown in Tab B in Memorandum for the Chief of the Army Air Forces, from the Deputy Chief of Staff File OCS 17874-58, dated December 19, 1941.

Dispatched
JAN 20 1942
AAG

FOR THE CHIEF OF THE ARMY AIR FORCES

For the Assistant Chief of Staff, A-4
JOHN B. COOLEY
Lt. Colonel, A. G. D.,
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-5	A-Insp.	Budget	Statistics	
Incl. OCM No. 17599 (in dupl.)						T/M/S					

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4 Jan. & 30 June 1974
By JS/HEI I.C. Date 3-10-77

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TO INSURE PROMPT ATTENTION IN REPLYING REFER TO

No.

ATTENTION OF

WAR DEPARTMENT
OFFICE OF THE CHIEF OF ORDNANCE
WASHINGTON

bjh

ORDNANCE-WAR
33.4.8 8942
JAN 9 1942

January 8, 1942

JAN 10 1942

WAR DEPARTMENT

Subject: Cartridge, Tracer, Caliber .30, M2 and Cartridge, Tracer, Caliber .50, M2 - Recommended for Standardization

To: The Adjutant General
Through: The Under Secretary of War

1. The Ordnance Committee by its item number 17599 recommended that Cartridge, Tracer, Caliber .30, M2 and Cartridge, Tracer, Caliber .50, M2 be adopted for aircraft use as Required types, Adopted types, Standard items.

2. Additional information required by paragraph 17, AR 850-25 is contained in the attached Ordnance Committee Item. Clearance for procurement will be shown by a subsequent indorsement by the Under Secretary of War.

3. It is requested that approval be given this action of the Ordnance Committee.

EARL McFARLAND
Brigadier General
Assistant to the Chief of Ordnance

1 Incl.
OCM No. 17599 (in dupl.)

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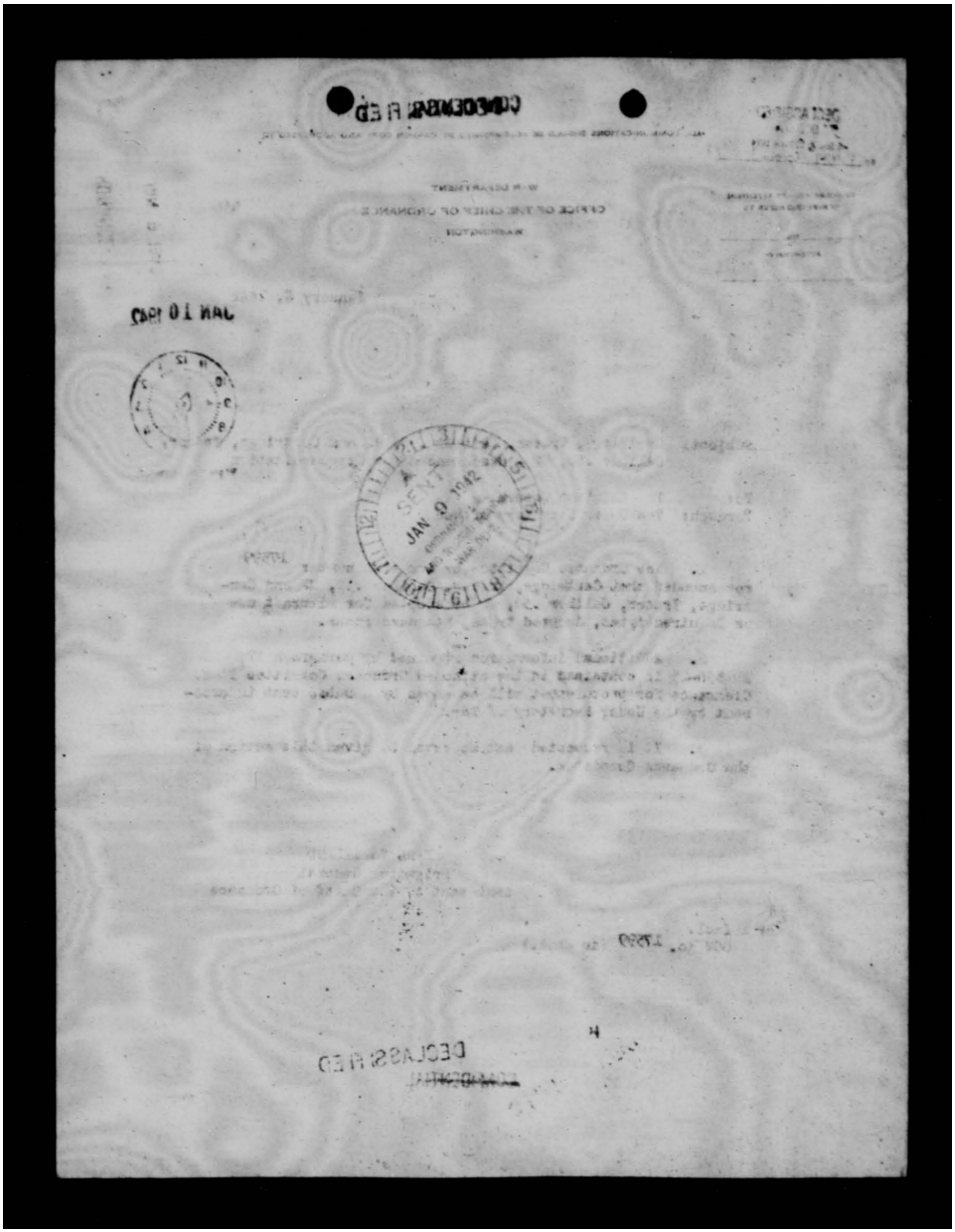

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9 Jan. & 20 June 1974
By: JSTAM LC; Date 3-10-77

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1st Ind.

War Department, Office of the Under Secretary, Washington, D. C. January 14, 1942. To: The Assistant Chief of Air Staff, A4, Headquarters, Army Air Forces, Munitions Building, Washington, D. C.

1. The following items are cleared for procurement as to type:

Cartridge, Tracer, Caliber .30, M2

Cartridge, Tracer, Caliber .50, M2

2. The Ordnance Department is charged with the procurement of these items.

By direction of the Under Secretary of War:

BYRON A. FALK,
Lt. Colonel, Signal Corps,
Chief, Standards Division.

Incl.
OCM No. 17599

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8 Jan. & 20 June 1974
By JS/HH LC. Date 3-10-77

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AAF/A-4
RCC/hmh
Written 1-22-42

Subject: Loading Machine for
20 mm. Ammunition.

1st Ind.

War Department, Headquarters Army Air Forces, Washington, D. C.
To: Chief of the Air Corps

1. In reference to the preceding, the following is furnished.

a. It is desired that a simple type of belt loading machine for the 20mm. be made available with Chatellerault feeds for use by squadron armament sections or Ordnance Aviation Companies to meet loading requirements which may vary from the standard depending on the theaters of operation, type of targets to be attacked and type of airplanes to be employed.

b. Loading machines other than that indicated in a above is a matter strictly pertaining to the Ordnance Department to meet requirements of loading in depots or stations. 20 mm. ammunition should be loaded in continuous belts of not less than 150 rounds per belt.

c. The loading sequence in belts should be in accordance with Tab-8 attached to memorandum for the Chief of the Army Air Forces from the Deputy Chief of Staff dated December 19, 1941, File OCS 17874-153, subject--Revision of Basis for Computation Requirements for Items Air Corps-Ordnance equipment, which specifies 2 rounds of H. E. incendiary and 3 rounds of A. P. for each 5 rounds loaded. The first, third and fifth round, A. P. The second and fourth round, H. E. incendiary.

By command of Lieutenant General ARNOLD:

23 1942

Dispatched
JAN 23 1942
AAG

JOHN B. COOLEY
Lieutenant Colonel, A.G.D.
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	Budge	S a	

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DOD Dirs
8 Jan. & 30 June 1971
By JS/HH LC. Date 3-10-77

JAN 19 1942

MEMORANDUM FOR: Chief of Air Staff

SUBJECT: Loading Machine for 20 mm. Ammunition

1. The Ordnance Department is now in process of having manufacturers design and develop a suitable ammunition loading machine for 20 mm. ammunition. In order that the development of these machines may not be delayed, the following information is necessary inasmuch as it will have a definite bearing on the construction.

a. Is it the desire of the Air Corps to have 20 mm. ammunition loaded into belts by the using squadron, the air base, the depot, or the point of manufacture?

b. If it is decided that loading should be accomplished at any place other than the using squadron, in what length belts is it desired that this ammunition be loaded? In this connection it might be stated that two (2) airplanes using the 20 mm. gun at the present time, namely the P-38's and P-61's, have drum feeds. These feeds however, are to be replaced by Chatellerault feeds when available. Chatellerault feeds will also be used in other airplanes in which the gun may be mounted. At present the number of rounds per gun installation for the various type airplanes which have or will have this gun can not be given.

c. If it is desired that ammunition will be loaded at other places than the using squadron, what method of loading is desired, that is, is it desired that every third shell is to be H.E. incendiary with the other two being A.P., or will a loading similar to that used by the British be satisfactory.

For the Chief of the Air Corps

F. I. ORDWAY, JR.,
Major, Air Corps,
Asst. Exec., Mat. Div.

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Air AG 471 (19)

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HEADQUARTERS ARMY AIR FORCES

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DOD Rs
By: JS/MM LC. Date 3-10-77 3403

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File No. .....

Tally No. AAF .....

SUBJECT: Flash Reduction Cal. .50 Aircraft Machine.

- 2 -

NO.	FROM	TO	DATE	COMMENTS
1. (cont.)	AAF C/AS	C/AC	1941 11/22	further experimental and development work.
2	[illegible]	Mat Div	11/29	[illegible]
3.	Materiel Division (4-E-1)	AAF C/AS	1942 1/14	1. In reference to paragraph 2.a. above, flash hiders and boosters, the same type as those tested at Wright Field on November 17, 1941, were sent by the Ordnance Department to Eglin Field, Valparaiso, Florida, for the purpose of conducting flash tests in flight. These flash hiders were equipped with the six (6) inch diameter disc assembly as was recommended by Col. Coupland of the Ordnance Department. 2500 foot second velocity ammunition, as well as 2800 foot second velocity ammunition, was also sent to Eglin Field. 2. These flash tests at Eglin Field were started on January 8, 1942, and one series of these tests, firing both velocity ammunition from the turret of a B-26 airplane at a [illegible] hiders with discs for all turret mounted and flexible .50 cal. machine guns.

RCC/mhh

File RCC

O.P.E.
Asst. for Procurement Services

(Do not use reverse side) W-4071, AC.Rev.8/14/41

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HEADQUARTERS ARMY AIR FORCES

ROUTING CONFIDENTIAL SHEET

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DOD Ltr. 8 Jan. & 20 June 1974 By JSMM LC, Date 3-10-77

11/24

Note. - A line will be drawn across sheet after each comment.

File No. .....

Tally No. AAF .....

SUBJECT: Flash Reduction Cal. .50 Aircraft Machine.

NO.	FROM	TO	DATE	COMMENTS AAF/A-4 RCC/mhh
1.	AAF C/AS	C/AC	1941 11/22	1. The results of test conducted at Wright Field, Dayton, Ohio, November 17, 1941 indicates that a suitable flash hider will reduce the flash of a Cal. .50 Aircraft Machine Gun some 95% with standard ammunition using the new standard powder. 2. The use of a flash hider seems mandatory for the immediate solution of this problem. In order to determine if the flash hider and booster used in the test at Wright Field on November 17, is satisfactory to meet the military requirements for turret mounted Cal. .50 guns in night operations, it is desired that the Chief of Ordnance be requested to furnish the Air Corps Board at Eglin Field the following equipment as soon as practicable. a. Three flash hiders boosters similar to the type tested at Wright Field on Nov. 17, 1941. b. Three masking disks approximately 6" in diameter and arranged for easy assembly on rear of flash hider. c. 1200 rounds standard Cal. .50 Aircraft Ammunition, 2800 ft/sec. velocity with new standard type powder. 3. It is further desired that a directive be sent to the Air Corps Board [redacted] an airplane. This test should be given high priority and the results furnished this office as soon as practicable The specific purpose is to determine whether the equipment as furnished meets military requirements or involves

Cn-374

Cb-86

A 11/28 (20-B) XF-585

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W-4071, AC.Rev.8/14/41

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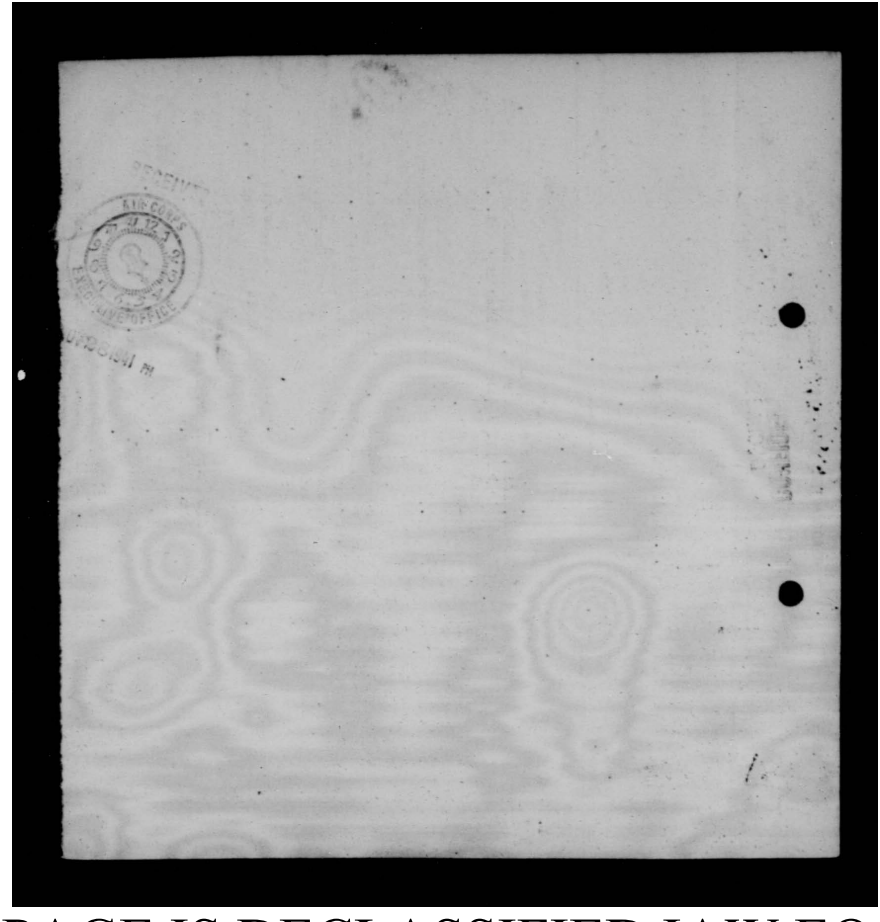

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Wrtn. 2/18/42

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DOD ltrs.
8 Jan. & 20 June 1974
By: JSIMM LC Date 3-10-77

SUBJECT: Training Ammunition Credits.

5th Ind.

War Department, Headquarters, Army Air Forces, Washington, D. C.
FEB 20 1942 To: Chief of Air Corps.

1. Credits for training ammunition are issued direct to the Air Corps Training Centers by the Chief of Ordnance, based upon revised ammunition training requirements submitted by your headquarters, subject to the 33 1/3% reduction imposed by letter AG 471 (1-3-42)MO-C-M dated January 14, 1942.

2. The critical status of small arms ammunition at this time may compel further reduction of training credits in the future.

Incls.
s/d

By Command of Lieutenant General Arnold

JOHN B. COOLEY
Lt. Colonel, A. G. D.,
Assistant Air Adjutant General

471 (75)

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.
9 Jan. & 20 June 1974
By JS/MM LC Date 3-10-77

HEADQUARTERS WESTERN DEFENSE COMMAND AND FOURTH ARMY
Presidio of San Francisco, California
OFFICE OF THE COMMANDING GENERAL

WAR DEPARTMENT

471/1-Misc-33 (Ord) January 6, 1942

SUBJECT: Training Ammunition Credits.

TO: Commanding General, Field Forces GHQ
Army War College
Washington, D. C.

Attention Ordnance Officer

1. To confirm request partially presented by telephone January 6, 1942, from Lt. Col. O.P. Winningstad, this headquarters to Lt. Col. R. W. Daniels, GHQ., the West Coast Air Corps Training Center makes request for training ammunition credits in the amounts indicated below:

1	2	3	4
ITEM	IMMEDIATE REQUIREMENT	Monthly REQUIREMENTS THEREAFTER	TOTAL REQUIRED TO 6/30/42
Cart. Cal. 22	700,000	693,000	3,372,000
Cart, ball, cal. 30 Gr. AC	2,200,000	1,294,000	7,375,000
Cart, Tracer cal, 30 Gr, AC	550,000	323,500	1,845,000
Cart, AP, cal. 50 Gr. AC	60,000	110,500	500,000
Cart, Tracer cal. 50 Gr. AC	15,000	28,000	122,000
Links, cal. 30	2,750,000	1,617,000	9,220,000
Links, cal. 50	75,000	138,000	622,000
Cart, cal. 45	200,000	200,000	1,000,000
Shell, shotgun #7 & #9	1,000,000	2,160,000	3,160,000
Shell, HE 37mm w/ links	40,000	34,200	110,000
Shell, HE 20mm W/ links	40,000	34,200	110,000
Signals, drift	1,300	650	3,800
Shell, shotgun #00-Paper	25,000		25,000
Cart, cal .30 Gr. R or MG	30,000		30,000
Cart, cal. 30 Tracer Gr R or MG	7,200		7,200

2. It is requested that credit be immediately made available for items listed in column 2 above, for delivery during January, 1942 for use during February, 1942, and the balance monthly as indicated.

For the Commanding General:

S/ Chas. C. Quigley

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CHAS. C. QUIGLEY
Lt. Col., A.G.D.
Assistant Adjutant Gener l

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IMMEDIATE ACTION

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WAR DEPARTMENT

471 - WDC - Ord. 1st Ind. 3405

GENERAL HEADQUARTERS, U. S. ARMY, Army War College, Washington, D. C., January 15, 1942. To: Chief of the Army Air Forces, Washington, D. C.

1. Forwarded as a matter pertaining to your office.

By command of GENERAL MARSHALL:

J. W. RAMSEY
Lt. Col., A.G.D.,
Assistant Adjutant General

2nd Ind. (Air AG)

WD HEADQUARTERS ARMY AIR FORCES, Washington, D. C., January 23, 1942. To: Chief of Air Corps.

1. For comment.

2. It would appear that consideration should be given to the stock on hand and the types of weapons available for training.

By command of Lieutenant General Arnold:

JOHN B. COOLEY
Lieutenant Colonel, A. C.
Assistant Air Adjutant General.

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DOD Dir.
8 Jan. & 20 June 1974
By [illegible] I.C. Date [illegible]

3rd Ind.

War Department, Headquarters, Air Corps Flying Training Command, February 4, 1942, Washington, D. C. TO: Chief of the Army Air Forces. (thru: Chief Of A.C

1. Herewith lists showing revised ammunition requirements for training activities for the period February 1, 1942, through June 30, 1942.

2. Due consideration has been given to stock on hand and the type of weapons available for training in computing these requirements.

For the Commanding General:

S/ Ralph F. Stearley,

Ralph F. Stearley,
Lt. Colonel, Air Corps,
Acting Adjutant General

4th Ind.

Chief of the Air Corps, February 8, 1942. To: Chief of the Army Air Forces.

S/ HHB
H. W. B.

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Air Av. 471 (75) Sitr-111

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DOD ltrs.
6 Jan. & 20 June 1974
By: JS/MM LC: Date: 3-10-77

RECEIPT

Date _____

Subject: Training Ammunition Credits.

1. Received from the Headquarters, Army Air Forces, one Disposition Form, above subject with incls.: Letter to C/G, above subject from A.G.D. (1-6-42); three Indorsements, above subject; five charts listing ammunition requirements for months of Febr., March, April, May and June.

_____
Officer Rank

_____
Office

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6 Jan. & 20 June 1974
By JSMM LC Date 3-10-77

JBC/rrb

2nd Ind. (Air AG)

WD HEADQUARTERS ARMY AIR FORCES, Washington, D. C., January 23, 1942.
To: Chief of Air Corps.

1. For comment.

2. It would appear that consideration should be given to the stock on hand and the types of weapons available for training.

By command of Lieutenant General ARNOLD:

JAN 23 1942
AAG

JOHN B. COOLEY
Lieutenant Colonel, A.G.D.
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	

AAF 39

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Air AG 471 (75)

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DOD ltrs.
8 Jan. & 20 June 1974
By: TSHM LC. Date 3-10-77

HEADQUARTERS ARMY AIR FORCES

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ROUTING AND RECORD SHEET

File No.....

Tally No. AAF.....

Note.--A line will be drawn across sheet after each comment.

SUBJECT: Training Ammunition Credits

NO.	FROM	TO	DATE	COMMENTS AAF/A-4 HCB/mja
1.	AAF A-4	AAF AAG	1942 1/21	1. Request a secret letter substantially as follows be sent to the Chief of the Army Air Corps: "1. For comment. 2. It would appear that consideration should be given to the stock on hand and the types of weapons available for training." for TJH, Jr. C/A-4 Incl.: imm.Actn ltr, 1/6/42, to Com. Gen., Fld. Forces, GHQ, fr. Hq.West.Def.Cmnd. Fourth Army w/1st Ind.
		JAN 22 '42 AAG Received		

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8 Jan. & 20 June 1974
By: JS/MM LC; Date 3-10-77

AAF/A-4
MFS/mhh

January 16, 1942.

MEMORANDUM FOR THE ASSISTANT CHIEF OF STAFF, G-4:

Subject: Ammunition at MacDill Field for "X" Project.

1. The Chief of the Army Air Forces has issued a directive that machine guns on aircraft leaving the United States for foreign destinations be thoroughly tested and the installations "shot-in" to insure that all Army equipment is in combat condition.

2. The Commanding General, Air Force Combat Command reports that an unusual amount of difficulty has been experienced with the gun installations of the heavy bombers leaving MacDill Field and that the testing involved in detecting and correcting these defects has required the expenditure of unusual quantities of ammunition.

3. Two hundred eighty thousand rounds of .50 caliber AP and tracer ammunition have thus far been made available by the Supply Division for this purpose. Information received this morning indicates that if previous experience is any guide an additional 72,000 rounds will be required to complete the project. It is therefore requested that an additional 72,000 rounds of .50 caliber ammunition linked four and one be shipped to MacDill Field marked for project "X".

For the Chief of the Air Staff:

Dispatched
JAN 17 1942
AAG

T. J. HANLEY, JR.,
Colonel, Air Corps,
Assistant Chief of Air Staff, 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	

AAF-39

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air AS471 (74)

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DOD ltrs.
8 Jan. & 30 June 1974
By: JSHH I.C. Date: 3-10-77

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SECRET

RECEIPT

DATE _____

SUBJECT: Ammunition at MacDill Field for "X" Project.

Received from the Headquarters, Army Air Forces, one memorandum, above subject.

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OFFICER RANK

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OFFICE

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Air AG 471 (74)

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DOD ltrs.
6 Jan. & 20 June 1971
By JS IMM LC. Date 3-10-77

JBC/gr
(Air AG)
AC 141

January 17, 1942

SUBJECT: .50 Caliber Ammunition.

TO: Chief of the Air Corps.

1. Experience indicates the desirability of proof-firing airplane gun installations prior to preparing the airplanes for shipment overseas. It is understood that General Miller has directed that such proof-firing be accomplished.

2. The War Department stocks of .50 caliber ammunition are extremely critical at this time. It is hoped that increased production during the next two months will tend to relieve the situation materially. Meanwhile, it is absolutely necessary to take maximum advantage of existing stocks.

3. Stockage figures on .50 caliber ammunition at the various Air Corps Training Centers obtained in December indicate that the stocks of .50 caliber ammunition on hand are materially in excess of requirements for some time to come and that diversions therefrom can therefore be made at this time without influencing training. It is directed that the .50 caliber ammunition required be made available for proof-firing the guns of airplanes being prepared for foreign shipment. It is suggested that this ammunition be closely controlled an that the average expenditure be limited to ten rounds of caliber per gun to be tested.

Dispatched
JAN 19 1942
AAG

By command of Lieutenant General ARNOLD:

HEADQUARTERS ARMY AIR FORCES							COORDINATION				
Chief of Staff	Sec'y Air Staff	A A G	A 1	A 2	A 3	A 4	A FPD	A Insp	Budget	Statistics	
	✓	gpc				✓					

JOHN B. COOKEY,
Assistant Air Adjutant General.

AAF 39

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Air AS 471 (72)

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DOD Dir.
8 Jan. & 30 June 1974
By JS/HM LC; Date 3-10-77

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HEADQUARTERS ARMY AIR FORCES

ROUTING AND RECORD SHEET

File No.....

Tally No. AAF.....

Note.--A line will be drawn across sheet after each comment.

SUBJECT: .50 Caliber Ammunition.

NO.	FROM	TO	DATE	COMMENTS AAF/A-4 MFS/mhh
1.	AAF A-4	AAF AAG	1942 1/14	1. It is requested that a letter substantially as follows be sent to the Chief of the Air Corps:

"1. Experience indicates the desirability of proof-firing airplane gun installations prior to preparing the airplanes for shipment overseas. It is understood that General Miller has directed that such proof-firing be accomplished."

"2. The War Department stocks of .50 caliber ammunition are extremely critical at this time ~~and~~ It is hoped that increased production during the next two months will tend to relieve the situation materially. Meanwhile, it is absolutely necessary to take maximum advantage of existing stocks."

"3. Stockage figures on .50 caliber ammunition at the various Air Corps Training Centers obtained in December indicate that the stocks of .50 caliber ammunition on hand ~~at various Air Corps Training Centers~~ are materially in excess of requirements for some time to come and that diversions therefrom can therefore be made at this time without influencing training. It is desired that you make available to the Air Service Command the .50 caliber ammunition required for proof-firing the guns of airplanes being prepared for foreign shipment. It is suggested that this ammunition be closely controlled and that the average expenditure be limited to ~~twenty~~ 10 rounds of ~~.50~~ caliber per guns to be tested.

JAN 16 1942
AAG Recd

T. H. JR.
C/A-4

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6 Jan. & 30 June 1974
By JS/MM LC. Date 3-10-77

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3366

AG 471 (1-10-42)MSC-G

RPM/evh-1705.

~~SECRET~~
Auth: T.A.G.
J. G. [illegible]
Initials:
Date: JAN 13 1942

January 13, 1942.

SUBJECT: Storage of Aircraft Ammunition, Bombs and Pyrotechnics for "X" and Shipment to Copper.

TO : The Chief of Ordnance.

1. Confirming telephone instructions issued to your office (Lt. Col. Rice) January 8, 1942 (Serial 935) from Lt. Col. Burgess, A-4, Air Staff it is desired that the following ammunition be stored at Wingate Ordnance Depot for shipment to "X".:

Air AS 471 (1)

Bombs

265	ea	2000#	Demolition
504	ea	1000#	Demolition
3,781	ea	500#	Demolition
6,348	ea	300#	Demolition
6,245	ea	100#	Demolition
5,610	ea	20#	Fragmentation

Ammunition

21,000	rounds	37 mm Aircraft
33,600	rounds	20 mm Aircraft

Pyrotechnics

500	Signals	M8
500	Flares	M8A1
50	Flares	M9
3,000	Signals	M11
1,000	Signals	M14
1,000	Signals	M15
1,000	Signals	M16
2,072	Bombs	M23
1,220	Bombs	M24
800	Signals	M25

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AG 471 (1-10-42)MSC-G (Cont'd.) January 13, 1942.

2. Confirming telephone instructions issued to your office (Lt. Col. Rice) January 8, 1942 (special 928) from Lt. Col. Burgess, A-4, Air Staff, it is desired that the following bombs be shipped to "Copper."

230 2000# Bombs
2,000 300# Bombs

By order of the Secretary of War:

J. O. Brenkinridge

Adjutant General.

COPIES TO: Chief of the Army Air Forces.
Assistant Chief of Staff, G-4.

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AAG 471 (71)

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DOD Hrs.
9 Jan. & 20 June 1974
By: JSMM LC; Date 3-10-77

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ACC 471 (1-16-42) 3rd Ind. (K-28)

HEADQUARTERS AIR FORCE COMBAT COMMAND, Bolling Field, D. C., JAN 28 1942
To: The Chief of the Army Air Forces, Washington, D. C.

Attention is invited to preceding indorsement.

For the Commanding General:

C. W. RUSSELL,
Brigadier General, G.S.C.,
Chief of Staff

JAN 30 1942
AAG Received

File
MS

471

(24)

12831 JAN 30 42
~~CENTRAL MAIL SECTION A.A.F.~~
~~12[illegible] JAN 30 42~~
~~CENTRAL MAIL SECTION A.A.F.~~

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air AG 471 (70)

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8 Jan. & 20 June 1974
By: JS/HM LC. Date 3-10-77

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SECRET

ACC 471 (1-16-42) 1st Ind. (K-28)

HEADQUARTERS AIR FORCE COMBAT COMMAND, Bolling Field, D. C., JAN 19 1942
To: Commanding General, 3rd Air Force, National Guard Armory, Tampa, Fla.

Reference paragraph 1 of basic, request investigation and report thereof be submitted to this office promptly.

By command of Major General HARMON:

T. A. FITZPATRICK,
Major, A. G. D.,
Asst Adjutant General

JAN 21 '42 AM

RECVD A. G. D.
HQ 3rd AIR FORCE

3AF 471 (1-16-42) 2nd Ind. (K-2)

HEADQUARTERS 3rd AIR FORCE, Tampa, Florida, JAN 26 1942
To: Commanding General, Air Force Combat Command, Bolling Field, D. C.

1. The 3rd Interceptor Command reports that no ammunition has been obtained from Eglin Field by its units.

2. The records of this headquarters show that no ammunition has been received from Eglin Field by Base Ordnance Officers of this Air Force.

3. Early in December this headquarters contacted Eglin Field, found that a large quantity of aircraft machine gun ammunition was located there, and asked your headquarters in radio 3AF D1178K dated Dec. 22, 1941, for authority to obtain some of this ammunition. This authority was not granted and no further action has been taken on this matter.

For the Commanding General:

H. M. JONES,
Lt. Col., A. G. D.,
Adjutant General.

RECEIVED
JAN 28 1942
HEADQUARTERS

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~~12864 JAN 30 42~~

CENTRAL MAIL SECTION A.A.F.
12834 JAN 30 42

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DOD Ltr.
6 Jan. & 29 June 1974
By: JSHM LC. Date: 3-10-77

WAR DEPARTMENT
HEADQUARTERS OF THE ARMY AIR FORCES
WASHINGTON (Air AG)

C C 46

January 16, 1942

SUBJECT: .50 Caliber Ammunition

TO : Commanding General, Air Force Combat Command

1. This headquarters has been informally advised that, at the request of the Commanding General, Third Interceptor Command, The Commanding General, Southeast Air Corps Training Center recently turned over several hundred thousand rounds of .50 caliber ammunition from the stocks at Eglin Field.

2. It is directed that this matter be investigated and a report thereof submitted as soon as practicable.

By command of Lieutenant General ARNOLD:

John B. Cooley
JOHN B. COOLEY
Lt. Col., A.G.D.
Assistant Air Adjutant General.

RECEIVED
JAN 17 1942
HEADQUARTERS
AFCC
Bolling Field

12831 JAN 30 42
~~12861 JAN 30 42~~
~~CENTRAL MAIL SECTION A.A.F.~~
~~CENTRAL MAIL SECTION A.A.F.~~

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AAC 471 (1-16-42)

AAC 471 (70)

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DOD Rts.
8 Jan. & 30 June 1974
By: JSIMM LC, Date 3-10-77

DECLASSIFIED

(Air AG)

C C 46

January 16, 1942

SUBJECT: .50 Caliber Ammunition

TO : Commanding General, Air Force Combat Command

1. This headquarters has been informally advised that, at the request of the Commanding General, Third Interceptor Command, The Commanding General, Southeast Air Corps Training Center recently turned over several hundred thousand rounds of .50 caliber ammunition from the stocks at Eglin Field.

2. It is directed that this matter be investigated and a report thereof submitted as soon as practicable.

By command of Lieutenant General ARNOLD:

JOHN B. COOLEY
Lt. Col., A.G.D.
Assistant Air Adjutant General.

Dispatched
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	Statistics	
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AAF 39

Air AB 471 (70)

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8 Jan. & 20 June 1974
By: JS MM LC, Date 3-10-77

HEADQUARTERS AIR FORCES
SECRET
ROUTING AND RECORD SHEET

File No.,.....

Tally No. AAF.....

Note.--A line will be drawn across sheet after each comment.

SUBJECT: .50 Caliber Ammunition.

AAF/A-4
MFS/mhh

NO.	FROM	TO	DATE	COMMENTS
1.	AAF A-4	AAF AAG	1942 1/14	1. It is requested that a letter, substantially as follows, be sent to the Commanding General, Air Force Combat Command: "1. ~~These~~ headquarters have been informally advised that, at the request of the Commanding General, Third Interceptor Command, The Commanding General, South East Corps Training Center recently turned over several hundred thousand rounds of .50 caliber ammunition from the stocks at Eglin Field." "2. It is ~~desired~~ that this matter be investigated and a report thereof submitted as soon as practicable. TJH, JR. C/A-4

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3288

AG 471 (1-12-42)MSC-D

LFL/fm-1705.

January 13, 1942.

~~SECRET~~

Auth: T.A.G.
Initials: J. G. B
Date: JAN 13 1942

SUBJECT: Caliber .50 Ammunition for "X".

TO: The Chief of Ordnance.

1. Confirming telephone instructions issued to your office (Captain Stone) January 12, 1942, the immediate shipment of 48,000 rounds, Caliber .50 AP and Tracer (4-1) will be made to the Chief of Army Air Forces at McDill Field, Florida, for further shipment to destination "X".

2. The above shipment will replace a like amount of Caliber .50 ammunition previously supplied McDill Field and expended for test purposes in connection with the movement of airplanes to "X".

By order of the Secretary of War:

J. G. Brackinridge

Adjutant General.

COPIES TO: A. C. of S., WPD, and

Chief of the Army Air Forces.

JAN 14 1942
AAG Received

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air 471 (69)

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DOD ltrs.
6 Jan. & 20 June 1974
JSIMM LC; Date 3-10-77

AG 471 (1-12-42)MEC-D

LFL/fm-1705.

~~SECRET~~

Auth: T.A.G.
J. G. B
Initials:
Date: JAN 13 1942

January 13, 1942.

SUBJECT: Caliber .50 Ammunition for the American Volunteer Group, China.

TO: The Chief of Ordnance.

1. Confirming telephone instructions issued to your office (Lieutenant Colonel Rice) January 9, 1942, it is desired that 1,095,900 rounds of Caliber .50 AP and Tracer (4-1) be shipped to China Defense Supply, Incorporated, Chesapeake and Ohio Terminal, Newport News, Virginia, for trans-shipment to the American Volunteer Group, Air Corps, Project 51-B.

2. In addition to the above, it is desired that 84,300 rounds of Caliber .50 AP and Tracer (4-1) be shipped to the American Volunteer Group, Air Corps Project 51-A, Pier 36, Brooklyn, New York, for trans-shipment via the S. S. Fernglen.

By order of the Secretary of War:

J. G. Brackinridge

Adjutant General.

COPIES TO: A. C. of S., WPD, and

Chief of the Army Air Forces.

JAN 14 1942
AAG Received

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DOD Nrs.
5 Jan. & 20 June 1974
By JSJMM LC. Date 5-10-77

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3258

AG 471 (1-10-42)MSC-D LFL/fm-1705.

January 12, 1942.

SECRET

Auth: T.A.G.
Initials: J. W. M.
Date: JAN 12 1942

SUBJECT: Ammunition for Shipment 4580.

TO: The Chief of Ordnance.

1. Reference is made to Paragraph 7 f, letter, this office, January 7, 1942, AG 370.5 (1-7-42)MSC-C-M, Subject: Movement Orders, Shipment 4580.

2. Confirming telephone instructions issued to your office (Captain Stone) January 10, 1942, it is desired that the following ammunition be released without delay to the Commanding General, San Francisco Port of Embarkation, for shipment 4580:

Caliber .30 AP	609,310 rds.
Caliber .30 Ball	1,070,550 rds.
Caliber .30 Tracer	203,340 rds.
Caliber .45 Ball	114,085 rds.
Caliber .45 Tracer	16,000 rds.
Caliber .50 AP	480,000 rds.
Caliber .50 Tracer	120,000 rds.
Links, metallic, Caliber .50	600,000
Links, metallic, Caliber .30	718,200

3. The above releases of ammunition provide five Units of Fire for ground weapons and 15 missions for the 114 B-26 airplanes included in Force 4580.

By order of the Secretary of War:

J. A. Brackinridge

Adjutant General.

Air AG 471 (67)

File
HCB

COPIES TO: Chief of the Army Air Forces; and

Commanding General, San Francisco
Port of Embarkation.

13 1942
AAG Received

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Air AG 471 (67)

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DOD ltrs.
6 Jan. & 20 June 1974
By JS/MM LC. Date 5-10-77

3195

WAR DEPARTMENT
WAR DEPARTMENT GENERAL STAFF
WAR PLANS DIVISION
WASHINGTON

DECLASSIFIED
AUTHORITY OF A. C. OF S., WPD
1-10-42
Date
Initials

WPD 4373-8 January 12 1942

MEMORANDUM FOR: THE COMMANDING GENERAL FIELD FORCES, GHQ,
THE ASSISTANT CHIEF OF STAFF, G-4,
THE CHIEF OF ARMY AIR FORCES:

Subject: Ammunition for Alaska.

1. Reference is made to letter (copy enclosed) C. G. Western Defense Command, Jan. 4, 1942, subject, Ammunition Requirements for Alaska.

2. The Deputy Chief of Staff (Gen. Moore) has approved the immediate release of the following amounts of ammunition to the Commanding General, Western Defense Command:

ITEM	ROUNDS
Cartridge, tracer cal .45	8,000
Shell, HE, M49A1, 60 mm Mortar	30,000
Shell, HE, M43, 81 mm Mortar	10,000
Shell, fixed, HE, M54, 37 mm AA gun	70,000
Shell, fixed, HE, M42, 3" AA gun	18,000

Release of the following, in suitable proportion of Tracer and AP, was approved for release on or about Jan. 25, 1942:

ITEM	ROUNDS
Cartridge, cal .50 AP and Tracer	500,000.

Air ad 471 (65)

JAN 12 1942
AAG Received

L. T. GEROW,
Brigadier General,
Assistant Chief of Staff.

File
HCB

BY:

R. W. Crawford
R. W. CRAWFORD,
Brigadier General, GSC.

1 Incl. C.G.Western Defense Command (1-4-42) 471 (Ord)

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air ad 471 (65)

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DOD ltrs.
8 Jan. & 20 June 1974
By JS/HH LC Date 3-10-77

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HEADQUARTERS WESTERN DEFENSE COMMAND AND FOURTH ARMY
Presidio of San Francisco, California
OFFICE OF THE COMMANDING GENERAL

471 (Ord) January 4, 1942

SUBJECT: Ammunition Requirements for Alaska. CRP/ria

TO : Commanding General, Field Forces, GHQ,
Army War College, Washington, D. C.

1. The Alaska Defense Command does not have sufficient ammunition on hand to meet a sustained hostile attack. Such an attack must be anticipated.

2. When the attack is made, ammunition resupply will be practically an impossibility by reason of the present lack of naval and air support for shipping convoys.

3. Ammunition requirements for the Alaska Defense Command authorized by the War Department, augmented by the additional quantities for aircraft requested by General Buckner and recommended by the undersigned, represent the minimum requirements.

4. Applying the quantities of ammunition on hand in Alaska against the requirements reveals the following shortages:

ITEM	ROUNDS
Cart., ball, cal. .30, M2	1,226,000
Cart., AP, cal. .30, M2	4,396,000
Cart., AP, cal. .30, Gr. AC	31,002,400
Cart., tracer, cal. .30, Gr. AC	7,750,600
Cart., tracer, cal. .45, M1	7,800
Cart., AP, cal. .50, M1	1,687,000
Cart., AP, cal. .50, Gr. AC	10,181,000
Cart., tracer, cal. .50, M1	106,000
Cart., tracer, cal. .50, Gr. AC	2,545,400
Shell, HE, M49A1, 60-mm Mortar, Comp. Rd	245,755
Shell, HE, M43, 81-mm Mortar Comp Rd.(Lt)	29,250
Shell, HE, M56, 81-mm Mortar Comp Rd.(Hv)	16,130
Shell, smoke, phos. WP, M57 81-mm Mortar, Comp. Rd	8,100
Shell, fixed, HE, Mk. II, 37-mm Guns M3 & M5, Comp. Rd.	12,450
Cannister, fixed, M2, 37-mm Guns M3 & M5, Comp. Rd.	656
Shell, fixed, smoke, WP, MK.II, 75-mm Gun, Comp. Rd	2,460

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Ltr. 471 (Ord) GG, WDC & 4th Army, to CG, PW, GHQ, 1/3/42, Subject: "Ammunition Requirements for Alaska". (cont'd)

ITEM	ROUNDS	
Shell, fixed, gas, persistent, HS, Mk. II, 75-mm Gun, Comp. Rd.	3,840	
Shell, smoke, phos. WP, 75-mm, Pk. How. M1 & M1A1, Comp. Rd.	960	
Shell, semi-fixed, gas, persistent, HS, 75-mm Pk. How. Comp. Rd.	960	
Shell, fixed, HE, M54, w/SD tracer and fuse PD, M56, 37-mm Auto. Gun, M1A2	403,886	
Shot, fixed, AP, w/SD tracer and fuse, PD, M56, 37-mm Auto. Gun, M1A2	57,600	
Shell, fixed, HE, M42, WE, 3" AA Gun, M1S (all models) M1 & M3	139,750	
Shot, fixed, AP, 3" AA Gun, M1S (all models) M1 & M3	10,800	
Shell, semi-AP, 155-mm Gun, Comp. Rd.	20,250	
Shell, 20-mm, Gr. AC	60,000	
Shell, 37-mm, Gr. AC	60,000	
* Bomb, Demo., 100#	76,384	3800
* Bomb, Demo., 250-300#	35,405	6000
* Bomb, Demo., GP 500#	11,842	2010
* Bomb, Demo., GP 1000#	11,783	5800
* Bomb, Demo., 2000#	7,785	7780
* Bomb, Demo., SAP, 500#	8,400	2700
* Bomb, Demo., SAP, 1000#	4,200	1200
* Bomb, AP, 1500#	1,400	1000
* Bomb, Demo., 600#	19,024	3000
* Bomb, Chem., 100#	7,000	
* Bomb, Depth, 300#	14,000	2000
* Bomb, Frag., 20#	21,000	5700
* Bomb, Incen., 100#	7,000	

* NOTE: Distribution requirements Govern these quantities.

5. It would be inexcusable, after our experiences in the Pacific, if an attack on Alaska were to find the troops of the several garrisons with shortages still existing in the minimum requirements.

Enough bombs to provide for the combat life of about 400 bombers.

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Ltr. 471 (Ord), CG, WDC & 4A to CG FF GHQ, 1/4/42, subject: "Ammunition Requirements for Alaska". (Cont'd)

6. I am fully aware that all ammunition sent to this theatre is for distribution to all troops both in the continental United States and Alaska. The ammunition available in this theatre (other than Alaska) is insufficient, except for caliber .30 ball, to meet the Alaska deficit. It is therefore essential that these shortages be supplied without delay from sources other than the Western Defense Command.

J. L. DeWITT
Lieutenant General, U. S. Army
Commanding.

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an ao 471 (65)

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DECLASSIFIED 3238

WAR DEPARTMENT
WAR DEPARTMENT GENERAL STAFF
SUPPLY DIVISION, G-4
WASHINGTON, D.C.

G-4/33861

JAN 9 1942

MEMORANDUM FOR THE CHIEF OF ARMY AIR FORCES:

DECLASSIFIED
DOD ltrs.
8 Jan. & 20 June 1974
By: JS/MM LC; Date 5-10-77

Subject: Caliber .30 and Caliber .50
Ammunition for "X".

1. Reference is made to the information copy of a secret cablegram from General Brett relative to bombs and small arms ammunition for "X". (AG 400 (1-7-42)MSC, No 5, dated January 7th)

2. The status of small arms ammunition (AC) in or enroute to "X" is as follows:

	Caliber .30	Caliber .50
At "X"	0 rounds	500,000 rounds
Enroute	0 rounds	1,857,000 rounds
Scheduled	5,860,000 rounds	2,670,000 rounds
	5,860,000 rounds	4,577,000 rounds

3. Every effort is being made to ship a minimum of 20 missions with each plane destined for "X".

4. With ships now available, combat loading of troops is impracticable unless bulk of passenger space is wasted. However, as far as space is available, organizational equipment is placed on same boat with the organization.

Air ab 471 (64)

BREHON SOMERVELL,
Brigadier General,
Assistant Chief of Staff.

Incl.
Secret Radgm (Cy)
(1-7-42)

DON C. FAITH
Col., General Staff.
Asst. Executive

Hq. Army Air
JAN 12 1942
AAG Received

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OUT-G-4 JAN 10 1942
air ab 471 (64)

S-212

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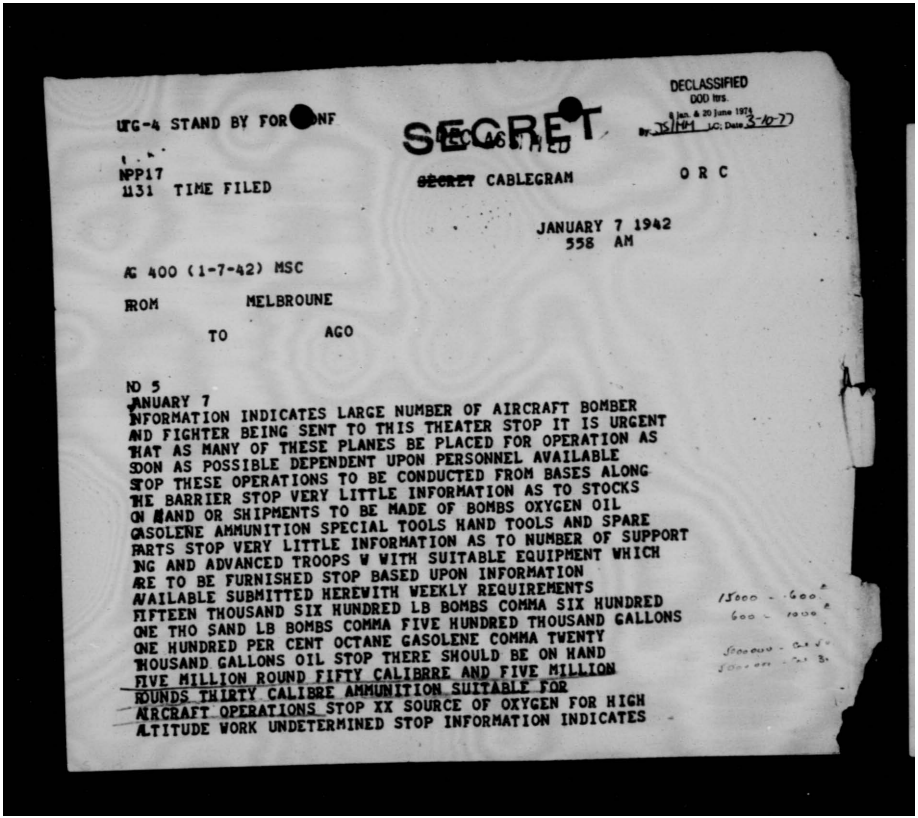

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DOD ltrs.
8 Jan. & 20 June 1974
By: JS/HM LC; Date: 3-10-77

UTG-4 STAND BY FOR [redacted]NF

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1131 TIME FILED

~~SECRET~~ CABLEGRAM

O R C

JANUARY 7 1942
558 AM

AG 400 (1-7-42) MSC

FROM MELBROUNE

TO AGO

NO 5
JANUARY 7
INFORMATION INDICATES LARGE NUMBER OF AIRCRAFT BOMBER
AND FIGHTER BEING SENT TO THIS THEATER STOP IT IS URGENT
THAT AS MANY OF THESE PLANES BE PLACED FOR OPERATION AS
SOON AS POSSIBLE DEPENDENT UPON PERSONNEL AVAILABLE
STOP THESE OPERATIONS TO BE CONDUCTED FROM BASES ALONG
THE BARRIER STOP VERY LITTLE INFORMATION AS TO STOCKS
ON HAND OR SHIPMENTS TO BE MADE OF BOMBS OXYGEN OIL
GASOLENE AMMUNITION SPECIAL TOOLS HAND TOOLS AND SPARE
PARTS STOP VERY LITTLE INFORMATION AS TO NUMBER OF SUPPORT
ING AND ADVANCED TROOPS W WITH SUITABLE EQUIPMENT WHICH
ARE TO BE FURNISHED STOP BASED UPON INFORMATION
AVAILABLE SUBMITTED HEREWITH WEEKLY REQUIREMENTS
FIFTEEN THOUSAND SIX HUNDRED LB BOMBS COMMA SIX HUNDRED
ONE THO SAND LB BOMBS COMMA FIVE HUNDRED THOUSAND GALLONS
ONE HUNDRED PER CENT OCTANE GASOLENE COMMA TWENTY
THOUSAND GALLONS OIL STOP THERE SHOULD BE ON HAND
FIVE MILLION ROUND FIFTY CALIBRRE AND FIVE MILLION
ROUNDS THIRTY CALIBRE AMMUNITION SUITABLE FOR
AIRCRAFT OPERATIONS STOP XX SOURCE OF OXYGEN FOR HIGH
ALTITUDE WORK UNDETERMINED STOP INFORMATION INDICATES

15000 - 600
600 - 1000

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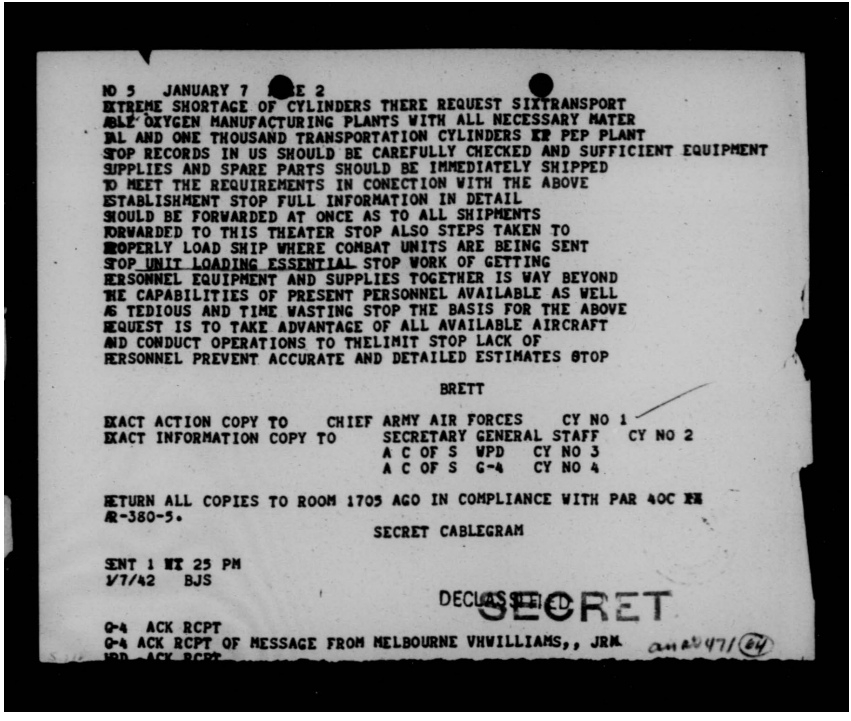

NO 5 JANUARY 7 [redacted] E 2
EXTREME SHORTAGE OF CYLINDERS THERE REQUEST SIXTRANSPORT
ABLE OXYGEN MANUFACTURING PLANTS WITH ALL NECESSARY MATER
IAL AND ONE THOUSAND TRANSPORTATION CYLINDERS FR PEP PLANT
STOP RECORDS IN US SHOULD BE CAREFULLY CHECKED AND SUFFICIENT EQUIPMENT
SUPPLIES AND SPARE PARTS SHOULD BE IMMEDIATELY SHIPPED
TO MEET THE REQUIREMENTS IN CONECTION WITH THE ABOVE
ESTABLISHMENT STOP FULL INFORMATION IN DETAIL
SHOULD BE FORWARDED AT ONCE AS TO ALL SHIPMENTS
FORWARDED TO THIS THEATER STOP ALSO STEPS TAKEN TO
PROPERLY LOAD SHIP WHERE COMBAT UNITS ARE BEING SENT
STOP UNIT LOADING ESSENTIAL STOP WORK OF GETTING
PERSONNEL EQUIPMENT AND SUPPLIES TOGETHER IS WAY BEYOND
THE CAPABILITIES OF PRESENT PERSONNEL AVAILABLE AS WELL
AS TEDIOUS AND TIME WASTING STOP THE BASIS FOR THE ABOVE
REQUEST IS TO TAKE ADVANTAGE OF ALL AVAILABLE AIRCRAFT
AND CONDUCT OPERATIONS TO THELIMIT STOP LACK OF
PERSONNEL PREVENT ACCURATE AND DETAILED ESTIMATES STOP

BRETT

EXACT ACTION COPY TO CHIEF ARMY AIR FORCES CY NO 1
EXACT INFORMATION COPY TO SECRETARY GENERAL STAFF CY NO 2
A C OF S WPD CY NO 3
A C OF S G-4 CY NO 4

RETURN ALL COPIES TO ROOM 1705 AGO IN COMPLIANCE WITH PAR 40C AR
AR-380-5.

SECRET CABLEGRAM

SENT 1 [redacted] 25 PM
1/7/42 BJS

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G-4 ACK RCPT
G-4 ACK RCPT OF MESSAGE FROM MELBOURNE VHWILLIAMS,, JRM
WPD ACK RCPT

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DOD ltrs.
8 Jan. & 20 June 1974
By JS/MM LC; Date 3-10-77

AAF/A-4
HCB

JAN 10 1942

AAF/A-4/471-4

MEMORANDUM FOR THE ADJUTANT GENERAL:

Subject: .37 mm. Ammunition M-55 A1.

The Secretary of War directs:

I. That a secret letter, substantially as follows, be sent to the Chief of Ordnance:

1. Confirming telephone instructions issued to your office (Lt. Col. Rice) January 7, 1942 (Serial 981) from Lt. Col. Burgess, A-4, Air Staff, it is desired that the following ammunition be released as follows:

To Supply Officer, McChord Field, Washington
Marked for use on P-39-D Airplanes
1,000 rds. 37 mm. M-55 A1

To Quartermaster, Langley Field, Virginia
For Air Corps Supply Officer
1,000 rds. 37 mm. M-55 A1

To Air Corps Representative
Bell Aircraft Corporation
Buffalo, New York
Marked for use on P-39-D Airplanes
150 rds. 37 mm. M-55 A1

2. Advise Wright Field of date and method of shipment.

3. This authorization is over and above the total requisition 42-9 Wright Field, dated August 5, 1941 as approved, by 1,150 rounds, but the issue is made necessary for proof test at McChord Field and requirements at Bell Aircraft Corporation.

emd

(1-10-42)

471 (63)

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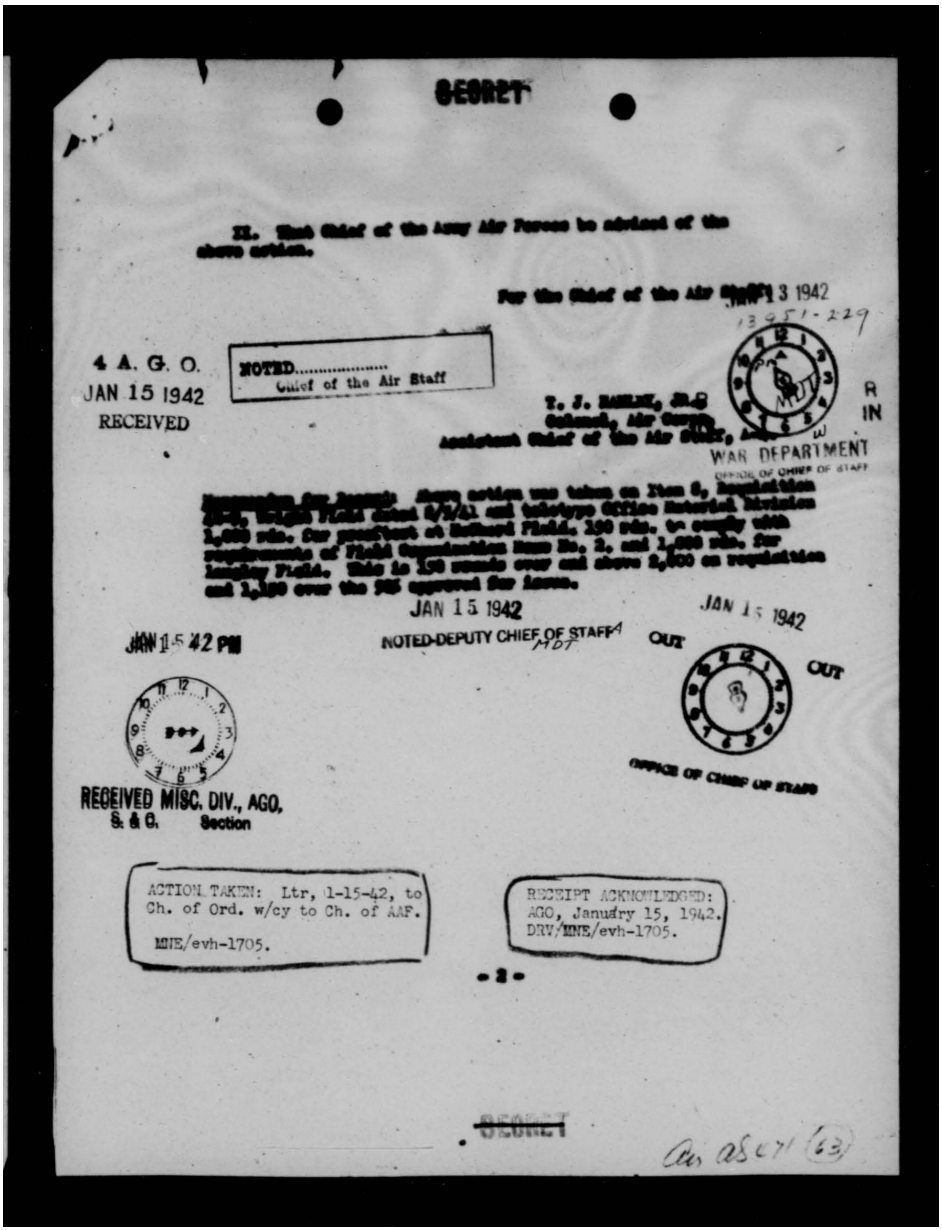

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II. Chief of the Army Air Forces to advisor of the above action.

For the Chief of the Air Staff JAN 13 1942

13951-229

4 A. G. O.
JAN 15 1942
RECEIVED

NOTED.....
Chief of the Air Staff

T. J. HANLEY, JR.
Colonel, Air Corps,
Assistant Chief of the Air Staff, [illegible]

WAR DEPARTMENT
OFFICE OF CHIEF OF STAFF

[illegible] action was taken on Item 6, Requisition [illegible] and teletype Office Material Division [illegible], Wright Field dated 9/5/41 and teletype Office Material Division [illegible], Wright Field dated 9/5/41 and telegram Office Material Division [illegible], Wright Field dated 9/5/41 and telegram Office Material Division [illegible], Wright Field dated 9/5/41 and telegram

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DOD Ltrs.
8 Jan. & 20 June 1974
By JSMH LC; Date 5-10-77

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JAN 1 0 1942 AAF/A-4
HCB/emd

Written January 9, 1942.

AAF/A-4/471-4

MEMORANDUM FOR THE ADJUTANT GENERAL:

Subject: .37 mm. Ammunition M-55 A1.

The Secretary of War directs:

I. That a secret letter, substantially as follows, be sent to the Chief of Ordnance:

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Marked for use on P-39-D Airplanes
1,000 rds. 37 mm. M-55 A1

To Quartermaster, Langley Field, Virginia
For Air Corps Supply Officer
1,000 rds. 37 mm. M-55 A1

To Air Corps Representative
Bell Aircraft Corporation
Buffalo, New York
Marked for use on P-39-D Airplanes
150 rds. 37 mm. M-55 A1

JAN 15 1942
AAG

2. Advise Wright Field of date and method of shipment.

3. This authorization is over and above the total requisition 42-9 Wright Field, dated August 5, 1941 as approved, by 1,150 rounds, but the issue is made necessary for proof test at McChord Field and requirements at Bell Aircraft Corporation.

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 471 (63)

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II. That Chief of the Army Air Forces be advised of the above action.

For the Chief of the Air Staff:

NOTED EPC 1/12/42
Chief of the Air Staff

T. J. [illegible], Jr.,
Colonel, Air Corps,
Assistant Chief of the Air Staff, A-4.

Memorandum for Record: Above action was taken on Item 8, Requisition 42-9, Wright Field dated 8/2/41 and teletype Office Material Division 1,000 rds. for prooftest at McChord Field. 190 rds. to comply with requirements of Field Organization Memo No. 2. and 1,000 rds. for Langley Field. This is 190 rounds over and above 2,000 on requisition and 1,190 over the 90% approved for issue.

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	
	[illegible]					[illegible]					

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8 Jan. & 20 June 1974
By JS/HH LC; Date 3-10-77

AG 471 (1-2-42)MSC-B LFL/gb-1705

January 8, 1942

SECRET

SUBJECT: Metallic Links for Trinidad.

Auth: T.A.G.
Initials: J.L.C.
Date: JAN 8 1942

TO: Chief of Ordnance.

1. Attention is invited to the inclosed paraphrased copy of radiogram from the Commanding General, Caribbean Defense Command January 2, 1942, AG 471 (1-2-42)MSC and reply thereto January 5, 1942, AG 471 (1-2-42)MSC-B.

2. Confirming telephone instructions issued to your office (Lt. Colonel Rice) January 5, 1942, it is desired that 100,000 Links Metallic Caliber .30 be shipped at the earliest practicable date to the Trinidad Base Command.

By order of the Secretary of War:

Joseph L. Clark

Adjutant General.

2 Incls.
#1 - Para. of radio fr. CG, CDC, to TAG, January 2, 1942.
#2 - Para. of radio fr. TAG to CG, CDC, January 5, 1942.

COPIES TO: (w/cy incls) C.G., Field Forces.
A. C. of S., WPD.
Chief of the Army Air Forces.

File
HCB

JAN 10 1942
AAC Received

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Air AG 471 (62)

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PARAPHRASE OF RADIOGRAM

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INFORMATION COPY

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DOD Ltrs.
8 Jan. & 30 June 1974
By JS/MM LC Date 3-10-77

AG 471 (1-2-42)MSC BJS - 1705

TO: THE ADJT GENL

FROM: QUARRY HEIGHTS CZ

NO. [illegible] 26 JANUARY 2, 1942.

* * * * *

CAF ADVISES THAT A SHORTAGE OF ONE MISSION LINES METALLIC CALIBER .30 EXISTS AT TRINIDAD BASE COMMAND. WHEN AMMUNITION WAS ISSUED TO AIR CORPS UNITS DISCOVERY OF SHORTAGE OF LINKS WAS MADE; IT WAS ORIGINALLY INTENDED FOR USE OF GROUND WEAPONS. THAT SUPPLY OF ABOVE QUANTITY OF LINKS CALIBER .30 BE MADE AS EARLY AS POSSIBLE.

COPIES TO: Chief of Army Air Forces.
A.C. of S., WPD,
Chief of Ordnance,
Commanding General, Field Forces.

PARAPHRASE OF RADIOGRAM

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DOD Ltrs
8 Jan. & 20 June 1974
By JSM-M1 LC. Date 3-10-77

AG 471 (1-2-42)MSC-D BJS - 1705

FROM: THE ADJUTANT GENERAL

TO: COMMANDING GENERAL CARIBBEAN DEFENSE COMMAND

JANUARY 5, 1942

* * * * * * *

IN REFERENCE TO YOUR RADIO CDC 26, TO SHIP TO TRINIDAD BASE COMMAND 100,000 LINKS METALLIC CALIBER 30, ACTION IS BEING TAKEN.

COPIES TO: Chief, Army Air Forces,
A.C. of S., WPD,
Chief of Ordnance,
Commanding General, Field Forces.

PARAPHRASE OF RADIOGRAM

INFORMATION COPY DECLASSIFIED

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DOD ltrs.
8 Jan. & 20 June 1974
By JS/MH LC; Date 3-10-77

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Directive No. 3-23

WAR DEPARTMENT
HEADQUARTERS OF THE ARMY AIR FORCES
WASHINGTON

January 8, 1942.

DIRECTIVE MEMO FOR: A-3

SUBJECT: Gunnery and Bombing.

1. Initiate action to make available ammunition and bombs for training purposes for all tactical units, and see that any present instructions restricting expenditure of ammunition or bombs are modified sufficiently to permit units a reasonable amount of gunnery and bombing.

By direction of the Chief of the Air Staff:

C. E. Duncan,
Lieut. Colonel, Air Corps
Secretary of the Air Staff.

dis OD 471 (61)

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	Budge	S [illegible]	

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CED:arl.

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6 Jan. & 20 June 1974
By JS/HM LC; Date 3-10-77

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3084

AG 370.5
(1-6-42)MSC-D

LFL/emk-1705.

January 7, 1942.

SECRET

Auth: T.A.G.
Initials: J. W. M.
Date: JAN 7 1942

SUBJECT: Ammunition for Shipment 4514.

TO: Chief of Ordnance.

1. Reference is made to letter, this office, January 1, 1942, AG 370.5 (1-1-42)MSC-C-M, Subject: Movement Orders, Shipment 4514.

2. Confirming telephone instructions previously issued to the Chief of Ordnance (Lt. Colonel Rice), it is desired that the quantities of small arms ammunition listed in Paragraph 6 f of the above directive be changed to the following, in order to provide ammunition for additional weapons being sent with Force 4514:

Caliber .50, AP & Tracer (4-1)	320,000 rounds
Caliber .30, AP & Tracer (4-1)	2,100,000 rounds
Caliber .45, Ball	100,000 rounds
Shell, Shotgun, 12 gauge, 00	10,000

By order of the Secretary of War:

John W. McCormick

Adjutant General.

COPY TO: Chief of the Army Air Forces.

Army Air Forces
9 1942
AAG Received

Air Ob 471 (60)

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HCB

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air ob 471 (60)

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8 Jan. & 20 June 1974
By JS/MM LC, Date 3-10-77

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AAF/A-4
HCB/mja
written 1/5/42

JAN 8 1942

Air Commodore E.E.C. Betts
Royal Air Force Delegation
Washington, D.C.

Dear Commodore Betts:

Reference your letter A.21735/41 December 19, 1941.

Receipt is acknowledged of your letter containing the paraphrase of the signal notifying Headquarters, Royal Air Force, Middle East that the U.S. Army Air Corps wishes to take advantage of the offer of 500,000 rounds .5 ammunition.

Your cooperation in this matter is very gratifying.

Very truly yours,

WILLIAM W. DICK
Col., A.G.D.
Air Adjutant General

Dispatched
JAN 8 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 28471 (59)

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ASC (RAF)

~~BR. SECRET~~
~~U. S. CONFIDENTIAL~~
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ROYAL AIR FORCE DELEGATION
(BRITISH AIR COMMISSION)

TO: Colonel M.F. Schneider
Munitions Building, Washington, D.C.

DATE: 19th December, 1941

FROM: Air Commodore E.B.C. Betts

OUR REF: A.21,735/41

ATTENTION OF:

YOUR REF:

SUBJECT:

DECLASSIFIED
Per
JCS memo 2 Jan. 75
By [illegible] Date 3/10/77

In reference to our conversation today the following is a paraphrase of a signal which has been despatched to Headquarters, Royal Air Force Middle East, Cairo:-

"In reference to previous signals on the subject of ammunition urgently required for the reinforcement of the Philippines it is now understood that the U.S. Army Air Corps wishes to take advantage of the offer of 500,000 rounds .5" ammunition, 50% armour piercing and 50% ball, with the necessary disintegrating links to match. It is presumed that the latter are available. The U.S. Army Air Corps will arrange for air transport and are instructing the Air Corps Ferry Command to establish touch with your Headquarters through General Adler. The ammunition will be replaced by like quantities and qualities which will be made available for shipment from here in the first week in January, 1942."

E. Betts

Air Commodore.

Ann AB 471 (59)

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DOD ltrs.
6 Jan. & 20 June 1974
By JS/PPI LC, Date 3-10-77

~~CONFIDENTIAL~~
DECLASSIFIED

2914

SUBJECT: Caliber .30 Incendiary Ammunition.

AG 471 (11-14-41)MSC-D 4th Ind. JMH/kti-1712.

War Department, A.G.O., January 1, 1942. To: Chief of Ordnance.

It is desired that the 16,000 rounds Caliber .30, Incendiary ammunition referred to in Paragraph 2, preceding 3rd Indorsement, be transferred to West Coast storage for shipment to destination "X".

By order of the Secretary of War:

D. R. VanBickler

Adjutant General.

471 (57)

COPY TO:

Chief of the Army Air Forces,
w/cys. of basic ltr, 1st,
2nd and 3rd Inds.

File
Hers

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an AG 471 (57)

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DOD ltrs.
5 Jan. & 20 June 1973
By JS/PM LC Date 3-10-77

WAR DEPARTMENT
The Adjutant General's Office
Washington

AG 471 (11-8-41)MC-D MNE/lfl-1712.

November 14, 1941

SUBJECT: Caliber .30 Incendiary Ammunition.

TO: Chief of Ordnance.

1. When Caliber .30 Incendiary ammunition becomes available from production it is desired that the following shipments be made in order that necessary tests may be conducted.

a. 5,000 rounds to the Air Corps Materiel Division, Wright Field, Ohio.

b. 5,000 rounds to the Air Corps Board at Eglin Field, Florida.

2. It is further desired that a report be made to this office when deliveries from production have been received in excess of the above requirements.

By order of the Secretary of War:

/s/ D. R. Van Sickler,
Adjutant General.

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DOD Rts.
8 Jan. & 20 June 1974
By JS/MM LC. Date 3-10-77

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OO 471.41/2834
AG 471 (11-8-41)MC-D 1st Ind. S.L.SMITH/okc

War Dept., Ordnance Office, Washington, D.C., November 25, 1941.
To: The Adjutant General.

1. The cal. .30 incendiary ammunition requested in basic communication is not available in Field Service stock at this time.

2. Return of this correspondence is desired so that report of shipment may be made when cal. .30 incendiary ammunition is available, and instructions in par. 2. of basic communication complied with.

For the Chief of Ordnance:

/s/ P.M.SELEEN,
Major, Ordnance Dept.,
Executive Assistant.

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DOD Dir.
5 Jan. & 30 June 1972
By JS/HM LC Date 3-10-77

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DECLASSIFIED

SUBJECT: Caliber .30 Incendiary Ammunition.

AG 471 (11-14-41)MC-D 2nd Ind. LFL/gc - 1712.

War Department, A.G.O., December 2, 1941. - To: Chief of Ordnance.

Noted and returned as requested in Paragraph 2, 1st Indorsement.

By order of the Secretary of War:

/s/ D. R. VAN SICKLER
Adjutant General.

O.O. 471.41/2834
Attn: Amm. Sup.Div.,F.S.
AG 471 (11-8-41) MC-D 3rd Ind. Knodel/ih

War Department, Ordnance Office, Washington, D.C., December 9, 1941.
To: Adjutant General

1. With reference to basic communication, you are advised that 5,000 rounds, Cartridge, Incendiary, caliber .30 to Wright Field, and 5,000 rounds, Cartridge, Incendiary, caliber .30 to Eglin Field were shipped December 1, 1941. In addition 20,000 rounds, Cartridge, Incendiary, caliber .30 were shipped to Wright Field to apply on Wright Field requisition 42-34, on December 4, 1941.

2. With reference to paragraph 2, a balance of 16,000 rounds, Cartridge, Incendiary, caliber .30 remains in stock.

For the Chief of Ordnance:

/s/ P.M. Seleen,
Major, Ord. Dept.,
Executive Assistant.

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6 Jan. & 20 June 1975
by JSTMH JC Date 3-10-77

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JLH/ved-1712.

2722

AG 471
(12-27-41)MSC-D

December 30, 1941.

~~SECRET~~

Auth: T.A.G.
Initials: J. L. C.
Date: DEC 30 1941

SUBJECT: Release of Ammunition to Army Air Forces for Force "X".

TO: Chief of Ordnance.

Confirming telephone instructions issued to your office (Captain Stone) December 27, 1941 (Serial No. 750), it is desired that the following items of ammunition be released to the Chief of the Army Air Forces at MacDill Field, Florida, for project "X":

Caliber .50 AP & Tracer (4-1)	114,000 rounds
Caliber .30 AP & Tracer (4-1)	39,000 rounds
Caliber .30, Ball (8 round clips)	6,900 rounds
Caliber .45 Ball	10,000 rounds

By order of the Secretary of War:

Joseph L. Clark
Adjutant General.

COPIES TO: A.C. of S, WPD;
Chief of the Army Air Forces.

Air AG 471

53

File MS

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Air AG 471 (55)

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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 JS/MM LC. Date 3-10-77

File No.

Tally No. AAF

Note.—A line will be drawn across sheet after each comment.

SUBJECT: Caliber .50 Ball Ammunition for Training Purposes

NO	FROM	TO	DATE	COMMENTS	AAF/A-4 LWD/elm
1.	AAF C/AS A-4	AAF C/AC	1941 12/31	1. Attached letter is forwarded for your information. Incl. Ltr. frm. AGO, 12/26/41, abv. subj. EPS A/A-4	
2.	C/AC APS	AAF C/AS A-4	1942 1/6	1. Noted. O.P.E. Assistant for Procurement Services	

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Air AS 471 (54)

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A1/4 (29-B) Cm 513 XG 209

(Do not use reverse side) W-4071, AC. Rev. 8/14/41

Page No. Air AS 471 (54) 3-14

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6 Jan. & 28 June 1974
By: JS/MH LC, Date 3-10-77

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2620

WAR DEPARTMENT
THE ADJUTANT GENERAL'S OFFICE

IN REPLY REFER TO AG 471.1 (12-23-41)MSC-D WASHINGTON JMH/gb-1705

December 26, 1941.

SUBJECT: Caliber .50 Ball Ammunition for Training Purposes.

TO: Chief of the Army Air Forces.

1. Confirming telephone advice to your office (Lt. Col. Schneider), December 20, 1941, the current restrictions upon the use of Caliber .50 Ball ammunition now in post, camp, and station stocks at Air Force Schools is rescinded.

2. The Chief of Ordnance has been directed to release to you 500,000 rounds Caliber .50 Ball ammunition for gunnery training.

By order of the Secretary of War:

D. Vandiekler
Adjutant General.

G4/32208 Dup

cm 513

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Dis AS 471 (54)

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DOD ltrs.
8 Jan. & 20 June 1974
By: JS/HM LC Date 3-10-77

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2569

SUBJECT: Wright Field Requisition 42-9 calling for ammunition.

AG 471 (8-19-41)MSC-D 2nd Ind. AGW/gc - 1712.

War Department, A.G.O., December 25, 1941. To: - Chief of Ordnance.

1. Wright Field Requisition No. 42-9, August 5, 1941, is approved as follows:

a. Not more than 50% of the quantities listed of items (1), (2) and (8) will be supplied during the period ending March 31, 1942.

b. 50% of the quantities listed of items (3), (4) and (5) will be supplied at the earliest practicable date.

c. 20% of the quantities listed of items (6) and (7) will be supplied at the earliest practicable date.

d. 2,000 rounds of 20mm aircraft ammunition (Item (9)) will be supplied at the earliest practicable date.

2. Practice, or sand loaded, bombs will be substituted for the demolition bombs listed on the Requisition.

3. You will be advised at a later date of the disposition of the remaining items on the Requisition.

By order of the War Department:

D. R. VanSickler

Adjutant General.

1 Incl.
Incl. 15
(Incls. 1 to 14 incl. w/d.)

COPY TO: Chief of Army Air Forces.
w/cy of Basic & 1st Ind.

Air AG 471

53

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air AG 471 (53)

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8 Jan. & 20 June 1974
By: JSHH LC. Date 3-10-77

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WAR DEPARTMENT
OFFICE OF THE CHIEF OF THE AIR CORPS (4-G-2)
WASHINGTON

August 19, 1941.

SUBJECT: Wright Field Requisition 42-9 calling for ammunition.

To: The Chief of Ordnance.

There is forwarded herewith, for necessary action, Wright Field Requisition 42-9 dated August 5, 1941, calling for items of ammunition.

For the Chief of the Air Corps.

/s/ F. I. Ordway, Jr.,
Major, Air Corps,
Asst. Exec., Mat. Div.

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DOD Dir.
5-10-77

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00 400.325/5021 Air Corps GFG/jeb

1st. Ind.

War Department, Ordnance Office, Washington, D. C., August 27, 1941.
To: The Adjutant General.

1. Inclosed Status of Stock of 100 lb., 300 lb., 500 lb., 600 lb., 1,000 lb., 1,100 lb., and 2,000 lb. demolition bombs in the M and Mk. series, together with ammunition Status of Stock covering Fuze, bomb (Nose) M103 and Fuze, bomb (Tail) M106 for use in the M series bombs, and Shell, practice, M55A1 for the 37-mm gun, M4, dated August 21, 1941.

2. Ammunition Status of Stock for Caliber .30 and .50 and 20-mm ammunition is now in the War Department hands for consideration.

3. Request instructions as to action to be taken on requisition No. 42-9.

For the Chief of Ordnance:

/s/ P. M. Seleen,
Major, Ord. Dept.,
Executive Assistant.

1 Incl.
Incl. 15

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DOD Dir. 5200.9 and 20 June 1974
By JSMH J.C. Date 3-10-77

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AAF/A-4
MFG/mhh

December 18, 1941

MEMORANDUM FOR COLONEL GROSS:

Subject: Air Movement of .30 Caliber Ammunition to "X".

1. The following is the status of plans for the air movement of ammunition to "X":

Point & Date of Departure	Cargo
La Guardia Field, Dec. 20 - - - - - -	24,000 rds. .30 cal. ammunition 1200# Rifle extractors (replaces 8000 rds. of ammunition)
Miami, Fla., Dec. 20 - - - - - - - -	72,000 rds. .30 cal. ammunition
Bolling Field, D.C., Dec. 20	7000 rds. .30 cal. ammunition 6 passengers
Cairo, Egypt	800,000 rds. .30 cal. ammunition*

*Note. The job of moving this ammunition from Cairo has been delegated to the Air Corps Ferrying Command. It is expected approximately six tons will be moved shortly by means of a B-24 and a British flying boat. The remainder will be moved as expeditiously as practicable as the means become available.

2. General Brett, after consultation with the C. G. USAFFE, will determine the point at which the Ferrying Command will lay down all cargo in the Far East.

Dispatched
DEC [illegible] 1941
AAG

EDGAR P. [illegible],
Colonel, Air Corps,
[illegible], Air Chief.

HEADQUARTERS ARMY AIR FORCES											
Chief of Staff	Secy Air Staff	AAG	A 1	A 2	A 3	A 4	A WPD	A Trsp	Budge	[illegible]	

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AAF 19

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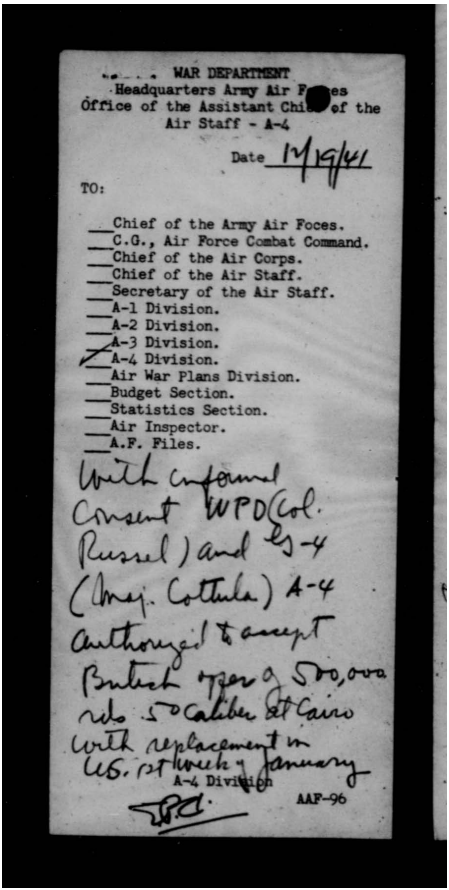

WAR DEPARTMENT
Headquarters Army Air Forces
Office of the Assistant Chief of the
Air Staff - A-4

Date 12/19/41

TO:

___Chief of the Army Air Foces.
___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.

With informal
Consent WPD (Col.
Russel) and G-4
(Maj. Cottrell) A-4
Authorized to accept
British offer of 500,000
rds .50 Caliber at Cairo
With replacement in
U.S. 1st week of January

A-4 Division

AAF-96

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8 Jan. & 20 June 1974
By JSMM LC Date 3-10-77

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WAR DEPARTMENT
WAR DEPARTMENT GENERAL STAFF
SUPPLY DIVISION, G-4
WASHINGTON, D.C.

DECLASSIFIED

December 17, 1941.

MEMORANDUM FOR COLONEL SORENSEN, A-4:

Subject: Clipper Flight of 50 cal. Ammunition to X.

1. The following understandings were reached at our conference this afternoon:

Serial	Plane	Cargo	Rounds of 50 Cal.	Passengers	Port of Departure	Time
1	3 Clippers	9 Tons	47,500		LaGuardia Fld, New York	Sat. Dec. 20
2	4 [illegible]	~~9 Tons~~ 14 "	72,500		Miami, Fla.	" "
~~3~~	~~1 B-24~~	2 T	7,000	4	Bolling Field	" "
4 a	1 B-24	3 Tons	17,000		Cairo	Without delay
b	1 British flying boat	3 Tons	17,000		Cairo	Without delay
			161,000			

In case of Serial 3, plane will proceed to X, discharge cargo and after passengers confer with Commanding General, proceed with passengers to Australia.

In case of Serial 4 b, if British flying boat cannot make the last hop, it will discharge its cargo to be relayed by B-24 used in Serial 4 a in a shuttle trip.

2. Major Cotulla, G-4, will have the ammunition listed at the points of departure indicated in ample time for early departure Saturday, December 20.

3. Air Commodore Betts, British Air Commission (HObart 9000, Extension 383) will be contacted by you with reference to Serial 4 and further to develop what additional supply will be available for early transport to X and the method of its replacement from our stocks.

NO TRACER
½ ap
½ ball

C. P. GROSS,
Colonel, General Staff,
Chief, Transportation Branch.

Copies to:
Gen. Somervell
Maj. Cotulla

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WAR DEPARTMENT
OFFICE, SECRETARY, GENERAL STAFF

DISPOSITION SLIP

Subject of paper: .....

To	Tally No. 13951-218	Date
	A. C. of S., G-1	
	A. C. of S., G-2	
	A. C. of S., G-3	
	A. C. of S., G-4	
	A. C. of S., W. P. D.	
	The Adjutant General	
	Budget & Legislative Planning Branch	
	Statistics Branch	
	Executive for Reserve Affairs	
	Chief, Air Staff	
	Chief of Staff, G. H. Q.	
	Morale Branch	
	Bureau of Public Relations	
✓	ARMY AIR FORCES	12/26

For—

- ..... Necessary action. ..... Draft of reply.
- ..... Preparation of study. ..... Direct reply.
- ..... Note and forward. ..... Note and file.
- ..... Remark and recommendation ..... File.
- ..... Comment or concurrence. ..... Signature.
- ..... Inviting attention to {notation / direction} of Sec. War ..... D.C.of S.

By direction of D.C. of S.:

W. B. Smith

WAR DEPARTMENT
O. C. OF S.—Form No. 8 U. S. GOVERNMENT PRINTING OFFICE 16—24481-1

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WAR DEPARTMENT
OFFICE OF THE CHIEF OF THE ARMY AIR FORCES
WASHINGTON

December 20, 1941

MEMORANDUM FOR THE CHIEF OF STAFF:

Subject: .50 Caliber Ammunition For "X".

I. Discussion.

1. There are 500,000 rounds of caliber .50 aircraft ammunition (80% AP - 20% Tracer) on the Holbrook in the so-called "Suba" convoy. If present hopes materialize this ammunition will be landed in Australia.

2. Present practice in the dispatch of airplanes to Oceana is to ship twenty missions of ammunition concurrently with the airplanes.

3. Thus airplanes reaching Oceana by water shipment have available sufficient ammunition for approximately one month's operation. The British have offered to make available at Cairo for shipment to Oceana 500,000 rounds of 50 caliber ammunition (50% AP - 50% ball) if the United States can arrange for transportation to destination. Present plans are to transport this ammunition to destination by air through the medium of the Air Corps Ferrying Command.

4. The offer of the British is made with the understanding that the ammunition will be replaced in kind in the United States. Replacement ammunition can be made available in the United States during the first week in January 1942.

II. Action recommended.

The Secretary of War directs:

1. That the offer of the British Government to make available 500,000 rounds of caliber .50 aircraft grade ammunition (50% AP - 50% ball) be accepted with the understanding that the replacement of the ammunition will be made available in the United States by the first week of January 1942.

[illegible] that the Chief of the Army Air Forces is authorized to make all necessary arrangements for the movement of the ammunition from Cairo to destination and for making available in the United States the replacement ammunition by the first week of January 1942.

Am as 471

(51)

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Hers

T-39, 12/26

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III. Concurrences.
A. C. of S., WPD, ([illegible])
A. C. of S., G-4, (BS) IN 12/22/41 OUT 12/22/41

DEC 26 1941
APPROVED
By order of the Secretary of War
R. C. MOORE
Deputy Chief of Staff

By M. D. TAYLOR
Major, G. S. C., Asst. Sec. W. D. G. S.

NOTED-DEPUTY CHIEF OF STAFF

DEC 24 1941
13951-218

For the Chief of the Air Staff:

EDGAR P. SORENSEN,
Colonel, Air Corps,
Assistant Chief of Air Staff, A-4

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R IN
WAR DEPARTMENT
OFFICE OF CHIEF OF STAFF

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- 2 -
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air ak 471 (51)

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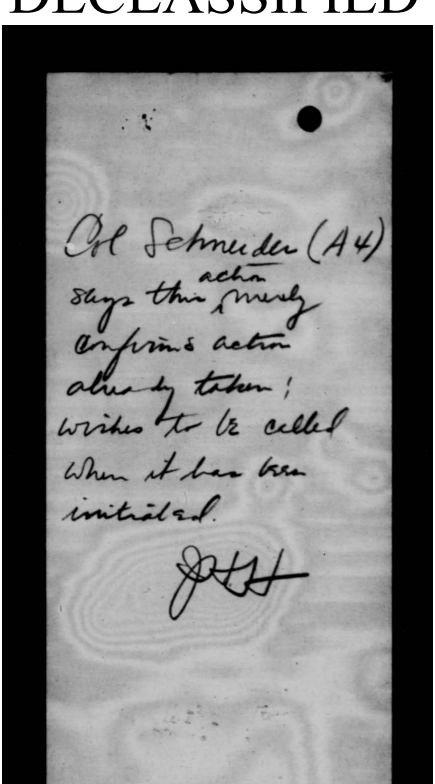
Col Schneider (A4)
says this action merely
confirms action
already taken;
wishes to be called
when it has been
initialed.

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8 Jan. & 20 June 1974
By JS/MM LC. Date 3-10-77

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AAF/A-4
MFS/mhh

December 20, 1941

MEMORANDUM FOR THE CHIEF OF STAFF:

Subject: .50 Caliber Ammunition For "X".

471 (51)

I. Discussion.

1. There are 500,000 rounds of caliber .50 aircraft ammunition (80% AP - 20% Tracer) on the Holbrook in the so-called "Suba" convoy. If present hopes materialize this ammunition will be landed in Australia.

2. Present practice in the dispatch of airplanes to Oceana is to ship twenty missions of ammunition concurrently with the airplanes.

3. Thus airplanes reaching Oceana by water shipment have available sufficient ammunition for approximately one month's operation. The British have offered to make available at Cairo for shipment to Oceana 500,000 rounds of 50 caliber ammunition (80% AP - 20% ball) if the United States can arrange for transportation to destination. Present plans are to transport this ammunition to destination by air through the medium of the Air Corps Ferrying Command.

4. The offer of the British is made with the understanding that the ammunition will be replaced in kind in the United States. Replacement ammunition can be made available in the United States during the first week in January 1942.

II. Action recommended.

The Secretary of War directs:

1. That the offer of the British Government to make available 500,000 rounds of caliber .50 aircraft grade ammunition (80% AP - 20% ball) be accepted with the understanding that the replacement of the ammunition will be made available in the United States by the first week of January 1942.

2. That the Chief of the Army Air Forces is authorized to make all necessary arrangements for the movement of the ammunition from Cairo to destination and for making available in the United States the replacement ammunition by the first week of January 1942.

Dispatched
DEC 24 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	Sta

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III. Concurrences:
As C. of S., WPD, ( )
As C. of S., G-4, ( )

For the Chief of the Air Staff:

EDGAR P. SORENSEN,
Colonel, Air Corps,
Assistant Chief of Air Staff, A-4

HEADQUARTERS ARMY AIR FORCES						COORDINATION					
Chief of Staff	Secy Air Staff	AAG	A 1	A 2	A 3	A 4	A WPD	A [illegible]	Budget	S [illegible]	

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By JS/MM LC; Date 3-10-77

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AAF/A-4
MFS/mhh

December 20, 1941

MEMORANDUM FOR THE CHIEF OF STAFF:

Subject: .50 Caliber Ammunition For "X".

I. Discussion.

1. There are 800,000 rounds of caliber .50 aircraft ammunition (80% AP - 20% Tracer) on the Holbrook in the so-called "Suba" convoy. If present hopes materialize this ammunition will be landed in Australia.

2. Present practice in the dispatch of airplanes to Oceana is to ship twenty missions of ammunition concurrently with the airplanes.

3. Thus airplanes reaching Oceana by water shipment have available sufficient ammunition for approximately one month's operation. The British have offered to make available at Cairo for shipment to Oceana 800,000 rounds of 50 caliber ammunition (80% AP - 20% ball) if the United States can arrange for transportation to destination. Present plans are to transport this ammunition to destination by air through the medium of the Air Corps Ferrying Command.

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2. That the Chief of the Army Air Forces is authorized to make all necessary arrangements for the movement of the ammunition from Cairo to destination and for making available in the United States the replacement ammunition by the first week of January 1942.

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III. Concurrences:
A. C. of S., WPD, { }
A. C. of S., G-4, { }

For the Chief of the Air Staff:

EDGAR P. SORENSEN,
Colonel, Air Corps,
Assistant Chief of Air Staff, A-4

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- 2 - SECRET

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WAR PLANS DIVISION

Distribution

General Gerow

Major Gailey

Lt. Col. Bundy
Lt. Col. Handy
Lt. Col. Allen
Lt. Col. Scobey
Lt. Col. Kibler
Lt. Col. Bissell
Major Wedemeyer

Lt. Col.(Col.) Wilson
Lt. Col. Jaynes
Major Wyman
Major Stevens
Captain Krueger

Lt. Col. Gerow
Lt. Col. Harrison
Lt. Col. MacKelvie
Lt. Col. Townsend
Lt. Col. Nevins
Lt. Col. Chauncey
Major McDaniel
Captain Daniel

Lt. Col. Ridgway
Lt. Col. Barber
Major Mathewson
Major Silverthorne

Gen Colonel Crawford

Lt. Col. Sherrill
Lt. Col. Upston
Lt. Col. Tully
Major McCarthy

Colonel Loomis
Lt. Col. Davis
Lt. Col. Koenig
Lt. Col. Jacobs
Lt. Col. Clark
Major Frederick
Major Snow

Lt. Col. Russell
Lt. Col. McKee
Lt. Col. Irvine
Lt. Col. Slocum
Major Wilson
Major Lane

Chief Clerk

To note and return

Attention invited to:

Recommend Concurrence

JWM

General Crawford —

Concurrence Recommended.

H.G.

Col 50 is critical
Col 30 is not.

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8 Jan. & 20 June 1974
By JSIMM LC; Date 3-10-77

AAF/A-4
WRB/mhh

December 22, 1941.

471 (50)

MEMORANDUM FOR THE ASSISTANT CHIEF OF STAFF, G-4:

SUBJECT: Priority of Munitions.

1. A clear preponderance of the armament being installed on airplanes under current procurement for the Army Air Forces is based on the .50 caliber machine gun.

2. Reports (Estimate of situation by Col. Wedemeyer - WPD) have reached this office to the effect that a .50 caliber machine gun has had to be substituted in anti-aircraft defense for 37 mm. cannon owing to a shortage of the latter. Also, the Navy is relying heavily on .50 caliber fire for defense of its vessels from aircraft.

3. These developments indicate that there is a definite priority in the employment of .50 caliber ammunition over .30 caliber ammunition.

4. The Office of the Under Secretary of War (Capt. W. B. Slade) has informed this office (verified through Major W. E. Miles of Ordnance) that no expression of priority has been transmitted by the War Department on the subject of priority in developing new .50 caliber ammunition facilities.

5. In view of the existing facilities for .30 caliber production versus .50 caliber production, and in view of the priority indicated by paragraphs 1 and 2 above, it is believed highly desirable to give whatever impetus possible to accelerating .50 caliber ammunition production. It is suggested that considerable effect can be achieved by an expression of priority on the part of the War Department and by advising the Chief of Ordnance of this priority.

6. Concurrence:
A. C. of S., WPD (Gen Crawford)

Delivered by Lt Burke

For the Chief of the Air Staff:

HEADQUARTERS ARMY AIR FORCES							COORDINATION				
Chief of Staff	Sec'y Air Staff	AAG	A 1	A 2	A 3	A 4	A WPD	A Insp	Budget	S a	
						WB	EDGAR P. BORENSEN, Colonel, Air Corps, Asst. Chief of the Air Staff, A-4.				

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AAF 39

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HEADQUARTERS ARMY [redacted]

ROUTING AND RECORD SHEET

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DOD Ltr.
8 Jan. & 20 June 1974
By: JSMH LC. Date 3-10-77

Note.--A line will be drawn across sheet after each comment.

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File No. 2381

Tally No. AAF

SUBJECT: Ammunition Situation on the West Coast.

NO.	FROM	TO	DATE	COMMENTS
1.	AAF/INS	AAF/A-4	1941 12-22	AAF/INS EWH/mma 1. Confirming our conversation this morning and statement made by me in Staff Meeting regarding ammunition situation on the West Coast. 2. I found that the First Pursuit Group stationed at North Island had but 2½ missions of ammunition. S-4 of the 4th Interceptor Command stated that there were 4 missions of fire for the entire Interceptor Command. This, in my opinion, is altogether inadequate even should a general reserve for the Western Defense Command be held. If an adequate general reserve is not held by the Western Defense Command the situation is critical and might result in a catastrophe. EWH AAF/INS
2.	AAF C/A-4	AAF C/AS	1941 12/29	AAF/A-4 MFS/mhh 1. The situation with the U.S. Army as a whole with respect to .50 caliber ammunition is critical with no relief in immediate sight. 2. A-4 is convinced that G-4 has made available to the Western Defense Command the maximum amount of .50 caliber ammunition possible, consistent with requirements in other areas and our total resources. 3. From a purely military viewpoint, the problem is basically one for solution by General DeWitt, as he is the one who controls the distribution of such resources as have been made available to him. These resources as regards .50 caliber ammunition are admittedly very meager, but no immediate remedy is foreseen. EPS C/A-4

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W-4071, AC. Rev. 8/14/41

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DOD ltrs.
8 Jan. & 20 June 1974
By JS/MM LC. Date 3-10-77

~~SECRET~~

Ammunition Situation on the West Coast.

AAF/INS
EWH/mma

1. AAF/INS AAF/A-4 . 1941
12-22

1. Confirming our conversation this morning and statement made by me in Staff Meeting regarding ammunition situation on the West Coast.

2. I found that the First Pursuit Group stationed at North Island had but 2½ missions of ammunition. S-4 of the 4th Interceptor Command stated that there were 4 missions of fire for the entire Interceptor Command. This, in my opinion, is altogether inadequate even should a general reserve for the Western Defense Command be held. If an adequate general reserve is not held by the Western Defense Command the situation is critical and might result in a catastrophe.

471

(49)

EWH
AAF/INS

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-20

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DOD ltrs
8 Jan. & 20 June 1974
By: JS/MM LC. Date 3-10-77

December 18, 1941.

MEMORANDUM FOR: Colonel Gross,
Transportation Section, G-4 Division,
War Department General Staff.

1. Air Commodore Betts has assured me that one-half million rounds of .80 calibre machine gun ammunition, equally divided between ball and armor piercing, can be spared and made available to us in the Middle East. He states that replacement will be acceptable by sea shipment, but asks that that shipment be made as early as practicable.

2. Instructions have been given to the Air Corps Ferrying Command to plan for the most expeditious movement of the ammunition to the destination "X".

3. As soon as we can estimate the time at which 250,000 rounds of armor piercing ammunition, calibre .80, can be spared by us and made ready for loading, a request for the sea shipment will be initiated by us and forwarded to you.

4. Please advise General Somervell.

EDGAR P. SORENSEN,
Colonel, Air Corps,
Assistant Chief of the Air Staff, A-4.

Dispatched
DEC 28 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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Ans 8471 (48)

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DOD Dir.
6 Jan. & 20 June 1975
By JS/MM LC, Date 3-10-77

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HEADQUARTERS ARMY AIR FORCES

DECLASSIFIED

ROUTING AND RECORD SHEET

File No.

Tally No. AAF

Note.—A line will be drawn across sheet after each comment.

SUBJECT: Distribution of Ammunition.

NO.	FROM	TO	DATE	COMMENTS
1.	AAF C/AS	C/AC	1941 12/24	1. To note and return for Army Air Force Files. Incl. Ltr. AG 471 (12-15-41) MSC-D abv.subj. to C/Ord,12/18/41 — CS C/AS
2.	C/AC	C/AS	1942 1/7	Noted. — Actin C/AC

AAF/A-4 MFS/mbh

OCAC/14-S JPN:mj

RECEIVED DEC 31 1941 CLASSIFIED MAIL AND FILE UNIT

Army Air Forces 1942 AAG received

File 1/9/42

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Page No.

A12/31 (38-a) xr-929 air 471 (45)

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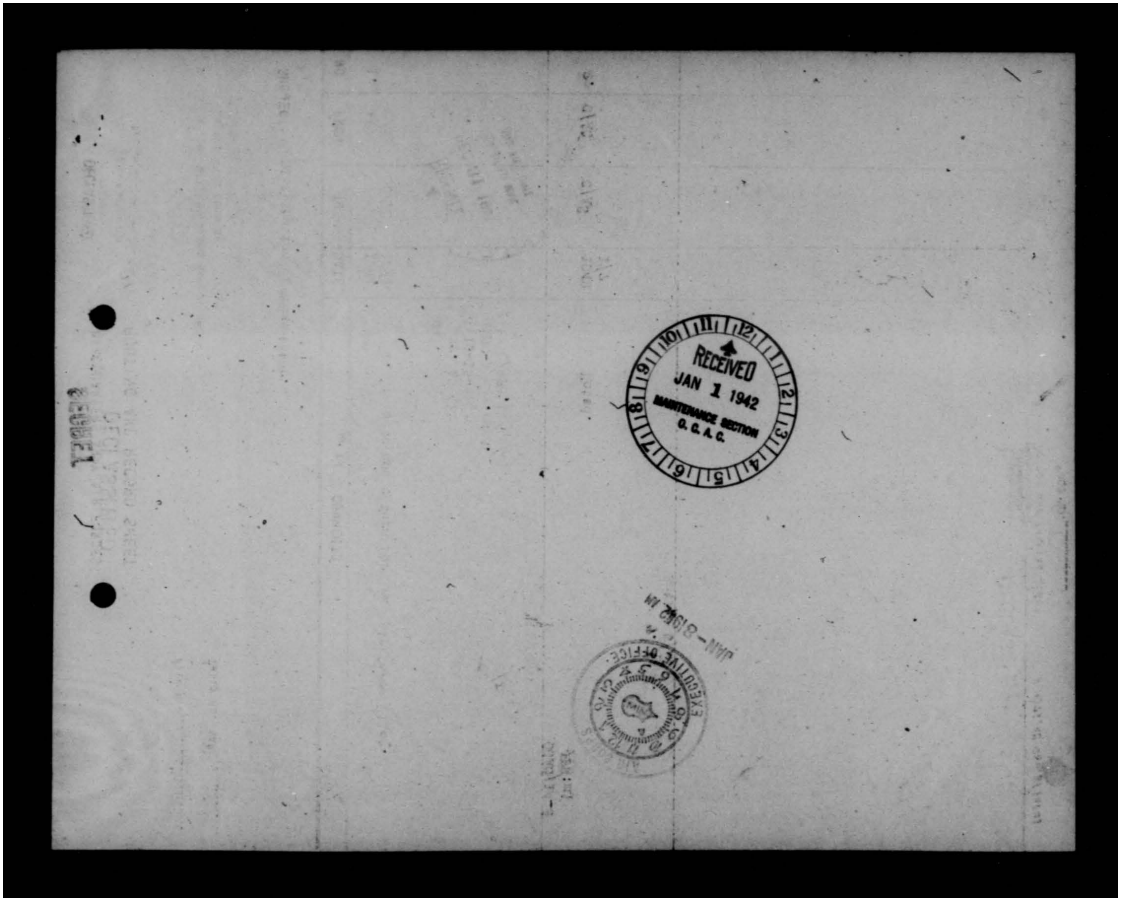

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AG 471
(12-15-41)MSC-D

DECLASSIFIED
DOD ltrs
8 Jan & 20 June 1974
By JSIMM LC Date 3-10-77

LFL/vcd-1712.

December 18, 1941.

~~SECRET~~

Auth: T.A.G.
Initials: DRV
Date: DEC 18 1941

SUBJECT: Distribution of Ammunition.

TO: Chief of Ordnance.

1. Reference is made to letter, this office, November 10, 1941, AG 381.4 (9-27-41)MC-D, subject: Priorities for Distribution of Ammunition. The instructions contained in the above letter relative to the distribution of ammunition are suspended until further notice.

2. Shipments (other than inter depot transfers) and issues of ammunition from Ordnance Depots will be made only at the direction of this office. Unless otherwise directed, troop units leaving the home stations will take with them not to exceed one mobilization allowance of ammunition, provided such ammunition is available locally in post, camp or station stocks.

By order of the Secretary of War:

Eq Army Air Forces
19 41
AAG Received

D. R. VanSickler

Adjutant General.

COPIES TO: Chief of Staff, GHQ;
A.C. of S., WPD;
A.C. of S., G-3;
Chief of Chemical Warfare Service;
Chief of the Army Air Forces;
Chief of the Air Corps.

Incl #1

acc-278

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DOD ltrs.
8 Jan. & 20 June 1974
By: JS/HM LC; Date 3-10-77

AAF-A-3
FFE/HB
1-8-42

1st Ind.

War Department, Headquarters, Army Air Forces, Washington, D. C.
TO: The Commanding General, Air Force Combat Command.

1. Reply to basic letter was made by Record and Routing Sheet, C of AS to AFCC, subject: Training in Gunnery and Bombing, dated December 24, 1941.

2. Allowances of training ammunition as established by AR 775-10 and as reduced 33-1/3% by previous instructions, may be expended within the limits of training ammunition actually available.

Incl. Ltr.12-31-41
frm Brig.Gen.C.W.Russell
to C/AAF w/incl.

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Air OG 471 (44)

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IMMEDIATE ACTION

~~CONFIDENTIAL~~ ~~CONFIDENTIAL~~

HEADQUARTERS AIR FOR CE COMBAT COMMAND

BOLLING FIELD, D. C.

COPY

DECLASSIFIED
DOD Ltr.
8 Jan. & 20 June 1973
By JS/MM LC Date 3-10-77

COPY

ACC 471 Dec 15, 1941

SUBJECT; Suspension of Ammunition Credit s.

TO: Chief of Army Air Forces, Washi ngton, D. C.

1. Reference is made to 5th Indorsement, your office, to letter ACC 471 (10-16-41), October 16, 1941, subject: "Ammunition for Training", to the Chief of the Air Corps, copy inclosed.

2. Paragraph two of cited Indorsement is not clearly understood. Advice is requested as to whether or not a restriction has been placed against the use of ammunition now on hand at Air Bases of the Air Force Combat Command for training purposes.

For the Commanding General:

1 Incl.
Incl. 1 - Cy 5th Ind.
ACC 471 (10-16-41)

IMMEDIATE ACTION

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Incl 1

air ACC 471 (44)

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Office, Chief of the Air Corps
Washington

DECLASSIFIED
DOD Dir.
8 Jan. & 20 June 1974
By: JSMM LC; Date 3-10-77

5th Ind.

War Department, Office of the Air Corps, Washington, D. C.
December 12, 1941. TO: Command ing General, Air Force Combat Command, Bolling Field, D. C.

1. Reference Paragraph 2, 4th Indorsement, statement of am ammunition requirements listed b y Chief of Ordnance and attached herewith, represents items and quantities which have been approved for your command to-date. Due t o the cr itical situation prevailing in ammunition production and stocks, the additional requirements requested by your office, as sho wn on attached enclosure, have not yet received final approval by higher authority.

2. No estimate of when relief may be expected in this situation can be given at this time as instructions have been received from the War Department (AG 471 (12-8-41)MO-C, dated December 9, 1941, Subject: "Suspension of Ammunition Credits") suspending issue of all types of service ammunition against training ammunition credits until further notice. This directive applies to ammunition on hand, as well as credits allowable under AR 775-10.

3. The need for adequate supplies of ammunition for training purposes is fully appreciated and effort is being made to secure modification of this directive so that at least partial training can carry on. Further advice on this matter will be given as soon as information becomes available.

For the Chief of the Air Corps

O. S. FERSON,
Colo nel, Air Corps
Chie f, Operations Division

14 Incls. n/c

Incl to Incl #1

COPY

COPY

air AG 471 (44)

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IMMEDIATE ACTION

[redacted] AIR FORCE COMBAT COMMAND

BOLLING FIELD, D. C. (K-64)

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DECLASSIFIED
DOD Rts.
8 Jan. & 20 June 1974
By JS/HH LC. Date 3-10-77

ACC 471 (12-31-41) December 31, 1941.

SUBJECT: Unanswered Correspondence.

TO : The Chief of the Army Air Forces, Washington, D. C.

1. Reference is made to confidential letter ACC 471, this headquarters, December 15, 1941, subject "Suspension of Ammunition Credits", to your office, and inclosure thereto (copy inclosed). Training with service type ammunition has been suspended by units of this command pending clarification of the present War Department policy.

2. It is requested that an early reply to cited letter referred to in paragraph one (1) above, be furnished this headquarters.

For the Commanding General:

C. W. RUSSELL,
Brigadier General, G.S.C.,
Chief of Staff

1 Incl:
Incl. 1 - Cy. Ltr. ACC 471 (12-15-41) and inclosure thereto (5th Ind., ACC 471 (10-16-41).

IMMEDIATE ACTION

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air ag 471 (44)

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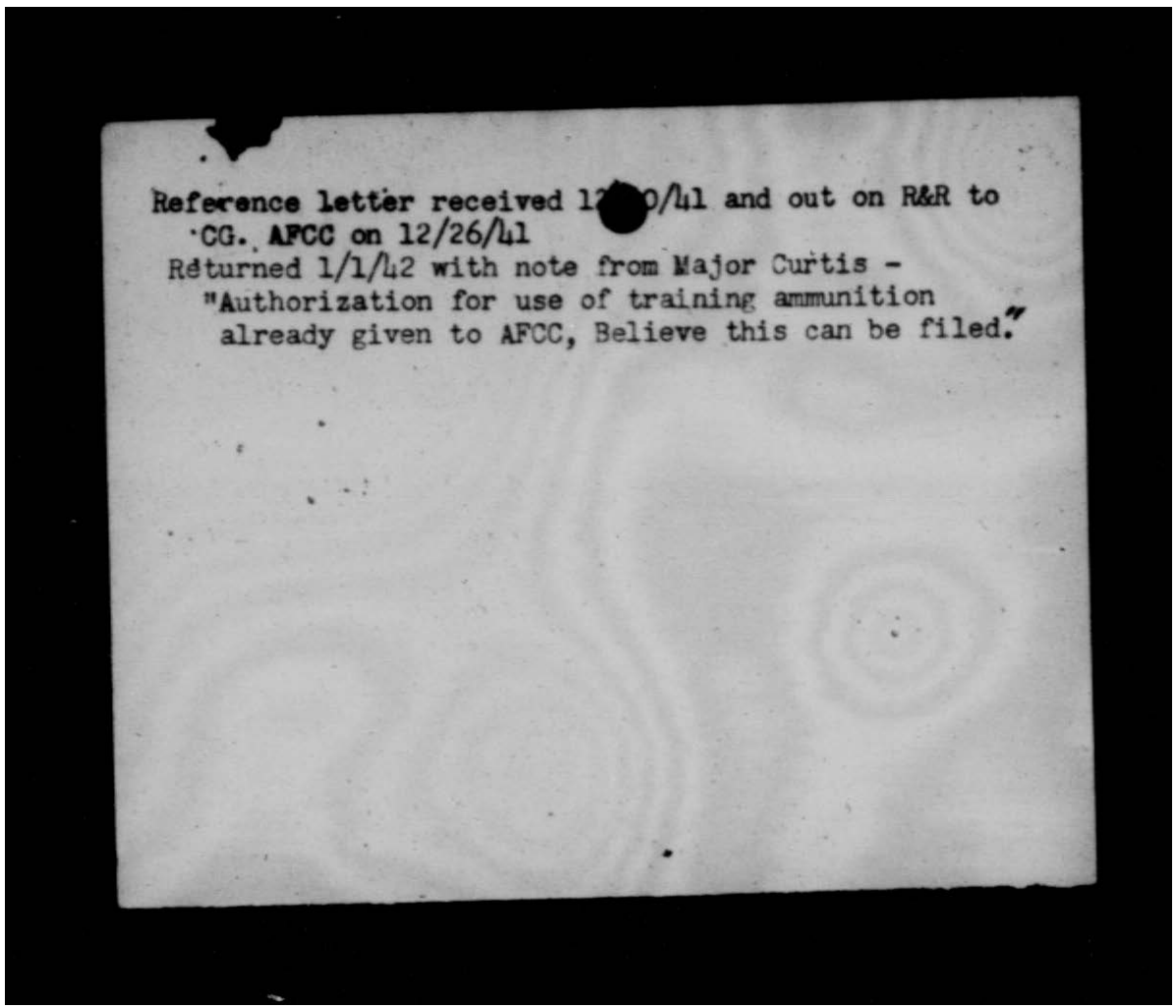

Reference letter received 12[illegible]0/41 and out on R&R to
CG. AFCC on 12/26/41
Returned 1/1/42 with note from Major Curtis -
"Authorization for use of training ammunition
already given to AFCC, Believe this can be filed."

AGE IS DECLASSIFIED IAW E

S DECLASSIFIED I

WAR DEPARTMENT
Headquarters Army Air Forces
Office Chief of the Air Staff
Washington, D.C.

Date _____

TO:

Look in files for
this paper dated
Dec 15th from
AFCC

CL Evans

A-4 DIVISION

X-225-D, A. C.

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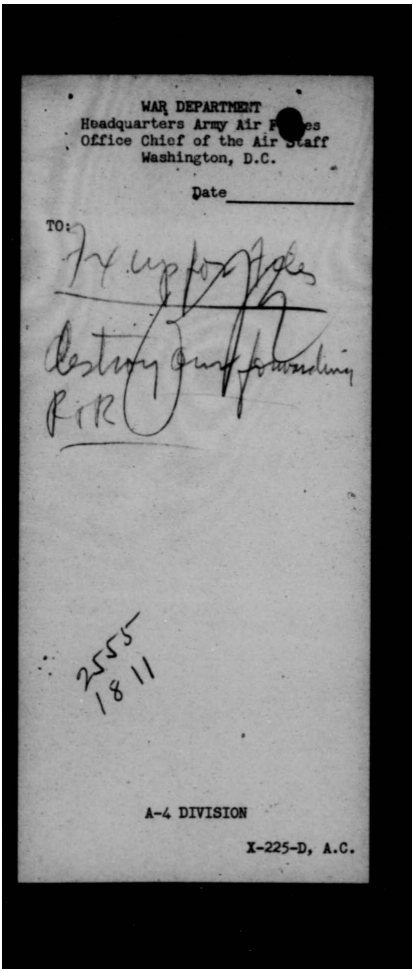
IS DECLASSIFIED IA



WAR DEPARTMENT
Headquarters Army Air Forces
Office Chief of the Air Staff
Washington, D.C.

Date_____

TO:

2555
1811

A-4 DIVISION

X-225-D, A.C.

IS DECLASSIFIED IA

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WAR DEPARTMENT
Headquarters Army Air Forces
Office Chief of the Air Staff
Washington, D.C.

Date 12/30/41

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
- A-2 Division
- A-3 Division
- ✓ A-4 Division
- Air War Plans Division
- Budget Section
- Medical Section
- Public Relations Section
- Statistics Section
- Inspector, Army Air Forces
- Adjutant General, Army Air Forces
- A.F. Files

Col. Schneider.

Authorization for use of training ammunition already given to A.F.C.C. Believe this can be filed

E. P. CURTIS,
Major, Air Corps,
Secretary of the Air Staff.

AAF-217

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DOD ltrs.
5 Jan. & 20 June 1974
By JSHH LC. Date 3-10-77

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Ar 05 471 (43)

Dispatched
JAN 9 1942
AAG

Dispatched
JAN 15 1942
AAG

AAF/A-3
FIE;HB
1-8-42

1st Ind.

War Department, Headquarters, Army Air Forces, Washington, D. C.
Jan. 13, 1942 TO: The Commanding General, Air Force Combat Command.

1. Reply to basic letter was made by Record and Routing Sheet, C of AS to AFCC, subject: Training in Gunnery and Bombing, dated December 24, 1941.

Chief of Staff	Sec'y Am. Staff	A.A.G.	A.1	A.2	A.3	A.4	A.WD	A.Insp.	Budget	Sta.

2. Allowances of training ammunition as established by AR 775-10 and as reduced 33-1/3% by previous instructions, may be expended within the limits of training ammunition actually available.

By command of Lieutenant General ARNOLD:

Incl. Ltr. 12-21-41
fm Brig.Gen.C.W.Russell
to C/AAF w/incl.

DECLASSIFIED
JOHN B. COOLEY AAF 39
Lt. Col., A.G.D.
Assistant Air Adjutant General.

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DOD ltr.
8 Jan. & 20 June 1974
By JS/HPT I.C. Date 3-10-77

HEADQUARTERS AIR FORCE COMBAT COMMAND

BOLLING FIELD, D. C.

(K-3)

ACC 471

SUBJECT: Suspension of Ammunition Credits.

TO: Chief of Army Air Forces, Washington, D. C.

1. Reference is made to 5th Indorsement, your office, to letter ACC 471 (10-16-41), October 18, 1941, subject: "Ammunition for Training", to the Chief of the Air Corps, copy enclosed.

2. Paragraph two of cited Indorsement is not clearly understood. Advice is requested as to whether or not a restriction has been placed against the use of ammunition now on hand at Air Bases of the Air Force Combat Command for training purposes.

For the Commanding General:

1 Incl.
Incl. 1 - Cy 5th Ind.
ACC 471 (10-16-41).

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Office, Chief of the Air Corps
Washington

5th Ind. (15-23)

War Department, Office, Chief of the Air Corps, Washington, D. C. December 12, 1941. TO: Commanding General, Air Forces Combat Command, Bolling Field, D. C.

1. Reference Paragraph 2, 4th Indorsement, statement of ammunition requirements listed by Chief of Ordnance and attached herewith, represents items and quantities which have been approved for your Command to-date. Due to the critical situation prevailing in ammunition production and stocks, the additional requirements requested by your office, as shown on attached enclosure, have not yet received final approval by higher authority.

2. No estimate of when relief may be expected in this situation, can be given at this time as instructions have been received from the War Department (AR 471 (12-8-41)WPD-S, dated December 9, 1941, Subject: "Suspension of Ammunition Credits") suspending issue of all types of service ammunition against training ammunition credits until further notice. This directive applies to ammunition on hand, as well as credits allowable under AR 775-10.

3. The need for adequate supplies of ammunition for training purposes is fully appreciated and effort is being made to secure modification of this directive so that at least partial training can carry on. Further advice on this matter will be given as soon as information becomes available.

For the Chief of the Air Corps

s/t O. S. Person,
Colonel, Air Corps,
Chief, Operations Division

14 Incls. n/c

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DOD Ltrs.
6 Jan. & 20 June 1974
By JS/MM LC, Date 3-10-77

SUBJECT: Distribution of Ammunition (.20mm HS Ball)

AG 471.1 (12-11-41)MSC-D 1st Ind. LFL/jmh-1712

War Department, A.G.O., December 24, 1941. To: Chief of the Army Air Forces.

Returned without action at the informal request of your office (Lt. Colonel Schneider).

By order of the Secretary of War:

D. Pantichler
Adjutant General.

AF - File & Correspondence is dual in view of transfer to C of AAF & of responsibility for aircraft ammunition
Schneider

471

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air AG 471 (40)

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WAR DEPARTMENT

OFFICE OF THE CHIEF OF THE ARMY AIR FORCES

WASHINGTON

DECLASSIFIED
DOD ltrs.
6 Jan. & 20 June 1974
By: JS/MM LC; Date 3-10-77

DECLASSIFIED

SECRET

DEC 11 1941

(47) OA 471.1 (12-11-41)

MEMORANDUM FOR THE ASSISTANT CHIEF OF STAFF, G-4:

SUBJECT: Distribution of Ammunition (20mm HS Ball)

1. The Office, Chief of Ordnance (Lt. Col. Rice) has just informed the A-4 Division of the Air Staff that 700,000 rounds of 20 mm. HS ball ammunition has been diverted to the Ordnance Department from Lease-Lend.

2. It is requested that the following disposition be made of this ammunition:

a. 200,000 rounds to be released to the Chief of Staff, General Headquarters, for shipment to Panama. (95 British P-39's are to be sent to Panama in the immediate future).

b. 300,000 rounds to be released to the Chief of the Army Air Forces for re-allotment to the Commanding General, Air Force Combat Command.

c. 200,000 rounds to be placed in storage, half on the east coast and half on the west coast.

For the Chief of the Air Staff:

Edgar P. Sorensen

Edgar P. Sorensen,
Colonel, Air Corps,
Assistant Chief of the Air Staff, A-4.

DEC 12 1941
28664-218

G-4 DIVISION

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OA 471 (HD)

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DOD Dir.
6 Jan. & 30 June 1974
By: JS/MM LC Date 3-10-77

AAF/A-4
MFS:sz

Written 12-12-41

DEC 11 1941

MEMORANDUM FOR THE ASSISTANT CHIEF OF STAFF, A-4:

SUBJECT: Distribution of Ammunition

471

40

1. The Office, Chief of Ordnance (Lt. Col. Rice) has just informed the A-4 Division of the Air Staff that 700,000 rounds of 20 mm. HS ball ammunition has been diverted to the Ordnance Department from Lease-Lend.

2. It is requested that the following disposition be made of this ammunition:

a. 200,000 rounds to be released to the Chief of Staff, General Headquarters, for shipment to Panama. (25 British P-40's are to be sent to Panama in the immediate future).

b. 300,000 rounds to be released to the Chief of the Army Air Forces for re-allotment to the Commanding General, Air Force Combat Command.

c. 200,000 rounds to be placed in storage, half on the east coast and half on the west coast.

For the Chief of the Air Staff:

Edgar P. Sorensen,
Assistant Chief of the Air Staff, A-4.

DEC 11 1941
AAG Received
Dispatched
DEC 11 1941
AAG

sz

HEADQUARTERS ARMY AIR FORCES											
Chief of Staff	Sec'y Air Staff	A A G	A 1	A 2	A 3	A 4	A MD	A Insp	Budget	Statistics	

AAF 39

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FEB 9 1942

February 7, 1942.

AAF/A-4/471-30

DECLASSIFIED
DOD ltrs.
8 Jan. & 20 June 1974
By: JS/HH LC Date: 3-10-77

Defense Reserve of Aircraft Ammunition and Bombs for Alaska.

1. G-4

471 (39)

1. ////////// concurrence

////////////// return A-4, Air Staff.

AAF/A-4
MFS/mhh

Incls.
D/F frm.AAF dated
2/6/42 w/incls.
D/F WPD 4373-1,
12/5/41;ltr.CG
Presidio San Fran.
to AG 11/29/41; Basis for
1 day of Amm.; AC Amm
& Bombs for Alaska.

For the Chief of the Air Staff:

T. J. HANLEY, JR.,
Colonel, A. U. S.
Assistant Chief of 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	Sta[illegible]	

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DECLASSIFIED
DOD ltrs.
5 Jan. & 20 June 1974
By JSHM, LC, Date 3-10-77

Written Feb. 7, 1942.
February 2, 1942

Defense Reserve of Aircraft Ammunition and Bombs for Alaska.

II. ~~G-3~~ III. ~~G-4~~ II. ~~WPD~~

X. TAG II. AAF

I. Commanding General Field Forces, GHQ.

X. SW directs

I. Endorsement.

AAF/A-4
MFS/mhh

I. 1. .30 and .50 caliber ammunition is made available for shipment to Alaska to the maximum extent permitted by War Department resources and the requirements elsewhere.

2. 60,000 rounds of 20 mm. ball and 60,000 rounds of 37 mm. H.E. aircraft ammunition will be released to your headquarters for shipment to Alaska.

3. The total stated requirements for bombs (Par. 5, basic letter) approximate forty thousand tons. Available resources are not sufficient at this time to provide such a quantity for Alaska. A consideration of the bombs that have been made available to the Commanding General, Western Defense Command and of the problems involved in providing additional bombs in case of active air attack operations would indicate that some two to three thousand tons of bombs could be immediately transferred from the West Coast to Alaska without unduely reducing the West Coast stockage level or jeopardising combat operations in that area.

HEADQUARTERS ARMY AIR FORCES					COORDINATION				
Chief of Staff	Sec. Y. Ass. Staff								

4. It is the general policy of the Chief of the Army Air Forces to provide insofar as resources permit, bombs, ammunition and pyrotechnics for the life of the assigned combat airplanes, plus a reasonable distribution factor where required. In line with this policy, additional bombs, ammunition and pyrotechnics will be released for shipment to Alaska as rapidly as practicable. In view of the many variables in the

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current situation, no definite date can be given as to when these releases can be made.

II. To be advised of above action.

III. Concurrence.
A. C. of S., G-4 ( )

Incls.
DF/WPD 4373-1,12/5/41;ltr.CG Presidio San Francisco to AG 11/29/41; Basis for 1 day of Amm.; AG Amm & Bombs for Alaska.

For the Chief of the Air Staff:

NOTED EPC 2/13/42
Chief of the Air Staff

T. J. HANLEY, JR.,
Colonel, R.U.S.
Assistant Chief of Air Staff, A-4.

MEMORANDUM FOR RECORD: Letter from C.G. Fourth Army, Nov. 29, 1941:

1. Refers to AG 381.4 (861-41) MC-E dated Aug. 8, 1941 giving authorized Defense Reserve of aviation gasoline, ammunition, bombs and pyrotechnics.

2. Stated that the Defense Reserve must be divided between a number of widely separated airfields and that the authorized amounts were inadequate.

3. Recommends the amount of ammunition and bombs that should be authorized.

Hq. Army Air Forces
FEB 18 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	S a
	WJF				Ir	MFS				

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AAF 39

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DECLASSIFIED DISPOSITION FORM

AG

WPD 4373-1

SUBJECT: Defense Reserve of Aircraft Ammunition and Bombs for Alaska.

December 5, 1941.

x Chief of Army Air Forces.

x Primary interest

1 Incl.
AG 471 (11-29-41)
w/2 Incls as listed

L. T. GEROW,
Brigadier General,
Acting Assistant Chief of Staff.

/s/
C.K.GAILEY,Jr.
Major, G.S.C.,
Executive, WPD.

MEMO FOR RECORD:

Letter from C.G. Fourth Army, Nov. 29, 1941:

1. Refers to AG 481.4 (8-1-41) MC-E dated Aug. 8, 1941 giving authorized Defense Reserve of aviation gasoline, Ammunition, bombs and pyrotechnics.

2. Stated that the Defense Reserve must be divided between a number of widely separated airfields and that the authorized amounts were inadequate.

3. Recommends the amount of ammunition and bombs that should be authorized.

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DECLASSIFIED
DOD ltrs.
8 Jan. & 20 June 1974
By: JS/HM LC; Date 3-10-77
DECLASSIFIED

471 ABC (Ord) November 29, 1941

SUBJECT: Defense Reserve of Aircraft Ammunition and Bombs for Alaska.

TO : The Adjutant General,
Washington, D. C.

1. Reference is made to the two letters AG 381.4 (8-1-41)MS-E dated August 8, 1941, subject: "Defense Reserve of Aviation Gasoline, Ammunition, Bombs and Pyrotechnics, Overseas Department and Alaska."

2. The Defense Reserve of aircraft ammunition and bombs for Alaska is a subject in which a number of factors operate to make it an exceptional case.

a. Distance between air fields are large. Approximately 900 miles separate Annette Island Landing Field and Ladd Field. It is approximately 600 miles from Elmendorf Field to Umnak, Dutch Harbor, Cold Bay areas; 600 miles from Ladd Field to Nome.

b. Weather conditions are severe.

c. Transportation facilities are poor, sometimes almost non-existent.

d. The area from which potential danger may arise is large; the Alaska Airforce must therefore be able to operate from any of a number of fields.

3. The aircraft ammunition authorized by the War Department (letter of August 8, 1941, and inclosures thereto) is insufficient to permit stockage at each of the various fields.

4. In view of these facts, and since it is essential that the Alaska Air Force be able to operate from a number of fields, aircraft ammunition must be placed in sufficient quantity at each field to supply the missions that might be operated therefrom. The basis for the quantities is explained in General Buckner's tabulation enclosed herewith, and is approved by me.

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Ltr. CG 4A, 11/28/41 to TAG, subject: Defense Reserve of Aircraft Ammunition and Bombs for Alaska. (Cont'd).

5. In terms of rounds of aircraft ammunition and bombs, the following are the requirements:

ITEM	W.D. ALASKA DEFENSE RESERVES 7/24/41 (Inadequate, see Next Column)	MEM REQUIREMENTS FOR ALASKA 11/28/41	ON HAND OR EN ROUTE 11/28/41	TOTAL TO BE SUPPLIED
Cart., AP, Cal. .50 AC	800,000	10,181,600		10,181,600
Cart., Tracer, Cal. .50 AC	200,000	2,545,400		2,545,400
Cart., AP, Cal. .30 AC	280,000	31,002,400		31,002,400
Cart., Tracer, Cal. .30 AC	70,000	7,750,600		7,750,600
Shell, 20-mm AC	60,000	60,000		60,000
Shell, 37-mm AC	6,000	60,000		60,000
Bomb, Demo., 100#	1,000	82,940	4,928	78,012
Bomb, Demo., 250-300#	2,000	38,753	2,961	35,792
Bomb, Demo., GP, 500#	1,300	13,000	186	12,814
Bomb, Demo., GP, 1000#	700	12,012	186	11,826
Bomb, Demo., 2000#	500	7,865	36	7,829
Bomb, Demo., SAP, 500#	600	8,400		8,400
Bomb, Demo., SAP, 1000#	300	4,200		4,200
Bomb, AP, 1500#	100	1,400		1,400
Bomb, Demo., 600#		20,306	1,240	19,066
Bomb, Chem., 100#	500	7,000		7,000
Bomb, Depth, 300#	1,000	14,000		14,000
Bomb, Frag., 20#	1,500	21,000		21,000
Bomb, Incen., 100#	500	7,000		7,000

6. In view of the immediately critical situation in the Pacific, it is requested that the amounts listed in the column "Total to be Supplied", or such part thereof that can be made immediately available, be allotted for shipment and that information be supplied as to when the remainder can be expedted.

/s/
J. L. DeWITT
Lieutenant General, U. S. Army,
Commanding.

2 Incls.
1. Tab: Basis for 1 Day of Amm
2. Tab: AC Amm. and Bombs for Alaska.

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8 Jan. & 30 June 1974
By JSMM LC Date 3-10-77

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BASIS FOR I DAY OF AMMUNITION (Recommendations of Commanding General, Alaska Defense Command)

a. Aircraft Machine Gun Ammunition:

Item	Rounds	Boxes	Total Lbs.	Cu. Ft.	Standard Igloos Required
Cart., Cal. .30	54,200	37	3,975	55	.02
Cart., Cal. .50	17,800	60	6,171	89	.02

b. Demolition Bombs:

Item	No.	Total Lbs.	Cu. Ft.	Standard Igloos Required
100 lb.	116	18,096	285	.06
300 lb.	55	16,911	278	.06
600 lb.	29	17,694	286	.06
1100 lb.	17	19,220	296	.06
2,000 lb.	11	22,770	386	.08

b. Fin Assemblies:

Bomb, 300 lb.	55	1,139	98	
Bomb, 600 lb.	29	881	90	
Bomb, 1100 lb.	19	807	140	
Bomb 2000 lb.	11	803	100	

d. Fuzes, Bomb:

M-103 (nose)	228	1,206	19	.01
M-106 (tail)	228	712	3	.01
			Total	.34

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By JHH LC Date 3-10-77

AIRCRAFT AMMUNITION AND BOMBS FOR ALASKA

LOCATION	DAYS OF AMMUNITION (Each day represents a Mission for 1 Pursuit Sq., 1 Medium Bombardment Sq., and 1 Heavy Bombardment Sq.,)
Fort Richardson (Elmendorf Field)	60 (Plus 60 days central storage)
Fort Greely	60
Ladd Field	60
Nome	60
Umnak or Otter Point	60
Cold Bay	30
Bethel	30
Naknak	30
Annette Island	30
Yakutat	30
Cordova	15
Juneau	10
McGrath	10
Gulkana	10
Galena (West Ruby)	10
Port Heiden	10
Big Delta	10
Tetlin or Moose Creek Boundary	10
TOTAL	595

Incl. #2

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8 Jan. & 30 June 1974
By: JS/MM LC. Date 3-10-77

RECEIPT

DATE _____

SUBJECT: Defense Reserve of Aircraft Ammunition and Bombs for Alaska.

1. Received from the Headquarters, Army Air Forces, one disposition form, above subject w/inclosures:

DF frm. AAf dated
2/8/42; D/F WPD 4373-1,
12/5/41;ltr.CG Presidio
San Fran. to AG 11/29/41;
Basis for 1 day of Amm.;
AC Amm & Bombs for Alaska.

_____
OFFICER RANK

_____
OFFICE

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8 Jan. & 30 June 1954
By JS/MM LC. Date 3-10-71

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WAR DEPARTMENT
HEADQUARTERS ARMY AIR FORCES
DISPOSITION FORM

FEB 9 1942
Date February 7, 1942.....

AG

AAF/A-4/471-30

SUBJECT: Defense Reserve of Aircraft Ammunition and Bombs for Alaska.

	USW	ASW	ASWA	B-LP	BOWD	BPR
	C/S	G-1	G-2	G-3	1. G-4	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					

FOR: SW directs
Draft of reply attached
Approved
Disapproved
File

1 ~~Comment or~~ concurrence
~~Direct reply made~~
Inviting attention to
See notation of _____
Information

Information for reply
_____ Ind. approved
Primary interest
~~Notation and~~ return A-4, Air
Noted _____ Staff.

AAF/A-4
MFS/mhh

✓Incls.
D/F frm.AAF dated
2/6/42 w/incls.
D/F WPD 4373-1,
12/5/41;ltr.CG
Presidio San Fran.
to AG 11/29/41; Basis for
1 day of Amm.; AC Amm
& Bombs for Alaska.

FEB 10 1942

For the Chief of the Air Staff:

for MFS
F. S. BORUM
Colonel, Air Corps.
Assistant Chief of Air Staff, A-4.

IN G-4 DIVISION IN
WAR DEPT. GEN. [redacted]SSIFIED OUT-G-4 FEB 11 1942

W-4689, A.C.
Air AG 471 (39)

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WAR DEPARTMENT
Headquarters Army Air Forces
Office Chief of the Air Staff
Washington, D. C.

Date. . . . . .

TO:

___ Chief, A-4 Division
___ Equipment Section
___ Facilities Section

___ Colonel Sorensen
___ Lt. Colonel York
___ Lt. Colonel Schneider

___ Lt. Colonel Crumrine
___ Major Perrin
___ Captain Katzman
___ Captain Donoghue
___ Captain O'Shea
___ Lieutenant Burt
___ Mr. Gibson
___ Miss Hammer

FOR:

___ Information
___ Coordination
___ Preparation of reply
___ Necessary Action
___ Note and Return
___ Confer with

___ Recommendation
___ File
___ Circulation

~~Col Sorensen~~

~~Col Copeland~~

Basis of Computation?

Same as standard Tracer Ordnance has the directive

RbC

A-4 Division
AIR STAFF

AAF-82-1

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8 Jan. & 20 June 1974
By: JS/MH LC. Date 3-10-77

HEADQUARTERS ARMY AIR FORCES
CONFIDENTIAL
ROUTING AND RECORD SHEET

2076

Note.--A line will be drawn across sheet after each comment.

File No. .....

Tally No. AAF .....

SUBJECT: Limited Trace Ammunition.

NO.	FROM	TO	DATE	COMMENTS AAF/A-4 RCC/mhh
1.	AAF C/AS	C/AC	1941 11/21	1. It is desired that the Chief of Ordnance be requested to discontinue production on standard cal. 50 and cal. 30 trace ammunition for Army Air Corps use as soon as practicable and standardize for general use the experimental limited tracer ammunition with trace to 550 yards plus or minus 50 yards. 2. The Chief of Ordnance should be further requested that if and when a satisfactory combination night trace to 200 yards and limited trace to 550 yards plus or minus 50 yards is obtained this should be standardized and placed in production in lieu of the limited trace. CS C/AS
2.	C/AC.	MATL.	12/4	For necessary action. BHm.
3.	(4-E-1) Materiel Division	AAF C/AS	1941 12/12	1. Reference paragraph 1. above, the Chief of Ordnance was informed by the Adjutant General through a letter from the Joint Aircraft Board to standardize for use the experimental limited tracer ammunition with trace to 550 yards, plus or minus 50 yards. A letter from this office to the Chief of Ordnance further requested that if and when a satisfactory combination night trace to 200 yards and limited trace to 550 yards, plus or minus 50 yards, could be obtained, that this would be standardized in lieu of the limited trace. O. P. E. Chief, Materiel Division.

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Hq. Army Air Forces
DEC 16 1941
AAC Received

Cl-92
Ck-563
A 12/4 (8-B)
XF-706

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W-4071, AC. Rev. 8/14/41

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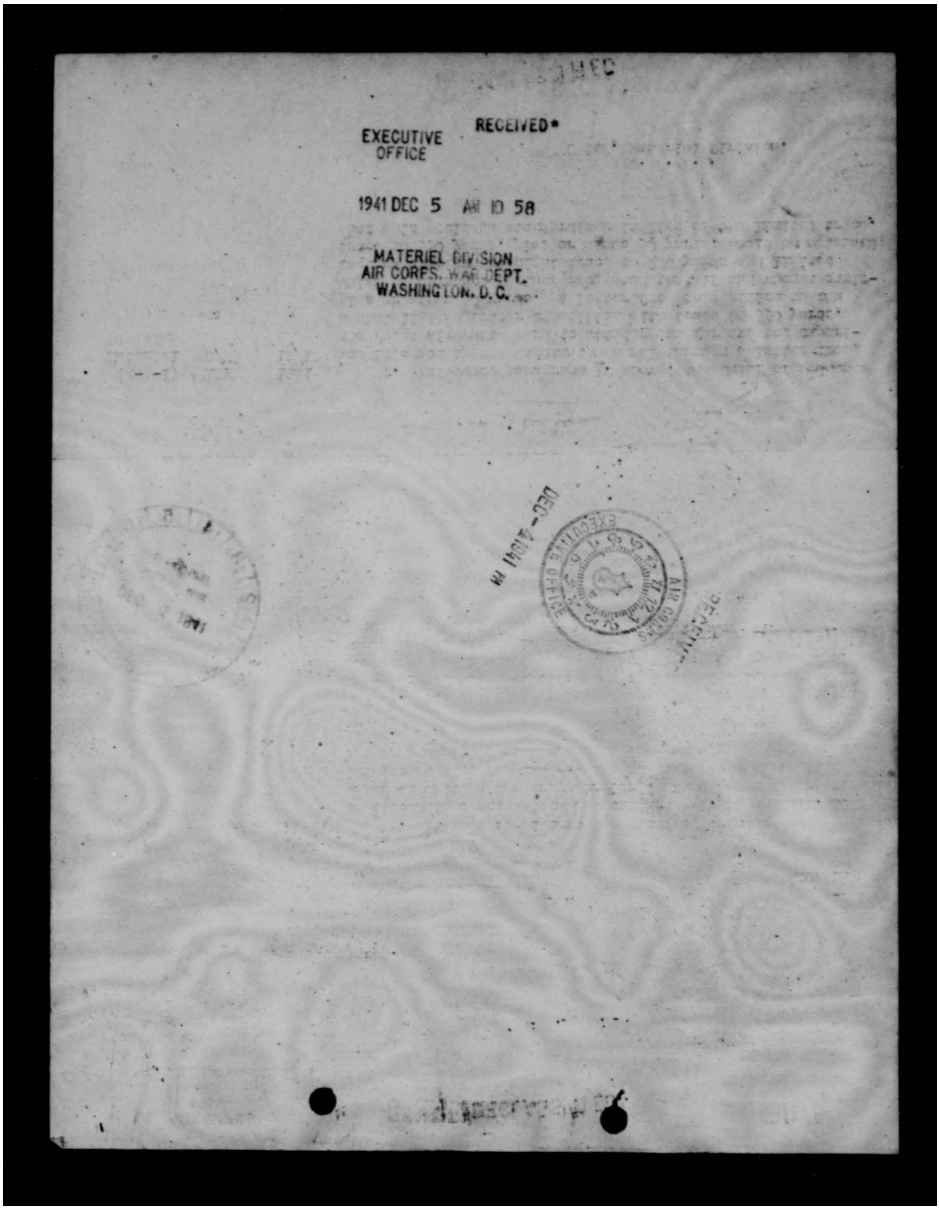

EXECUTIVE OFFICE

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1941 DEC 5 AM 10 58

MATERIEL DIVISION
AIR CORPS, WAR DEPT.
WASHINGTON, D. C.

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DOD ltrs
8 Jan. & 20 June 1951
By JS/HM - LC. Date 3-10-77

Flash Reduction Cal. .50 Aircraft Machine.

AAF/A-4
RCC/mhh

471 (36)

1. AAF 1941
C/AS C/AC 11/22

1. The results of test conducted at Wright Field, Dayton, Ohio, November 17, 1941 indicates that a suitable flash hider will reduce the flash of a Cal. .50 Aircraft Machine Gun some 95% with standard ammunition using the new standard powder.

2. The use of a flash hider seems mandatory for the immediate solution of this problem. In order to determine if the flash hider and booster used in the test at Wright Field on November 17, is satisfactory to meet the military requirements for turret mounted Cal. .50 guns in night operations, it is desired that the Chief of Ordnance be requested to furnish the Air Corps Board at Eglin Field the following equipment as soon as practicable.

Dispatched
NOV 26 1941
AAG

a. Three flash hiders boosters similar to the type tested at Wright Field on Nov. 17, 1941.

b. Three masking disks approximately 6" in diameter and arranged for easy assembly on rear of flash hider.

c. 1200 rounds standard Cal. .50 Aircraft Ammunition, 2800 ft/sec. velocity with new standard type powder.

3. It is further desired that a directive be sent to the Air Corps Board utilizing flight tests using a two gun Cal. .50 turret with standard ammunition and equipped with flash hiders with and without masking discs. Firing to be conducted at night against a target simulating as close as practicable the silhouette and combat color of an airplane. This test should be given high priority and the [illegible] furnished [illegible] as soon as practicable. The specific purpose is to determine whether the equipment as furnished meets military requirements or involves

HEADQUARTERS ARMY AIR FORCES											
Chief of Staff	Sec'y Air Staff	A.A.G.	A-								

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Flash Reduction Cal. .50 Aircraft Machine.

- 2 -

AAF/A-4
ROC/mhh

1. (cont.) AAF C/AS 1941 C/AC 11/22 further experimental and development work.

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	

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8 Jan. & 20 June 1974
By JS/HH LC, Date 3-10-77

JBC/rrb
(Air AG)
AC 84

January 11, 1942.

SUBJECT: List of Aircraft Ammunition to be Stored at Off-Shore Bases.

TO: The Chief of the Air Corps.

1. The attached secret photostat (Tab B), subject, "Army Air Forces - Stockage Requirements - Outlying Bases," has been submitted as part of a study for the approval of the Chief of Staff (W.P.D. and G-3 have concurred to date).

2. The photostat represents stockage requirements believed necessary by this office.

3. The above information is transmitted in reply to your R & R, Chief, B. & G. Div., (12-B3), 11/26/41.

By command of Lieutenant General ARNOLD:

JOHN B. COOLEY
Lieutenant Colonel, A.G.D.
Assistant Air Adjutant General

1 Incl.: Photostat.

Copy for A-4 re-R & R, AAF/A-4, WRB-elm, to AAG, 1/7/42.

Distribution
JAN 12 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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DOD Ltrs.
8 Jan. & 20 June 1971
By: JS/HH LC, Date 3-10-77

File No. .....

Tally No. AAF .....

SUBJECT: Request for List of Aircraft Ammunition to be Stored at Off-Shore Bases.

NO.	FROM	TO	DATE	COMMENTS
3.	AAF A-WPD	AAF A-4	12/11	AAF/AWPD SEA/rr 1. Inviting attention to Tab C of memorandum for the Assistant Chief of Air Staff, subject, "Defense Reserves of Aviation Gasoline, Ammunitions, Bombs, and Pyrotechnics, Overseas Departments," which states the [redacted]
4.	AAF A-4	AAF AAG	1942 1/7	AAF/A-4 WRB/elm 1. It is requested that the following information be transmitted to the Chief of the Air Corps in answer to Item 1 above; a. The attached secret photostat (Tab B), subject, "Army Air Forces - Stockage Requirements - Outlying Bases," has been submitted as part of a study for the approval of the Chief of Staff (WPD and G-3 have concurred to date). b. It represents stockage requirements believed necessary by this office. Incl. Secret photo. AAF Stockage Req. Outlying Bases. TJH, Jr. C/AS "Rewrite" initialled by Bob Hanley

9 1942
AAG Received

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W-4071, AC. Rev. 6/14/41

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OFFICE OF THE CHIEF OF THE AIR CORPS

ROUTING AND RECORD SHEET

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8 Jan. & 20 June 1974
By JS/MM LC. Date 3-10-77

File No. - - - - - - - - - -

Tally No. AAF/ - - - - -

Subject: Request for List of Aircraft Ammunition to be Stored at Off-Shore Bases.

X-5761

NO.	FROM	TO	DATE	COMMENTS (12-83)
1	Chief, B.&G. Div.	Ch/AAF A-WPD THRU Executive	11-26 1941	1. Informal information recently received in this Division indicates that revisions have been made in the sizes, types and quantities of aircraft ammunition to be stored at off-shore bases. To enable this Division to compute the numbers, sizes and types of Ordnance magazines required for these Air Corps off-shore bases, it is requested that this office be furnished an itemized list indicating the sizes, types and quantities of bombs and other aircraft ammunition which will represent the maximum quantities to be stored at any one time at the following bases: (a) Puerto Rico and St. Croix (b) Lesser Antilles (c) Bermuda (d) Newfoundland (e) Greenland (f) Alaska (g) Hawaii (h) Philippine Islands 2. In view of the necessity of initiating construction of Ordnance storage facilities at the above bases at the earliest possible date, it is requested that this information be furnished as soon as possible. F. M. K. Pxxxo Chief, B. & G. Division.
2.	C/AC	AAF A-WPD	1941 11/26	1. Forwarded. NOV 27 1941 AAG RECEIVED For M. S. F. Executive

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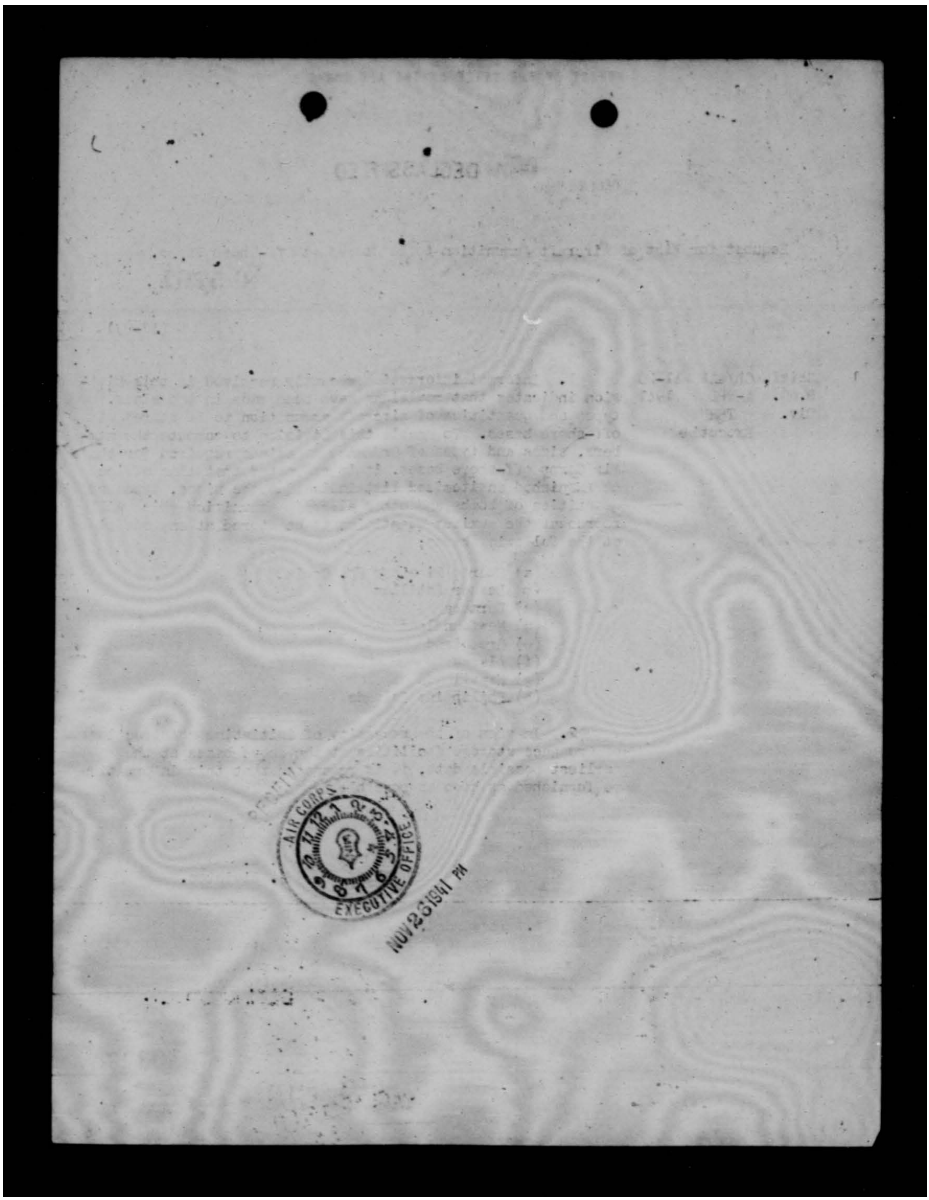

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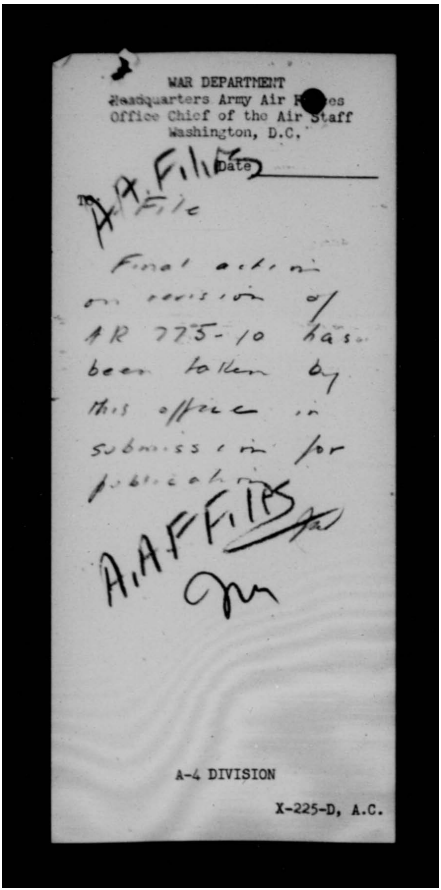

WAR DEPARTMENT
Headquarters Army Air Forces
Office Chief of the Air Staff
Washington, D.C.

Date

TO: A.A. File

Final action on revision of AR 775-10 has been taken by this office in submission for publication

A.A.F. File

A-4 DIVISION

X-225-D, A.C.

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6 Jan. & 20 June 1974
By: JS/HH LC; Date 3-10-77

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WAR DEPARTMENT

OFFICE OF THE CHIEF OF THE ARMY AIR FORCES

WASHINGTON

NOV 21 1941

MEMORANDUM FOR THE Asst CHIEF OF STAFF: G-3

Subject: Changes in AR 775-10, January 1, 1941, "Qualification in Arms and Ammunition Training Allowances."

471

33

1. Relative Memo from G-3 on the subject November 12, 1941, underlying - the following is pertinent after conference with OCAC and G-3.

a. Increases indicated can be justified on the basis that training in aerial gunnery is decidedly more important than it has ever been and the added training time per individual is only slightly increased. Also the allowances are desired items and supply will have to depend upon production.

b. Increase in shot gun ammunition is also desirable but perhaps not justifiable, fundamentally, as a above. Suggest authorization to triple basic allowance under control of Chief of Air Corps for gunnery schools where intensive training is desirable.

c. In the opinion of this office training requirement in the use of smoke pots is not strongly justifiable.

d. Training requirement of cluster, incendiary (100# type) bombs for medium and heavy bombardment airplanes is considerably open to question. Training in target or area bombing and evaluation of effect or ballistics seems of doubtful promise. The lack of incendiary control makes its use uncertain in many cases. Because some familiarity with the weapon is desirable recommend its training employment only by light bombardment. Allowance over and above this can be handled by the Chief of the Air Corps.

2. Recommend this revision of AR 775-10 go forward based upon G-3 and A-3 consideration as indicated. Combat Command and OCAC have upheld requirements in their review.

Incls:
Memo fm G-3 to Misc. Br. 11-12-41.
Memo to C/S w/5 Incls..

For the Chief of the Army Air Forces:

E. P. Curtis

EDWARD P. CURTIS,
Major, Air Corps,
Secretary of The Air Staff

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air ars 471 (33)

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8 Jan. & 20 June 1974
By JS/HH LC; Date 3-10-77

AAF/A-4
JFW/coc
Written November 18, 1941.

NOV 21 1941

MEMORANDUM FOR THE ASST CHIEF OF STAFF: G-3

Subject: Changes in AR 775-10, January 1, 1941, "Qualification in Arms and Ammunition Training Allowances."

471

33

1. Relative Memo from G-3 on the subject November 12, 1941, underlying - the following is pertinent after conference with OCAC and G-3.

a. Increases indicated can be justified on the basis that training in aerial gunnery is decidedly more important than it has ever been and the added training time per individual is only slightly increased. Also the allowances are desired items and supply will have to depend upon production.

b. Increase in shot gun ammunition is also desirable but perhaps not justifiable, fundamentally as a above. Suggest authorization to triple basic allowance under control of Chief of Air Corps for gunnery schools where intensive training is desirable.

c. In the opinion of this office training requirement in the use of smoke pots is not strongly justifiable.

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2. Recommend this revision of AR 775-10 go forward based upon G-3 and A-3 consideration as indicated. Combat Command and OCAC have upheld requirements in their review.

For the Chief of the Army Air Forces:

Incls. Memo to G-3 to Misc. Br. 11-12-41. Memo to C/S w/5 Incls.	HEADQUARTERS ARMY AIR FORCES - COORDINATION									
Chief of Staff Air Staff	A-1	A-2	A-3	A-4	A-WPD	A-Insp.	Budget	Statistics	

Major, Air Corps,
Secretary of The Air Staff

AAF-39

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8 Jun. & 20 June 1974
By JS/NH NC; Date 3-10-77

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WAR DEPARTMENT
WAR DEPARTMENT GENERAL STAFF
Operations and Training Division G-3
WASHINGTON

November 12, 1941

MEMORANDUM FOR MISCELLANEOUS BRANCH:

Subject: Changes in AR 775-10, January 1, 1941, "Qualification in Arms and Ammunition Training Allowances."

The changes proposed by the Army Air Forces in ammunition training allowances appear to be okeh with the following exceptions:

a. There appears to be no justification for the increases in the allowances of the Chief of the Army Air Forces. This item will require more justification than that now shown.

The increase in allowances of .50 caliber ammunition from 600 to 1,000 as shown in paragraph 51 a (7) appears to be without justification, particularly in view of the fact that this allowance is per gun in airplane in tactical unit.

The increase in shell, HE, for 20 mm aircraft gun as shown in paragraph 52 from 100 to 500 and of shell, practice, 37mm aircraft gun from 100 to 300 as shown in paragraph 53 appears to be excessive and without adequate justification.

Any increase in combat allowances of .30, .50, 20mm or 37mm ammunition is going to be hard to justify because a great increase is being asked for in these types of ammunition for individual qualification.

b. Reference paragraph 57 a (2), the increase from 200 to 600 shotgun shells appears to be without justification, particularly in view of the fact that substitution may be had for shotgun shell.

c. Is it necessary for student armorers to have smoke pots? If so, why? And if the answer is "Yes", is the allowance considered to be correct?

d. Reference paragraph 65 on bombs for the Army Air Forces. Your attention is invited to the fact that last year the Air Corps requested 184 bombs per airplane in light bombardment units and 134 in medium and heavy bombardment and reconnaissance units. The proposed changes call for 433

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bombs per airplane in light bombardment and reconnaissance units and 148 bombs per airplane in medium and heavy bombardment and reconnaissance units. Why the terrible discrepancy between the allowances for light bombardment and reconnaissance and medium and heavy bombardment and reconnaissance units and why the great increase in allowances for light bombardment units? Another point that suggests itself is that 500, 1,000 and 2,000 pound demolition bombs are now being used for training purposes. Why?

Would you be kind enough to rush this paper and call upon me when you are ready to discuss the same? It is imperative that this paper be approved and in the hands of the Adjutant General not later than December 1, 1941.

H. L. EARNEST,
Lt. Col., General Staff.

P. S. There are several places in AR 775-10 where allowances are set up for Pursuit Squadrons. Do we still have Pursuit Squadrons?

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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 JS/HM LC; Date 3-10-77

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MEMORANDUM FOR THE CHIEF OF STAFF:

Subject: Changes in AR 775-10, January 1, 1941, "Qualification in Arms and Ammunition Training Allowances."

1. Discussion.

1. Appropriate changes in AR 775-10 are necessary to meet training requirements of the Air Corps schools and tactical units of the Army Air Forces, as required in recently approved manuals TM 1-250, "Precision Bombing Practice," March 7, 1941; TM 1-270, "Aerial Gunnery Practice and Record Firing," April 10, 1941; and TM 1-260, "Dive Bombing", now in process of preparation.

2. a. Old manuals have been revised because of changes in aircraft, aircraft weapons, and improved training procedures and facilities.

b. Present training allowances do not provide for qualification with other than Caliber .30 aircraft guns, and some miscellaneous bombs, which allowances were based on old TR 440-40. Present requirements are being met partially by substitution.

c. Present training allowances do not provide for dive bombing, which involves new tactics, procedures and allowances. Training allowances for this class of aviation are recommended in conformity with courses for training now in process of preparation.

3. a. Recommendations have been received from the Air Corps Board, the Air Force Combat Command, and the Chief of the Air Corps. These recommendations have been coordinated and are shown as finally recommended by the Chief of the Army Air Forces in Tab "A".

b. Recommended changes for Caliber .50, 20 mm and 37 mm ammunition are necessary because of partial or total replacement of Caliber .30 weapons. Attainment of proficiency with these weapons is as difficult as with Caliber .30 but recommended allowances are less in the interest of economy and also because of procurement difficulties.

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e. Recommended changes for Caliber .22 and shotgun ammunition are necessary for augmented primary gunnery training and economy.

f. Combat or special training allowances are, in effect, on per gun per individual basis to permit training of personnel in weapons of various calibers according to the equipment with which the individual is equipped, and to provide allowances for multiple guns in aircraft where these guns are fired by a single individual.

g. Thorough and adequate training requires that all weapons with which an aircraft is equipped be fired by the aerial gunner. Handling of aircraft is affected by fire of all guns thereof.

f. No allowances of 20mm and 37mm ammunition for students in gunnery schools are considered now necessary in view of absence of such weapons at this time or in the near future.

g. Certain changes are recommended to bring the Regulation up-to-date as to nomenclature and terminology insofar as the Army Air Force is concerned.

h. More benefit is to be derived by instructors at Air Corps Schools utilizing their individual and qualification allowances for the firing and bombing of special courses prescribed by Training Center commanders in lieu of courses as prescribed in TM-1-270 and TM-1-350.

i. An increase in the Chief of Army Air Forces' allowances of Caliber .30 and Caliber .50 ammunition for special purposes is recommended to take care of contingencies on an increased scale that must be planned for in 1942 incident to the expansion program.

j. Further detailed explanation and defense of increased allowances, necessitated by the proposed changes, is contained in Tab "E".

4. The effect in rounds and the effect in money of the changes recommended herein in allowances are shown in Tabs "B" and "C".

II. Action Recommended.

The Secretary of War directs:

1. That Ar 775-10, January 1, 1941, "Qualification in Arms and Ammunition Training Allowances" be changed as shown in Tab "D" to be effective January 1, 1942.

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2. That the Chief of Ordnance and the Chief of the Chemical Warfare Service be furnished copies of the action taken in paragraph 1, Section II, above, directed to make the necessary ammunition available, and include in the next Supplemental Estimate for the Calendar Year 1942 the amounts of $4,921,703 for Ordnance items and $1,974,465 for Chemical Warfare items, and include in the First Supplemental Estimate for the Calendar Year 1943 the amounts of $ for Ordnance items and $ for Chemical Warfare items.

III. Concurrences.

A. C. of S., G-3 ( )

A. C. of S., G-4 ( )

Incls:
Tabs A thru E.

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DECLASSIFIED
DOD Dir.
5 Jan. & 30 June 1976
By JS/HM LC Date 3-10-77

Subject: Belt Loading of Caliber .30 and Caliber .50 Aircraft Ammunition

471 (31)

AAF/A-3
BSV-ds

5 AAF C/AS OCAC 11/24 In view of the comments included in Item 4 above (next) loading is not favorably considered.

Dispatched
NOV 28 1941
AAG

Incl. n/c OS 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
	[illegible]				[illegible]					

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DOD Dir. 5 Nov. & 20 June 1972
By JS NARS Date 5-10-77

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4 Hq.AFCC AAF C/AS 11/8/41

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1. Attention is invited to letter, unclassified, Office of Ch/AC to this headquarters and 1st Ind. this headquarters to The Ch/AC (Incl. #1). The comments of this headquarters on the cited indorsement are still applicable.

2. Further, it may be noted that the method of "neat" loading creates a situation wherein any failure to operate on the part of any machine gun on an airplane would deprive that airplane of the essential type of ammunition with which the gun is loaded and would not be a reduction in the proportionate amount of fire power of the airplane. In the event the gun containing the tracer ammunition malfunctions, the effectiveness of the complete airplane would be lost.

C.W.R.
C/S,AFCC

1 Incl.
Ltr 11/18/40
w/1st Ind.

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DOD ltrs.
8 Jan. & 20 June 1974
By: JSIHM LC. Date 3-10-77

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(9)

October 18, 1940.

Loading of Aircraft Ammunition on Fighter Aircraft.

The Commanding General,
GHQ Air Force,
Langley Field, Virginia.

1. It has been reliably reported that the Royal Air Force is loading ammunition for machine guns "neat". This term applies to a method whereby one type of ammunition is loaded in a single belt and fired from a single gun. With a multiplicity of guns, the method of harmonizing the guns at a point from 200 to 250 yards affords an opportunity of utilizing the various types of ammunition. For instance, in the eight gun fighter, the British use four guns for ball ammunition, two guns for armor piercing ammunition and two guns for explosive or combination incendiary and explosive ammunition.

2. The report also states that the British load the ammunition in the squadron by the use of power driven loading machines and obtain a rate of loading of some 600 rounds per minute, with two men operating the machine. If the same method of loading could be employed by the Air Corps, it would materially facilitate the loading of ammunition in the squadrons or made it readily possible to load such ammunition at the factory.

3. Comments and recommendations of the GHQ Air Force are requested on this matter.

By order of the Chief of the Air Corps:

B. E. Meyers,
Major, Air Corps,
Executive.

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DOD ltrs.
8 Jan. & 20 June 1955
By: JS/HM LC, Date 3-10-77

471.88 (10-18-40) 1st Ind. (E-40)

HEADQUARTERS GHQ AIR FORCE, Langley Field, Virginia, November 22, 1940.
To: The Chief of the Air Corps, Washington, D. C.

1. The present procedure in the GHQ Air Force is to have the .30 Cal. and .50 Cal. ammunition furnished to the combat units "belted" (1 tracer to 4 ball) or as prescribed. It is neither contemplated nor desired to have belts loaded in the combat units. Explosive ammunition has not been available, but it is believed that it lends itself readily to "belting" in the same manner as other ammunition.

2. Unless some special advantage is derived from "neat" loading, which is not now apparent, it is believed that our present procedure is superior.

3. Paragraph 1, basic, states "With a multiplicity of guns the method of harmonizing the guns at a point from 200 to 250 yards affords an opportunity of utilizing the various types of ammunition". The various types of ammunition can also be utilized by having single belts loaded in the proportion desired.

4. The supply of belted ammunition to combat units appears much simpler if all guns of a unit take the same items instead of the supply units segregating several different loadings for each airplane.

5. It may be that in the Royal Air Force ammunition was loaded "neat" in the squadrons because facilities were not available to load mixed belts, but this is not the case in our present procedure, as the Ordnance is equipped to load any mixed belt as desired.

For the Commanding General:

HUME PEABODY,
Colonel, G. S. C.,
Acting Chief of Staff.,

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8 Jan. & 20 June 1974
By: JSMM LC; Date 3-10-77

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WAR DEPARTMENT
THE ADJUTANT GENERAL'S OFFICE
WASHINGTON

IN REPLY
REFER TO AG 470 (11-6-41)MC-D

MNE/bjs-1712.

November 7, 1941.

SUBJECT: Munitions Production for the Army Air Forces.

TO: Chief of the Army Air Forces.

1. Reference is made to memorandum from the Chief of the Army Air Forces to the Assistant Chief of Staff, G-4 through the Chief of Ordnance, October 16, 1941, subject as above, and to 1st Indorsement thereto from the Chief of Ordnance to the Assistant Chief of Staff, G-4, file number OO 471.86/1315, October 29, 1941.

2. The communication referred to has been transmitted under date of November 7, 1941, to the Under Secretary of War, as a matter of primary interest, together with the following comments:

a. The Chief of Ordnance has been advised of the overall Army Requirements in TNT by means of the current expenditure program.

b. Action was taken at the request of the Chief of Ordnance to secure from the Navy Department the requirements of the Navy and Marine Corps in all items normally procured by those services from the War Department. The Navy Department requirements in TNT were forwarded to the Chief of Ordnance in July, 1941.

c. The quantities of TNT required by Defense Aid either in bulk or in loaded ammunition and bombs are forwarded to the Chief of Ordnance by means of approved requisitions as rapidly as such requirements are made known to the War Department.

By order of the Secretary of War:

Carl Robinson
Adjutant General.

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Col. Schneider:

So am I. And I believe we should carry this a step farther (or try it at least).

Some concrete action to correct the situation:

1. A reserve, or some way, for taking care of demands resulting from diversion as you stated them.
2. More TNT plants.
3. Recognition of the fact that not the Navy alone but most likely the Army A.C. will be involved in early use of ammunition, bombs etc.
4. Ordnance are letting their loading plans for artillery ammunition take precedence in the matter of allotment of available supply of Army TNT to the question of what munitions will probably be needed first. Believe we ought to make an attempt to

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present that problem in its true light.

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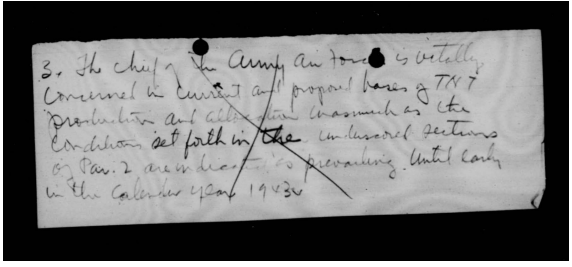

3. The chief of the Army Air Force is vitally concerned in current and proposed bases of TNT production and allocation inasmuch as the conditions set forth in the underscored sections of Par. 2 are indicated as prevailing. Until early in the calendar year 1943.

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WAR DEPARTMENT
Headquarters Army Air Forces
Office Chief of the Air Staff
Washington, D. C.

Date. 11/13/42

TO:

___ Chief, A-4 Division
___ Equipment Section
___ Facilities Section
✓ Colonel Sorensen
___ Lt. Colonel York
___ Lt. Colonel Schneider

___ Lt. Colonel Crumrine
___ Major Perrin
___ Captain Katzman
___ Captain Donoghue
___ Captain O'Shea
___ Lieutenant Burt
___ Mr. Gibson
___ Miss Hammer
___

FOR:

___ Information
___ Coordination
___ Preparation of reply
___ Necessary Action
___ Note and Return
___ Confer with

___ Recommendation
___ File
___ Circulation

I am much irritated by the implications of the a. des. letter. Attached is my proposed answer. It will serve no useful purpose probably, but it will keep the subject open.

A- Division
AIR STAFF

AAF-82-1

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coc

Subject: Munitions Production for the Army Air Forces.

1st Ind.

War Department, Headquarters Army Air Forces, Washington, D. C.,

To: The Adjutant General.

1. The following statement is extracted from a "secret" report forwarded from the Office of the Undersecretary of War dated November 8, 1941:

"Ammunition

Small proportions of the ammunition procurement program have been delivered but the greater part has been placed under contract. ***

One of the principal limiting components is TNT. More than two-thirds of the country's entire production is being delivered to the British and to the Navy. New TNT plants, however, are expected to increase output rapidly. Additional demands for TNT by the British and the Navy (in the event of war) are large enough to absorb the entire deliveries to the Ordnance Department, on which present ammunition loading schedules are based." (Underscoring supplied)

2. The condition indicated by the underscored sections of paragraph 1 above are indicated as continuing until early in calendar 1943.

3. The Chief of the Army Air Forces is vitally interested in current and proposed bases pertaining to TNT allocation in the face of the shortages that will continue to exist for some time to come.

4. It is the belief of this office based on past experience that no certainty prevails in any Defense Aid agency as to where and what munitions are being procured for Defense Aid airplanes, all of which were assumedly in the past intended for Great Britain. This condition is emphasized by the fact that, when airplanes originally intended for Great Britain are diverted to China or Russia, munitions must be withdrawn from stocks or production intended for the Army Air Forces.

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Subject: Munitions Production for the Army Air Forces.

1st Ind. (Cont'd)

5. The condition prevailing as cited in paragraph 4 above is of great concern to the Chief of the Army Air Forces in that emergency plans for the defense of the Western Hemisphere, in the event of possible contingencies hinge on the taking over of Defense Aid airplanes for the use of the Army Air Forces. Obviously these airplanes are of little value without their original munitions, or, if the original munitions are being manufactured within the British Empire without a correspondingly adequate munitions stockage in the United States.

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By: JS/HM LC; Date 3-10-77

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AAF/A-4
RCC/ccc
Written November 10, 1941.

Subject: Supply of Small Arms Ammunition.

1st Ind.

War Department, Headquarters Army Air Forces, Washington, D. C.,
NOV 13 1941 To: Commanding General, Air Force Combat Command, Bolling Field, D. C.

1. Capacity load of ammunition is being provided Hawaii for each B-17B airplane passing through that Department destined for Plum.

For the Chief of the Army Air Forces:

EDWARD P. CURTIS,
Major, Air Corps,
Secretary of The Air Staff

471

(29)

Dispatched
NOV 14 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	
	SPC					[illegible]					

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8 Jan. & 20 June 1974
By: JS/MM LC; Date 3-10-77

ACC 471 (11-6-41)

HEADQUARTERS AIR FORCE COMBAT COMMAND

BOLLING FIELD, D.C. (K-42)

November 6, 1941.

HQ AFCC TAF (INITIALS)

Subject: Supply of Small Arms Ammunition.

To: Chief, Army Air Forces, Washington, D.C.

1. Pursuant to telephone conversation between G-3 of this headquarters and your A-3, it is requested that action be initiated by the War Department to supply ammunition as listed below to Hickam Field, T.H.:

65,000 rds. Cartridges, cal..30, linked 50% A.P., 30% Incendiary and 20% Tracer, in metallic link belts, if incendiary ammunition is available. If incendiary ammunition is not available it is requested that it be linked 80% A.P., 20% tracer.

390,000 rds. Cartridges, cal..50, linked 50% A.P., 30% Incendiary and 20% tracer, in metallic link belts, if incendiary ammunition is available. If incendiary ammunition is not available it is requested that it be linked 80% A.P., 20% tracer.

2. These quantities are required to provide full capacity loads for 130 B-17E airplanes destined for Plum.

For the Commanding General:

C. W. RUSSELL,
Brigadier General, G.S.C.,
Chief of Staff

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8 Jan. & 20 June 1974
By: JS/HH J.C. Date 3-10-77

NOV 3 1941 AAF/A-4
WRB/cmd
Written October 24, 1941.

MEMORANDUM FOR THE ASSISTANT CHIEF OF STAFF, G-4:

Subject: .30 Caliber Incendiary Ammunition.

471
(28)

1. This office has been informally advised that there will be approximately 300,000 rounds of .30 caliber incendiary ammunition made available under Army contracts during the next eight months.

2. Allocation of subject ammunition, as it and additional production become available to the Army to meet the following requirements of the Army Air Forces is requested:

First 6,000 rounds to the Materiel Division of the Air Corps at Wright Field for testing purposes.

Second 6,000 rounds to the Air Corps Board at Eglin Field for testing purposes.

Third 2,312,730 rounds to the Philippine Air Force for use as a part of the defense reserves.

Fourth 375,000 rounds to the Air Force squadron participating in Indigo operations.

Dispatched
NOV 3 1941
AAG

For the Chief of the Army Air Forces:

EDWARD P. CURTIS,
Major, Air Corps,
Secretary 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	
	[illegible]				[illegible]	[illegible]	[illegible]	for [illegible]			

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8 Jan. & 30 June 1974
By: JS/MM LC. Date 3-16-77

715

O.O. 400.3295/36993-Russia
Attn: Fiscal Div. 1st Ind. Strong/er

War Department, Ordnance Office, Washington, D. C., November 7, 1941.
To: Chief of the Army Air Forces, Washington, D. C.

1. There is inclosed herewith a tabulation showing the estimates of the monthly cost involved in the production of the munitions set forth in Exhibit A attached.

2. Attention is invited to the fact that estimates are based on demolition bombs instead of GP demolition bombs as listed in Exhibit A, due to the fact that the latter are not a standard production.

For the Chief of Ordnance:

H. R. KUTZ,
Colonel, Ord. Dept.,
Assistant.

2 Incls:
Exhibit A
Tabulation in dupl.

Hq. Army Air Forces
NOV 10 1941
AAG Received

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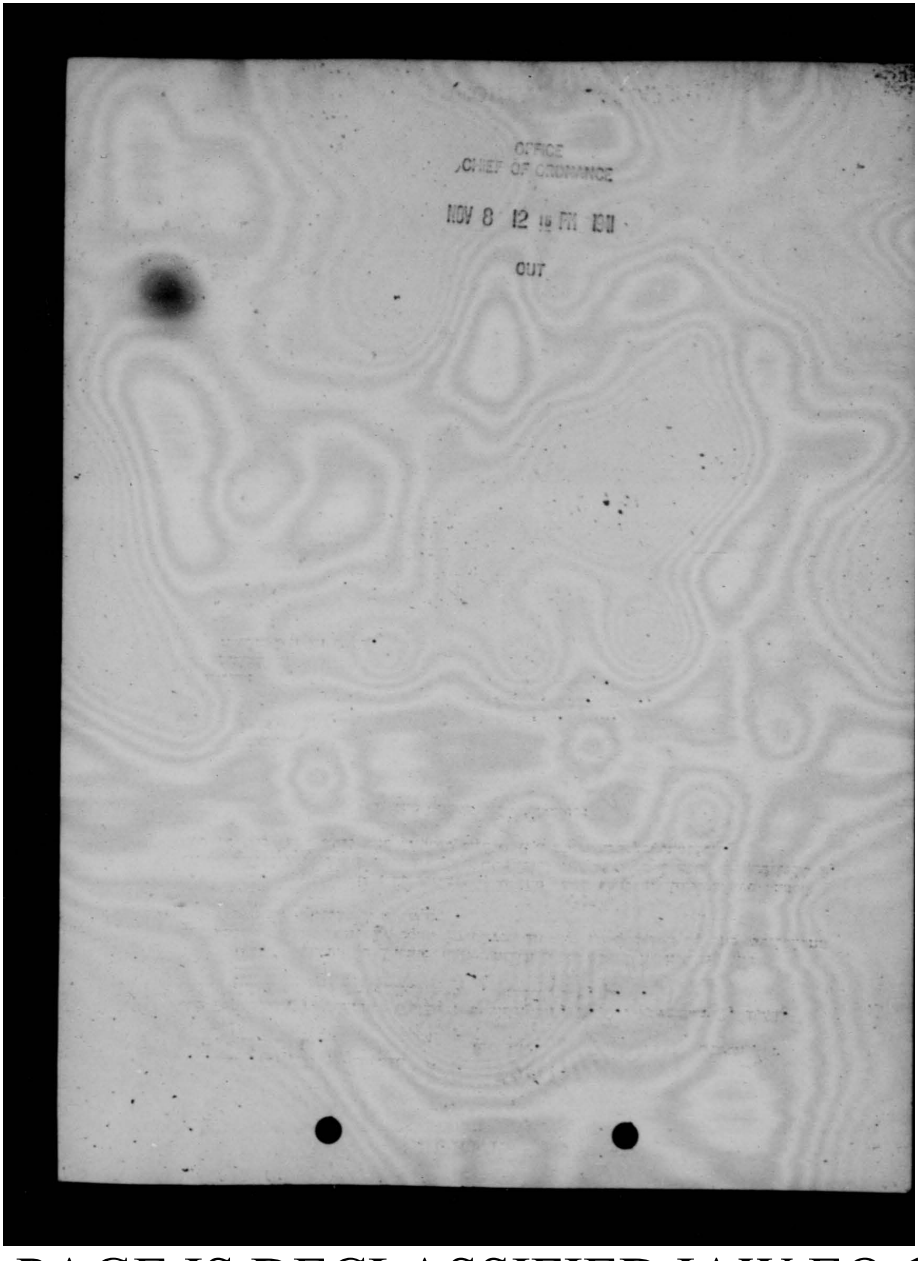

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8 Jan. & 20 June 1974
By JS/MM LC: Date 3-10-77

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WAR DEPARTMENT
OFFICE OF THE CHIEF OF THE ARMY AIR FORCES
WASHINGTON

O. O. WAR DEPT.
400.3295 36993
OCT 30 1941

OCT 29 1941

MEMORANDUM FOR THE CHIEF OF ORDNANCE:

Subject: Money Value of Munitions for Russia.

Russia

1. Attached herewith (as Exhibit A) is Tab B of a memorandum to the Chief of Staff in which the Chief of the Army Air Forces sets forth the munitions requirements to accompany recent schedules of airplane allocations to Russia from United States sources.

2. It is requested that this office be provided with an estimate of the monthly cost involved in the production (i.e. all costs other than final shipment from storage to Russia) of the munitions set forth in Exhibit A attached.

Incl:
Exhibit A

For the Chief of the Army Air Forces:

E. P. Curtis

EDWARD P. CURTIS,
Major, Air Corps,
Secretary of The Air Staff

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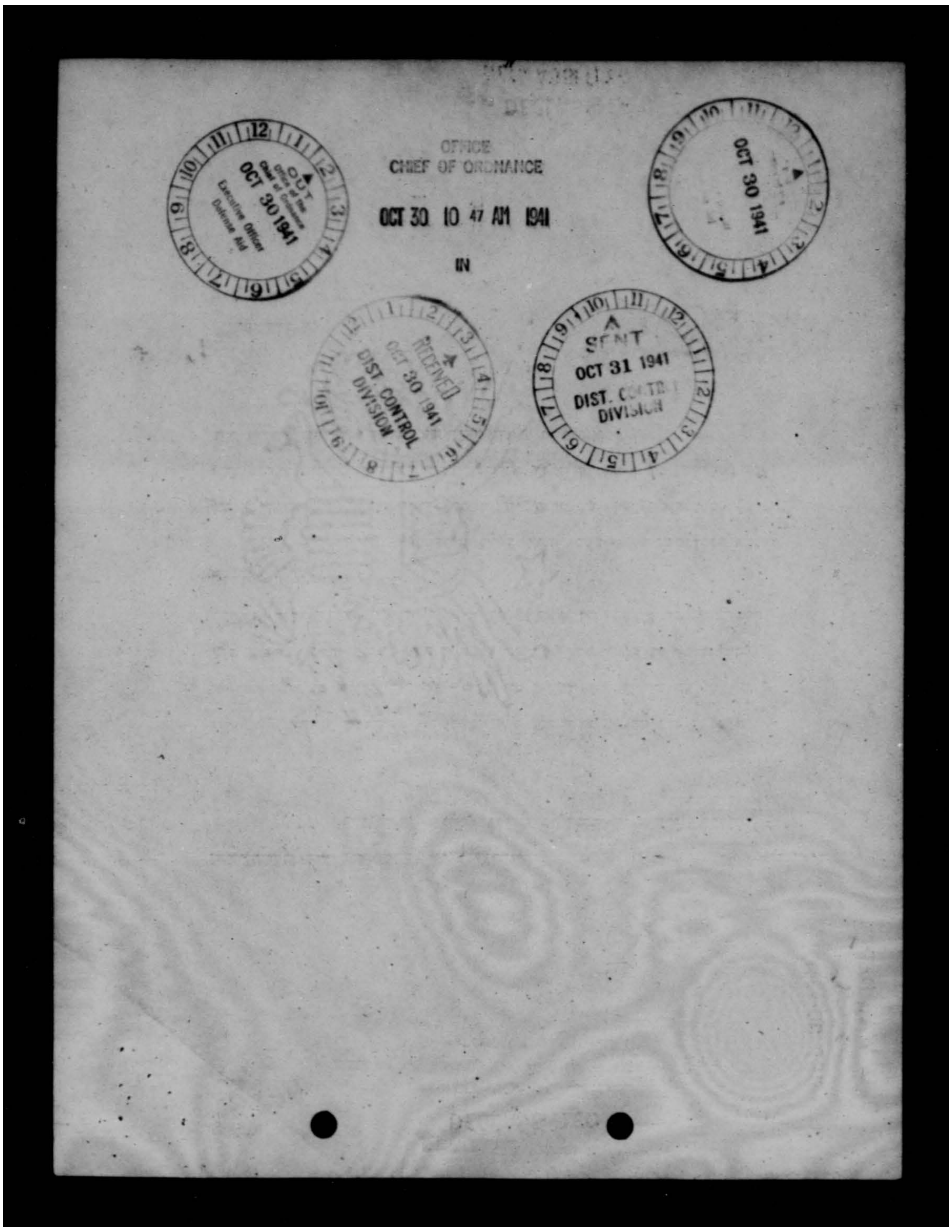

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8 Jan. & 20 June 1974
By JSM LC Date 3-10-77

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EXHIBIT "A"

MUNITION REQUIREMENTS TO MEET AIRPLANE ALLOCATION TO RUSSIA

TAB. B

	150. 500# GP Dem.	86. 300# GP Dem.	50. 100# GP Dem.	20. 20# Frag.	m AP 232.59 T 215.44 .50 Cal.	m Bdf 49.34 AP 74.42 T 68.25 .30 Cal.
OCTOBER				954	2,395,160	1,988,000
NOVEMBER				1,926	3,608,040	
DECEMBER	720	2,880	8,400	1,800	4,092,000	3,000,000
JANUARY	1,008	3,312	22,800	1,800	4,471,200	3,144,000
FEBRUARY	1,464	5,136	15,160	1,800	4,927,200	5,044,000
MARCH	1,488	5,232	15,440	1,800	4,951,200	5,144,000
APRIL	1,488	5,232	15,440	1,800	4,951,200	5,144,000
MAY	1,488	5,232	15,440	1,800	4,951,200	5,144,000
JUNE	408	912	2,840	1,800	3,871,200	644,000

NOTE: Bombing Mission Distribution 20% - 500#
30% - 200#
50% - 100#

O.O. 400.3295/36993 Russia - Incl 1

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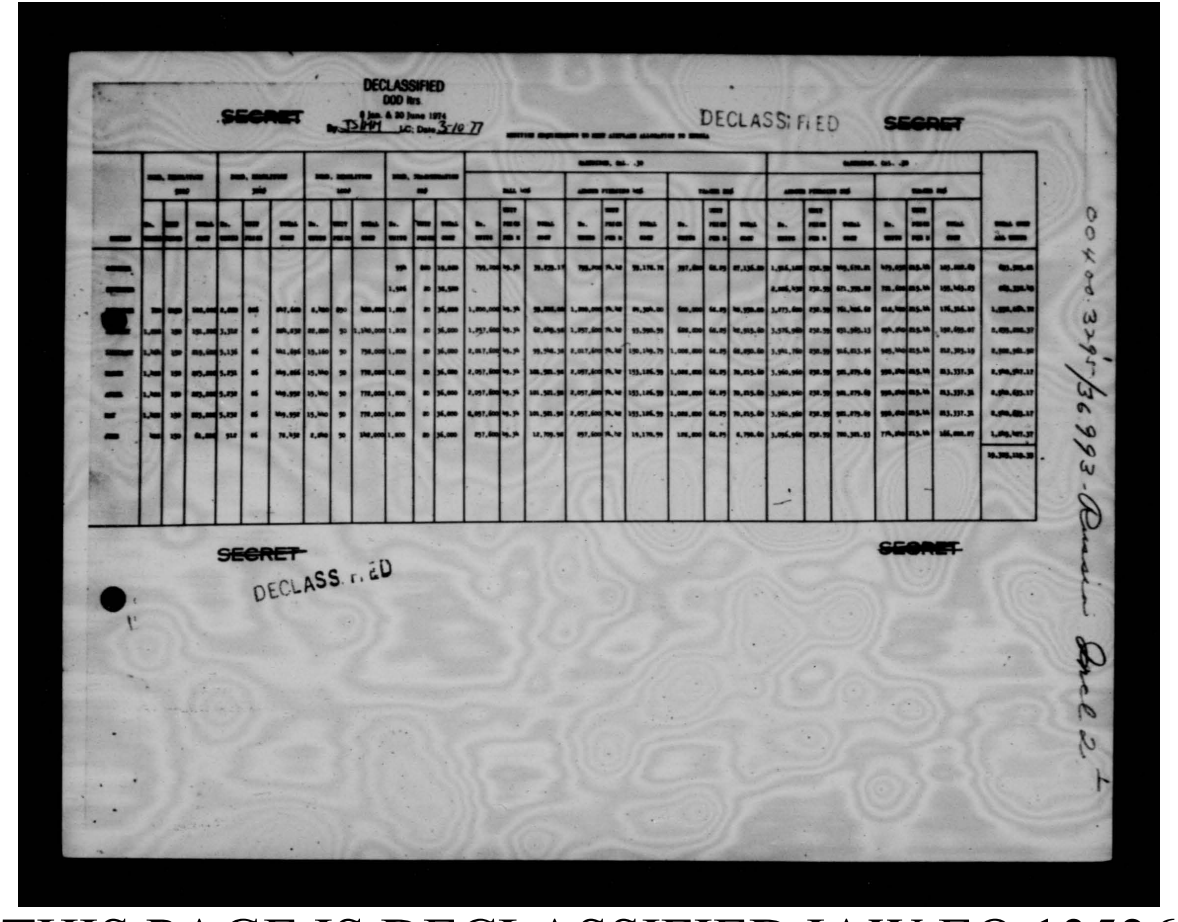

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6 Jan. & 20 June 1974
By JS/HM LC; Date 3-10-77

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Written Oct. 28, 1941

OCT 29 1941

MEMORANDUM FOR THE CHIEF OF ORDNANCE:

Subject: Money Value of Munitions for Russia.

1. Attached herewith (as Exhibit A) is Tab B of a memorandum to the Chief of Staff in which the Chief of the Army Air Forces sets forth the munitions requirements to accompany recent schedules of airplane allocations to Russia from United States sources.

2. It is requested that this office be provided with an estimate of the monthly cost involved in the production (i.e. all costs other than final shipment from storage to Russia) of the munitions set forth in Exhibit A attached.

Dispatched
OCT 29 1941
AAF

For the Chief of the Army Air Forces:

Incl:
Exhibit A

EDWARD P. CURTIS,
Major, Air Corps,
Secretary of The Air Staff

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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DOD Dir.
9 Jan. & 26 June 1971
By TS/[illegible] Date 5-10-77

EXHIBIT A

MUNITION REQUIREMENTS TO MEET AIRPLANE ALLOCATION TO RUSSIA

TAB B

	500# GP Dem.	300# GP Dem.	100# GP Dem	20# Frag.	.50 Cal.	.30 Cal.
OCTOBER				954	2,395,160	1,988,000
NOVEMBER				1,926	3,608,040	
DECEMBER	720	2,880	8,400	1,800	4,092,000	3,000,000
JANUARY	1,008	3,312	22,800	1,800	4,471,200	3,144,000
FEBRUARY	1,484	5,136	1[illegible],160	1,800	4,927,200	5,044,000
MARCH	1,488	5,232	15,440	1,800	4,951,200	5,144,000
APRIL	1,488	5,232	15,440	1,800	4,951,200	5,144,000
MAY	1,488	5,232	15,440	1,800	4,951,200	5,144,000
JUNE	408	912	2,840	1,800	3,871,200	644,000

NOTE: Bombing Mission Distribution 20% - 500#
30% - 200#
50% - 100#

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DOD Dir.
6 Jan & 20 June 1974
By TS/HH LC. Date 3-10-77

AAF/A-4
JFW/emd
Written November 5, 1941.

NOV 7 1941

MEMORANDUM FOR THE ASSISTANT CHIEF OF STAFF, G-4:

Subject: Wright Field Requisition No. 42-34 for Ammunition.

471.(23)

1. Reference memorandum WDGS, G-4 on the above subject, October 28, 1941 the following comments are pertinent.

2. Subject requisition represents Experimental Engineering part of total requirements for Material Division activities as estimated and covered in memorandum for WDGS, G-4 July 24, 1941.

3. Shipments on requisition have been indicated as desired at earliest practicable date. In view of production status, however, part shipment in monthly increments may be necessary, possible four to six or less if practicable.

4. Effort will be made in future requisitions of this nature to have conveyed at the time some indication in the nature of a running balance of total as well as current requirements possibly to include monthly shipments.

For the Chief of the Army Air Forces:

EDWARD P. CURTIS,
Major, ~~AC~~ Cs/Ops.
Secretary of The Air Staff

Reg. 42-34
WD Procurement Auth.
10 cys. Ammun. Status of Stock 10/16/41
with orig. only

Incls:
Memo for C/AAF from G-4 10/28,
w/Ltr from C/AC to C/Ord 9/16,
w/3 Incls. and Incls:-
Requisition #42-34
WD Procurement Auth. (cc)
10 cc Ammunition Status of Stock 10/16/41.

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	
	EPC					N					

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AAF-39

NOV 7 1941
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8 Jan. & 20 June 1974
By: JSHM LC; Date 3-10-77

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Supply Division, G-4

October 28, 1941

AG 471 (9-16-41)

G-4/286640120

MEMORANDUM FOR THE CHIEF OF ARMY AIR FORCES:

Subject: Wright Field Requisition No. 42-34 for Ammunition.

1. Your comments and recommendations on the attached Wright Field Requisition No 42-34 are requested.

2. It is further requested that the above communication together with your recommendations be returned to the Assistant Chief of Staff G-4 for final action.

R.A.WHEELER,
Brigadier General,
Acting Assistant Chief of Staff.

Incls:
Ltr fm OChAC
(9-16-41)
w/3 Inds. &
Incls listed.

DON C. FAITH
Lt. Col., General Staff,
Ass't. Executive

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DOD ltrs
8 Jan. & 20 June 1974
By TS/MM LC Date 3-10-77

OFFICE OF THE CHIEF OF AIR CORPS

September 16, 1941

SUBJECT: Wright Field Requisition 42-34
for Ammunition.

TO: The Chief of Ordnance.

1. There is forwarded herewith as a matter pertaining to your office Wright Field Requisition 42-34 dated September 4, 1941, calling for items of ammunition.

2. Sub-Procurement Authority No. AC 11 P 71-13 A 0705-2 dated September 10, 1941, in the amount of $332, 987.34 is also forwarded to cover the cost of these items.

For the Chief of the Air Corps:

L.W.Moreland Capt. AC

for

/s/
L. P. WHITTEN,
Lt. Col., Air Corps,
Chief, Maintenance Section

2 Incls:
#1 - Reqn. #42-34
in Trip.
#2 - Sub-Procurement Authority
(in dup.)

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DOD ltrs.
6 Jan. & 30 June 1974
By: JSMH LC Date 3-10-77

400.325/5621 Air Corps 1st Ind. Stamford/bp
Amm.Sup.Div.,Fld.Serv.
4-A-2

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War Department, Ordnance Office, Washington, D. C., September 24, 1941
To: Chief of Air Corps, Washington, D. C.

1. Wright Field requisition 42-34 is returned for clarification of nomenclature on items six (6) and thirteen (13).

a. Item 6-It is believed the word explosive should be deleted.

b. Item 13-The caliber has been omitted.

For the Chief of Ordnance:

P.M.Seleen,
Major, Ord. Dept.,
Executive Assistant.

2 Incl. N/C

Subject: Wright Field Requisition 42-34 (4-G-2)
for Ammunition.

2nd Ind.

War Department, Office, Chief of the Air Corps, Washington, D. C.
October 13, 1941. To: The Chief of Ordnance.

In connection with preceding first Indorsement from your office the following information is furnished.

a. Item 6 - The word "Explosive" should be retained in the description as originally submitted.

b. Item 13 - 50 caliber ammunition is desired.

For the Chief of the Air Corps:

L. P. WHITTEN,
Lt. Col., Air Corps,
Chief, Maintenance Section.

2 Incl. n/c

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8 Jan. & 30 June 1976
By JSMM LC: Date 5-10-77

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O.O.400.325/5621 Air Corps
Attn: Amm.Sup.Div.,F.S.
4-A-2 3rd Ind.

War Department, Ordnance Office, Washington, D. C., October 18, 1941.
To: The Adjutant General.

1. Wright Field requisition 42-34 is forwarded herewith for approval.

2. Status of stock Reports on Field Service items of issue are inclosed.

For the Chief of Ordnance:

P. M. Seleen,
Major, Ord. Dept.,
Executive Assistant.

12 Incls;

Req.#42-34
Sub-Procurement Authority
10 Status of Stock Reports.

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DOD Nrs.
8 Jan. & 30 June 1974
By TS/HM AC, Date 3-10-77

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SUBJECT: Special Ammunition Allowance - Philippine Department.

471

AAF/A-4
JJD/mr

2. AAF C/AS C/AC 1941 10/28

1. Further information should be requested of General Clagett to determine if the Commanding General, Philippine Department, will concur in the ammunition being drawn from Philippine Reserve, in view of the fact that it would take approximately 60 days to replace it.

1 Incl.
Radio fra Manila, P.I., to C/AC, 10-19-41.

CS
C/AS

Dispatched
OCT 31 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

-2-

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DOD Ltrs.
6 Jan. & 20 June 1974
By: JSMH LC. Date 3-10-77

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Special Ammunition Allowance - Philippine Department.

WFC/aa (3-C10)

1 Ch.A.C. Ch.AAF. 10/20 Request information and recommendation on which to base reply.

M.S.F.
Brig.Gen.A.C.
Executive.

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Air AG 471 (22)

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10/20

OFFICE OF THE CHIEF OF THE AIR CORPS

21 10/20

ROUTING AND RECORD SHEET

Note.--A line will be drawn across sheet after each comment.

File No. _____

Tally No. AAF/ _____

Subject: Supply and Maintenance

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NO.	FROM	TO	DATE	COMMENTS (4-G-2) BM:nw
1.	OCAC Mat.	AAF C/aS thru ch/ac	1941 10-10	1. In reference to comment 1, Routing and Record Sheet, dated October 9, 1941, relative to Report of Inspection of the 3rd Air Force by General Arnold, the enclosed basic communication with five indorsements thereon explaining in detail the actual shortage of ammunition is transmitted herewith, as a matter pertaining to your office. 1 Incl. Ltr. (8-22-41) w/5 Inds. TEO O.P.E. C/Mat.
2.	C/AC	AAF C/AS	1941 10/14	1. Forwarded. Incls. N/C AAB for M. S. F. Executive

471

21

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DOD ltrs.
8 Jan. & 20 June 1974
By: JS/MM LC; Date 3-10-77

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V-4071, AC, Rev. 8/1/41

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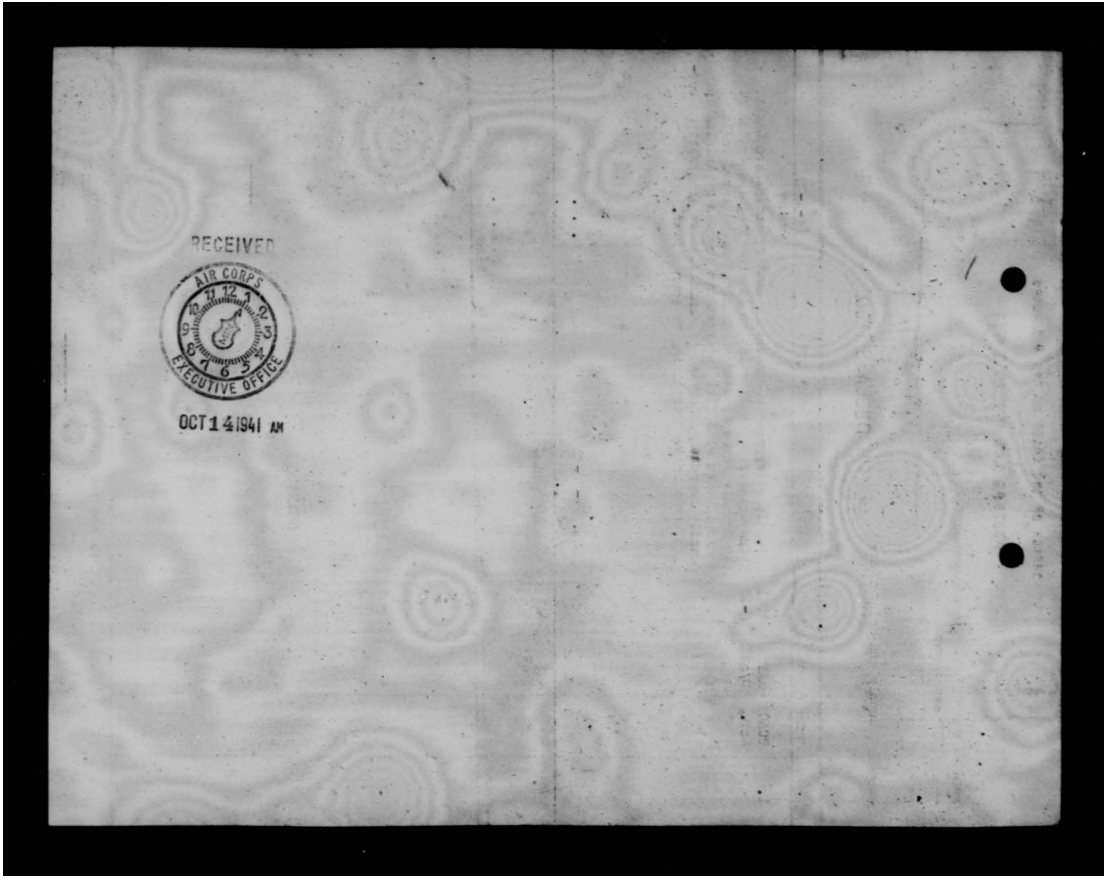

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IN REPLY REFER TO 401

WAR DEPARTMENT
OFFICE OF THE CHIEF OF THE AIR CORPS (4-0-2)
WASHINGTON
AUG 22 1941

AUG 23 1941 U.S. WAR DEPT.

SUBJECT: Supply and Maintenance.

TO: The Chief of Ordnance.

1. The following extract from Report of Inspection of the 3rd Air Force by General Arnold is forwarded as a matter pertaining to your office:

* * * *

"In this connection, while the Air Corps equipment is approximately 85% to 90% complete in the priority Organizations, it was noted that the Signal Corps, Ordnance, Chemical Warfare, Quartermaster, Engineer Corps, and Medical Corps equipment on hand varied from 35% to 60%. All Organizations reported a shortage of pistols and service type gas masks. MacDill Field had no demolition bombs or 50 caliber ammunition to use for training purposes. It is recommended that action be taken to call to the attention of the other Branches the conditions mentioned above and that they be instructed to give special emphasis to equipping the Organizations scheduled to participate in the September maneuvers."

* * * *

2. It is requested that you advise this office action taken to correct the deficiencies noted above.

For the Chief of the Air Corps

F. O. Ordway Jr.

F. I. ORDWAY, JR.,
Major, Air Corps,
Asst. Exec., Mat. Div.

Q. M. C. Form 856 (Old Form 68)
Approved December 1, 1922

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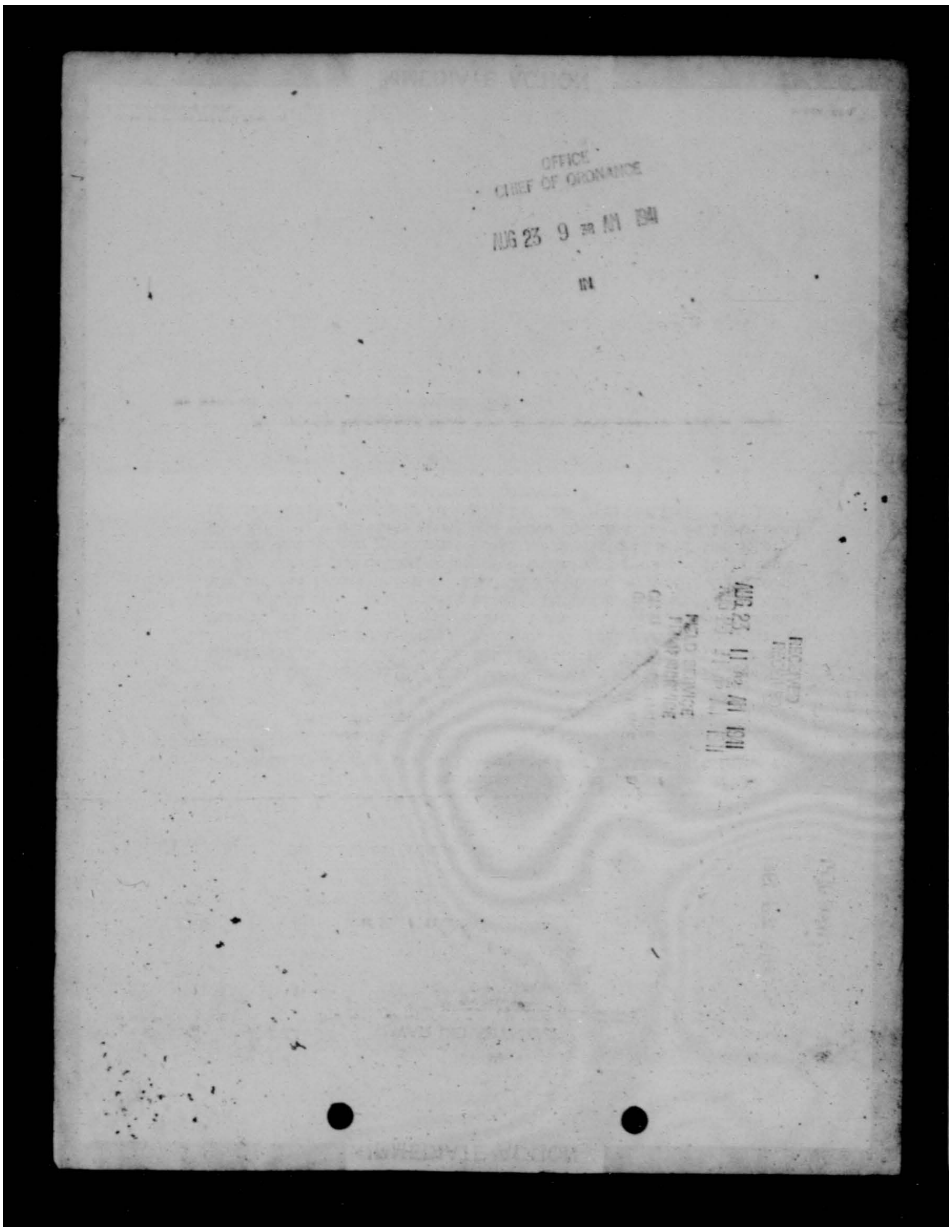

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O.O. 333.1/267 Misc. 1st Ind. LJM/mw
Att: F.S., Equip. Div.

War Department, Ordnance Office, Washington, D. C., September 2, 1941.
To: Office, Chief of The Air Corps, Washington, D. C.

1. The records of this office show that there is a shortage of certain controlled items of equipment for the Air Force Combat Command. However, controlled items are issued in accordance with priorities established by the War Department.

2. It is regretted that there are no Pistols available to satisfy the shortage of this item.

3. The reported shortage of Gas Masks is a matter to be referred to the Chemical Warfare Service.

4. Credits for training ammunition have been issued by the Chief of Ordnance to the Commanding General, Air Force Combat Command in accordance with amounts and types authorized by the War Department and insofar as stocks available for this purpose will permit. The distribution of these credits among the units of the Air Force Combat Command is a matter pertaining to the Commanding General, Air Force Combat Command.

For the Chief of Ordnance:

P. M. SELEEN
Major, Ordnance Dept.
Executive Assistant.

Received SEP 6 1941 B
M.R. OCAC

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ab-336 A1-371

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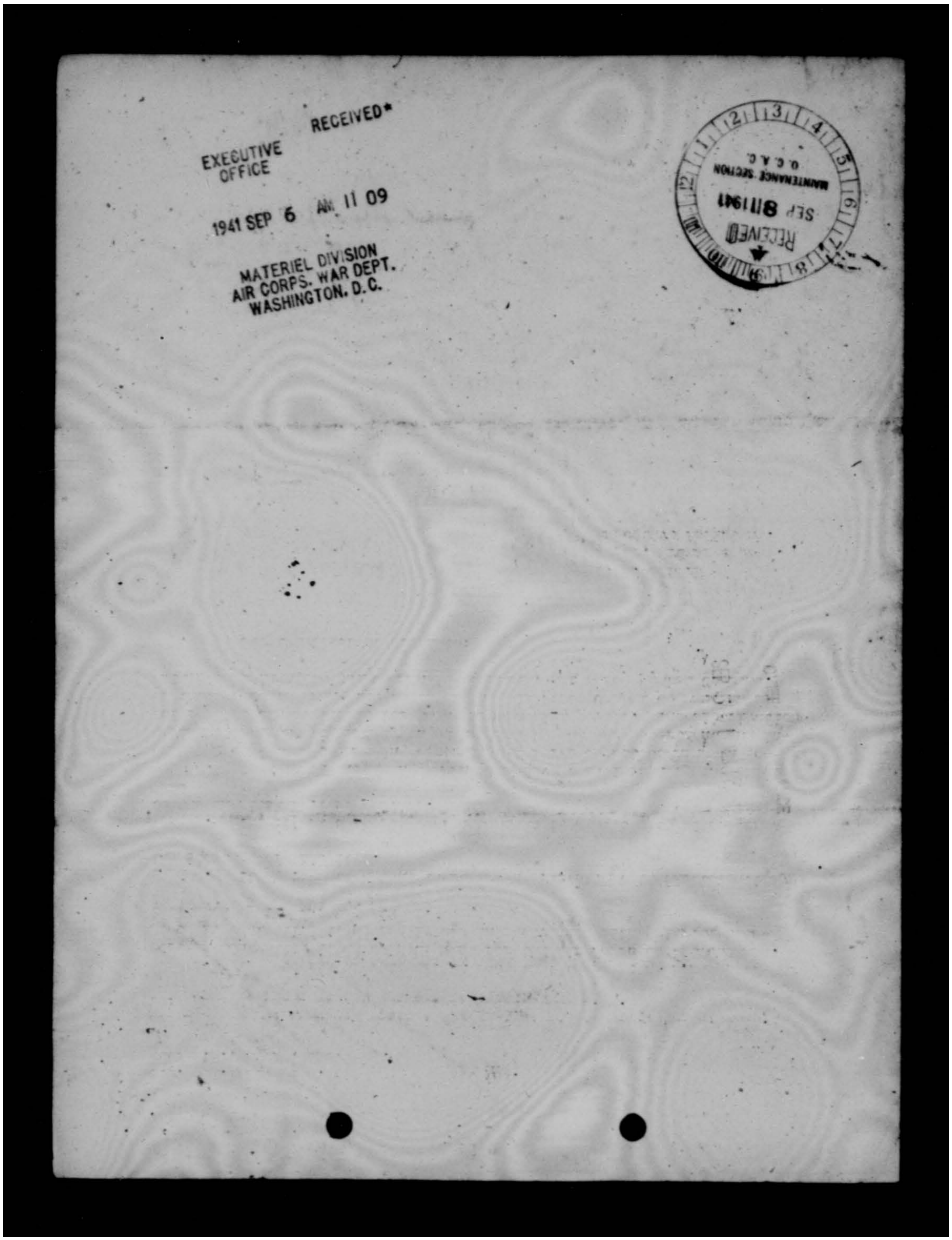

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IN REPLY REFER TO

WAR DEPARTMENT

Subject: Supply and Maintenance. (4-G-2)

2nd Ind.

War Department, Office, Chief of the Air Corps, Washington, D.C.
SEP 15 1941 To: The Commanding General, Air Force Combat Command, Bolling Field, D.C.

1. Forwarded for comment insofar as statements made in Paragraph 4 of preceding indorsement from the Chief of Ordnance dated September 2, 1941 are concerned.

For the Chief of the Air Corps

F. I. Ordway Jr.
F. I. ORDWAY, JR.
Major, Air Corps,
Asst. Exec., Mat. Div.

HQ CHQ AIR FORCE

SEP 16 1941 9 10 AM

ACC 401 (8-22-41) 3rd Ind. (K-64)

HEADQUARTERS AIR FORCE COMBAT COMMAND, Bolling Field, D. C., Sept. 24, 1941.
TO: Commanding General, 3rd Air Force, National Guard Armory, Tampa, Fla.

1. The following is an extract from "Report of Inspection" of the 3rd Air Force by General Arnold: "MacDill Field had no demolition bombs or 50 caliber ammunition to use for training purposes."

2. Records in this headquarters indicate that the stocks of items as tabulated below were on hand at MacDill Field on July 31, 1941, with unexpended balances of Ammunition Expenditure Authorities on that date as listed:

Item	Stocks on Hand	MacDill Fld. Unexpended Balance	3d Air Force Unobligated Expenditure Balance
Bomb, demolition, 100-lb	556	162	446
Cartridge, ball, cal..50	30,000	0	10,000
Cartridge, ball & tracer (4-1), cal..50	29,300	8,450	58,400

3. Your comments are requested.

By Command of Lieutenant General EMMONS:

M M Brice
M. M. Brice,
Major, A. G. D.,
Asst Adjutant General

Rec. Hq. 3rd A. F.
SEP 29 1941

Q. M. C. Form 355 (Old Form 403)
Approved December 1, 1933

- 3 -

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IN REPLY REFER TO

WAR DEPARTMENT

401 (8-22-41) 4th Ind. (K-4)

HEADQUARTERS 3rd AIR FORCE, Tampa, Florida, [illegible] 30 1941
To: Commanding General, Air Force Combat Command, Bolling Field, D.C.

1. Because of the limited amount of high explosive bombs and caliber .50 ammunition available at MacDill Field and the instructions received by the Commanding General of the 3rd Wing to be prepared for a secret project directed by higher authority during the latter part of June, 1941, the 3rd Wing Commander directed that no demolition bombs or caliber .50 ammunition be expended for any training purposes. This decision was also believed desirable because of War Department instructions to restrict the issue of demolition bombs and caliber .50 ammunition from depots. It was deemed desirable to conserve the supply on hand until the arrival of additional bombs and ammunition for the secret project.

2. Meanwhile shipment of demolition bombs for the secret project mentioned in paragraph 1 above, has been received. Restrictions against the use of training allotment of 100 pound demolition bombs and .50 caliber ammunition have been rescinded at MacDill Field.

For the Commanding General:

R

FRANCIS M. BRADY
Colonel, Air Corps,
Acting Chief of Staff.

AIR FORCE

OCT 2 1941 9 04 AM

Q. M. C. Form 556 (Old Form 401)
Approved December 1, 1922

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8 Jan. & 20 June 1974
By JSJ/HM LC; Date 3-10-77

IN REPLY REFER TO

WAR DEPARTMENT

ACC 471.88 (8-22-41) 5th Ind. (K-28)

HEADQUARTERS AIR FORCE COMBAT COMMAND, Bolling Field, D.C., October 8, 1941
To: The Chief of the Air Corps, Washington, D. C.

HQ AFCC: RM (INITIALS)

1. Reference paragraph 1, 4th Indorsement above, for the same reasons this headquarters suspended the use of three hundred pound and heavier demolition bombs for training and demonstration pending the establishment of an ammunition war reserve for this command, requested in letter AF 471.88 (6-12-41), this headquarters, June 12, 1941, subject "War Reserve Ammunition Storage," to the Adjutant General.

2. Request of this headquarters for credits for demolition bombs larger than three hundred pound for training have not been granted by the War Department.

3. Ammunition credits to this command for cal. .50 ammunition have been suspended by the War Department in secret radio from the Chief of Ordnance, dated June 5, 1941, to this headquarters.

For the Commanding General:

C. W. [illegible]
Brigadier General, G.S.C.,
Chief of Staff

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Q. M. C. Form 366 (Old Form 455)
Approved December 1, 1938
A10-9(11-a)A-2705

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By JSJHrl NLC Date 5-10-77

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733

SUBJECT: Munitions Production for the Army Air Forces.

AG 471 (10-16-41)MC-D 2nd Ind. JHH/acg-1712

War Department, A.G.O., November 7, 1941. To: Under Secretary of War.

The Secretary of War directs that this correspondence be referred to you as a matter of primary interest. With reference to Paragraph 2, preceding 1st Indorsement, the following is submitted:

a. The Chief of Ordnance has been advised of the overall Army requirements in TNT by means of the current expenditure program.

b. Action was taken at the request of the Chief of Ordnance to secure from the Navy Department the requirements of the Navy and Marine Corps in all items normally procured by these services from the War Department. The Navy requirements in TNT were forwarded to the Chief of Ordnance in July 1941.

c. The quantities of TNT required by Defense Aid either in bulk or in loaded ammunition and bombs are forwarded to the Chief of Ordnance by means of approved requisitions as rapidly as such requirements are made known to the War Department.

CARL ROBINSON

Adjutant General.

COPIES TO: Chief of Army Air Forces,
ref. his basic memo to
A.C.of S., G-4, 10-16-41,
w/cy 1st Ind.
Chief of Ordnance, ref.
his 1st Ind., OO 471.86/1315
Attn: Ind. Ser., Amm. Div.,
10-29-41.

- 4 -

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AG 471 (10) B

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DOD Ltrs.
8 Jan. & 20 June 1974
By JSHH LC Date 3-10-77

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OO 471.86/1315
Attn: Ind. Ser., Amm. Div. 1st Ind. Harris/de

War Department, Ordnance Office, Washington, D. C., October 29, 1941.
To: Assistant Chief of Staff, G-4.

1. Forwarded, concurred in.

2. At no time has this office been advised of the overall picture in regard to the requirement for TNT, taking into consideration the requirement of the U. S. Government, both Army and Navy, and that TNT which will be diverted to other governments. It must be evident, therefore, that forward planning is limited to the information available. While steps have been taken to produce those quantities needed by the Army, Navy and Air Corps, by the completion of new facilities, it should be understood that any TNT diverted from this program will defer the date when we may expect to have loaded ammunition in the required amounts. At the present time, it is believed that new TNT plants cannot be constructed and brought into operation in less than fifteen months, and, even worse is the picture in regard to ammonia and toluol required as raw materials in such a program. Ammonia plants will take from eighteen to twenty-four months to construct, and toluol plants will require not much less time than these figures.

3. It can be seen, therefore, that further new plant construction cannot aid in the situation in the next year. Accelerated completion of presently-authorized facilities will probably aid materially. It is estimated that two to three months could be cut from the construction period with sufficiently high priorities, or preferably with allocation of the major equipment. High priorities now assigned to other projects for the Army, Navy, and Defense Aid are serving to delay construction of TNT facilities, while, also, high priorities from these same organizations for TNT are demanding production from the facilities thus delayed.

4. It is desired to emphasize that allocation of critical items for plants now approved and under construction, so that vital items needed at specific times can be provided to expedite the earliest and greatest possible production of TNT, appears to be the only solution to the securing of greater quantities of TNT at an earlier date than now planned.

For the Chief of Ordnance:

/s/ C. T. Harris, Jr.

C. T. HARRIS, JR.
Major General
Assistant to Chief of Ordnance
Chief of Industrial Service

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Munitions Production for the A.A.F.

DECLASSIFIED
DOD ltrs
5 Jan. & 20 June 1974
By JS/HM NC; Date 3-10-77

~~CONFIDENTIAL~~

DECLASSIFIED

877

3rd Ind.

War Department, O.U.S.W., Production Branch, November 15, 1941.
To: The Office of the Chief of the Army Air Forces, attention Brig. General Carl Spaatz, A.C.

1. Increase in the production of munitions, as related to T.N.T., is being accomplished in the immediate and long term programs as follows:

a. Immediate program: Urgent requests have been submitted to the Army and Navy Munitions Board for the improvement of priority ratings necessary to complete construction and operation of T.N.T. and auxiliary chemical facilities.

b. Future program: Two new T.N.T. plants have been initiated under "Lend-Lease" to take care of anticipated requirements.

By direction of the Under Secretary of War:

T. J. Hayes

T. J. HAYES,
Brig. General, U. S. Army,
Director, Production Branch.

Air 08 471 (20)

NO FURTHER ACTION NECESSARY
GDB

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Air 08 471 (20)

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WAR DEPARTMENT
OFFICE OF THE CHIEF OF THE ARMY AIR FORCES
WASHINGTON

DECLASSIFIED
DOD Dir.
6 Jan. & 20 June 1974
By: JSIMM LC; Date 3-10-77

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OCT 18 1947

O. O. WAR DEPT.
471.86/1315
OCT 20 1941

MEMORANDUM FOR THE ASSISTANT CHIEF OF STAFF, G-4:
(THRU The Chief of Ordnance)

Subject: Munitions Production for the Army Air Forces.

1. This Headquarters has been informally advised that the preponderance of expansion in plant facilities for producing T.N.T. and allied explosives is based on scheduled Army requirements.

2. At the same time this office has been advised by the Chief of Ordnance that only 1,600 tons of T.N.T. are available for loading in bombs for the Army Air Forces between October 1 and December 31, 1941. Scheduling of loading beyond December is indefinite owing to uncertainty of T.N.T. production and allocation.

3. Current stockage in such critical items as 300# and 500# demolition bombs is only approximately 10% and 30% of current required defense reserves.

4. It is informally reported that the Navy submits requests for T.N.T. from Army production facilities and that the Navy requests are not part of an overall Navy procurement program for which production facilities can be provided. But the Navy does recommend highest priority for their requests as submitted.

5. The Defense Aid Division has under procurement equipment for which at this time there is no overall schedule of munitions requirements. When, however, allocation is made to Russia or China, the Defense Aid Division requests corresponding munitions with the requirements placed in highest priority.

6. Intelligence reports from England indicate a continuous lessening of British ability to meet their own explosive requirements. It is not unreasonable to anticipate sizable British requests for explosives in the near future.

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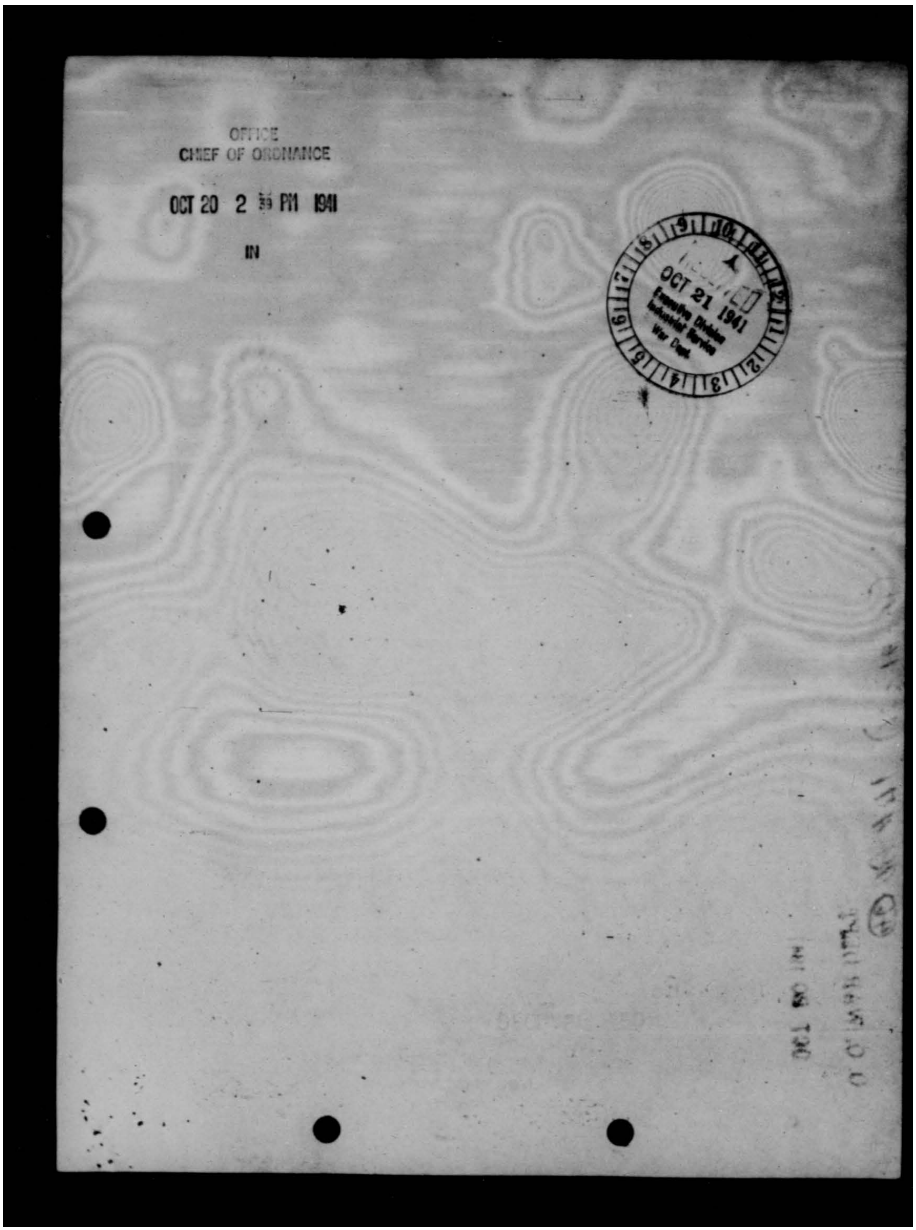

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7. In the light of the above trend, it is recommended that efforts be made to accomplish a sizable and accelerated increase in the production of munitions. It is suggested that the measure of this increase can only be estimated insofar as requirements are concerned by calling upon the Navy, the Defense Aid authorities, and the British to present the long range picture of their requirements and the production they have available to meet these requirements.

8. This correspondence is being routed through the Chief of Ordnance for confirmation of and comment on the information recorded above.

9. It is desired that the Chief of Ordnance comment on the feasibility of further plant expansion during the next eight months beyond the expansion planned at this time. The high priority of the Defense Aid, Navy, and possible British requirements indicates that the highest priority can be obtained for the added plant expansion if the further expansion is either desirable or feasible.

For the Chief of the Army Air Forces:

Carl Spaatz

CARL SPAATZ
Brig. General, Air Corps,
Chief of The Air Staff.

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Air 44471 (20)

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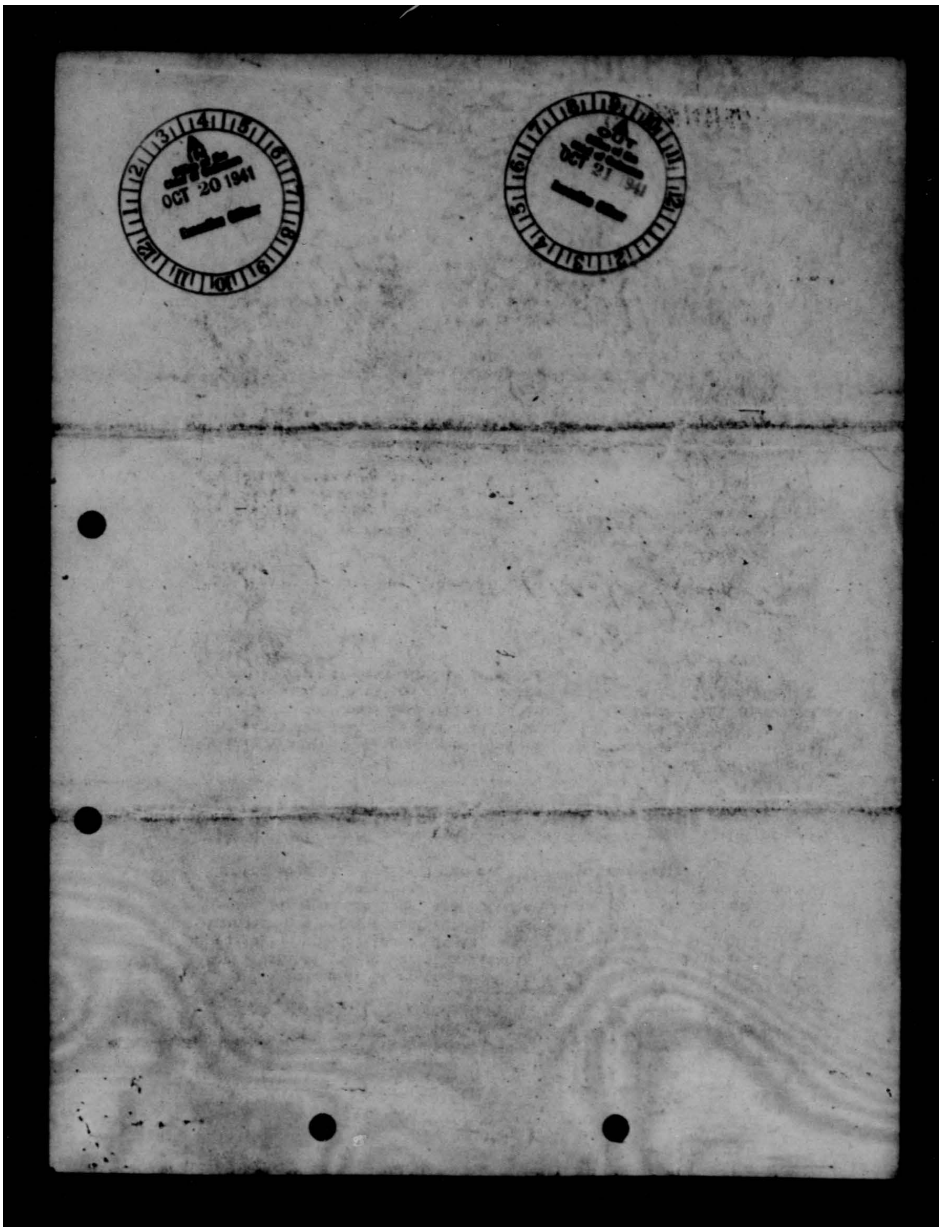

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8 Jan. & 20 June 1974
JS/HM/ic Date 3-6-77

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OO 471.86/1315
Attn: Ind. Ser., Amm. Div. 1st Ind. Harris/de

War Department, Ordnance Office, Washington, D. C., October 29, 1941.
To: Assistant Chief of Staff, G-4.

1. Forwarded, concurred in.

2. At no time has this office been advised of the overall picture in regard to the requirement for TNT, taking into consideration the requirement of the U. S. Government, both Army and Navy, and that TNT which will be diverted to other governments. It must be evident, therefore, that forward planning is limited to the information available. While steps have been taken to produce those quantities needed by the Army, Navy and Air Corps, by the completion of new facilities, it should be understood that any TNT diverted from this program will defer the date when we may expect to have loaded ammunition in the required amounts. At the present time, it is believed that new TNT plants cannot be constructed and brought into operation in less than fifteen months, and, even worse is the picture in regard to ammonia and toluol required as raw materials in such a program. Ammonia plants will take from eighteen to twenty-four months to construct, and toluol plants will require not much less time than these figures.

3. It can be seen, therefore, that further new plant construction cannot aid in the situation in the next year. Accelerated completion of presently-authorized facilities will probably aid materially. It is estimated that two to three months could be cut from the construction period with sufficiently high priorities, or preferably with allocation of the major equipment. High priorities now assigned to other projects for the Army, Navy, and Defense Aid are serving to delay construction of TNT facilities, while, also, high priorities from these same organizations for TNT are demanding production from the facilities thus delayed.

4. It is desired to emphasize that allocation of critical items for plants now approved and under construction, so that vital items needed at specific times can be provided to expedite the earliest and greatest possible production of TNT, appears to be the only solution to the securing of greater quantities of TNT at an earlier date than now planned.

For the Chief of Ordnance:

OCT 29 1941
33689

C T Harris

C. T. HARRIS, Jr.
Major General
Assistant to Chief of Ordnance
Chief of Industrial Service

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G-4 DIVISION
WAR DEPT GEN STAFF

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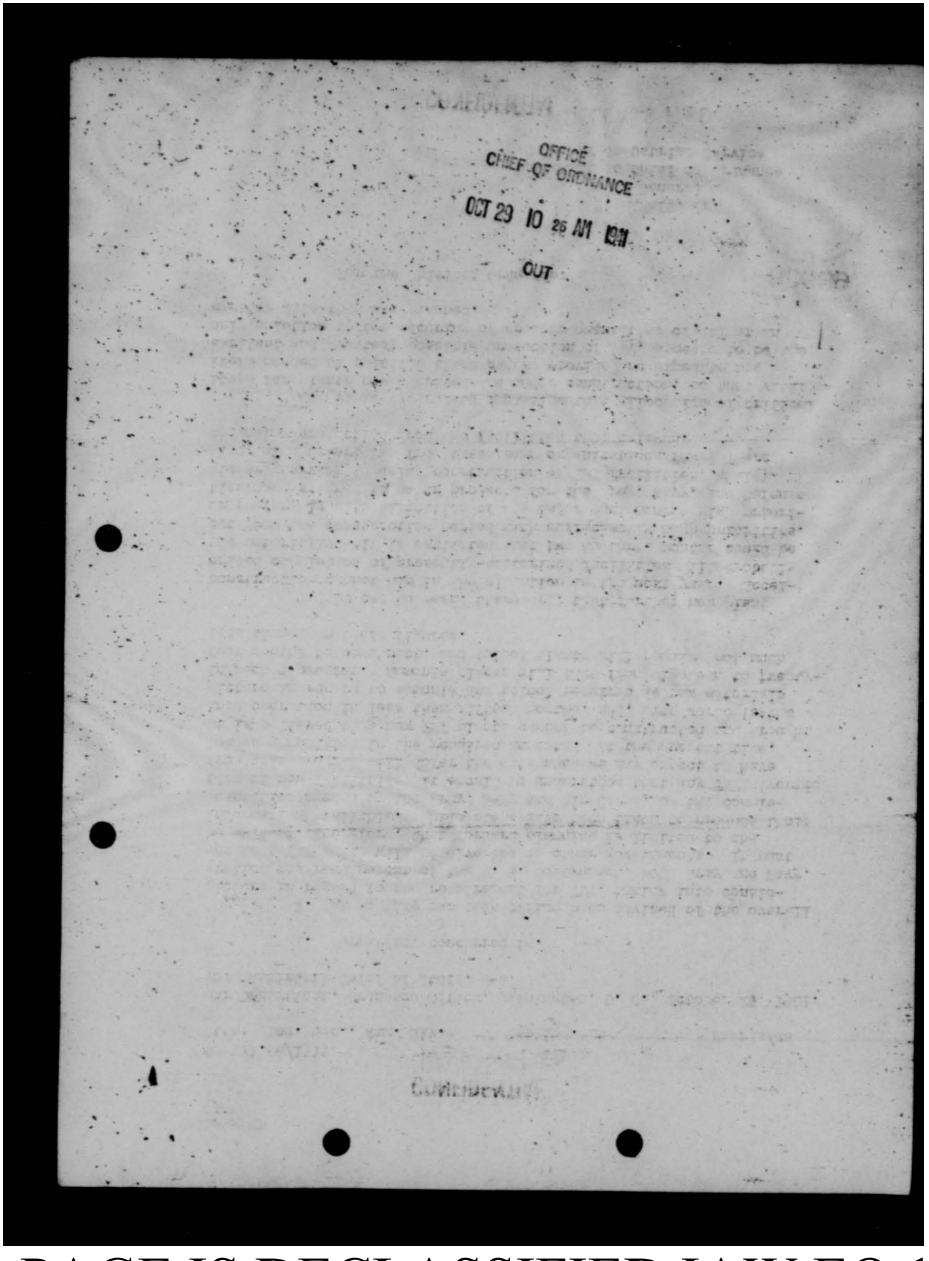

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DOD ltrs.
8 Jan. & 20 June 1974
By: JSHM LC. Date 3-10-77

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SUBJECT: Munitions Production for the Army Air Forces.

AG 471 (10-16-41)MC-D 2nd Ind. JMH/acg-1712

War Department, A.G.O., November 7, 1941. To: Under Secretary of War.

The Secretary of War directs that this correspondence be referred to you as a matter of primary interest. With reference to Paragraph 2, preceding 1st Indorsement, the following is submitted:

a. The Chief of Ordnance has been advised of the overall Army requirements in TNT by means of the current expenditure program.

b. Action was taken at the request of the Chief of Ordnance to secure from the Navy Department the requirements of the Navy and Marine Corps in all items normally procured by those services from the War Department. The Navy requirements in TNT were forwarded to the Chief of Ordnance in July 1941.

c. The quantities of TNT required by Defense Aid either in bulk or in loaded ammunition and bombs are forwarded to the Chief of Ordnance by means of approved requisitions as rapidly as such requirements are made known to the War Department.

NOV 10 1941
WAR DEPARTMENT
OFFICE OF THE
UNDER SECRETARY

RECEIVED
NOV 12 1941
PROCUREMENT BRANCH
U. S. W.

Carl Robinson
Adjutant General.

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000 Hrs.
6 Jan. & 30 June 1974
By JSH/ LC; Date 3-10-77

Ammunition Requirements.

471

(19)

OS. AAF 1941
C/AS C/AC 11/5

AAF/A-4
MFS/mkh

1. Item 4 is approved as a basis for substitution of incendiary for tracer ammunition production.

Incl. n/c

OS
C/AS

NOV 10 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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DOD ltrs.
8 Jan. & 20 June 1974
By: [illegible] LC; Date: 3-10-77

Subject: Ammunition Requirements

1.	Material Division (4-E-1)	Chief, Air Staff thru Chief, Air Corps	1941 10/13	1. Forwarded for information as to whether the proposed adjustment to give up tracer ammunition in order to obtain incendiary ammunition is satisfactory.
				O.P.E. Chief, Materiel Division
	1 Incl. Immed. Action letter fr. Ordnance, dated 10/7/41			
2.	OCAC	AAF C/AS	1941 10/14	1. Forwarded for information requested in No. 1, above.
				Incl. N/C — M. S. F. Executive
3.	AAF C/AS	Hq.AFCC	10/16	For comment and recommendation. AAF/A-3 HSV-ds
				Incl. n/c — CS C/AS
4.	Hq.AFCC	AAF C/AS	10/28	1. It is recommended that the required ratio for the War Reserve be retained as indicated in par. 1, basic letter, i.e., 50% A.P., 30% incendiary, and 20% tracer. 2. Until facilities can be provided to accomplish the above it is recommended that production of tracer, both .30 and .50 caliber not fall below 10% of total. 3. It is recommended that immediate production of incendiary ammunition be begun within the limits of par. 2, supra.
				Incl. n/c — C.W.R. Chief of Staff

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DOD Ltr.
5 Jan. & 30 June 1974
By JS/MH LC Date 3-10-77

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WAR DEPARTMENT
Office of the Chief of Ordnance
Washington,

October 7, 1941

Subject: Ammunition Requirements

To: The Chief of the Air Corps

1. By reference to minutes of the Air Corps Technical Committee concerning revision of Air Corps requirements for ammunition (amendement a - Ordnance requirements) September 19, 1941, which has been approved by the Secretary of War, it is noted that present schedules call for 50% armor piercing, 30% incendiary, and 20% tracer for use in machine guns. The former requirement was 80% armor piercing and 20% tracer.

2. From the foregoing it will be seen that there has been no reduction in the requirement for tracer ammunition following the introduction of the incendiary type. The production of incendiary ammunition involves the use of machines such as are used for making tracer bullets, and unless there is a reduction in present requirements for tracer cartridges it will not be possible to initiate large scale production of incendiary until new facilities are available. This will require a year or more.

3. Information received from the British is that they are willing to give up two tracers to get one incendiary.

4. Facilities available or now being established will result in peak production of approximately 5.5 million caliber .30 and 10.3 million caliber .50 tracer cartridges per month for Air Corps account during the next year.

5. The Ordnance Department has current requirements for incendiary ammunition for Air Corps use totaling approximately 74.8 million caliber .30 and 250 million caliber .50 complete rounds.

6. If immediate production of incendiary ammunition is desired, it will be necessary to adjust the demand during the next twelve months as follows:

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Gain Incendiaries	Lose Tracers
Caliber .30--36 million	72 million
Caliber .50--19 million	38 million

7. Information is requested as to whether such a reduction, pending the erection of new facilities, will be acceptable.

C. T. HARRIS, Jr.,
Major General,
Acting Chief of Ordnance.

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8 Jan. & 20 June 1974
By JS/MM LC, Date 3-10-77

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OFFICE OF THE CHIEF OF THE AIR CORPS
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ROUTING AND RECORD SHEET

Note.--A line will be drawn across sheet after each comment.

File No. _____

Tally No. _____

Subject: Second Supplemental Estimate for Training Ammunition, Fiscal Year 1942.

NO.	FROM	TO	DATE	COMMENTS
3.	(Continued)			3. The above mentioned rough draft was informally coordinated with Colonel Ferson, Colonel Schneider and Major Everest before being transmitted to Colonel Earnest.

471 (15) B

M. S. F.
Brig. Gen., A.C.
Executive.

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V-4071, AC. Rev. 8/1/41

0-2165 TFO (10-23-41) XF-86

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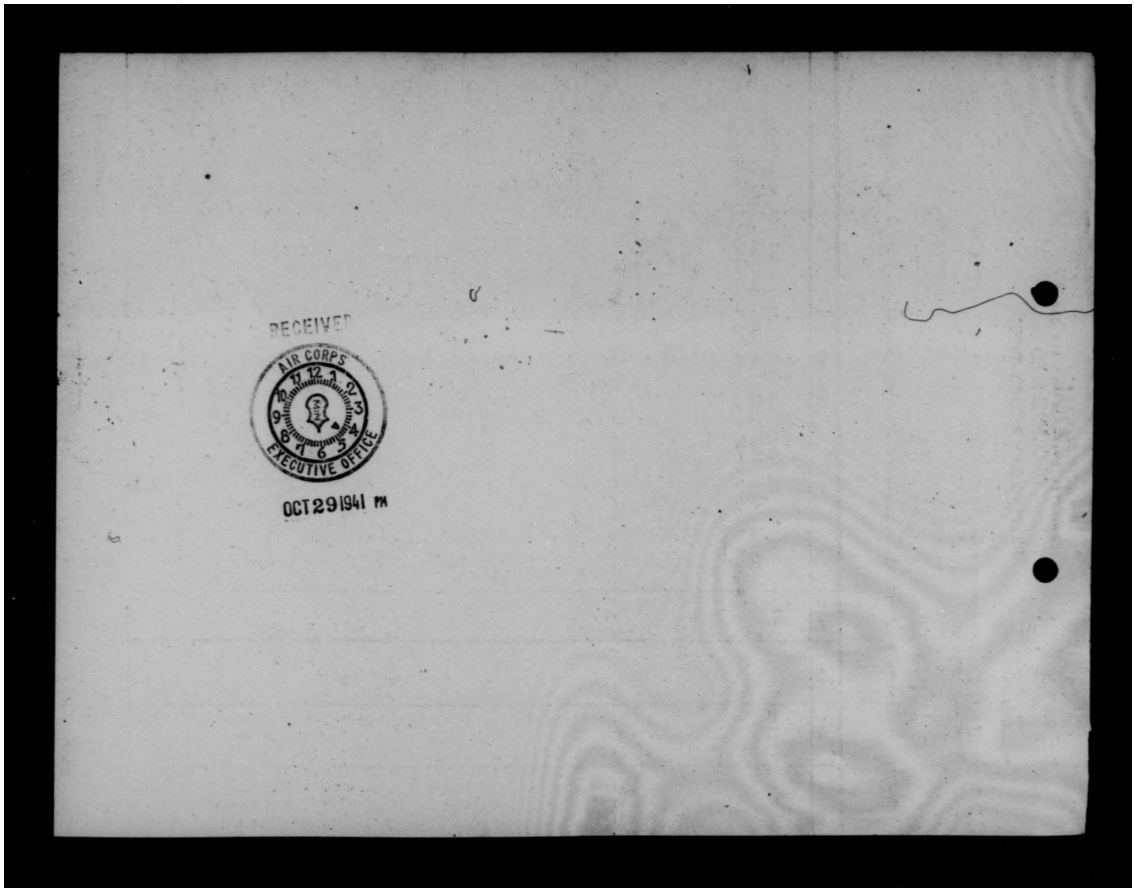

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8 Jan. & 20 June 1974
By: JS/HH LC; Date 3-10-77

WFC/mlp (3-C10)

3. CH.A.C. Chief 1941
A.A.F. 10/27

1. Reference G-3 Memo, quoted in Comment #1 above, requesting supplementary estimates (1942) of ammunition requirements for

(a) All National Guard Units.
(b) Air Corps Expansion (49,090 men)

this information is being included in a special study, "Changes in AR 775-10", now being completed.

2. In compliance with request contained in Comment #1 above, a preliminary estimate in rough draft, of the above requirements was submitted to Colonel Earnest (G-3) on October 9th, to meet the deadline for estimates set forth in basic letter, BOWD 111/Military, dated September 27, 1941, subject "Second Supplemental Estimate, FY 1942."

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6 Jan. & 20 June 1974
By JS/MM LC. Date 3-10-77

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HEADQUARTERS ARMY AIR FORCES

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Room 4286

1/4

ROUTING AND RECORD SHEET

(To be filed with correspondence)

Note.—A line will be drawn across sheet after action by each office concerned.

SUBJECT: Second Supplemental Estimate for Training Ammunition, Fiscal Year 1942.

X-4143

NO.	FROM	TO	DATE	DATA AAF/A-3 FPE-de
1.	AAF C/AS	OCAC C/AC	1941 10/4	1. Memorandum from G-3 to the Chief of the Army Air Forces, dated September 30, 1941, Subject: Training ammunition to be included in Second Supplemental Estimate fiscal year 1942, was delivered to Major W. F. Centner of your office, this date in order to expedite necessary action. It is desired that the information required by the above memorandum be made available to this Headquarters not later than twelve (12) noon October 7. C.P.C. C.S. C/AS
3.	CH.A.C.	Chief A.A.F.	1941 10/27	WFC/mlp (3-C10) 1. Reference G-3 Memo, quoted in Comment #1 above, requesting supplementary estimates (1942) of ammunition requirements for (a) All National Guard Units. (b) Air Corps Expansion (49,090 men) this information is being included in a special study, "Changes in AR 775-10", now being completed. 2. In compliance with request contained in Comment #1 above, a preliminary estimate in rough draft, of the above requirements was submitted to Colonel Earnest (G-3) on October 9th, to meet the deadline for estimates set forth in basic letter, BOWD 111/Military, dated September 27, 1941, subject "Second Supplemental Estimate, FY 1942."

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Form No. 4071, AC. Rev. 8/1/41

C-2161780 (10-27-41)

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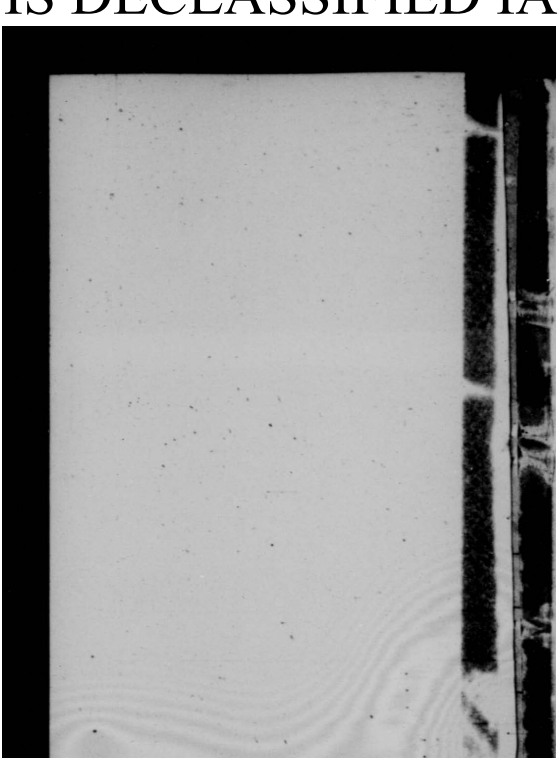

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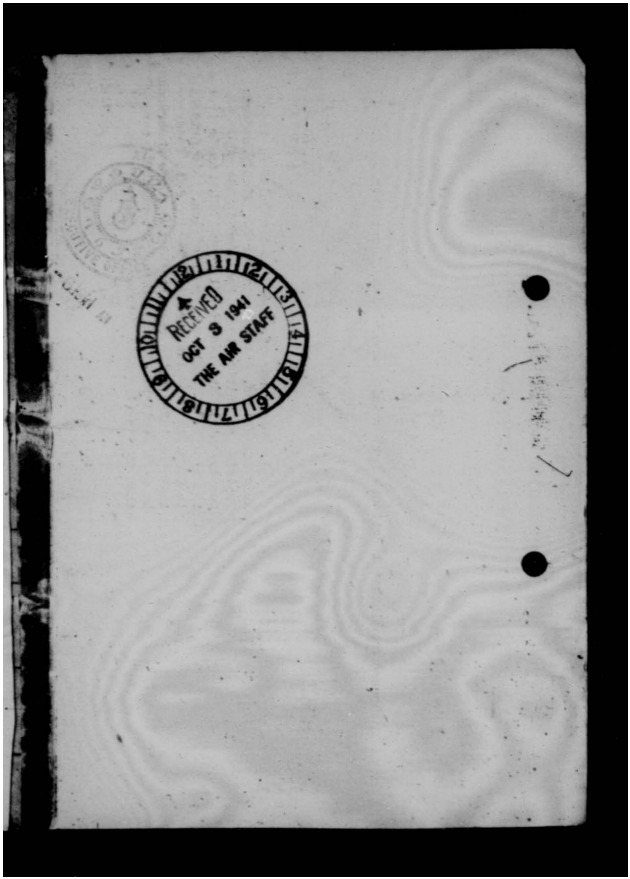

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1st Ind. (3B-50)

War Department, Office, Chief of the Army Air Forces, Washington, D. C.
To The Adjutant General. SEP 16 1941

1. Request favorable consideration of the basic request.

2. The present ammunition allowances prescribed by AR 775-10, January 1, 1941, and further reduced by 3% 1/3% are wholly inadequate for the training of Air Corps Combat Crews in the performance of their basic missions, that is, fighting in the air.

For the Chief of the Army Air Forces

WILLIAM W. DICK
Lt. Col., A.G.D.
Air Adjutant General

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6 Jan. & 20 June 1974
By DAM LC. Date 3-10-77

Wright Field Requisition No. 42-9 Calling for Ammunition.

AAF/A-4
JFW/cmd

5 AAF C/AC 1941
C/AS 12/13

1. Without further detailed discussion, ammunition and bomb requirements versus production are in critical category as mentioned several times and it is entirely possible for Wright Field to conserve by coordination at Eglin Field and otherwise;

Dispatched
DEC 27 1941
AAG

2. Attention is invited to item 3 on R&R sheet AAF,C/AS to C/AC subject, "Bombs and Ammunition for langley Field" 11/19/41. Action requested in paragraph 4 thereof has apparently not yet been effected. It is requested that this be accomplished at the earliest practicable date so that the requirements for [illegible] Air [illegible] can be balanced

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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Wright Field Requisition No. 42-9 Calling for Ammunition.

AAF/A-4
JPW/cmd

S Comp.	AAF C/AS	C/AC	1941 12/13	against available stocks on hand and being procured. In this connection, attention is invited to underlying copy of action taken on Wright Field Requisition 42-9.

Incls:
Cy Memo A-4 to G-4
Cy ltr to C/AC frm Col. Sorensen CS
4/11/41 w/Outline and pgs 3&4 of C/AS
Chart.

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	
	JPW					[illegible]					

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Wright Field Requisition No. 42-9 Calling for Ammunition.

AAF/A-4
JFW/cmd

5 AAF C/AC 1941 against available stocks on hand and being procured. In this
Cont. C/AS 12/13 connection, attention is invited to underlying copy of action
taken on Wright Field Requisition 42-9.

Incls:
Cy Memo A-4 to G-4 w/
Memo G-4/28664-120 w/Incl,
Ind, & Am.St. of St.w/dramm.
Cy ltr to C/AC frm Col.Sorensen
4/11/41 w/Outline & 2 charts.

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	

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DOD ltrs.
6 Jan. & 20 June 1974
By: JSHM LC Date 3-10-77

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December 18, 1941.

MEMORANDUM FOR THE ASSISTANT CHIEF OF STAFF, G-4:

Subject: Wright Field Requisition No. 42-9
Calling for Ammunition.

1. Reference the foregoing on the subject of Wright Field Requisition No. 42-9 for ammunition and bombs recommend as follows:

Item (1) Shipment in increments over period of 3-4 months or less if practicable.

Item (2) Shipment in increments over period of 3-4 months or less if practicable.

Item (3) Shipment of 80% practice bombs as early as practicable.

Item (4) Shipment of 80% practice bombs as early as practicable.

Item (5) Shipment of 80% practice bombs as early as practicable.

Item (6) Shipment of 20% practice bombs as early as practicable.

Item (7) Shipment of 20% practice bombs as early as practicable.

Item (8) Shipment in increments over period of 3-4 months or less if practicable.

Item (9) Shipment of 2,000 rds as early as practicable.

2. Disposition of remaining items on requisition will be advised when estimated requirements are received from the Chief of the Air Corps for the period January - June, inclusive, 1942.

Incls:
Memo G-4 to C/AAF, 8/11/41 w/ ltr frm C/AC to C/Ord, 8/12/41 w/1st Ind & 14 cy Am. St. of St. 8/21/41 & WF Req. 42-9,8/5/41.

For the Chief of the Air Staff;

Edgar P. Sorenson,
Colonel, Air Corps,
Assistant Chief of the Air Staff, A-4.

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Wright Field Requisition No. 42-9 Calling for Ammunition.

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DOD Rts.
8 Jan. & 30 June 1974
By JSHM LC Date 3-10-77

2. C/AC Matl. 9/18/ B3H.M.

3. OCAC AAF/A-4 1941
Mat. THRU 12-8
C/AC

1. Attached, in accordance with request contained in paragraphs 2. and 4. of the first entry, is a program and the monthly requirements of ammunition requisitioned by Requisition No. 42-9.

2. With respect to the defense of the ammunition required for both Wright Field and Eglin Field, your attention is invited to R&R from this Division to your office under date of October 8, 1941, subject: "Bombs and Ammunition for Langley Field," The need for thoroughly testing equipment from all angles, such as operation, maintenance and tactics, cannot be over-stressed, particularly in new type equipment which the Service has never before been provided.

3. Again it is pointed out that although it may appear that Wright Field and Eglin Field duplicate tests, this is not the case. Wright Field tests are primarily interested in proper functioning of the equipment, and every effort is made to iron out all the operational troubles before the airplane is turned over to Eglin Field to determine its suitability for tactical use. Tremendous delays would result if the airplanes and equipment were immediately turned over to Eglin Field without first thoroughly ironing out all bugs. Furthermore, Wright Field has close contact with the contractors and can expedite the correction of equipment directly, whereas if these difficulties were first encountered at Eglin Field, various devious means of communication would be necessary.

4. Large quantities of ammunition as indicated may also be accounted for by the fact that equipment is not always right on the first trial, and therefore, repeated tests must be accomplished.

5. It is most important that the ammunition requirements of both Wright Field and Eglin Field be approved immediately, in order that the development and test program will not be interrupted. At the present time there are airplanes both at Wright Field and Eglin Field awaiting tests which are held up pending the availability of ammunition.

/s/

Incls: n/c Added Incls: Ltr, 6-11-41 w/Incls. O. P. E. Chief, Materiel Div.

4 OCAC AAF 12/10 Concur in Item 3.
Exec. C.AS
Att.
A-4

/s/ M. E. G.
Asst. Executive.

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THE AIR CORPS BOARD
Maxwell Field, Ala.

(8)

11 April 1941.

SUBJECT: Accelerated Service Test of Aircraft Armament.

TO: The Chief of the Air Corps, Washington, D.C.

1. The Air Corps at the present time devotes considerable effort and energy to the conduct of accelerated service tests designed to bring to immediate light any structural or flight operational defects that may exist in new type aircraft. So that these defects may be corrected before the airplanes reach the tactical units in quantity, current practice appears to be to utilize the first three production airplanes for the test.

2. It is the considered opinion of the Air Corps Board that there is a pressing need for the establishment of a parallel system of accelerated armament service tests to bring to immediate light any defects or weaknesses in the bombing and gunnery equipment as installed that reduce the potential offensive and defensive fire capabilities of the airplane and that these tests should be initiated as soon as the major defects developed during the engineering accelerated service tests have been remedied.

3. In other words, the Board's theory is that combat airplanes must be able to fly and fight. The engineering accelerated service tests conducted at Wright and Patterson Fields insure the detection and correction of the defects which interfere with flight, or with the maintenance of flight condition. The armament accelerated service tests which the Board urges are to insure the detection and correction of defects which interfere with the airplane's utility as a fighting weapon or with the maintenance of the fighting elements -- bombing and gunnery equipment.

4. Mere determination of the fact that bombs can be dropped or guns fired from the airplane -- a purely mechanical functioning test of certain of the elements of the fighting equipment -- is considered no more of an indication of whether or not an airplane can fight effectively or can be readily maintained in fighting condition than is the ferry flight of the first article to the Materiel Division for inspection an indication that it is suitable for combat flight operations and can be maintained in flight condition satisfactorily by the tactical units in the field. Attached hereto as Inclosure 1 is a general outline of the scope of the armament inspection and test program considered desirable for determination of the combat suitability of new armament installations.

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5. It is noted that Military Attache Report No. 42072, London, January 5, 1941, (Great Britain, I. G. No. 9570) outlines a system of combat equipment test and inspection which closely parallels that advocated by the Board. It would appear that the British with combat experience right on the designer's and manufacturer's doorstep nevertheless feel compelled to subject all new installations to a critical examination to detect and eliminate or correct conditions that reduce the effectiveness of combat equipment.

6. Past Air Corps experience has also been that defects occur in the design or installation of armament equipment that are not developed until the airplanes are put to intensive combat use. No records are immediately available listing these defects, but the following are cited from memory:

a. With one type bomber an inherent defect in the bomb release mechanism caused "hung" bombs. As a result of this defect, an 1100-lb. demolition bomb on one occasion was released 1/4 mile from the target and on another, came off just at the moment of landing. An armament accelerated service test more than likely would have disclosed this defect with the result that it could have been corrected before the airplanes were turned to service.

b. With another type bomber, it was impossible to close the bomb bay doors when a 1100-lb. bomb was carried and it was impossible to load a 600-lb. bomb on one of the stations listed for 600-lb. bombs.

c. With a third type bomber, the automatic flight control equipment was improperly installed when the airplanes were turned to service; likewise, bomb hoisting equipment was unsatisfactory and instructural weakness developed in gun positions after extensive firing. All of these defects should have shown up in armament accelerated service tests and, therefore, could have been remedied before the airplanes came off the production line in quantity.

7. The Air Corps Board, therefore, submits the following recommendations and urges that they be immediately approved and placed in effect.

a. That the Air Corps establish immediately a system of armament accelerated service tests, to parallel the current system of engineering accelerated service tests.

b. That the purpose of the armament accelerated service tests be to develop any defects, weaknesses or unsatisfactory condition relating to the armament equipment of the airplane by a program of inspection and intensive air use of that equipment.

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c. That the 23rd Composite Group be charged with the routine conduct of all armament accelerated service tests.

d. That the next three articles available after the three assigned the engineering accelerated service tests be assigned to the 23rd Group for the conduct of the armament tests.

e. That the armament tests be initiated immediately after the major defects developed during the engineering tests have been remedied.

f. That the Air Corps Board and the Commanding Officer of the 23rd Composite Group be directed to submit a joint plan for the conduct of the armament accelerated service tests.

/s/

EDGAR P. SORENSEN,
Colonel, Air Corps,
Director

1 Incl.
Outline.

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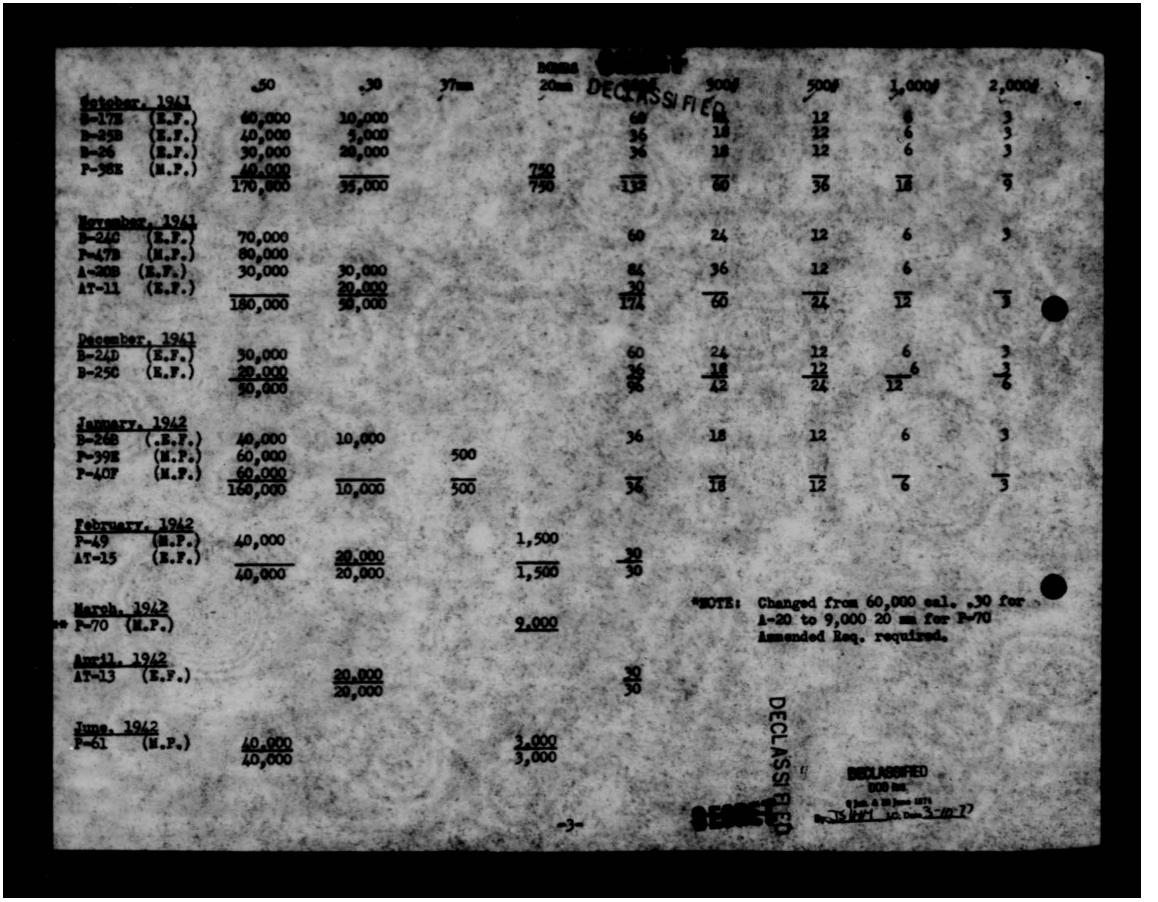

	.50	.30	37mm	20mm	300#	500#	1,000#	2,000#
October, 1941								
B-17E (E.F.)	60,000	10,000			60	12	6	3
B-25B (E.F.)	40,000	5,000			36	12	6	3
B-26 (E.F.)	30,000	20,000			36	12	6	3
P-38E (M.P.)	40,000			750				
	170,000	35,000		750	132	60	36	18
November, 1941								
B-24C (E.F.)	70,000				60	24	12	6
P-47B (M.P.)	80,000							
A-20B (E.F.)	30,000	30,000			84	36	12	6
AT-11 (E.F.)		20,000			30			
	180,000	50,000			174	60	24	12
December, 1941								
B-24D (E.F.)	30,000				60	24	12	6
B-25C (E.F.)	20,000				36	18	12	6
	50,000				96	42	24	12
January, 1942								
B-26B (E.F.)	40,000	10,000			36	18	12	6
P-39E (M.P.)	60,000		500					
P-40F (M.P.)	60,000							
	160,000	10,000	500		36	18	12	6
February, 1942								
P-49 (M.P.)	40,000			1,500				
AT-15 (E.F.)		20,000			30			
	40,000	20,000		1,500	30			
March, 1942								
P-70 (M.P.)				9,000				
April, 1942								
AT-13 (E.F.)		20,000			30			
		20,000			30			
June, 1942								
P-61 (M.P.)	40,000			3,000				
	40,000			3,000				

*NOTE: Changed from 60,000 cal. .30 for A-20 to 9,000 20 mm for P-70 Amended Req. required.

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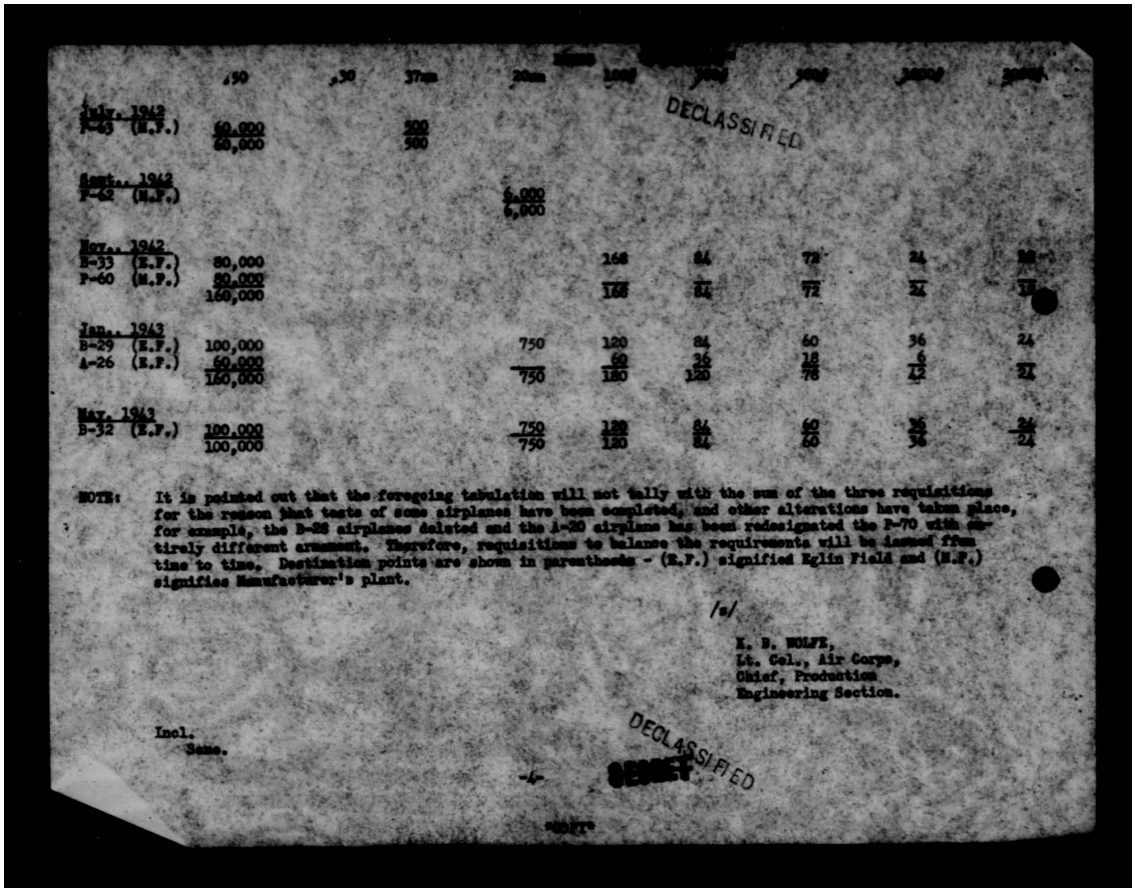

	.50	.30	37mm	20mm	1000	1000	1000	1000	2000
July, 1942									
P-43 (E.F.)	40,000		300						
	40,000		300						
Sept., 1942									
P-42 (M.F.)				6,000					
				6,000					
Nov., 1942									
B-33 (E.F.)	80,000				168	84	72	24	12
P-60 (M.F.)	80,000								
	160,000				168	84	72	24	12
Jan., 1943									
B-29 (E.F.)	100,000			750	120	84	60	36	24
A-26 (E.F.)	60,000				60	36	18	6	
	160,000			750	180	120	78	42	24
May, 1943									
B-32 (E.F.)	100,000			750	120	84	60	36	24
	100,000			750	120	84	60	36	24

NOTE: It is pointed out that the foregoing tabulation will not tally with the sum of the three requisitions for the reason that tests of some airplanes have been completed, and other alterations have taken place, for example, the B-26 airplanes deleted and the A-20 airplane has been redesignated the P-70 with entirely different armament. Therefore, requisitions to balance the requirements will be issued from time to time. Destination points are shown in parentheses - (E.F.) signified Eglin Field and (M.F.) signifies Manufacturer's plant.

/s/

K. B. WOLFE,
Lt. Col., Air Corps,
Chief, Production
Engineering Section.

Incl.
Same.

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DOD Dir
By JS NHP NC Date 3-10-77

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AAF/A-4
JPW/emd
Written December 17, 1941.

MEMORANDUM FOR THE ASSISTANT CHIEF OF STAFF, G-4:

Subject: Wright Field Requisition No. 42-9
Calling for Ammunition.

1. Reference the foregoing on the subject of Wright Field Requisition No. 42-9 for ammunition and bombs recommend as follows:

Item (1) Shipment in increments over period of 3-4 months or less if practicable.

Item (2) Shipment in increments over period of 3-4 months or less if practicable.

Item (3) Shipment of 50% (practice bombs) as early as practicable.

Item (4) Shipment of 50% (practice bombs) as early as practicable.

Item (5) Shipment of 50% (practice bombs) as early as practicable.

Item (6) Shipment of 50% (practice bombs) as early as practicable.

Item (7) Shipment of 50% (practice bombs) as early as practicable.

Item (8) Shipment in increments over period of 3-4 months or less if practicable.

Item (9) Shipment of 5,000 rds as early as practicable.

Dispatched DEC 20 1941 AAF

2. Disposition of remaining items on requisition will be advised when estimated requirements are received from the Chief of the Air Corps for the period January - June, inclusive, 1942.

Incls:
1. Memo, C/S, W.D., 12/17/41.
2. Ltr, Chief of Air Corps, to C/S, W.D., 12/11/41 w/1st Ind & 14 cy Am. Req. of 50. 8/21/41 & WF Req. 42-9, 8/8/41.

HEADQUARTERS, ARMY AIR FORCES - Office of the Chief of the Air Staff										
Chief of Staff	Secretary	A-1	A-2	A-3	A-4	A-WPD	A-Insp.	Budget	Statistics	

Major P. Sevenson,
Colonel, Air Corps,
Assistant Chief of the Air Staff, A-4.

AAF-39

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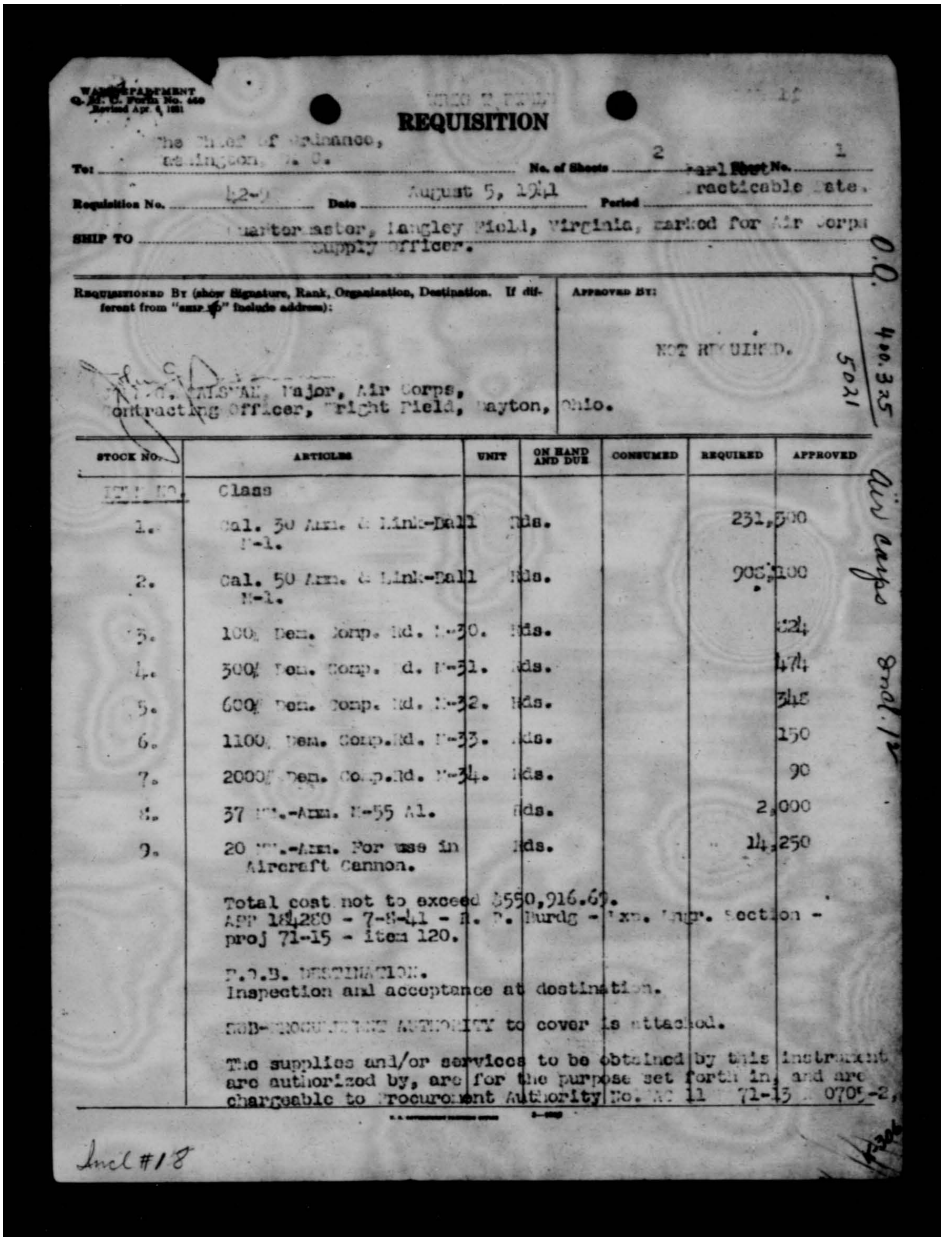

WAR DEPARTMENT
O. of M. Form No. 460
Revised Apr. 4, 1941

REQUISITION

To: The Chief of Ordnance, Washington, D. C.

No. of Sheets 2 — Serial Sheet No. 1

Requisition No. 42-0 — Date August 5, 1941 — Period Practicable Date.

SHIP TO Quartermaster, Langley Field, Virginia, marked for Air Corps Supply Officer.

O.O. 400.325 5021

REQUISITIONED BY (show Signature, Rank, Organization, Destination. If different from "SHIP TO" include address):

[illegible], Major, Air Corps, Contracting Officer, Wright Field, Dayton, Ohio.

APPROVED BY:

NOT REQUIRED.

STOCK NO.	ARTICLE	UNIT	ON HAND AND DUE	CONSUMED	REQUIRED	APPROVED
ITEM NO.	Class					
1.	Cal. 30 Arm. & Link-Ball M-1.	Rds.			231,500	
2.	Cal. 50 Arm. & Link-Ball M-1.	Rds.			903,100	
3.	100% Dem. Comp. Rd. M-30.	Rds.			324	
4.	300% Dem. Comp. Rd. M-31.	Rds.			174	
5.	600% Dem. Comp. Rd. M-32.	Rds.			348	
6.	1100% Dem. Comp. Rd. M-33.	Rds.			150	
7.	2000% Dem. Comp. Rd. M-34.	Rds.			90	
8.	37 M.M.-Arm. M-55 Al.	Rds.			2,000	
9.	20 M.M.-Arm. For use in Aircraft Cannon.	Rds.			14,250	

Air Corps 8nd. 12

Total cost not to exceed $550,916.69.
APP 18,280 - 7-8-41 - R. D. Durdg - Exp. Engr. Section - proj 71-15 - item 120.

F.O.B. DESTINATION.
Inspection and acceptance at destination.

SUB-[illegible] AUTHORITY to cover is attached.

The supplies and/or services to be obtained by this instrument are authorized by, are for the purpose set forth in, and are chargeable to Procurement Authority No. AC 11 71-15 0705-2,

Incl #18

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WAR DEPARTMENT
Q. M. C. Form No. 401
Revised April 6, 1931

REQUISITION
(EXTRA SHEET)

No. 1,2-9
Sheet No. 2

STOCK NO.	ARTICLES	UNIT	ON HAND AND DUE	CONSUMED	REQUIRED	APPROVED

the available balance of which is sufficient to cover cost of same.

TRANSPORTATION: Cost of transportation, if required, is chargeable to Procurement Authority No. AC 11 P 71-07 A 0705-2. It is requested that copy of bill of lading showing cost of transportation be furnished to Budget Office, Wright Field, Dayton, Ohio, also this office.

NOTE: All shipping tickets issued against this requisition should refer to the Wright Field requisition number. Contractors should be directed to indicate Requisition number in addition to the shipping ticket number on all papers and packages for identification purposes.

It is requested that copy of shipping ticket when issued be furnished to each of the following:

1. ea. - Contracting Officer, Wright Field, Dayton, Ohio
1. ea. - Chief, Expr. Engr. Section, Wright Field, Dayton, Ohio
1. ea. - Budget Office, Wright Field, Dayton, Ohio
1. ea. - Consignee, marked for Air Corps Supply Officer.

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DOD Rts.
8 Jan. & 20 June 1974
By JS/MM LC Date 3-10-77

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AAF/A-4
JFW/emd
Written December 17, 1941.

MEMORANDUM FOR THE ASSISTANT CHIEF OF STAFF, G-4:

Subject: Wright Field Requisition No. 42-9
Calling for Ammunition.

1. Reference the foregoing on the subject of Wright Field Requisition No. 42-9 for ammunition and bombs recommend as follows:

Item (1) Shipment 50% per in increments over period of 3-4 months or less if practicable.

Item (2) Shipment 50% per in increments over period of 3-4 months or less if practicable.

Item (3) Shipment of 50% (practice bombs) as early as practicable.

Item (4) Shipment of 50% (practice bombs) as early as practicable.

Item (5) Shipment of 50% (practice bombs) as early as practicable.

Item (6) Shipment of 50% (practice bombs) as early as practicable.

Item (7) Shipment of 50% (practice bombs) as early as practicable.

Item (8) Shipment in increments over period of 3-4 months or less if practicable.

Item (9) Shipment of 2,000 rds as early as practicable.

2. Disposition of remaining items on requisition will be advised when estimated requirements are received from the Chief of the Air Corps for the period January - June, inclusive, 1942.

Incls:
Memo G-4 to C/AAF, 8/11/41 w/ ltr from C/AC to C/Ord, 8/12/41 w/1st Ind & 14 cy Am. St. of St. 8/21/41 & WF Req. 42-9, 8/5/41.

For the Chief of the Air Staff;

Edgar P. Sorensen,
Colonel, Air Corps,
Assistant Chief of the Air Staff, A-4.

Dispatched
DEC 20 1941
AAG

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DOD Dir.
8 Jan. & 30 June 1974
By: JSHM LC Date 3-10-77

R E C E I P T

DATE _____

SUBJECT: Wright Field Requisition No. 43-9 Calling for Ammunition.

Received from Headquarters Army Air Forces, Memorandum above subject, with the following inclosures:

Memo G-4 to C/AAF, 8/11/41 w/ltr frm C/AC to C/Ord, 8/19/41 w/1st Ind & 14 cy Am. St. of Stock, 8/21/41 & WF Req. 43-9, 8/5/41

_____ Officer _____ Bank

_____ Office

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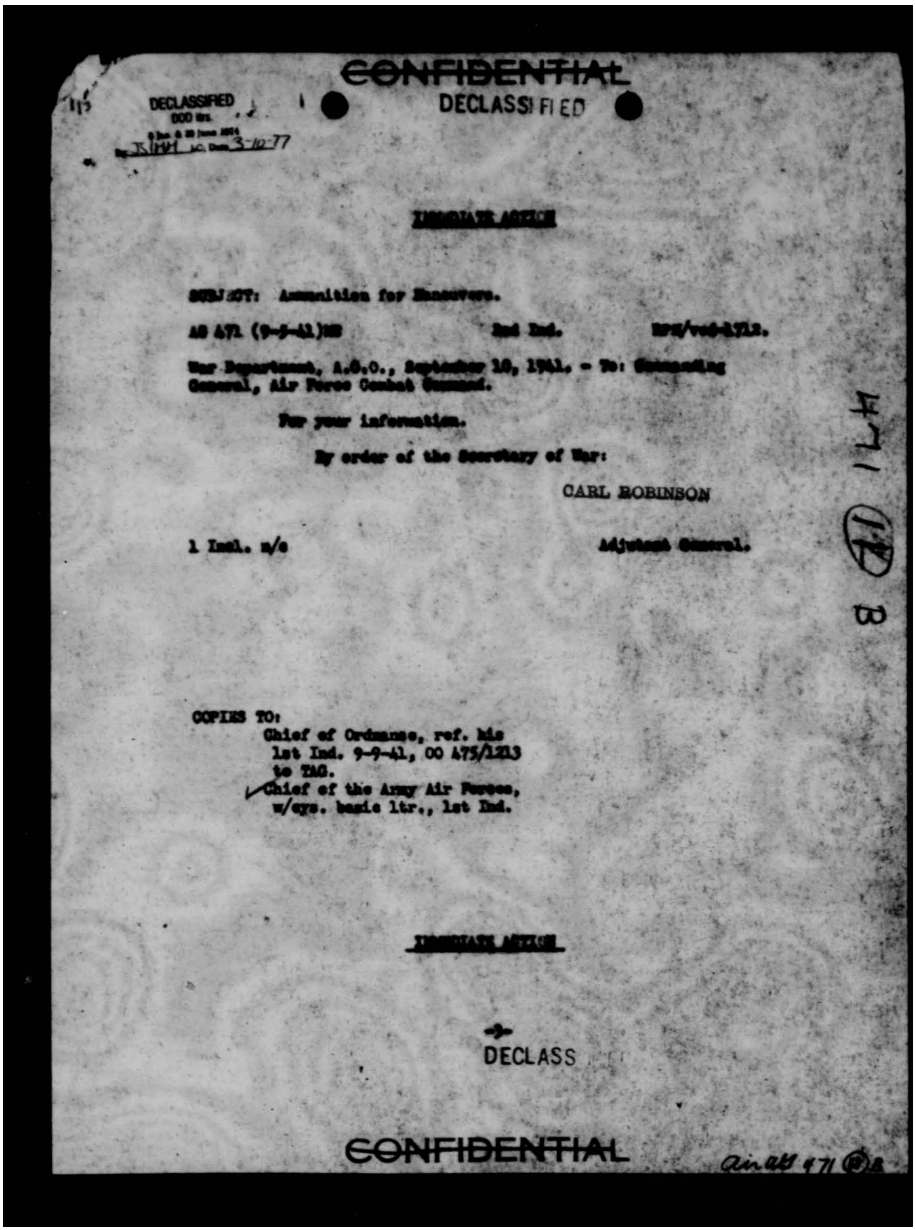

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DOD Ltr.
8 Jan. & 30 June 1974
By JS/HH LC Date 3-10-77

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IMMEDIATE ACTION

SUBJECT: Ammunition for Maneuvers.

AG 471 (9-5-41)MS 2nd Ind. RPN/vcd-1712.

War Department, A.G.O., September 10, 1941. - To: Commanding General, Air Force Combat Command.

For your information.

By order of the Secretary of War:

CARL ROBINSON

1 Incl. n/c Adjutant General.

471 (12) B

COPIES TO:
Chief of Ordnance, ref. his 1st Ind. 9-9-41, OO 475/1213 to TAG.
Chief of the Army Air Forces, w/cys. basic ltr., 1st Ind.

IMMEDIATE ACTION

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DOD Dir.
5 Jan. & 30 June 1961
By: SSMM LC Date: 3-10-77

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IMMEDIATE ACTION

WAR DEPARTMENT
The Adjutant General's Office
Washington LFL/gwd-1712

AG 471
(8-8-41)MC-D

September 5, 1941.

SUBJECT: Ammunition for Maneuvers.

To: Chief of Ordnance.

1. Attention is invited to the inclosed copy of 3rd indorsement, this office, to the Commanding General, Air Force Combat Command, September 5, 1941, subject and classification as above, together with copy of basic communication, 1st and 2nd indorsements.

2. It is desired that the bombs and ammunition for the Air Force Combat Command requested in inclosed Communication be shipped without delay to the 445th Ordnance Company, Aviation, (Bombardment), Barksdale Field, Louisiana.

3. The small arms ammunition requested will be deducted from the authorized training credits allocated to the Army Air Force.

4. The demolition bombs and 37mm Aircraft Practice Ammunition will be charged against the G-3 reserve of Ordnance Training Ammunition.

By order of the Secretary of War:

Adjutant General.

1 Incl.
Cy. of 3rd Ind., AGO
to C.G., AFCC, 9-5-41,
w/cy. of basic com.
& 1st & 2nd Inds.
thereto.

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DOD Dir
8 Jan. & 30 June 1974
By JS/HM LC Date 3-10-77

IMMEDIATE ACTION

OO 475/1213 1st Ind. SLS/am
ATTN. F.S., Am.Sup.Div.
AG 471 (8-8-41)MC-D

War Department, Ordnance Office, Washington, D. C., September 9, 1941
To: The Adjutant General, Washington, D. C.

1. Ammunition listed in inclosed communication has been ordered shipped to Barksdale Field, Louisiana.

2. The small arms ammunition has been deducted from the authorized training credits allocated to the Air Force Combat Command and the demolition bombs and 37mm aircraft practice ammunition charged against the G-3 reserve for training ammunition.

For the Chief of Ordnance:

/s/ P. M. SELEEN,
Major, Ord. Dept.,
Executive Assistant.

1 Incl.

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DOD ltrs.
8 Jan. & 20 June 1974
By: JS/HM/WC; Date: 3-20-77

IMMEDIATE ACTION

SUBJECT: Ammunition for Maneuvers.

AG 471 (8-6-41)MC-D 3rd Ind. LFL/gmd-1712

War Department, A.G.O., September 5, 1941. - To: Commanding General, Air Force Combat Command.

1. The Chief of Ordnance is being directed to ship the ammunition and demolition bombs requested in basic communication to the 445th Ordnance Company, Aviation, (Bombardment), Barksdale Field, Louisiana.

2. Authority is granted to expend the above ammunition and bombs in connection with the maneuvers scheduled to be held in the Beauregard area.

By order of the Secretary of War:

CARL ROBINSON

Adjutant General.

COPIES TO: Chief of Ordnance, w/cy. of basic communication, 1st & 2nd Inds. (as inclosure to ltr. AGO, 9-5-41)

Chief of the Army Air Forces, w/cy. of basic communication, 1st & 2nd Inds.

471. (11)

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DOD Ltr.
8 Jan. & 20 June 1974
By JS/MM LC Date 3-10-77

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WAR DEPARTMENT
HEADQUARTERS AIR FORCE COMBAT COMMAND
Office of the Commanding General
Bolling Field, D. C.

(K-59)

ACC 471

August 8, 1941.

SUBJECT: Ammunition for Maneuvers.

TO: : The Adjutant General, Washington, D. C.

1. It is desired that the following-listed ammunition be made immediately available to this headquarters for expenditure in connection with the maneuvers scheduled to be held in the Beauregard area in the near future.

ITEM	QUANTITY
BOMB, demolition, 100-lb., Mk IMIV, C/R	800
BOMB, demolition, 600-lb., M32, or 500-lb., M43, C/R	24
BOMB, demolition, 1,000-lb., M44, or 1,100-lb., M33, C/R	6
CARTRIDGE, tracer, cal..30, in links	30,000
CARTRIDGE, tracer, cal..50, in links	20,000
SHELL, fixed, practice, M55A1, with tracer, and FUZE, dummy, M50, 37-mm auto gun, M4	600

2. It is requested that necessary action be initiated to ship the above-listed ammunition direct to the 445th Ordnance Company, Aviation, (Bombardment), at Barksdale Field, Louisiana. This ammunition is required not later than September 1, 1941.

For the Commanding General:

/s/ C. W. Russell

C. W. RUSSELL,
Brigadier General, G.S.C.,
Chief of Staff.

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8 Jan. & 20 June 1974
By JS/MM LC Date 3-10-77

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SUBJECT: Ammunition for Maneuvers, Air Force Combat Command.

AG 471
(8-8-41)MO-D 1st Ind. LD:mr

War Department, AGO, August 12, 1941 - To the Chief of Staff, GHQ, Army War College.

For remark and recommendation.

By order of the Secretary of War:

/s/ J. J. Brackenridge

Adjutant General

471/60 - Ord. 2nd Ind.
(8-8-41)
GENERAL HEADQUARTERS, U. S. ARMY, Army War College, Washington, D.C., August 14, 1941.- To: The Adjutant General, Washington, D. C.

1. The bombs and other ammunition requested in basic letter are for instructional purposes of personnel engaged in the Louisiana maneuvers.

2. It is recommended that issue as requested be authorized by the War Department. No funds are available in this headquarters for reimbursement.

For the CHIEF OF STAFF:

/s/ Clyde L. Hyssong

CLYDE L. HYSSONG,
Lt. Col., A.G.D.,
Adjutant General.

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000 Hrs.
5 Jan. & 20 June 1974
By JS/HH/JC Date 3-10-77

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AAF/A-4
WRB/mr
Written October 13, 1941.

SUBJECT: Storage of Ammunition.

2d Wrapper Ind.

War Department, Headquarters, Army Air Forces, Washington, D. C.
OCT 14 1941 TO General Hq. U. S. Army, Army War College.

1. A study regarding defense reserves for the leased Atlantic Bases prepared by the War Plans Division of the General Staff and concurred in by this office, sets up the following defense reserves for the Bermuda Base:

a. Aviation gasoline and oil.

Gasoline	450,000 gallons
Oil	9,000 "

b. Aircraft Ammunition.

37 mm.	7,920 rds.
20 mm.	38,160 rds.
50 cal.	1,199,520 rds.
30 cal.	1,098,720 rds.

c. Aircraft bombs.

2000 lb. Demolition	160
1000 lb. Dem. GP	220
1000 lb. Dem. SAP	100
500 lb. Dem. GP	640
500 lb. Dem. SAP	300
250-300 lb. Dem.	1420
100 lb. Dem.	1600
100 lb. Incend.	640
1500 lb. A.P.	100
300 lb. Depth	142
100 lb. Chem.	500

d. Pyrotechnics.

Bomb Photo Flash	16
Bomb Flare	64
Signals Assorted	716
Drift	64
Distress	38

2. The problem of intermediate stockage based on existing supplies will be worked out as quickly as possible after action is taken by the Chief of Staff on the WPD study.

471

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Avi AG 471 (B)

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SUBJECT: Storage of Ammunition.

2d Wrapper Ind. (cont.)

3. The bomb and ammunition stockage indicated in the attached memorandum to Assistant Chief of Staff, G-4, dated August 14, 1941 and approved by G-4, appears to be a reasonable basis for intermediate stockage of defense reserves.

4. It is the understanding of this office (per Colonel Upston of W.P.D.,G.S) that construction for gasoline and oil storage is proceeding in accordance with paragraph 1 a above and complete stockage may be made as soon as construction of facilities is completed.

5. It is believed that stockage of pyrotechnics can be made in accordance with paragraph 1 d above at this time or in the immediate future.

Incl. n/c

For the Chief of the Army Air Forces:

EDWARD P. CURTIS,
Major, Air Corps,
Secretary of The Air Staff

Dispatched
OCT 14 1941
AAG

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DOD Dir.
5 Jan. & 30 June 1976
By JS/HM LC Date 3-10-77

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SUBJECT: Photoflash Bombs for 2nd Photo Squadron (Alaska).

AG 471 (7-11-41)MC-D 3rd Ind. LFL/gwd-1712

War Department, A.G.O., August 6, 1941. - To: Chief of Ordnance.

It is desired that 160 Bombs, Photoflash, M23, be made available immediately to the Commanding General, Ninth Corps Area, for shipment to Alaska Defense Command.

By order of the Secretary of War:

/s/ Carl Robinson

Adjutant General.

1 Incl. w/d
2 Incl. w/d in G-4

COPY TO: Commanding General, Ninth Corps Area,
ref. his 1st Ind., July 12, 1941,
RA 1904/5-A, w/cy. of 2nd Ind.
Chief of Army Air Forces.

471 (3)

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DOD ltrs
8 Jan. & 20 June 1974
By JS/MM LC Date 3-10-77

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IMMEDIATE ACTION

Subject: Replacement of Ammunition, First Echelon, Indigo.

AG 471 (7-15-41)MC-D 3rd Ind. LFL/ved/1712.

War Department, A.G.O., July 29, 1941. To: Commanding General, Air Force Combat Command, Bolling Field, D. C.

1. Attention is invited to 2nd Indorsement.

2. The ammunition requested in basic communication was not supplied by Commanding General, 1st Air Force, but was shipped direct via truck from Raritan Arsenal to the 33rd Pursuit Squadron at Mitchel Field, N. Y. on July 19, 1941.

3. Informal advice from the Office of Chief of Ordnance indicated that the 60 AC Flares, Para., M8A1, are now available and will be shipped with the First Echelon, Indigo.

By order of the Secretary of War:

CARL ROBINSON

Adjutant General.

COPY TO:
The Chief of The Army Air Forces.,
w/cys. of Basic, 1st & 2d Inds.

Notal. [illegible]

AAG 471 (1)

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DOD-Ltr.
8 Jan. & 30 June 1971
By JSIM/ LC Date 5-10-77

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IMMEDIATE ACTION

WAR DEPARTMENT
Headquarters Air Force Combat Command
Office of the Commanding General. (K-59)
Bolling Field, D. C.

DECLASSIFIED

ACC 471 July 15, 1941.

SUBJECT: Replacement of Ammunition.

TO: The Adjutant General, Washington, D. C.

1. The following radio, received by this headquarters from the Commanding General, 1st Air Force, July 14, 1941, is quoted for your information:

"FIRST AF 1970 L PERIOD REQUEST IMMEDIATE ISSUANCE OF AMMUNITION SUPPLY AUTHORIZATION FOR TWENTY TWO THOUSAND EIGHT HUNDRED RDS CAL FIFTY BALL AND TRACER PAREN FOUR DASH ONE PAREN SIXTY THOUSAND RDS CAL THIRTY BALL AND TRACER PAREN FOUR DASH ONE PAREN AND SIXTY FLARES TO REPLACE AMMUNTION BEING ISSUED THIRTY THIRD PURSUIT SQUADRON WHICH SQUADRON IS UNDER ORDERS FOR TRANSFER TO EXTENDED FIELD DUTY"

2. The ammunition and flares (M8A1) referred to in the above-cited radio have been directed issued to the 33rd Pursuit Squadron by the Assistant Deputy Chief of Staff (Air) and will not be used for training.

3. It is requested that necessary action be initiated to replace the ammunition and flares cited in the above radio.

For the Commanding General:

/s/ C. W. Russell,

C. W. RUSSELL,
Brigadier General, G.S.C.,
Chief of Staff.

IMMEDIATE ACTION

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DOD Nrs.
9 Jan. & 20 June 1974
By: JSTHM LC; Date 3-10-77

IMMEDIATE ACTION

DECLASSIFIED

SUBJECT: Replacement of Ammunition.

AG 471
(7-15-41)MO 1st Ind WP:MR

War Department, AGO, July 17, 1941 - To; The Chief of Ordnance.

For remark and recommendation.

By order of the Secretary of War:

/s/ J. C. Brackinridge.

Adjutant General.

OO 471/4076
AG 471 (7-15-41)MO 2nd Ind. ASR/okc

War Dept., Ordnance Office, Washington, D. C., July 19, 1941.
To: The Adjutant General.

1. The cal..30 and .50 ammunition in the amounts requested will be furnished by truck from Raritan Arsenal to Mitchel Field, N.Y., on July 19, 1941. These amounts will be deducted from the ammunition set up to be shipped with the First Echelon Indigo, in accordance with existing instructions.

2. The 60 Flares which are understood to be Flares, Para., M8A1, cannot be provided at this time as no stock is available.

For the Chief of Ordnance:

/s/ P. M. Seleen,

P. M. SELEEN,
Major, Ordnance Dept.,
Executive Assistant.

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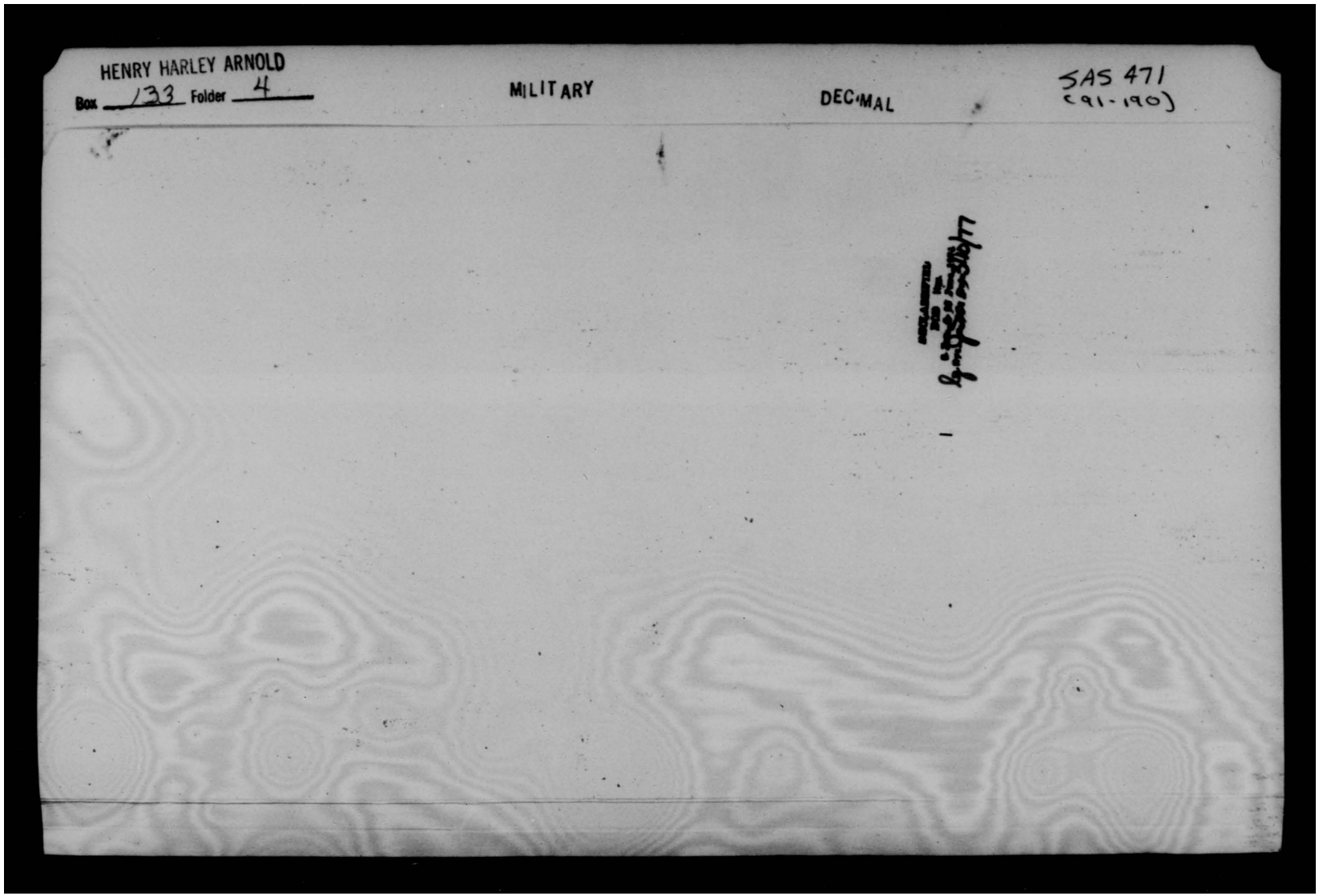

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DOD Dir
5 Jan. & 20 June 1971
By TSMM LC, Date 3-10-77

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Report to Secretary of War

Air Adjutant General

18 JUL 1945

1

AC/AS, MMS, Air Ordnance Office

Lt Col Walker/LBR/mb/72345

1. Reference inclosure #1, this information was requested by Dr. R. D. Huntoon by telephone conversation on 14 July 1945 with this office (Captain L. B. Reigler).

2. Request the inclosure be signed and forwarded.

R. C. COUPLAND
Brig. Gen., U.S.A.
Air Ordnance Officer

1 Incl
Memo to Office of the Secretary of War, sub: "Oversea Shipments of VT Fuzes," file AFDAO 471 (17 Jul 45)

AAB 471 (190)

File.

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1

AAB 471 (190)

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DOD ltrs.
8 Jan. & 20 June 1974
By: JS/MM LC; Date 3-10-77

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AFDAO 471 (17 Jul 45)

Captain Reigler/mb/71579
(17 Jul 45)

MEMORANDUM FOR OFFICE OF THE SECRETARY OF WAR
(Attention: Dr. R. D. Humtoon)

23 JUL 1945

SUBJECT: Overseas Shipments of VT Fuses.

1. Following is a list of overseas shipments of VT Fuses as requested by Dr. R. D. Humtoon of your office:

POA
Bomb Fuses VT

Quantity	Type	Date Directed Shipped
756	T50E1	2 January
756	T50E4	2 January
10,000	T50E1	19 February
1,000	T50E4	19 February
5,000	T50E1	28 February
900	T50E4	28 February
5,000	T50E1	3 March
900	T50E4	3 March
1,500	T50E1	26 March
1,000	T50E4	26 March
4,000	T51E2	13 April
4,000	T51E2	20 April
5,000	T50E1	10 May
99	T50E4	25 May
7,500	T51E1	22 June
2,502	T50E1	28 June
1,503	T50E4	28 June

Rocket Fuses VT

200	T4	2 February
200	T5	2 February

Far East
Bomb Fuses VT

252	T50E1	16 February
252	T50E4	16 February
10,000	T50E4	9 April

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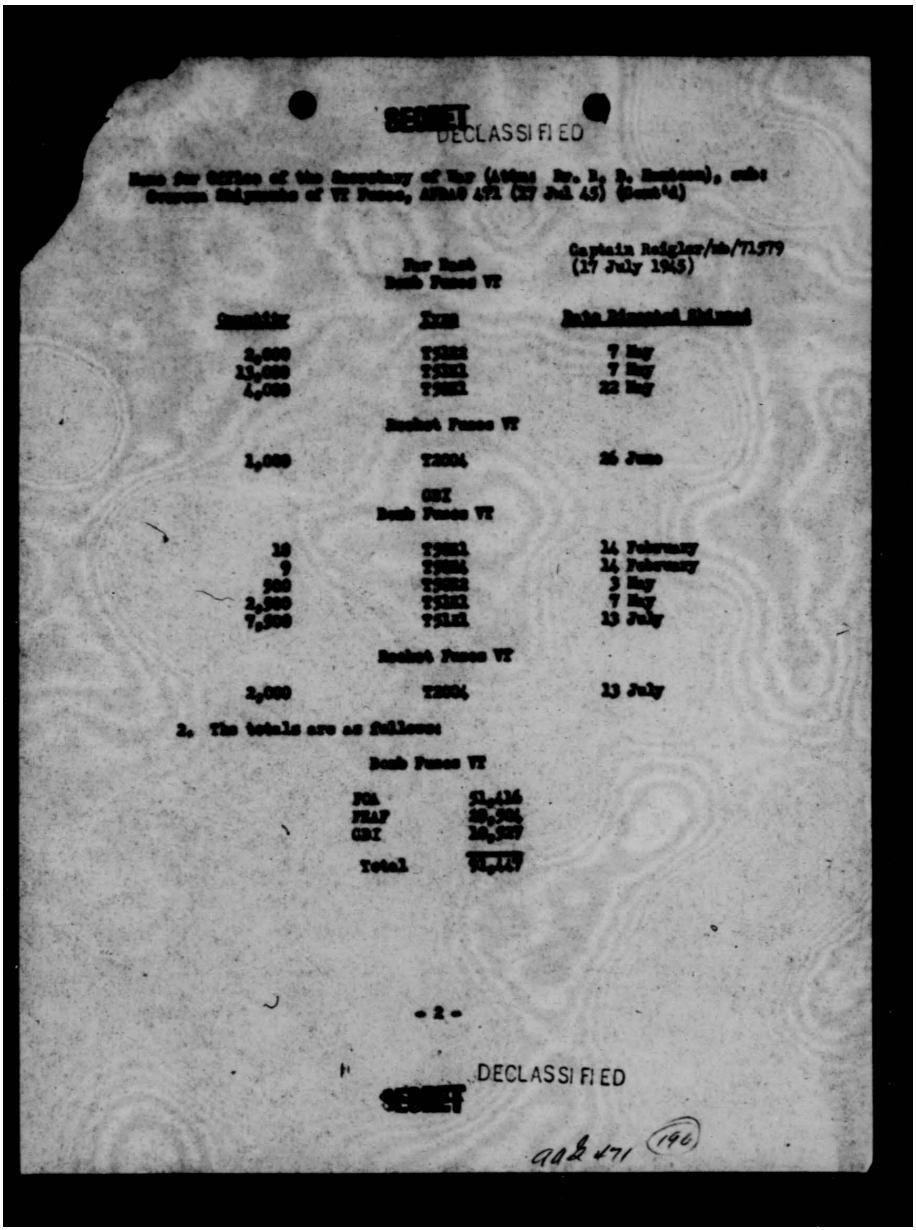

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Memo for Office of the Secretary of War (Attn: Dr. R. D. Hemtoon), sub: Overseas Shipments of VT Fuzes, AFDAO 471 (17 Jul 45) (Cont'd)

Captain Reigler/mb/71579
(17 July 1945)

Far East
Bomb Fuzes VT

Quantity	Type	Date Directed Shipped
2,000	T51E2	7 May
13,000	T51E1	7 May
4,000	T50E1	22 May

Rocket Fuzes VT

1,000	T2004	26 June

GBI
Bomb Fuzes VT

18	T50E1	14 February
9	T50E4	14 February
500	T50E2	3 May
2,500	T51E1	7 May
7,500	T51E1	13 July

Rocket Fuzes VT

2,000	T2004	13 July

2. The totals are as follows:

Bomb Fuzes VT

FOA	51,416
FEAF	20,504
GBI	10,527
Total	91,447

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aaa 471 (196)

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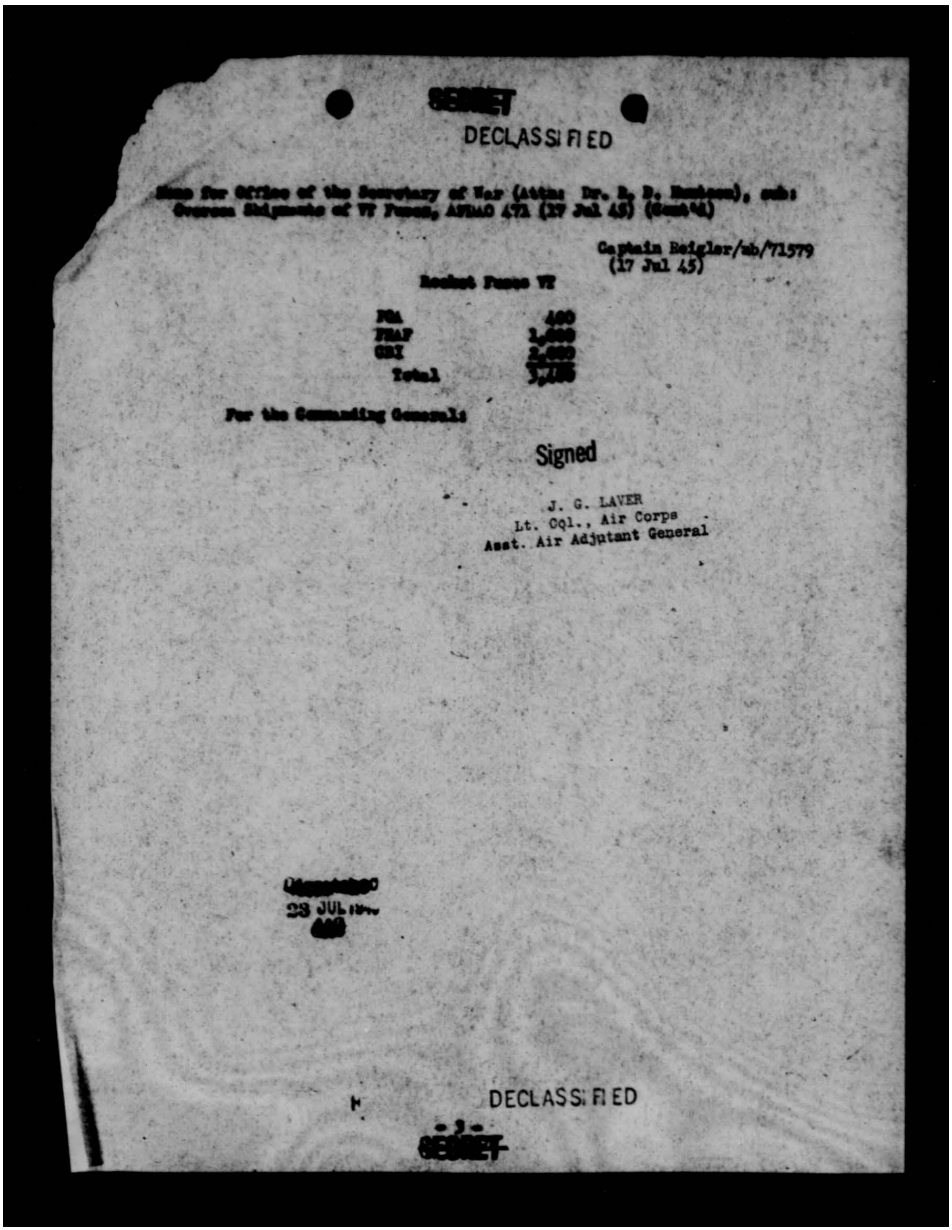

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Memo for Office of the Secretary of War (Attn: Dr. R. D. Hunteen), sub: Overseas Shipments of VT Fuses, AFDAO 471 (17 Jul 45) (Cont'd)

Captain Reigler/mb/71579
(17 Jul 45)

Rocket Fuses VT

PCA	400
PEAF	1,000
CBI	2,000
Total	3,400

For the Commanding General:

Signed

J. G. LAVER
Lt. Col., Air Corps
Asst. Air Adjutant General

[illegible]
23 JUL 194[illegible]
[illegible]

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- 3 -

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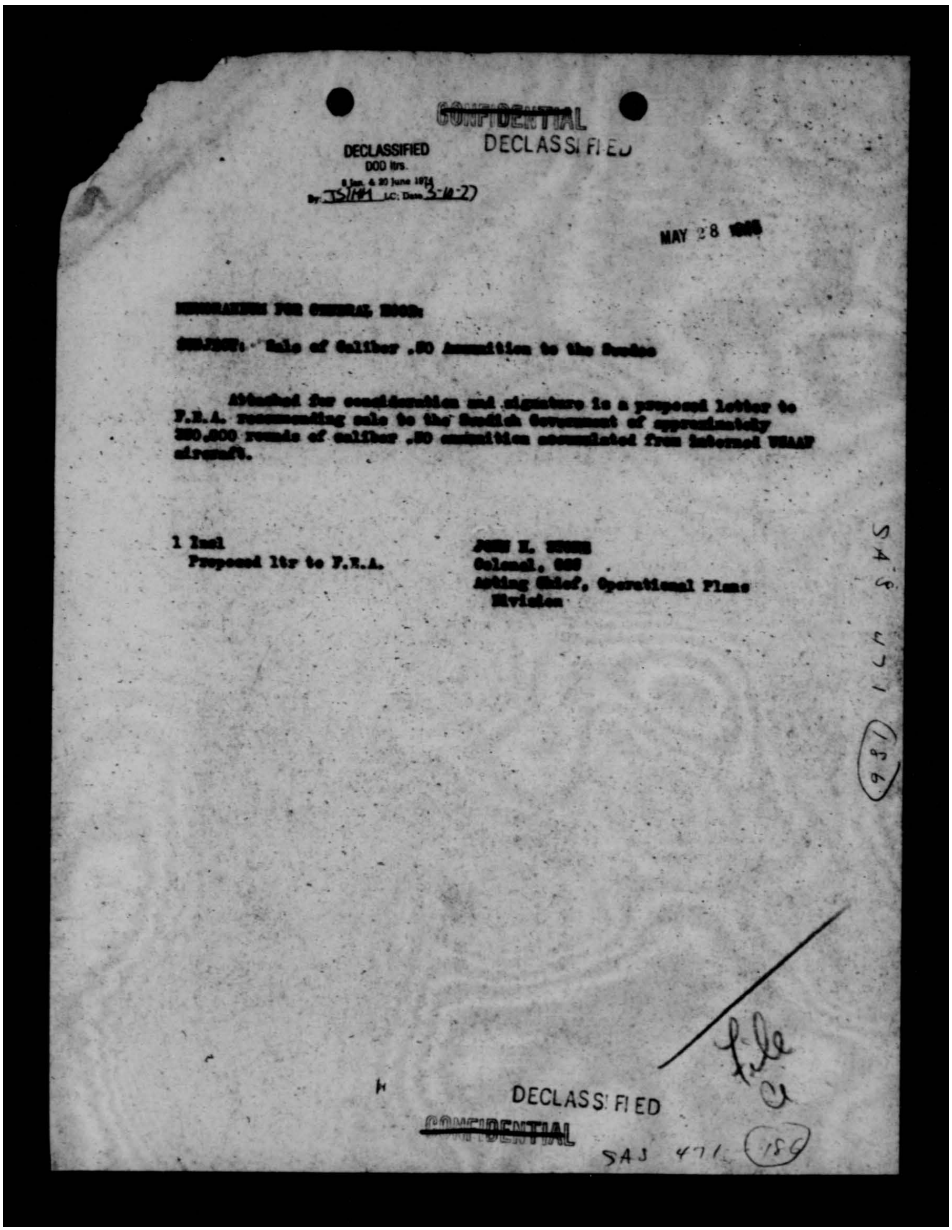

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DOD ltrs.
8 Jan. & 20 June 1974
By: JSTMM LC; Date 3-10-27

MAY 28 1975

MEMORANDUM FOR GENERAL HOOD:

SUBJECT: Sale of Caliber .50 Ammunition to the Swedes

Attached for consideration and signature is a proposed letter to F.E.A. recommending sale to the Swedish Government of approximately 350,000 rounds of caliber .50 ammunition accumulated from interned USAAF aircraft.

1 Incl
Proposed ltr to F.E.A.

JOHN H. STONE
Colonel, GSC
Acting Chief, Operational Plans
Division

SAS 471 (186)

file
a

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SAS 471 (186)

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AFAEP
MEP/emp/72558
26 May 45

DECLASSIFIED
000 Rrs.
8 Jan. & 30 June 1974
By: JS/HM LC; Date 3-10-77

29 MAY 1945

Mr. L. W. Waller
F.E.A. War Department Representative
Room 5E864, Pentagon
Washington 25, D. C.

Dear Mr. Waller:

The War Department has been advised by the U.S. Military Attache in Stockholm that the Swedish Government desires to purchase approximately 350,000 rounds of caliber .50 ammunition which have been stockpiled in Sweden from USAAF aircraft interned there. This ammunition is rated as grade 3, has accumulated since early 1943, and is suitable for emergency combat and practice firing.

Security clearance for the sale of this ammunition to the Swedes has been obtained from AC/AS, Intelligence and from the Technical Intelligence Branch, Intelligence Division, Army Service Forces. The Chief of Ordnance has declared that .50 caliber ammunition presently available to the AAF is unclassified.

As the Swedish Government has already purchased USAAF type aircraft and transactions for others are pending, the proposed sale of ammunition is consonant with current policy. The AAF recommends, therefore, that your office take necessary action to effect the sale of this ammunition to the Swedish Government.

Sincerely yours,
Signed
REUBEN C. HOOD, JR.
Brigadier General, U. S. Army,
Deputy Chief of Air Staff.

DISPATCHED
29 MAY 1945
AFSAE

AFCAS

AFAEP
Col Parker

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Office of Signature

SPS 471 (186)

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AFRDB
Mf. Browder 72497

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DOD ltrs.
6 Jan. & 20 June 1974
By: JSIHH LC; Date 3-10-77

Use of Tracer Ammunition in Flexible Gunnery Training

14 MAR 1945

AC/AS, Training

Chief of Air Staff

1

1. Directives issued by General Arnold on 21 July 1943, prohibiting the use of tracer ammunition in flexible gunnery training are herewith rescinded.

2. It is directed that a course of instruction in the flexible gunnery training program be initiated immediately to instruct all gunners in the limitations and difficulties of using tracer ammunition as an aid to sighting.

Signed

REUBEN C. HOOD, JR.
Brigadier General, U. S. Army,
Deputy Chief of Air Staff.

SAS 471 (182)

DISPATCHED
14 MAR 1945
AFSAS

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~~Reg Air~~

1 SAS 471 (182)

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DOD ltrs.
8 Jan. & 20 June 1974
By: TSIHM LC; Date: 3-10-77

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9 MAR 1945

MEMORANDUM FOR THE CHIEF OF AIR STAFF:

Subject: Use of Tracer Ammunition in Training

I. Discussion

1. The Theaters of Operation have been using experimentally a quantity of T1E1 ammunition commonly called "headlight tracer". This ammunition burns with a larger and brighter intensity than ordinary tracer ammunition and the European Theater of Operations has reported that its use has been quite successful in that enemy fighters have a tendency to break off the attack at longer ranges than when tracer ammunition is not used. Accordingly, larger quantities of this headlight tracer ammunition have been requested by the Theaters.

2. It was found, however, that gunners not having used any type tracer before, tended to become bewildered by tracers and would try to use tracer instead of the gunsight as a method of sighting. Therefore, the theaters have requested that a course of instruction in the limitations and difficulties in using tracer for sighting be initiated in the gunnery curriculum.

3. The Research Division of the Central School for Flexible Gunnery has determined that ordinary tracer ammunition, adequate quantities of which are available, may be successfully used to accomplish this type of instruction. The AC/AS, Training is capable of including this training in the flexible gunnery program. However, in July 1943 General Arnold personally directed the AC/AS, Training to discontinue use of tracer and directives were issued to that effect 21 July 1943. The AC/AS, Training and this office concur with the Theater request to start this training.

II. Action recommended

1. Signature of the attached R&R to AC/AS, Training, rescinding the directive prohibiting the use of tracer ammunition for training.

Signed
WILLIAM F. McKEE
Brigadier General, U.S.A.
Deputy, Asst. Chief of Air Staff,
Operations, Commitments and Requirements

Incl.
R&R to AC/AS, Training
for sig., undated.

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COMINCH FILE

UNITED STATES FLEET
HEADQUARTERS OF THE COMMANDER IN CHIEF
NAVY DEPARTMENT
WASHINGTON 25, D. C.

FF1/A16-3
Serial: 00608

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DOD ltrs.
8 Jan. & 20 June 1974
By: JS/MM LC, Date 3-10-77

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Army-Navy

Noted by Gen Arnold
CAS

8 March 1945

My dear General Arnold:

Many thanks for your letter of the eighth expressing your interest in the supply of ammunition to carriers at sea. The Navy is developing and in some cases has achieved a satisfactory method for and rate of supplying a fleet at sea with all its necessities. Fuel, food, ammunition and spare parts are supplied at sea to all types of ships in all but the worst weather. The significance of this is such that our fleet logistics have been characterized as the greatest single advance in naval warfare since steam supplanted sail.

I am sending copies of your letter to Fleet Admiral Nimitz as well as Admiral Spruance and Vice Admiral Mitscher. They too, will appreciate your thoughtful expressions of esteem.

Sincerely yours,

E J King

Fleet Admiral

To Gen Arnold — Believe you will agree that the navy has something to be proud for in this kind of logistics

BMG

General of the Army H. H. Arnold,
Commanding General, Army Air Forces,
War Department,
Washington, D. C.

3/11/45 To: Gen Kutec File ci

From Gen Arnold's Office for file

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B-11173
3/11/45

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DOD Ltrs.
8 Jan. & 30 June 1974
By: JS/HM LC, Date 5-10-77

SECRET
BY AUTHORITY OF THE
CHIEF of the ARMY AIR FORCES
SECRET FINITIALS

DECLASSIFIED

[illegible]/rkc/4152
Wrtn 2 Mar 45

8 MAR 1945

Fleet Admiral Ernest J. King
Commander in Chief, United States Fleet
Washington 25, D. C.

My dear Admiral:

I have read with interest Admiral Nimitz's cable of 26 February describing the successful rearming of Mitscher's CV's and CVL's while at sea. The rate of transferring bombs is remarkable and all hands have my sincere admiration for accomplishing this striking development in logistic technique.

The increased scope of opportunities presented by this rearming experience leads me to believe that your future carrier operations can be stepped up to a tempo which a year ago would have seemed incredible. All increased in the air effort to reduce the effectiveness of the Japanese military establishment are, naturally, sources of utmost gratification to us all.

Sincerely,

Signed

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

DISPATCHED
8 MAR 1945
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DOD ltrs
8 Jan. & 20 June 1974
By: JS/MM LC; Date 3-10-77

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AFAEP FILES
RWD/rkc/4152
wrtn 3 Mar 45

MEMORANDUM FOR GENERAL GILES

Subject: Letter to Admiral King re: Rearming by TF 58 at Sea

Attached is a letter to Admiral King regarding the rearming operations at sea carried out by Task Force 59 on 26 February 1945.

Signed

L. S. KUTER
Major General, U. S. A.
Asst Chief of Air Staff, Plans

1 Incl
Ltr to Adm King
re: rearming at sea

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SAS 471 (181)

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DOD Ltr
8 Jan. & 20 June 1974
By: JS HH LC; Date 3-10-77

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Tracer Ammunition

Assistant Chief of Air Staff, OC&R 15 Jan 1945

Chief of the Air Staff 1

1. During my recent conversations with Lieutenant General Doolittle in the United Kingdom he stated that the present tracer ammunition being used would, in his opinion, be much more satisfactory if the lead was placed in the nose of the projectile (Head Light Tracers). He feels that the psychological effect obtained from having the enemy pilots continually looking into these highly illuminated projectiles approaching them would be most desirable.

2. Let me have your comments on the foregoing suggestion.

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

Cy to Air Ordnance Officer

SAS 471 (177)

15 JAN 1945

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SAS 471 (177)

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AAF 471/115

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DOD Hrs.
6 Jan. & 20 June 1974
By JS/HM LC Date 3-10-77

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AFDAC-4A-3 5 SEP 1944

Mr. R.H. Kiche/mmf/74098

Assistant Chief of Staff, G-4

X Information

Hazards Due to Mishandling of Ammunition

1. It is advised that action has been initiated by this Headquarters to publish and distribute to the Air Forces and AF Commands the information contained in paragraphs 1, 2, and 3 of attached memorandum, dated 30 August 1944, subject as above, in an AAF letter.

2. It is further advised that the information referred to in paragraph 1, above, has been previously disseminated to the Ordnance Officers of the various Air Forces and AF Commands by letter, this Headquarters, file 319.1 (1 Aug 44), dated 5 August 1944, subject, "Monthly Technical Letter."

For the Commanding General, Army Air Forces:

Signed

R. C. COUPLAND
Brig General, U. S. Army
Air Ordnance Officer

1 Incl
Memorandum for the
OS, AAF, sub, "Hazards
Due to Mishandling of
Ammunition," dtd 30 Aug
44 (S)

171

Dispatched
6 SEP 1944
AAG

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DOD ltrs.
8 Jan. & 20 June 1974
By JS/HH LC. Date 3-10-77

DECLASSIFIED

Direct Shipment of Aircraft Ammunition

Chief of Air Staff

AC/AS, Materiel and Services

31 AUG 1944

2
Col.Tisdale:cjm:72345

1. Reply was made to the attached proposal of the Seventh Air Force in 5th Indorsement, copy of which is attached. The objective of their proposal has been attained, but the procedure for accomplishing the supply has been varied.

2. In view of Comment No. 1, information copies of this correspondence are being airmailed this date to AAF Pacific Ocean Areas.

(Signed) O. P. Echols

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

2 Incls:
#1 - n/c
#2 - Added: Cy. 5th Ind.
dtd. 16 August 1944.

471 (170)

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SAS 471 (170)

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DOD ltrs.
8 Jan. & 20 June 1974
By JS/MM LC; Date 3-10-77

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Direct Shipment of Aircraft Ammunition.

AC/AS M&S Attn: Air Ordnance Officer

Chief of Air Staff

1

1. While in Hawaii on my recent trip the following matter came to my attention. Since this matter comes under the jurisdiction of your office it is desired that you take necessary action and notify the Commanding General, AAFPOA accordingly. A copy of the letter referred to below is attached.

"Every effort is being made to make all shipments to the Forward Pacific Areas direct from the West Coast without transshipment at Oahu which involves considerable time, labor, shipping, etc. Air ammunition is being invluded in these shipments by delaying and diverting parts of releases made by your office to Oahu and requesting additional allocations. Because of the crowded conditions in the Forward Area, lack of shipping and beach capacity and the directives of the theater commander, it is not possible to set up levels for each of the bases to be supplied automatically. They are cognizant of the desirability of moving the maximum amount forward as soon as possible but are, and will be limited in forwarding this ammunition for some time.

"Seventh Air Force proposal contained in confidential letter dated 13 June 1944 to Headquarters AAF, subject: "Aircraft Ammunition", appears reasonable."

Sign

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

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DOD Dir.
8 Jan. & 30 June 1974
By: JS/HH LC Date 3-10-D

DECLASSIFIED

Direct Shipment of Aircraft Ammunition.

30 AUG 1944
1

AC/AS M&S Attn: Air Ordnance Officer

Chief of Air Staff

1. While in Hawaii on my recent trip the following matter came to my attention. Since this matter comes under the jurisdiction of your office it is desired that you take necessary action and notify the Commanding General, AAFPOA accordingly. A copy of the letter referred to below is attached.

"Every effort is being made to make all shipments to the Forward Pacific Areas direct from the West Coast without transshipment at Oahu which involves considerable time, labor, shipping, etc. Air ammunition is being invluded in these shipments by delaying and diverting parts of releases made by your office to Oahu and requesting additional allocations. Because of the crowded conditions in the Forward Area, lack of shipping and beach capacity and the directives of the theater commander, it is not possible to set up levels for each of the bases to be supplied automatically. They are cognizant of the desirability of moving the maximum amount forward as soon as possible but are, and will be limited in forwarding this ammunition for some time.

"Seventh Air Force proposal contained in confidential letter dated 13 June 1944 to Headquarters AAF, subject: "Aircraft Ammunition", appears reasonable."

1 Incl

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

Dispatched
30 AUG 1944
AAG

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S.H. 471 (170) SAS File

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DOD ltrs.
8 Jan. & 20 June 1974
By: JBMM LC. Date 3-10-77

471.

SUBJECT: Aircraft Ammunition.

THROUGH: Commanding General, U. S. Army Forces, Central Pacific Area, APO #958.

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

1. Current logistic directives from CinCPOA and the Commanding General, USAFICPA, require maximum possible shipping be made to the Forward Area direct from the West Coast instead of through Oahu. Class VA requirements for Army aircraft are a substantial and increasing portion of these tonnages.

2. At present your Headquarters releases to the Port, the ammunition required to meet the approved theater level and this ammunition is shipped to Oahu as soon as shipping is available. While shipments are made in accordance with priorities established by this Headquarters, ammunition is not held at the Port until called for.

3. It is recommended that ammunition to meet the theater level be placed to the credit of this theater on the West Coast subject to call for shipment direct to different points in the Forward or Hawaiian Area, as necessary. This becomes more and more important as additional bases are acquired further across the Pacific and as additional aircraft are assigned to the theater.

4. Similar proposals for ground ammunition have already been made to the War Department by the Commanding General, USAFICPA.

5. As soon as approved in principle, details will be arranged with the Port, Navy and others concerned, to insure efficient operation.

6. This proposal has the full approval of CinCPOA.

R. W. DOUGLASS, JR.,
Brigadier General, U. S. A.,
Commanding.

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AMDIN-1/8 AUG 16 1944

1st Col Sargent/[illegible]
Wrtn. 8-12-44

War Department General Staff
Operations Division

DECLASSIFIED
DOD Hrs.
6 Jan. & 20 June 1974
By JS/HM LC; Date 3-10-77

ACTION

Request for Change in War Department Letter.

1. This Headquarters is in accord with the proposed amendment to subject letter contained in par. 8 of inclosed memorandum cited in basic letter.

2. It is suggested that the designation, "North Atlantic Wing", as it appears in par. 3a of the basic correspondence be changed to read "North Atlantic Division, Air Transport Command" in order to conform with ASO Letter A. G. 322 (1 June 1944) OB-I-AIRFC-M, dated 27 June 1944.

For the Commanding General, Army Air Forces:

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

1 Incl
B/F, WBGS,OPD dtd
7 Aug 44, w/1 incl

COPY FOR SEC'Y OF AIR STAFF

SAS 471 (169)

DECLASSIFIED
16 AUG 1944
AGO

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SAS 471 (169)

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DOD ltrs.
6 Jan. & 20 June 1974
By JS/HH LC; Date 3-10-77

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DECLASSIFIED

Level of Aircraft Combat Munitions to be Maintained as Strategic Reserve Within the First Air Force.

Secretary of the Air Staff

11 JUL 1944

AC/AS, Materiel, Maintenance and Distribution

1
Maj.Segar:cja:72345

Recommend that the attached Memorandum for the Chief of Staff (Attn: Operations Division), be signed and forwarded.

Signed

J. W. SESSUMS,
Colonel, Air Corps,
Executive, Office,
AC/AS, MM&D

1 Incl:
Memo for signature,
subj as above.

Coordination:

_____AFRDB

_____AFRAD

SAS 471 (165)

File
cc

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SAS 471 (165)

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DOD Dir.
8 Jan. & 30 June 1974
By JSHM LC Date 3-10-77

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DECLASSIFIED

Levels of Aircraft Combat Munitions.

Secretary of the Air Staff

5 JUL 1944

AC/AS, Materiel, Maintenance and Distribution

1
Col Tisdale:ejm:72345

Recommend that the attached memorandum for the Chief of Staff (Attn: Operations Division) be signed and forwarded.

1 Incl;
Memo. subj as above,
for signature, w/1 Incl.

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

SAF 471 (164)

File

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SAF 471 (164)

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DOD Dir. 5 Jan. & 20 June 1972
By JHM LC: Date 3-10-77

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AFICL-LI

6 JUN 1944

MEMORANDUM FOR THE COMMANDING GENERAL, ARMY AIR FORCES

Subject: Special Mission to Chile

1. In February of 1944 a Special Mission was sent to Chile by the United States Army Ordnance Department at the request of the United States Army Air Forces. Its purpose was to determine the effect of high altitude on the incendiary efficiency of calibre .50 ammunition. The Mission landed at Antofagasta, Chile, and proceeded to Volcan Aucanquilcha altitude 19,000 feet at which place the tests were made.

2. The Chilean government was very cooperative and provided an interpreter and guide. One American citizen, one British subject, residents in Chile, were extremely helpful, one Chilean citizen aided the project, and the United States Naval Liaison Officer at Antofagasta lent his support.

3. The United States Military Attache to Chile and the Chief of the Special Mission to Chile have requested that these letters and commendations be written and forwarded to the United States Military Air Attache for delivery.

4. Request was made that letter to Senor Carrasco be written in Spanish. Letter to the President of Chile has been written in Spanish and English and likewise the commendation to Capitan de Bandada Aravena. It is suggested that the letters and commendation in Spanish written to the President of Chile, Senor Carrasco, and Capiten Aravena be signed and forwarded as well as the two letters and commendation written in English to Mr. Heskett, Mr. Campbell, and Lt. Bethune.

[Signed

THOMAS D. WHITE
Brigadier General, U. S. Army
Assistant Chief of Air Staff, Intelligence

8 Incls:
Memo dtd 12 May 44
R&R dtd 22 May 44
Draft of 4 ltrs and
2 commendations (2 ltrs
& 1 Cmd in Spanish
w/translation)

File U/S Signed

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DOD Rts.
8 Jan. & 20 June 1974
By TJHM LC. Date 3-10-77

Requisition Basis of Supply of Aircraft Munitions for Ascension Island

Secretary of the Air Staff

26 JUN 1944

AC/AS, Materiel, Maintenance and Distribution

1
Maj.Seger:ejm:72345

Recommend that attached memorandum for the Chief of Staff (Attention: Operations Division), be signed and forwarded.

1 Incl:
Memo, subj as abv,
w/2 Incls.

Signed
E. M. POWERS,
Brig. General, U. S. A.,
Acting Deputy Assistant Chief of Air Staff
Materiel, Maintenance & Distribution.

(67) 1L4 848

File
ci 29 June 44

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 sar 471 (160)

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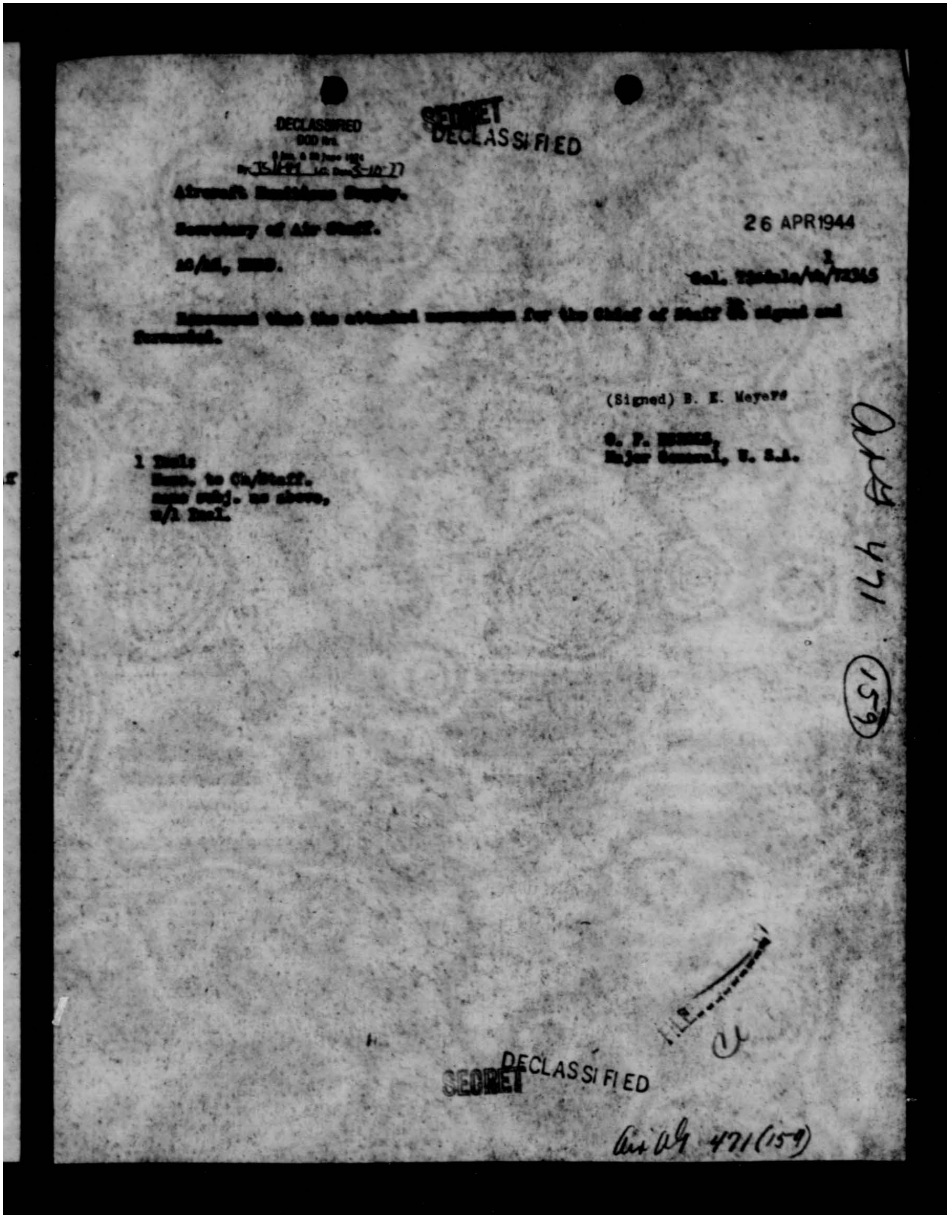

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DOD Dir.
5 Jan. & 30 June 1954
By JS/KM/ Date 3-10-77

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Aircraft Maintenance Supply.

Secretary of Air Staff.

26 APR 1944

AC/AS, [illegible].

Col. Tisdale/[illegible]/72345

Recommend that the attached memorandum for the Chief of Staff be signed and forwarded.

(Signed) B. E. Meyers

G. F. [illegible],
Major General, U. S. A.

1 Incl:
Memo. to Ch/Staff.
same subj. as above,
w/1 Incl.

Air AG 471 (159)

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Air AG 471 (159)

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DOD Dir.
6 Jan. & 20 June 1974
By: JS/HH I.C. Date: 3-6-77

Strategic Reserves of Aircraft Munitions, Iceland, Newfoundland, and Bermuda.

Secretary of the Air Staff. 17 APR 1944

AC/AS, MM & D. 1

Recommend that the attached Memorandum for the War Department General Staff, Operations Division, be signed and forwarded.

1 Incl:
Memo for WDGS, OPD,
subj as above.

O. P. ECHOLS,
Major General, U.S.A.

Coordination:

AFRDS_____

AC/AS 471 (251)

FILE

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AC/AS 471 (158)

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DECLASSIFIED
DOD Dir.
6 Jan. & 20 June 1974
By: TS/HM LC Date 3-6-77

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Pilot Familiarization with Appearance of Flak.

Add 471 (156)

TO: Air Adjutant General

FROM: Asst C/AS, Training

DATE 18 Mar 44

COMMENT NO. 2
AFACT-4/hsm/73651

Comment #1 complied with.

File 3/23/44

R. R. WALKER
Colonel, Air Corps
Chief, Unit Training Division
Asst Chief of Air Staff, Training

3 Incls:
Incl #1 w/d
Added 2 Incls.
Incl #2 - Memo for C/S wrtn 18 Mar 44., subj as abv., w/incls.
Incl #3 - Cy memo to CG, AAF, fr C/S, subj as abv., dtd 14 Dec 43.

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22 MAR 1944

MEMORANDUM FOR THE CHIEF OF STAFF: (Attention: G-3)Division)

Subject: Pilot Familiarization with Appearance of Flak

I. Discussion

1. In compliance with Par. 3, Memorandum WDGCT 471 (9 Nov 43), subject as above, dated 14 December, 1943, the attached report of mission flown 4 February, 1944, by units of the 60th Troop Carrier Wing is submitted herewith.

2. The value of the mission flown on 4 February, 1944 is evident from the attached report. Each troop carrier replacement crew should be given familiarization with the appearance of flak during their final month of training. In order that this training may be as realistic as practicable the corridor should be reduced in width from five (5) to three(3) miles.

3. The Executive Officer at Camp Davis has informally recommended the firing of magnesium bombs of the fire works type so as to increase the realism of the training through additional illumination and blast effect. While air ordnance does not concur in the use of such a non-standard item, it does offer a modified Signal Ground, High Burst, Ranging M27 as a substitute.

II. Action Recommended

It is recommended that the I Troops Carrier Command be authorized a monthly allotment of anti-aircraft ammunition in the amount indicated in Par. 2. of the memorandum referred to in Par. 1., above, and that the Ordnance Department be requested to modify, produce and make available the M27 Signal described above, in sufficient quantities each month to effect a flak familiarization program for troop carrier replacement crews.

For the Commanding General, Army Air Forces:

Signed

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

3 Incls:
Incl #1 - Rpt of Mission Pilot Familiarization w/ Appearance of Flak.
Incl #2 - Map Camp Davis Area
Incl #3 - overlay

Dispatched 22 MAR 1944

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Air AG 471 (156)

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DOD ltrs.
8 Jan. & 20 June 1974
By JS/HH LC. Date 3-10-77

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Pilot Familiarization with appearance of flak.

Assistant Chief of Air Staff, Training 17 Mar 44

Air Adjutant General 1

WDG:JB 5791

1. Attention is invited to par. 2a of Hq. O.I. No. 10-2 dated 8 November 43, which requires that a Memorandum for the Chief of Staff be signed by the Commanding General, AAF, or the Chief or a Deputy Chief of Air Staff.

2. In this particular case, 2 additional copies should be made, one marked "comeback copy" and the other "copy for G-3". The symbol of office of origin, initials and telephone extension of the author should be typed in the upper right-hand corner of all copies.

3. For the information of the Secretary, Air Staff, please attach the G-3 Memorandum dated 14 December 43, referred to in par. 1 of attached memorandum.

H. H. HEWITT,
Lt. Col., A.G.D.,
Asst. Air Adj. Gen.

1 Incl.
Memo for C/S dtd 3 Mar 44
w/incls.

Dispatched
18 MAR 1944
AAG

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

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DOD Dir.
6 Jan. & 20 June 1974
By TS/HM LC, Date 3-10-77

Ammunition at Stops of the B-29 Airplanes.

AC/AS, MM&D Attention: Air Ordnance 14 March, 1944

Deputy Chief of Air Staff 1

ESP:hj 6971

1. Confirming telephone conversation, it is directed that immediate action be taken to insure that sufficient .50 caliber ammunition is available at each of the planned stops of the B-29 airplanes; in order to allow the crews to pick up 100 rounds per gun at each of these stops.

2. Advise this office of the action you have taken to accomplish this directive.

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

Dispatched
14 MAR 1944
AAG

File
Ci 14 Mar 44

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Air AS 471 (155)

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

SECRET

DECLASSIFIED DOD Dirs. 5 Jan & 20 June 1972 By JSMM NARS Date 5-10-77

SECRET By Authority of The Commanding General Army Air Forces 10-14-43 MAP Date Initials

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

MEMORANDUM FOR THE DEPUTY CHIEF OF THE AIR STAFF: 14 OCT 1943

Subject: Status of Cluster Fragmentation Bombs, M1 in 12th Air Force.

1. The latest on-hand report (26 August 1943) showed 15,795 clusters on hand at that time, with shipments directed July and subsequently, about 83,000 in addition to the on-hand figure, being enroute.

2. This theater has been given over half of the total received from production, and the entire production has been directed shipped as rapidly as it became available. Shipments have been directed as soon as accepted from tests and turned over to Chief of Ordnance, Field Service, for distribution. Most of the above shipments were directed within 24 hours after becoming available and many shipments made direct from factory without being moved to a depot. Production has been the governing factor as quantities produced were not sufficient to meet early needs of all theaters. However, the following resume of shipments indicate that sufficient quantities are now under way and the shortage should not exist but a short time.

3. Shipments M1 Fragmentation Clusters to 12th Air Force:

Date:	Quantity:	Date:	Quantity:
1942	55,005 Clusters		
1943		1943	
2/20/43	3,000 Clusters	7/26/43	7,000 Clusters
3/ 8/43	27,000 Clusters	8/ 2/43	7,000 Clusters
5/ 3/43	7,000 Clusters	8/20/43	5,200 Clusters
From SAF	7,000 Clusters	8/24/43	4,000 Clusters
5/17/43	2,500 Clusters	9/ 2/43	1,998 Clusters
5/22/43	6,000 Clusters	9/ 2/43	11,000 Clusters
5/31/43	3,000 Clusters	9/10/43	4,000 Clusters
6/11/43	29,808 Clusters	9/17/43	11,000 Clusters
7/ 6/43	12,000 Clusters	9/30/43	3,000 Clusters
7/22/43	7,000 Clusters	10/6/43	10,000 Clusters

Total Shipped - 223,511 Clusters

FOR VICTORY BUY UNITED STATES WAR BONDS AND STAMPS

R. C. COUPLAND,
Brigadier General, U. S. Army,
Air Ordnance Officer.

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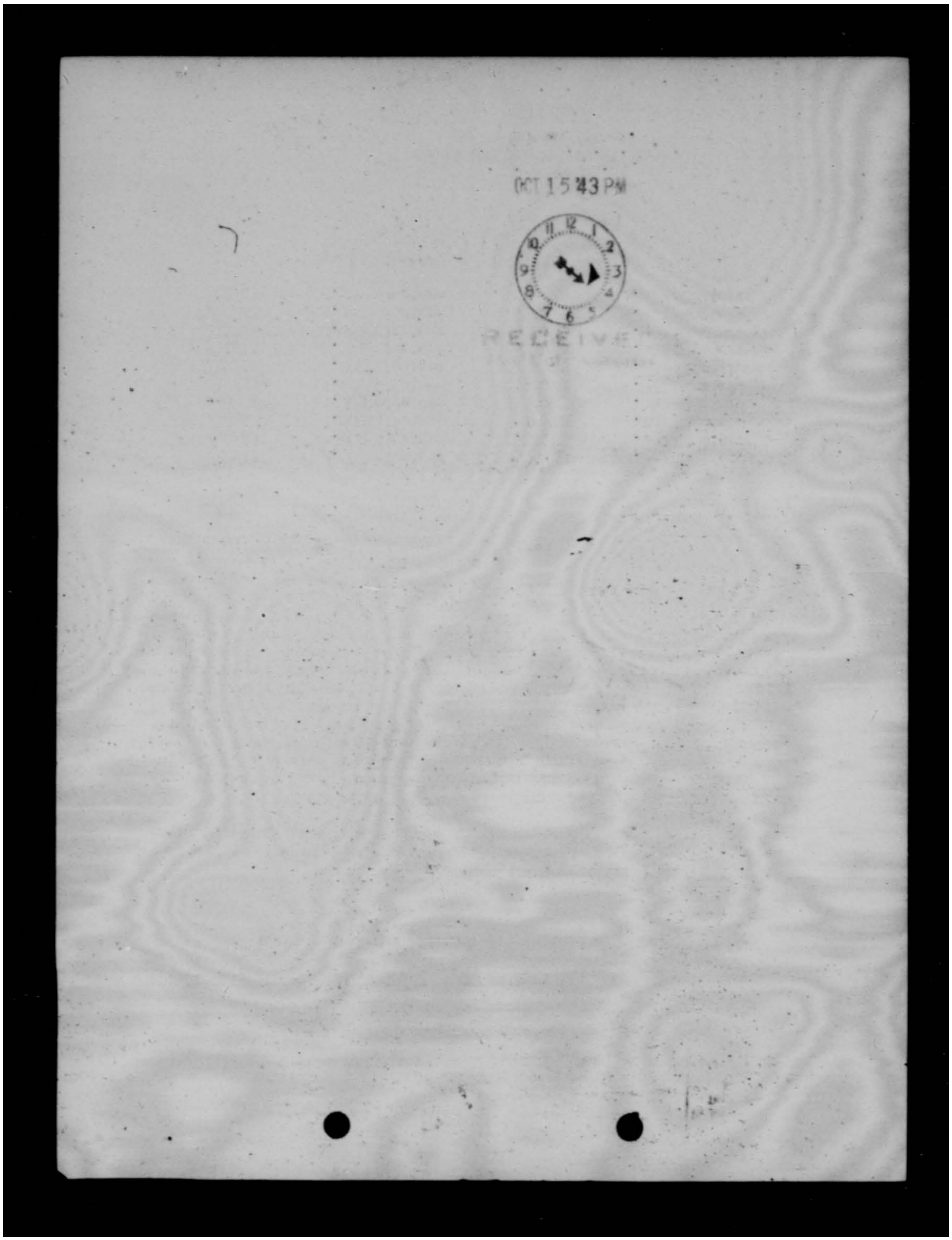

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DOD Dir.
5 Jan. & 20 June 1974
By JSHM LC. Date 3-10-77

DECLASSIFIED 8 October, 1943

MEMORANDUM TO: MAT. MAINT. & DIST. (AIR ORDNANCE OFFICER)

SUBJECT: Message No. SC-0934 Dated 10/7/43 From NAAF SERVICE COMMAND.

1. The above message appears on page 75 of General Arnold's log of messages, concerning which General Perrin made the following comment:

"M.M.&D. (ORD) - Why do we run short in theaters?"

2. Your attention is directed to the above message for such action as is necessary.

3. You are requested to inform the undersigned officer of the action you have taken on the above message in accordance with this comment.

4. _____

Roger L. Shearer
ROGER L. SHEARER
Lt. Col., A.C.
OFFICE OF CABLE SECRETARY
Air Staff

Telephones: 71660
71674
71661
71732

DISTRIBUTION:

MAT. MAINT. & DIST. (AIR ORDNANCE OFFICER)
(Col. Porter - 5C-1048) 74965
CABLE SECRETARY

Ian Coyle

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DECLASSIFIED
DOD Ltr.
8 Jan. & 20 June 1974
By JS/MH LC Date 3-10-77

Supply of Training Ammunition

TO: A-4

DATE Feb. 15, 1943

FROM: Secretary, Air Staff

CONSENT NO. 2
WHR:JT 5246

For signature and dispatch by your division.

Incl.
n/c

WILLIAM E. HALL,
Colonel, G. S. C.,

File
Cr 2/15/43

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~~CONFIDENTIAL~~

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February 1, 1943

MEMORANDUM FOR THE CHIEF OF STAFF (Attention G-3):

Subject: Changes in AR 775-10

I. Discussion.

1. In accordance with the policies of the Assistant Chief of Staff, G-3 not to publish piece-meal changes in AR 775-10, various proposed changes to this regulation originating in the Army Air Forces have been accumulated and are now being submitted along with a proposed change in W.D. Circular No. 253, July 30, 1942.

2. The proposed paragraph 19 is believed necessary because, under the present system of training combat crews, whereby numerous crews are trained by a parent organization during a calendar year, the members of these crews do not receive their authorized annual combat training allowance. The proposed change would make available to each combat crew its authorized annual combat training allowance during its training period.

3. The changes in paragraph 64a(3) are believed necessary because a minimum of 10 rounds of shotgun shell are required to instruct one who is to perform guard duty with the shotgun. Changes in paragraph 64a(4) are believed necessary to provide an allowance for bombardiers and navigators who may be required to serve as aerial gunners in combat.

4. The changes in paragraph 67 are believed necessary because the present allowance of grenades has been found inadequate for training.

5. The changes in paragraph 73 are believed necessary to provide required allowances of bombs for practice purposes.

6. The changes in paragraph 74 are believed necessary because an allowance of training ammunition is required for instructors in order that they may be able to teach properly each class of students and because the allowances of training ammunition now authorized for students at Army Air Forces schools are not, in all cases, sufficient to permit students to be properly trained. The recommended changes in allowances should provide sufficient training ammunition for such students.

Copy to: Office, Chief of Air Staff

Air AS 471 (143)

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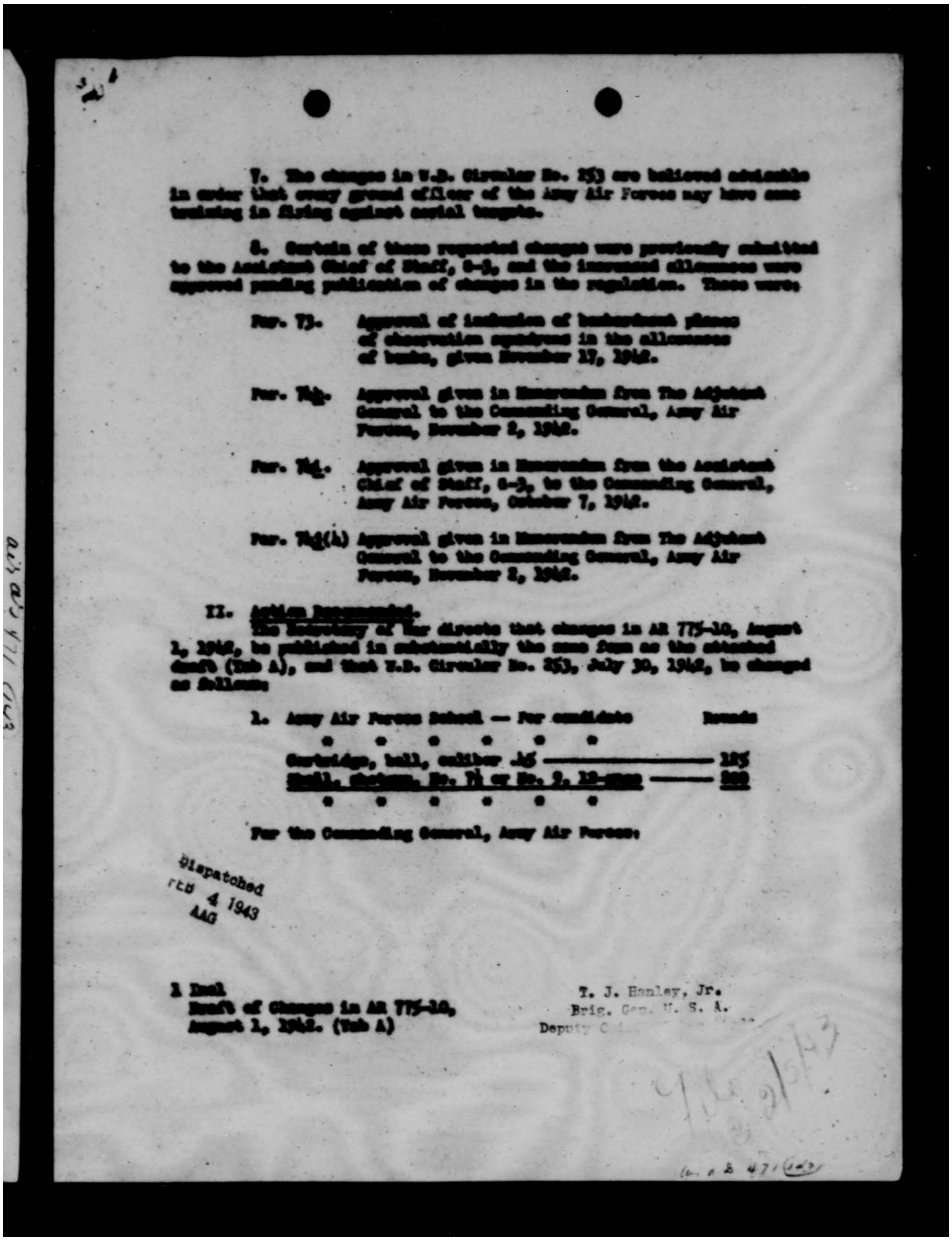

7. The changes in W.D. Circular No. 253 are believed advisable in order that every ground officer of the Army Air Forces may have some training in firing against aerial targets.

8. Certain of these requested changes were previously submitted to the Assistant Chief of Staff, G-3, and the increased allowances were approved pending publication of changes in the regulation. These were:

Par. 73. Approval of inclusion of bombardment planes of observation squadrons in the allowances of bombs, given November 17, 1942.

Par. 74b. Approval given in Memorandum from The Adjutant General to the Commanding General, Army Air Forces, November 2, 1942.

Par. 74c. Approval given in Memorandum from the Assistant Chief of Staff, G-3, to the Commanding General, Army Air Forces, October 7, 1942.

Par. 74d(4) Approval given in Memorandum from The Adjutant General to the Commanding General, Army Air Forces, November 2, 1942.

II. Action Recommended.

The Secretary of War directs that changes in AR 775-10, August 1, 1942, be published in substantially the same form as the attached draft (Tab A), and that W.D. Circular No. 253, July 30, 1942, be changed as follows:

1. Army Air Forces School — For candidate

	Rounds
* * * * * *	
Cartridge, ball, caliber .45	125
Shell, shotgun, No. 7½ or No. 9, 12-gage	200
* * * * * *	

For the Commanding General, Army Air Forces:

Dispatched
FEB 4 1943
AAG

1 Incl
Draft of Changes in AR 775-10,
August 1, 1942. (Tab A)

T. J. Hanley, Jr.
Brig. Gen. U. S. A.
Deputy C...

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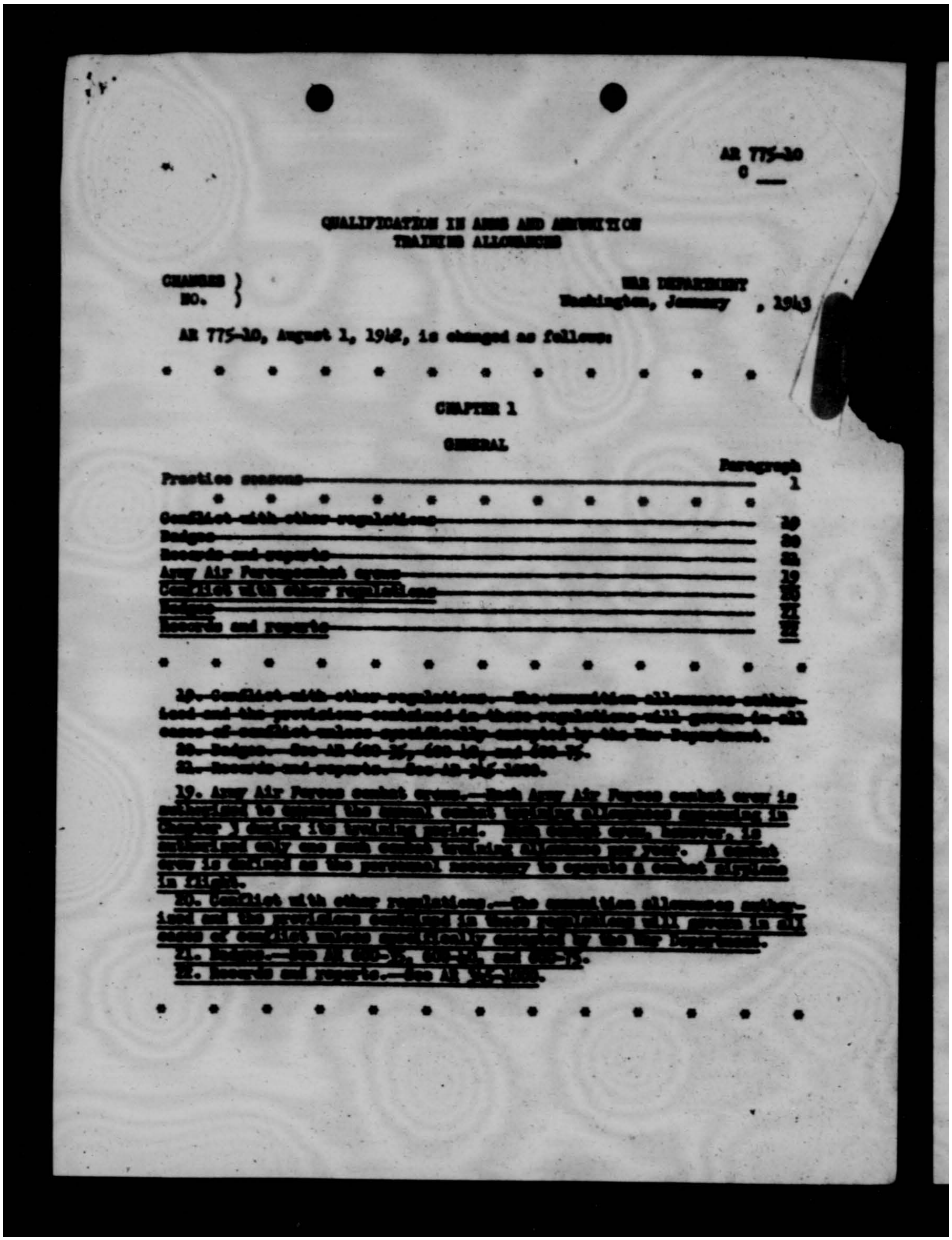

AR 775-10
C ___

QUALIFICATION IN ARMS AND AMMUNITION
TRAINING ALLOWANCES

CHANGES NO. }

WAR DEPARTMENT
Washington, January , 1943

AR 775-10, August 1, 1942, is changed as follows:

* * * * * * * * * * * *

CHAPTER 1

GENERAL

	Paragraph
Practice seasons	1
* * * * * * * * * * *	
Conflict with other regulations	19
Badges	20
Records and reports	21
Army Air Forces combat crews	19
Conflict with other regulations	20
Badges	21
Records and reports	22

* * * * * * * * * * * * *

19. Conflict with other regulations.—The ammunition allowances authorized and the provisions contained in these regulations will govern in all cases of conflict unless specifically excepted by the War Department.

20. Badges.—See AR 600-35, 600-42, and 600-75.

21. Records and reports.—See AR 345-1000.

19. Army Air Forces combat crews.—Each Army Air Forces combat crew is authorized to expend the annual combat training allowance appearing in Chapter 3 during its training period. Each combat crew, however, is authorized only one such combat training allowance per year. A combat crew is defined as the personnel necessary to operate a combat airplane in flight.

20. Conflict with other regulations.—The ammunition allowances authorized and the provisions contained in these regulations will govern in all cases of conflict unless specifically excepted by the War Department.

21. Badges.—See AR 600-35, 600-42, and 600-75.

22. Records and reports.—See AR 345-1000.

* * * * * * * * * * * * *

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ARMS AND AMMUNITION TRAINING ALLOWANCES

64. Shotgun shell.

	Paper shell, rounds 7½ or 9 shot	00 buckshot
a. For Individual instruction:		
(3) Each enlisted man or civilian guard armed with shotgun for guard duty and not previously instructed therewith from allowances of (1) or (2)	6	4
(4) For rated pilot, bombardier, observer, navigator, and aerial gunner	600	

67. Chemical warfare ammunition.

k. Grenade, incendiary, M14. For 100 authorized strength of all tactical units, service command units, and War Department overhead	3

73. Bombs, Army Air Forces.—For unit instruction and combat exercise.

	Fighter	Dive Bomber	For airplane in tactical unit: Light bombardment and reconnaissance and observation	Medium and Heavy bombardment and reconnaissance	Commanding General, Army Air Forces
Miniature practice	—	1,000	—	—	—
Cluster, 20-pound, practice, stabilized	—	—	200	—	2,500
Cluster, 20-pound, fragmentation, stabilized	—	—	40	—	—
100-pound practice	40	100	100	100	2,500
Cluster, incendiary, (100-pound type)	—	12	12	16	500
Cluster, (100-pound type) of 17 pound practice, parachute, fragmentation	—	—	60	* 30	—
Cluster, (100-pound type) of 17 pound practice, parachute, fragmentation	—	—	2	2	—
100-pound demolition	—	** 10	15	15	1,000
300-pound practice	—	—	6	6	—
250 or 300-pound demolition	6	—	6	6	—
500-pound demolition	—	** 6	3	3	200
1,000-pound demolition	—	** 2	1	1	100
2,000-pound demolition	—	—	1	1	50

* For medium bombardment, only.
** Complete with suspension or trunnion bands for adaptation to dive bomber racks.

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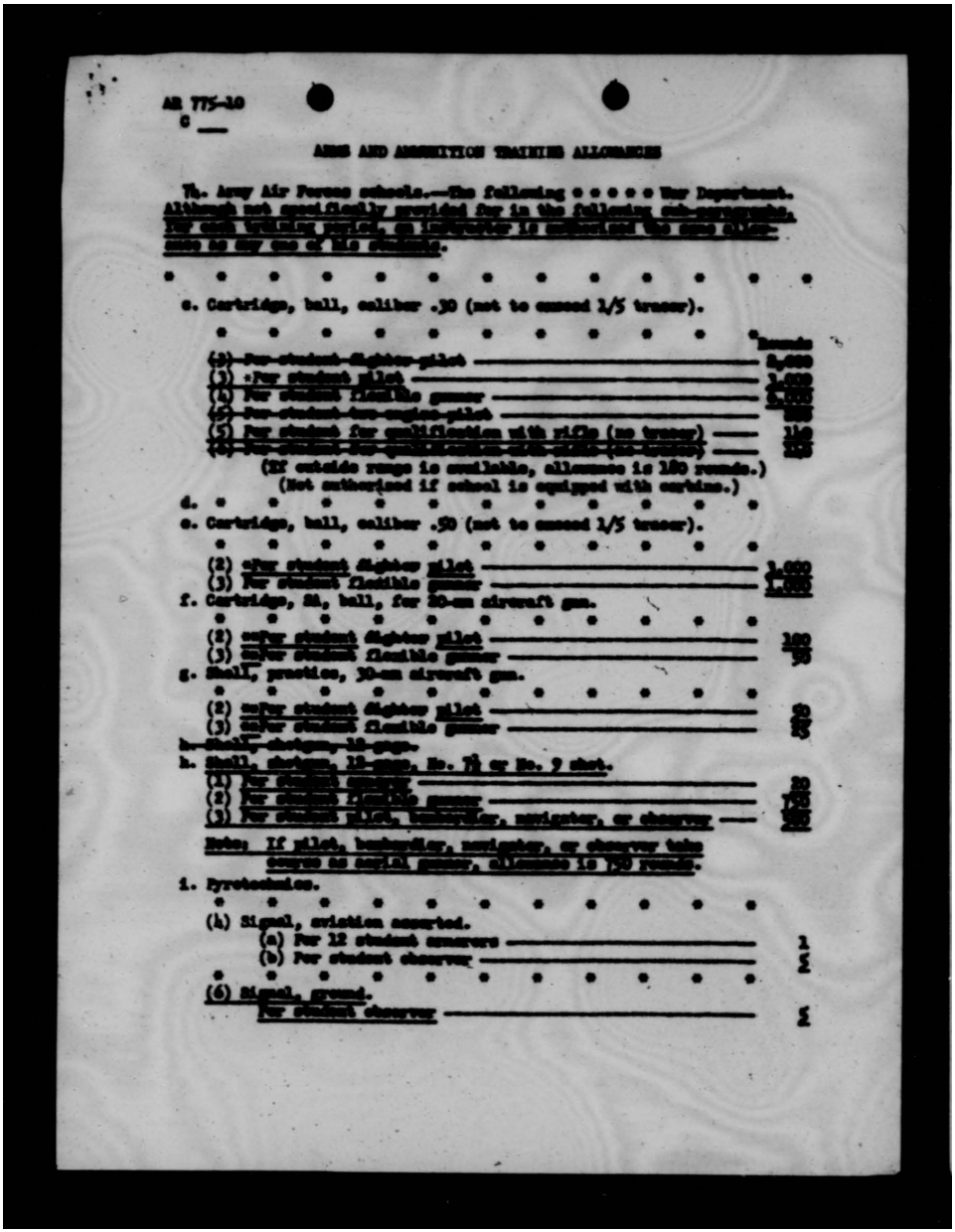

ARMS AND AMMUNITION TRAINING ALLOWANCES

74. Army Air Forces schools.—The following * * * * * War Department. Although not specifically provided for in the following sub-paragraphs, for each training period, an instructor is authorized the same allowance as any one of his students.

* * * * * * * * * * * * *

c. Cartridge, ball, caliber .30 (not to exceed 1/5 tracer).

* * * * * * * * * * *

	Rounds
~~(2) For student fighter pilot~~	~~2,000~~
(3) *For student pilot	1,000
(4) For student flexible gunner	2,000
~~(5) For student two-engine pilot~~	~~[illegible]~~
(5) For student for qualification with rifle (no tracer)	140
~~(6) For student for qualification with rifle (no tracer)~~	~~[illegible]~~

(If outside range is available, allowance is 180 rounds.)
(Not authorized if school is equipped with carbine.)

d. * * * * * * * * * * *

e. Cartridge, ball, caliber .50 (not to exceed 1/5 tracer).

* * * * * * * * * * *

(2) *For student fighter pilot	1,000
(3) For student flexible gunner	1,000

f. Cartridge, SA, ball, for 20-mm aircraft gun.

* * * * * * * * * * *

(2) **For student fighter pilot	100
(3) **For student flexible gunner	50

g. Shell, practice, 30-mm aircraft gun.

* * * * * * * * * * *

(2) **For student fighter pilot	50
(3) **For student flexible gunner	25

~~h. Shell, shotgun, 12-gage.~~

h. Shell, shotgun, 12-gage, No. 7½ or No. 9 shot.

(1) For student armorer	20
(2) For student flexible gunner	750
(3) For student pilot, bombardier, navigator, or observer	500

Note: If pilot, bombardier, navigator, or observer take course as aerial gunner, allowance is 750 rounds.

i. Pyrotechnics.

* * * * * * * * * * *

(4) Signal, aviation assorted.

(a) For 12 student armorers	1
(b) For student observer	5

* * * * * * * * * * *

(6) Signal, ground.

For student observer	5

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ARMS AND AMMUNITION TRAINING ALLOWANCES

j. Bombs.

~~(1) 17-pound practice, parachute, complete round.~~ Rounds

~~For student bombardier and two engine pilot~~ ——— 16

(1) Cluster, (100-pound type), of 17 pound practice,

[illegible]

~~For student bombardier~~ ——— 5

~~For student bombing pilot~~ ——— 2

* * * * * * * * * * *

(4) 100-pound demolition, complete round.

(a) For student bombardier ——— 5

(b) For 4 students bombsight mechanics ——— 1

* * * * * * * * * * *

* * * * * * * * * * * * *

* This allowance is restricted to student pilots training in aircraft equipped with Caliber .30 and/or Caliber .50 fixed guns. If aircraft is equipped with both types of fixed guns, amount of each type of ammunition authorized is proportional to the number of corresponding type weapons. In any case, the total amount of ammunition authorized is 1,000 rounds.

** This allowance is restricted to students training in aircraft equipped with this weapon. When aircraft are equipped with more than one fixed gun of this caliber, the allowance is increased proportionally. If aircraft equipped with this weapon are not available, five rounds are authorized for familiarization firing from ground mount.

By order of the Secretary of War:

G. C. MARSHALL,
Chief of Staff.

OFFICIAL:

J. A. ULIO,
Major General,
The Adjutant General.

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Changes in AR 775-10

Chief of the Air Staff 1/23/43

Organizational Planning 1

JHE/emp/73094

1. There is inclosed for signature a Memorandum for the Chief of Staff proposing changes in AR 775-10. In accordance with the request of the Assistant Chief of Staff, G-3, these changes have been accumulated to be submitted at one time. They have been approved by the Director of Military Requirements, the Director of Air Support, the Director of Base Services, the Director of Individual Training, the Director of Air Defense, the Director of Bombardment, and the Assistant Chief of Air Staff, A-3.

Incl: Memo for Chief of Staff w/Incl,
Drft of Changes in AR 775-10.

JAMES W. ASTON,
Lt. Colonel, Air Corps.

TO: Air Adjutant General

DATE 2/3/43

FROM: Chief of the Air Staff

COMMENT NO. 2
MAL/mdg/5265

For Dispatch.

MILLARD A. LIBBY
Lieut. Colonel, G. S. C.

Incl. n/c

Cur A S 47 (143)

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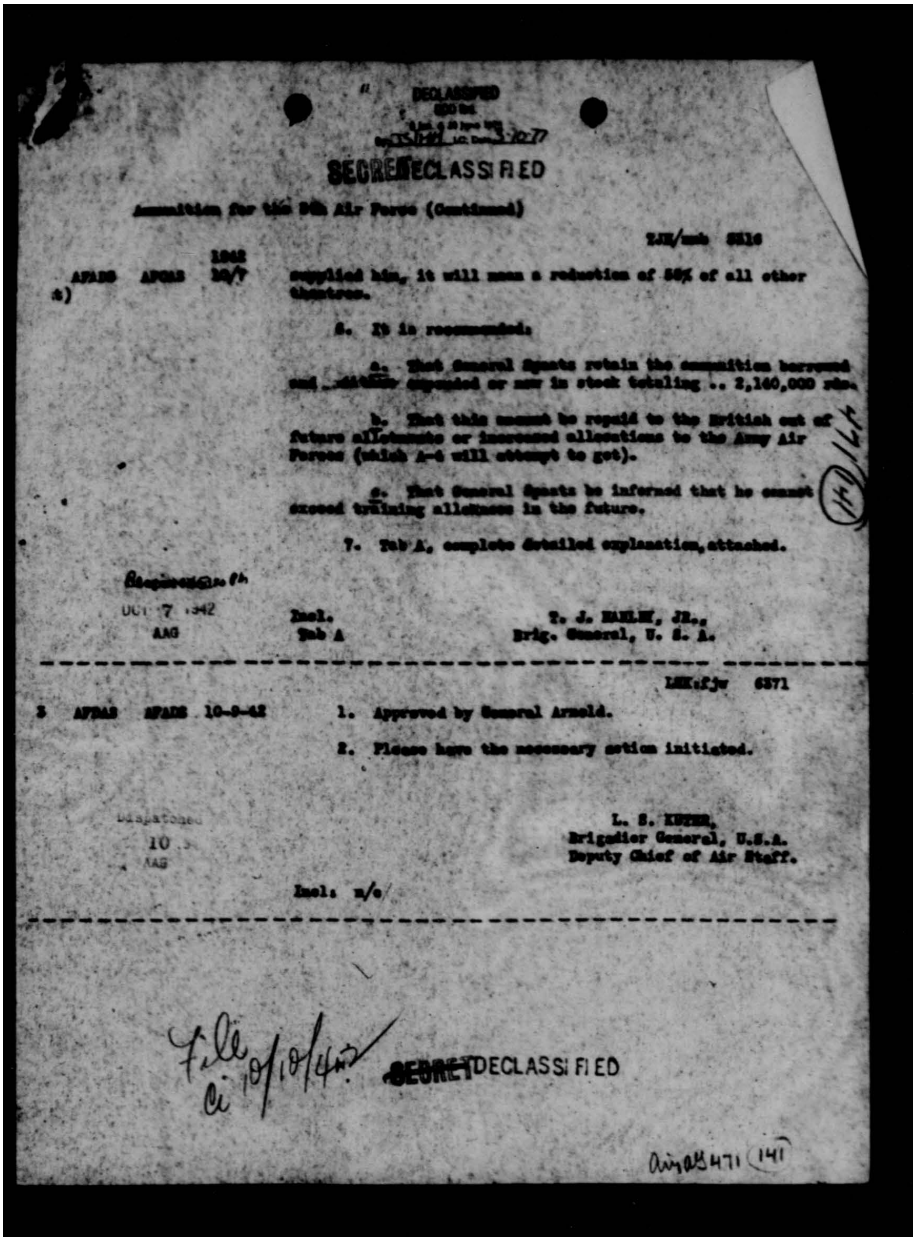

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DOD Dir.
Date 3-10-77

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Ammunition for the 8th Air Force (Continued)

TJE/mmb 5516

1942
AFADS AFOAS 10/7 supplied him, it will mean a reduction of 50% of all other theatres.

6. It is recommended:

a. That General Spaatz retain the ammunition borrowed and [illegible] expended or now in stock totaling .. 2,160,000 rds.

b. That this amount be repaid to the British out of future allotments or increased allocations to the Army Air Forces (which A-4 will attempt to get).

c. That General Spaatz be informed that he cannot exceed training allowances in the future.

7. Tab A, complete detailed explanation, attached.

Dispatched
OCT 7 1942
AAG

Incl.
Tab A

T. J. HANLEY, JR.,
Brig. General, U. S. A.

LHK:fjw 6371

3 AFDAS AFADS 10-9-42

1. Approved by General Arnold.

2. Please have the necessary action initiated.

Dispatched
10
AAG

L. S. KUTER,
Brigadier General, U.S.A.
Deputy Chief of Air Staff.

Incl: n/c

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Ci 10/10/42

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Air AG 471 (141)

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DOD Rts.
8 Jan. & 20 June 1974
By JJMM LC. Date 3-10-77

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Ammunition for the 8th Air Force

WEH:JT 5246

1 AFCAS AFADS 1942 10-6

1. General Arnold is perturbed over cable information which he received to the effect that it was necessary for General Spaatz to borrow ammunition from the British. A later cable instructed General Spaatz to repay this ammunition.

2. General Arnold desires that this matter be investigated, and furthermore wants the answer to the question "Why doesn't Spaatz have more ammunition than he can shoot?"

L. S. KUTER
Brig. Gen., U. S. A.,
Deputy Chief of the Air Staff

TJH/nmb 5316

2. AF/DS AFCAB 10/7

1. Total allocations to the Army Air Forces for the month of October of 50 caliber ammunition is ....12,210,000 rds. Allocations of all ammunition are made to the Army Air Forces by the G-3, War Department, on a monthly basis, and are determined by estimated production for that month. Training ammunition allowances are prescribed in Army Regulations 775-10, and are the basis upon which total allocations are made.

2. Based on the number of airplanes actually in the United Kingdom as of October 1, General Spaatz was entitled for training purposes to ..... 210,000 rds. of 50 caliber ammunition. Based upon the number of airplanes he expected to have on October 1, he was entitled to .... 625,000 rds.

3. By radio, dated October 5, General Spaatz asked for 1,180,000 rds. per month with an entire year's supply to be furnished immediately of ..... 14,160,000 rds.

4. General Spaatz had borrowed from the British 2,140,000 rds. of which he has expended 1,000,000, with an additional quantity on requisition from the British of .... 5,000,000 rds.

5. Ammunition is not available to either repay the British what has been borrowed, or to supply this amount to General Spaatz all at one time. The figures quoted above show that General Spaatz has increased his training allowances by almost 500% for the airplanes on hand, and by 200% for those which he expected to have. If this amount is to be

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air ab 471 (141)

Mr. Gray

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8 Jan. & 20 June 1974
By JSTHM LC Date 3-10-77

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Ammunition for the 8th Air Force

WEH:JT 5246

1 AFCAS AFARS 1942 10-6

1. General Arnold is perturbed over cable information which he received to the effect that it was necessary for General Spaatz to borrow ammunition from the British. A later cable instructed General Spaatz to repay this ammunition.

2. General Arnold desires that this matter be investigated, and furthermore wants the answer to the question "Why doesn't Spaatz have more ammunition than he can shoot?"

L. S. KUTER
Brig. Gen., U. S. A.,
Deputy Chief of the Air Staff

471 (141)

Dispatched
OCT 6 1942
AAG

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403/1002

ADDRESS REPLY TO
[redacted]
WAR DEPARTMENT
WASHINGTON, D. C.

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WAR DEPARTMENT
[redacted]

WASHINGTON

SECRET
By Authority of
The Commanding General
Army Air Forces
JUL 4 1942
Date Initials

July 4, 1942.

DECLASSIFIED
DOD
8 Jan. 4
By JSHM 3-10-77

MEMORANDUM FOR GENERAL HARMON:

1. The following is revised data on incendiary ammunition at points indicated:

a. Australia.

(1) 600,000 rounds of .50 caliber incendiary ammunition are at the San Francisco Port of Embarkation awaiting shipment. It can be anticipated that this ammunition will move shortly.

(2) An additional 1,000,000 rounds of this ammunition has been ordered. No specific date can be given at this time as to when shipment will actually be effected.

b. India.

(1) A June 15 report shows 12,500 rounds on hand.

(2) There are 25,000 rounds enroute by boat which left about June 1, 1942.

c. Middle East.

(1) 1,700,000 rounds of .50 caliber incendiary ammunition has been set up for shipment by 10 July 1942. The exact quantity that will be shipped will be dependant upon the availability of stocks at the time the boat leaves.

471 (138)

FOR DEFENSE
BUY
UNITED STATES SAVINGS BONDS AND STAMPS

Army Air Forces
JUL 4 1942
AAG Received

File

Noted by
Gen Hunter

Max F. Schneider
MAX F. SCHNEIDER,
Colonel, G.S.C.,
Acting Asst. Chief of the Air Staff, A-4.

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air AG 471 (138)

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Cy. for Sec. Air Staff
ADS 1959

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DOD Rts.
8 Jan. & 30 June 1954
By: JSI/MM LC; Date 3-10-77

Ammunition Requirement for M1A2 37 mm.

AFADS
[illegible]

1. AFADS AFDMR 1942
6/29

1. The Air Forces have a requirement with S.O.S. for 2,000 37 mm. aircraft cannons, series M1A2.

2. This Division is advised that in 1942 900 of these will be made available and in 1943, 1,100 will be made available.

3. There are available and under manufacture at the present time for anti-aircraft guns of the same type, H. E. and A. P. ammunition.

4. It is requested that this Division be advised as to the requirement for ammunition to supply the aircraft to be equipped for this armament.

5. It is expected that A-20 airplanes will receive the priority of installation.

6. To what extent (if any) can M4 production rates be decreased to expedite conversion of existing facilities to M1A2 production.

471
136

Hq. Army Air Forces
JUN 29 1942
AAG Received

M. F. S.
AC/A-4.

Cy for S/AS

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WJF

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Air ab 471
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DOD Ltrs.
6 Jan. & 30 June
By: JS/HH LC. Date 3-10-77

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WAR DEPARTMENT
The Adjutant General's Office
Washington

AG 471 (5-12-42)MC-E May 16, 1942.

SUBJECT: Replacement of Ammunition.

TO: Commanding Generals, Eastern Defense Command,
Western Defense Command,
Central Defense Command,
Southern Defense Command.

1. Caliber .30 and caliber .50 ammunition (except incendiary) expended in combat missions by units of the Army Air Forces that are called on by you to perform combat missions, but which are not assigned to your control, will be replaced from the ammunition stocks held in your Command.

2. This replacement will be automatic and will be performed upon the request of the commander of the unit concerned.

By direction of the Commander-in-Chief:

Hq. Army Air Forces
MAY 16 942
AAG Received

Official:

G. C. MARSHALL,
Chief of Staff.

DWIGHT D. EISENHOWER
Major General
Assistant Chief of Staff.

A. E. O'Leary
Major, A. G. D.
Adjutant General.

INFORMATION COPIES TO:
CG, Army Air Forces;
CG, Services of Supply;
Director of Base Services, Army Air Forces;
A. C. of S., G-4;
A. C. of A.S., A-4.

Hq. Army Air Forces
MAY 19 942
AAG Received

File
c 5/20/42

Air AG 471 (135)

AAG/2840
Air AG 471 (135)

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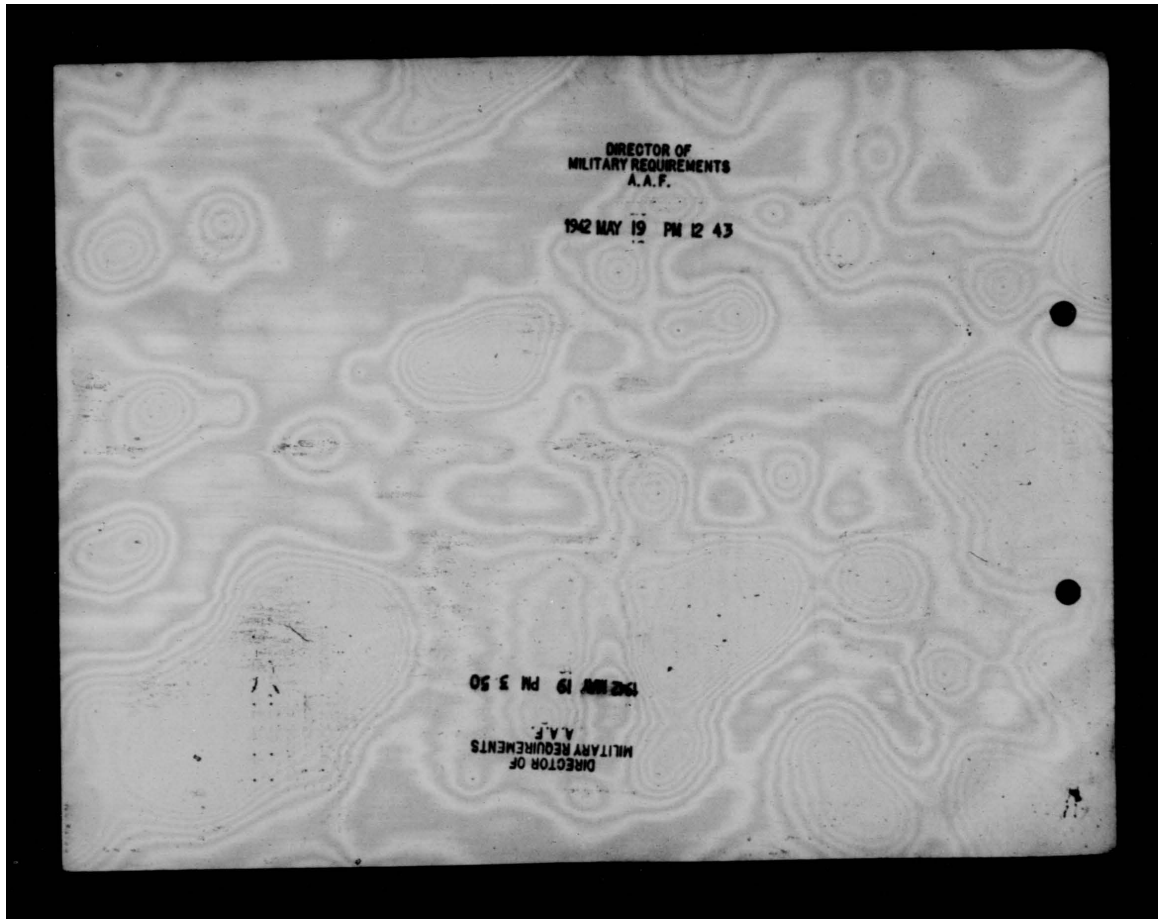

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HEADQUARTERS ARMY AIR FORCES

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ROUTING AND RECORD SHEET

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DOD Ltr.
8 Jan. & 30 June 1971
By JSIMM I.C. Date 3-10-77

File No. _____

Tally No. AAF _____

Note. -- A line will be drawn across sheet after each comment.

SUBJECT: Thirty Days Supply of Ammunition for U.S. Forces in Australia.

NO.	FROM	TO	DATE	COMMENTS (AFASC-S-6) RER:vb
1.	AFASC	AFRBS Attn:Col. Burgess	1942 4-3	1. There is forwarded herewith, as a matter pertaining to your office, Memorandum for the Chief of Ordnance, dated March 29, 1942, subject, same as above. LDM H. J. F. M. CG/ASC 1 Incl. Memo for C/Ord 3-29-42
2.	AFRBS/ ORD	AFMAG	1942 4-14	AFRBS:ORD AH:med 1. For file. L. P. W., D/BS EAL E. A. L., Ordnance Officer. 1 Incl. n/c

Hq. Army Air Forces
APR 15 1942
AAG RECEIVED

Rec'd
APR 9 1942
10:30

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(Do not use reverse side) W-4071, AF, Rev.8/14/41

Asc 1687s

Page No. 1 Ord 491 (131)

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DOD Dir
By JSlatt, WC, Date 3-10-77

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By Authority of 147 605 N.D.
3/27/80 Date
Initials

MAR 29 1942

MEMORANDUM FOR THE CHIEF OF ORDNANCE.

Subject: Thirty Days Supply of Ammunition for U.S. Forces in Australia.

1. Confirming telephone instructions issued to the Chief of Ordnance (Lt. Col. Rice) March 28, 1942 (Serial No. 1933), it is desired that the following ammunition be shipped to the Commanding General, U. S. Army Forces in Australia, at the earliest practicable date:

Caliber .30 Ball	7,163,520 rounds
Caliber .30 Tracer	1,511,520 "
Caliber .30 AP, I & Tr.(5-3-2)	9,669,632 "
Caliber .45 Ball	324,000 "
Caliber .45 Tracer	162,000 "
Caliber .50 AP	2,304,000 "
Caliber .50 Tracer	384,144 "
Caliber .50 AP & Tr (4-1)	4,608,576 "
Shell, HE, 37mm T & E	14,400 "
Shell, AP, 37mm T & E	21,600 "
Canister, 37mm Tank	1,080 "
Shell, HE, 37mm AA	2,880 "
Shell, HE, 60mm Mortar	24,480 "
Shell, HE, 81mm Mortar (Light)	5,517 "
Shell, HE, 81mm Mortar (Heavy)	1,440 "
Shell, HE, 75mm Gun (M2)	5,400 "
Shell, HE, 75mm Gun (M3)	17,280 "
Shell, HE, 75mm Gun (M6)	14,400 "
Shell, Smoke, WP, 75mm Gun	5,400 "
Shell, HE, 3" AA	14,400 "
Shell, HE, 105mm Howitzer	10,800 "
Grenades, hand, fragmentation	5,760 "
Signals, ground, assorted	1,440 "
Signals, very, assorted	5,400 "
Links, metallic, Caliber .30	9,676,800 "
Links, metallic, Caliber .50	6,912,000 "

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CENTRAL MAIL SECTION A.A.F.

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Copy for Commanding General
Army Air Forces

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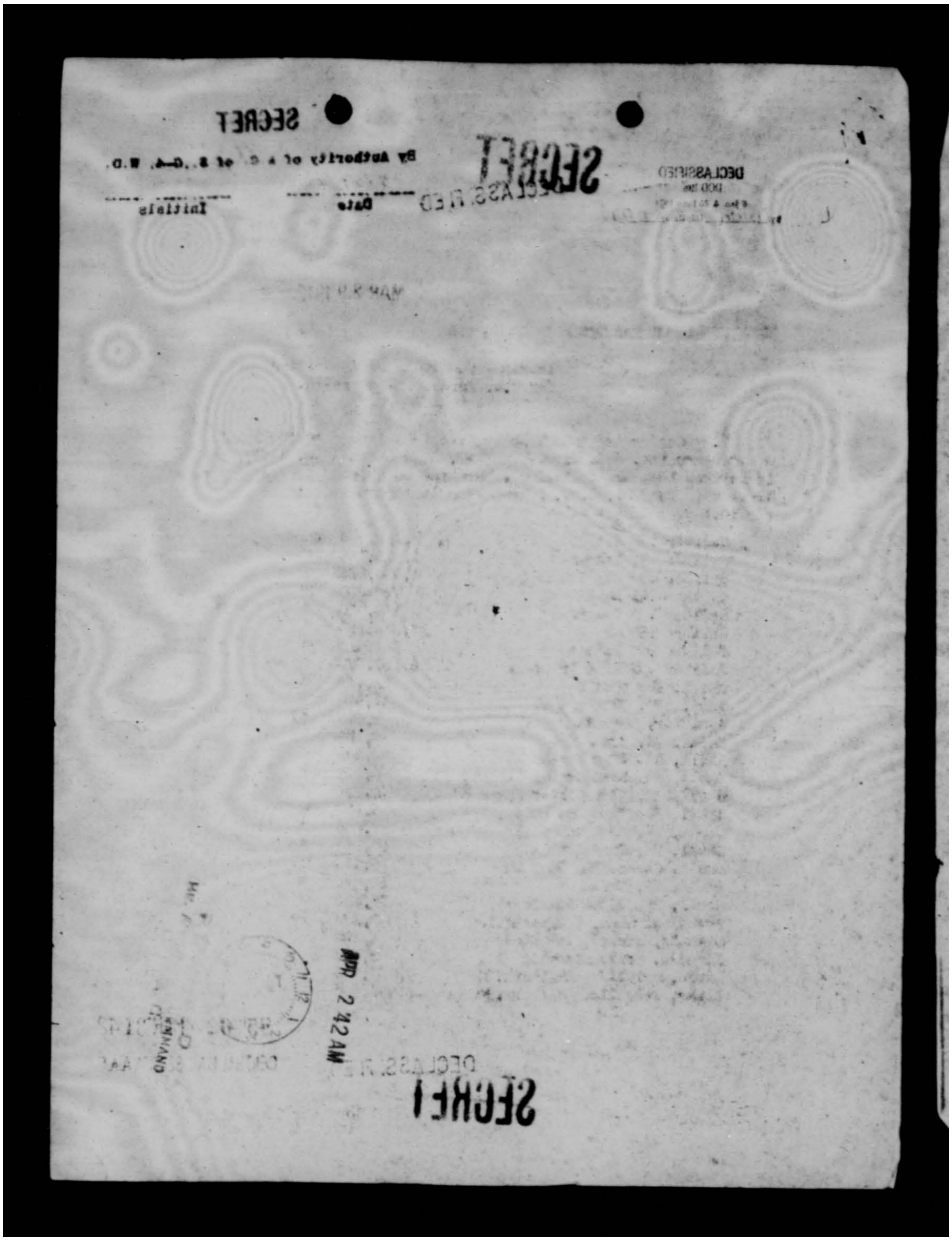

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2. The above shipment will provide ammunition for one month's operations of the Army Airplanes in Australia, and thirty days of supply for U.S. Forces in Australia or enroute thereto.

3. The issues authorized will be given priority over the establishment of Task Force Reserves.

4. Shipment will be marked - "[illegible] - TO OC P".

For the Commanding General:

CHARLES D. YOUNG,
Brigadier General,
Director of Procurement and Distribution.

H J Purdie

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DOD ltrs.
8 Jan. & 20 June 1974
By JSIHM LC, Date 3-10-77

AFADS

WMB/mhh

(Written April 9, 1942)
Ex H749

APR 11 1942

Subject: Incendiary Ammunition .50 and .30 caliber.

To: The Chief of Naval Operations

1. Reference your letter to the Chief of Staff, War Department, dated March 13, 1942, above subject, requesting an allocation of incendiary ammunition from the United States production the following action has been taken:

The Director of Procurement and Distribution has been directed to supply the United States Navy with 250,000 rounds of .50 caliber incendiary ammunition; 125,000 rounds to be delivered by April 15 and the remaining 125,000 rounds to be delivered by May 1, 1942 and 400,000 rounds of .30 caliber incendiary ammunition; 200,000 rounds to be delivered by April 15 and the remaining 200,000 rounds to be delivered by May 1, 1942.

2. The Munitions Assignments Committee (Air) has been requested to make a study of the requirements for incendiary ammunition based on actual needs of the Army and Navy and Defense Aid and to make a percentage allocation of United States production.

3. Pending this study and allocation, the afore mentioned amounts have been made available in order that the Navy's immediate requirements may be met.

Incls.
Ltr.fr.C/NO to C/S 3/13/42 w/cy.ltr.from CC/U.S.Fleet to C/NC 3/10/42;cy.ltr.fr.C/NO to C C/US Fleet 3/4/42; cy.ltr.fr. C/S to C/NO 2/26/42.

Dispatched
APR 11 1942
AAG

M. F. HARMON
Major General, U. S. A.
Chief of Staff.

471 (129) a

HEADQUARTERS—ARMY AIR FORCES—COORDINATION

		A-1	A-2	A-3	A-4	A-5		

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Serial 017812
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DOD ltrs.
Jan. & 20 June 1974
By JS/FH LC; Date 5-10-77

NAVY DEPARTMENT
OFFICE OF THE CHIEF OF NAVAL OPERATIONS
WASHINGTON

MARCH 13, 1942

From: The Chief of Naval Operations
To: The Chief of Staff, War Department

Subject: Incendiary Ammunition .50 and .30 caliber.

Enclosure: (A) Copy of Secret ltr of Chief of Staff, War Department, dated Feb. 26, 1942, including endorsement thereto by the Commander in Chief, United States Fleet.

1. In the second endorsement of enclosure (A) the Commander in Chief, U. S. Fleet, has stressed the vital importance of incendiary ammunition in aircraft combat.

2. To provide a proper ratio of incendiary ammunition to armor piercing and tracer ammunition when belted, it is requested that allocation of one-half the production of .50 caliber incendiary and one-thrid the production of .30 caliber incendiary ammunition be made to the Navy.

3. The Navy representative of the munitions assignment committee is being advised accordingly,

s/Horne
F. J. HORNE
Acting

---

cc: Cominch
BuOrd
Capt.A.G.Noble

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By JS/RM NC, Date 3/10/77

UNITED STATES FLEET
Headquarters of the Commander in Chief
Navy Department, Washington, D. C.

Cominch File
FF1/S76
Serial 00178

March 10, 1942

SECRET

SECOND ENDORSEMENT to
Secret ltr. of Chief of Staff,
War Department, dated Feb. 28, 1942

From: The Commander in Chief, United States Fleet.
To : The Chief of Naval Operations.

Subject: Incendiary ammunition .50 and .30 caliber.

1. Noted and returned. It is understood that ammunition mentioned in enclosure (A) of first endorsement has been released to Subordinate Command, Service Force, Pacific Fleet, for delivery in Hawaiian Area at earliest practicable date. This assignment is concurred in.

2. Due to vital importance of incendiary ammunition for aircraft use in combat with the enemy, it is requested that every effort be made to obtain at once a sizeable percentage allocation of total U. S. production of this type from the Army for Navy use.

s/ E. J. KING

E. J. KING

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DOD ltrs.
8 Jan. & 20 June 1974
By JSIMM LC, Date 3-10-77

COPY

NAVY DEPARTMENT
OFFICE OF THE CHIEF OF NAVAL OPERATIONS
WASHINGTON

Op-12 et
(SC) S78-1
Doc. 44744
Serial 014412

March 4th 1942

~~SECRET~~

1st Endorsement

From: The Chief of Naval Operations.
To: The Commander-in-Chief, U.S. FLEET

Subject: Caliber .50 Incendiary Ammunition for the Navy.

Enclosure: (A) Secret ltr of Chief of Staff, War Dept. S78-1, Doc. No. 44744 of 2/26/42.

1. Enclosure (A) is forwarded herewith.

2. Comments and recommendations for assignment are requested.

s/ F. J. HORNE

F. J. HORNE
Acting

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8 Jan. & 20 June 1974
By: JS/HM LC, Date 3-10-77

COPY SECRET

WAR DEPARTMENT

OFFICE OF THE CHIEF OF STAFF
WASHINGTON

February 26, 1942

Subject: Caliber .50 Incendiary Ammunition for the Navy.

To: The Chief of Naval Operations.

1. Reference is made to your memorandum for General Arnold on the above subject February 17, 1942.

2. The Chief of Ordnance has been directed to release to the Navy Department 40,000 rounds Caliber .50 incendiary ammunition as requested in the above memorandum.

s/ G. C. MARHSALL
Chief of Staff.

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DOD Ltr.
5 Jan. & 20 June 1974
By JS/HH LC. Date 3-10-77

RECEIPT

DATE _____

SUBJECT: Incendiary Ammunition .50 and .30 caliber.

1. Received from the War Department, General Staff, letter, above subject w/inclosures:

Ltr.frm. C/NO to CS
3/13/42 w/cy ltr.frm.
CC/US Fleet to C/NO 3/10/42;
cy.ltr.fr.C/NO to CC/US Fleet
3/4/42; cy.ltr. fr.C/S to
C/NO 2/26/42.

_____
OFFICER RANK

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OFFICE

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HEADQUARTERS ARMY AIR FORCES

ROUTING AND RECORD SHEET

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DOD ltrs.
8 Jan. & 20 June 1974
By JS/MM LC; Date 3-10-77

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File No. _____

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SUBJECT: Training Ammunition Allocations for April 1942.

NO.	FROM	TO	DATE	COMMENTS (AFASC-S-6) RER:em
1.	AFASC	AFRBS	1942 3-31-	1. There is forwarded herewith as a matter pertaining to your office memorandum from Headquarters, Services of Supply, dated March 23, 1942, subject, "Training Ammunition Allocations for April 1942". Incl. Memo. dtd. 3-23-42 H. J. F. M. CG/ASC
2.	AFRBS/ ORD	AFMAG	1942 4-6	AFRBS:ORD AH:med 1. To be filed. 2. The Chief of Ordnance has been informed as to distribution desired. L. P. W. D/BS E. A. L. Ordnance Officer.

471 (129)

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(Do not use reverse side) W-4071,AF, Rev.8/14/41

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Page No. 1

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8 Jan. & 20 June 1971
By: JS/MM LC; Date 3-10-77

WAR DEPARTMENT
HEADQUARTERS, SERVICES OF SUPPLY
WASHINGTON, D. C.

SP 471 (3-23-42) MAR 23 1942

MEMORANDUM FOR THE COMMANDING GENERAL, ARMY AIR FORCES:

Subject: Training Ammunition Allocations for April 1942.

1. The service ammunition as indicated in the attached Tab A has been allocated for training in April 1942.

2. It is requested that you advise the Chief of Ordnance of distribution of the training credits to units under your control.

For the Commanding General:

Joe N Dalton

JOE N. DALTON,
Colonel, General Staff Corps,
Administrative Assistant.

Incl:
Train amm
Allocations
Tab A

SP 471 (3-23-42)

FOR VICTORY BUY UNITED STATES DEFENSE BONDS AND STAMPS

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ASC
CENTRAL MAIL SECTION A.A.F.
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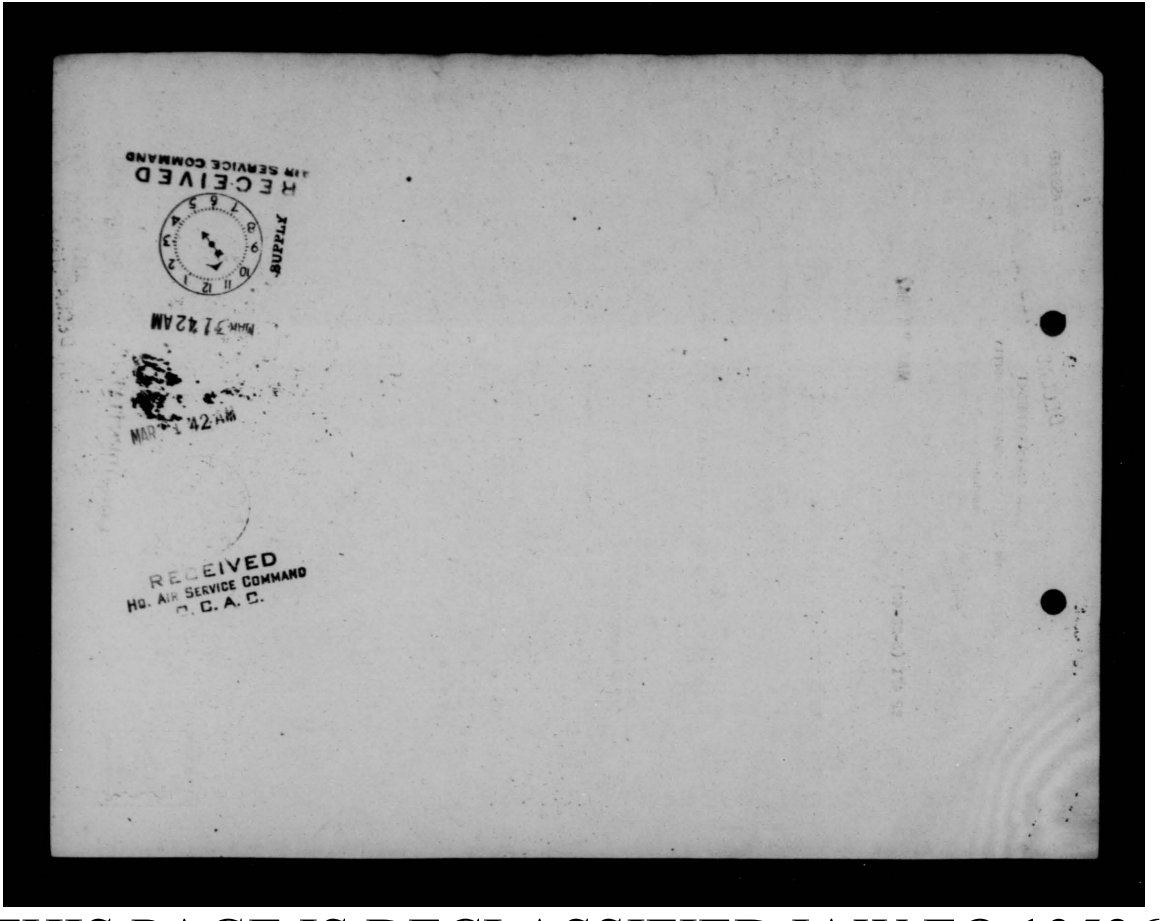

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TAB A

TRAINING AMMUNITION ALLOCATIONS FOR APRIL, 1942

Service Ammunition	Army Air Forces
Shell, HE 155mm gun C/R	
Shell, HE 240mm how C/R	
Shell, HE 200# M106 8" how	
Shell, HE, M42 3" AA gun 1917	
Shell, HE, M42 3" AA gun 1918	
Primer, electric M30	
Shell, HE M71 90mm AA gun	
Cartridge, SA Ball 20mm AC gun (TP & S)	49,886
Shell, HE M48 or Mk 1 75mm gun	
Primer, Friction M1914	
Shell, HE Mk II 40mm AA gun	
Shell, smoke FM Mk II 75mm gun (TP & S)	
Shell, HE 75mm pk how	
Shell, HE M1 105mm how	
Shell, HE Mk 1 155mm how C/R	
Shell, smoke WP 155mm how C/R	
Shell, HE or prac 60mm mortar	
Shell, HE or prac 81mm mortar	
Shell, smoke WP M57 81mm mortar	
Cap, Blast Tetryl Elec	
Cap, Blast Tetryl Nonelec	
Explosive, TNT or nitro starch, ½ lbs	
Fuze, Blasting Time Feet	
Primer, Percussion 21 Gr	
Shell, smoke SF M60 105mm how	
Bomb, Demo 100# M30 C/R	
Bomb, Demo 300# M31 C/R	
Bomb, Demo 500# M43 C/R	
Bomb, Demo 1000# M44 C/R	
Bomb, Demo 2000# M34 C/R	
Bomb, Photoflash M23 C/R	1,222
Bomb, Frag 20# M41 C/R	
Bomb, Frag 30# M5 C/R	
Grenade, Hand Frag MkII WP	
Grenade, Hand CI CN M7WF (TP & S)	1,701
Flare, AC Para M8A1	826
Flare, AC Para M9 Reconn	692
Flare, AC Para M24 Bombing	
Flare, Airport M13	
Lights, Signal Very Assorted	1,292
Signals, Aircraft Assorted	1,410
Signals, Drift M25	
Signals, Ground Assorted	
Grenade, Hand Smoke HC M8	
Cartridge, Ball Cal. .30	4,456,938
Cartridge, Tracer Cal. .30	1,209,229
Cartridge, Ball Cal. .45	673,774
Cartridge, Tracer Cal. .45	1,600,000
Cartridge, Ball or AP Cal. .50	400,000
Cartridge, Tracer Cal. .50	

Note: (a) Balance of year's total.

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LWD/esg
Written March 6, 1942.

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6 Jan. & 20 June 1974
By JS/HM LC Date 3-10-77

MAR 11 1942

Ammunition.

Commanding General, U.S.A.F.I.A.

1. This Headquarters is using the following as a basis to compute the needs for ammunition and planes in combat areas:

a. The Attrition rates.

(1) Theatre of Operations - all types 20% a month.

(2) Zones of Interior and Overseas Departments - all types 3% a month.

b. Mission rates.

(1) Heavy Bombardment - 5 missions per plane per month, of which 5 will be bombing missions.

Hq. Army A
MAR 9 1942
AAG Received

(2) Medium Bombardment - 15 missions per plane per month, of which 10 will be bombing missions.

Light Bombardment, including Dive Bombers) - 15 missions per plane per month, of which all will be bombing missions.
Transports - 15 missions per plane per month.
Amphibians - 15 missions per plane per month, of which 5 will be bombing missions.

(3) Pursuit aircraft equipped to carry bombs) - 20 missions per month, of which 2-1/2 missions will be bombing missions.

(4) All other types - 20 missions per plane per month.

c. Load: Computations to be based on the maximum alternate load.

HEADQUARTERS ARMY AIR FORCES - COORDINATION

Chief of Staff, Air Staff, A-1 A-Insp. Budget Finance

d. The requirement for General Purpose Demolition bombs and other types shall be computed independently of the Armor Piercing bombs, Depth bombs, Chemical bombs, and Aeiral Mines, on an airplane mission basis as follows:

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(1) For Heavy and Medium Bombardment:

2000 lb. 8%
1000 lb. . . . . 16% (70% GP; 30% SAP)
800 lb. . . . . 23% (70% GP; 30% SAP)
250 lb. 24%
100 lb. 9%
Incendiaries . . . . . 20%, of which 15% shall be 100 lb. gasoline filled; 85% shall be 4 lb. or smaller.

(2) For Light Bombardment, other than Dive Bombers:

1000 lb. . . . . 12% (70% GP; 30% SAP)
500 lb. . . . . 22% (70% GP; 30% SAP)
250 lb. 24%
100 lb. 20%
20 lb. fragmentation, stabilized 17%
Incendiaries . . . . . 5%, of which 15% shall be 100 lb. gasoline filled; 85% shall be 4 lb. or smaller.

(3) For Dive Bombers (including combined loads for wing racks):

1000 lb. 40%
500 lb. plus 2-100 lb 35%
500 lb. plus 2-100 lb. clusters of 6-20 lb. fragmentation. .10%
500 lb. plus 2-100 lb. clusters of 4 lb. incendiaries . . . 10%
500 lb. plus 2-100 lb. incendiaries 5%

(4) Pursuit:

500 lb. . . . . 60% - NOTE: If 250 lb. bomb is carried as alternate, divide percentage equally between 250 and 500 lb. bombs.

20 lb. fragmentation . . . . 40% - NOTE: If airplane will not carry 20 lb. fragmentation bomb on wing racks, add percentage to 500 lb. bomb.

20 lb. fragmentation. . . . .40% - NOTE: If airplane will not carry 20 lb. fragmentation bomb on wing racks, add percentage to 500 lb. bomb.

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.	[illegible]	Fiscal	

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2. It is realized that in using this basis, changes must be made to meet the tactical situation in different areas. With this in mind, and realizing that your operations up to date cannot be taken as a standard, it is desired that you state what changes, if any, you would recommend to fit the tactical situation. Information is particularly desired on the following points:

a. The combat life of the various types of airplanes.

b. The types of bombs that each airplane uses most and against what kind of targets.

c. The number of missions per airplane per month and what number of these are bombing missions.

For the Commanding General, Army Air Forces:

1 Incl.
Chart -"30 Days' Supply per Operating Tactical Group".

R. C. LEWIS
Major, A.C.
Actg. Asst. Adjutant General, A.A.F.

Dispatched
MAR 11 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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HEADQUARTERS A[redacted]RCES [redacted]

ROUTING A[redacted]ORD SHEET DECLASSIFIED

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6 Jan. & 30 June 1954
By TJH LC Date 3-10-77

File No.

Note.—A line will be drawn across sheet after each comment.

Tally No. AAF/A-4/438

SUBJECT: Ammunition.

NO	FROM	TO	DATE	COMMENTS
1.	AAF A-4	AAF AAG	1942 3/6	AAF/A-4 LMD/esg 1. It is desired that the attached letter be sent to Commanding General, U.S.A.F.I.A. by the quickest available means. Incl. Ltr. to C.G.A.F.I.A. (3/6/42). TJH, Jr., C/A-4

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8 Jan. & 30 June 1974
By: JS/MM LC Date 3-10-77

March 24, 1942

MEMORANDUM FOR THE ASSISTANT CHIEF OF STAFF, G-3:

Subject: Shortages in Training Equipment and Ammunition.

It is believed undesirable to publish the attached letter for the reasons set out in the non-concurrence of G-4.

For the Commanding General, Army Air Forces:

E. P. CURTIS,
Lt. Col., Air Corps,
Executive, Air Staff.

Incls:
G-3/48260 (2-24-42)
w/ incls. as listed.

Dispatched
MAR 24 1942
AAG

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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	

AAF-39

air ab 471 (124)

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ADDRESS REPLY TO:
CHIEF OF THE AIR CORPS
WAR DEPARTMENT
WASHINGTON, D. C.

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8 Jan. & 20 June 1974
By JSMM LC; Date 3-10-77

WAR DEPARTMENT
Headquarters Army Air Forces
[redacted]
WASHINGTON

March 12, 1942.

SUBJECT: Shortages in Training Equipment and Ammunition

TO: A-3 Section, Army Air Forces

1. This office concurs with the comments of the Assistant Chief of Staff, G-4 as set forth in Tab "B". There is no necessity for the action recommended.

L. S. S.
Director, Individual Training

Noted Van

1 Incl.
Memo for C/S,2/14/42, same subj.
with Tabs A & B

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8 Jan. & 20 June 1974
By JS/HM LC Date 3-10-77

283

AG 471 (2-18-42)MSC-D JMH/gc - 1705.

February 26, 1942.

SUBJECT: Ratio of .30 Caliber Ball and AP Ammunition.

TO: Chief of Ordnance.

1. At the present time, the production of Caliber .30 ammunition is based upon a ratio of approximately 65% Ball, 20% Armor Piercing and 15% Tracer.

2. In view of industrial difficulties and the shortages of strategic and essential materials required for the manufacture of Caliber .30 Armor Piercing Ammunition, the production of Caliber .30 ammunition, both in existing and projected plants, will continue in the proportions referred to in Paragraph 1 above.

By order of the Secretary of War:

D.R. Van Sickler

Adjutant General.

471 (122)

INFORMATION COPIES TO: Under Secretary of War;
Chief of the Army Air Forces;
Chief of Coast Artillery;
Chief of the Air Corps;
Chief of Chemical Warfare Service;
Chief of Engineers;
Chief of Ordnance;
Chief Signal Officer;
The Quartermaster General;
The Surgeon General.

Dr. Army Air Forces
MAR 4 1942
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8 Jan. & 20 June 1974
By JS/KM LC; Date 3-10-77

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BY AUTHORITY OF THE
CHIEF OF ARMY AIR FORCES
DATE INITIALS

(Air AG)

March 3, 1942.

SUBJECT: Shipment of Air Corps Technical Orders to England.

TO: Chief of the Air Corps.

It is directed that the latest revised edition of Air Corps Technical Orders 00-30-74 and 11-1-6C American Aircraft Ammunition capacities and armament installation be sent to General J. E. Chaney, American Embassy, London, England by Air Mail.

By command of Lieutenant General ARNOLD:

JOHN B. COOLEY
Lt. Col., A.G.D.
Assistant Air Adjutant General

471 (125)

Dispatched
MAR 4 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	
	WJF										

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6 Jan. & 20 June 1974
By: JS/HM LC; Date: 3-10-77

HEADQUARTERS ARMY AIR FORCES
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ROUTING AND RECORD SHEET

File No.,.....

Note.--A line will be drawn across sheet after each comment.

Tally No. AAF/A-4/341.

SUBJECT: Shipment of Air Corps Technical Orders to England.

NO.	FROM	TO	DATE	COMMENTS AAF/A-4 HCB/mhh
1.	AAF A-4	AAF AAG	1942 3/1	1. Request that a directive, substantially as follows, be sent to the Chief of the Air Corps: "1. It is directed that the latest revised edition of Air Corps Technical Orders 00-30-74 and 11-1-6C American Aircraft Ammunition capacities and armament installation be sent to General J. E. Chaney, American Embassy, London, England by Air Mail."
	Hq. Army Air Forces MAR 1 1942 AAG RECEIVED			for TJH, Jr., C/A-4 HCB.

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(Do not use reverse side) W-4071, AC. Rev. 8/14/41

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6 Jan. & 20 June 1974
By JS/HM LC, Date 3-10-77

AAF/A-4
HCB/mhh

March 7, 1942.

MEMORANDUM FOR THE ASSISTANT CHIEF OF STAFF, G-4:

Subject: Aviation Ammunition for China.

1. Basic memorandum to G-4, February 14, 1942, Colonel B. G. Ferris, submits certain requirements of bombs and ammunition for the Volunteer Group in China for the months of March, April, May and June.

2. This division is unable to determine the basis used in computing these requirements.

3. In view of the comments of War Plans Division and informal conversation with War Plans Division (Lt. Col. Timberman) it is believed these requirements should be included in the overall picture of the projected air effort in India.

4. It is the policy of the A-4 Division to make an initial shipment in cases of this nature, of three months supply of bombs, ammunition peculiar to the Air Corps, and pyrotechnics with the object of building up a stockage as soon as practicable for five months (combat life) of all airplanes actually operating in or shipped to the theatre.

5. This munitions supply is calculated upon approved mission and expenditure rates based upon the types of airplanes being used.

6. It is our intention to keep G-4 informed as to the number of airplanes by type located in India and China and of allocations to these theatres as they occur, for shipment of necessary caliber .30 and caliber .50 ammunition.

Air Ab 471 (117)

MAR 7 1942
AAG Rec

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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7. At the present time, the method of supply outlined above, has not been approved to include the Volunteer Group and therefore it is recommended that the inclosed correspondence be referred to the Defense Aid Director for such action as he deems necessary.

Incls.
DF G-4/[illegible]
2/24/42 to
G/AAF abv.subj;
DF WPD 4[illegible]-8,
2/[illegible]/42; memo to
AWPD 2/20/42 frm.
G-4; memo for G-4,
2/14/42 frm. C/S.

For the Chief of the Air Staff:

T. J. HANLEY, JR.,
Colonel, Air Corps,
Assistant Chief of Air Staff, A-4.

Dispatched
MAR 8 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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8 Jan. & 20 June 1974
By JS/MM LC. Date 3-10-77

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WAR DEPARTMENT GENERAL STAFF
DISPOSITION FORM

AG
G-4/33961

SUBJECT: Aviation Ammunition for China. Date FEB. 24, 1942

X Ch/AAF

X Remark and recommendation

BREHON SOMERVELL,
Major General,
Assistant Chief of Staff.

S/ L. K. Ladue

L. K. LADUE
Lt. Colonel, General Staff Corps,
Acting Chief, Supply Branch

Incls:
DF fm WPD
(2-23-42)
w/1 Incl.

FOR RECORD ONLY:

1. The basic memorandum to G-4, February 14, 1942, Colonel B. G. Ferris requests Caliber .50 ammunition and bombs for the Volunteer Group in China and other airplanes whose shipment to China has been assured.

2. In a memorandum for WPD comments and recommendations were requested concerning the relative priority to be given shipments of ammunition to this force.

3. War Plans Division recommends that the basic memorandum be referred to the Chief of Army Air Forces for comment.

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COPY for Chief of Army Air Forces

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3 Jan. & 30 June 1976
By JS/MCL LC. Date 3-10-77

WAR DEPARTMENT GENERAL STAFF
DISPOSITION FORM
WAR PLANS DIVISION

AG
G-WPD 4626-8

2-21-42
Date

K
Initials

SUBJECT: Aviation Ammunition for China

February 23, 1942

X G-4

X See notation below

1. The requirement for aviation ammunition listed in Col. Ferris' memorandum of February 14, 1942 was based upon the expansion of the American Volunteer Group to three squadrons and other air reinforcements. This estimate will now be but a partial requirement for the total aviation munitions in this theatre in view of our projected air effort in India.

2. It is recommended that the attached memorandum for G-4 from Col. Ferris be referred to CAAF for such action as he may desire.

DWIGHT D. ELSENHOWER
Brigadier General
Assistant Chief of Staff.

R. W. Crawford

1 Incl. - Memo for AC/S, WPD,
G-4/33961, 2/20/42
w/incl.

R. W. CRAWFORD
Brigadier General, G.S.C.

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6 Jan. & 20 June 1974
By: JS Jr. LC Date: 3-10-77

WAR DEPARTMENT
WAR DEPARTMENT GENERAL STAFF
SUPPLY DIVISION, G-4
Washington, D. C.

G-4/33961

Feb. 20, 1942

MEMORANDUM FOR THE ASSISTANT CHIEF OF STAFF, WAR PLANS DIVISION:

Subject: Aviation Ammunition for China.

1. Reference is made to the attached memorandum on the above subject for the Assistant Chief of Staff, G-4, February 14, 1942, from Colonel B. G. Ferris.

2. Your comments and recommendations are requested concerning the relative priority to be accorded shipment of ammunition to the Volunteer Group in China.

BREHON SOMERVELL,
Major General,
Assistant Chief of Staff.

Incl:
Memo fm OCoS
(2-14-42) (dup)

S/ H. A. Malin

H. A. MALIN,
Lt. Colonel, General Staff,
Assistant Executive.

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WAR DEPARTMENT
OFFICE OF THE CHIEF OF STAFF
WASHINGTON

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DOD Dir.
5 Jan 6 20 Jan 1971
By JJ[illegible] LC Date 3-10-77

February 14, 1942.

MEMORANDUM FOR THE ASSISTANT CHIEF OF STAFF, G-4:

Subject: Aviation Ammunition for China.

1. The aviation ammunition listed below has been determined as the requirements for the Volunteer Group in China, and other airplanes whose shipment to China has been assured:

	Quantity
March:	
Cal. .50	1,015,200
Links	1,015,200
600-lb. bombs	360
20-lb. bombs	2,160
April:	
Cal. .50	1,248,000
Links	1,248,000
Cal. .30	432,000
Links	432,000
600-lb. bombs	360
250-lb. bombs	480
100-lb. bombs	720
20-lb. bombs	4,752
May:	
Cal. .50	1,771,800
Links	1,771,800
Cal. .30	2,424,000
Links	2,424,000
600-lb. bombs	360
250-lb. bombs	480
100-lb. bombs	720
20-lb. bombs	4,752
June:	
Cal. .50	1,971,200
Links	1,971,200
Cal. .30	2,856,000
Links	2,856,000
600-lb. bombs	360
250-lb. bombs	480
100-lb. bombs	720
20-lb. bombs	9,936

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WAR DEPARTMENT
WAR DEPARTMENT GENERAL STAFF
SUPPLY DIVISION, G-4
Washington, D. C.

G-4/33961

Feb. 20, 1942

MEMORANDUM FOR THE ASSISTANT CHIEF OF STAFF, WAR PLANS DIVISION:

Subject: Aviation Ammunition for China.

1. Reference is made to the attached memorandum on the above subject for the Assistant Chief of Staff, G-4, February 14, 1942, from Colonel B. G. Ferris.

2. Your comments and recommendations are requested concerning the relative priority to be accorded shipment of ammunition to the Volunteer Group in China.

HERRON SOMERVELL,
Major General,
Assistant Chief of Staff.

Incl:
Memo fm OCoS
(2-14-42) (dup)

S/ H. A. Malin

H. A. MALIN,
Lt. Colonel, General Staff,
Assistant Executive.

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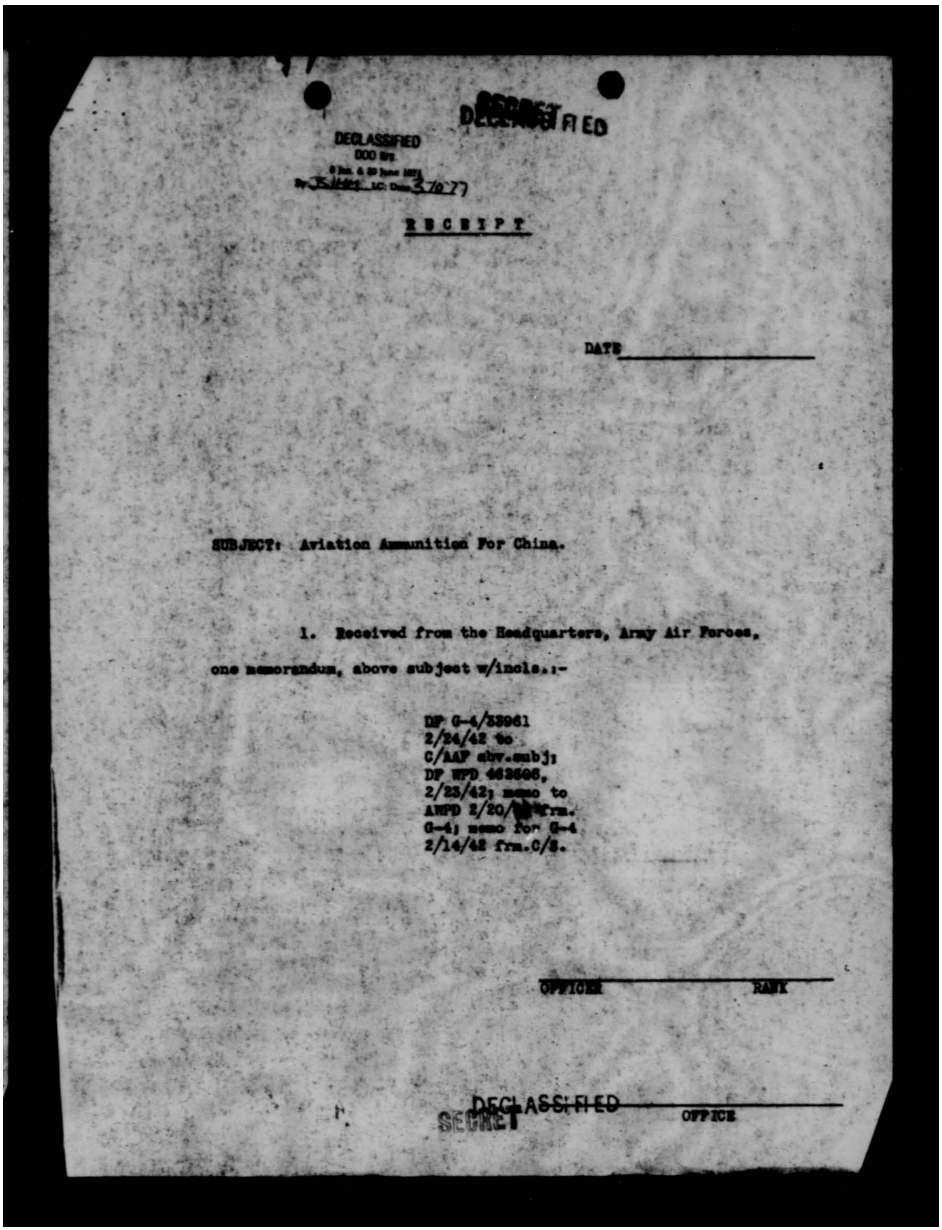

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DOD Dir.
5 Jan. & 30 June 1972
By JS/HM LC Date 3/10/77

RECEIPT

DATE _____

SUBJECT: Aviation Ammunition For China.

1. Received from the Headquarters, Army Air Forces, one memorandum, above subject w/incls.:-

DF G-4/33961
2/24/42 to
C/AAF abv.subj;
DF WPD 462606,
2/23/42; memo to
AWPD 2/20/[illegible] frm.
G-4; memo for G-4
2/14/42 frm.C/S.

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8 Jan. & 20 June 1974
By: JS/MM LC; Date 3-10-77

AAF/A-4
MFS/emd

MEMORANDUM FOR THE ASSISTANT CHIEF OF STAFF, G-4:

Subject: Ammunition for Project "Lockspur".

1. It is requested that the material indicated below be shipped Pier 37, Clyde - Mallory Lines, North River, New York, to arrive by February 15, 1942. All packages should be marked:

Air Corps
"Lockspur"
Export Lighterage Free

30 ea. Gun, Machine, Cal. .30 Browning, Model 1917A1
30 ea. Mount Tripod, Light Machine Gun M2, Cal. .30
(or equivalent)
Necessary accessories and maintenance spare parts to include feed boxes, ammunition belts, loading machine, etc.
300,000 rounds Cal. .30 armor piercing and tracer (4-1)

For the Chief of the Air Staff:

T. J. HANLEY, JR.,
Colonel, A. U. S.,
Assistant Chief of the Air Staff, A-4.

Taken by A-4 and by

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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5 Jan. & 20 June 1974
By: [illegible] I.C. Date 3-10-77

"R E C E I P T"

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DATE_____

SUBJECT: Ammunition for Project "Larkspur".

Received from Headquarters Army Air Forces, Memorandum above subject.

_____
Officer Rank

_____
Office

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6 Jan. & 20 June 1974
By JJ/MM LC; Date 3-10-77

AAF/A-4
HCB/mhh
(Written Feb. 26, 1942)

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SUBJECT: Day of Supply of Ammunition for Aircraft Guns and Cannon.

3rd Ind.

War Department, Headquarters, Army Air Forces, Washington, D. C.
FEB 28 1942 To: Commanding General, Air Force Combat Command, Bolling Field, D. C.

1. The basis for computation of Air Corps requirements of ammunition, both Ordnance and Chemical Warfare items, is inclosed herewith.

2. Care must be exercised in using the basis referred to above because the figures used therein are over all estimates for procurement purposes only and are based on total requirements and not on requirements for any particular locality or any particular set of circumstances.

By Command of Lieutenant General Arnold

Incls.
Cy. WD AGO Ltr., 12-20-41;
OCS 17874-53 WD 12-19-41;
2 Charts on Basis of Sup. of Ammunition.

JOHN B. COOLEY
Lt. Colonel, A. G. D.,
Assistant Air Adjutant General

Incls. att to original only

471 (113)

Hq. Army Air Forces
FEB 26 1942
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FEB 28 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	
						HCB					
						TJH					

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DOD Dir. 5200.9 June 1974
By JS NARS, Date 3-10-77

HEADQUARTERS (K-60)
FIRST AIR FORCE BASE COMMAND
471 Mitchel Field, New York

Feb 12, 1942

SUBJECT: Day of Supply of Ammunition for aircraft Guns and Cannon.

TO: Commanding General, Air Forces, E.T.O. and First Air Force, Mitchel Field, New York.

1. Attention is invited to paragraph 4 c, letter WD AGO, AG 571 (12919-41) MSC-D-M, December 20, 1941, subject, "G-4 Administrative Order-Designation of Eastern Theatre of Operations", copy inclosed. Ordnance Field Manual FM 9-5, defines the day of supply of ammunition other than aircraft. However, no mention is made of the day of supply for aircraft machine guns and cannon.

2. It is requested that this headquarters be furnished a definition on the day of supply of ammunition for aircraft machine guns and cannon in order that the requirements may be computed.

For the Commanding General:

s/ MALCOLM H. STEWART,
Colonel, Air Corps,
Assistant Executive.

1 Incl-
Copy WD AGO Ltr., 12-2--41.

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000 ins.
6 Jan. & 30 June 1974
By JS/MM LC Date 5-10-77

Day of Supply of Ammunition for
Aircraft Guns and Cannon

471 (2-12-42) 1st Ind.

GQ AIR FORCES E.T.O. AND FIRST AIR FORCE, Mitchel Field, N. Y. FEB 17 1942
TO: Commanding General, Air Force Combat Command, Bolling Field, D. C.

For definition requested in paragraph 2, basic communication.

For the Commanding General:

s/t H. B. SEPULVEDA,
Lt. Col., AGD,
Adjutant General.

AOC 471 (2-12-42) 2nd Ind. (K-3)

HEADQUARTERS AIR FORCE COMBAT COMMAND, Bolling Field, D.C. FEB 21 1942
TO: Chief of Army Air Forces, Washington, D. C.

W.G.C.

1 Incl. n/c

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AAG/816
Air AG 471 (1/3)

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DOD Dir.
By [illegible] Date 3-6-77

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HEADQUARTERS (K-60)
FIRST AIR FORCE BASE COMMAND
471 Mitchel Field, New York

Feb 12, 1942

SUBJECT: Day of Supply of Ammunition for aircraft Guns and Cannon.

TO: Commanding General, Air Forces, E.T.O. and First Air Force, Mitchel Field, New York.

1. Attention is invited to paragraph 4 c, letter WD AGO, AG 371 (12-19-41) MSC-D-M, December 20, 1941, subject, "G-4 Administrative Order-Designation of Eastern Theatre of Operations", copy inclosed. Ordnance Field Manual FM 9-5, defines the day of supply of ammunition other than aircraft. However, no mention is made of the day of supply for aircraft machine guns and cannon.

2. It is requested that this headquarters be furnished a definition on the day of supply of ammunition for aircraft machine guns and cannon in order that the requirements may be computed.

For the Commanding General:

s/ MALCOLM N. STEWART,
Colonel, Air Corps,
Assistant Executive.

1 Incl-
Copy WD AGO Ltr., 12-2--41.

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13

WAR DEPARTMENT
WAR DEPARTMENT GENERAL STAFF
SUPPLY DIVISION, G-4
WASHINGTON, D.C.

DECLASSIFIED
DOD ltrs.
6 Jan. & 20 June 1975
By: JSHM LC, Date 3-16-77

FEB 19 1942

G-4/33180

MEMORANDUM FOR THE CHIEF OF THE ARMY AIR FORCES:

Subject: Aircraft Ammunition to Indigo.

1. Confirming telephone communication of February 16, 1942, the 30,000 rounds of 37 mm aircraft ammunition referred to in basic communication, has already been given priority number one, and the Port Commander notified concerning details of shipment.

By authority of the Secretary of War:

FEB 21 1942
AAG Received

BREHON SOMERVELL,
Major General,
Assistant Chief of Staff.

H. A. Malin

H. A. MALIN,
Lt. Colonel, General Staff,
Assistant Executive.

Air as 471

112

File
HCB

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OUT-G-4 FEB 19

AAG/985
Air as 471 112

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DOD ltrs.
8 Jan. & 20 June 1972
By JSlm JC. Date 3-10-71

AAF/A-4
HCR/mhh

February 20, 1942.

MEMORANDUM FOR THE CHIEF OF ORDNANCE:

Subject: Shot, A. P. for 37 mm. Aircraft Gun.

1. With reference to the inclosed correspondence, it is desired that 12,000 rounds Shot, AP for 37 mm. Aircraft Gun be made up as soon as practicable with a view to making the following allotment:

4,000 "Russian Department"
2,000 "General Headquarters" for reallocation to "Caribbean Defense Command"
5,000 "X"

2. Further requirements of this item of ammunition will be furnished the Ordnance Department at an early date.

Encls.
Memo for C/AAF, A-4 frm. C/Ord.2/14/42, abv.subj.;Memo.radio frm.Ft.Shafter to C/Ord. 2/10/42

For the Chief of the Air Staff:

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	

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Air AB 471 (11)

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000 ltrs.
8 Jan. & 30 Jan. 1942
By JS/MM EC Date 3-10-77

ORDNANCE-WAR
400.356/78 Hawaii (S)
FEB 16 1942

A.S.RICE/cbo

February 14, 1942

MEMORANDUM FOR: Chief of Army Air Forces, A-4.
Attn: Colonel Schneider.

Subject: Shot, A.P. for 37-mm Aircraft Gun.

1. There is inclosed paraphrase of radiogram from the Ordnance Officer, Hawaiian Department, requesting availability of Shot A.P. [illegible] for 37-mm Aircraft Gun. The Hawaiian Status Report, October 19, 1941, shows a requirement under Item 145[illegible] of 4[illegible] rounds. Twelve thousand (12,000) rounds of this type ammunition can be made up within approximately two weeks.

2. Information is requested as to action to be taken.

For the Chief of Ordnance:

JAMES W. FREEMAN,
Lt. Col., Ord. Dept.,
Assistant.

1 Incl.
Para. Radio
00 400.356/37-Haw. accpg

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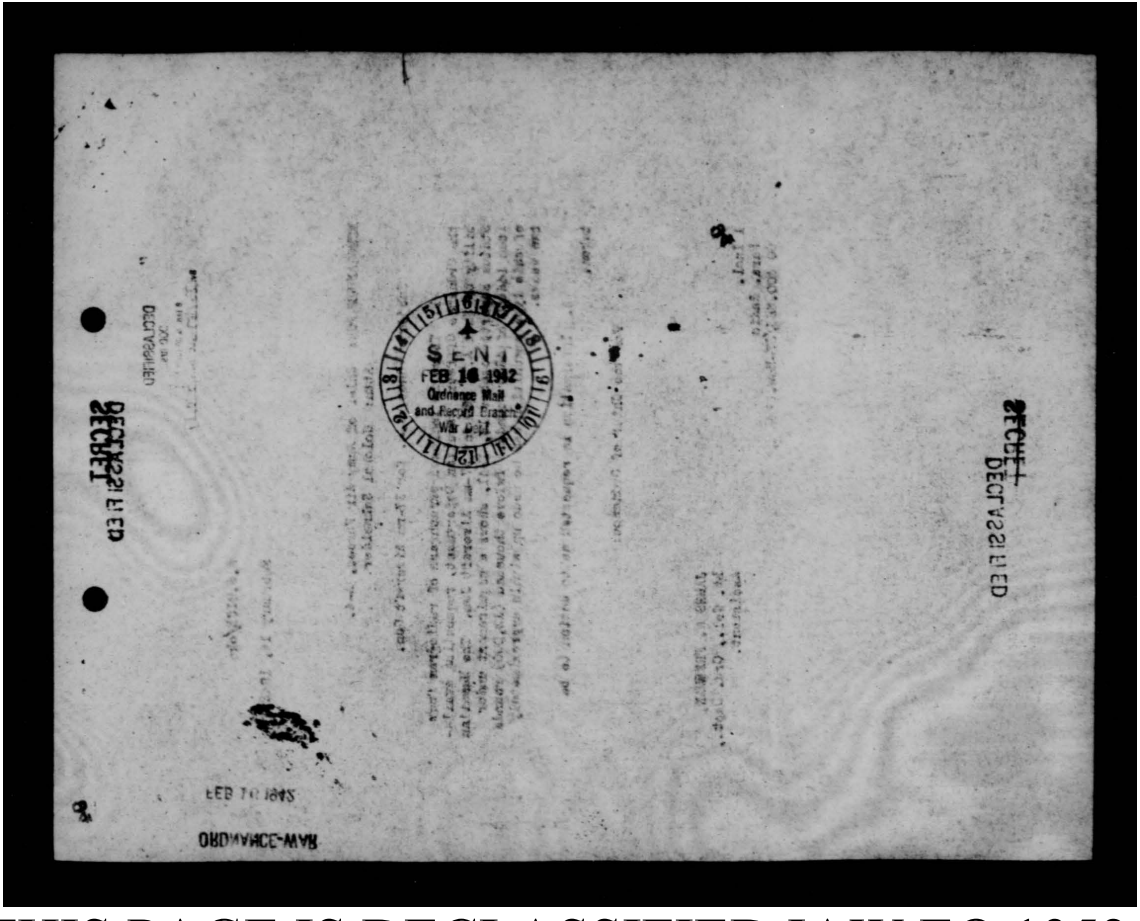

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PARAPHRASE

RADIO

FEBRUARY 10, 1942.

))

00 400.356/37-Haw.

FROM FORT SHAFTER

TO CHIEF OF ORDNANCE

NO. 2169 2/9/42

REQUEST RADIO INFORMATION AS TO WHEN SHIPMENT OF SHOT AP COMMA M FIFTY NINE FOR THIRTY SEVEN MM AC GUN CAN BE EXPECTED REFERENCE STATUS REPORT OCTOBER NINETEEN FORTY ONE

EMMONS

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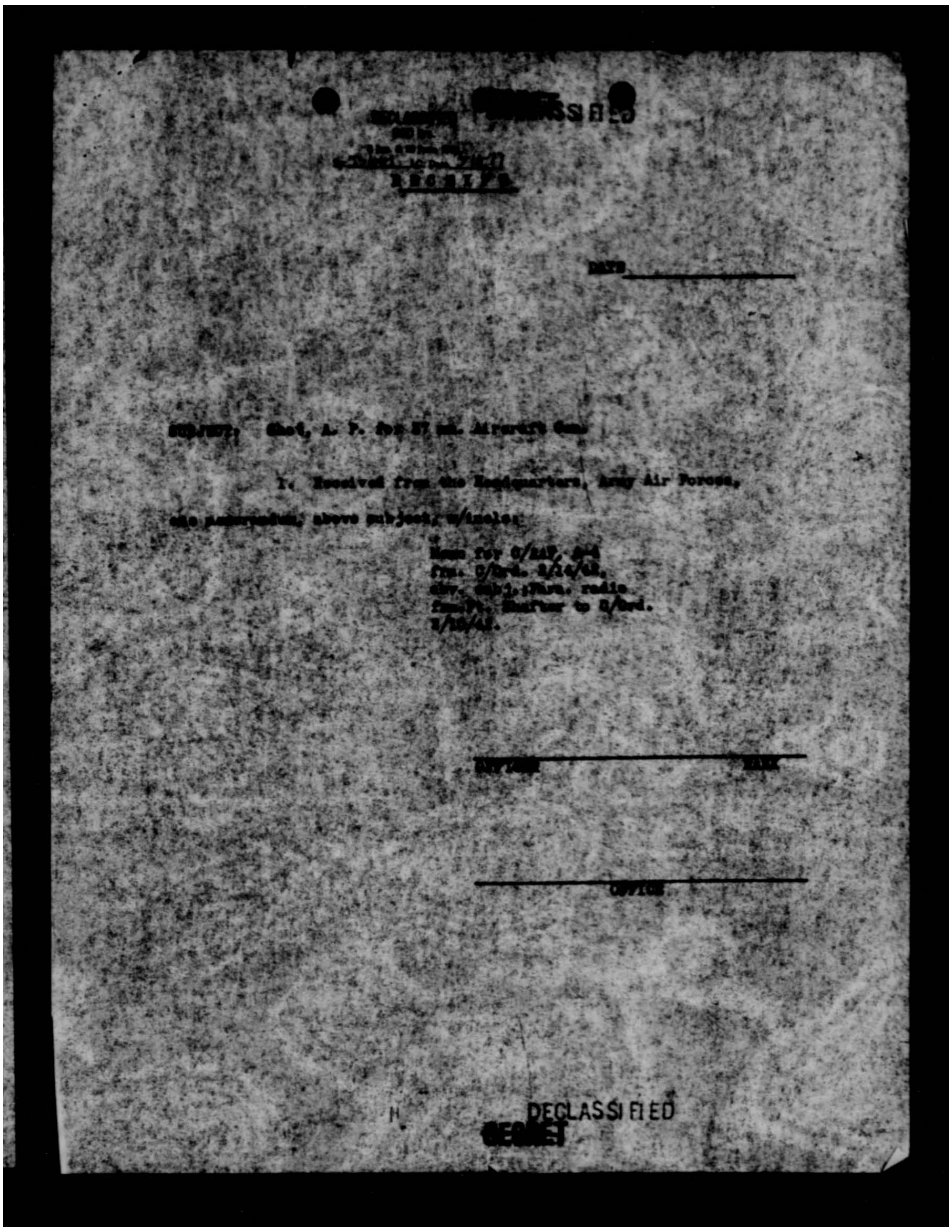

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DOD ltrs.
8 Jan. & 20 June 1974
By JS JAM LC. Date 3-10-77

AAF/A-4/1189
HCB/mhh

February 18, 1942

Ammunition For Airplanes Being Shipped to "Indigo".

Port Air Officer,
New York Port of Embarkation,
Brooklyn, N. Y.

1. Confirming telephone conversation between Lt. Col. Burgess, A-4, Air Staff and Colonel Siser, Port Air Officer, New York Port of Embarkation, sufficient caliber .30 and caliber .50 ammunition is on hand in "Indigo" to take care of the requirements for the 15 PBSD airplanes scheduled to be shipped in the near future. Seven hundred thousand, (700,000), metallic links caliber .30 are being shipped on the first available transportation.

2. Thirty thousand (30,000) rounds 37 mm. aircraft ammunition have been released and ordered shipped to "Indigo". This ammunition is available at Delaware Ordnance Depot upon call from the Port Quartermaster to Raritan Arsenal, and it is desired that this ammunition be shipped at the earliest practicable date.

3. Three supply charts, as requested, are inclosed herewith.

Incls.
3 Sup.Charts.

For the Chief of the Air Staff:

Incls att. to original only

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	
						HCB					

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471 (110)

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AAF/A-4
HCB/mhh

(Written Feb. 14, 1942)

Subject: Sequence Record #76.

601 164

1st Ind.

War Department, Headquarters, Army Air Forces, Washington, D. C.
To: Chief of Ordnance

1. Approved.

Incl. m/c
Memo for C/Ord.
frm.US/W 2/12/42

For the Chief of the Army Air Forces:

Dispatched
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-[illegible]	A-Insp.	Budget	Sta-[illegible]	
		RCR									

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8 Jan. & 20 June 1974
By: JS/MM LC. Date: 3-10-77

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AAF-39

RESTRICTED

Air AG 471 (109)

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WAR DEPARTMENT
OFFICE OF THE UNDER SECRETARY
WASHINGTON, D. C.

DECLASSIFIED
DOD Ltr.
8 Jan. & 20 June 1974
By: JS/MM LC. Date: 3-10-77

DECLASSIFIED

February 12, 1942
Seq. Rec. # 76

"~~RESTRICTED~~"

MEMORANDUM FOR THE CHIEF OF ORDNANCE

Subject: Transfer to the United Kingdom of Common Items From Stock with Replacement from Lend-Lease Production.

1. Reference is made to memorandum dated November 28, 1941, from the Defense Aid Director War Department, subject "Blanket Transfer Authority."

2. In accordance with the provisions of Paragraph 3 of above mentioned memorandum and with the approval of the Deputy Chief of Staff, you are authorized to transfer the following common items to His Majesty's Government in the United Kingdom:

Req. No.	Item	Quantity
798	Cartridges, SA, Ball. 20mm Hispano Suisa	4,000

3. The Assistant Chief of Air Staff, A-4, has concurred.

4. It is requested that immediate action be taken to carry out this transaction in collaboration with the Chairman of the British Supply Council in North America, who will provide the necessary shipping instructions.

5. In addition to supply of such number of copies of shipping invoices, packing lists, and bills of lading as may be requested by representatives of the United Kingdom for use in connection with the actual transfer, four signed copies of each shipping ticket or receiving report showing quantities, values and other pertinent information will be furnished to the Office of the Defense Aid Director, War Department.

For the Under Secretary of War:

/s/ R. C. Benner

R. C. BENNER,
Lt. Colonel, General Staff Corps,
Defense Aid Division

Enclosure
(1 cy req. No. 798-A1)

Air AD 471 (109)

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DOD ltrs.
8 Jan. & 20 June 1974
By: JS HM LC; Date 3-10-77

AAF/A-4
HCB/mhh
(Written Feb. 14, 1942)

February 14, 1942.

MEMORANDUM FOR THE ASSISTANT CHIEF OF STAFF, G-4:

Subject: Shipment of 37 mm. Aircraft Ammunition to "Indigo".

1. Request the following ammunition which was released to General Headquarters for Indigo on February 9, 1942, be sent to "Indigo" on the first available [illegible]:

Ammunition.

30,000 rounds 37 mm. Aircraft Ammunition

2. This ammunition is located at Delaware Ordnance Depot, available upon call by the Port Quartermaster to Raritan Arsenal which in turn will order the ammunition to the Port.

3. Due to the present situation, the need for this ammunition is believed urgent, and efforts should be made to make the shipment at the earliest practicable date.

For the Chief of the Air Staff:

F. S. BORUM,
Colonel, Air Corps,
Acting Assistant Chief of the Air Staff, A-4.

Dispatched
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	
						HCB					

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Air AS 471 (107)

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DOD ltrs.
8 Jan. & 20 June 1974
By: JSMM LC; Date 3-10-77

WAR DEPARTMENT
OFFICE OF THE CHIEF OF THE ARMY AIR FORCES
WASHINGTON

MEMORANDUM FOR GENERAL ARNOLD:

Subject: Training Ammunition.

I. History:

a. On December 7, 1941, the War Department "froze" all training ammunition.

b. On December 20, 1941, General Moore released for training the training ammunition on hand at Air Force posts, camps and stations. G-4 notified A-4 of this and A-4 notified the Air Force Combat Command. 500,000 additional rounds of .50 caliber ball ammunition taken from the British without a corresponding quantity of tracer were made available.

c. Early in January the Air Force Combat Command, Colonel Chauncey, notified A-4 of its training ammunition requirements for January-February. They were well within the available supplies of .30 caliber ammunition on hand at Army Air Force stations and approximately equalled the amount of .50 caliber available.

d. On inquiry after repeated reports of shortages of training ammunition, A-4 was assured by G-4, Air Force Combat Command that stocks of training ammunition were sufficient to meet training requirements.

II. Cause of Shortage.

a. Theater Commanders and other interested agencies of the War Department (except the Army Air Forces) were not notified of the release of training ammunition on hand at Air Force stations.

b. Theater Commanders are so short of .50 caliber ammunition that they would not release their supplies even when authorized to do so. (General Fickel stated he received authority

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to shoot, but would not release his "fighting" ammunition for gunnery practice.)

III. The Future:

a. The United States is so short of .50 caliber ammunition that the forces now being moved or set up for movement cannot be supported. Inasmuch as ammunition production appears to be pushed to the maximum, it will be necessary to reconsider current plans so as to lessen the demand.

b. Because of malfunction, it has been necessary to suspend the use of 5,000,000 rounds of .50 caliber ball ammunition taken over from the British. Unless that ammunition can be immediately released or replaced the probability of having any .50 caliber ammunition for training is somewhat remote.

c. It is to be noted that the Navy Department has completely suspended the use of .50 caliber ammunition for air gunner training.

IV. Action Taken.

a. The Eastern and Western Defense Commanders and the Commanding General, Air Force Combat Command have been authorized to expend 1,500 rounds per airman (each pilot and each gunner).

b. General Moore has made 4,600,000 rounds of .30 caliber ammunition available for training. The Commanding General, Air Force Combat Command has been notified and will suballot that ammunition to the four Air Forces in accordance with their requirements. The quantity will meet estimated requirements for two months.

c. The Theater Commanders, the Commanding General Air Force Combat Command and other interested agencies have been notified that the stock of .50 caliber ammunition on hand on Air Force posts, camps and stations on December 20, 1941 (estimated about 700,000 rds.) has been released to the Commanding General, Air Force Combat Command for redistribution for aerial gunnery training. He will reallocate that ammunition on the basis of requirements.

d. The authorization to fire 1500 rounds plus the suspension of the 500,000 rounds of .50 caliber taken from the British because of serious defects leaves a shortage of about 1,000,000 rounds of .50 caliber for training. Definite dates cannot be set as to when

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this quantity of .50 caliber ammunition can be made available by the War Department due to the acute shortage of .50 caliber ammunition in the Army.

e. The Chief of the Air Corps has been directed to take exceptional action to provide tow targets and remedy shortages other than ammunition.

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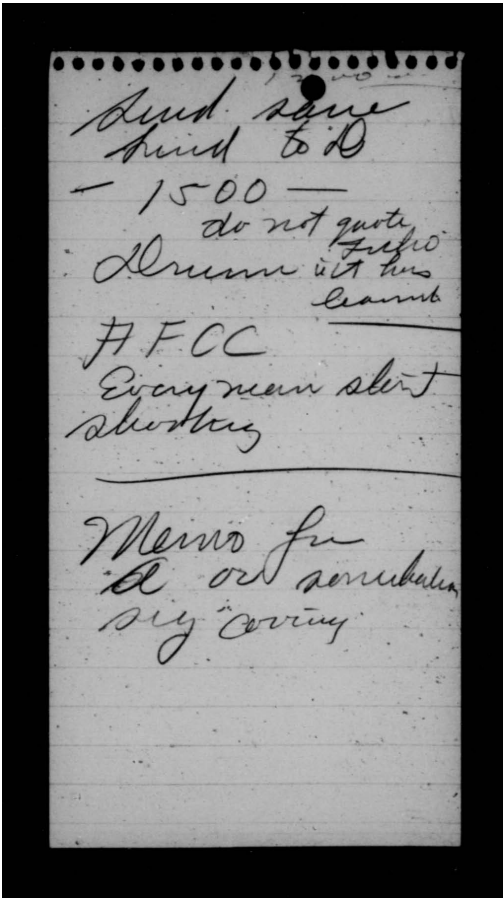

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~~It has been reported~~

It has come to my attention that

Action to be taken

① Wire to Crumm sub the same

② AFCC to be told to shoot 1500 per each air man ie pistol & gunner depending upon type.

? How many rounds would this take.

③ AC to get distribution of East Coast & AFCC installations similar

④ Memo to Gen Moore requesting necessary ammunition

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WAR DEPARTMENT
OFFICE, SECRETARY, GENERAL STAFF

DISPOSITION SLIP

Subject of paper: .....

To	TALLY No.	DATE
.....	A. C. of S., G–1	
.....	A. C. of S., G–2	
.....	A. C. of S., G–3	
.....	A. C. of S., G–4	
.....	A. C. of S., W. P. D.	
.....	The Adjutant General	
.....	Budget & Legislative Planning Branch	
.....	Statistics Branch	
.....	Executive for Reserve Affairs	
.....	Chief, Air Staff	
.....	Chief of Staff, G. H. Q.	
.....	Morale Branch	
.....	Bureau of Public Relations	
✓	Chief AAF (Col Shelmire)	

For—

..... Necessary action. ..... Draft of reply.
..... Preparation of study. ..... Direct reply.
..... Note and forward. ..... Note and file.
..... Remark and recommendation. ..... File.
..... Comment or concurrence. ..... Signature.
..... Inviting attention to [notation / direction] of Sec. War ..... D.C.of S.

Read this - maybe Gen A should also. Gen DeWitt doesn't seem to realize he is (THEY). The 1/18 radio should help explain that fact to him.

By direction of D. C. of S.:

WAR DEPARTMENT
O. C. of S.—Form No. 3 U. S. GOVERNMENT PRINTING OFFICE 16—24481-1

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DOD ltrs.
8 Jan. & 20 June 1974
By JS/HMJ LC. Date 3-10-77

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Telephone Conversation between General Marshall and General DeWitt

at 11:45 A.M., January 18, 1942.

M: . . . I wanted to talk to you personally about it. Now that doesn't appeal to me. There's something wrong somewhere and we have to get an immediate correction. The thing is abnormal, of course. We've got to proceed on an abnormal basis, but it seems to me that some measures could have been taken out there by Fickel under you, -- he's under your command -- to get these fellows to work on this business and still maintain your squadrons. I wish you'd personally go right into that and find out all the facts about it because the message is coming through, I haven't got the data yet, to see what lays behind it, we'll say, in the way of ammunition. But something has to be done and done fast.

D: I agree with you, George, but --

M: Now the reactions that we get on this thing are that the Army commander, I'm not talking about you specifically, I'm referring to Drum and I'm referring to you, -- the Army commanders, one thing, and the air fellow doesn't get this. The responsibility for both the training and the fighting is yours while these squadrons are there. I don't know the details but I wish you'd get right into it today and I will get to you what the details are that we pick up here in more formal fashion.

D: All right, but George, I want to tell you that all the training ammunition -- ammunition for training -- out here was frozen. I wasn't allowed to use any of it.

M: Well, we're going into that and I'll send you word about that.

D: All right. I have been trying now for a week to get authority to use some ammunition for training purposes but they will not give it to me from GHQ.

M: All right, I'll find out about that. We'll send you the exact details as I dig it up here.

D: All right.

M: All right. How are you getting along?

D: I'm getting along fine except for that one thing. I have been trying to get GHQ to authorize me as to use some of this ammunition for training purposes and they will not grant it.

M: As I have said twice now, we'll check up on that and I'll give you

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the coast facts on that a little later. How DeWitt, I have had a long discussion with GHQ for about three days in regard to whether a theater should have a narrow limit or extend all the way to the defense command or whether there should be any theater in continental United States and it should be merely a defense command or whether the theater should have the Corps Area under it and the responsibility for sabotage or whether the Corps Area should take over now that we've gotten out of the first confusion, the sabotage and similar protective matters. Have you any offhand views.

D: Well, yes. Right offhand, I could say that the setup we have now is very satisfactory and should be continued. I don't want to pass the responsibility on to anybody else of protecting against sabotage in aircraft factories on this coast and the Navy yards. I don't want to give that to Bonadict or to any prior commander or anybody else.

M: I see.

D: I think that that responsibility is mine and I should have full freedom of action for the movement of troops and the detail of troops for that purpose and I'll have to tell somebody else to do it.

M: Yes. Of course you're talking about four very critical things, that's Boeing, Bremerton, the Los Angeles area and the San Diego area

D: The San Diego and the Los Angeles area.

M: Air, air -- I'm talking about, their plants.

D: Yes.

M: Those are rather abnormal, four of them. What about the ordinary manufacturing plants?

D: Well, I think the same thing applies, George. I have, as you know, a narrow strip along the coast here about 100 miles to 125 miles wide designated as the combat zone.

M: Yes.

D: . . . . I think its the most satisfactory and the most positive way we can handle the proposition now. I think that the depots in the rear better be moved to . . . . . move the congestion and communications here in San Francisco, put him of his job and place him in charge of protection of railroads and all facilities in the communications zone, Ogden depot, and various other places. Its working very satisfactorily. The setup is good, and I don't think ought to be changed.

M: All right, well thank you very much.

D: Now George, about that air business -- I'm going to direct that air business . . . I'm going to direct him to go ahead on those.

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wanting to shoot and I've been wanting to have him shoot.

H: All right. Good bye.

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WAR DEPARTMENT
OFFICE OF THE CHIEF OF STAFF
WASHINGTON

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000 lbs.
E.O. Dec. 3/10/77

January 18, 1942.

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MEMORANDUM TO GENERAL ARNOLD:

Returning Fickel's radio that THEY won't let him fire.

THEY are:

1. G-4 (Colonel Mallon signing for General Somervell) who allotted half of General Moore's million rounds of .50 Cal. ball ammunition to the A.A.F. and the other half to AA Artillery.

Recommended action: You talk to General Moore and have 500,000 additional rounds allotted to the A.A.F. Many AA machine-gunners also have never fired their guns.

2. Air Force Combat Command (Chief of Staff or G-4) who have allotted only 280,000 rounds to their air forces.

Recommended action: A-4 to prepare a directive in your name instructing the Commanding General, A.F.C.C. to make immediate allotment to combat units of all training ammunition allotted to him during this period of greatly reduced ammunition supply.

3. 4th Air Force (General Fickel) who states he received authority to expend ammunition for gunnery practice on January 15th but refused to do so.

Recommended action: None—General Fickel probably having already heard plenty on this subject as a result of General Marshall's radio to General DeWitt on Sunday, January 18th.

L. S. K.

2 Incls.
Photostat Teletype Radio from
Gen.Fickel to Gen.Arnold, 1-16-42.
1 Sheet pencil notes.

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23B AQ B
Filed Jan. 16th

TELETYPE

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AC-4
January 16, 1942
11:26 PM

PARAPHRASE

FROM: 4AF SAN FRANCISCO CALIFORNIA

TO: CHIEF OF THE AIR FORCES WAR DEPT FOR GENERAL ARNOLD

NO. 4AF C74A January 16th

In response to your message of January 16, many of our pilots and apprentice gunners have never fired a machine gun. The reasons for neither bombardment nor pursuit's being able to practice machine gun firing are: Lack of tow target airplanes, lack of ammunition, and the lack of gun or target installation parts in the case of many bombers. In the Air Force there is no target-towing plane capable of towing for modern planes.

There is now available for guns installed in this Air Force about one tenth missions of Caliber 50, and 4.8 missions of caliber 36. There are 5.5 missions of caliber 30 and 2.6 missions of 50 caliber available for 3 groups of bombardment and 3 groups of pursuit which were promised their equipment immediately.

Requests for practice ammunition have been submitted to Western Defense Command, Air Service Command, and to Air Force Combat Command without securing ammunition. On January 3 authority was received to use a total of 15,000 rounds to test functioning of guns, and authority to expend our fighting ammunition for gunnery practice was received on Jan. 15. Because of the small amount available, the undersigned disapproved today of using the fighting ammunition for gunnery practice.

Fickel

Received in Cable Section
9:10 AM January 17, 1942
Paraphrased by RES:bbt

DISTRIBUTION

AIR FORCES
General Arnold
General Spaats
A-4

ACTION COPY TO A-3

AIR CORPS
Material
Training

DECLASSIFIED
DOD Ltrs.
9 Jan. & 20 June 1[illegible]
By: JS/MM LC; Date: 3-10-77

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Aug 471

INFORMATION

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2026

(AFCC (G-4) allocation of training ammunition 1/18/42 [illegible])

		Rounds
1st Air Force	Westover Fld.	10,000
	Windsor Locks	15,000
	Langley Fld.	30,100
	Bowman Fld.	10,000
	unallocated	20,000
2nd Air Force	Geiger Fld.	75,000
3rd Air	Charlotte	15,000
	Talahasse	15,000
	Meridian	10,000
	Orlando	15,000
	Mc Dill Fld.	10,000
	Jackson	10,000
4th	allocated	75,000
	No report on dist.	

Balance still unallocated 190,000

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PARAPHRASE

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DOD Ltr.
8 Jan. & 20 June 1974
By JSIMM LC. Date 3-6-77

TELETYPE
CORRECTED COPY

23B AQ B
Filed Jan. 16th

AC-4

January 16, 1942

11:26 PM

From: 4AF San Francisco, California

To: Chief of the Air Forces War Dept., for General Arnold

No. 4AF C74A January 16th

In response to your message of January 16, many of our pilots and apprentice gunners have never fired a machine gun. The reasons for neither bombardment nor pursuit's being able to practice machine gun firing are: Lack of tow target airplanes, lack of ammunition, and the lack of gun or target installation parts in the case of many bombers. In the Air Force there is no target-towing plane capable of towing for modern planes.

There is now available for guns installed in this Air Force about 6.1 missions of Caliber 50, and 4.8 missions of caliber 30. There are 5.5 missions of caliber 30 and 2.6 missions of 50 caliber available for 3 groups of bombardment and 3 groups of pursuit which were promised their equipment immediately.

Requests for practice ammunition have been submitted to Western Defense Command, Air Service Command, and to Air Force Combat Command without securing ammunition. On January 3 authority was received to use a total of 15,000 rounds to test functioning of guns, and authority to expend our fighting ammunition for gunnery practice was received on Jan. 15. Because of the small amount available, the undersigned disapproved today of using the fighting ammunition for gunnery practice.

Fickel

Received in Cable Section, AAG
9:10 a.m. January 17, 1942
Paraphrased by RES:jmt

INFORMATION

Air Forces
General Arnold
General Spaatz
A-4

Distribution:

Air Corps
Materiel
Training

ACTION COPY TO: A-3

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DOD ltrs.
8 Jan. & 20 June 1974
By: [illegible] LC. Date 3-10-77

Secretary, GS

OCS: LSK

January 18, 1942.

COMMANDING GENERAL

WESTERN DEFENSE COMMAND.

IN A REPORT ON THE STATUS OF TRAINING OF THE AIR UNITS UNDER YOUR COMMAND GREATLY SURPRISED TO LEARN SUBSTANTIALLY AS FOLLOWS colon MANY PILOTS AND GUNNERS HAVE NEVER FIRED A MACHINE GUN comma REASONS FOR WHICH INCLUDE LACK OF TARGET TOWING PLANES SUITABLE FOR PRACTICE FIRING FROM MODERN COMBAT TYPE AIRPLANES comma LACK OF GUN OR TARGET INSTALLATIONS PARTS AND LACK OF AMMUNITION stop REPORT ALSO INDICATES REQUESTS FROM AIR UNITS TO MANY HEADQUARTERS FOR AUTHORITY TO EXPEND PRACTICE AMMUNITION HAVE NOT BEEN MET paragraph CONCERNING FOREGOING REPORT TRAINING AMMUNITION HAS BEEN AVAILABLE SINCE DECEMBER TWENTY-FOUR BUT APPARENTLY HAS NOT REACHED AIR UNITS stop REGARDLESS OF ALL OTHER INSTRUCTIONS YOU ARE HEREBY AUTHORIZED TO EXPEND FIFTEEN HUNDRED ROUNDS PER EACH AIR MAN parenthesis EACH PILOT AND EACH GUNNER DEPENDING ON TYPE AIRPLANE parenthesis OF THE CALIBER APPROPRIATE TO THE ARMAMENT OF THE AIRPLANES IN QUESTION paragraph THE CHIEF OF THE AIR CORPS IS BEING DIRECTED TO TAKE EXCEPTIONAL ACTION IMMEDIATELY TO ASSIST IN REMEDYING THE SHORTAGE parenthesis OR IN IMPROVISING IN THE ABSENCE OF parenthesis TOWED TARGETS FOR MODERN PLANES AND LACK OF GUN OR TARGET INSTALLATIONS PARTS paragraph THE OBSTACLES WHICH HAVE CAUSED THE EXTRAORDINARY LOW STATE OR ABSENCE OF TRAINING REFERRED TO IN THE FIRST PARAGRAPH ARE UNDOUBTEDLY GREAT stop IT IS BELIEVED THAT

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Secretary, GS

OCS: LSK

PAGE TWO

EXCEPTIONAL ACTION OR IMPROVISATION TO REMEDY SUCH CONDITIONS IS ONE OF THE PRIMARY RESPONSIBILITIES OF COMMANDERS OF AIR UNITS AT THIS TIME paragraph FURTHER REPORTS ON THE STATUS OF THE GUNNERY TRAINING OF THE AIR PERSONNEL OF YOUR COMMAND WILL BE CALLED FOR IN THE IMMEDIATE FUTURE end

MARSHALL

I hereby certify that this message is on official business and necessary for the public service.

L. S. KUTER,
Major, General Staff,
Assistant Secretary, General Staff.

vah

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DOD ltrs.
8 Jan. & 20 June 1971
By JS/MM LC: Date 3-10-77

January 18, 1942.

MEMORANDUM FOR THE CHIEF OF THE AIR CORPS:

Subject: Gunnery training.

1. Inclosed herewith is a radiogram concerning the gunnery training of the air units on the West Coast and a copy of the direct action taken thereon by the Chief of Staff.

2. You will have a representative on the West Coast immediately, with authority to take direct action, to remedy the shortages, except ammunition, referred to in the radiogram from the West Coast. It is directed that each group on the West Coast will be provided with at least one target towing airplane and necessary accessories with which gunnery training can be conducted.

3. A report on the action that has been taken to remedy this condition will be rendered to this headquarters (attention General Arnold) by 8:15 a.m., January 20, 1942.

By direction of the Deputy Chief of Staff for Air:

L. S. EUTER,
Major, General Staff,
Assistant Secretary, General Staff.

Incl.

Copy for Air Staff, Col Vanaman

Orig. delivered to Col Luke Smith 3:15 P 1/18

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Filed Jan. 16th

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DOD Ltr.
8 Jan. & 20 June 1974
By: JS/HH LC. Date 3-10-77

TELETYPE

AC-4
January 16, 1942
11:26 PM

Paraphrase

FROM: 4AF SAN FRANCISCO CALIFORNIA

TO: CHIEF OF THE AIR FORCES WAR DEPT FOR GENERAL ARNOLD

NO. 4AF C74A January 16th

In response to your message of January 16, many of our pilots and apprentice gunners have never fired a machine gun. The reasons for neither bombardment nor pursuit's being able to practice machine gun firing are: Lack of tow target airplanes, lack of ammunition, and the lack of gun or target installation parts in the case of many bombers. In the Air Force there is no target-towing plane capable of towing for modern planes.

There is now available for guns installed in this Air Force about one tenth missions of Caliber 50, and 4.8 missions of caliber 36. There are 5.5 missions of caliber 30 and 2.6 missions of 50 caliber available for 3 groups of bombardment and 3 groups of pursuit which were promised their equipment immediately.

Requests for practice ammunition have been submitted to Western Defense Command, Air Service Command, and to Air Force Combat Command without securing ammunition. On January 3 authority was received to use a total of 15,000 rounds to test functioning of guns, and authority to expend our fighting ammunition for gunnery practice was received on Jan. 15. Because of the small amount available, the undersigned disapproved today of using the fighting ammunition for gunnery practice.

Fickel

Received in Cable Section
9:10 AM January 17, 1942
Paraphrased by RHS:bbt

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AIR FORCES
General Arnold
General Spaatz
A-4

ACTION COPY TO A-3

AIR CORPS
Materiel
Training

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DDD Hrs.
5 Jan. & 20 June 1974
By DJMM LC. Date 3-10-77

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2nd Ind. (Air AG)

WD HQ ARMY AIR FORCES, Washington, D. C. February 25, 1942.
TO: Commanding General, Field Forces, Army War College, Washington, D. C.

Referred as a matter pertaining to your jurisdiction.

For the Chief of the Army Air Forces:

JOHN B. COOLEY
Lt. Col., A.G.D.
Assistant Air Adjutant General

471 (104) B

Dispatched
FEB 25 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	

AAF-39

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WAR DEPARTMENT
HEADQUARTERS ARMY AIR FORCES
DISPOSITION FORM

SECRET

Date February 21, 1942....

AG

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DOD ltrs.
8 Jan. & 20 June 1974
By: TS HM LC; Date 3-10-77

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AAF/A-4/471-45

SUBJECT: Supply of Combat Ammunition.

	USW	ASW	ASWA	B-LP	BOWD	BPR
	C/S	G-1	G-2	G-3	II. G-4	WPD
	Sec. G/S	NGB	JAG	1G	QMG	SG
TO:	OCAC	CSO	Fin.	Ord.	Ex.R.A.	ENGR
	AFCC	Inf	FA	Cav	CAC	CWS
	X. TAG	II. AAF				

I. Commanding General, Field Forces, G.H.Q.

FOR: X. SW directs
Draft of reply attached
Approved
Disapproved
File

Comment or concurrence
Direct reply made
Inviting attention to
See notation of _____
Information

Information for reply
2nd Ind. approved
Primary interest
Notation and return
Noted _____

AAF/A-4
HCB/mhh

I. Forwarded as a matter pertaining to your headquarters.

II. To be advised of action taken above.

Incl.
Ltr.abv.subj.frm.ET/O
to AFCC 1/31/42 w/1 ind.
(& 1 incl.-cy.ltr.1/28/42
to C/AAF, ACC471(1-28-42)
withdrawn.)

For the Chief of the Air Staff:

Frank M. Williams Capt A.C.
for
T.J. HANLEY, JR.,
Colonel, Air Corps,
Assistant Chief of the Air Staff, A-4.

MEMORANDUM FOR RECORD: Above action taken to comply with request of 1st Air Force for combat ammunition.

not used

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W-4689, A.C.

Air Ag 471 (113)

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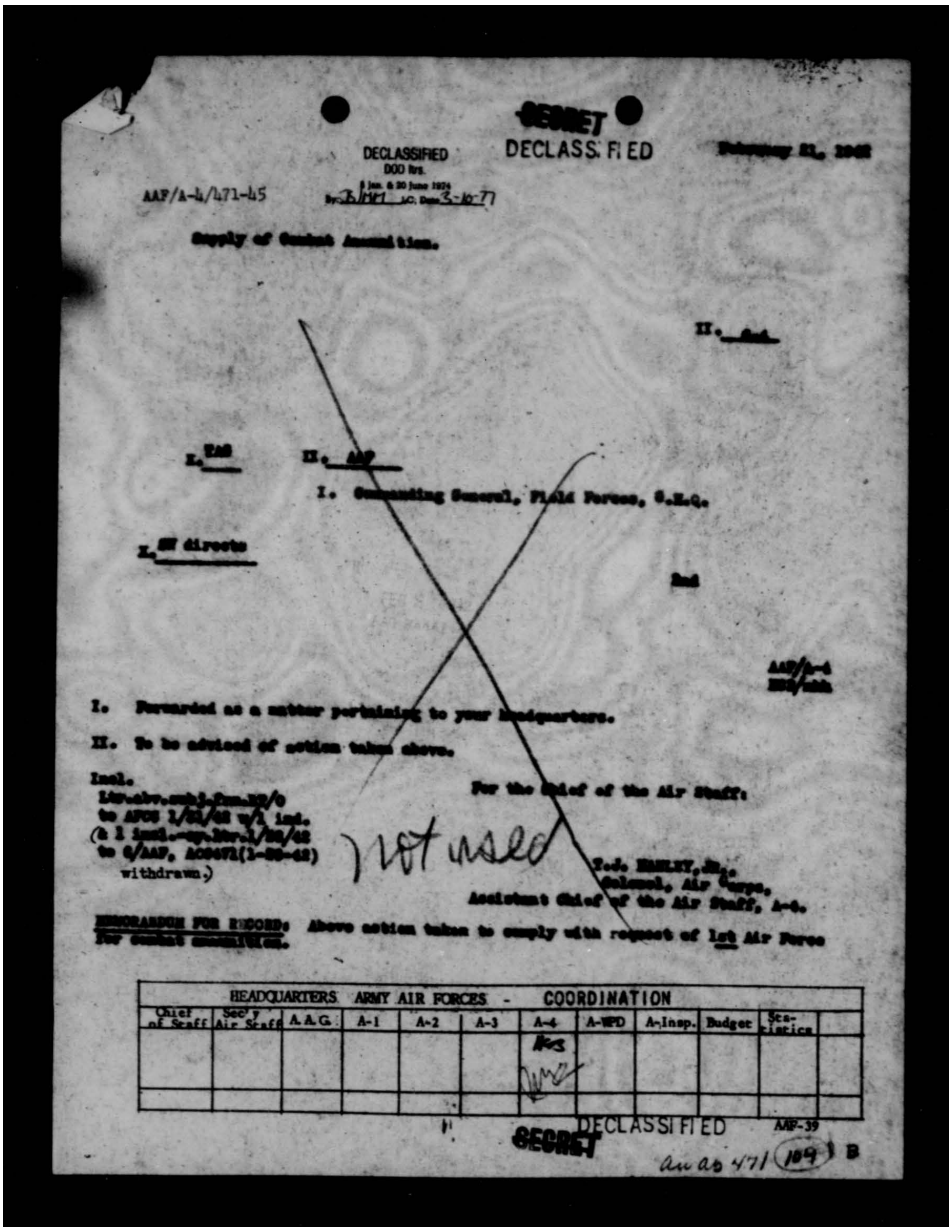

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DOD ltrs.
5 Jan. & 20 June 1974
By: B/MM, LC, Date 3-10-77

February 21, 1942

AAF/A-4/471-45

Supply of Combat Ammunition.

II. [illegible]

X. TAG

II. AAF

I. Commanding General, Field Forces, G.H.Q.

X. SW directs

2nd

AAF/A-4
[illegible]

I. Forwarded as a matter pertaining to your headquarters.

II. To be advised of action taken above.

Incl.
Ltr.abv.subj.fmm.RT/O
to AFCS 1/31/42 w/1 ind.
(& 1 incl.-cy.ltr.1/30/42
to G/AAF, AC0471(1-30-42)
withdrawn.)

For the Chief of the Air Staff:

not used

T.J. HANLEY, JR.,
Colonel, Air Corps,
Assistant Chief of the Air Staff, A-4.

MEMORANDUM FOR RECORD: Above action taken to comply with request of 1st Air Force for combat ammunition.

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	
						[illegible]					

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DOD Dir.
By JS/MM J.C. Date 3-10-77

ACC 471 (1-31-42) 1st Ind. (E-28)

HEADQUARTERS AIR FORCE COMBAT COMMAND, Bolling Field, D. C., FEB 4 1942
To: The Chief of the Army Air Forces, Washington, D. C. TAF

1. Reference basis in this connection, your attention is invited to secret letter, ACC 471 (1-28-42), January 28, 1942, Subject "Supply of Ammunition to the Air Force Combat Command and to the Eastern and Western Theaters of Operation", to your office, copy inclosed.

2. Request this headquarters be advised of action taken.

For the Commanding General:

1 Incl:
Cy ltr ACC 471 (1-28-42),
to CAAF.

ST. CLAIR STREETT,
Colonel, Air Corps,
Acting Chief of Staff.

FEB 7 42 AM

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HQ. AIR SERVICE COMMAND
B. B. A. C.

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13456 FEB 5 42
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DOD Rts
6 Jan. & 20 June 1974
By JS/MM SC Date 5-10-77

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471

WAR DEPARTMENT

HEADQUARTERS
AIR FORCES, EASTERN THEATER OF OPERATIONS
And
FIRST AIR FORCE
Office of the Air Force Commander
Mitchel Field, New York

(E-60)

SUBJECT: Supply of Combat Ammunition.

TO: Commanding General, Air Force Combat Command,
Bolling Field, D. C.

1. In accordance with paragraph 2 a, Air Force Combat Command Memorandum 65-7, it is requested that these headquarters be granted an Ammunition Supply Authority to cover the quantities indicated below or that shipment be made direct to the following distributing points in the Eastern Theater of Operations:

a. Key West, Florida

QUANTITY	ITEM
100	Bomb, demolition, 100-lb., M30.
100	Bomb, demolition, 300-lb., M31.
8	Bomb, depth, 325-lb., Mark 17 (Navy)
5,000	Cartridge, cal..30, Armor Piercing or Armor Piercing and Tracer (4-1) Grade AC in metallic links

b. Miami, Florida

QUANTITY	ITEM
100	Bomb, demolition, 100-lb., M30
16	Bomb, depth, 325-lb., Mark 17 (Navy)
15,000	Cartridge, cal..30, Armor Piercing or Armor Piercing and Tracer (4-1) Grade AC in metallic links.

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WAR DEPARTMENT

a. Jacksonville, Florida

QUANTITY	ITEM
100	Bomb, demolition, 100-lb., M30
200	Bomb, demolition, 300-lb., M31
16	Bomb, depth, 325lb., Mark 17 (Navy)
10,000	Cartridge, cal..30, Armor Piercing or Armor Piercing and Tracer (4-1) Grade AC in metallic links.

b. Charleston, S. C.

QUANTITY	ITEM
100	Bomb, demolition, 100-lb., M30,
16	Bomb, depth, 325-lb., Mark 17 (Navy)
15,000	Cartridge, cal..30, Armor Piercing or Armor Piercing and Tracer (4-1) Grade AC in metallic links

2. In the event that an Ammunition Supply Authority covering the above ammunition is not available, it is requested that the Third Air Force be directed to ship ammunition to the points designated from stockage at Air Bases in the Third Air Force.

3. The following demolition bombs are now due-in at distributing points in the quantities indicated:

DISTRIBUTING POINT	QUANTITY	ITEM
Miami, Florida	231	Bomb, demolition, 300-lb, M31
Charleston, S. C.	231	Bomb, demolition, 300-lb, M31

For the Commanding General:

S/ O. C. Van. Hoesen

O. C. VAN HOESEN,
Major, A. G. D.,
Asst. Adjutant General.

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RECEIPT

DATE _____

SUBJECT: Supply of Combat Ammunition.

Received from Headquarters Army Air Forces, Disposition Form, above subject, with the following inclosures:

Ltr. abv. subj. frm ET/O
to AFCC, 1/31/42 w/1 Ind.
and 1 Incl. cy ltr. 1/28/42
to C/AAF, ACC 471 (1-28-42)

_____
Officer Rank

_____
Office

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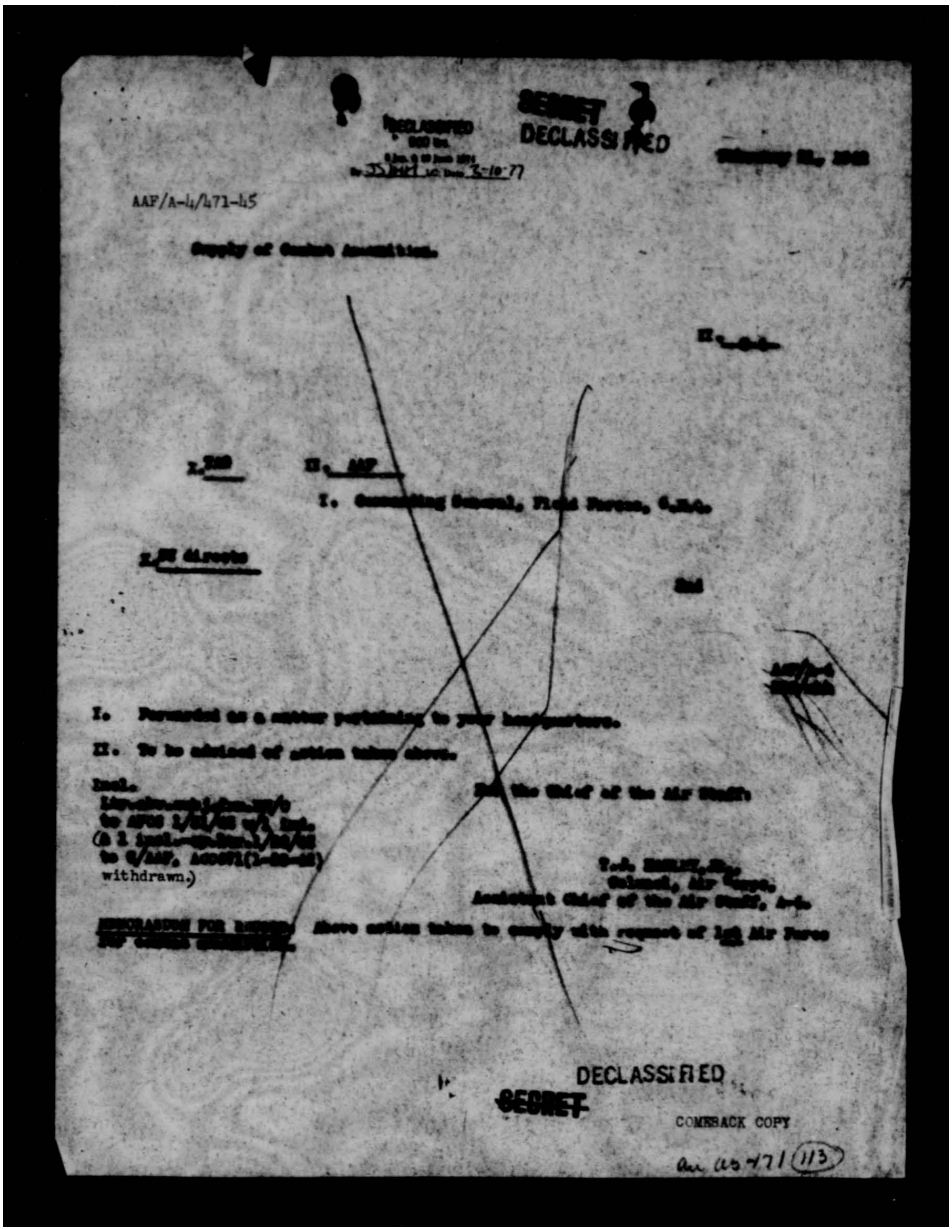

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AAF/A-4/471-45
I. Forwarded for a matter pertaining to your headquarters.
II. To be advised of action taken above.
withdrawn.)
Above action taken to comply with request of
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DOD Dir.
8 Jan. & 20 June 1974
By JS/MM LC Date 3-10-77

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Eq. Army Air Forces
MAR 1
WAG RECEIVED

SUBJECT: Request for Ammunition Supply.

AG 471 (2-9-42)MSC-G 2nd Ind. MSC/vcd-1705.

War Department, A.G.O., February 26, 1942. - To: Commanding General, Field Forces.

Forwarded as a matter pertaining to your headquarters.

By order of the Secretary of War:

R. G. Hersey

Adjutant General.

INFORMATION COPIES TO:
1. Chief of The Army Air Forces re his memo 2-22-42 AAF/A-4/471-47 to TAG.
2. A. C. of S., G-4, w/cy basic & 1st Ind.

471 (104)

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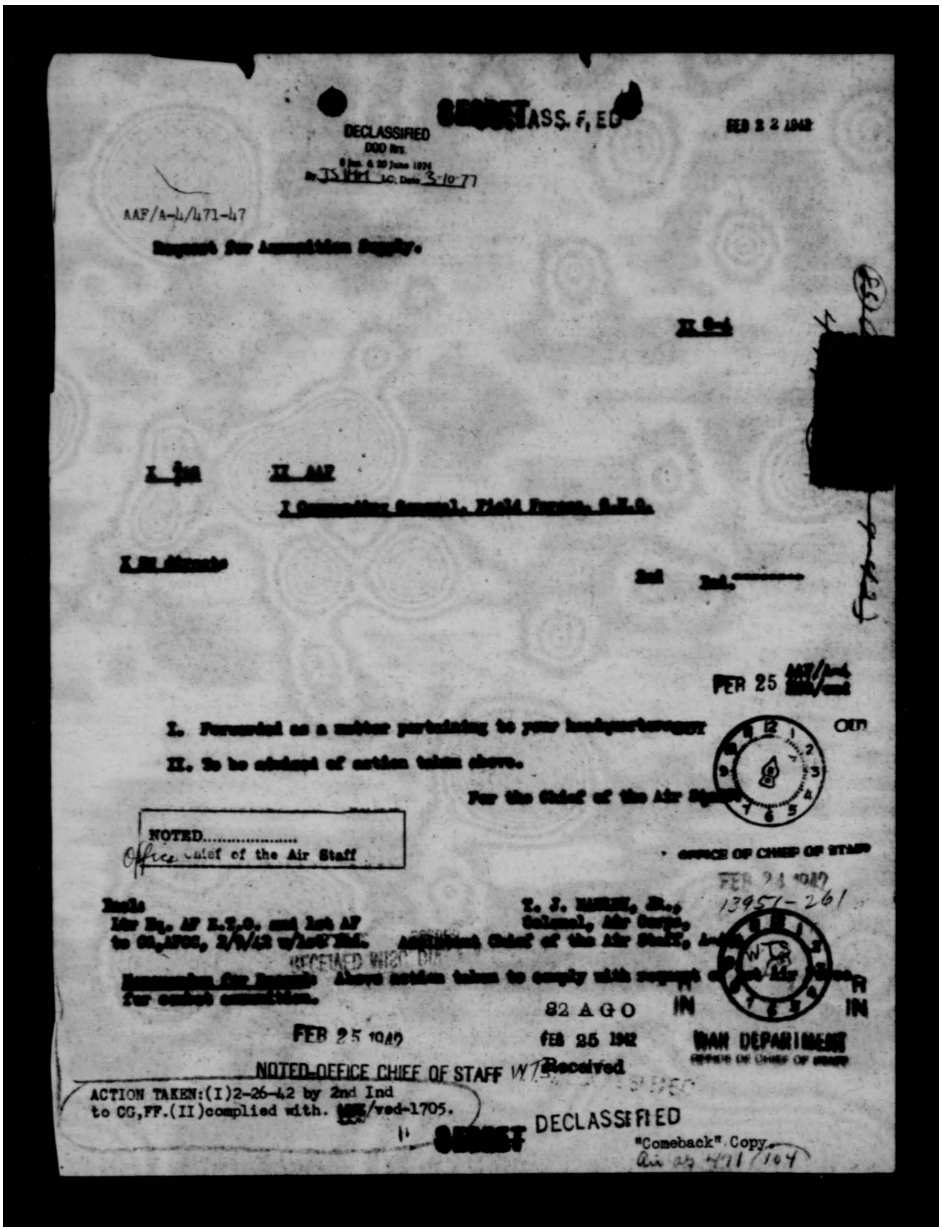

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8 Jan. & 20 June 1974
By JS [illegible] LC, Date 3-10-77

FEB 2 2 1942

AAF/A-4/471-47

Request for Ammunition Supply.

[redacted]

I [illegible] II AAF

I Commanding General, Field Forces, G.H.Q.

I [illegible] Atlantic

2nd Ind.

FEB 25 AAF/A-4 [illegible]

I. Forwarded as a matter pertaining to your headquarters.

II. To be advised of action taken above.

For the Chief of the Air Staff

NOTED.....
Office Chief of the Air Staff

OFFICE OF CHIEF OF STAFF

FEB 24 1942

13951-261

Incls:
Ltr Eq. AF E.T.O. and 1st AF
to CG,AFCC, 2/9/42 w/1st Ind.

T. J. [illegible], Jr.,
Colonel, Air Corps,
Assistant Chief of the Air Staff, A-4

RECEIVED WISC DIV

Recommendation for Request: Above action taken to comply with request of 1st Air Force for combat ammunition.

82 AGO

FEB 25 1942

FEB 25 1942

WAR DEPARTMENT
OFFICE OF CHIEF OF STAFF

NOTED-OFFICE CHIEF OF STAFF WTS

Received

ACTION TAKEN:(I)2-26-42 by 2nd Ind
to CG,FF.(II)complied with. [illegible]/ved-1705.

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Air ag 471/104

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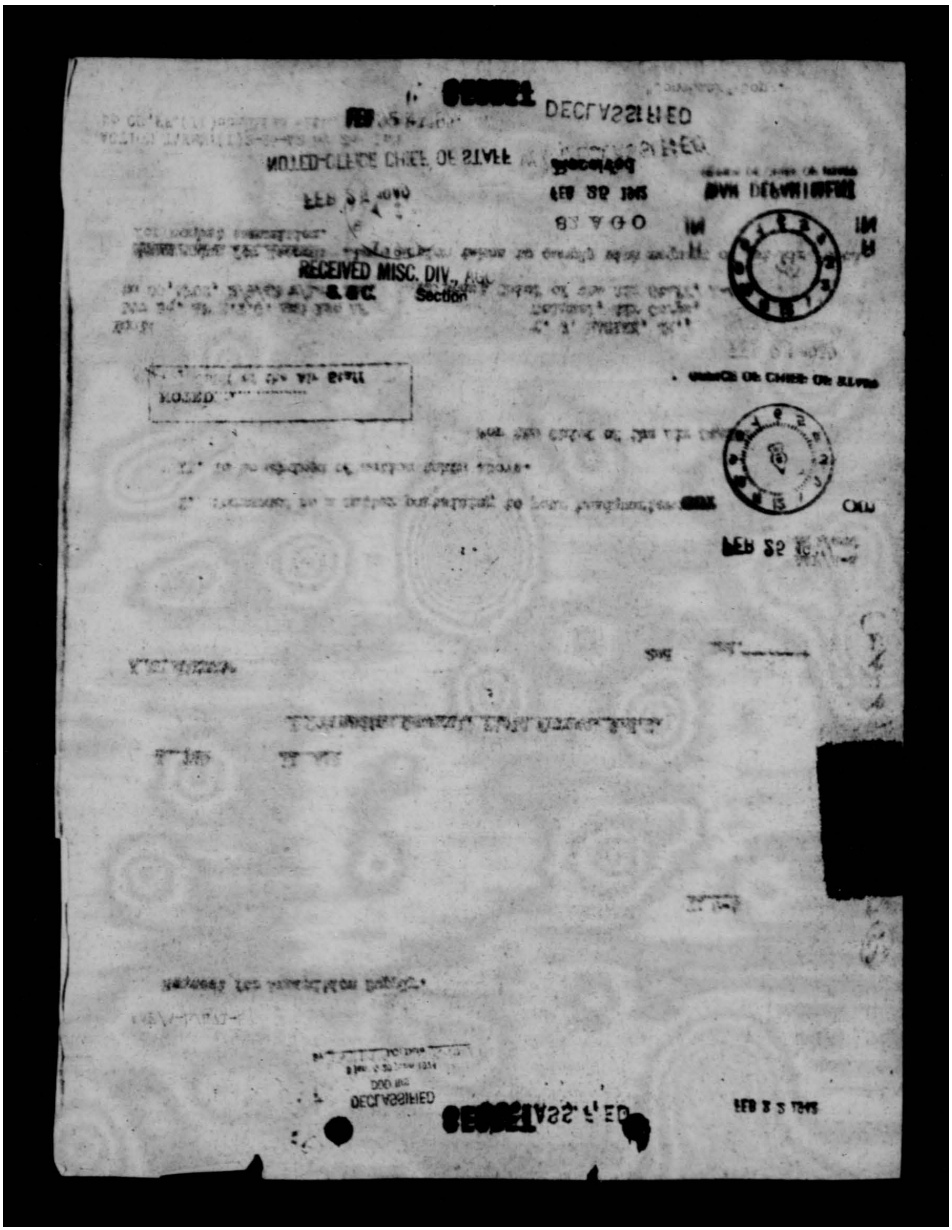

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8 Jan. & 20 June 1974
By: [illegible] LC, Date 3-10-77

FEB 2 2 1942

AAT/A-4/47-47

Request for Ammunition Supply.

II G-4

471 (104)

I [illegible] II AAF

I Commanding General, Field Forces, G.H.Q.

I [illegible] directs

2nd Ind.

AAF/A-4
[illegible]

I. Forwarded as a matter pertaining to your headquarters.

II. To be advised of action taken above.

For the Chief of the Air Staff:

NOTED ..... EAC 2/23/42
Office Chief of the Air Staff

Dispatched
FEB 24 1942
AAG

Incl:
Ltr Hq. AF E.T.O. and 1st AF
to CG, AFCC, 2/9/42 w/1st Ind.

T. J. HANLEY, JR.,
Colonel, Air Corps,
Assistant Chief of the Air Staff, A-4.

[illegible] 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	
	[illegible]					[illegible]					

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8 Jan. & 20 June 1974
By SSJMM J.C. Date 3-10-77

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HEADQUARTERS
AIR FORCES, EASTERN THEATER OF OPERATIONS
and
FIRST AIR FORCE
Office of the Air Force Commander
Mitchel Field, New York

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(K-82)

By Authority of: CG

471

SUBJECT: Request for Ammunition Supply.

TO: Commanding General, Air Force Combat Command,
Bolling Field, D. C.

1. In compliance with paragraph 2 a, Air Force Combat Command Memorandum 65-7, dated November 14, 1941, and paragraph 4 b, letter the Adjutant General's Office, file AG 371 (12-19-41) MSC-D-M, dated December 20, 1941, subject, "G-4 Administrative Order - Designation of Eastern Theatre of Operations," it is requested that these headquarters be furnished ammunition supply authorities covering the quantities of ammunition indicated in column "short" below.

ITEM	REQUIRED	ON HAND	SHORT
Cartridge, armor piercing cal.. 30, grade AC, (w/olinks)	4,608,960	748,564	3,860,396
Cartridge, tracer, cal..30 grade AC, (w/olinks)	1,152,240	252,045	900,195
Cartridge, armor piercing cal..50, grade AC (w/o links)	1,216,800	359,434	857,366
Cartridge, tracer, cal..50 grade AC, (w/o links)	304,200	124,657	179,543
Shell, fixed H.E., M54, w/BD tracer and fuze P.D., M56, 37-mm auto.gun, M4	5,800	10,000	----
Bomb, demolition, 100-lb., C/R	3,156	3,545	----
Bomb, demolition, 300-lb., C/R	1,381	3,043	---
Bomb, demolition, 500 & 600 Lb., C/R	1,345	4,163	----

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Let. Hq. A.F. E.T.O. & 1st A.F. Request for Am. Supply (cont'd)

ITEM	REQUIRED	ON HAND	SHORT AA
Bomb, demolition, 1000 & 1100 lb., C/R	489	566	- - - -
Bomb, demolition, 2000 lb., C/R	48	251	- - - - -
Bomb, fragmentation, 20-lb, C/R	1,380	1,500	- - - -
Link, metallic belt, cal..30	5,761,200	836,800	4,924,400
Link, metallic belt, cal..50	1,521,000	66,600	1,454,400
Cartridge, armor piercing, cal..30, grade R	1,474,400	NONE	1,474,400
Cartridge, tracer, cal..30, grade R	141,630	NONE	141,630
Cartridge, armor piercing, cal..30, grade MG	874,350	NONE	874,350
Cartridge, tracer, cal..30, Grade MG	130,650	NONE	130,650
Cartridge, ball, cal..45, M1911	196,200	244,400	- - - -
Cartridge, tracer, cal..45, M1911	36,000	NON E	36,000

2. The quantity of the ammunition listed above was based on the total number of weapons and airplanes on hand as of this date and was computed as follows: Weapons other than aircraft - based on figures listed in Appendix III Ordnance Field Manual 9-5; Aircraft Pursuit - based on twenty (20) missions per month; Bombardment, Reconnaissance and Observation - based on eight (8) missions per month.

For the Commanding General:

/s/ H.B.Sepulveda

H. B. SEPULVEDA,
Lt. Col., A.G.D.,
Adjutant General.

DISTRIBUTION:

Orig. & 1 copy - C.G., Air Force Combat Command.
1 copy - C.G., E.T.O., Governor's Island, New York.
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8 Jan. & 20 June 1974
By: JWH LC Date 3-10-77

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(K-94)

AGC 471 (2-9-42) 1st Ind.

FEB 12 1942

HEADQUARTERS AIR FORCE COMBAT COMMAND, Bolling Field, D. C.
TO: The Chief of the Army Air Forces, Washington, D. C.

1. Forwarded in accordance with recommendation contained in secret letter AGC 471 (1-26-42) this headquarters, dated 26 January 1942, subject, "Supply of Ammunition to the Air Force Combat Command and to the Eastern and Western Theaters of Operations, to your office. Attention is also invited to secret letter AGC 471 (1-31-42) Headquarters, Eastern Theater of Operations, dated 31 January 1942, subject, "Supply of Combat Ammunition", to the Commanding General, Air Force Combat Command, forwarded to your office from this headquarters by 1st indorsement thereon dated 4 February 1942.

2. Records this headquarters indicate quantities listed as being on hand in basic include only these six bases assigned to the Eastern Theater of Operations as designated in secret letter AG 320.2 (12-30-41) MSC-D-M, T. A. G. dated 30 December 1941, subject, "Allocation of Army Air Force Units and Associated Services, and the Assignment of Air Bases and Observation Airdromes".

3. In accordance with our recommendations contained in letter cited in paragraph one above, records this headquarters indicate total quantities Combat Ammunition on hand in Eastern Theater of Operations outlined in letter AG 371 (12-19-41) MSC-D-M, T. A. G. dated 20 December 1941, subject, "G-4, Administrative Order - Designation of Eastern Theater of Operations", as follows:

ITEM	QUANTITY
Bomb, demo., 2000-lb., M34	457
Bomb, demo., 1000-lb.	1,080
Bomb, demo., 500-lb.	6,567
Bomb, demo., 300-lb.	5,063
Bomb, demo., 100-lb.	5,507
Cartridge, AP&T, Cal..30	663,000
Cartridge, AP&T, Cal..50	452,000
Cartridge, Ball, S.A. 20-mm	20,900
Shell, H.E., 37-mm	12,000

For the Commanding General:

W. G. Caldwell,
Major, A. G. D.,
Asst. Adjutant General

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CENTRAL MAIL SECTION A.A.F.
ari 12471 (104)

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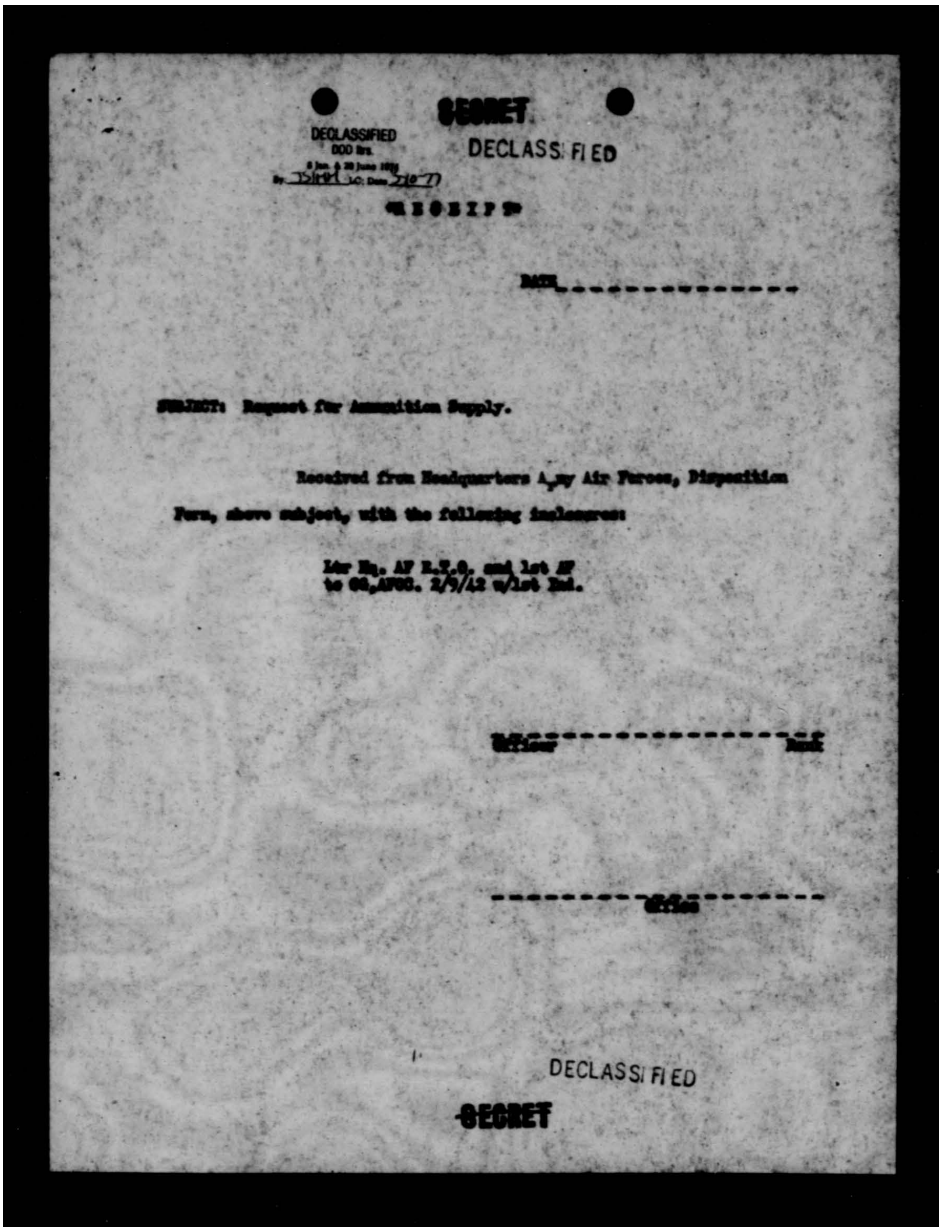

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DOD Dir.
8 Jan. & 20 June 1971
By: [illegible] LC; Date: 5/10/77

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"RECEIPT"

DATE _____

SUBJECT: Request for Ammunition Supply.

Received from Headquarters Army Air Forces, Disposition Form, above subject, with the following inclosures:

Ltr Hq. AF R.T.O. and 1st AF
to CG,AFOC. 2/9/42 w/1st Ind.

_____
Officer Rank

_____
Office

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DOD Ltr.
8 Jan. & 30 June 1974
By: JS/HM LC Date: 3-10-77

AG 471 (2-2-42)MSC-S LFL/ihw-1705

February 10, 1942

SUBJECT: Shipment of Ammunition to Eglin Field, Sacramento Air Depot and San Antonio Air Depot.

SECRET

Auth: T.A.G.

Initials: R.G.H.

Date: FEB 10 1942

TO: Chief of Ordnance.

Confirming telephone instructions issued to your office (Captain Stone), January 31, 1942, (Serial 1332), from Lt. Col. Burgess, A-4, Air Staff, it is desired that the following ammunition be shipped as follows:

a. To Ordnance Officer
Air Corps Proving Ground
Eglin Field
Valparaiso, Florida.

165,000 rounds cal. 50 ball & tracer (4 & 1)
(84,000 for testing B-24D airplanes, and
81,000 for testing B-17E airplanes).

13,500 rounds cal. 20 ball & tracer (4 & 1)
(for testing B-17E airplanes).

This shipment to be applied against items one and two of requisition 42-9 Wright Field.

b. To Sacramento Air Depot
500 rounds 20 mm
300 rounds 37 mm Practice

c. To San Antonio Air Depot
500 rounds 20 mm
300 rounds 37 mm Practice

By order of the Secretary of War:

Hq. Army Air Forces
FEB 11 1942
AAG RECEIVED

R.G. Hersey
Adjutant General.

COPIES TO: Chief of the Army Air Forces, ref. his memo, AAF/A-4/471-25, 2-2-42, to TAG.
A. C. of S., G-4.

File
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DOD ltrs.
8 Jan. & 20 June 1974
By: JS/HM LC Date 3-10-77

DECLASSIFIED

AG 471 (2-10-42)MSC-D

LFL/jb-1705

SECRET

10, 1942

Auth: T.A.G.
Initials: R.G.H.
Date: FEB 10 1942

SUBJECT: Caliber .30 Ammuni[illegible] Airplanes for South American Countries.

TO: Chief of Ordnance.

1. Confirming telephone instructions issued to your office (Captain Stone) February 9, 1942, it is desired that the following ammunition be shipped to the destinations listed below:

The American Military Mission, Santiago, Chile	Caliber .30 AP and Tracer (4-1) 150,000 rds. Caliber .30 Ball and Tracer (4-1) 150,000 rds.
United States Military Attache, Lima, Peru.	Caliber .30 AP and Tracer (4-1) 90,000 rds. Caliber .30 Ball and Tracer (4-1) 90,000 rds.
American Mission, Salinas, Ecuador	Caliber .30 AP and Tracer (4-1) 40,000 rds. Caliber .30 Ball and Tracer (4-1) 40,000 rds.

2. It is further desired that the above shipments be made from the San Francisco Port of Embarkation and accompany Force 9098.

By order of the Secretary of War:

R.G. Hersey

Adjutant General.

INFORMATION COPY TO: Chief of the Army Air Forces.

Hq. Army Air Forces
FEB 11 1942
AAG RECEIVED

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AAG/221
air AG471 (101)

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DOD Dir.
8 Jan. & 30 June 1974
By JS/MM LC; Date 3-10-77

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AG 471 (2-6-42)MSC-D LFL/kti-1705.

February 8, 1942.

SECRET

Auth: T.A.G.
Initials: R.G.H.
Date: FEB 8 1942

SUBJECT: Ammunition for BIRCH, HOLLY and FANTAN.

TO: Chief of Ordnance.

It is desired that the following ammunition be shipped by the first available transport to the destinations indicated below:

HOLLY	Cal.	.50 AP and Tr (4-1)	16,800 rds.
BIRCH	Cal.	.50 AP and Tr (4-1)	16,800 rds.
FANTAN	Cal.	.50 AP and Tr (4-1)	33,600 rds.

By order of the Secretary of War:

R.G. Hersey

Adjutant General.

COPIES TO:

Chief of the Army Air Forces;
A. C. of S., WPD.

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AG/460
an AG 471 (100)

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DOD Dir.
8 Jan. & 30 June 1974
By JS/MM LC Date 3-10-77

AG 471 (2-5-42)MSC-D LFL/gc - 1705 DECLASSIFIED

February 6, 1942.

SECRET

Auth: T.A.G.
Initials: R.G.H.
Date: FEB 6 1942

SUBJECT: Ammunition for Project "Larkspur."

TO: Chief of Ordnance.

1. It is desired that you ship the articles and ammunition listed below to Pier 37, Clyde-Mallory Lines, North River, New York, to arrive by February 15, 1942:

30 each, guns, machine, caliber .30 Browning, Model 1917A1
30 each, mounts, tripod, caliber .30 machine gun, M1917A1
Necessary accessories and maintenance spare parts to include ammunition chests, ammunition belts, and loading machine.
300,000 rounds caliber .30 ammunition, armor piercing and tracer (4-1).

2. All packages should be marked:

Air Corps
"Larkspur"
Export Lighterage Free

3. This confirms instructions telephoned to your office by the Assistant Chief of Staff, G-4, on February 4, 1942.

By order of the Secretary of War:

R.G. Hersey
Adjutant General.

COPY TO: Chief of Army Air Forces.

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AAF/A-4/30

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DECLASSIFIED

February 2, 1942

DECLASSIFIED
DOD ltrs.
6 Jan. & 20 June 1974
By: JS/MM LC; Date 3-10-77

AAF/A-4/471-25

Shipment of Ammunition to Eglin Field, Sacramento Air Depot and San Antonio Air Depot.

II G-4

I Ord.

II AAF

X TAG

X SW directs

AAF/A-4
HCB/esg

I. 1. Confirming telephone instructions issued to your office (Capt. Stone) January 31, 1942 (Serial 1232) from Lt. Col. Burgess, A-4, Air Staff, it is desired that the following ammunition be shipped as follows:

FEB 7 1942
AAG

To Ordnance Officer
Air Corps Proving Ground
Eglin Field
Valparaiso, Fla.

165,000 rounds cal. 50 ball & tracer (4 & 1)
(84,000 for testing B-24D airplanes, and 81,000 for testing B-17E airplanes).

13,500 rounds cal. 30 ball & tracer (4 & 1)
(for testing B-17E airplanes).

This shipment to be applied against [illegible] and two of requisition [illegible] Wright Field.

of Staff	Air Staff	A.A.G.	A-1	A-2	A-3	A-4	A-WPD	A-Insp.	Budget	Statistics	
	2.	To Sacramento Air Depot 500 rounds 20 mm 500 rounds 37 mm Practice									

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3. To San Antonio Air Depot

500 rounds 20 mm
300 rounds 37 mm Practice

II. Tp be advised of above action.

For the Chief of the Air Staff.

NOTED ERC 2/6/42
Chief of the Air Staff

T. J. HANLEY, JR.,
COLONEL, AIR CORPS
Assistant Chief of Air Staff, A-4

Memorandum for Record: Above action taken to provide testing of B-24D and B-17E airplanes at Eglin Field and tests at Sacramento Air Depot and San Antonio Air Depot. This has been coordinated with G-4 (Major Cotulla).

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	
	WJT					[illegible]					

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AAF/A-4/38

RECEIPT

DATE _____

SUBJECT: Shipment of Ammunition to Eglin Field, Sacramento Air Depot and San Antonio Air Depot.

Received from Headquarters, Army Air Forces, Disposition Form, above subject.

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AAF/A-4
HGB/mlrb

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DOD Rts.
8 Jan. & 20 June 1974
By JS-HH LC Date 3-10-77

DECLASSIFIED

(Written February 3, 1942)

Subject : Ammunition for Combat Airplanes Prior to Departure from the United States.

1st. Ind.

War Department, Headquarters Army Air Forces, Washington, D. C.
FEB 9 1942 TO Chief of the Air Corps.

1. The critical status of small arms ammunition at this time will not permit a stockage of this ammunition at various Depots and Air Fields in anticipation of possible requirements.

2. Upon receipt of timely request, this headquarters will make every effort to have the ammunition available for specific airplanes at the place and at the time required.

3. If this proves impracticable, replacement of ammunition provided by the Depots for this purpose will be made.

By Command of Lieutenant General Arnold

JOHN B. COOLEY
Lt. Colonel, A. G. D.,
Assistant Air Adjutant General

FEB 6 1942

FEB 9 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	
	WJF					[illegible]					

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DOD ltrs.
8 Jan. & 20 June 1974
By: JS/HM to Date 3-10-77

WAR DEPARTMENT
OFFICE OF THE CHIEF OF THE AIR CORPS
WASHINGTON

SUBJECT: Ammunition for Combat Airplanes Prior to Departure from the United States.

TO: The Chief of Air Staff.

1. It is imperative that all combat airplanes leaving the continental United States be fully equipped with armament and ammunition prior to departure. In most cases this has been accomplished with ammunition which has been furnished by the Combat Command. However, in some instances, combat airplanes have departed for foreign service from Depots under the control of the Air Service Command rather than fields under the jurisdiction of the Combat Command. In these cases it has been necessary to use the ammunition which was available at the Depots for proof-firing and testing the guns and installations and any other ammunition available anywhere for this purpose.

2. To avoid repetitions of this, it is recommended that the Air Staff make available to the Air Service Command a quantity of ammunition to be held at Sacramento Air Depot, San Antonio Air Depot, and Mines Field, California, for the purpose of equipping the airplanes leaving the United States from those fields. If this is not approved, it is requested that in each case the Depot Commander be informed as to the exact source of the ammunition for these planes.

For the Chief of the Air Corps:

W. T. HEFLEY
Major, Air Corps,
Executive, Air Service Command

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8 Jan. & 20 June 1974
By: JS HM LC Date 3-10-77

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SUBJECT: .37 mm. Ammunition M-55 Al.

AG 471 (1-15-42)MSC 2nd Ind. RPM/hm - 1705.

War Department, A.G.O., January 28, 1942. - To: Chief of the Army Air Forces.

JAN 30 1942
AAG Received

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AAG/134
air AG 471 (93)

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DOD Ltr.
8 Jan. & 20 June 1974
By JS/HM LC; Date 3-10-77

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WAR DEPARTMENT
THE ADJUTANT GENERAL'S OFFICE
WASHINGTON

IN REPLY REFER TO AG 471 (1-10-42)MSC-G MNE/evh-1705.

Q.Q. WAR DEPT.
471.1/6251
18 JAN 19 1942
81

January 15, 1942.

~~SECRET~~

Auth: T.A.G.
Initials:
Date: JAN 15 1942

SUBJECT: .37 mm. Ammunition M-55 Al.

TO: Chief of Ordnance.

1. Confirming telephone instructions issued to your office (Lt. Col. Rice) January 7, 1942 (Serial 921) from Lt. Col. Burgess, A-4, Air Staff, it is desired that the following ammunition be released as follows:

To Supply Officer, McChord Field, Washington
Marked for use on P-39-D Airplanes
1,000 rds. 37 mm. M-55 Al

To Quartermaster, Langley Field, Virginia
For Air Corps Supply Officer
1,000 rds. 37 mm. M-55 Al

To Air Corps Representative
Bell Aircraft Corporation
Buffalo, New York
Marked for use on P-39-D Airplanes
150 rds. 37 mm. M-55 Al

2. It is further desired that you advise Wright Field of date and method of shipment.

3. This authorization is over and above the total requisition 42-9 Wright Field, August 5, 1941 as approved, by 1,150 rounds, but the issue is made necessary for proof test at McChord Field and requirements at Bell Aircraft Corporation.

By order of the Secretary of War:

Adjutant General.

(84) AG 471 (1-15-42)

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DOD ltrs.
8 Jan. & 20 June 1974
By: JS/HM LC; Date: 3-10-77

87

O.O.471.1/6251
Amm.Sup.Div.,Fld.Serv.
AG 471 (1-10-42)MSC-G

1st Ind.

Evans/bp

War Department, Ordnance Office, Washington, D. C., January 26, 1942.
To: The Adjutant General, Washington, D. C.

1. The following shipments have been made against Wright Field Requisition 42-9.

1000 rounds to Supply Officer, McChord Field, Washington, marked "for use on P-39-D airplanes," from San Antonio Arsenal on January 9, 1942, on Shipping Order 41-R-2.

1000 rounds to Quartermaster, Langley Field, Virginia, from Savanna Ordnance Depot on January 21, 1942, on Shipping Order 42-R-2.

150 rounds to Air Corps Representative, Bell Aircraft Corporation, marked "for use on P-39-D airplanes" from Raritan Arsenal on January 13, 1942, on Shipping Order 43-R-2.

2. Wright Field has been notified of the above shipment.

For the Chief of Ordnance:

James W. Freeman
James W. Freeman,
Lt. Col., Ord. Dept.,
Assistant.

84 AGO
JAN 28 1942
Rec'd Back

JAN 28 '42 PM

RECEIVED MISC. DIV., AGO.
S. & C. Section

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DOD Ltr.
8 Jun. & 20 June 1974
By: JS/KH LC; Date 5-10-77

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AG 471 (1-25-42)MSC-D MMH/fm-1705.

January 26, 1942.

SUBJECT: Small Arms Ammunition for "Halpro" Project.

TO: Chief of Ordnance.

Confirming telephone instructions issued to your office (Lieutenant Colonel Rice), January 25, 1942, it is desired that the following ammunition be shipped to the Chief of the Army Air Forces at Eglin Field, Florida, for the "Halpro" Project:

Caliber .50 AP and Tracer (4-1)	8,700 rounds.
Caliber .45 Ball	8,000 rounds.

By order of the Secretary of War:

J. G. Brackinridge

Adjutant General.

COPY TO: Chief of the Army Air Forces.

471 (92)

JAN 28 1942
AAF Received

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air AG 471 (92)

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6 Jan. & 20 June 1974
By: JSMM LC; Date 5-10-77

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WAR DEPARTMENT
HEADQUARTERS OF THE ARMY AIR FORCES
WASHINGTON

MEMORANDUM FOR THE CHIEF OF STAFF:

Subject: Delivery of Small Arms Ammunition to Del Monte Airport by Bombardment Airplane.

471 (91)

1. From the information available, the nearest airdrome to Del Monte, Mindanao, from which bombardment airplanes can operate for the purpose of transporting small arms ammunition are those in the Java area and Timor. Due to the range involved this necessitates landing at Del Monte for servicing, and under these conditions a four-engine airplane can carry approximately 50,000 rounds of small arms ammunition, caliber .30.

2. Del Monte Airport is reported available for landings although certain hazards are involved due to enemy action. Gasoline is available. A radiogram from General Brereton, dated January 24th, reports evacuation of twenty three pilots from this airport on January 20th.

JAN 26 1942

NOTED-OFFICE CHIEF OF STAFF W.T.S.

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OCS/21347-57

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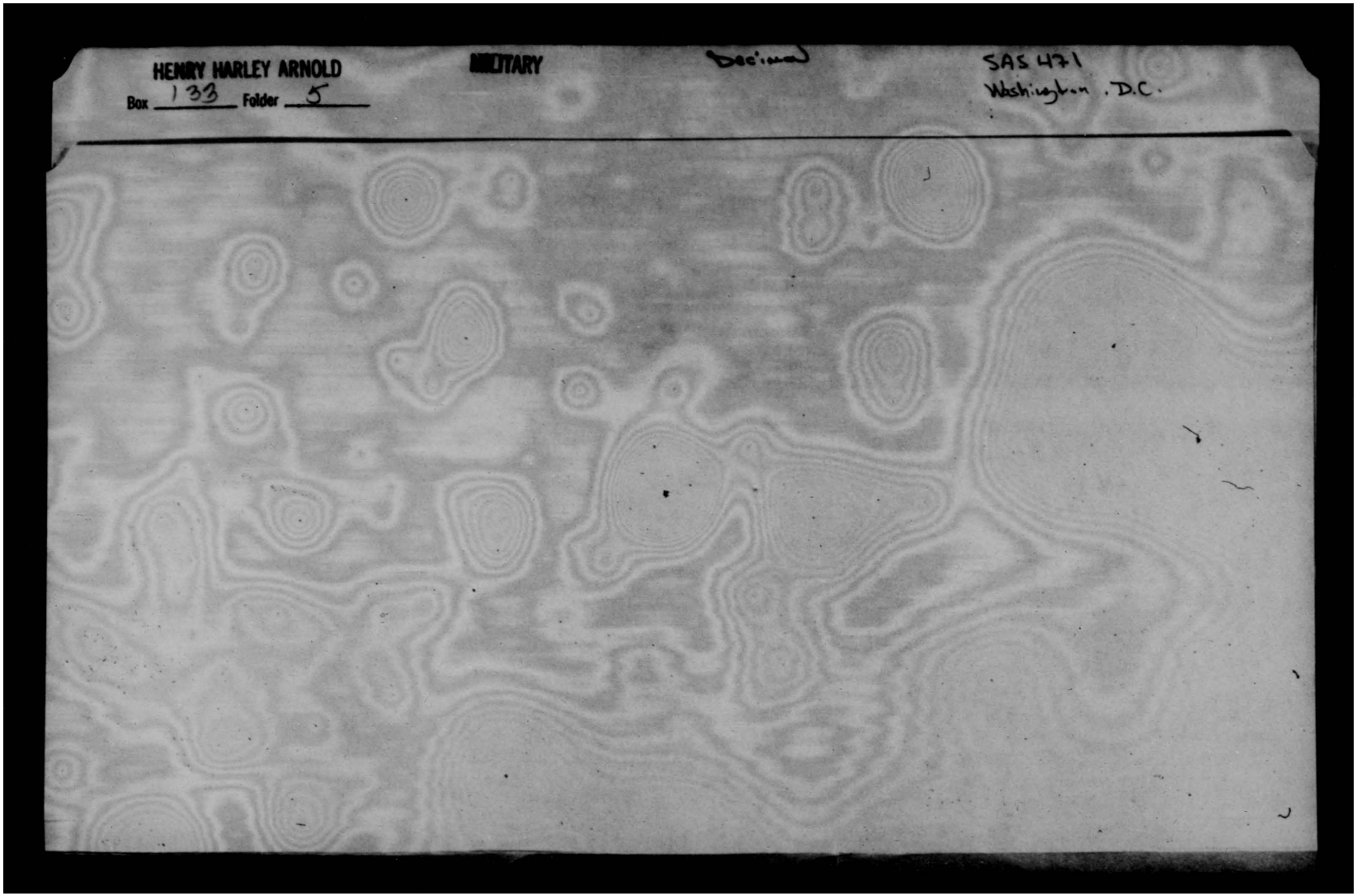

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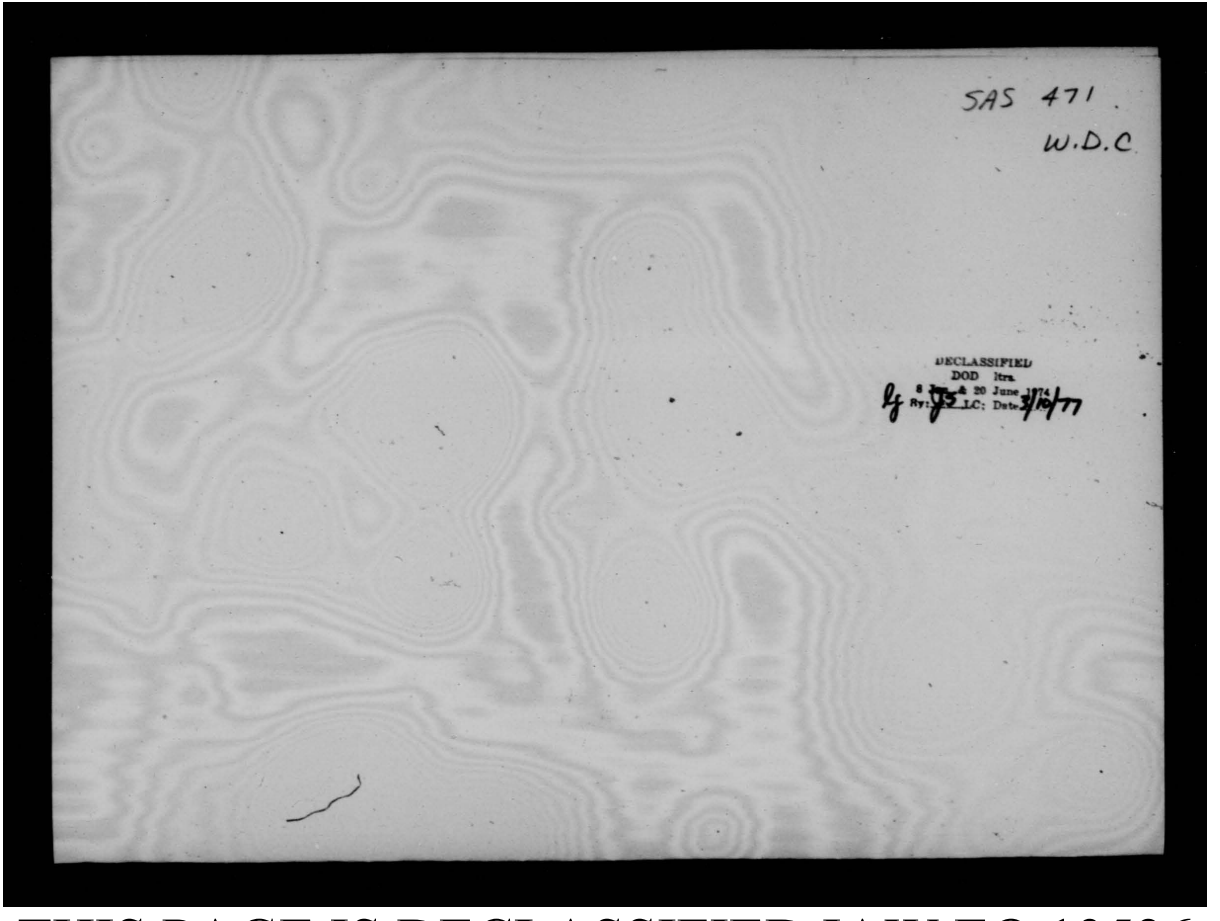

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8 Jan. & 20 June 1974
By: JSMM J.C. Date: 3-10-77

AAF/A-4
HCB/emd

FEB 3 1942

471 - WDC (2)

MEMORANDUM FOR THE ASSISTANT CHIEF OF STAFF, G-4:

Subject: Training Ammunition Supplied by the Western Defense Command to the 4th Air Force.

1. The 4,[illegible],000 rounds cal. 30 ammunition and the 500,000 rounds cal. 50 ammunition were released to the Air Force Combat Command for distribution to the four Air Forces based upon requirements.

2. Records of the Air Force Combat Command indicate the following stocks on hand in the 4th Air Force:

1,[illegible],000 rounds cal. 30
184,000 rounds cal. 50
24,000 rounds 20 mm
5,000 rounds 37 mm

3. From the allotment of ammunition in paragraph 1 above, the 4th Air Force received their proportionate share based upon requirements as follows:

750,000 rounds cal. 30
103,000 rounds cal. 50

4. In addition, 15,000 rounds 20 mm and 5,000 rounds 37 mm were released to the 4th Air Force on January 30, 1942.

5. Our records do not show any airplanes equipped with the 20 mm gun in the 4th Air Force.

6. The shortage of cal. 50 ammunition can only be met by an additional allocation from the War Department.

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	
Incls: None for G/AAF 1/27/42 frm G-4 w/None for G-4 frm GHQ, 1/23/41 w/Para. Radio.						HCB T. J. HANLEY, JR., Colonel, Air Corps, Assistant Chief of the Air Staff, A-4.					

AAF-39

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RADIOGRAM

FROM: C. G., W. D. G. and Fourth Army — SENT: January 21, 1942.

TO: C. G., Field Forces, GHQ — RECEIVED: January 21, 1942.

PARAPHRASE

January 22, 1942

A radio from your Headquarters sent January 18th, 1942 (JT number 210) requested this Headquarters submit list of the ammunition requirements of the 4th Air Force. It is furnished herewith. The requirements by calibers are as follows:

Cal. .30 linked 4 ball & one tracer	1,126,500 rds.
Cal. .50 linked 4 ball or A. P. and one tracer	1,126,500 rds.
Cartridge 20mm 42,000 rds	42,000 rds.
37mm Gun M-4 shell	7,000 rds.

This amounts to 2,302,500 rds and allows 795 pilots and 740 gunners 1500 rds. apiece.

The Field Forces have one half the Cal. .30 which was made available from stock and mostof the balance of the Cal. .30 can also be supplied from that source.

Training credits provide 15,000 cartridge practice 20mm.

At present no other ammunition of any caliber is available.

Paraphrased by:

W. H. Lippincott,
Captain, G. S. C.,
Assistant, G- 4.

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DOD Dir.
8 Jan. & 30 June 1974
By JSIMM LC Date 3-10-77

WAR DEPARTMENT
War Department General Staff
Washington, D. C.

G-4/28664-215

January 27, 1942

MEMORANDUM FOR THE CHIEF OF THE ARMY AIR FORCES:

Subject: Training Ammunition Supplied by the Western Defense Command to the 4th Air Force.

1. Reference is made to the attached memorandum for the Assistant Chief of Staff, G-4, on the above subject, January 23, 1942, and to the paraphrased radio from the Commanding General, Western Defense Command, inclosed therewith.

2. Action was taken on January 19, 1942, to release 4,600,000 rounds of Caliber .30 ammunition to the Chief of the Army Air Forces. The Chief of Ordnance was directed on January 26, 1942 to replace with serviceable ammunition 500,000 rounds of Caliber .50 ball ammunition previously released to the Chief of the Army Air Forces, the use of which has been rescinded.

3. The above releases were made in order to provide training ammunition for the Army Air Force, including units in the Western Defense Command.

4. Your comments and recommendations, together with the return of the attached memorandum to the Assistant Chief of Staff, G-4, are requested.

BREHON SOMERVELL,
Brigadier General,
Assistant Chief of Staff.

Incls:
Memo fm GHQ,
U.S.Army for
ACoS,G-4 (1-23-42)
w/1 Incl.

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9 Jan. & 20 June 1924
By TSWM JC; Date 3-10-77

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Auth: DGFF
Initials MBB
Date 1/23/42

471-[illegible]-D

January [illegible], 1942.

MEMORANDUM FOR ASSISTANT CHIEF OF STAFF, G-4, WAR DEPARTMENT:

Subject: Training Ammunition Supplied by Western Defense Command to 4th Air Force.

1. On January 12, the War Department (orders of General Marshall) directed the Western Defense Command to supply 1,800 rounds of training ammunition to each gunner and pilot of the 4th Air Force.

2. The attached paraphrase of radiogram from the Commanding General, Western Defense Command, reports the amount of ammunition which will be furnished the 4th Air Force.

3. In view of the shortage of ammunition in the Western Defense Command, request that Chief of Ordnance be directed to furnish to the Commanding General, Western Defense Command, amounts of ammunition indicated in paraphrase of radiogram.

For the COMMANDING GENERAL:

CLYDE L. HISSONG
Lt. Col., A.G.D.,
Adjutant General.

1 Incl. - Paraphrase of
Radio, (1/21/42).

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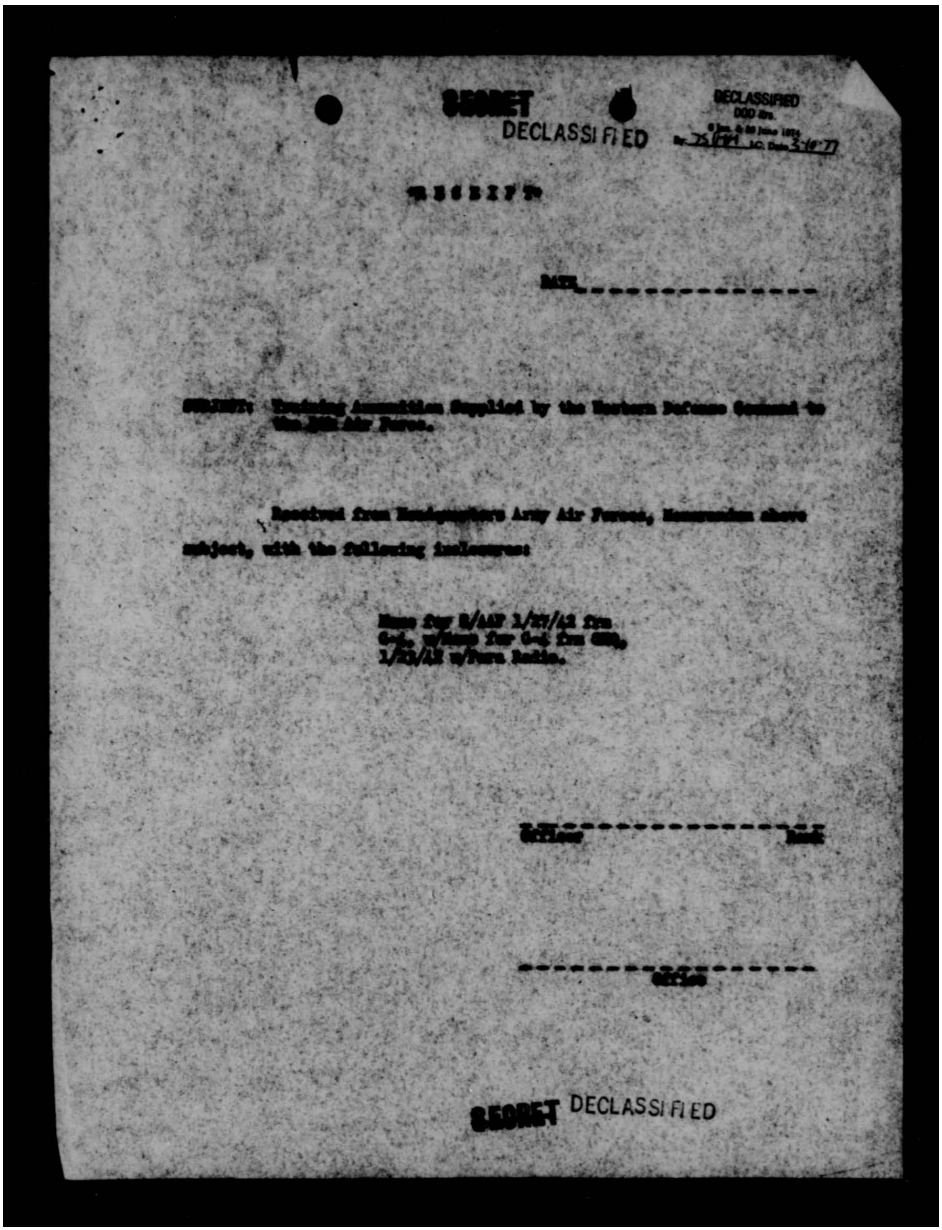

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DOD Dir.
6 Jan. & 30 June 1974
By: JS/PM LC Date 3-10-77

"RECEIPT"

DATE _____

SUBJECT: Training Ammunition Supplied by the Western Defense Command to the 20th Air Force.

Received from Headquarters Army Air Forces, Memorandum above subject, with the following inclosures:

Name for S/AAF 1/27/42 from
G-4, w/Name for G-4 from [illegible],
1/23/42 w/Para Radio.

_____
Officer Rank

_____
Office

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AAF/A-4
HCB/soc

February 3, 1942

MEMORANDUM FOR THE ASSISTANT CHIEF OF STAFF G-4

Subject: Estimate of Requirements of Aerial Bombs, Ammunition and Pyrotechnics.

1. It is the policy of the Chief of the Army Air Forces to provide bombs, pyrotechnics and aircraft ammunition for the estimated combat life of airplanes whenever resources permit. It is further the policy to take cognizance of special situations, where because of transport difficulties, stockage duplication is necessary to permit full realization of the inherent strategical and tactical mobility of aircraft.

2. Resources of bombs, pyrotechnics and aircraft ammunition peculiar to the air corps are deemed sufficient to permit furnishing one month's combat requirements for the airplanes assigned to the 2nd and 4th Air Forces but are insufficient at this time to provide 5 months requirements for the airplanes set-up for Alaska.

3. Since the constitution of the Western Defense Command, bombs, pyrotechnics and ammunition released to that command have not been earmarked for any specific Air Forces or station, it is considered the prerogative of the Commanding General, Western Defense Command to determine what proportion of his resources he will assign to various portions of his Command including Alaska, and to take the action necessary to effect the desired distribution.

4. Attached hereto is a tabulation showing one month's combat requirements for the 2nd and 4th Air Forces for bombs, pyrotechnics and ammunition peculiar to the Air Corps, and the quantities on hand in or released to, the Western Defense Command. It will be noted that in the case of demolition bombs, stockages (including credits) are materially larger than the authorized one month's supply. It is thought that the excesses are sufficiently great to permit the immediate transfer of several thousand tons of bombs to Alaska without seriously jeopardizing the stocks at West Coast air bases if the Commanding General, Western Defense Command desires to [illegible]

DEPARTMENT
FEB 5 1942
AAG

INSTRUMENTS - 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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airab 471 West. Def. com. (1)

471 West Def Com (1)

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5. The A-4 Division will initiate action to increase the quantities of bombs, pyrotechnics and ammunition peculiar to the Air Corps at the disposal of the Commanding General, Western Defense Command as rapidly as resources and commitments in other areas permit. The supply objective will be to provide munitions for the combat life of the available airplanes at the time the airplanes are assigned plus a reasonable distribution factor where circumstances warrant such a factor.

For the Assistant Chief of Staff:

T. J. HANLEY, JR.
Colonel, A.U.S.
Assistant Chief of the Air Staff-A-4

Incls:
Memo for G/AAF:1/24/42.
Ltr to Com.Gen.12/29/41, from Col.Lewis; 1st,2nd, 3rd Ind.abv subject
Tab/Est.of Requirements for 2nd & 4th Air Forces

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	
						[illegible]					

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	One Month Combat Requirements for 2nd & 4th Air Forces	Quantities on hand in and released to the Western Defense Command
2000# Demolition Bombs	178	682
1000# Demolition Bombs	1,206	1,558
500# Demolition Bombs	3,892	15,695
300# Demolition Bombs	6,696	18,532
100# Demolition Bombs	10,113	24,814
20# Fragmentation Bombs	35,854	21,000
37 MM Aircraft	9,975	16,580
20 MM Aircraft	0	0
.30 Cal. (AP&T)	3,200,000	1,092,350
.50 Cal. (AP&T)	3,150,000	1,140,576
Distress Signal M8	650	300
Flares M8A1 (Replaced by M24)	0	1,200
Flares M9	19,500	27,019
Signals M11	7,150	27,099
Flares M13	1,300	2,280
Signals M14	6,500	25,000
M15	6,500	25,000
M16	6,500	25,000
Photo Flashbombs M23	13,000	0
Flares M26	13,000	350
Signals M25	13,000	15,065

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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WAR DEPARTMENT
WAR DEPARTMENT GENERAL STAFF
SUPPLY DIVISION, G-4
WASHINGTON, D. C.

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DOD ltrs.
8 Jan. & 20 June 1978
By: JS/MM LC. Date 3-10-77

AG 471 (12-29-41)
G-4/28664-215

MEMORANDUM FOR THE CHIEF OF ARMY AIR FORCES:

Subject: Estimate of Requirements of Aerial Bombs, Ammunition and Pyrotechnics.

1. Reference ismade to the basic communication from the Commanding General, Western Defense Command, on the above subject, December 29, 1941, and to the indorsements thereon.

2. Attention is invited to the fact that the proposed reserve, recommended by General Headquarters for Alaska, represents ten months' combat requirements for the pursuit and heavy bombardment airplanes of that command. G-4 is of the opinion that the provision of a 100 per cent distribution factor for bombs and small arms ammunition in Alaska is excessive.

3. Since no undue difficulty is anticipated in supplying the Western Defense Command (less Alaska) in an emergency, G-4 further believes that the reserve for the Western Defense Command (less Alaska) may be reduced to one third of that proposed by General Headquarters.

4. It is requested that the attached memorandum, together with your comments and recommendations relative to the approved level of small arms ammunition for Air Force units to be maintained in the Western Defense Command, including Alaska, be returned to the Assistant Chief of Staff, G-4, at the earliest practicable date.

BREHON SOMERVELL,
Brigadier General,
Assistant Chief of Staff.

/s/ W. C. Rutter

W. C. RUTTER, (stamped)
Lieut. Col., General Staff
Asst. Executive

Incls.
Ltr fm CG, WDC
w/3 Incls. & 1 Incl.
12-29-41

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DOD Dir.
8 Jan. & 30 June 1974
By JS/MH LC Date 3-10-77

WAR DEPARTMENT
HEADQUARTERS WESTERN DEFENSE COMMAND AND FOURTH ARMY
PRESIDIO OF SAN FRANCISCO, CALIF.

OFFICE OF THE COMMANDING GENERAL

471 (Ord) December 29, 1941

SUBJECT: Estimate of Requirements of Aerial Bombs, Ammunition and Pyrotechnics.

TO : Commanding General, 4th Air Force, Hamilton Field, California.

1. For the purpose of insuring an adequate supply of aircraft ammunition, bombs, and pyrotechnics, for the combat airplanes of the Western Defense Command, it is desired that an estimate of the initial requirement be submitted with the least possible delay.

2. The estimate will be based upon the following:

a. It will include the needs of all combat air units of the 4th and 2nd Air Force.

The total present allotment is:
One (1) group Bombardment (H)
Two (2) group Bombardment (M) less one (1) Squadron.
Three (3) groups Pursuit.

b. The items to appear in the estimated requirement will include the complete list now reported in the Air Force Ammunition Situation Report submitted daily to Commanding General, Western Defense Command.

c. The report will list the estimated requirement in terms of numbers of rounds, bombs, flares, etc.

By command of Lieutenant General DeWITT:

/s/ H.B.Lewis

H. B. LEWIS (stamped)
Colonel, A.G.D.
Adjutant General

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8 Jan. & 30 June 1971
By JSIMM LC Date 3-10-77

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00 471/584

1st Ind.

(K-4)

HEADQUARTERS 4TH AIR FORCE, Hamilton Field, California, December 31, 1941.
TO: Commanding General, Headquarters Western Defense Command and Fourth Army, Presidio of San Francisco, California.

1. With reference to basic communication, herewith is submitted estimates on aircraft ammunition, bombs, and pyrotechnics for combat airplanes of Western Defense Command.

2. Column 1 indicates the amount believed necessary in the Air Bases and in the hands of troops.

3. Column 2 is an estimate of the amount that should be stored in Depots in this Area, as a reserve.

4. In making these estimates, it has been assumed that, in addition to the Groups shown in basic communication, the Western Defense Command will have two Observation Groups, full strength.

5. All ammunition, bombs and flares should be complete rounds. The Items: Cartridge, Cal. .30 Armor Piercing; Cartridge, Cal. .30, Tracer, and Links, Metallic, Cal. .30, should be procured, if possible, linked in the proportion of 4 Armor Piercing to 1 Tracer. The additional Links, Cartridge, Cal. .30, are to be used with the Cartridge, Cal. .30 Incendiary, and should be belted, if possible.

6. There is no information in this Headquarters on the type of ammunition for 20mm, AC, Cannon, as these Items have not been listed in the Standard Nomenclature Lists. The 37mm ammunition should be procured as follows: Shell, Fixed, H. E., M54, W/SD Tracer and PDF M56, 37mm Automatic Gun, M4.

For the Commanding General.

/s/ G. H. McManus, Jr.

G. H. McMANUS, JR.,
Major, A. G. D.,
Adjutant General

Incls:
Est. AC AMM.

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DOD Dir.
5 Jan. & 30 June 1974
By TS Hill LC Date 3-10-77

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WAR DEPARTMENT

BASIC: Ltr. 471 (Ord), CG WDC & 4A, 12/29/41, to CG 4th AF, Subject: Estimate of Requirements of Aerial Bombs, Amm., and Pyrotechnics.

471 (Ord) 2nd Ind.

HQ. WESTERN DEFENSE COMMAND AND FOURTH ARMY, Presidio of San Francisco, California, January 3, 1942 - To: Commanding General, Field Forces, GHQ, Army War College, Washington, D. C.

1. Excerpts from a letter just received from the Commanding General, Western Air Force, are quoted as follows:

"There is at present in the 2nd Air Force area only seventy-seven one hundredths (.77) of one mission of Cal. .30, Armor Piercing and Tracer, and one and seventy-seven one hundredths (1.77) mission of Cal. .50, Armor Piercing and Tracer for airplanes in that area".

"In the 4th Air Force, there is only ninety-five hundredths (.95) of one mission, Cal. .30, Armor Piercing and Tracer, and two missions of Cal. .50, Armor Piercing and Tracer for all airplanes in this area."

2. The ammunition requirement for the Western Air Force, represented by the sum of columns 1 and 2 of the enclosed table "Estimates of Requirements of Aerial Bombs, Ammunition, and Pyrotechnics", is concurred in by this headquarters. Column 3 lists quantities on hand.

3. Since the Air Force will be required in the first phases of defense, action commensurate with the urgency of the supply of this requirement is requested. Quantities listed in column 4 should be supplied.

For the Commanding General:

/s/ J. J. Lappage

J. J. LAPPAGE
Major, A.G.D.,
Asst. Adjutant General

Incl.
n/c

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DOD Ltr.
8 Jan. & 20 June 1974
By: SS/HM LC; Date 3-10-77

471-WDC-D 3rd Ind.

GENERAL HEADQUARTERS, U. S. ARMY, Army War College, Washington, D. C., January 16, 1942. TO: The Adjutant General, Washington, D. C.

1. This headquarters is cognizant of the shortage of bombs and aircraft ammunition, but in view of the critical situation existing in the Alaskan area it is believed that every effort should be made to deliver sufficient stocks of these essential supplies to the Alaskan Defense Command at the earliest date possible. Stockages for the Western Defense Command should be maintained in accordance with the general ammunition situation and commensurate with their tactical situation.

2. The following stockages of bombs and aircraft ammunition for the Western Defense Command (less Alaska) and Alaska are recommended:

a. WDC less Alaska:

Pursuit.	20 missions (S.A. & 37mm)
Bombers (medium)	5 bombing missions
	8 small arms "
Bombers (heavy).	5 bombing missions
	8 small arms "

b. Alaska:

Pursuit	200 missions
Bombers (medium).	50 bombing missions
	80 small arms "
Bombers (heavy)	50 bombing missions
	80 small arms "

The stockages as recommended would amount to an estimated one (1) month's operation for the Western Defense Command (less Alaska), and then (10) months' operations for Alaska. The stockages for Alaska might appear to be excessive, but consideration must be given to the inaccessibility of this theater and the probable interruption of water transportation in case of attack. It is further suggested that stockages placed in this theater could be used for the armament of missions to be executed against enemy installations and concentrations. Consideration must also be given to the Alaskan plan for storage of bombs and aircraft ammunition, whereby fairly well balanced stocages are to be placed at each landing field.

3. An advance copy of subject communication has been delivered to the Assistant Chief of Staff, G-4, War Department, by special messenger from this headquarters.

4. Request that Assistant Chief of Staff, G-4, GHQ, be informed as soon as possible, the stockages of bombs and aircraft ammunition approved for the Western Defense Command (less Alaska) and Alaska; the approximate dates when stocks to attain 50 per cent of the approved levels can be shipped; and the approximate dates when the attainment of the full authorized levels may be expected.

For the COMMANDING GENERAL:

1 Incl. - n/c

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ESTIMATES OF REQUIREMENT[illegible] BOMBS, AMMUNITION AND PYROTECHNICS.

Item	Column 1 Requirement for Air Bases	Column 2 Requirement for Depot Reserve.	Column 3 Total on Hand.	Column 4 Shortage.
SHELL, 37mm AC M54	72,000	72,000	11,580	132,420
CARTRIDGE, 20mm H.E.M1	720,000	720,000	0	1,440,000
BOMB, Dem. 100 lb.	6,248	8,500	10,801	3,947
BOMB, " 300 lb.	13,481	17,211	9,963	20,729
" " 500 lb.	16,234	20,292	1,306	35,220
" " 600 lb.	0	0	334	0
" " 1000 lb.	2,384	2,980	665	4,699
" " 1100 lb.	0	0	201	0
" " 2000 lb.	596	745	341	1,000
" " 4000 lb.	0	0	0	0
" Frag. 17 lb.	0	0	0	0
" " 20 lb.	11,820	14,440	0	25,960
" " 30 lb.	1,320	1,320	1,885	755
"Photo Flash	2,318	2,318	0	4,636
FLARE, Para., M26	4,470	4,470	0	8,940
BOMB, Chemical M100#	0	0	0	0
GRENADE, Hand, Gas, M7	800	800	1,126	474
GRENADE, Hand, Gas, M6	800	800	354	1,246
GRENADE, Hand, Smoke, M8	2,825	2,825	1,798	3,852
FLARE, AC, Para.M8,M8A1	4,670	4,670	753	8,587
" " " M9	13,320	13,320	1,610	25,030
" Airport, M13	1,600	1,600	88	3,112
" AC,Parachute,M24	5,670	5,670	15	11,325
LIGHT, Aircraft, Float	500	500	647	353
SIGNAL, AC,Parachute,M10	13,320	13,320	2,555	24,085
" " " M11	13,320	13,320	4,016	22,624
" " " M14	13,320	13,320	520	26,120
" " " M15	13,320	13,320	790	25,850
" " " M16	13,320	13,320	542	26,098
SIGNAL, Ground, " M17	3,600	3,600	74	7,126
" " " M18	3,600	3,600	46	7,154
" " " M19	3,600	3,600	86	7,114
" " " M20	3,600	3,600	41	7,159
" " " M21	3,600	3,600	44	7,156
" " " M22	3,600	3,600	41	7,159
" Drift, M25	5,670	5,670	1,484	9,856
LIGHT,Signal,Very,Red	6,660	6,660	138	13,182
" " "White	6,660	6,660	135	13,185
" " "Green	6,660	6,660	138	13,182
CARTRIDGE, ball,cal..30	900,000	900,000	3,243,632	
" AP, cal..30	24,584,800	24.854.800	490,786	48,678,814
" Incendiary	3,070,580	3,070,580	36,000	6,105,160
" Tracer,cal..30	6,121,000	6,121,000	601,564	11,640,436
LINK,metallic,cal..30	33,200,380	33,776,380	4,422,635	62,554,125
CARTRIDGE,ball,cal..45	850,000	850,000	1,102,589	
" " " .50	0	0	515,629	
" AP " .50	23,140,000	23,140,000	823,991	45,456,009

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8 Jan. & 30 June 1974
By JS/RL LC; Date 3-10-77

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ESTIMATED REQUIREMENTS OF AERIAL BOMBS, AMMUNITION AND PYROTECHNICS, (Cont)

Item	Column 1 Requirement For Air Bases	Column 2 Requirement For Depot Reserve	Column 3 Total on Hand	Column 4 Shortage
CARTRIDGE, Tracer, Cal..50	5,760,000	5,760,123	316,585	11,203,538
LINK, metallic, belt, Cal..50	29,900,000	29,900,000	14,600	59,785,400
FUZE, bomb, M103, ( ) (Nose)	2,000	2,500	0	4,500
FUZE, bomb, M106 (tail)	2,000	2,500	0	4,500
WIRE, arming, assy	4,000	5,000	0	9,000
CLIPS, safety, Arming, (Fahnestock type)	4,000	5,000	0	9,000

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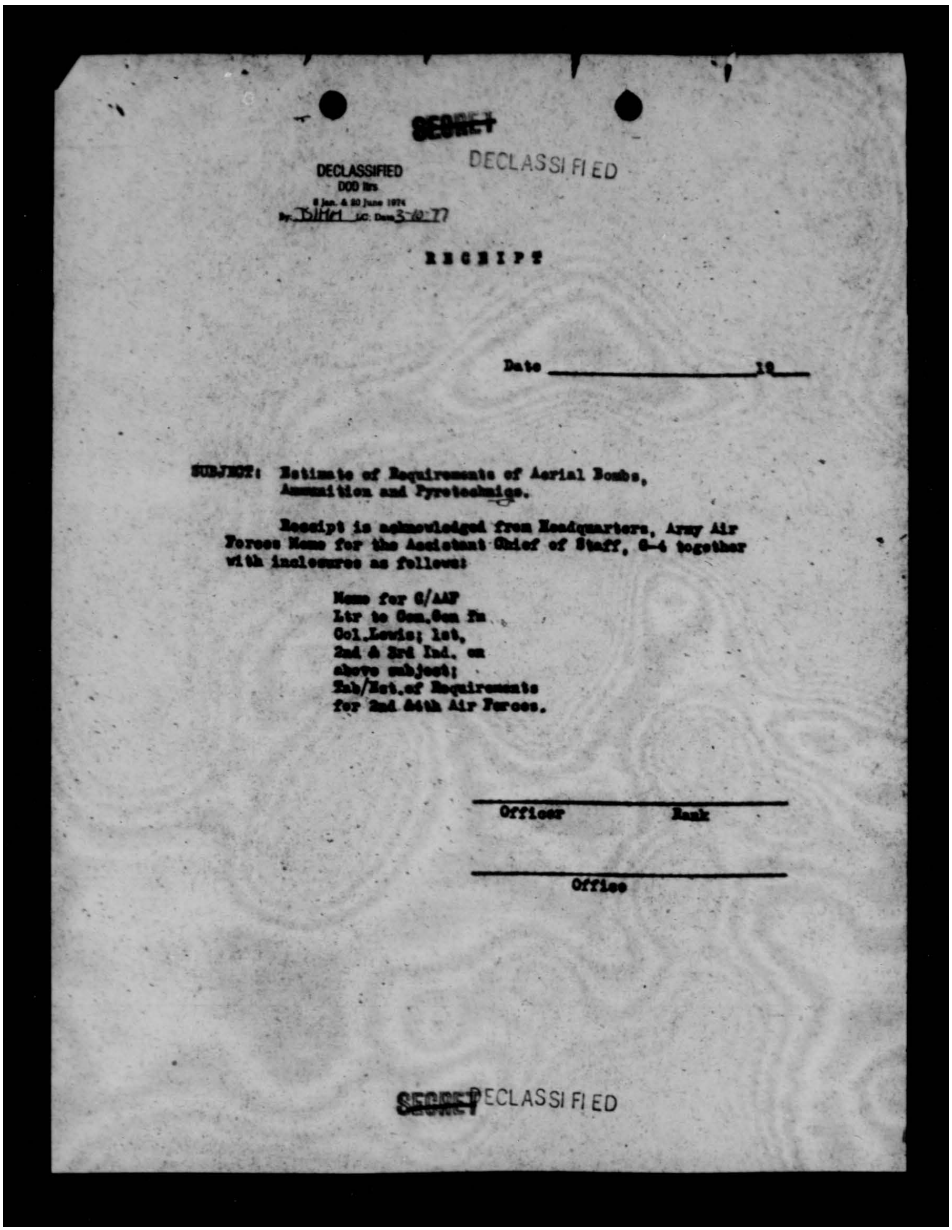

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DOD ltrs
6 Jan. & 30 June 1974
By: JSHM LC. Date 3-10-77

RECEIPT

Date _____ 19___

SUBJECT: Estimate of Requirements of Aerial Bombs, Ammunition and Pyrotechnics.

Receipt is acknowledged from Headquarters, Army Air Forces Memo for the Assistant Chief of Staff, G-4 together with inclosures as follows:

Memo for C/AAF
Ltr to Com.Gen fm
Col.Lewis; 1st,
2nd & 3rd Ind. on
above subject;
Tab/Est.of Requirements
for 2nd &4th Air Forces.

_____
Officer Rank

_____
Office

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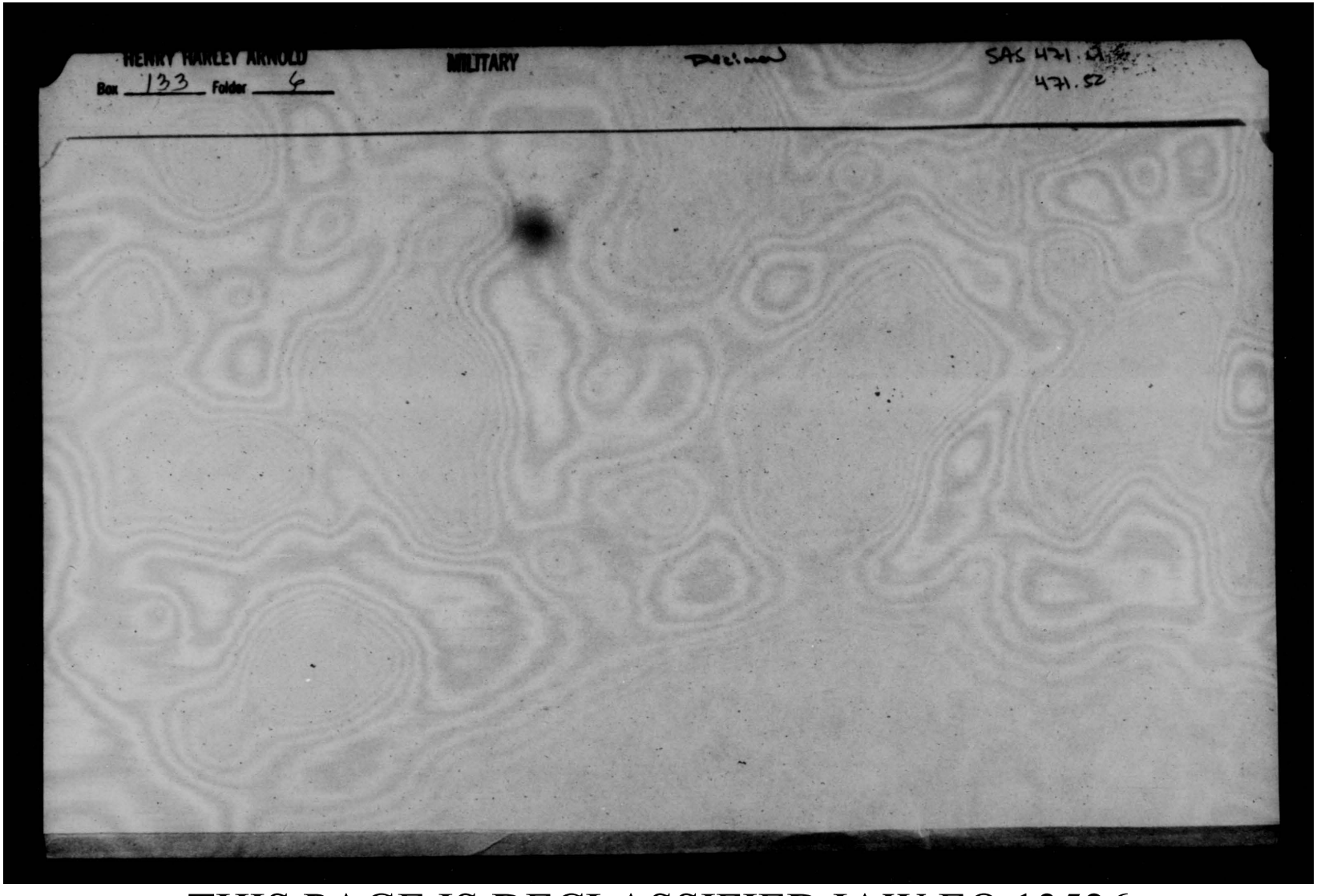

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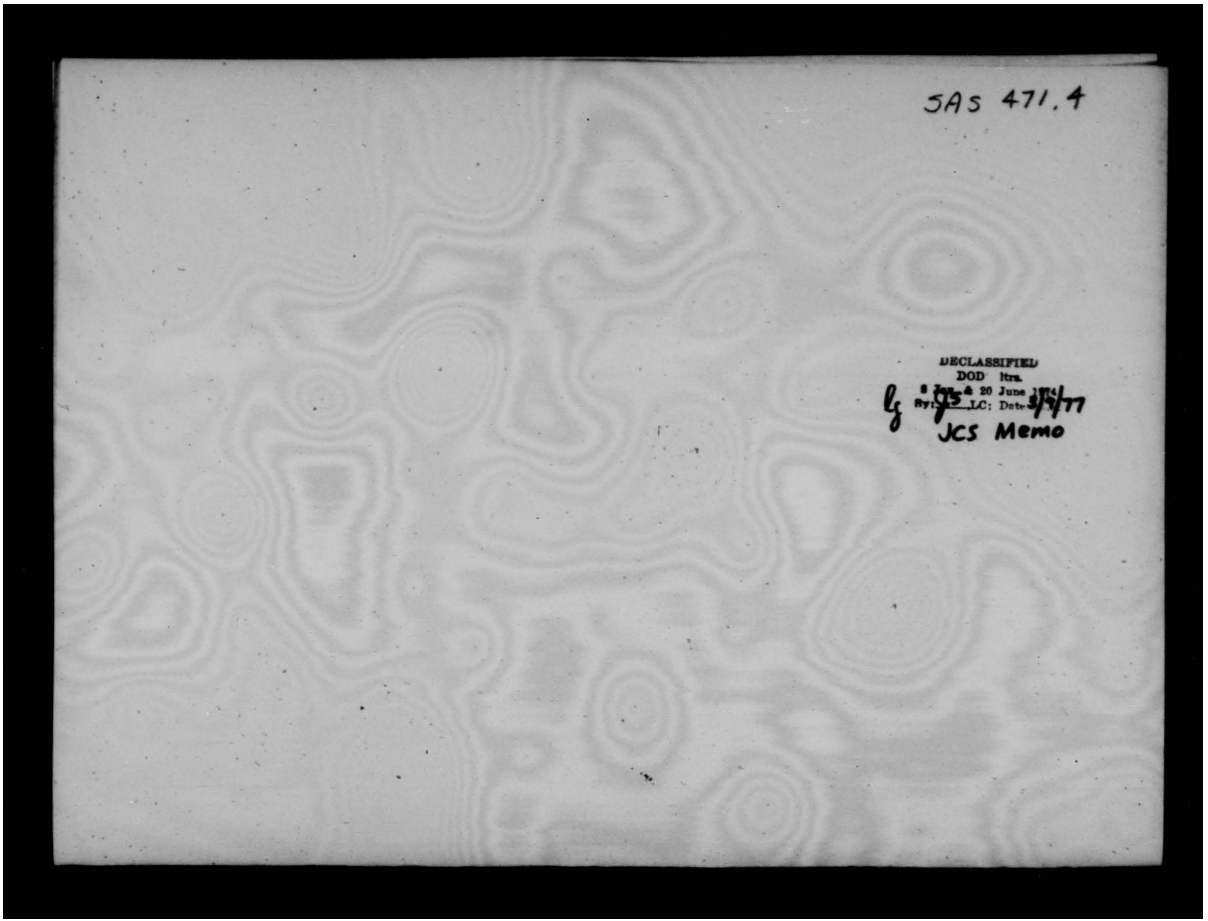

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BRITISH AIR COMMISSION
1785 MASSACHUSETTS AVENUE
WASHINGTON, D. C.

TELEPHONE HOBART 9000

LEASE QUOTE
EFERENCE NO. Sel103/RH

September 16, 1941

DECLASSIFIED
DOD ltrs.
8 Jan. & 20 June 1974
By: LC; Date 3/9/77

DECLASSIFIED
JCS Memo
2 Jan. 1975
By: LC; Date 3/9/77

471.4 (1)

Major General H. H. Arnold
Deputy Chief of Staff (Air)
War Department
Washington, D. C.

Thank you for your letter of September 10th, 1941, letting me know about the present position of the .30 cal. initial production at the excellent rate of 100,000 per week is due to commence in a month's time.

I am informed that the latest trials of the .30 calibre incendiary have been very successful, and I feel sure that this ammunition will prove to be a most important factor in our pursuit operations in the Middle East and elsewhere.

I appreciate that my letter of August 19th was the cause of some delay in freezing the design for production but fortunately, the ammunition now approved for bulk manufacture is superior to the current British product.

Signed - RODERIC HILL

Roderic Hill,
Air Marshal

egs

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DOD ltrs.
8 Jan. & 20 June 1974
By 251MM LC. Date 3-9-77

AAF/A-2
GCMcD

SEP 10 1941

Air Marshal Roderic Hill,
British Air Commission,
1785 Massachusetts Avenue,
Washington, D. C.

My dear Air Marshal Hill:

Receipt is acknowledged of your letter of August 18, S17-50 SE-753/NF, calling attention to the shortage of caliber .30 incendiary ammunition and requesting information as to the earliest possible production of this ammunition.

This matter has been taken up with the Chief of Ordnance who advised as follows:

"A recommendation that authority be granted for the manufacture of approximately 1,000,000 rounds of Caliber .30 Ammunition, Incendiary type, in accordance with specifications for Caliber .303 B MK VI Z, was approved by the Chief of Ordnance on June 12, 1941, and forwarded to the Office of The Adjutant General for approval of the Secretary of War, which approval was granted on June 28, 1941.

"Development of production facilities was immediately initiated. Production of the 1,000,000 rounds will start October 15, 1941, at the rate of 100,000 rounds per week. The estimated completion date of the quantity now authorized for manufacture is December 31, 1941.

"The eleven-week period from June 28 to October 15, could have been shortened had it not been necessary to redesign the bullet. This redesign was essential to obtain satisfactory functioning and the necessity therefore was recognized by Air Marshal Hill in his letter to the Chief of Ordnance of August 19, 1941, which contains the following statement:

471.4 (2)

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'From the above it will be seen that the only design actually in manufacture in England uses a screwed base plug, ball and anvil. It is obviously highly undesirable to consider manufacture of this type in the U. S. particularly as the modified 'Red Line' design will almost certainly be approved in England with little alteration.'

'The above quoted statement is supported by the fact that Caliber .303 B MK VI Ammunition, obtained from England for test in this country has given most unsatisfactory results.'

Sincerely yours,

Dispatched
SEP 10 1941
AAG

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AG 471.4 (1)

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BRITISH AIR COMMISSION
1785 MASSACHUSETTS AVENUE
WASHINGTON, D. C.

TELEPHONE HOBART 9000

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PLEASE QUOTE S17-50
REFERENCE NO. SE-753/XF

August 18, 1941

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DOD ltrs.
8 20 June 1974
By JS LC; Date 3/10/77

DECLASSIFIED
JCS Memo
2 Jan. 1975
By JS LC; Date 3/10/77

Dear Arnold,

I am very much concerned over the production of .30 caliber incendiary ammunition at present under development at the Frankford Arsenal. The urgent need for this type of ammunition was stressed in our letter, reference SE-1832 of June 9th addressed to the Office of the Chief of Ordnance for the attention of Brigadier General Somers. In the fifth paragraph of this letter it was stated that it was believed the Royal Air Force would prefer increased production of .30 caliber incendiary at the expense of tracer. Subsequent cables confirm that they are prepared to sacrifice 25% of the prospective output of tracer in favour of incendiary.

Owing to lack of .30 caliber incendiary ammunition, Middle East Command reports that the otherwise splendid operational qualities of the Tomahawk (P-40) have been seriously impaired. Actually, it appears that in some cases .303 wing guns have been substituted. By this means our B Mk. VI incendiary ammunition has been used. It is clear, however, that the supply is extremely limited, and if .30 caliber incendiary ammunition is to be used, urgent action seems necessary.

Sir Clive Baillieu has written to General Lewis on this subject. I should be most grateful for anything you could do to assist the earliest possible production of this ammunition, which we feel will be such an essential asset to our pursuit operations in Middle East.

Yours sincerely

/s/ Roderic Hill

Major General H.H. Arnold
Deputy Chief of Staff (Air)
War Department
Washington, D. C.

dld

A-331

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Ann a9471.4

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DOD Ltr.
8 Jan. & 20 June 1974
By JS/MM LC Date 3-4-77

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TO INSURE PROMPT ATTENTION IN REPLYING REFER TO

NO.

ATTENTION OF

WAR DEPARTMENT

OFFICE OF THE CHIEF OF ORDNANCE

WASHINGTON

RRS/rth

ORDNANCE-WAR
To 471.4/1851
SEP 3 1941

August 29, 1941

MEMORANDUM FOR: Chief of Army Air Forces

SUBJECT: Caliber .30 Incendiary Ammunition.

1. Replying to your memorandum of August 25, 1941, it is recommended that reply be made to the communication from Air Marshal Roderic Hill of the British Air Commission as follows:

A recommendation that authority be granted for the manufacture of approximately 1,000,000 rounds of Caliber .30 Ammunition, Incendiary type, in accordance with specifications for Caliber .303 B EK VI 3, was approved by the Chief of Ordnance on June 12, 1941, and forwarded to the Office of The Adjutant General for approval of the Secretary of War, which approval was granted on June 28, 1941.

Development of production facilities was immediately initiated. Production of the 1,000,000 rounds will start October 15, 1941, at the rate of 100,000 rounds per week. The estimated completion date of the quantity now authorized for manufacture is December 31, 1941.

The eleven-week period from June 28 to October 15, could have been shortened had it not been necessary to redesign the bullet. This redesign was essential to obtain satisfactory functioning and the necessity therefor was recognized by Air Marshal Hill in his letter to the Chief of Ordnance of August 19, 1941, which contains the following statement:

"From the above it will be seen that the only design actually in manufacture in England uses a screwed base plug, ball and anvil. It is obviously highly undesirable to consider manufacture of this type in the U. S. particularly as the modified "Red Line" design will almost certainly be approved in England with little alteration."

A-379

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RRS/rbh

Memo. for Chief of Army Air Forces 8-29-41
Subj: Caliber .30 Incendiary Ammunition.

The above quoted statement is supported by the fact that Caliber .303 B MK VI Z Ammunition, obtained from England for test in this country has given most unsatisfactory results.

C. T. HARRIS, Jr.,
Major General
Acting Chief of Ordnance.

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A 371

2-2

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air AG 471.4 (1)

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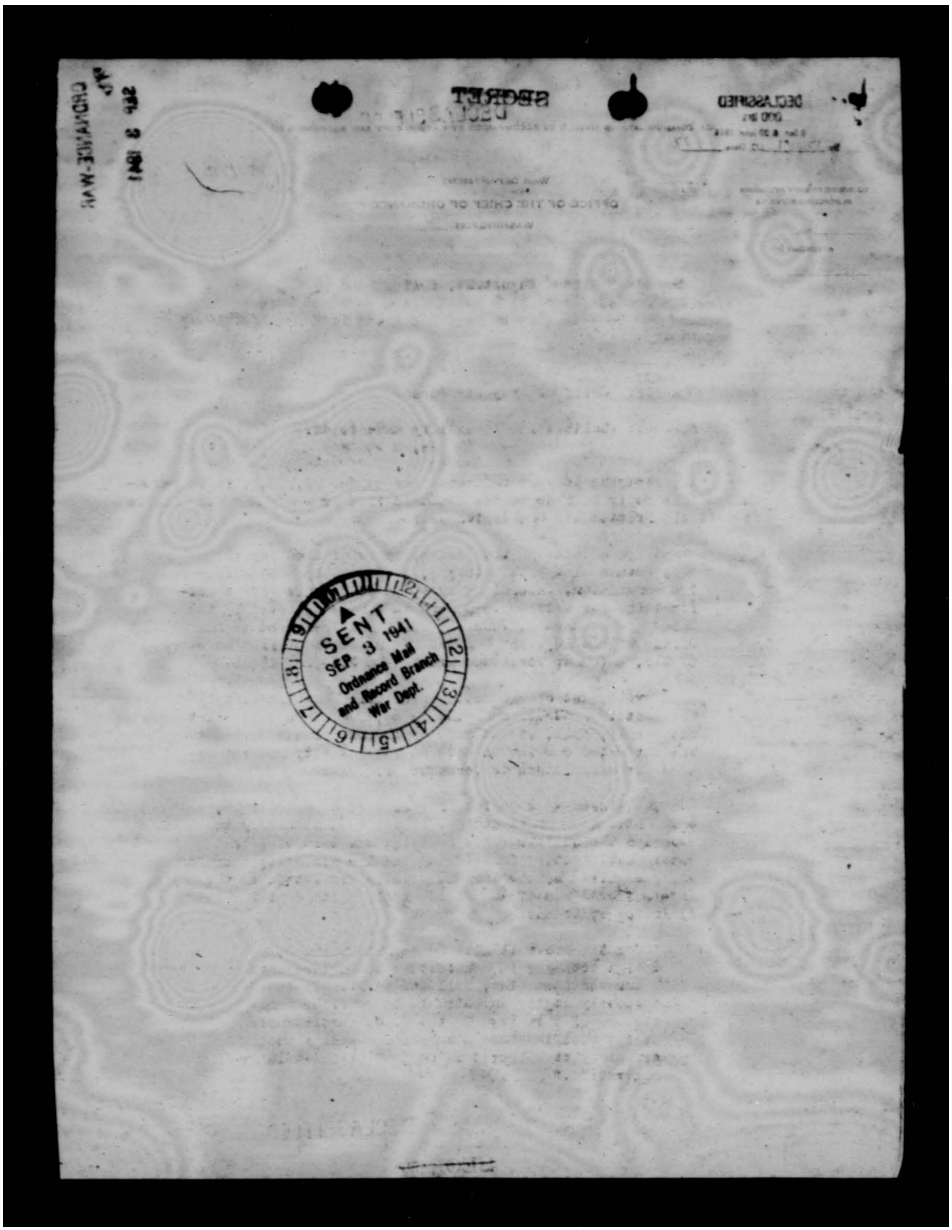

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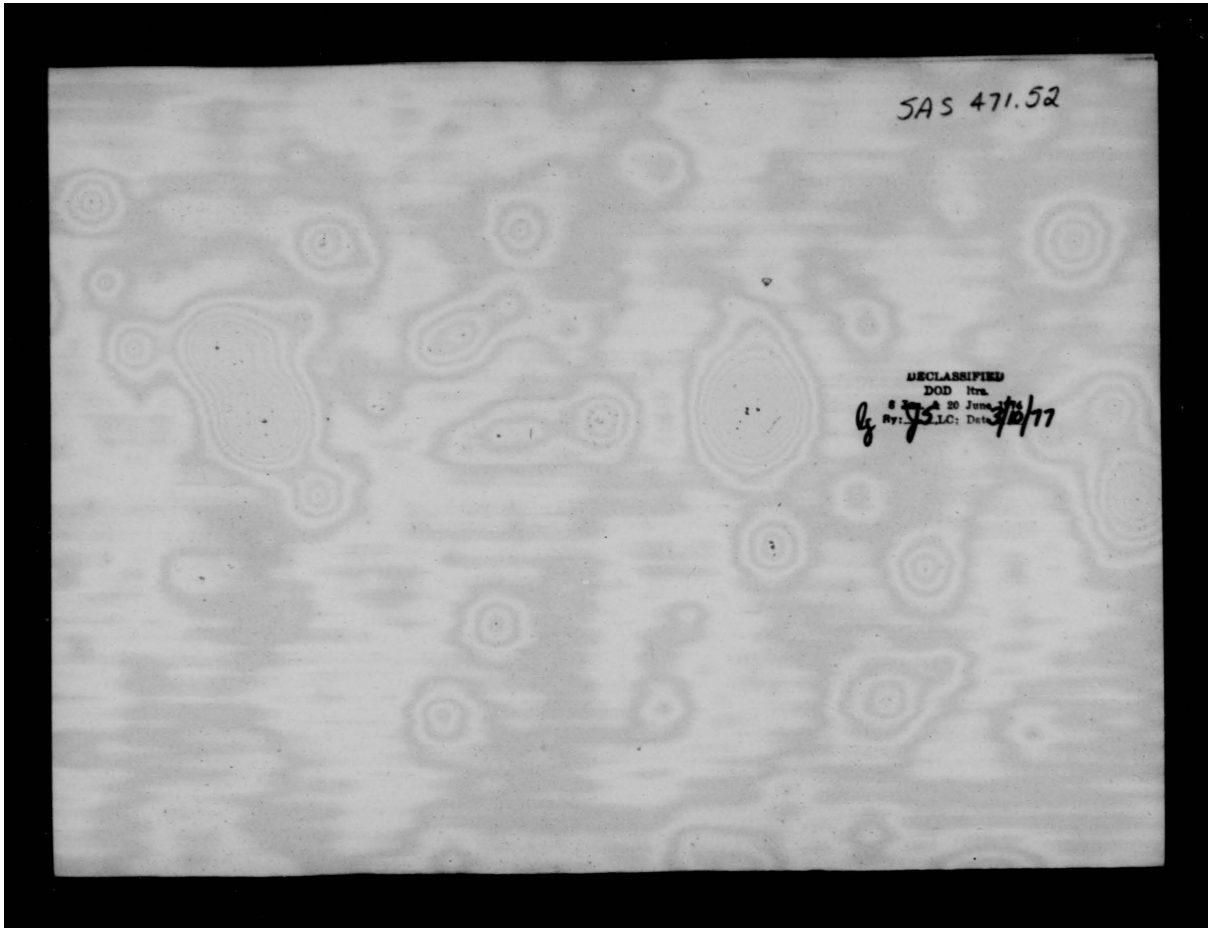

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DOD ltrs.
6 Jan. & 20 June 1974
By: JSIMM LC; Date: 3-10-77

AAF/COMM
ABM/hg

SUBJECT: Shipment of Detonators.

FEB 23 1942

TO: Chief of Ordnance.

1. Information has been received by this Headquarters that 432 detonators No. 39 Mark I, packed in 18 cases bearing case marking HH-D-1711, are on board or have just been unloaded from the Steamship Empire Swan now docked at the foot of Java Street, Brooklyn. It is requested that these items be shipped to the Air Corps Supply Officer, Patterson Field, Fairfield, Ohio.

2. Also on board are 3 cases containing detonators type D-30; these cases being marked B-29-76-1, B-29-76-2, and B-29-76-3. It is requested that these items be shipped to the Ordnance Property Officer, Orlando Air Base, Orlando, Florida, marked "For Trigger".

3. Mr. B. A. R. Tucker of the British Purchasing Commission, 37 Wall Street, Telephone: Hanover 22460, is the proper authority to release this shipment.

FOR THE CHIEF OF THE ARMY AIR FORCES

JOHN B. COOLEY
Lt. Colonel, A. G. D.,
Assistant Air Adjutant General

471.52 (3)

FEB 23 1942

Dispatched
FEB 23 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	Coll
						[illegible]					[illegible]

AAF 39

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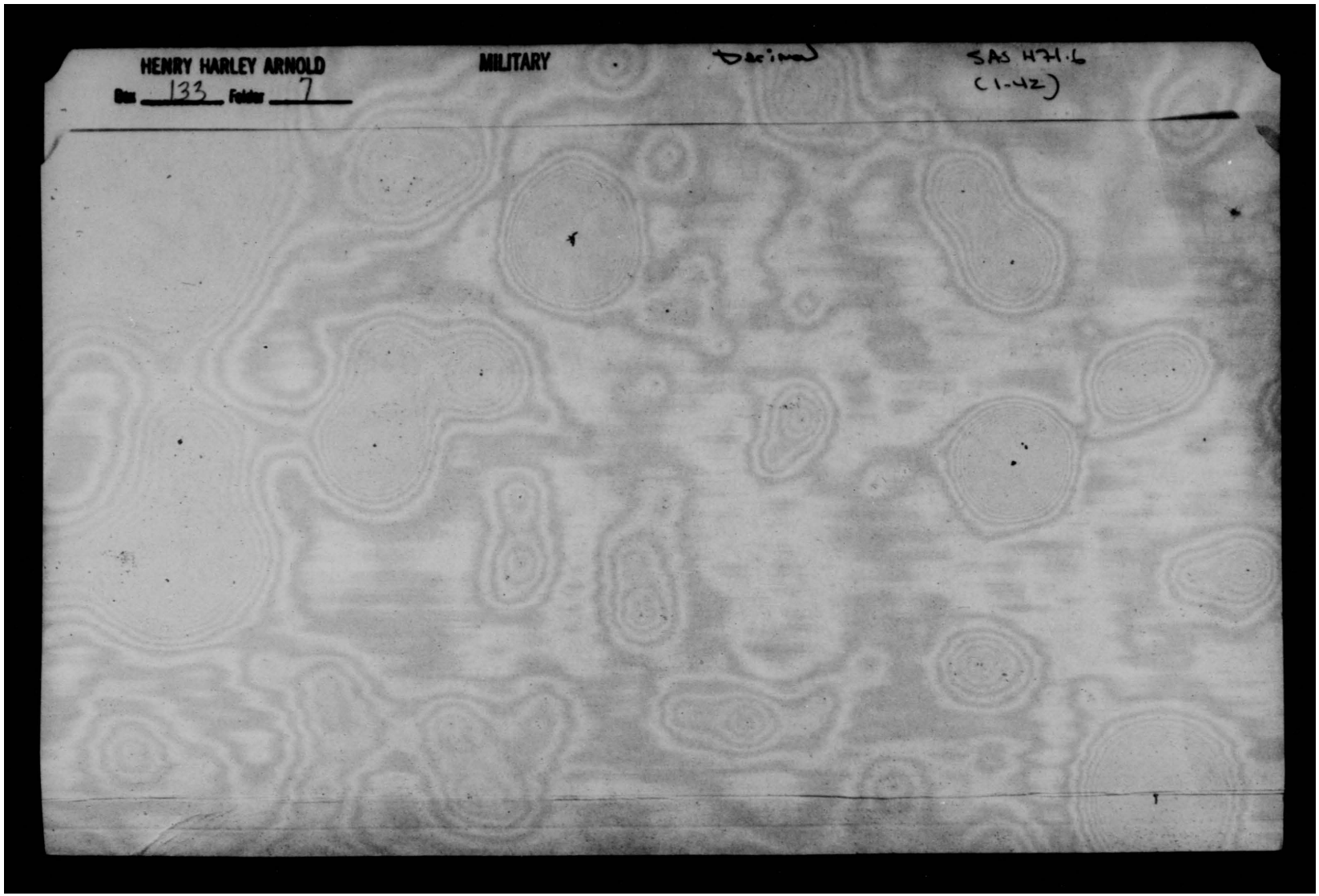

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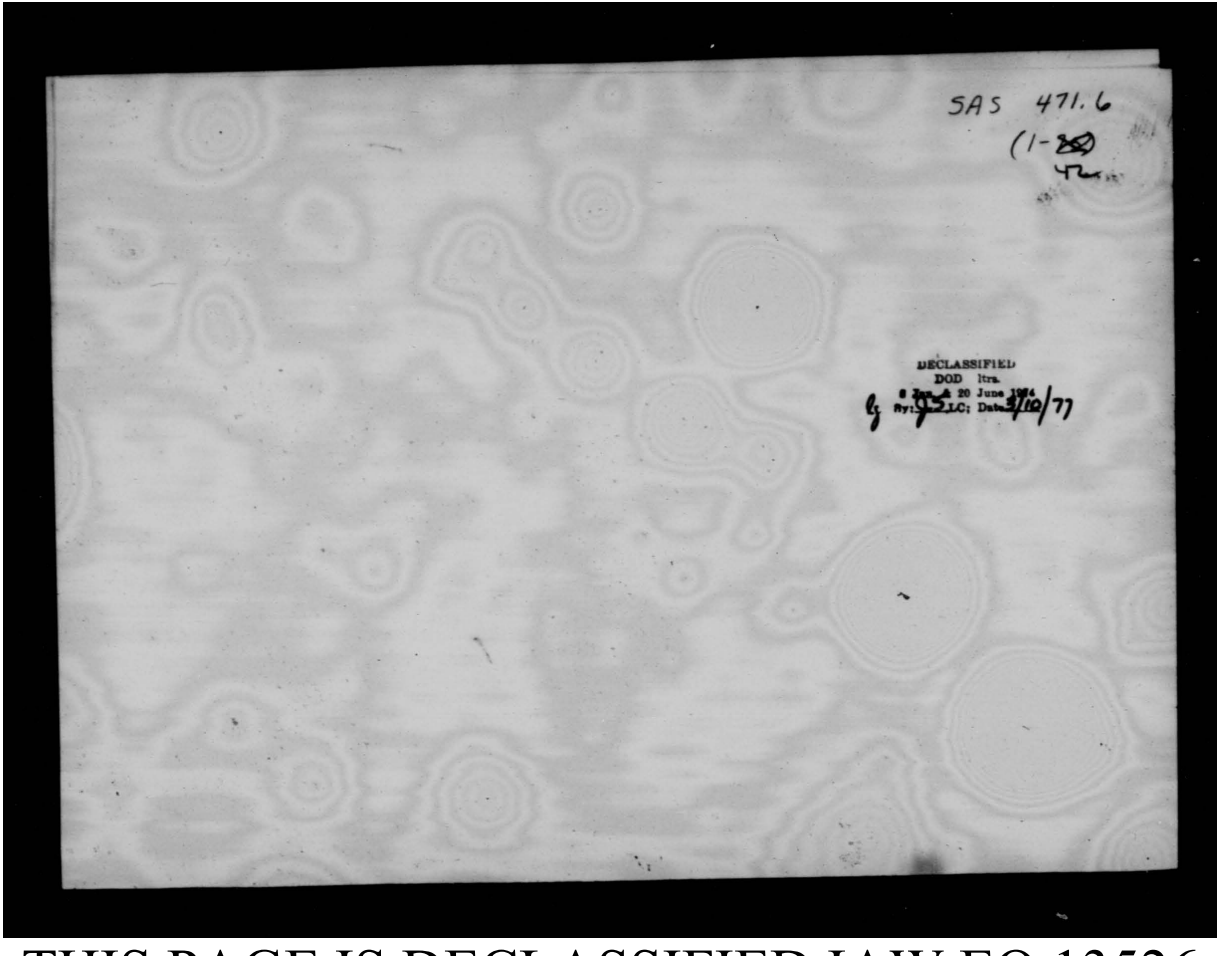

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DOD Ltrs.
8 Jan. & 20 June 1974
By JSHM LC. Date 3-10-77

File No. .....

Tally No. AAF .....

SUBJECT: Trunnion and Suspension Bands.

NO.	FROM	TO	DATE	COMMENTS
1.	AAF C/AS	C/AC	1941 11/7	AAF/A-4 RCC/mhh 1. The Chief of Ordnance is arranging to ship by truck to Mitchel Field on November 15, 1941 the following materiel: a. Suspension bands for 100# bomb - 400 b. Trunnion " " 500# " - 100 c. " " " 1000# " - 100 This materiel is destined for the Philippines for use with A-24 airplanes now enroute to Manila. Total weight packed is 2575 pounds. 2. It is desired that arrangements be made for an airplane to transport the above listed materiel from Mitchel Field, Long Island to San Francisco, California in order to sail on the U. S. Republic from San Francisco on November 21, 1941; arrangements have been made for freight space accommodations with the QMG's Office. 3. Arrangements should also be made by your office for truck transportation from the airport to the Post Quartermaster, Port of Embarkation, San Francisco, California, who has been advised of this shipment. CS C/AS
2.	C/AC	AAF C/AS	1941 11/13	1. In accordance with the above instructions arrangements have been made to have a C-39 airplane which is attached to Bolling Field leave Bolling Field on November 15

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OFFICE OF THE CHIEF OF THE AIR CORPS

ROUTING AND RECORD SHEET

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File No. - - - - - - - - - -

Tally No. AAF/ - - - - - -

Subject: Trunnion and Suspension Bands.

814

NO.	FROM	TO	DATE	COMMENTS
(2 Continued)				to arrive at Mitchel Field before noon of that day reporting to the Post Ordnance Officer at that staion to receive the above material. The airplane will then proceed to Hamilton Field, California to deliver the material to the Ordnance Officer at that station. 2. It is understood that arrangements will be made by your office for transporation of this material from Hamilton Field to the Port of Embarkation and that the only arrangements necessary on the part of this office are as outlined above. M. S. F. Executive
file	RBB			11/14/41 Arrangements made by telephone with Ordnance Officer, Col Lyon, Combat Command to notify Ord. Officers at Mitchell Field and Hamilton Field of this shipment. RBB

471.6 (42)

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RADIOGRAM

INFORMATION COPY

AG 471.6 (11-5-41)MC EHB/sm - 1712

FROM OPNAV TO CINCLANT

RELEASED BY RADM TURNER INFO. COMSUPFOR

5 NOV 1941

#52359 CR #544

WHEN SUPPLY PERMITS, AS A MEASURE OF LOCAL COOPERATION ~~XXXXXXXX~~ DESIRE YOU ISSUE ARMY AIRCRAFT IN NEWFOUNDLAND SUFFICIENT AIRCRAFT DEPTH BOMBS FOR IMMEDIATE NEEDS

9-1174

(17)

COPY TO: Chief of the Army Air Forces;
A. C. of S., G-4.

ARMY

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ana AG 471.6 (11)

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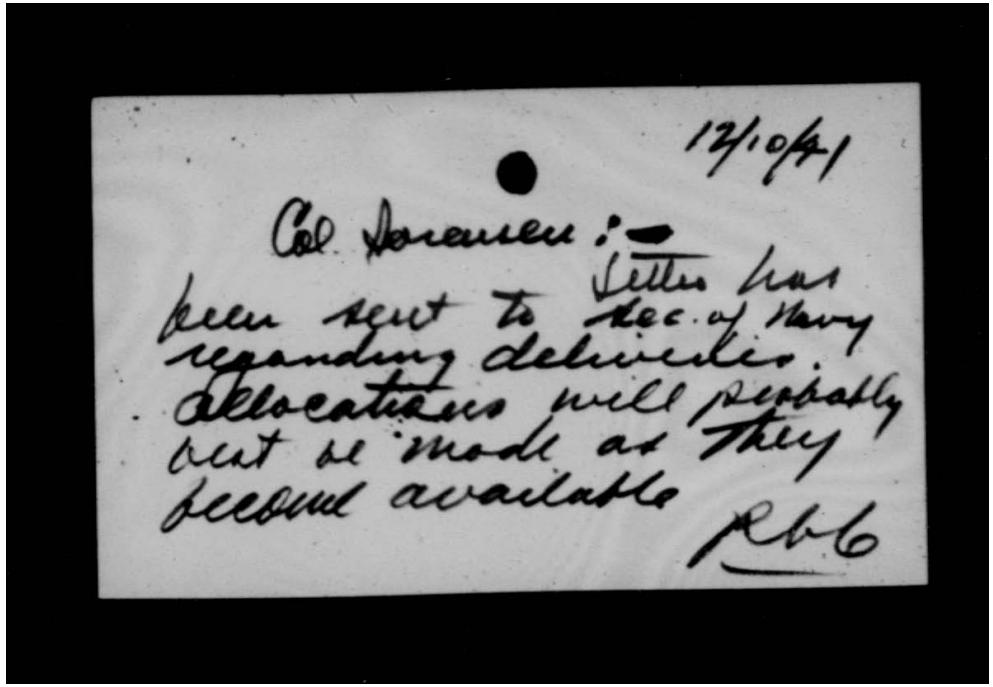

12/10/41

Col Donovan:—

Letter has been sent to Sec. of Navy regarding deliveries. Allocations will probably not be made as they become available

RLG

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DOD ltrs.
8 Jan. & 30 June 1974
By: JSIMM LC Date 3-10-77

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HEADQUARTERS ARMY AIR FORCES

ROUTING AND RECORD SHEET

1582

Note.--A line will be drawn across sheet after each comment.

File No. .....

Tally No. AAF .....

SUBJECT: Distribution of Depth Bombs 325# AN Mark 17

NO.	FROM	TO	DATE	COMMENTS AAF/A-3 MMacC-ek
4	AAF A-3	AAF A-4	1941 12-3	1. Reference Paragraph 2, Item 3 preceding, as rapidly as small quantities of bombs become available prior to June, 1942, deliveries should be made to Newfoundland. It is contemplated that a supply of subject bombs will be established at a later date in Iceland, Greenland and Bangor, Maine. The establishment of this latter supply will be covered by a later directive. 2. Reference the delivery of bombs commencing in June, 1942, it is not practical to establish at this time a distribution priority between the Atlantic and Pacific. for E. L. N. C/A-3

471.6 (40)

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ROUTING AND RECORD SHEET

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DOD Dir. 5 200.9 & 30 June 1992
By JS/NLT, NC, Date 5-10-77

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File No. .....

Tally No. AAF .....

SUBJECT: Distribution of Depth Bombs 325# AN Mark 17

1073

NO.	FROM	TO	DATE	COMMENTS
1.	AAF A-4	AAF A-3	1941 11/11	AAF/A-4 RCC/mhh 1. Inviting attention to inclosed correspondence. 2. In accordance with the Minutes of Subcommittee of the Air Corps Technical Committee on Revision of Air Corps - Ordnance Requirements dated May 5, 1941, Item #60 sub. par. 1b, the War Reserve Requirements of Depth Bombs was fixed at 3,000 tons or some ~~18,000~~ 18,750 - 325# AN Mark 17. 3. The Ordnance Department Army has placed orders on the Navy Department for ~~18000~~ 18,750 Depth Bombs; You are requested to advise this office of the desired distribution of these bombs. 4. In connection with items of critical shortage such as the present situation on depth bombs, consideration should be given to revising Par. 15(i) AR 750 - 10 and require bombs to be returned to base and not dropped except under exceptional circumstances or in action against the enemy. 1 Incl. Ltr.11/6/41 to C/AAF fr.AFCC "Sp.Res.of Ammunition EPS C/A-4
2.	AAF A/3	AAF A/4	1941 11/19	AAF/A-3 JHA:rlc 1. With reference to Par. 4, item 1, above, AR 775-10 covers peace-time range regulations and as such does not appear to restrict commanders of field forces in time of war or national emergency when engaged in non-training missions. 2. With reference to Par. 3, item 1, above, the date of beginning of deliveries (June,1942) as furnished by your office is too far in the future to permit judicious indication of desired distribution of such deliveries now.

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HEADQUARTERS ARMY AIR FORCES

ROUTING AND RECORD SHEET

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Tally No. AAF .....

SUBJECT: Distribution of Depth Bombs 325# AN Mark 17

NO.	FROM	TO	DATE	COMMENTS
2 -	continued			AAF/A-3 JHAsrlc 3. Subject bombs are needed immediately in Newfoundland, and by the AFCC over the North Atlantic. It is imperative that you make every possible effort to secure some deliveries now. For E. L. N. A-3 Incl. n/c

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HEADQUARTERS ~~SECRET~~ AIR FORCES
DECLASSIFIED
ROUTING AND RECORD SHEET

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File No. .....

Tally No. AAF .....

SUBJECT: Distribution of Depth Bombs 325# AN Mark 17.

NO.	FROM	TO	DATE	COMMENTS AAF/A-4 RGC/mhh
3.	AAF A-4	AAF A-3	1941 11/29	1. Reference paragraph 4, item 1 and paragraph 1, item 2, preceding. It appears questionable as to whether Commanders of Field Forces can be expected to interpret AR 775-10 under the present circumstances other than as written, without deliberately violating this regulation. To relieve Field Commanders of this responsibility, it is believed that specific instructions should be given them to conserve items of critical shortage and to inform them that par. 15(1) AR 750-10 is not mandatory under the present emergency. 2. Reference par. 2 & 3, Item 2 preceding: strenuous effort is being made to obtain deliveries of depth bombs from the Navy as soon as practicable. The following schedule has been given: June 1942 2000 July " 3000 Aug. " 3000 Sept. " 3000 Oct. " 3000 Nov. " 3000 Dec. " 1750 However it is expected that the Navy will make small deliveries prior to June 1942; it is also understood that the Navy intends to load those quantities needed in the Pacific on the West Coast and conversely the quantities needed on the Atlantic Operations on the East Coast. In view of this, the distribution of the total quantity in accordance with priority is desired as well as a priority distribution on minimum requirements for vital locations in case small quantities become available from time to time prior to June '42. 1 Incl. n/e EPS C/A-4

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DOD ltrs.
6 Jan. & 20 June 1974
By JSIMM LC; Date 3-10-77

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HEADQUARTERS AIR FORCE COMBAT COMMAND

BOLLING FIELD, D.C. (K-42)

ACC 471.88 (11-6-41)

~~SECRET~~

November 6, 1941.

HQ AFCC: PBM
(INITIALS)

650

Subject: Special Reserve of Ammunition.

To: Chief, Army Air Forces, Washington, D.C.

1. Attention is invited to letter from this headquarters to The Adjutant General dated June 12, 1941 (file AF 471.88 (6-12-41)) and to his reply of July 18, 1941 (file 471.88 (6-12-41)MC-D) establishing a special reserve of ammunition for the Air Force Combat Command.

2. Due to the particular nature of the present threat in the North Atlantic it is imperative that this special reserve be augmented by 10,000 Bombs, depth, 325-lb., M17

3. It is urgently recommended that this reserve be established for distribution by this headquarters at the earliest possible date.

Hq. Army Air Forces
NO 7 941
AAG Received

DELOS C. EMMONS,
Lieutenant General, U. S. A.,
Commanding.

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Air AG 471.6 (40)

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DOD ltrs.
8 Jan. & 20 June 1974
By: JSMM LC Date 3-10-77

Cold Weather Tests at Ladd Field.

AAF/A-4
MFS/gwd

471.6 (39)

1. C/AS C/AC 1941 11-4

1. The Air Inspector reports as of October 28, 1941, with reference to Ladd Field and Elmendorff Field (Alaska) that "there are no bombs and ammunition and consequently no gunnery and bomb tests have been accomplished."

2. Records of G-4 indicate the following quantities of bombs shipped to Alaska:

a. Demolition Bombs:

	Authorized		Shipped April, 1941
100 lb.....	1000	....	6,7[illegible]
300 lb.....	2000	....	3,2[illegible]
500 - 600 lb.....	1300	....	1,4[illegible]
1000 - 1100 lb....	700	....	22[illegible]
2000 lb.....	500	....	4[illegible]

b. Bombs, Practice:

100 lb. (M38A2)... 8400 Shipped Sept.-Oct., 1941

3. Authority has been granted by the War Department for the Materiel Division to assign test projects to Ladd Field and for direct correspondence in connection with such projects. Copies of the correspondence relating to this authority were forwarded to your office in connection with R & R, dated October 28, 1941, Subject: "Bombs and Ammunition for Ladd Field."

4. The Chief of the Army Air Forces notes very little use has been made of Ladd Field from the viewpoint of Cold Weather tests of aviation materiel. It is desired that a program of such tests, commensurate with the personnel and equipment available, be immediately drawn up and furnished the Commanding Officer, Ladd Field. Such program should be fully [illegible] for other Air Force test agencies to avoid overlap and duplication. Arrangements should be made to provide necessary [illegible] and equipment, particu-

HEADQUARTERS [illegible]

Chief of Staff	Secy Air Staff	A.A.G.									

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Cold Weather Tests at Ladd Field. (Continued).

1. G/AS G/AC 1941 larly bombs and ammunition, concurrently with the assignment of
(Cont.) 11-4 test projects.

5. Action is being taken to augment the strength of the detachment at Ladd Field and to furnish items of modern equipment for tests at appropriate times.

6. A copy of the basic test program, any subsequent amendments thereof, and a copy of the report of each completed test will be furnished the Air Staff, marked for the A-4 Division.

CE
G/AS

Dispatched
NOV 7 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- W.D	A. Insp.	Budget	Statistics	

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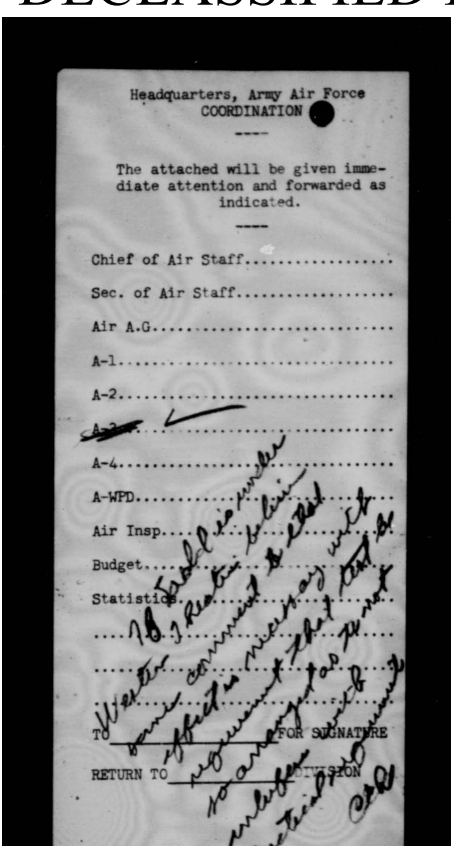

Headquarters, Army Air Force
COORDINATION

The attached will be given immediate attention and forwarded as indicated.

Chief of Air Staff.....
Sec. of Air Staff.....
Air A.G.....
A-1.....
A-2.....
~~A-3~~.....
A-4.....
A-WPD.....
Air Insp.....
Budget.....
Statistics.....
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.....
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TO _____ FOR SIGNATURE

RETURN TO _____ DIVISION

AAF-33

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WAR DEPARTMENT
Headquarters Army Air Forces
Office Chief of the Air Staff
Washington, D. C.

Date 11/22

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
___Public Relations
___Statistics Section
___Inspector, Army Air Forces
___Adjutant General, Army Air Forces
___A.F. Files

Gen Arnold wants
No 4 JV 52 to go
to Alaska & No
JV 86 to Panama

A. W. VANAMAN,
Lt. Colonel, Air Corps,
Secretary of the Air Staff.

AAF-63-B.

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DOD Rtr's
8 Jan. & 20 June 1974
By JS 1/1971 LC, Date 5/12/77

Cold Weather Tests at Ladd Field.

AAF/A-4
JPH/cmd

8 AAF C/AC 1941
C/AS 12/22

1. The outline of cold weather test appearing with Item No. 3 foregoing, seems to be based upon normal equipment and normal operations by tactical units in Alaska in training and other missions. The initiation of a more extensive program covering cold weather test for airplanes, engines, instruments, radio, photo equipment, and other accessories as mentioned briefly in Item No. 5, paragraph 1, is of paramount importance if operational problems in cold climate are to be successfully coped with.

2. In consideration of the problem of airplane and equipment tests in general it is requested that the entire subject be investigated with the end in view of securing more effective result through coordinated and comprehensive planning of the great many tests conducted by the Materiel Division, the Air Corps Board, and service activities. It is apparent from reports of operation of equipment under extreme conditions, and variations- cold, dampness, rain, heat dryness, sand - that numerous difficulties have been encountered including armament items and oxygen apparatus as well as engine and other difficulties.

3. It is highly desirable for coordinated planning to survey all test results and Unsatisfactory Reports to insure proper circulation of information covering difficulties and correction, also to allocate materiel and equipment or supplies, to particular locality for test under climatic extremes mentioned in paragraph 2. In this connection for general purpose it is requested that the 4 JU 52 airplanes be sent to Alaska and the JU 52 to Panama.

4. The problem of securing coordinated, extensive test experience to influence corrective action on all items of equipment and supplies in service [illegible] before delivery, is believed to be of sufficient importance to require positive direction by the Chief of the Air Corps, utilizing the Services

(Cont.)

HEADQUARTERS ARMY AIR FORCES											COORDINATION
Chief of Staff	Sec'y Air Staff	A. A. G.									

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Cold Weather Tests at Ladd Field.

AAF/A-4
JPW/cmd

8	AAF (Comt) C/AS	C/AC	1941 12/22	of the Air Corps Board (and, ~~Computers group~~ Proving Ground) the Materiel Division (and accelerated service test organization), as well as other test activity. This jurisdiction appears desirable from the factory to Air Service Command organizations with tactical units, in order to insure that manufacturers and service activities have full information possible at all times, and that acceptance tests or later service test are comprehensive and conclusive from the manufacturing and service points of view. Otherwise certain tendencies toward [illegible], duplicated effort, and inconclusive result, leading to continuing changes, will grow worse. Note underlying inclosure.

Incls:
Cy ltr WF 11/15/41 to Ladd Field w/Questionnaire, Memorandum.

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	

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DOD Dir
8 Jan. & 20 June 1974
By: JSHM LC, Date 3-10-77

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Cold Weather Tests at Ladd Field

2. OCAC Mat. 1941 A.S.B.
Div. 11/7

/s/

3. Matl. Air Staff 11-19
Div. (A-4)
(4-E-1) THRU
1. T&D
2. Chief
Air Corps

1. In compliance with the above, there is attached a questionnaire prepared by this division covering cold weather performance of armament equipment.

2. It is requested that any additions or corrections be indicated on this R&R and same be returned to this Division for forwarding to the Commanding Officer at Ladd Field, Fairbanks, Alaska.

/s/

O. P. E.
Chief, Materiel Division.

Incl:
Questionnaire.
(in duplicate).

4. Opera. Mat. 12/2 (15-B3) mlp
Div. Div.

It is believed that any program at Ladd Field for testing cold weather performance of armament, should be extended to include a definite directive on the amount of ammunition and bombs to be expended. Also, such an all-inclusive program should cover airplanes, engines, instruments, radio, photographic equipment, accessories and other aviation materiel applicable to that climate and country.

O. S. F.
Colonel, A. C.,
Chief, Operations Div.

Dupl. Incl. w/d

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5 Mat. Div. (4-E-1) Air Staff (a-4) THRU 1. T&O 2. Ch. A/C/ 1941 12/6

1. This Division concurs with the recommendations of the Operations Division to the effect that a cold weather test program for airplanes, engines, instruments, radio, photographic equipment and other accessories should be initiated for conductance at Ladd Field. Towards this end steps are being initiated to have such a program prepared.

2. In the meantime it has been agreed through discussion with personnelof Operations Division that the attached cold weather program for armament be forwarded to Ladd Field for commencement as quickly as possible. No specific reference to number of bombs and ammunition to be used is made inasmuch as it is anticipated that the attached program will be carried out through the normal activities of Ladd Field.

Incl. n/c

/s/ O. P. E.
Chief, Materiel Division

6 Op. Div. C/AC 12/8

(15-Bs) ims

Noted.

/s/

O. S. F.
Col. A.C.
Chief, Op. Div.

7 OCAC Exec AAF A-4 12/10

X-MEG:jn

1. Forwarded as originally intended in item 5, calling attention to paragraph 2, item 5.

M. E. G.
for
M. S. F.
Executive

Incl: n/c

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November 15, 1941

Cold Weather Tests for Armament Equipment.

Commanding Officer,
Ladd Field,
Fairbanks, Alaska.
(Thru: Office, Chief, Materiel Division,
Washington, D. C.)

1. The information contained in report of operations of Air Corps Experimental Station, Ladd Field, Fairbanks, Alaska, from October 1, 1940, to April 1, 1941, while interesting, does not seem to contain sufficient practical information regarding the operation of armament equipment under cold weather conditions. In order that a comprehensive and intelligent cold weather development program can be conducted, much additional information is required.

2. Inclosed is a questionnaire covering the information considered necessary for this development program. It is requested that Ladd Field personnel during tactical missions answer the questionnaire and forward the answers to this office.

1 Incl.-
Incl.1- Questionnaire (in duplicate).

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QUESTIONNAIRE

1. Bombing Equipment

a. Bomb Racks

Bombing missions should be conducted during severe weather conditions and operation of the bomb hoisting and bomb rack installations observed.

All malfunctions or difficulties determined with the following equipment should be noted and reported with a record of data indicating the circumstances under which failure occurred:

(1) Type B-7 bomb shackle.

(2) Type D-6 bomb shackle.

(3) Type D-3 bomb shackle.

(4) Type M-5 bomb rack.

(5) Type A-2 bomb rack release.

(6) Type B-2 bomb release interval control.

(7) Type C-3 bomb hoist.

(8) Pollak bomb shackle in B-26 airplane.

(9) Cluster adapters for fragmentation and incendiary bombs.

(10) Mechanical bomb racks with which most 12-volt bombardment airplanes are equipped.

Any items that appear defective during unfavorable weather should be reoperated under milder conditions and their functioning noted.

In reports, all complaints should include the following information to be obtained at the time of malfunction:

(1) Altitude.

(2) Temperature.

(3) Presence of frost on equipment concerned.

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(4) Notation as to whether or not the airplane had flown, previous to use of bombing equipment, from air of temperature below 32°F. to air of temperature above 32°F. and then back to air of temperature below freezing.

(5) Approximate length of time since equipment had been last used.

(6) Presence of oil, grease or dirt on equipment.

(7) Condition of electrical connections concerned.

2. Bomb Control Equipment

A. A cold weather report on bomb control equipment should include the following:

(1) Response of bomb sight and A.F.C.E. during operation in cold weather (these units operate efficiently at a minimum of +5°F.).

(2) Letter of Instructions No. 41-4 was issued to the Activities in connection with cold weather operation of the above unit. Steps should be taken to verify the instructions contained therein against the conditions met with in the field.

(3) Protection of bomb sighting equipment against moisture. The effects on equipment should be determined when it is taken from a warm place into the cold outdoors for installation in the airplane. The practicability of silica gel (Letter of Instructions No. 41-4) should be determined for use in cold weather.

(4) Effect of cold weather on lubricants used on A.F.C.E. and bomb sights should be determined.

(5) Effects of cold weather on dust-proofing (Letter of Instructions No. 41-13) should be noted, especially to see if seals are broked and if the sealing compound if affected or deteriorated. The methods of dust-proofing should be analyzed for such a climate with attention being given to effects of dust.

(6) Effects of cold weather on visual requirements for the bombardier should be noted. Altitudes,

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temperatures and humidity conditions at which icing over of the bombardier's window is experienced and at which it becomes a serious problem should be reported. The practices used to combat this condition should be described. A report of experiences with fogging and frosting up of the inside of the bombardier's window should also be made along with a description of methods to combat the condition.

(7) The efficiency of airplane heaters with respect to maintaining confidential equipment at operating temperatures. The need for heating confidential equipment while the airplane is on the ground with the engines dead should be investigated. Present equipment for defrosting bombardier's window should be evaluated.

(8) Effects of cold weather on operating personnel, relative to the bombardier, his efficiency, the length and number of bombing runs that can be made relative to the weather and climate.

(9) Snow glare and its effect on bomb sighting.

b. With the compilation of the foregoing data, recommendations to overcome malfunctions and oversights, if any, should be presented. A detailed description of weather, temperature, climatic conditions and other elements which will have a direct bearing on effectiveness of equipment should be reported.

3. Fire Control Equipment

a. Gunnery missions should be accomplished with all types of aircraft during severe weather conditions. If possible, when gun failures occur which are believed to be due to low temperature, the airplane should descend to a lower altitude and warmer air and the failing gun operated again in order to determine whether low temperature was directly responsibly for the malfunction.

All gun failures should be reported with a detail description of the conditions under which firing took place, including:

(1) Weather - Temperature, atmospheric condition, and altitude.

(2) Condition of Gun - Head space setting; buffer tube setting, gun accessories used (firing solenoid, charger, etc.); location of gun; preliminary precautions taken (type of oil

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used, procedure for oiling gun, etc.).

(3) Description of Test - Number of rounds loaded, number fired successfully, type of airplane, maneuvers being executed.

b. In addition to the functions of the guns themselves, the various accessories must function properly under cold weather operation, and for this reason, the following should be observed and reported:

(1) Defrosters - If defrosters were found necessary in order to obtain adequate vision for firing, record weather conditions, portions of windows or dome most affected, general effectiveness of existing provisions, and suggestions for improvement.

(2) Deicers - Record essentially the same information as listed under "defrosters".

(3) Gunners' Heat - Record physical reaction of gunner at each gun position for each airplane and describe effectiveness of heat provisions, including winter flying suits, heated flying suits, and warm air heat. A description of the atmospheric and temperature conditions under which the tests were conducted is absolutely essential.

(4) Turret Mechanism, Sight and Drive - The mechanisms involved in the sighting and driving of power operated gun positions should function under all conditions. If sluggishness or failures to function occur, all grease and oil should be removed from parts ordinarily lubricated and the tests on these mechanisms repeated.

Record all malfunctions, remedial action attempted, results of actions, recommendations for further actions to be taken, and atmospheric and weather conditions under which malfunctions occur.

(5) Barrel Jacker Covers - Rubber covers for barrel jackets are being included for airplanes intended for cold weather operation. These covers are to be mounted before.

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take-off and are not removed until alighting. Record should be made of their effectiveness in protecting the muzzle from ice and snow, any tendency of the rubber to freeze and crack off, burn or char, or become affected by gun oils, and recommendations for corrective measures or substitutions should be made.

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DOD ltrs.
8 Jan. & 20 June 1974
By: JS/HCI LC; Date 3-10-77

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MEMORANDUM

Certain aviation elements are now at Ladd Field, Fairbanks, Alaska for the purpose of conducting cold weather tests. There is apparent need for a new directive and for not only increased personnel to accomplish the test but a variety of equipment with which to accomplish them. Plans are being made to augment the personnel strength and to furnish two of each of some of the latest type airplanes as well as appropriate guns, cannon, bombsights, etc.

The test work to be done at Ladd Field will be directly under the Chief of the Air Corps and perhaps under the control of the Materiel Division. It is considered essential that a directive be prepared which will require the outline of a program of tests to be conducted to determine cold weather effects and which will specify the reports to be rendered. It is believed essential that the program developed shall be closely coordinated with the program of accelerated service tests of airplanes and engines as now made by the Materiel Division and the accelerated service tests of armament and accessory equipment to be made at the Air Corps Proving Ground. The cold weather tests should supplement the other two with a minimum of overlapping. Special emphasis should be placed upon the type of test in which the probable effects of low temperatures will be an important factor.

It is believed desirable that directive require preparation of a program under supervision of the Chief of the Air Corps and that collaboration or comments and recommendations of the Air Corps Board be suggested.

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By: JSJMM LC; Date 3-10-77

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WAR DEPARTMENT

OFFICE OF THE CHIEF OF THE ARMY AIR FORCES

WASHINGTON

December 13, 1941

MEMORANDUM FOR COLONEL SORENSEN:

SUBJECT: Cold Weather Tests at Ladd Field.

1. The attached memorandum refers to cold weather tests at Ladd Field, Alaska. In my opinion, the inertia of the Materiel Division has lost us a year's opportunity for test.

2. I believe the Air Service Command should be directed to station a competent engineer in Alaska as a traveling representative to study cold weather problems in order that our knowledge gained as the results of Alaskan operations will not be lost.

Max F. Schneider,
Lt. Col., Air Corps.

Incl. n/c

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HEADQUARTERS ARMY AIR FORCES

ROUTING AND RECORD SHEET

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DOD ltrs.
8 Jan. & 20 June 1974
By: JSIMM LC. Date 3-10-77

File No. .....

Tally No. AAF .....

DECLASSIFIED

SUBJECT: Effect of large Thin-shell Bombs on Targets in Germany

511

NO.	FROM	TO	DATE	COMMENTS
1	General Arnold	Colonel Coupland	1941 10/28	Attached herewith is a report from the British (MOST, MOST SECRET) covering the effect of large thin-shell bombs dropped on targets in Germany. Will you please go over this for me and write me up a summary? I am doing this because at the present time, as far as I know, we are still having difficulty in selling the idea of thin-skinned bombs to the Ordnance Department and the Army in general. Perhaps this information should clinch it, or perhaps unsell me -- I don't know which. Incl: MOST SECRET Report "Technical Data on Effect of Large British Bombs Dropped on Germany."
2.	Colonel Coupland	General Arnold	1941 10-31	1. Reference instructions contained in preceding: a. There appears to be no doubt in this country that R.D.X. - T.N.T. - has superior explosive qualities as compared with amatol - T.N.T. loadings. The difference in under water effect is also pronounced. The percentage increase of explosive destructiveness (30% to 33%) claimed for the R.D.X. in the accompanying notes, has been verified in this country. Two large plants are being constructed here for the manufacture of R.D.X. Pending production from these plants, R.D.X. will not be available. 2. Reasonable conclusions on the relative effective destructiveness of various sizes and types of bombs for a given tonnage cannot be deduced from the photographs and information contained in the accompanying notes. Necessary facts are lacking.

471.6

38

11/3/41

To
5a-4
noted

A-448 Inc w/d + ret'd to Air Marshall Harris, This date 11/4/41 ea.

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W-4071, AC.Rev.8/14/41

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Air AG 471.6 (38)

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HEADQUARTERS ARMY AIR FORCES
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ROUTING AND RECORD SHEET
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Tally No. AAF .....

SUBJECT: Effect of large Thin-shell Bombs on Targets in Germany.

NO.	FROM	TO	DATE	COMMENTS
2.	(Continued)			3. One evidence of the lack of any definite information from which to weigh the merits of various types of bombs is included in Paragraph No. 6, Page 2, Appendix A:- "As a result of the experience we have now gained, we are fully convinced that the most effective and lasting damage we can do will be concentrated attacks with a high proportion of incendiaries, followed by or combined with the heaviest loads of blast and G.P. bombs which can be carried economically in the aircraft available." 4. The British blast and G.P. bombs vary considerably in explosive content - the former about 70%-75% and the latter about 25%-35%. The indiscriminate mixing of these bombs with incendiaries, as recommended in the above quotation, appears to be a clear acknowledgment of inability to place the most effective type of bomb on a specific target. Such tactics indicate that our standard type of bomb with about 50%-55% explosive content would more efficiently meet general requirements of this nature. 5. As previously stated in R&R sheet to you, dated July 8, 1941, it is believed that the use of large high capacity bombs or "blast bombs" is justified in special cases for psychological and political reasons. (Two thousand 4000-lb. bombs are now under manufacture by the Ordnance Department). R. C. Coupland, Lieutenant Colonel, O.D. (Air Corps). Incl. - n/c.

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W-4071, AC.Rev.8/14/41

Page No. 2

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Air Force files

A-448
AB-640

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October 30, 1941

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DOD Ltrs.
8 Jan. & 20 June 1974
By: JSHM LC Date 3-10-77

2-lb incendiary bomb.

TO: C /CWS

FOR: Comment.

471.6 (37)

AAF/A-3
OSP-spb

1. The Special Sub-Committee for the Standardization of Aircraft Bombs on September 4, 1941, deferred action on standardization of the 2-lb incendiary bomb until recommendation on its tactical need was secured from the Chief of Army Air Forces. This was partly due to the statement of the British members that the bomb was ineffective against roofs of buildings and factories, which in Europe are generally of brick or stone. An additional need for our forces exists for use against paper and lightly constructed buildings near the Philippine Islands, where a 2-lb bomb will be effective and double the number of bombs than can be carried over the 4-lb bomb.

2. Your comment is requested on the effectiveness of the 2-lb bomb as an incendiary against light wooden and paper structures, and your opinion on whether it can be clustered in 100-lb adapters.

Dispatched
NOV 4 1941
AAG

For the Chief of the Army Air Forces:

EDWARD P. CURTIS,
Major, Air Corps,
Secretary of the Air Staff

HEADQUARTERS ARMY AIR FORCES - COMMUNICATION											
Chief of Staff	Secy Air Staff	A.A.G.	A-1	A-2	A-3	A-4	A- WPD	A. Insp.	Budget	Statistics	
	EPC				Em by P						

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DOD ltrs.
8 Jan. & 20 June 1974
By: TSIMM LC; Date 3-10-77

SECRET
Auth: T.A.G.
Initials: CR
Date: NOV 4 1941

AG 471.6 (10-13-41)MC-D MNE/mlh - 1712.

November 4, 1941.

SUBJECT: Shipment of Air Corps Bombs to the Philippines.

TO: Chief of Ordnance.

1. Confirming telephone instructions issued your office, (Lt. Col. Rice), October 28, 1941, (Serial No. 284), it is desired that the following bombs be shipped at the earliest practicable date to the Commanding General, United States Army Forces in the Far East:

Bombs, demolition, 100-lb.	8,147
Bombs, demolition, 500-lb.	3,000
Bombs, demolition, 1,000-lb.	200
Bombs, fragmentation, 20-lb.	5,000

2. In connection with the above, attention is invited to the fact that the substitution of the 30 pound fragmentation bomb for the 20 pound fragmentation bomb is not desired.

By order of the Secretary of War:

CARL ROBINSON

Adjutant General.

COPIES TO: A. C. of S., WPD;
Chief of the Army Air Forces;
C. G., U. S. Army Forces in the Far East.

471.6 (26) B

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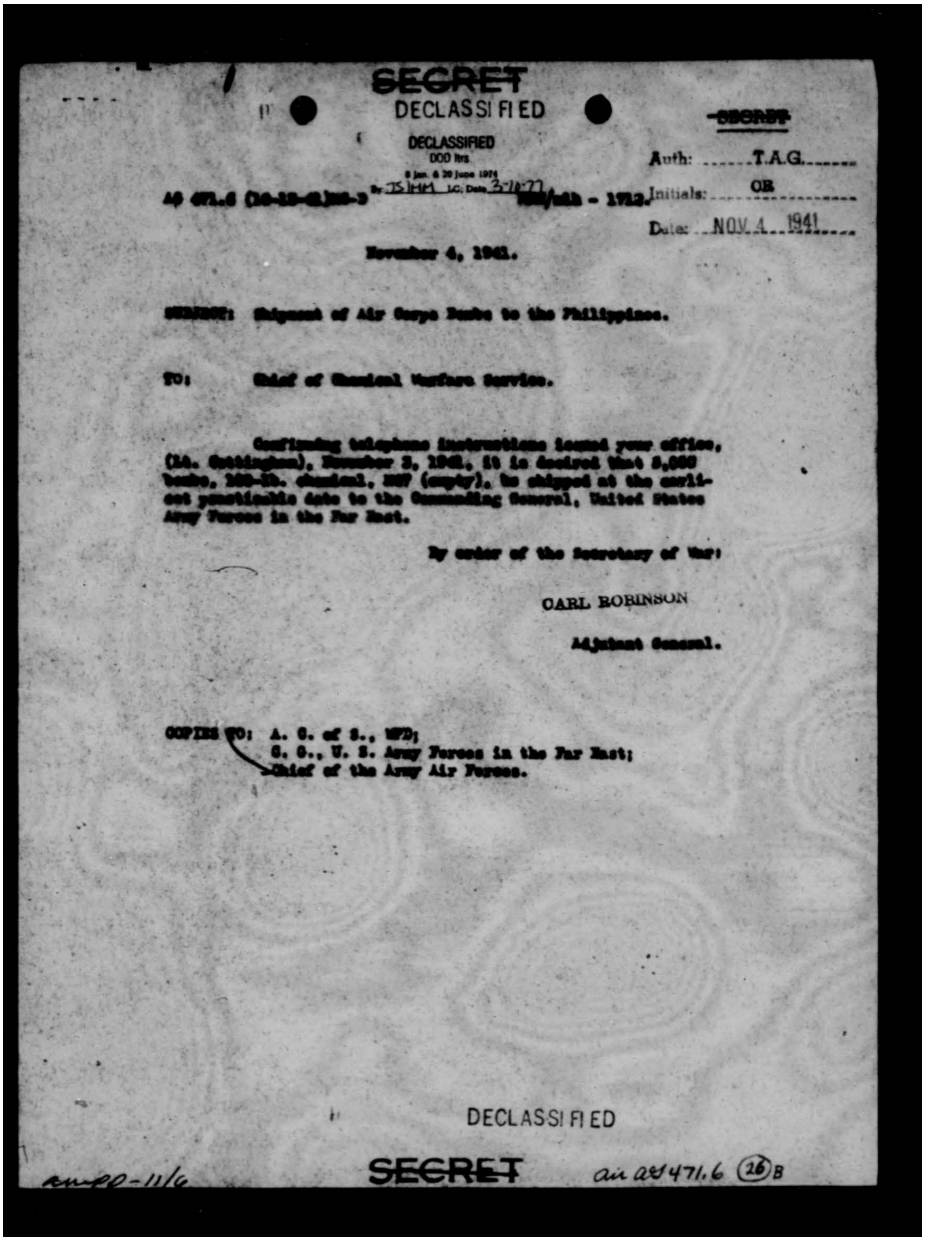

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DOD ltrs
8 Jan. & 20 June 1974
By TSIMM LC; Date 3-10-77

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Auth: T.A.G.

Initials: CR

Date: NOV 4 1941

A9 471.6 (10-12-41)MS-D [illegible]/mlh - 1712.

November 4, 1941.

SUBJECT: Shipment of Air Corps Bombs to the Philippines.

TO: Chief of Chemical Warfare Service.

Confirming telephone instructions issued your office, (Lt. Cottingham), November 3, 1941, it is desired that 5,000 bombs, 100-lb. chemical, M47 (empty), be shipped at the earliest practicable date to the Commanding General, United States Army Forces in the Far East.

By order of the Secretary of War:

CARL ROBINSON

Adjutant General.

COPIES TO: A. C. of S., WPD;
C. G., U. S. Army Forces in the Far East;
Chief of the Army Air Forces.

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OFFICE OF THE CHIEF OF THE AIR CORPS

ROUTING AND RECORD SHEET

1477

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File No. _____

Tally No. AAF _____

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DOD ltrs.
8 Jan. & 20 June 1974
By: JS/MM LC; Date 3-10-77

Subject: Glide Bomb Test at Muroc Lake.

NO.	FROM	TO	DATE	COMMENTS
1.	(4-E) Mat. Div.	C/AAF	1941 11-27	1. Report submitted by R&R dated 11-25-41 reference tests of glide bombs at Muroc was very pessimistic and we are glad to be able to give a much better second report as follows: a. Lt. Colonel R. P. Williams called this morning and stated that they finally got the glide bombs properly trimmed and the sixth one dropped flew reasonably well. The seventh continued in a perfect glide until it reached the ground about four miles beyond the point of release. b. The first Kettering airplane was wrecked but they have three others and they think, since studying moving pictures of the first one, that they will be able to launch the others successfully. c. Lt. Colonel Williams has just returned from Muroc where he spent two weeks and witnessed the glides referred to above. He is quite optimistic now about the whole program. O.P.E. Chief, Mat. Div.

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DOD Dir.
8 Jan. & 20 June 1974
By: JSMM J.C. Date 3-10-77

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AAF/A-4
WRB/coc
Written October 27, 1941

OCT 28 1941

MEMORANDUM FOR THE CHIEF OF THE ORDNANCE:

Subject: Munition Accessories for Dive Bombers.

1. It is requested the following munition accessories be provided for the use of the Philippine Air Force as soon as practicable:

Trunnion Bands, A-24 Airplanes

1560 for 1000# bombs
2340 for 500# bombs

Suspension Bands, A-24 Airplanes

[illegible] for 100# GP dem. bombs
[illegible] for 100# incend. bombs
1[illegible] for 100# chem. bombs
700 for clusters of six 20# frag. bombs used in 100 lb. stations.

Cluster Adapters

947 for clusters of six 20# frag. bombs in 100# stations.

471.6 (35)

Dispatched
OCT 28 1941
AAG

For the Chief of the Army Air Forces:

EDWARD P. CURTIS,
Major, Air Corps,
Secretary of The Air Staff

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	
	JPC					[illegible]					

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DOD ltrs.
8 Jan. & 20 June 1974
By JSIMM LC; Date 3-10-77

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O.O. 471.6/1483
ATTN: Amm. Div., Ind. Serv.
Air A.G. 476.6 (34) 1st Ind. Falk/mm

War Department, Ordnance Office, Washington, D.C., November 19, 1941.
To: Office of the Chief of the Army Air Forces.

1. Replying to basic memorandum requesting information concerning number of pounds of explosives contained in bombs under procurement for the Army Air Forces, there is attached herewith a tabulation containing the required information.

For the Chief of Ordnance:

D.C. Hall for

J. G. Holmes,
Lt. Colonel, Ord. Dept.,
Assistant.

1 Incl. - Tabulation as indicated. in dup

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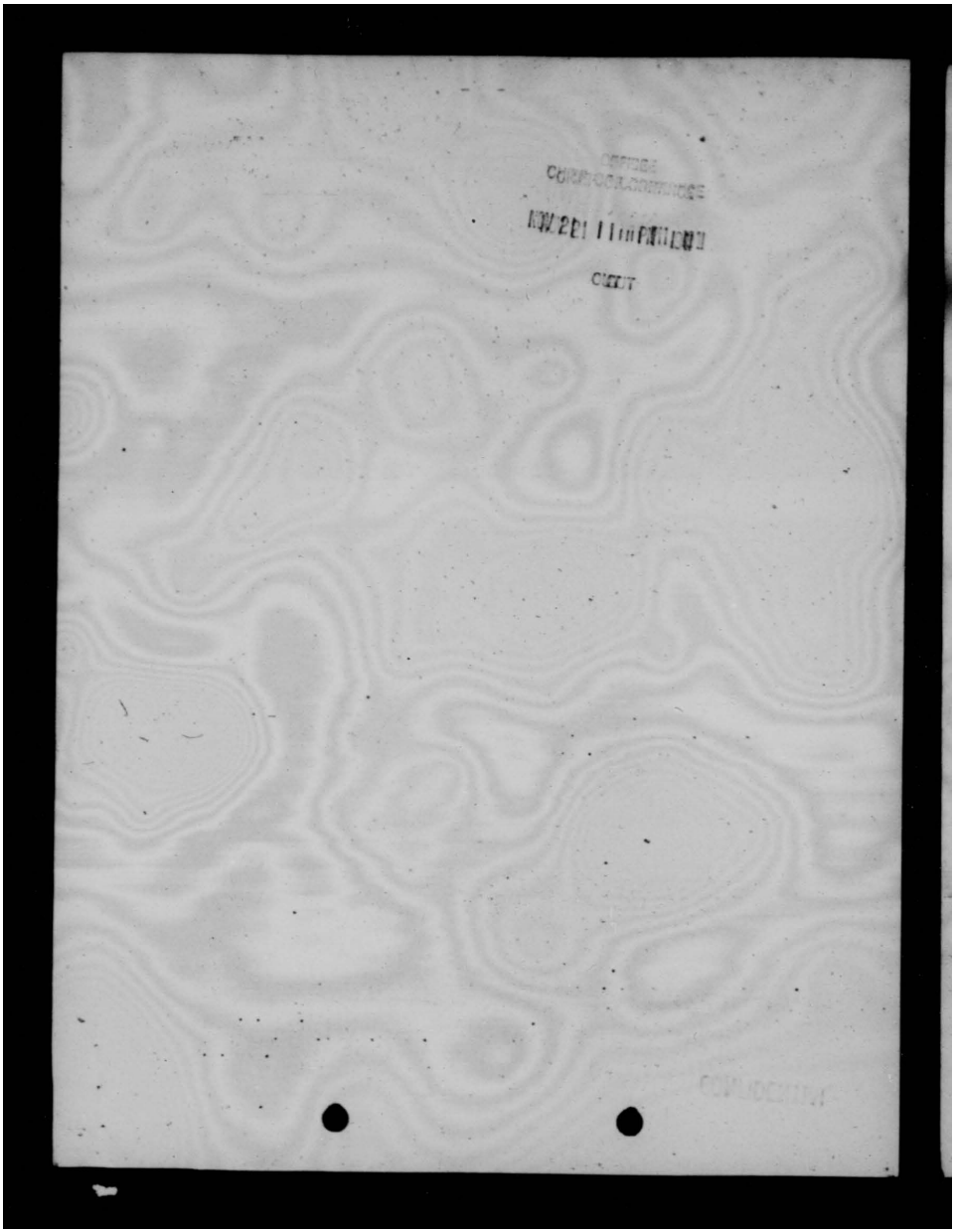

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WAR DEPARTMENT
OFFICE OF THE CHIEF OF THE ARMY AIR FORCES
WASHINGTON

471.6

DECLASSIFIED
CONFIDENTIAL

OCT 28 1941

O.O. WAR DEPT.
471.6
1483
OCT 27 1941

DECLASSIFIED
DOD ltrs.
8 Jan. & 20 June 1974
By: BJHM LC; Date 3-10-77

MEMORANDUM FOR THE CHIEF OF ORDNANCE:

Subject: Explosive Content of Bombs for Use of Army Air Forces.

1. It is requested that this office be provided with a schedule indicating the number of pounds of various explosive elements (T.N.T., Amytal, etc.) contained in each of the weights of bombs under procurement in quantity for the Army Air Forces.

For the Chief of the Army Air Forces:

WILLIAM W. DICK
Lt. Col., A.G.D.
Air Adjutant General

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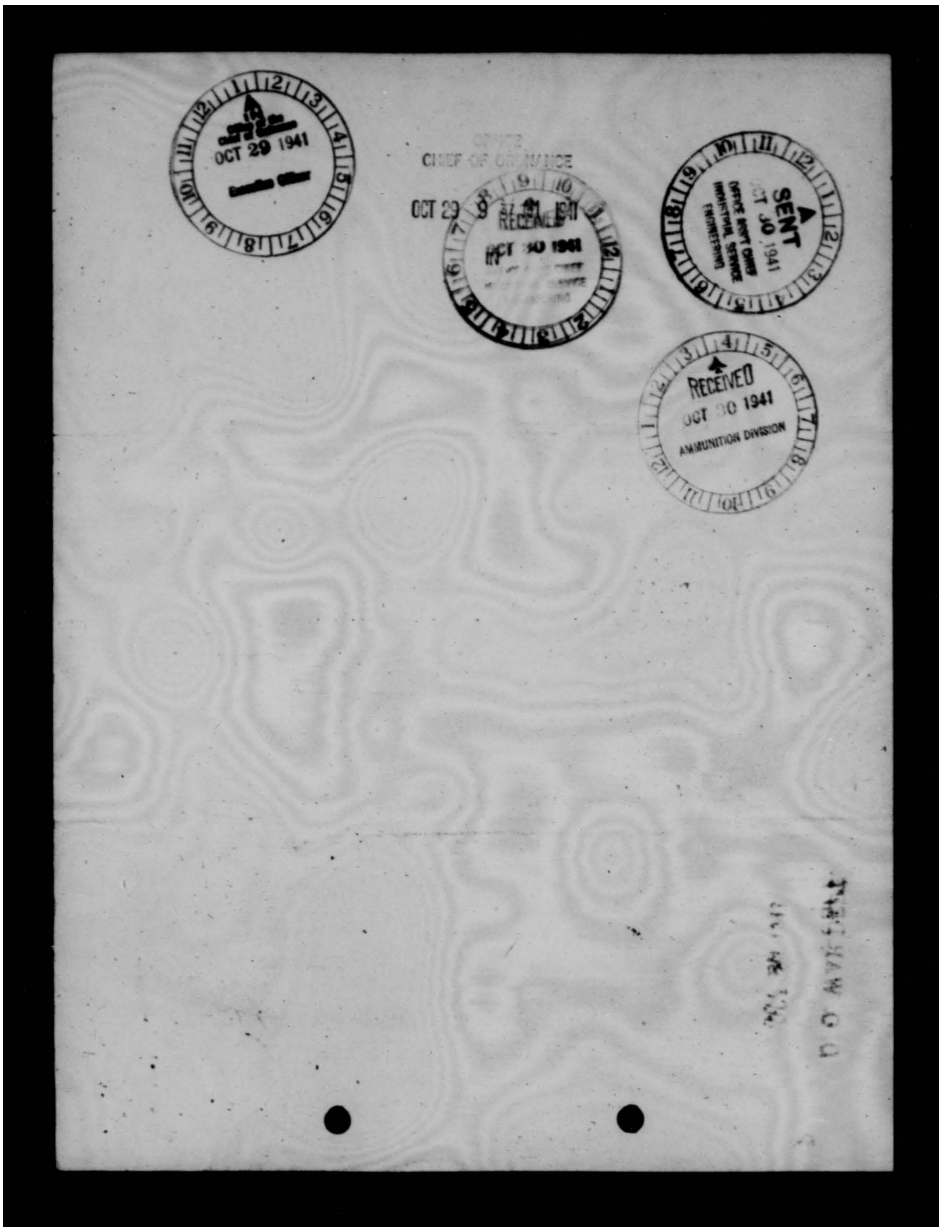

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8 Jan & 20 June 1974
JS/MM LC Date 3/10/77

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Prepared by: Estimates Branch,
Estimates & Requirements Section,
Amm. Div., Ind. Service WSM/sd/mm
November 19, 1941

UNIT WEIGHTS OF EXPLOSIVES IN AIRCRAFT BOMBS

	Weights in Pounds*					
	T.N.T.	Ammonium Nitrate	Ammonium Picrate	Tetryl	Lead Azide	Mercury Fulminate
Bomb, G.P., 100#, M30	32.15	21.15	-	.752	.00116	.00002
Bomb, G.P., 250#, AN-M57	71.7	49.2	-	1.242	.00116	.00002
Bomb, Demo., 300#, M31	75.5	60.0	-	1.242	.00116	.00002
Bomb, G.P., 500#, M43	141.5	123.0	-	1.242	.00116	.00002
Bomb, G.P., 1000#, M44	281.1	255.5	-	1.242	.00116	.00002
Bomb, G.P., 2000#, M34	554.	521.0	-	1.242	.00116	.00002
Bomb, Demo., 4000#, M56	1634.6	1606.0	-	3.65	.00116	.00002
Bomb, Semi-A.P., 500#, M_	84.5	69.5	-	.633	.00068	-
Bomb, Semi-A.P., 1000#, M_	162.45	145.00	-	.633	.00068	-
Bomb, Frag., 20#, M41	2.7	-	-	.0005	.000436	-
Bomb, Frag., 23#, M40	2.7	-	-	.0445	.000737	.000566
Bomb, Chem., 30#, M46A2	-	-	-	.14	.000436	-
Bomb, Chem., 100#, M47A1 (W.P. & H.S.)	-	-	-	1.5	.000436	-
Bomb, Depth, 325#, M_	243.0	-	-	(Requirements, if any, not yet determined)		
Bomb, A.P., 1600#, AN-Mk.I	-	-	228.0	(Requirements, if any, not yet determined)		
Bomb, A.P., 1000#, M52		-	58.4	.1433	.000677	-

* No wastage included.

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NOTE: 50/50 amatal loading of demolition bombs and TNT loading of fragmentation bombs is assumed.

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DOD ltrs
8 Jan. & 20 June 1974
By: BJHH LC Date 3-10-77

471.6

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AAF/A-4
EHE/mhh

(Written October 27, 1941)

OCT 28 1941

471.6 (34)

MEMORANDUM FOR THE CHIEF OF ORDNANCE:

Subject: Explosive Content of Bombs for Use of Army Air Forces.

1. It is requested that this office be provided with a schedule indicating the number of pounds of various explosive elements (T.N.T., Amytal, etc.) contained in each of the weights of bombs under procurement in quantity for the Army Air Forces.

For the Chief of the Army Air Forces:

WILLIAM E. DIXON
Lt. Col., A.G.D.
Air Adjutant General

Dispatched
OCT 28 1941
AAG

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~~CONFIDENTIAL~~

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

air ag 471.6 (34)

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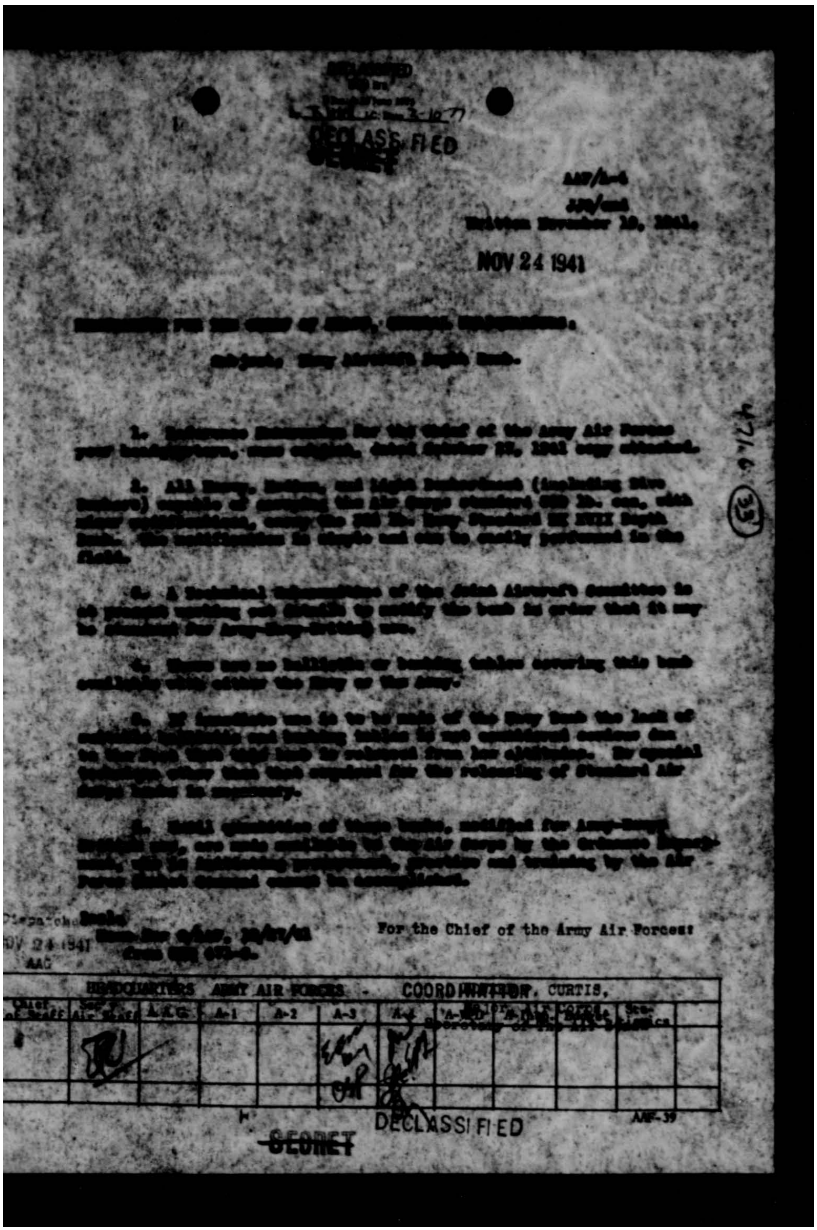

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NOV 24 1941

For the Chief of the Army Air Forces:

HEADQUARTERS ARMY AIR FORCES - COORDINATION. CURTIS.

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GENERAL HEADQUARTERS, U. S. ARMY

ARMY WAR COLLEGE

WASHINGTON, D.C.

471-C

October 27, 1941.

MEMORANDUM FOR CHIEF OF THE ARMY AIR FORCES.

Subject: Navy aircraft depth bombs.

1. Information is requested as to what types of aircraft now in use by the Army Air Forces are capable of bombing with the Navy aircraft depth bomb MK XVII, or any similar depth bomb which can be used against submarine targets.

2. If these types of aircraft are available, it is considered highly desirable to conduct tests at an early date to determine operating technique, bomb-sight corrections, and other data, with the view of eliminating possible difficulties in their use, providing such tests have not already been conducted. The advisability of assigning such types of aircraft to the maximum extent possible for duty with the Atlantic Base Commands is obvious. Your comments are requested.

For the CHIEF OF STAFF:

/s/

HARRY J. MALONEY,
Brig. Gen., G. S. C.,
Deputy Chief of Staff.

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HEADQUARTERS ARMY AIR FORCES
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ROUTING AND RECORD SHEET

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DOD Rts.
5 Jan. & 20 June 1974
By: JS/HM I.C. Date 3-10-77

Note.--A line will be drawn across sheet after each comment.

File No. .....

Tally No. AAF .....

SUBJECT: Navy Aircraft Depth Bombs.

765

NO.	FROM	TO	DATE	COMMENTS
1.	AAF C/AS	C/AC	1941 10/31	AAF/A-4 JJO/mhh 1. Forwarded for information on which to base a reply. 1 Incl:- Memo to C/AAF, 10/27/41, abv. subj. CS C/AS
2	Orac	Mat Div	11/3	AAB
3.	Mat. Div. (4-E-1)	Air Staff A-4	1941 11-8	1. Since standardization of the 325 lb. Navy Depth bomb by the Joint Aircraft Committee, a Technical Sub-Committee, whose function it is to determine the detailed design in order that satisfactory provisions for carrying and releasing will result for the Army Navy British, has sat in session and have reached a tentative decision. 2. The bombs now in existence and which are ready for immediate use will, however, be strictly in accordance with the Navy design. These bombs can be satisfactorily carried on all Air Corps airplanes which are designed to take the 500 lb. standard Air Corps bomb. There are some projections on this depth bomb applicable wholly to Navy equipment and which interfere with Air Corps carrying facilities but these projections can be bent and hammered out by the using service without affecting the use of the bomb. Further extreme care must be exercised by the Air Corps using service when hoisting the bombs into position with Air Corps equipment in order to prevent the hoisting bands from interfering with and bending the fuzing pins. These interferences are not considered to be serious nor will they affect the usability of the bomb by the Air Corps.

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W-4071, AC.Rev.8/14/41

Page No. ---

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pt-675 XM-539
A11-3(28-a) A-2510

air 28 471.6 (33)

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HEADQUARTERS ARMY AIR FORCES
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ROUTING AND RECORD SHEET
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DOD ltrs.
8 Jan. & 20 June 1974
By: JS/HM LC. Date 3-10-77

Note.--A line will be drawn across sheet after each comment.

File No. .....

Tally No. AAF .....

SUBJECT: Navy Aircraft Depth Bombs.

765

NO.	FROM	TO	DATE	COMMENTS
1.	AAF C/AS	C/AC	1941 10/31	AAF/A-4 JJO/mhh 1. Forwarded for information on which to base a reply. 1 Incl:- Memo to C/AAF, 10/27/41, abv. subj. CS C/AS
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A11-3(28-a) A-2510

air 471.6 (33)

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OFFICE OF THE CHIEF OF THE AIR CORPS

DECLASSIFIED
DOD ltrs.
8 Jan. & 30 June 1974
By: JS/MM LC; Date: 3-10-77

ROUTING AND RECORD SHEET

(To be filed with correspondence)

Note.—A line will be drawn across sheet after action by each office concerned.

SUBJECT: Navy Aircraft Depth Bombs.

NO.	FROM	TO	DATE	DATA
3.	Continued			3. There are no bombing ballistics or bombing tables available either in the Navy or the Army for use in connection with this bomb. The Navy at present is conducting tests in order to obtain these data but they will be applicable only to the limited quantity of bombs now on hand and on order. The Ordnance Department is being requested to prepare bombing tables suitable for use with standard Air Corps bombsights on those bombs finally to be standardized by the service. 4. If immediate use is to be made of the Navy bomb, lack of suitable bombing tables is not considered to be too serious due to the fact that this type bomb is released from low altitudes. No special technique other than that required for the releasing of standard Air Corps bombs is necessary. Until quantities of these are made available to the Air Corps (the Ordnance Department is initiating procurement) practice and training by the Air Force Combat Command cannot be accomplished. TDO O.P.E. Chief, Materiel Division

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air AG 471.6 (33)

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DOD Dir
8 Jan. & 20 June 1974
By RJMM LC; Date 3-10-77
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AAF/A-4
JJQ/emd
Written November 19, 1941.

NOV 24 1941

MEMORANDUM FOR THE CHIEF OF STAFF, GENERAL HEADQUARTERS:

Subject: Navy Aircraft Depth Bomb.

471.6 (33)

1. Reference Memorandum for the Chief of the Army Air Forces your headquarters, same subject, dated October 27, 1941 copy attached.

2. All Heavy, Medium, and Light Bombardment (including Dive Bombers) capable of carrying the Air Corps standard 500 lb. can, with minor modifications, carry the 325 lb. Navy Standard MK XVII Depth Bomb. The modification is simple and can be easily performed in the field.

3. A Technical Subcommittee of the Joint Aircraft Committee is at present working out details to modify the bomb in order that it may be standard for Army-Navy-British use.

4. There are no ballistic or bombing tables covering this bomb available with either the Navy or the Army.

5. If immediate use is to be made of the Navy Bomb the lack of suitable ballistic and bombing tables is not considered serious due to the fact that this bomb is released from low altitudes. No special technique other than that required for the releasing of Standard Air Corps bombs is necessary.

6. Until quantities of these bombs, modified for Army-Navy-British use, are made available to the Air Corps by the Ordnance Department, who is initiating procurement, practice and training by the Air Force Combat Command cannot be accomplished.

Incl:
Memo for G/AAF, 10/27/41
from GHQ 471-C.

For the Chief of the Army Air Forces:

Dispatched
NOV 24 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-Intp.	Budget	Statistics	
	[signature]				[signature]	[signature]					

Major, Air Corps, Secretary of the Air Staff

AAF-39

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DOD Dir.
4 Jan. & 20 June 1974
By JS/MM LC Date 3-10-77

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GENERAL HEADQUARTERS, U. S. ARMY

ARMY WAR COLLEGE

WASHINGTON, D.C.

471-C

October 27, 1941.

MEMORANDUM FOR CHIEF OF THE ARMY AIR FORCES.

Subject: Navy aircraft depth bombs.

1. Information is requested as to what types of aircraft now in use by the Army Air Forces are capable of bombing with the Navy aircraft depth bomb MK XVII, or any similar depth bomb which can be used against submarine targets.

2. If these types of aircraft are available, it is considered highly desirable to conduct tests at an early date to determine operating technique, bomb-sight corrections, and other data, with the view of eliminating possible difficulties in their use, providing such tests have not already been conducted. The advisability of assigning such types of aircraft to the maximum extent possible for duty with the Atlantic Base Commands is obvious. Your comments are requested.

For the CHIEF OF STAFF:

/s/

HARRY J. MALONEY,
Brig. Gen., G. S. C.,
Deputy Chief of Staff.

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DOD Dir.
8 Jan. & 20 June 1974
By: JS/MM LC Date 3-10-77

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GENERAL HEADQUARTERS, U. S. ARMY
ARMY WAR COLLEGE
WASHINGTON, D. C.

471-C

October 27, 1941.

MEMORANDUM FOR CHIEF OF THE ARMY AIR FORCES.

Subject: Navy aircraft depth bombs.

1. Information is requested as to what types of aircraft now in use by the Army Air Forces are capable of bombing with the Navy aircraft depth bomb MK XVII, or any similar depth bomb which can be used against submarine targets.

2. If these types of aircraft are available, it is considered highly desirable to conduct tests at an early date to determine operating technique, bomb-sight corrections, and other date, with the view of eliminating possible difficulties in their use, providing such tests have not already been conducted. The advisability of assigning such types of aircraft to the maximum extent possible for duty with the Atlantic Base Commands is obvious. Your comments are requested.

For the CHIEF OF STAFF:

S/ Harry J. Malony,
Brig. Gen., G. S. C.,
Deputy Chief of Staff.

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DOD Dir.
6 Jan. & 20 June 1974
By ISMM LC Date 3-18-77

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AAF/A-4
WRB/mhh
(written Oct. 23, 1941)

OCT 24 1941

MEMORANDUM FOR THE DIRECTOR OF DEFENSE AID:

Subject: 500 Lb. Bombs for Britain.

1. In confirmation of the telephone inquiry made by Col. W. V. Taylor of the Defense Aid Office, it is desired to state that Army Air Forces have no objection at this time to the agreement to divert 2800 - 500 lb. bombs to Great Britain in the month of November and 500 per month thereafter until a total of 5233 such bombs have been so diverted. The concurrence of the Army Air Forces is based, as was stated to Col. Taylor, on Great Britain providing T.N.T. for the bombs from sources currently allocated for British use and on the understanding that the loading schedule and diversion of bomb cases and components will not restrict the full use by the Army Air Forces of the very limited quantity of T.N.T. that has been allocated for their use.

2. It is desired that the necessary action be initiated by the Director of Defense Aid to instruct the Chief of Ordnance to accelerate bomb case procurement for the Army Air Forces sufficient to offset the diversion contemplated in paragraph 1 above.

For the Chief of the Army Air Forces:

CARL SPAATZ
Brig. General, Air Corps,
Chief of The Air Staff.

OCT 25 1941
AAG

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AAG 471.6 (32)

AAG 471.6 (32)

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8 Jan. & 20 June 1974
By JSIMM LC. Date 3-10-77

Proposed Flight of Army planes over certain countries of South America.

471.6 (30)

AAF/A-2
HRB/ekp

1 AAF OCAC 1941 For information on which to base a reply.
A-2 Intell 11/5

M.F.S.
C/A-2.

1 Incl.
Ltr fr Secy of State
to Secy of War, 10/31.

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	
				HRB							

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DOD Rts.
8 Jan. & 30 June 1976
By JS/MM LC Date 3-10-77

DEPARTMENT OF STATE
Washington

In reply refer to
IN 841.248/1057

October 31, 1941

~~STRICTLY CONFIDENTIAL~~

The Secretary of State presents his compliments to the Honorable the Secretary of War and, with reference to the proposed flight of sixteen Army planes over certain countries of South America, informs the Secretary that permission for the flight over Venezuela was obtained on October 24, 1941.

In a telegram dated October 25, the American Ambassador at Rio de Janeiro informed the Department that the planes may proceed over Brazil.

The above information was conveyed by telephone to Colonel James G. Taylor of the Army Air Corps on October 27.

The Department will appreciate being furnished with the name of the Flight Commander, the number of personnel and the date of departure of the planes in order that the appropriate Venezuelan and Brazilian authorities may be notified.

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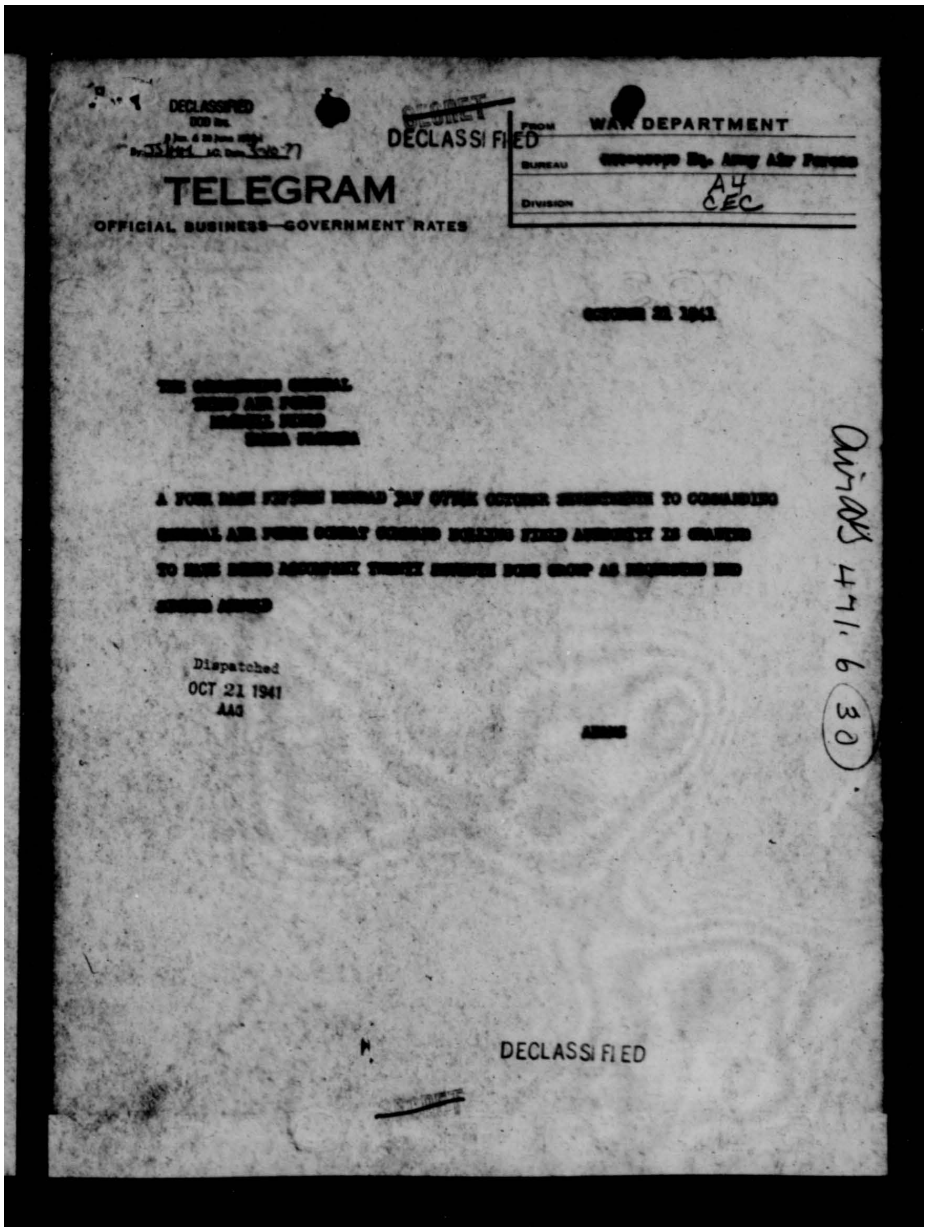

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DOD Dir.
By JS/MM LC Date 3-10-77

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FROM WAR DEPARTMENT
BUREAU [illegible] Eq. Army Air Forces
DIVISION A4 CEC

TELEGRAM

OFFICIAL BUSINESS—GOVERNMENT RATES

OCTOBER 21 1941

THE COMMANDING GENERAL
THIRD AIR FORCE
MARCH FIELD
[illegible]

A FOUR [illegible] FIFTEEN [illegible] JAN [illegible] OCTOBER [illegible] TO COMMANDING GENERAL AIR FORCE COMBAT COMMAND [illegible] FIELD AUTHORITY IS GRANTED TO [illegible] ACCOMPANY TWENTY [illegible] DONE GROUP AS REQUESTED AND [illegible]

Dispatched
OCT 21 1941
AAG

[illegible]

Air AS 471.6 (30)

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6 Jan. & 30 June 1961
By [illegible] 3-10-71

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ACC 370.5 (10-17-41) 1st Ind. (K-88)

HEADQUARTERS AIR FORCE COMBAT COMMAND, Bolling Field, D. C., October 18, 1941. To: The Chief of the Army Air Forces, Washington, D. C.

Request necessary action and direct reply to Commanding General, 3rd Air Force.

For the Commanding General:

H. H. PFEIL,
Colonel, A. G. D.,
Adjutant General

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air AG 471.6 (30)

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British Antitank Bomb

1 AAF 1941
C/As C/AC 11/6

AAF/A-4
RCC/mhh

1. The Chief of Ordnance should be requested to procure a sufficient quantity of the subject bomb described in the inclosed Military Intelligence Report #44621 to determine the effectiveness of this bomb in comparison with current material under development and procurement.

1 Incl.
Memo for C/AAF
10/22041 fm.G-3
w/memo to ACS/G-3
10/15/41 w/Rpt.IG #44621

CS
C/AS

2 [illegible] Matl. 11/[illegible]

For necessary action. BHM

3 AFAMC Air Staff 1942
THRU 4/21
AFRDB

1. The Ordnance Department has obtained twenty-five Mark I, 9-lb Antitank, Aircraft, H.E. Bombs "sticky" from England. These bombs are being shipped to Aberdeen Proving Ground for test purposes, however, the tests will be slightly delayed pending the completion of a similar type of bomb developed by the Ordnance Department entitled Device C. It is hoped that comparative tests between these two items can be accomplished. Your office will be advised when additional information is obtained.

O.P.E.
Commanding General, Material Command

Incl. n/c

4. AFRDB Chief of Air Staff 4/25

AFRDB
ARNsmr

1. Noted and forwarded.

F. L. A.
Deputy Dir/Bombardment

Incl. n/c

Dispatched tA-4
APR 29 1942
AAG

Air AG 471.6 (29) B

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8 Jan. & 20 June 1974
By JSlmm LC. Date 3-10-77

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WAR DEPARTMENT
G-3
WASHINGTON

G-3/47130 October 22, 1941.

MEMORANDUM FOR CHIEF OF THE ARMY AIR FORCES:

Subject: British Antitank Bomb.

1. Reference the attached M/A Report on a British plastic Antitank bomb, the G-3 Division has received reports from other observers indicating that a bomb of this type is quite effective if placed on a tank, and desired to have the subject investigated at an early date.

2. However, it is believed that the Assistant Chief of Staff, G-2, erroneously has referred the matter to G-3, in view of the amendments to the letter referred to in par. 2 of his Memorandum, as contained in AG E50.05 (4-2-41) M-B-M, April 25, 1942. The amended letter provides that all recommendations pertaining to the Air Corps will be referred to the Chief of Air Corps for action.

3. As stated above, this Division believes that this bomb merits thorough test at the earliest possible date, and will furnish any assistance desired in the investigation of the subject. It is suggested that it might be desirable to arrange for shipment to the United States of several samples of the bomb referred to in attached report.

/s/ Harry L. Twaddle
HARRY L. TWADDLE,
Brigadier General,
Assistant Chief of Staff.

By

W. E. CHAMBERS,
Colonel, General Staff,
Executive.

Incl.
G-2 Memo for G-3, 10-15-41
w. incl.

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6 Jan. & 20 June 1974
By: JS/MM LC, Date 3-10-77

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WAR DEPARTMENT
G-2
WASHINGTON

October 15, 1941.

MEMORANDUM FOR THE ASSISTANT CHIEF OF STAFF, G-3:

Subject: Armament.

1. Report No. 44621, Military Attache, London, September 24, 1941, subject, Nine-Pound Antitank Bomb, a copy of which is inclosed, prepared by E. P. Mechling, Major, Ordnance Department, contains the following recommendations:

a. Determine the probability of hitting tanks with small bombs dropped from airplanes.

b. If the probability of getting hits appears satisfactory, that a thin case bomb with plastic filler be developed for the American Service.

2. Under the provisions of AG 350.05 (12-2-40) M-E-M, December 3, 1940, subject, Initiation of action on Recommendations from Military Attaches, this recommendation is referred to your division for action.

/s/ Sherman Miles
SHERMAN MILES
Brigadier General, U.S. Army,
Acting Assistant Chief of Staff, G-2.

1 Inclosure

CC: Deputy Chief of Staff
Chief of Army Air Forces
Chief of Ordnance.

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8 Jan. & 20 June 1974
By: JB [illegible] LC; Date 3-10-77

DECLASSIFIED

British Antitank Bomb.

AAF/A-4
RCC/mhh

1. AAF 1941
C/AS C/AC 11/6

1. The Chief of Ordnance should be requested to procure a sufficient quantity of the subject bomb described in the inclosed Military Intelligence Report #44621 to determine the effectiveness of this bomb in comparison with current material under development and procurement.

1 Incl.
Memo for C/AAF
10/22/41 fn.G-4 CS
w/memo to ACS/G-3 C/AS
10/15/41 w/Rpt.IG #44621

471.6 (39) B

*Rpt. IG #44621 forwarded with original only.

Dispatched
NOV 7 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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DOD Dir.
8 Jan. & 30 June 1974
By: JSMM LC Date 3-10-77

WAR DEPARTMENT
WAR DEPARTMENT GENERAL STAFF
Operations and Training Division G-3
Washington

DECLASSIFIED

G-3/47130

October 22, 1941

MEMORANDUM FOR CHIEF OF THE ARMY AIR FORCES:

Subject: British Antitank Bomb.

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2. However, it is believed that the Assistant Chief of Staff, G-2, erroneously has referred the matter to G-3, in view of the amendments to the letter referred to in par. 2 of his Memorandum, as contained in AG 350.05 (4-2-41) M-B-M, April 25, 1941. The amended letter provides that all recommendations pertaining to the Air Corps will be referred to the Chief of Air Corps for action.

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HARRY L. TWADDLE,
Brigadier General,
Assistant Chief of Staff.

By

W. E. CHAMBERS,
Colonel, General Staff,
Executive.

Incl.
G-2 Memo for G-3, 10-15-41
w. incl.

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DOD Dir.
5 Jan. 6 '53 June 1954
By: JS/MM LC; Date: 3-10-77

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WAR DEPARTMENT
WAR DEPARTMENT GENERAL STAFF
Military Intelligence Division G-2
Washington

October 15, 1941

MEMORANDUM FOR THE ASSISTANT CHIEF OF STAFF, G-3:

Subject: Armament.

1. Report No. 44621, Military Attache, London, September 24, 1941, subject, Nine-Pound Antitank Bomb, a copy of which is inclosed, prepared by E. P. Mechling, Major Ordnance Department, contains the following recommendations:

a. Determine the probability of hitting tanks with small bombs dropped from airplanes.

b. If the probability of getting hits appears satisfactory, that a thin case bomb with plastic filler be developed for the American Service.

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
Chief of Army Air Forces
Chief of Ordnance.

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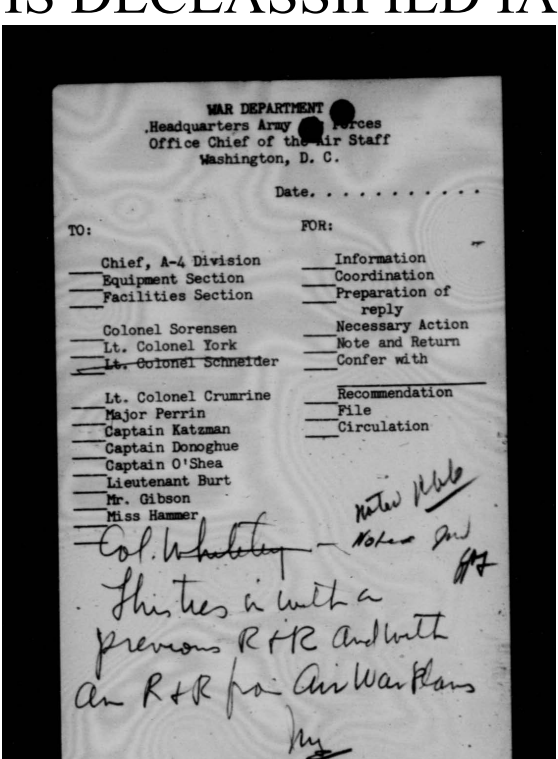

WAR DEPARTMENT
Headquarters Army Air Forces
Office Chief of the Air Staff
Washington, D. C.

Date. . . . . .

TO:

___ Chief, A-4 Division
___ Equipment Section
___ Facilities Section

___ Colonel Sorensen
___ Lt. Colonel York
___ ~~Lt. Colonel Schneider~~

___ Lt. Colonel Crumrine
___ Major Perrin
___ Captain Katzman
___ Captain Donoghue
___ Captain O'Shea
___ Lieutenant Burt
___ Mr. Gibson
___ Miss Hammer
___ ~~Col. Whiteley~~ — Noted [illegible]

FOR:

___ Information
___ Coordination
___ Preparation of reply
___ Necessary Action
___ Note and Return
___ Confer with

___ Recommendation
___ File
___ Circulation

Noted [illegible]

This ties in with a previous R+R and with an R+R from Air War Plans

[illegible]

A-4 Division
AIR STAFF

AAF-82-1

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8 Jan. & 20 June 1974
By: JS/MM LC Date 3-10-77

OFFICE OF THE CHIEF OF THE AIR CORPS

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ROUTING AND RECORD SHEET

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File No. _____

Tally No. _____

Subject: **Attachment of American Bombs on British Bomb Racks.**

1001

NO.	FROM	TO	DATE	COMMENTS
1.	Matl. Div. (4-E-1)	Air Staff (A-4)	1941 11-17	1. Upon verbal request of personnel from your office, the following information is given as additional and supplemental to that contained in second entry of R&R dated October 28, 1941, from this Division to the Air Staff, subject: "Attachment for British Bomb Racks". 2. No attempt has as yet been made by either England or this country to have designed or manufactured an adapter suitable as a means for carrying American bombs on British bomb racks. The development of such an adapter, however, is not anticipated to be difficult, but until definite commitment can be made, sources of procurement cannot be established. In this connection, your attention is invited to the fact that all types of bombs now contemplated for use have been standardized ~~for~~ by the Joint Aircraft Committee, and various Sub-Committees have investigated the detailed design incorporating such features that would make these bombs applicable to either the American or British bomb racks. Production releases on most types have already been made. 3. Information has just been received to the effect that the British, in addition to the one designed by Consolidated, have designed another adapter for carrying British bombs on American bomb racks. Samples of this adapter are now in this country, and the British will, within the near future, attempt to establish a source of procurement. [redacted] Second entry of R&R dated October 28th, which comments upon the adapter developed by the Consolidated Aircraft Corporation for carrying British bombs on American bomb racks, [redacted] failed to mention that a British selected arming unit must also be installed in the airplane in order that the British method of arming bombs can be accomplished. This necessitates stringing an additional electric wire throughout the bomb bay, inasmuch as the selector arming device is

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OFFICE OF THE CHIEF OF THE AIR CORPS

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File No. _____

Tally No. _____

Subject: **Attachment of American Bombs on British Bomb Racks.**

NO.	FROM	TO	DATE	COMMENTS
1.	(Continued)			not a part of the adapter. Manufacturing facilities for the British selector arming device are now established, and such a device has been designed and developed by the Materiel Division and will soon be in production in compliance with the directive of the Joint Aircraft Committee, who directed that such a device be standardized and installed in all aircraft.
	—			C. P. E. Chief, Materiel Division.
				To Col Coupland - To note. Then to file.

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OFFICE OF THE CHIEF OF THE AIR CORPS

ROUTING AND RECORD SHEET

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File No. _____

Tally No. AAF/ _____

Subject: Attachment for British Bomb Racks.

NO.	FROM	TO	DATE	COMMENTS
4.	C/AC	AAF C/AS	1941 10/30	1. Forwarded. X-ASB:br AAB For M. S. F. Executive

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(28)

File

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8 Jan. & 20 June 1974
By: JS MM LC Date 3-10-77

HEADQUARTERS ARMY AIR FORCES

ROUTING AND RECORD SHEET

10/16

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File No. .....

Tally No. AAF .....

SUBJECT: Attachment for British Bomb Racks.

NO.	FROM	TO	DATE	COMMENTS
1	AAF C/AS	C/AC	1941 10/14	AAF/A-4 WRB/vt 1. This office has received informal advice through the Air Liaison Section of G-2 Div.-WDGS that the British have developed and stocked in England a bomb attachment enabling them to drop American bombs from British bomb racks. 2. It is requested that the Office of the Chief of Air Corps initiate such action as is necessary to make certain that facilities could be made available within 60 days to manufacture attachments in this country equal or superior to the British item.
3.	Materiel Division (4-E-1)	Air Staff THRU Ch. Air Corps	1941 10/28	1. An adapter used by the British for carrying British bombs on American bomb racks has been developed and produced by the Consolidated Aircraft Corporation. Adapters of this type have been provided by the Consolidated Aircraft Corporation on B-24 airplanes manufactured by them for the British. 2. Inasmuch as the adapter is of a very simple design and practically any manufacturer conversant with sheet metal practice could fabricate these devices it is believed that procurement could be initiated whenever the occasion should arise and in conformity with sixty day delivery notice. Other sources than the Consolidated Aircraft Corporation, however, cannot be established definitely until commitments are to be made. C.P.E. Chief, Materiel Division

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By JS NARA Date 2-10-77

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WAR DEPARTMENT
HEADQUARTERS OF THE ARMY AIR FORCES
WASHINGTON

January 8, 1942.

MEMORANDUM FOR COLONEL DUNCAN:

Subject: 4,000# Bombs.

1. The delay in equipping airplanes to carry 4,000# bombs arises out of the policy of producing the maximum number of airplanes in the minimum of time and of allowing nothing to interfere with turning production airplanes over to the tactical units.

2. The foregoing policy vigorously pursued has simply made it impossible to lay up B-17 airplanes for the relatively long period of time (approximately three (3) weeks) necessary to make the 4,000# bomb-carrying installation.

3. There is a project to increase the gas-carrying capacity of a limited number of B-17E's. Such an increase will necessitate carrying bombs outside the fuselage.

4. Colonel Gardner states that when these airplanes are modified, provision will be incorporated for carrying the 4,000# bomb.

Incl.
Memo 1/5/41 abv.subj. to Col. Hanley frm.Col.Schneider; memo for AC of S,G-4,"Postponement of Load.of 4000# Demol. Bombs,12/24/41; memo for C/Ord. 12/31/41 frm.Deputy Ch.of Staff.

T. J. HANLEY, JR.,
Colonel, Air Corps,
Chief, A-4, Air Staff.

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Move to East Coast

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8 Jan. & 20 June 1974
By: JS IMM LC; Date 3-10-77

WAR DEPARTMENT
OFFICE OF THE CHIEF OF THE ARMY AIR FORCES
WASHINGTON

January 5, 194~~1~~2.

MEMORANDUM FOR COLONEL HANLEY:

Subject: 4000# Bombs.

1. At General Arnold's direction, the Chief of Ordnance was instructed to procure two thousand 4000# bombs.

2. Because aircraft capable of carrying 4000# bombs are not immediately available, smaller sizes of bombs were given a loading priority. This was necessary at the time due to the limited amount of T.N.T. to be made available for bomb loading.

3. The Office of the Chief of Ordnance has informed A-4 that 100 four thousand pound bombs have now been loaded to meet General Arnold's desires. The question of disposition arises as the loaded bombs must be moved from the loading plant -- today if possible.

4. The Office of the Chief of Ordnance is under the impression that General Arnold directed the loading of these bombs for a special purpose. Information as to that special purpose has not been made available to me.

why?

5. No tactical airplane on hand at this time will carry the 4000# bomb internally.

6. Provision for carrying the 4000# bombs cannot be immediately incorporated in aircraft now in production at this time without materially delaying production.

7. Both the B-17 and the B-24 now on hand can be modified to take the 4000# bombs. The total labor involved amounts to approximately 2500 man hours per airplane.

8. The bomb-ground clearance for the B-17 airplane will be five inches which will necessitate the airplane taking off on concrete runways. Increase in the five-inch clearance would require the building of the equipment within the wing structure which would add another 1250 man hours per airplane.

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9. Under date of December 31, 1941, Materiel Division has been directed to incorporate provisions for carrying 4000# bombs in B-17 and B-24 type airplanes on current contracts without delaying production.

Max F. Schneider,
Lt. Col., Air Corps,
A-4 Div., Air Staff.

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ALL COMMUNICATIONS SHOULD BE ACKNOWLEDGED BY LETTER, COPY AND ADDRESSED TO

2711

WAR DEPARTMENT
OFFICE OF THE CHIEF OF ORDNANCE
WASHINGTON

Hofstetter/mm

00 471.623

ATTENTION OF 0096

Ammunition Division,
Industrial Service.

December 24, 1941.

MEMORANDUM FOR: The Assistant Chief of Staff, G-4.

SUBJECT: Postponement of Loading of 4,000-lb. Demolition Bombs.

1. Reference is made to letter from the Adjutant General dated August 14, 1941, to the Chief of Ordnance, subject: Procurement of 4,000 Pound Demolition Bombs, file O.O. War Department 471.623/898, AG 471.6(8-7-41)MC-G. This communication directed procurement of 2,000 - 4,000-lb. bombs "as soon as possible" and stated that there exists an immediate need for the same.

2. On the basis of the above directive, procurement was immediately initiated and is now under way. The 2,000 bomb bodies are scheduled for delivery in March, 1942, and loading was scheduled to be completed by May, 1942.

3. However, the existing stringent situation regarding T.N.T. production versus explosives requirements indicates the advisability of postponement of loading of the major portion of these bombs until a later date. This decision is supported by informal advices from the Office of the Materials Division, Chief of Air Corps, as well as from G.H.Q. which are to the effect that there is no possible application of these bombs by the service in the near future.

4. Consequently, loading of these bombs has been scheduled to provide for completion of approximately 100 by February, 1942, with loading of the balance suspended until July, 1942. Loading of the bombs will then be resumed at the rate of 50 in July, 100 in August, and 200 in September, continuing at the latter rate thereafter. This postponement will permit utilizing to the fullest extent all available explosives for bombs considered more urgent, namely, the 500-lb., 1,000-lb. and 2,000-lb. sizes. It should be

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understood that the procurement of components will continue as scheduled and the bomb cases stored; hence, during the interim loading could be resumed on short notice with the loading of the entire quantity completed, if necessary, within thirty days or less.

5. Since the above change in schedule is contrary to the wish of the Office of the Adjutant General as expressed in reference Paragraph 1, approval of the action outlined herein is requested.

For the Chief of Ordnance:

H. H. KUTZ,
Colonel, Ordnance Dept.,
Assistant.

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G-4 DIVISION
WAR DEPT GEN STAFF

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WAR DEPARTMENT
OFFICE OF THE CHIEF OF STAFF
WASHINGTON

December 31, 1941

O. O. WAR DEPT.
471.62 3021
JAN 1 1942

MEMORANDUM FOR CHIEF OF ORDNANCE: (Social Security Building, Room 5362)

Subject: 4,000 Pound Thin Shelled Bombs

It is realized that the 4,000 pound thin shelled bomb is a weapon of opportunity. Accordingly, in order to take advantage of its destructive ability when the opportunity presents itself, these 4,000 pound bombs must be in being. Quite naturally we expect to use them as soon as possible against Japanese targets in Japan. With the above in mind, will you have about 100 of these prepared so that when the time comes there will be no delay in shipping them to the point of departure? This should be done at the earliest possible moment.

H. H. Arnold

H. H. ARNOLD
Lieutenant General, U. S. Army
Deputy Chief of Staff for Air

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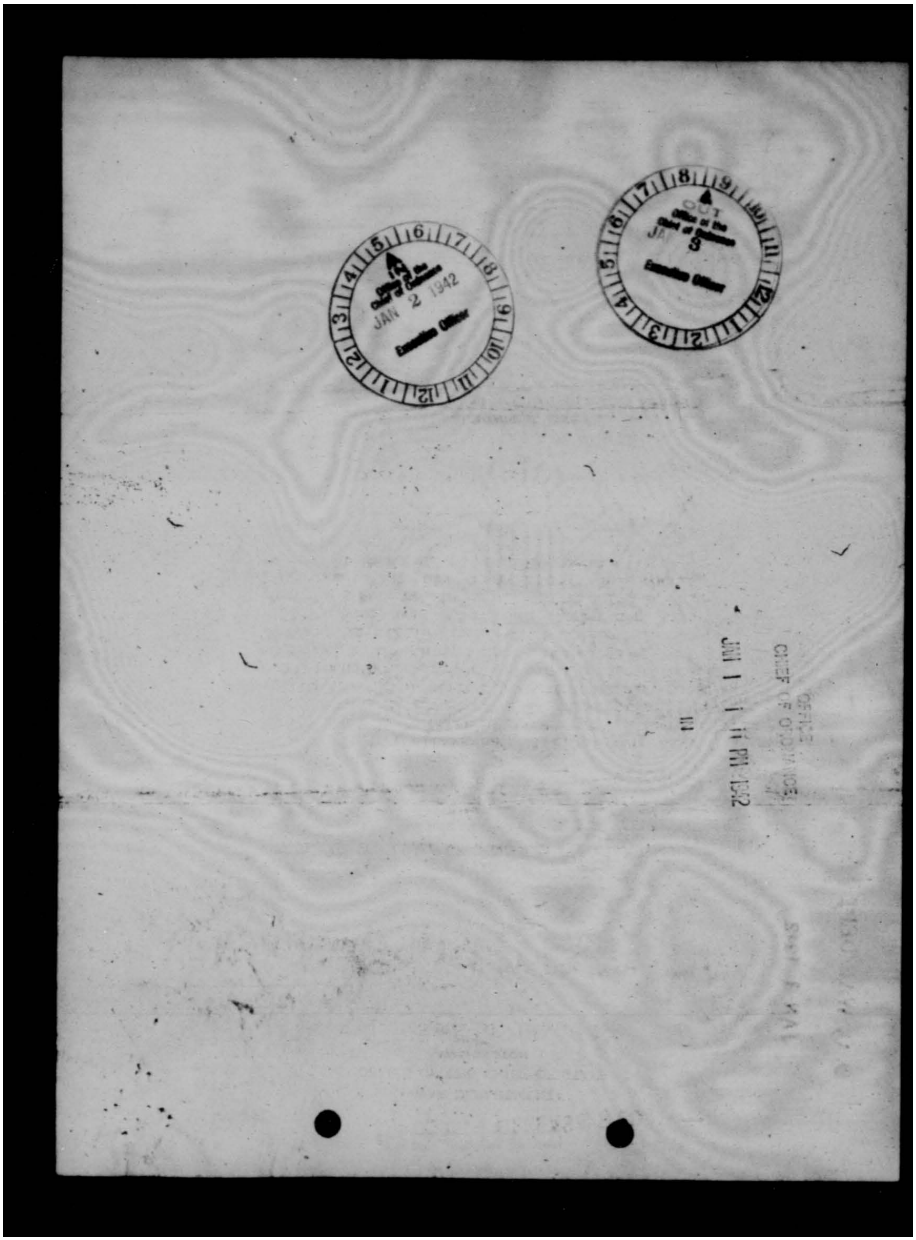

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O.O. 476.62/3021 1st Ind. Haskell/gb
Attn: Amm. Div., Loading & Assembly

War Department, Ordnance Office, Washington, D. C. Jan. 3, 1942
To: Deputy Chief of Staff for Air

1. This office had anticipated a possible urgent demand for these 4000 Lb. bombs and preliminary arrangements for loading some were initiated some weeks ago. The 100 bombs desired will be available at the Savanna Ordnance Depot not later than January 17, and this date may be anticipated.

For the Chief of Ordnance:

for L. J. DILLON,
Lt. Col., Ord. Dept.,
Executive Assistant.

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8 Jan. & 20 June 1974
By: JSTAM LC: Date 3-10-77

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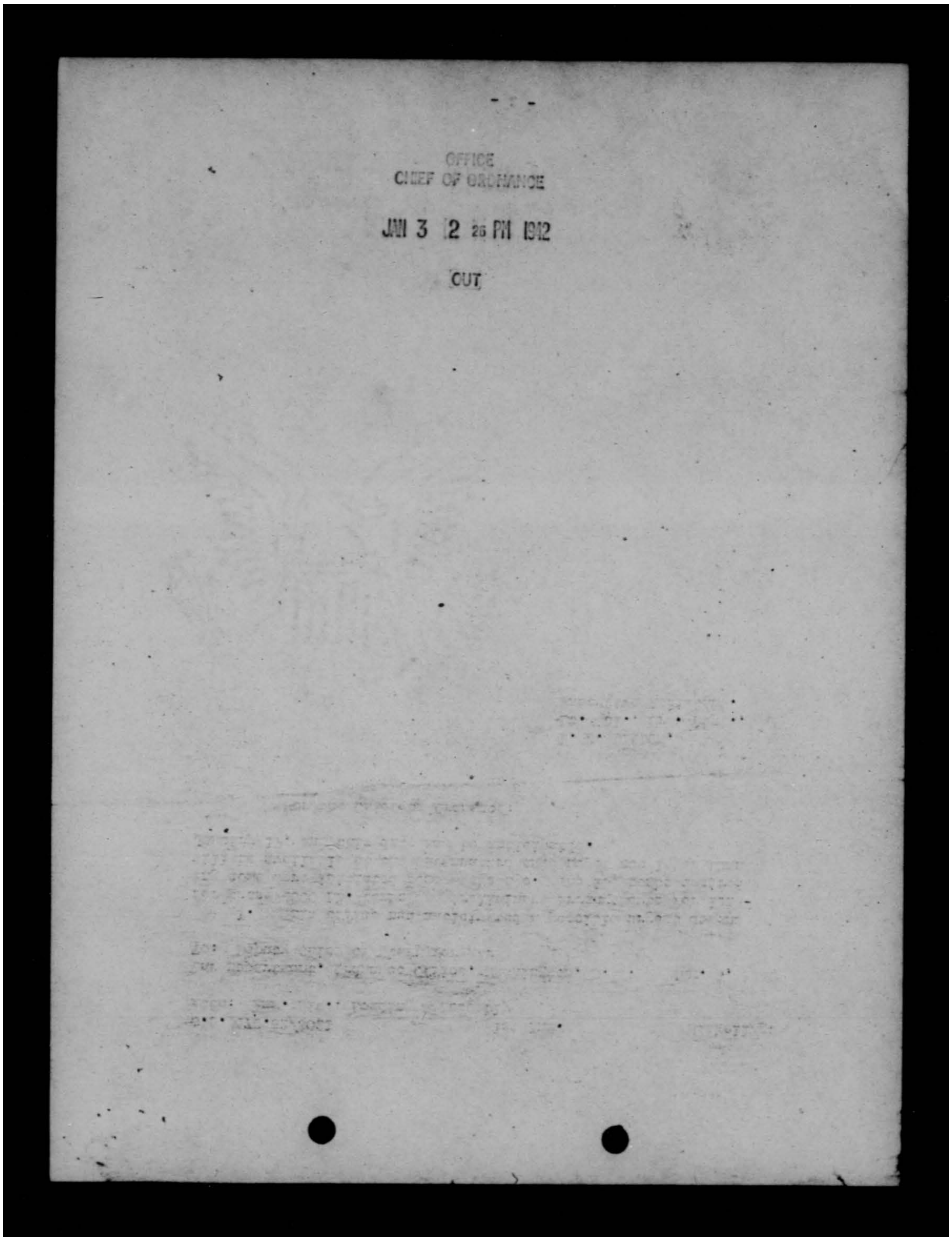

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HEADQUARTERS ARMY AIR FORCES

ROUTING AND RECORD SHEET

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File No. .....

Tally No. AAF .....

SUBJECT: British High Capacity Bombs.

NO.	FROM	TO	DATE	COMMENTS
				AAF/A-4 MFS/emd
1	AAF C/AS	C/AC	1941 10/23	1. The comments of the Air Corps Board, with reference to the attached M.I.D. Report of British High Capacity Bombs are requested. Incls: Cy Memo for A. C/S,G-3,10/16/41, Cy M.I.D. Report, 9/25/41, Charts-4. CS C/AS 12-5/10-27
[redacted]				
2.	C/AC	A.A.F.	1941 12/23	1. Comments of the Air Corps Board (15-B1) ims contained in the attached 1st Indorsement, dated December 18, 1941. Incl. n/c W. R. W. Actg. C/AC
3	General Arnold	General Spaatz	1941 12/30	1. With reference to the attached papers on the 4000-pound bomb and the note attached thereto, the 4000-pound bomb cases are being made but not being filled with T.N.T. due to the fact that six 1100-pound bombs can be loaded for each 4000-pound bomb loaded. It is desired that steps be taken to have some 4000-pound bombs loaded with T.N.T. and that necessary adapters, etc. be built for a few of the B-24 and B-17 type airplanes so that the loaded 4000-pound bombs can be carried by these types if necessary. 2. The number of 4000-pound bombs to be loaded and the number of adapters to be built will be decided by the Air Staff based upon the probable use of this type bomb against possible future targets for which it is adapted. H. H. A. 10/31/41

Added Incls: Ltr to Dir. AC Board, Eglin Fld. 10/27/41 re above subj.
1st Ind. to C/AC, 12/18/41

(Note attached to C. of Chd.)
added incls; cy above memo.

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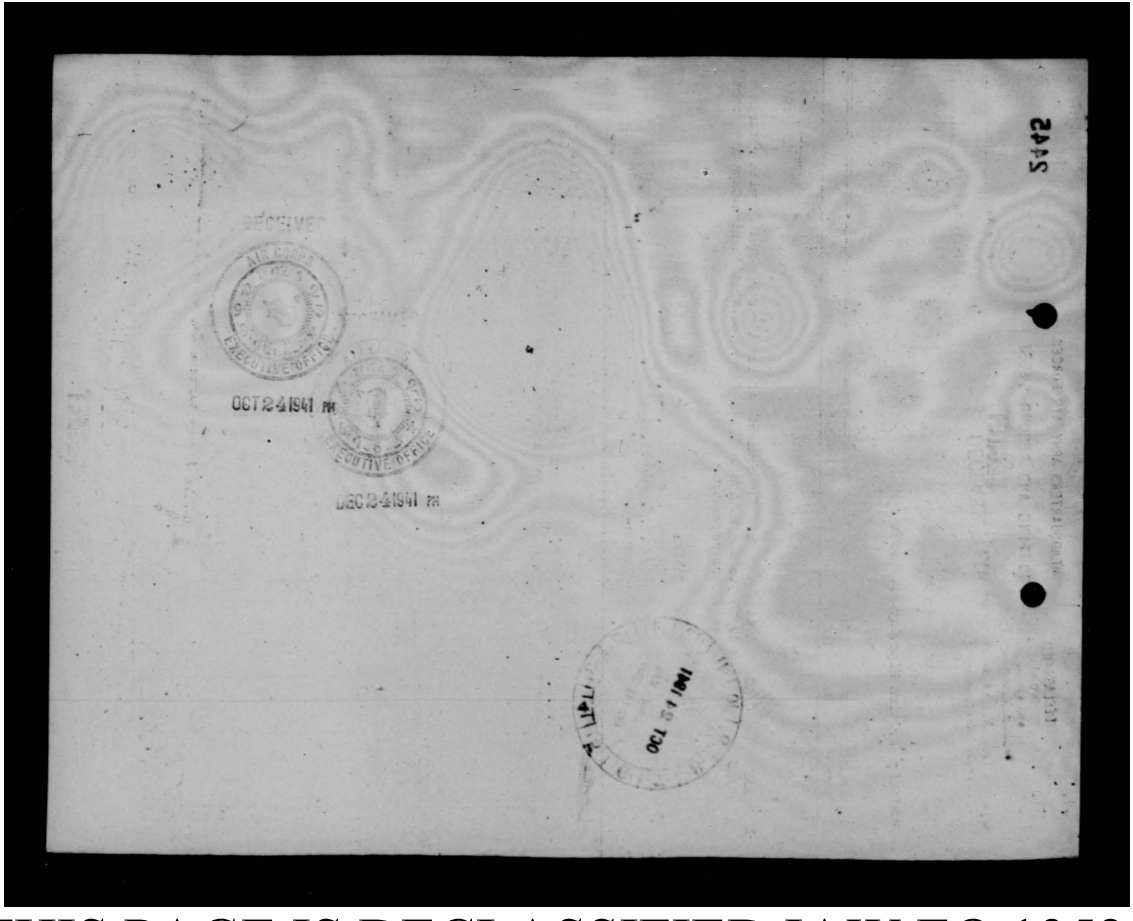

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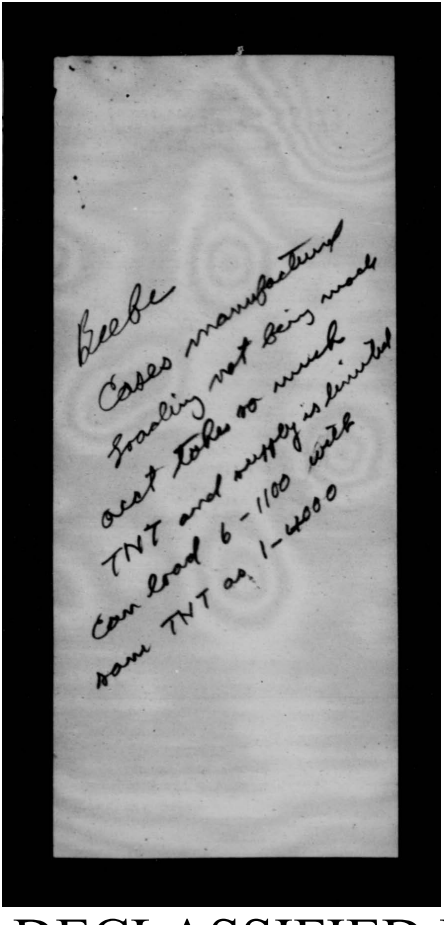

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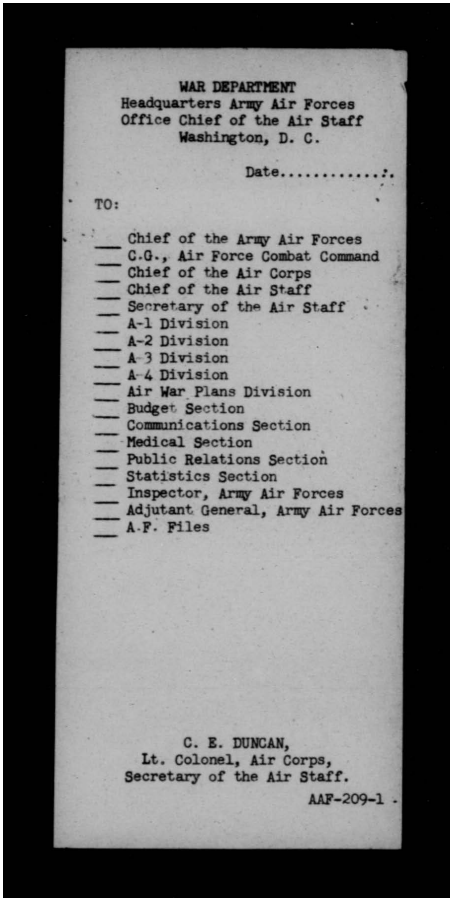

WAR DEPARTMENT
Headquarters Army Air Forces
Office Chief of the Air Staff
Washington, D. C.

Date.....

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
___ Communications Section
___ Medical Section
___ Public Relations Section
___ Statistics Section
___ Inspector, Army Air Forces
___ Adjutant General, Army Air Forces
___ A.F. Files

C. E. DUNCAN,
Lt. Colonel, Air Corps,
Secretary of the Air Staff.

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WAR DEPARTMENT
Headquarters Army Air Forces
Office Chief of the Air Staff
Washington, D.C.

Date 12/27/41

TO: Col. Duncan
Secy - The Air Staff.

This is the paper on the 4000# bomb about which I spoke to you Saturday afternoon.

A-4 DIVISION

X-225-D, A.C.

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WAR DEPARTMENT
Headquarters Army Air Forces
Office of the Air Adjutant General
Washington, D.C.

Date Dec 25 1941

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

WM. W. DICK, 19C
Lt. Col., A.G.O.
Air Adjutant General.

A.A.F-10-A.

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8 Jan. & 20 June 1974
By JS/MM LC; Date 3-10-77

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1st Ind. (34)

THE AIR CORPS BOARD, Eglin Field, Florida, 18 December 1941.
TO: The Chief of the Air Corps, Washington, D. C.

1. In connection with the attached Military Intelligence Division Reports on British high capacity bombs, a thorough review and study has been made of the following:

a. Military and Naval Intelligence Reports, immediately available to the Air Corps Board, on the construction, use, and effects of high capacity bombs and land mines.

b. Report of the tests of the 4000-pound (light case) demolition bomb recorded in Ordnance Committee Item 17071, including comparative data obtained in tests of the 2000-pound, M34, and 1000-pound, M44, standard demolition (G.P.) bombs.

2. The effectiveness of high capacity demolition bombs, based on the above-mentioned reports, is limited to:

a. Morale effect on the civilian population.

b. Destruction of flimsily-built structures and/or superficial damage to more resistant structures.

3. A study of the comparative tests of the 4000-pound high capacity demolition bomb and the 2000-pound and 1000-pound standard (G.P.) demolition bombs definitely indicates that one charge of 3000 to 3500 pounds of high explosive is not the most economical employment of the high explosive load carrying capacity of bombardment airplanes. For example, paragraph 2 e of this report shows that the same damage (area brush torn up or cut off) by the 4000-pound bomb containing approximately 3221 pounds of explosive was slightly less than twice the area in which the same results were accomplished by the 2000-pound, M34, demolition (G.P.) bomb containing approximately 1100 pounds of explosive. In terms of the distances from the point of impact, the 3221-pound explosive charge of the 4000-pound high capacity bomb produced the same destructive effect at a distance only about 40% greater than the distance at which the 1100-pound explosive charge of the 2000-pound standard demolition bomb produced the same destructive effect. There are no definite data available to the Air Corps Board to indicate the optimum size or charge required to produce the morale and surface blast effects credited to various types of high capacity bombs and land mines. The results obtained in the above-mentioned tests indicate that this amount is approximately 1000 pounds or less, and that, therefore, more effect would be accomplished with three bombs, each containing 1100 pounds of high explosive, properly spaced, in a target area than could

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be obtained by one bomb containing 3221 pounds. In the event that only surface functioning is desired, the metal cases for the three 1100-pound explosive charges should not greatly exceed that for the one 3221-pound charge. It also appears that in those bombardment airplanes in which the space capacity as distinguished from weight carrying capacity for bombs is limited, that a greater load of high explosive could be carried in the limited space, utilizing the smaller size bombs in lieu of a single maximum size.

4. It is interpreted that the term "delay anti-removal and anti-disturbance fuzes" contemplates a delay of hours. Since no penetration can be obtained with these bombs, such a delay would permit evacuation of the area and probable partial neutralization of the bomb, thereby appreciably reducing the effect that would have been attained had the bomb functioned instantaneously on impact. It is the opinion of the Air Corps Board that the probable loss of effectiveness incident to the use of long-delay fuzes will more than offset any tactical advantage that might be gained from the ability to drop this type bomb from large formations of bombardment airplanes at very low altitudes (less than 1000 feet). Apparently, the use of high capacity bombs with parachutes and special fuzes for dropping in water would be an improvised substitute for aircraft-laid mines and, consequently, less effective than aircraft mines which are specially designed for this purpose.

1643 D. S. Seaton

D. S. SEATON,
Colonel, Air Corps,
Director.

3 Incls. n/c.

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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: JJ/MM LC; Date 3-10-77

WAR DEPARTMENT
OFFICE OF THE CHIEF OF THE AIR CORPS
WASHINGTON

October 27, 1941.

SUBJECT: British High Capacity Bombs.

TO: Director, Air Corps Board, Eglin Field,
Valparaiso, Florida.

1. The Chief of the Army Air Forces has requested the comments of the Air Corps Board on the attached Military Intelligence Division Report of British High Capacity bombs.

By order of the Chief of the Air Corps:

L. G. Seeligson
Captain, Air Corps
Assistant Executive
Training & Operations Div.

3 Incls.
Cy Memo for A.C.of S.
dated 10/16
M.I.D. Report 9/25/41 (44632)
Charts -- 4

RECEIVED
OCT 29 1941
THE AIR CORPS BOARD
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By authority A. C. of S., G-2 GS/I JOH 41
Date OCT 16 1941 Initials
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DOD ltrs.
8 Jan. & 20 June 1974
By: JSHM LC; Date 3-10-77

October 16, 1941.

MEMORANDUM FOR THE ASSISTANT CHIEF OF STAFF, G-2:

Subject: American H. C. Bombs.

1. Report No. 446[illegible], Military Attache, London, September 25, 1941, subject, British High Capacity Bombs, a copy of which is inclosed, prepared by E. P. Moehling, Major Ordnance Department, contains the following recommendation:

a. That American High Capacity bombs be limited to a maximum 4000 pounds.

b. That studies be inaugurated in the American Service to determine the necessity for a parachute type H. C. bomb using delay anti-removal and anti-disturbance fuzes.

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
Chief of Army Air Forces
Chief of Ordnance

dya

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DOD ltrs.
8 Jan. & 20 June 1974
By [illegible] Date 3/10/77

SECRET authority of M.A. London.
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Date 9/25/41 (DAM) DECLASSIFIED
Initials
Classification

Enclosures
Record Section File No.
Copy No.
Published Indices Only

MILITARY INTELLIGENCE DIVISION
WAR DEPARTMENT GENERAL STAFF
MILITARY ATTACHÉ REPORT Great Britain
Country Reported On

Subject British High Capacity Bombs I.G. No. [illegible]
Brief Descriptive Title

Source and Degree of Reliability:

Ministry of Aircraft Production.

Summarization of Report
When Required

In Comments on Current Events Enter Item Headings Here

Based upon an analysis of the effect of German bombs on England particularly the so-called "Land Mines" the British have concentrated much of their bomb development programe on a new series of high capacity bombs. These bombs are designed for the destruction of industrial targets. The whole series is characterized by a high ratio of explosive weight to the weight of the case, 70% being one of the figures mentioned.

The cases are fabricated by welding from thin steel plate much along the lines of a domestic hot water tank. Since a bomb case of this construction has almost no penetrating effect against resistant targets special means must be employed to insure complete detonation before the case fails. There are two means used to accomplish this result. The first method is slowing the rate of descent by means of a parachute. When a parachute is employed delayed action fuses can be used. This permits large numbers of airplanes in a raid to drop their bombs from low altitude and get away without being blown up.

The disadvantages of parachute construction are that they cannot be accurately dropped from medium altitude or above, and the fuse action is apparently subject to a high percentage of failures.

The other type of construction is the stabilized bomb with instantaneous fuse action. The bomb is stabilized by using a hollow drum as the tail and a spoiler ring on the nose. In the latest types three nose fuses are used to insure 100% functioning.

The side fuses with delay and other special actions are only useable when the bombs are dropped into water from fairly low altitude. Plans are now under way to provide both parachutes and tails for 4000 lb. H.C. bombs.

G-2 Distribution: 4, 5, 6,
Copy No. 1, R/S; 2, L/C; 3, Section File

From M. A. London Report No 44632 Date September 25, 1941.
This line to appear on all succeeding pages

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Classification

WAR DEPARTMENT
OCS Form 17

U. S. GOVERNMENT PRINTING OFFICE 10—14547

Page 1

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Sketch No. 1 shows the general arrangement of the 2000 lb. H.C. parachute bomb. The lifting lug is used for positioning the bomb in the bomb rack. The weight of the bomb is carried on a wire rope sling that goes underneath the bomb. This is essentially the same gear as is used for torpedoes.

The next development is the 4000 lb. H.C. bomb shown in sketch No. 2. Originally this bomb was also fitted with a parachute. Difficulties with the parachute led to the discovery of the hollow drum tail. This tail in conjunction with the spoiler ring gives complete stability in flight. It is stated that the terminal velocity of this bomb is 780 feet per second. This bomb is normally dropped with the standard wind-vane nose fuse. Many bombs of this type have been dropped on enemy territory and to date the Germans have not been able to recover one.

A further development of the 4000 lb bomb Mk. II is shown in drawing R.D. 12992. The dimensions and construction is essentially the same as the Mk. I except for the nose. The nose is slightly rounded instead of conical. Improved functioning is obtained by the use of three nose fuses.

The newest development is a bomb of gigantic proportion. To make handling in the field practicable the bomb is divided into sections. All fuzing is in the nose section. The general arrangement of the bomb is shown in Sketch 3. A tail can be added to the nose section and the bomb used in that form. One or two second sections can be added and then the tail. The sections are bolted together with a large number of substantial bolts. Three nose fuses and also side fuses can be used in the nose section. The exploder tube terminates in a large GH pellet, covered by a relatively thin diaphragm. A similar GH pellet installation is at each end of the second section. Static tests indicate that high order detonation of the entire bomb is achieved by this explosive train.

A photograph of a special trailer used for assembling this bomb and delivering it to the airplane is included in a previous report on Ammunition Supply MA report No. 44586. The trailer is fitted with special crutches on rollers. When the bomb sections are placed on these crutches they can be rotated on the axis and can be moved longitudinally so that the sections can be aligned and joined.

CONCLUSIONS

1. High Capacity bombs are relatively cheap, easy to produce and cause terrific destruction.

2. The design of large size High Capacity bombs must be carefully coordinated with the design of bomber airplanes.

RECOMMENDATIONS

1. That American High Capacity bombs be limited to a maximum 4000 lbs.

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2. That studies be inaugurated in the American Service to determine the necessity for a parachute type H.C. bomb using delay anti-removal and anti-disturbance freezes.

INCLOSURES:
1. Sketch
2. Sketch
3. Drawing No. DD 12992
4. Sketch

E. P. MECHLING,
Major, Ord.
Observer.

No. 44632 1st Ind.

Office of the Military Attache, American Embassy, London, England. September 25, 1941. To: A.C. of S., G-2, War Department, Washington, D.C.

INCLOSURES: n/c

RAYMOND E. LEE,
Brigadier General, U. S. Army,
Military Attache, London.

By

ROBERT A. McCLURE,
Lt. Colonel, G.S.C.,
Intelligence Executive.

From M.A. London Report No. 44632 September 25, 1941.

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RECEIPT FOR SECRET DOCUMENT

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Receipt of the following secret document, from the Assistant Chief of Staff, G-2, War Department, is hereby acknowledged.

Subject: [redacted]

Document No.: _____

From: Acting Assistant Chief of Staff, G-2

Date: [redacted]

original rec'd. McGraw, returned to G-2

Signature: _____

Office: Chief of the Army Air Forces
AC of Air Staff

Date received: 10 41
AAG Received

G-2 Intelligence Branch

Air Section

Note: Two copies to be forwarded with the document, one of which is to be signed and returned.

ana 471.6 (27) A

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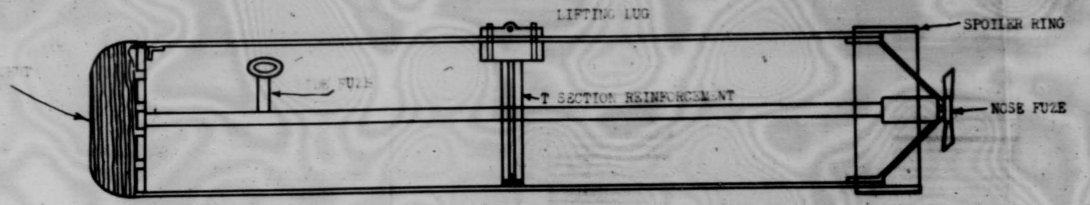

SKETCH # 1

SCALE 1" = 1'

2000 Lb. HIGH CAPACITY HIGH EXPLOSIVE BOMB

Inclosure 1 to Report No. 44632 Military Attache, London

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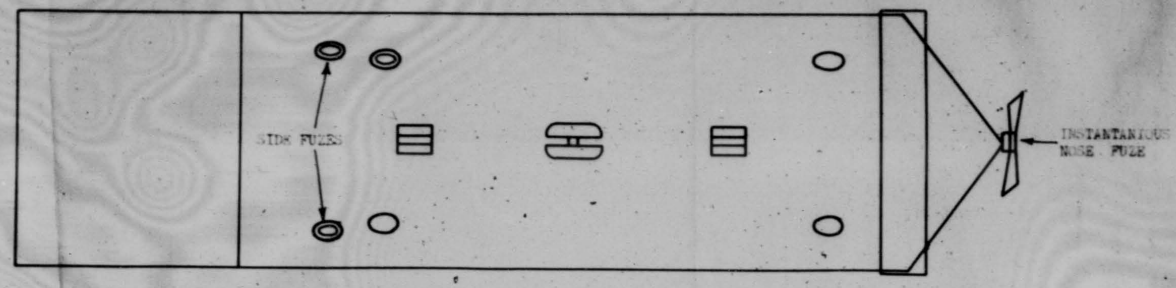

SKETCH #2

BOMB HE AIRCRAFT HC 4000 Lb. MK I

Inclosure 2 to Report No. 44632 Military Attache, London

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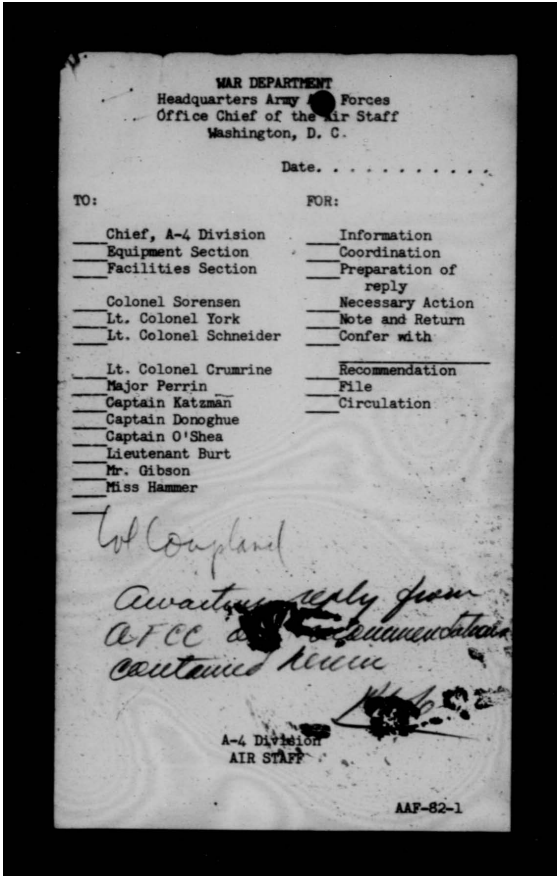

WAR DEPARTMENT
Headquarters Army Air Forces
Office Chief of the Air Staff
Washington, D. C.

Date. . . . . .

TO:	FOR:
___Chief, A-4 Division	___Information
___Equipment Section	___Coordination
___Facilities Section	___Preparation of reply
___Colonel Sorensen	___Necessary Action
___Lt. Colonel York	___Note and Return
___Lt. Colonel Schneider	___Confer with
___Lt. Colonel Crumrine	___Recommendation
___Major Perrin	___File
___Captain Katzman	___Circulation
___Captain Donoghue	
___Captain O'Shea	
___Lieutenant Burt	
___Mr. Gibson	
___Miss Hammer	

Lt Copeland

Awaiting reply from
AFCC on recommendations
contained herein

A-4 Division
AIR STAFF

AAF-82-1

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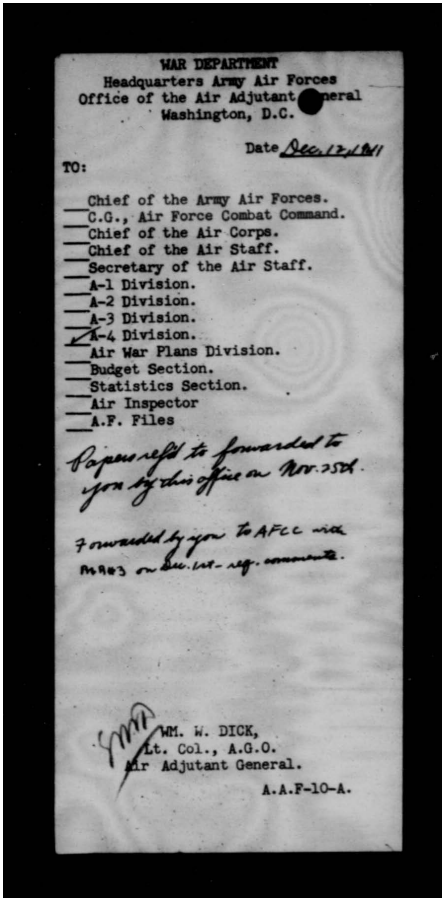

WAR DEPARTMENT
Headquarters Army Air Forces
Office of the Air Adjutant General
Washington, D.C.

Date Dec. 17, 1941

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

Papers rec'd to forwarded to you by this office on Nov. 25th.

Forwarded by you to AFCC with M983 on Dec. 1st - req. comments.

WM. W. DICK,
Lt. Col., A.G.O.
Air Adjutant General.

A.A.F-10-A.

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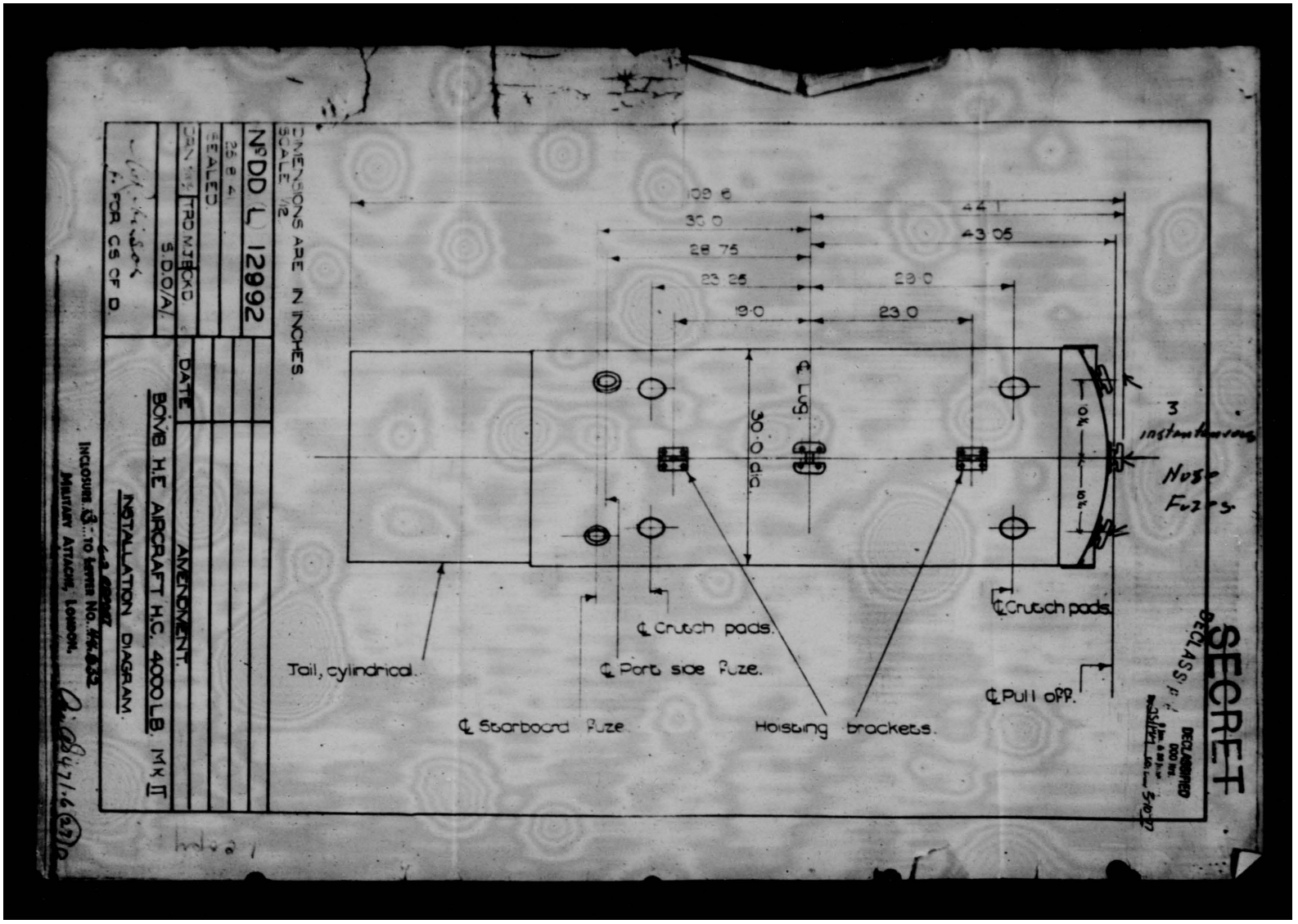

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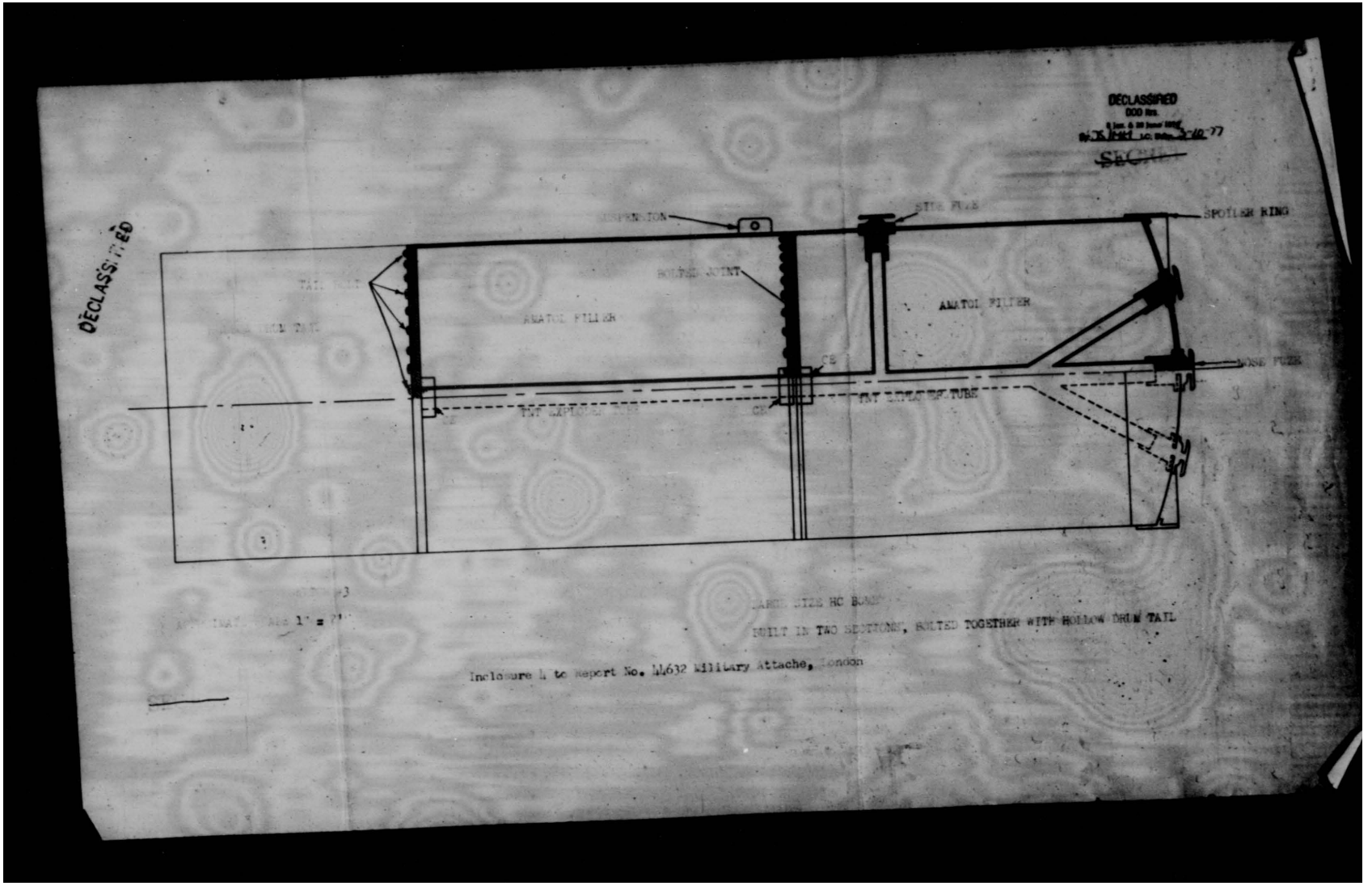

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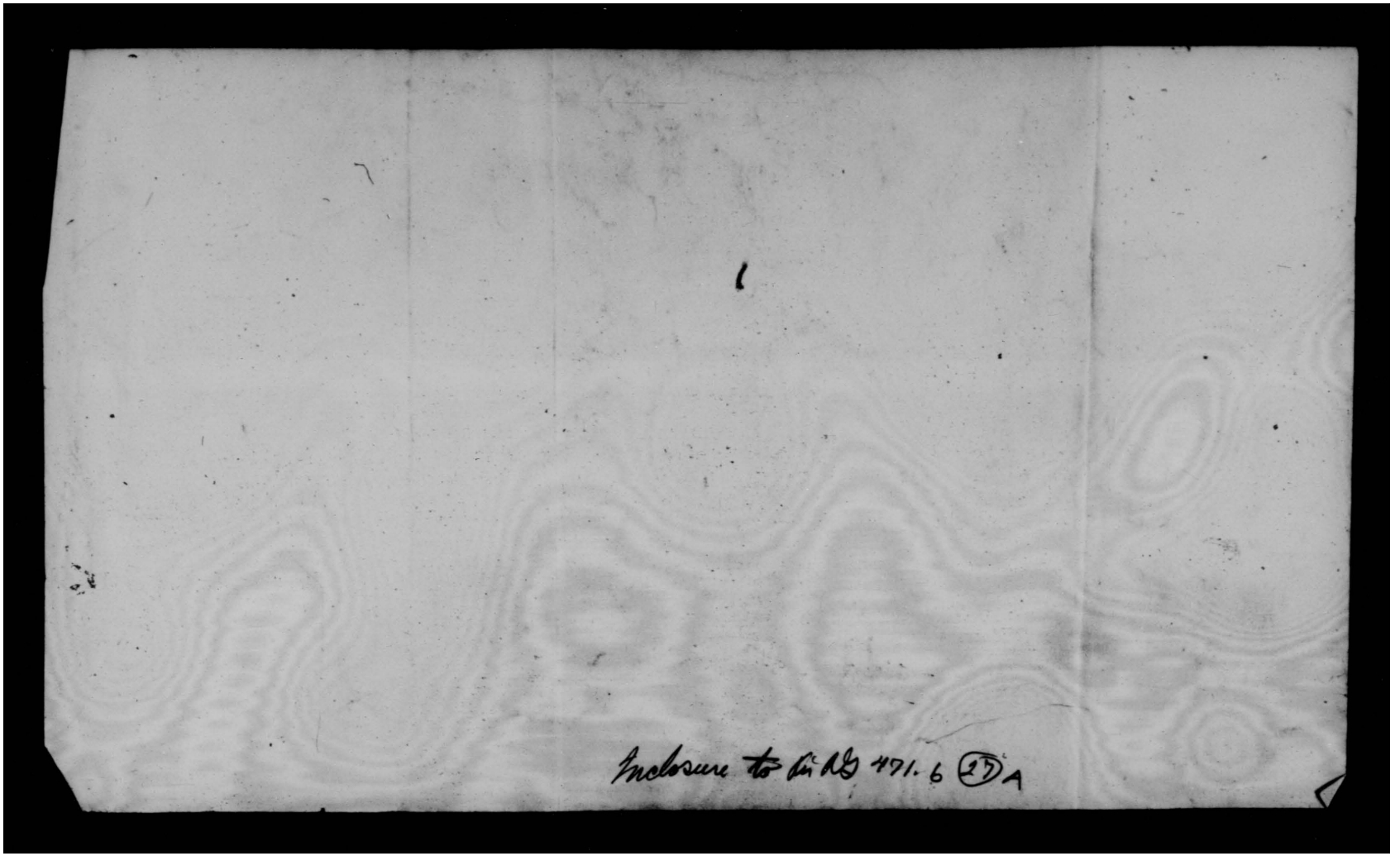

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By JSH/MT VC Date 3-10-77

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British High Capacity Bombs.

AAF/A-4
MFS/cmd

1 AAF C/AS C/AC 1941 10/23 1. The comments of the Air Corps Board, with reference to the attached M.I.D. Report of British High Capacity Bombs are requested.

Dispatched
OCT 23 1941
AAG

Incls:
Cy Memo for A. C/S,G-3,10/16/41.
Cy M.I.D. Report, 9/25/41.
Charts-4.

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C/AS

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OFFICE [redacted] AIR CORPS

ROUTING AND RECORD SHEET

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1953

Note.—A line will be drawn across sheet after each comment.

File No. _____

Tally No. AAF _____

Subject: Standardization of Fuzes for Standard (AN) Demolition and G.P.bombs.

NO.	FROM	TO	DATE	COMMENTS (15-B1) ims
1.	C/AC	Chief, A.A.F.	1941 12/6	1. Attention is invited to attached letter from the Air Corps Proving Ground re standardization of Fuzes for Standard Demolition and G. P. Bombs. 2. The original report on this subject was forwarded your office by R&R dated November 21, 1941. Incl. Ltr. 12/2/41 O.S.F. M. S. F. Brig. Gen. A. C. Executive. 12-6-12-8

471.6 (25) B

Action taken by A3 (Maj. Pitcher)
Send to files
WB.

[illegible] 9 1942
AAG Received

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Page No._____

V-4071, AC.Rev.8/1/41

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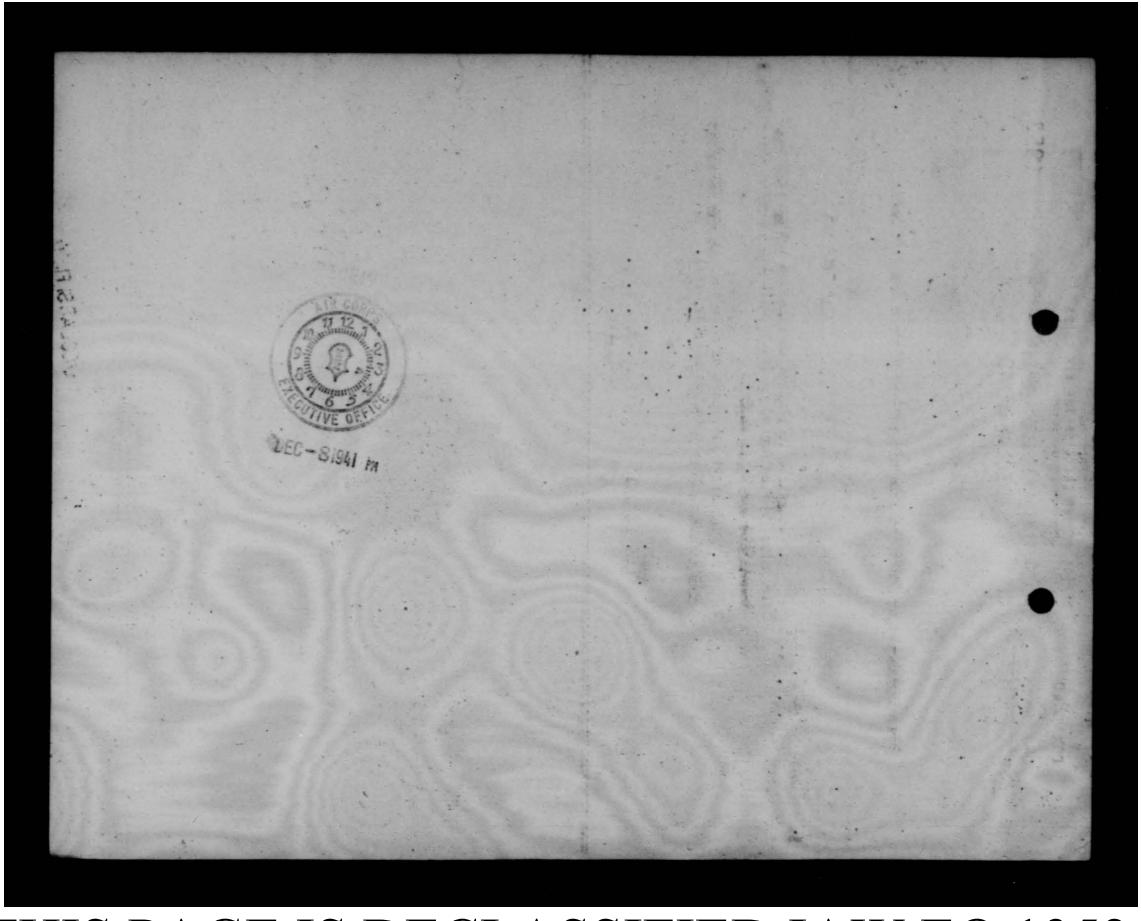

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IN REPLY REFER TO

WAR DEPARTMENT
THE AIR CORPS BOARD
Eglin Field, Florida

(34)

2 December 1941.

SUBJECT: Standardization of Fuzes for Standard (AN) Demolition and G.P. Bombs.

TO: The Chief of the Air Corps, Washington, D. C.

1. Reference is made to the 1st Indorsement from the Air Corps Board, dated November 14, 1941, to letter from the Chief of the Air Corps, dated October 30, 1941, on the above subject. In that indorsement the Air Corps Board expressed the opinion that, with the exception specified therein, the types of fuzes recommended for standardization for the standard (AN) Demolition and G.P. bombs by the inclosure to the basic letter provided a satisfactory fuzing system for these bombs.

2. Reexamination of this correspondence indicates that this office inadvertently overlooked the fact that paragraph 1 b of the inclosure to the basic letter (i.e., letter from the Chief of Ordnance to the Adjutant General, dated October 2, 1941, subject same as above) established a requirement for the Army of one each of the AN-M100A1, M101A1 or M102A1 type of tail fuze, with the 0.10-second delay primer-detonator assembled, for each Demolition and G.P. bomb of the 100-lb. to 2000-lb. size, inclusive.

3. It is the opinion of the Air Corps Board that the Army does not require one each of the AN-M100A1, M101A1 or M102A1 type of tail bomb fuze, with the 0.1-second delay primer-detonator assembled, for Demolition bombs of the 100-lb. to 2000-lb. sizes, inclusive. The special bomb tail fuze (12-second or 45-second delay), reference paragraph 1 e of the inclosure to the above-mentioned basic letter, in conjunction with the AN-M103 nose fuze would provide the desired fuzing arrangement for the attack of all penetrable land targets with Demolition or G.P. bombs fused for delay action. When weather conditions at the target make it necessary, this fuzing arrangement provides a means for dropping the bombs armed from low altitude (less than 1000 ft.) without endangering the dropping airplanes and without loss of effectiveness when the bombs are released from higher altitudes for the following reasons:

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Q. M. C. Form 556 (Old Form 493)
Approved December 1, 1923

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a. In high altitude bombing, with Demolition or G.P. bombs fused for delay action, against penetrable land targets the tail fuse is essentially insurance against failure of the nose fuse to detonate the bomb.

b. On impact with penetrable land targets it is generally accepted that the bomb will come to rest in approximately 0.1 second after impact.

c. When complete penetration is obtained there will be no appreciable difference in effect whether the bomb detonates 0.1 second or 45 seconds after impact.

4. The Army does have a requirement for the AN-M100A1, M101A1 or M102A1 type of tail fuses for 100-lb. to 2000-lb. sizes of Demolition or G.P. bombs, inclusive, for use against the following types of targets:

a. Surface vessels.

b. Impenetrable land targets.

c. Single storied factory buildings (with roofs sufficiently resistant to fuction the tail fuse).

It is believed that against such targets the delay in the tail fuse should be appreciably less than 0.1 second. It is the opinion of the Air Corps Board that the various delays (non-delay, 0.025-second delay and 0.05-second delay) provided in the primer-detonators listed in paragraph 1 c of the inclosure to the above-mentioned basic letter provide an adequate range of delays for these targets.

5. It is recommended that the 1st Indorsement referred to in paragraph 1, above, be amended by adding thereto paragraphs 3 and 4 of this letter.

1527

ROBERT KAUCH,
Colonel, Air Corps,
Director.

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By DNWI, WC, Date 5/18/77

DECLASSIFIED from AC's Report Approved 11-10-41

TABLE OF STANDARD ARMY-NAVY-BRITISH BOMBS AND FUZES
(as of November 4, 1941)

	BOMB TYPES	WEIGHT	STANDARD AN-DESIGNATION	AS PER DRAWING NO.	FUZES TYPE	FUZES DRAWING NUMBER
I.	Armor Piercing	1600 lb.	AN-Mark 1	Navy - 294,198	Tail, AN-Mark 28	Navy-236,220
II.	Semi-Armor Piercing	500 lb.	AN-M58	Ord. - 82-0-61		
					Tail, AN-M101A1	Ord.-73-8-7
		1000 lb.	AN-M59	Ord. - 82-0-62		
					Tail, AN-M102A1	Ord.-73-8-8
III.	General Purpose	100 lb.	AN-M30	Ord. - 82-0-12	Nose, AN-M103	Ord. - 73-8-14
			same basic fuse but different combinations of bombs		Tail, AN-M100A1	Ord.-73-8-3
					*Tail AN-M112	Ord. 73-8-73
		250 lb.	AN-M57	Ord.-82-0-60	Nose, AN-M103	Ord.-73-8-14
					Tail, AN-M100A1	Ord.-73-8-3
					*Tail, AN-M112	Ord.-73-8-73
		500 lb.	AN-M43	Ord.-82-0-27	Nose, AN-M103	Ord.-73-8-14
					Tail, AN-M101A1	Ord.-73-8-7
					*Tail, AN-M113	Ord.-73-8-74
		1000 lb.	AN-M44	Ord.-82-0-28	Nose, AN-M103	Ord.-73-8-14
					Tail, AN-M102A1	Ord.-73-8-8
					*Tail, AN-M114	Ord.-73-8-75
		2000 lb.	AN-M34	Ord.-82-0-16	Nose, AN-M103	Ord.-73-8-14
					Tail, AN-M102A1	Ord.-73-8-8
					*Tail, AN-M114	Ord.-73-8-75
IV.	Depth Bomb	325 lb.	AN-Mark 17	Navy-294,379	Hydro-AN-Mark 24	Navy-233,404
					Nose, AN-Mark 19	Navy-202,656

*Additional Tail Fuses for Use with General Purpose Bombs.

* Recommended 11 second delay action tail standardized for these bombs. At the present time the 46 second delay fuse is standard. This is covered in by

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8 Jan. & 20 June 1972
By: JS/MM J.C. Date 3-10-77

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3. AAF AFCC 1941 AAF/A-4
C/AS 12/1 RCC/ccc

1. Comments and recommendations on paragraph #1 and #2 of the inclosed 1st Indorsement from the Air Corps Board dated 14, November, 1941 are desired by this office.

Dispatched
DEC 3 1941
AAG

Incls:
Ltr fr C/AS to Eglin Field
10/24/41 w/1 Ind. & 1 Incl.
Cpy of Ltr fr O/CO to TAG
10/2/41, abv sub w/2 Inds.

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	
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E.O. Date 5-18-77

	Chief	1941	
2.	GAC	A.A.F.	11/21

(3-05) ims

Comments of the Air Corps Board are contained in attached 1st Indorsement.

Incl. n/c

Mg G. F.
Brig. Gen., A.C.
Executive.

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(3-05)

WAR DEPARTMENT
OFFICE OF THE CHIEF OF THE AIR CORPS
WASHINGTON

October 24, 1941.

SUBJECT: Standardization of Fuzes for Standard (AN) Demolition and G.P. Bombs.

TO: Director, Air Corps Board, Eglin Field, Valpariso, Florida.

1. The Chief of the Army Air Forces desires the Air Corps Board's comments on the matter contained in paragraph 1, attached copy of letter on Standardization of Fuzes for Standard Demolition and G. P. Bombs.

By order of the Chief of the Air Corps:

/s/ Ralph F. Stearley
Ralph F. Stearley,
Lt. Colonel, Air Corps,
Assistant Executive,
Training & Operations Division.

Incl.
Ltr. fr Ch. Ordnance
to TAG thru Under Sec. of
War, 10/2/41, w/2 Inds.

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1st Ind. (34)

THE AIR CORPS BOARD, Eglin Field, Florida, 14 November 1941. TO: The Chief of the Air Corps, Washington, D. C.

1. It is the opinion of the Air Corps Board that the types of fuzes recommended as standard for the Army-Navy standard types of demolition and general purpose bombs, as listed in paragraph 1 of the attached letter from the Chief of Ordnance dated 2 October 1941 on Standardization of Fuzes for Standard (AN) Demolition and G.P. Bombs, provide a satisfactory fuzing system for effectively attacking all types of targets except low (100 to 300 ft. altitude) level attacks against surface vessels. Recent reports from abroad stress the exceptional accuracy and effectiveness of this method of attack against unarmed and lightly armed surface vessels. It appears that a tail fuze having a delay in the vicinity of two or five seconds would be required for that type of attack. If the tactics of the Air Force Combat Command contemplate low level attacks against surface vessels and sufficient data are not available from foreign sources to definitely prescribe the fuze delay necessary for that method of attack, it is recommended that the necessary tests be conducted to determine the desired delay and a requirement therefor be established.

2. The selective arming of bomb fuzes in flight is necessary to the effective utilization of the fuzes listed in attached communication.

3. It is believed that the adoption of a single delay in the special fuze (12 sec. or 45 sec. delay) for both the United States and British services (par. 1, e, of inclosed letter) is desirable and practicable. It is recommended that this question be referred to the Air Force Combat Command for a statement of the maximum delay required for this fuze.

ROBERT KAUCH,
Colonel, Air Corps,
Director.

Incl. n/c

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DOD Dir.
4 Jan. & 30 June 1974
By JD/Mrl LC Date 3-6-77

WAR DEPARTMENT

OFFICE OF THE CHIEF OF ORDNANCE

Adelman/mfm

To Insure prompt attention in reply refer to

WASHINGTON

O.O. 334.8/6060
Attention of
Ammunition Division
Industrial Service

October 2, 1941

Subject: Standardization of Fuzes for Standard (AN) Demolition and G.P. Bombs.

TO: The Adjutant General. Thru: The Under Secretary of War.

1. There is being forwarded herewith a copy of the report of the subcommittee of the Ordnance Technical Committee dated September 23, 1941, which report has been approved by the Ordnance Committee and by the Chief of Ordnance and is recorded as Item 17282, Ordnance Committee Minutes. This action recommends types of fuzes for demolition and general purpose bombs of the Army-Navy standard types ("AN"). The recommendations are as follows:

a. that the nose and tail fuzes referred to above be classified as "AN" standard for demolition and general purpose bombs, as follows:

(1) Fuze, Bomb, Nose AN-M103 (for bombs 100-lb. to 4000-lb., Inclusive).

(2) Fuze, Bomb, Tail AN-M100A1 (for bombs 100-lb, and 250-lb.)
Fuze, Bomb, Tail AN-M101A1 (for bombs 500-lb.)
Fuze, Bomb, Tail AN-M102A1 (for bombs 1000-lb., 2000-lb. and 4,000-lb.)

b. that tail fuzes for bombs 100-lb. to 2000-lb., inclusive, be issued with the 0.10 second delay primer-detonator assembled and that one fuze be procured for each bomb.

c. that the requirements for extra primer-detonators non-delay, 0.025-second delay and 0.050-second delay be made the subject of additional study and a separate report.

d. that the tail fuze for the 4000-lb. bomb (thin case) be issued with the non-delay primer-detonator assembled and that this fuze with one action meet all requirements for this bomb.

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October 2, 1941

Subject: Standardization of Fuzes for Standard (AN) Demolition and G. P. Bombs.

TO: The Adjutant General. Thru: The Under Secretary of War.

e. that the special fuze (12-second or 45-second delay) be made the subject of a subsequent report in view of the fact that the Joint Sub-Committee is conducting a re-study of this type to see whether a single length of delay cannot be decided upon to meet requirements of both the United States and British Service.

f. that the types of fuzes for semi-armor piercing bombs be decided upon at the time that the bombs are standardized. The bombs are being designed for the AN-M101A1.

2. It is recommended that approval be given to this action.

/s/ Earl McFarland
Brigadier General
Assistant to the Chief of Ordnance

1 Inclosure:

Cy Item 17282, O.C.M.

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DOD ltrs.
8 Jan. & 20 June 1974
By: JS/RM LC, Date 3-10-77

1st Ind.

War Department, Office of the Under Secretary, Washington, D. C., October 4, 1941. To:, The Adjutant General, Washington, D. C.

1. The following items are cleared for procurement as to type:

Fuze, Bomb, Nose AN-M103
Fuze, Bomb, Tail AN-M100A1
Fuze, Bomb, Tail AN-M101A1
Fuze, Bomb, Tail AN-M102A1

2. The Ordnance Department is charged with the procurement of these items.

By direction of the Under Secretary of War:

/s/ Byron A. Falk,
Lt. Colonel, Signal Corps,
Chief, Standards Division.

Incl:
No Change

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SUBJECT: Standardization of Fuzes for Standard (AN) Demolition and G. P. Bombs.

AG 471.82 (10-2-41)MC-D 2nd Ind. JMH/gjw - 1712

War Department, A. G. O., October 11, 1941. - TO: Chief of Ordnance

The recommendations contained in Basic letter are approved.

By order of the Secretary of War:

S/ Carl Robinson
Adjutant General.

1 Incl. n/c

COPIES TO: The Under Secretary of War,
Ref. his 1st Ind., 10-4-41,
to TAG.
Chief of the Army Air Forces,
w/cys of basic & 1st Ind.

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Standardization of Fuses for Standard (AN)
Demolition and G. P. Bombs.

AAF/A-4
MFS/ccc

1 AAF C/AC 1941 1. The comments of the Air Corps Board are desired on
C/AS 10/17 the matter contained in paragraph 1, basic communication.

1 Incl. --- Copy of CS
Ltr frm O/CO to TAG C/AS
10-2-41, abv subj w/2 Inds.

471.6 (25)

Dispatched
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Air Adjutant General

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WAR DEPARTMENT
WAR DEPARTMENT GENERAL STAFF
SUPPLY DIVISION, G-4
WASHINGTON, D.C.

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8 Jan. & 20 June 1974
By: JS IMM LC; Date 3-10-77

G-4/22396-90

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NOV 14 1941

MEMORANDUM FOR THE CHIEF OF THE ARMY AIR FORCES:

Subject: Bomb Procurement Program for Defense Aid Airplanes.

1. The unplanned-for diversion of bombs that is referred to in the attached memorandum is a necessary complement of an unforeseen requirement for the transfer of airplanes. Such diversion will necessarily dislocate the timing of bomb deliveries that have been coordinated with airplane deliveries for the Army Air Forces.

2. The entire matter of bomb deliveries is dependent upon the availability of explosives, and British procurement of bombs is based upon such diversion of T. N. T. as is authorized, plus a comparatively small quantity procured from British-controlled sources. Currently, some 5,000 bombs (500# demolition) are being loaded for the British with T. N. T. furnished by the British without interference with Air Force supply.

3. An adjustment of the T. N. T. supply has recently been agreed upon, and provision will be made for acceleration of bomb supply with funds from the second Lend-Lease appropriation which are programmed, for bombs, as follows:

137,000	1900-lb. G. P. Bombs)	
276,000	1000-lb. G. P. Bombs)	$220,000,000
192,000	500-lb. SAP Bombs)	

S. J. Chamberlin
S. J. CHAMBERLIN,
Colonel, General Staff Corps,
Acting Assistant Chief of Staff.

Inclosures:
Memo fm Ch/AAF
10-11-41 w/1 incl.

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WAR DEPARTMENT
OFFICE OF THE CHIEF OF THE ARMY AIR FORCES
WASHINGTON

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DOD ltrs.
8 Jan. & 20 June 1974
By JSMH1 UC: Date 3-10-77

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OCT 11 1941

MEMORANDUM FOR THE ASSISTANT CHIEF OF STAFF, G-4:

Subject: Bomb Procurement Program for Defense Aid Airplanes.

1. Attention is invited to existing provisions for bomb procurement wherein bombs and ammunition are procured by the Chief of the Ordnance for airplanes scheduled for delivery to the Army Air Forces. The munitions procurement is based on the postulated life and mission distribution of airplanes as set forth in the Minutes of the Subcommittee of the Air Corps Technical Committee. (Copy attached)

2. Under the provisions of paragraph 1 above and with the added consideration of early stockage of defense reserves, the Chief of Ordnance procures munitions for the Army Air Forces appropriate to the number of planes scheduled for delivery to the Army Air Forces.

3. The British Government is apparently procuring munitions for airplanes on its own contracts and Defense-Aid contracts as separate items. Presumably the British have some formula for munitions procurement such as anticipated combat life of airplanes or other plan.

4. Recently Defense-Aid diversions have included sending airplanes under Defense-Aid contracts to nations other than Britain, such as Russia. The normal expectation appears to be that, when the airplanes do not go to Britain, that the Army provide bombs.

5. It is desired to emphasize that this unplanned for providing of bombs upsets the timing of bomb deliveries that have been coordinated with airplane deliveries for the Army Air Forces; and, further, it can cause an ultimate deficit in bombs that have been procured on the basis of the postulated combat life of airplanes in the Army Air Forces.

6. It is recommended that provision be made for accelerating bomb production in anticipation of further bomb diversion to anti-

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Axis efforts.

7. It is further recommended that an overall bomb procurement plan be drawn up, in conjunction with the British if necessary, so that agencies of the War Department may know where and what bombs are being procurred for Defense Aid airplanes.

Incl:
Copy of Minutes of Subcommittee
Meeting of A.C. Tech. Com. 5/5/41.

For the Chief of the Army Air Forces:

CARL SPAATZ
Brig. General, Air Corps,
Chief of The Air Staff.

OCT 13 1941
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IN IN
G-4 DIVISION
WAR DEPT. GEN. STAFF

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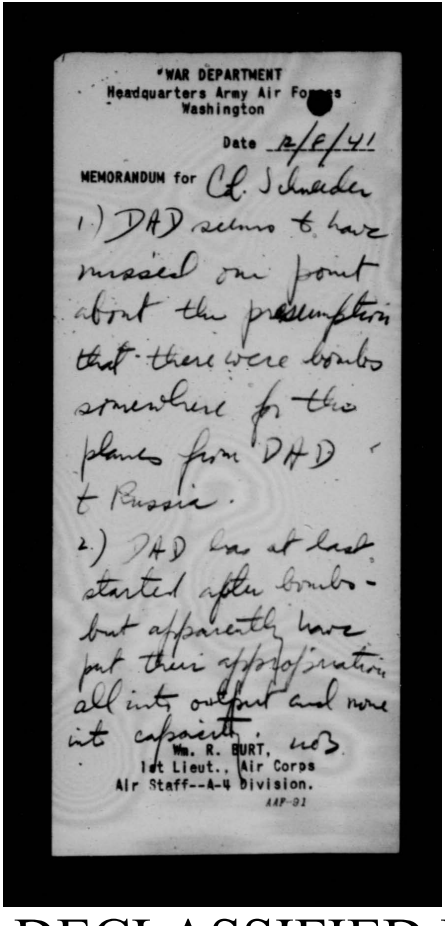

WAR DEPARTMENT
Headquarters Army Air Forces
Washington

Date 12/6/41

MEMORANDUM for Col. Schneider

1) DAD seems to have missed one point about the presumption that there were bombs somewhere for the planes from DAD to Russia.

2) DAD has at last started after bombs - but apparently have put their appropriation all into output and none into capacity. WRB

Wm. R. BURT,
1st Lieut., Air Corps
Air Staff--A-4 Division.

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8 Jan. & 20 June 1974
By JS/MM LC; Date 3-10-77

AAF/A-4
WRB/emd
Written October 9, 1941

OCT 11 1941

air ab 471.6 (24)

MEMORANDUM FOR THE ASSISTANT CHIEF OF STAFF, G-4:

Subject: Bomb Procurement Program for Defense Aid Airplanes.

1. Attention is invited to existing provisions for bomb procurement wherein bombs and ammunition are procured by the Chief of the Ordnance for airplanes scheduled for delivery to the Army Air Forces. The munitions procurement is based on the postulated life and mission distribution of airplanes as set forth in the Minutes of the Subcommittee of the Air Corps Technical Committee. (Copy attached)

2. Under the provisions of paragraph 1 above and with the added consideration of early stockage of defense reserves, the Chief of Ordnance procures munitions for the Army Air Forces appropriate to the number of planes scheduled for delivery to the Army Air Forces.

3. The British Government is apparently procuring munitions for airplanes on its own contracts and Defense-Aid contracts as separate items. Presumably the British have some formula for munitions procurement such as anticipated combat life of airplanes or other plan.

4. Recently Defense-Aid diversions have included sending airplanes under Defense-Aid contracts to nations other than Britain, such as Russia. The normal expectation appears to be that, when the airplanes do not go to Britain, that the Army provide bombs.

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6. It is recommended that provision be made for accelerating bomb production in anticipation of further bomb diversion to anti-

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Axis efforts.

7. It is further recommended that an overall bomb procurement plan be drawn up, in conjunction with the British if necessary, so that agencies of the War Department may know where and what bombs are being procurred for Defense Aid airplanes.

For the Chief of the Army Air Forces:

Incl:
Copy of Minutes of Subcommittee Meeting of A.C. Tech. Com. 5/5/41.

CARL SPAATZ
Brig. General, Air Corps,
Chief of The Air Staff.

Dispatched
OCT 13 1941
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DOD Dir. 5200.9 8 Jan. & 30 June 1971
By JS MMT Date 5-10-77

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MINUTES OF
SUBCOMMITTEE OF THE
AIR CORPS TECHNICAL COMMITTEE
ON
REVISION OF AIR CORPS - ORDNANCE REQUIREMENTS

MAY 5, 1941

The Subcommittee of the Air Corps Technical Committee met in the Office, Chief of the Air Corps, May 5, 1941, in accordance with the following directive:

"Memorandum to: Lt. Col. George C. McDonald, Air Corps April 22, 1941

Subject: Basis for Computation of Air Corps Requirements for Items of Air Corps - Ordnance Equipment -- Subcommittee of Air Corps Technical Committee.

1. You are hereby appointed chairman of the Subcommittee of the Air Corps Technical Committee for the purpose of reviewing the Air Corps requirements for items of Ordnance equipment. Other members of this subcommittee are as follows:

Maj. J. G. Moore, A.C., Mat. Div., O.C.A.C.
Maj. Wm. L. Ritchie, A.C., GHQ Air Force
Maj. N. B. Ames, A.C.R., T. & O. Div., O.C.A.C.
Mr. A. Adelman, Office, Chief of Ordnance

Though not appointed as members of this committee, it is desired that you call as witnesses and request the advice and aid of: Lt. Col. R. C. Coupland, Ordnance (Liaison Officer with the Air Corps), and Lt. Col. Grandison Gardner, A.C., Mat. Division, O.C.A.C.

2. Information received from Europe based on active military operations indicates that contemplated procurements of Ordnance materiel (ammunition, flares, etc.) may be excessive, if present established bases for computation of requirements are followed. It is particularly desired that your subcommittee review:

a. O.C.A.C. Policy No. 203, dated August 5, 1940, relating to pyrotechnic signals and flares.
b. A.C. letter to The Adjutant General dated September 25, 1940, subject: "Bases for Computation of Air Corps Requirements for Items of Air Corps - Ordnance Equipment."

and make recommendations as to such changes therein or additions thereto as considered appropriate, to the end that the Ordnance Department may procure all ammunition requirements of the Air Corps. This matter should be acted upon as early as practicable, as the Ordnance Department is now in the process of expanding its facilities throughout the United States for the production of all types of Ordnance equipment.

O. P. ECHOLS, Brig. Gen., U.S.A.
Chairman, Air Corps Technical Committee"

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PRESENT: All the members of the Subcommittee and advisory members as follows:
Lt. Col. E. A. Lynn, Ordnance Department, Hq. G.H.Q. Air Force
Major F. M. Thrun, Ordnance Department, War Plans Division, G.S.
Major R. B. Williams, Air Corps, 2nd Bomb. Group, G.H.Q. Air Force
Colonel Robert T. Knuch, Air Corps Board
Lt.Col.C.M.Kellogg, C.W.S., Office, Chief Chemical Warfare Service
Lt.Col.C.E.Loucks, C.W.S., Office, Chief Chemical Warfare Service
Major H. R. Buckley, Air Corps, T. & O. Division, O.C.A.C.

The Subcommittee reviewed the Air Corps bases for the computation of requirements for standard Air Corps - Ordnance items as contained in Air Corps letter to The Adjutant General dated September 25, 1940, subject: "Bases for computation of Air Corps Requirements for Items of Air Corps - Ordnance", and Subcommittee Meeting on Revision of Air Corps -Ordnance Requirements, dated August 14, 1940, and recommends that upon approval the following supersede all previous bases of computation.

The Attrition rates shall be as follows:

(1) Theatre of Operations - all types 20% a month.

(2) Zones of Interior and Overseas Departments - all types 3% a month.

Mission rates shall be as follows:

(1) Heavy Bombardment - 8 missions per plane per month, of which 5 will be bombing missions.

(2) Medium bombardment, Light bombardment, Transports and Amphibians - 15 missions per plane per month, 10 of the 15, medium; and 12½ of the 15, light bombardment shall be bombing missions

(3) All other types - 20 missions per plane per month.

Load: Computations to be based on the maximum alternate load.

Ammunition requirement shall be computed to provide a reserve of ammunition for each airplane procured, based on the attrition and mission rates stated above.

Item
1. Gun, machine, Browning, aircraft, caliber .30, M2, fixed, (Drg. 51-57).
2. Gun, machine, Browning, aircraft, caliber .30, M2, flexible (Drg. 51-76).
3. Gun, machine, Browning, aircraft, caliber .50, M2, fixed (Drg. 51-72).
4. Gun, machine, Browning, aircraft, caliber .50, M2, flexible (Drg.51-73).

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5. Gun, automatic, 37 mm., M4 (Drg. 51-92).
6. Gun, automatic, 20 mm., M1 (Drg. 54-105).

The basis for the computation of requirements of these items is established by airplane model specifications listing the number of each carried by each airplane by type and model designation. No other basis can be established. The Chief of the Air Corps will keep the Ordnance Department advised of the number of each of the above items required for each type and model airplane.

7. Ammunition (Fixed) 37 mm HE
8. Ammunition (Fixed) 20 mm HE
9. Ammunition (Fixed) 20 mm AP
10. Cartridge .50 cal. AP
11. Cartridge .50 cal. Tracer
12. Cartridge .30 cal. AP
13. Cartridge .30 cal. Tracer

The basis for the computation of requirements of these items is established by airplane model specifications setting forth the number of rounds carried for each gun installed by airplane type and model designation. No other basis can be established. The Chief of the Air Corps will keep the Ordnance Department advised of the ammunition loads specified for each type and model airplane.

An ammunition expenditure rate of 35% per weapon per mission is recommended.

The following percentage distribution by types of the above ammunition is recommended for procurement:

a. Caliber .30 aircraft machine gun .. 80% AP; 20% tracer.
b. Caliber .50 aircraft machine gun .. 80% AP; 20% tracer.
c. 20 mm. aircraft gun ..... 40% HE; 60% AP.
d. 37 mm. aircraft gun ..... 100% HE.

Item

14. Shotgun, Remington or Winchester, sporting 12-gauge or equal (commercial standard).
15. Powder, aluminum, bronze, Type A (Federal Spec. TT-A-476) with 1-liter glass Florence flasks.
16. Bomb, practice, 20 lb. fragmentation, stabilized.
17. Bomb, practice, pursuit aviation, simulating service, 20-lb., M45.
18. Bomb, practice, pursuit aviation, markmanship (miniature) M36.
19. Bomb, practice, bombardment aviation, simulating service, 100-lb., M39.
20. Cartridge, ball, caliber .30, M1 (Drg. 310985).

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21. Cartridge, dummy, caliber .30, M1906. (B6252).
22. Cartridge, ball, caliber .50, M1 (Drg. C44820).
23. Ammunition, practice, 20 mm.
24. Ammunition, practice, 37 mm.
25. Shell, shotgun, 12-gauge (Commercial Standard No. 9 shot).
26. Bomb, practice, M38-A2.
27. Targets, Pigeons, clay.

Computations of requirements for the above items must be based on the amount and kind of training contemplated and, in some cases, the place where specified training is to be conducted. It is, therefore, not feasible to establish a permanent basis for the computation of requirements in these training items based simply upon availability of personnel or equipment. Requirements for these training items will, therefore, be calculated by the Training & Operations Division of the Office, Chief of the Air Corps, and furnished to the Ordnance Department for inclusion in each annual or supplemental estimate.

Item
28. Pistol, pyrotechnic, M2, (Drg. 42-26).

A basis for computation of requirements of this item at the rate of one per life raft and one per airplane of the following types is recommended:

Heavy Bombardment
Medium Bombardment
Light Bombardment
Pursuit (all types)
Reconnaissance (Air Force and Army)
Observation, Corps & Division
Amphibian
Cargo or Transport

Item
29. Flare, aircraft, parachute, M9 (Drg. 78-0-11).

The following basis for computation of requirements is recommended:

5 M-9 observation flares per airplane of the following types:
Corps & Division Observation
Army Reconnaissance

Expenditure rate ..... 50% per mission.

Item
30. Signal, aircraft, red star, parachute, M11 (Drg. 78-0-10).
31. Signal, aircraft, red star, cluster, M14 (Drg. 78-0-14).
32. Signal, aircraft, white star, blinker, parachute, M15 (Drg. 78-0-16).
33. Signal, aircraft, green star, blinker, parachute, M16 (Drg. 78-0-16).

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The following basis for computation of requirements is recommended:

Type of Airplane	Load Assorted Signals	Expenditure Rate Per Mission
Heavy bombardment	9	20%
Medium bombardment	9	20%
Light bombardment	9	20%
Pursuit (all types)	4	25%
Air Force Reconnaissance	9	20%
Army Reconnaissance	15	75%
Observation, Corps & Division	15	75%
Amphibian	20	20%
Cargo or Transport	9	1%

Procurement to be distributed equally between the four signals.

In addition: 5 M-11 Signals, aircraft, per life raft -- expenditure rate ..... 0.

Item
34. Pistol, automatic, caliber .45, M1911, A1 (Drg. 43-8).

Requirements for this item are tied in with the problem of providing means to assure adequate local security for Air Corps commands. This problem is under study in the Office, Chief of the Air Corps, and it is probable that the provision of a proportion of other organic weapons, such as rifles, sub-machine guns, light machine guns, et cetera, will be recommended. The basis for computation of requirements for pistols for Air Corps troops shall be reduced from the basis of one (1) per officer, warrant officer, flying cadet, and enlisted men of the Air Corps to: one (1) per officer, warrant officer, and noncommissioned officer of the first three grades.

Item
35. Cartridge, ball, pistol, caliber .45 M1911 (Drg. B503).

The standard Army allowance of this ammunition per pistol is recommended.

Item
36. Bombs, Armor Piercing.
37. Bombs, Semi-armor piercing, 1000 lb.
38. Bombs, Semi-armor piercing, 500 lb.
39. Bombs, general purpose, 2000 lb.
40. Bombs, general purpose, 1000 lb.
41. Bombs, general purpose, 500 lb.
42. Bombs, general purpose, 250-300 lb.
43. Bombs, general purpose, 100 lb.
44. Bombs, chemical, 100 lb.
45. Bombs, Chemical, 20 lb.
46. Bombs, fragmentation, stabilized.
47. Bombs, incendiary 25-40 lb.
48. Bombs, incendiary, 4 lb. or smaller.
49. Bombs, incendiary, 100 lb. gasoline.
50. Bombs, depth, Navy Type.

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It is recommended that the present basis for computation of requirements for these items as established by the War Department in letter to the Chief of Ordnance, May 27, 1940 -- subject: "Airplane Bomb Reserves" -- A.G. 471.6 (11-2-39) M-D be amended to read as follows:

a. The War Reserve requirement for Armor Piercing bombs shall be fixed at 15,000 tons.

b. The War Reserve requirements for Depth Bombs, Navy Type, shall be fixed at 3,000 tons.

c. The requirement for the War Reserve in Semi-Armor Piercing bombs, 1,000 and 500 lb. types, shall be computed as 30% of the total requirement for 500 and 1,000 lb. bombs.

d. The requirement for the War Reserve in General Purpose Demolition bombs and other types shall be computed independently of the Armor Piercing bombs, and Depth Bombs, on an airplane mission basis as follows:

(1). For Heavy and Medium Bombardment:

2000 lb.	8%	
1000 lb.	15%	(70% GP; 30% SAP)
500 lb.	23%	(70% GP; 30% SAP)
250-300 lb.	20%	
100 lb.	9%	
Incendiaries	20%, of which	
10% shall be 100 lb. gasoline filled		
20% shall be 25 to 40 lb.		
70% shall be 4 lb. or smaller.		

(2) For Light Bombardment, all types:

1000 lb.	10%	(70% GP; 30% SAP)
500 lb.	18%	(70% GP; 30% SAP)
250-300 lb.	20%	
100 lb.	18%	
20 lb. fragmentation,		
stabilized ..	10%)	17%
parachute ...	7%)	
100 lb. chemical ...	8%	
30 lb. chemical	4%	
Incendiaries	5%	

(3) Amphibians:

1000 lb.	25%	(70% GP; 30% SAP)
500 lb.	50%	(70% GP; 30% SAP)
100 lb.	25%	

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(4) Requirements of bomb reserves for all other types of airplanes will be computed on the basis of assigned bombing missions per month and in types to be determined by the Chief of the Air Corps, predicated upon the bombs which such airplanes are equipped to carry.

e. The requirement for the War Reserve of smoke tanks and chemicals shall provide for five missions for each airplane capable of carrying this equipment.

Item
51. Signal, drift.

The following basis for computation requirements is recommended:

Load per heavy bombardment and reconnaissance (long range) and amphibian airplane 10
Load per medium bombardment and reconnaissance (medium) airplane 7
Expenditure rate - 10% per airplane of the above types per mission.

52. Flare, aircraft, landing, parachute, M8A1 (Drg. 78-0-7)

It is recommended that this item be eliminated for future procurement other than for training type aircraft.

53. Flare, aircraft, parachute, bombing and reconnaissance.

An expenditure rate of one (1) flare per mission per airplane of the following types is recommended:

Heavy bombardment
Medium bombardment
Light bombardment
Air Force reconnaissance
Army reconnaissance
Observation, Corps & Division.
Amphibian

Item
54. Bomb, photo-flash.

The following basis for computation of requirements is recommended:

Army reconnaissance.
Observation, Corps & Division
Air Force Reconnaissance
Bombardment

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Expenditure rate one (1) per mission per airplane of the Observation, Corps & Division and Army Reconnaissance types, and an expenditure of .25 per mission per airplane of Air Force Reconnaissance and Bombardment types.

Item
55. Signal, distress, (smoke grenade, M8).

The following basis for computation of requirements is recommended:

Load one (1) per combat airplane of all types.
Expenditure rate - 0.

/s/ George C. McDonald

GEORGE C. McDONALD
Lt. Col., Air Corps
Chairman, Sub-Committee of Air
Corps Technical Committee

/s/ John G. Moore

J. G. MOORE
Major, Air Corps
Member

/s/ Norman B. Ames

N. B. AMES
Major, Air Corps
Member

/s/ Wm. L. Ritchie

W. L. RITCHIE
Major, Air Corps
Member

/s/ A. Adelman

A. ADELMAN
Office, Chief of Ordnance
Member

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CONCURRENCES:

Chief, Materiel Division	concurs	/s/ (O.P.E.)
Chief, Plans Division	concurs	/s/ (C.S.)
Chief, T & O Division	concurs	/s/ (R.F.S.)
C. G., GHQ Air Force	concurs	/s/ (E.L.N.)

APPROVED:

/s/ O. P. Echols
O. P. ECHOLS
Brigadier General, Air Corps
Chairman, Air Corps Technical Committee.

APPROVED:

/s/ Geo. H. Brett
G. H. BRETT
Major General, Air Corps
Acting Chief of the Air Corps.

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Final Action Recommended.

The Secretary of War directs:

1. That the attached minutes of the Subcommittee meeting of the Air Corps Technical Committee on the Revision of Air Corps - Ordnance Requirements be approved as amended with the following additions:

a. That mission rate for amphibian airplanes shall be established as fifteen (15) missions per plane per month, of which five (5) shall be bombing missions.

b. That the mission rate for pursuit aircraft equipped to carry bombs shall be established at twenty (20) missions per month, of which two and one-half (2½) missions shall be bombing missions.

2. That this correspondence be returned to The Chief of the Air Corps directing the necessary distribution, including:

a. One copy to be forwarded to The Chief of Ordnance inviting attention to the increasing requirements for .50 caliber ammunition for training purposes and directing that the report be examined with a view to effecting such changes in the future expenditure programs as may be deemed advisable.

b. One copy to be forwarded to The Chief of the Chemical Warfare Service inviting attention to paragraph a., page 7, which shall be used as a basis for procurement of the items contained therein.

/s/ Geo. H. Brett
G. H. BRETT
Major General, Air Corps
Chief of the Air Corps

JULY 22, 1941
APPROVED AS AMENDED
By order of the Secretary of War
R.C. MOORE
Deputy Chief of Staff
/s/ Walter B. Smith
by WALTER B. SMITH
Maj., G.S.C., Asst. Sec. W.D.G.S.

Noted-DEPUTY CHIEF OF STAFF

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DOD. ltrs.
8 Jan. & 20 June 1974
By: JS/MM LC; Date 3-10-77

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MINUTES OF
SUBCOMMITTEE OF THE
AIR CORPS TECHNICAL COMMITTEE
ON
REVISION OF AIR CORPS - ORDNANCE REQUIREMENTS

AMENDMENT A -- SEPTEMBER 17, 1941.

The Secretary of War directs:

1. That the basis for computation of Air Corps requirements for items of Air Corps - Ordnance equipment as published in Minutes of the Subcommittee of the Air Corps Technical Committee, May 5, 1941 as approved July 22, 1941, are amended as follows:

a. Under item 8. delete "Ammunition (fixed) 20 mm. HE"-, and add: "Ammunition (fixed) 20 mm. HE - Incendiary."

b. Add item 11.a. Cartridge .50 caliber - Incendiary.

c. Add item 13.a. Cartridge .30 caliber - Incendiary.

d. On page 3 under the sentence "The following percentage distribution by types of the above ammunition is recommended for procurement", change a. from Caliber .30 aircraft machine gun - 80% AP; 20% tracer to: a. Caliber .30 aircraft machine gun - 50% AP; 30% Incendiary and 20% Tracer.

e. Under b. Caliber .50 aircraft machine gun - 80% AP; 20% tracer, change to: b. Caliber .50 aircraft machine gun - 50% AP; 30% Incendiary and 20% Tracer.

f. Under c. 20 mm. aircraft gun - 40% HE and 60% AP, change to: c. 20 mm. aircraft gun - 40% HE - Incendiary and 60% AP.

g. On page 5 under the sentence "The following basis for computation of requirements is recommended" under type of Airplane add after "Light Bombardment" - "Night Interceptor"; under Load - Assorted Signals - 9, and under Expenditure Rate Per Mission, 20%.

Approved September 11, 1941
By order of the Secretary of War
R. C. MOORE
Deputy Chief of Staff

By M. D. TAYLOR
Major, G.S.C., Asst. Sec. W.D.

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DOD Ltr.
2 Jan. & 30 June 1974
By: JS/PM LC: Date 3-10-77

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Subject: Tactical Requirements for Bomb Development.

471.6 (22)

AAF/A-S
OSB-opb

6. AAF C/AS CS/AFCS 11/22 1. To note and return.

1 Incl. n/c

CS
C/AS

Dispatched
NOV 27 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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Air AB 471.6 (22)

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DOD Dirs
6 Jan. & 30 June 1954
By [illegible] NC, Date 3-10-77

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Subject: Tactical Requirements for Bomb Development.

1 See file — AAF/A-4 JJO/mhh

2. AAF C/AS C/AC 10/31

1. Your comments and recommendations regarding development of an anti-submarine mine and an anti-tank bomb as outlined in basic communication are requested.

2. It is understood from informal conversation with the Armament Branch (Major Moore) that steps are being taken for the standardization of a Depth Bomb, Navy type, which will meet the anti-submarine mine requirements as outlined.

1 Incl. n/c — CS C/AS

---

8 OCAC Mat. Div. 11/3 A.S.B.

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4. Materiel Division (4-E-1) Air Staff A-4 1941 11-10

1. An anti-submarine depth bomb complying with the requirements set forth in communications from the Air Force Combat Command has been standardized by the Joint Aircraft Committee.

2. The basis for this standardization is the Navy Mark XVII depth bomb. This bomb has several projections which are peculiar to the Navy carrying and releasing equipment only. The Technical Sub-Committee on Bomb Standardization has taken this bomb up during the last session and is now preparing recommendations regarding the detailed design, if and when approved, will make this bomb standard for Army-Navy-British use.

3. The bomb will be of a size suitable for carrying on the 500 lb. bomb station of present Air Corps airplanes and will be of the thin walled high capacity type. There will be a nose fuse suitable for instantaneous functioning on contact and a hydrostatic fuse located on the side of the bomb suitable for detonating the bomb at a given depth.

4. Action has already been taken to make available a quantity of the Navy standard type bombs for immediate

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4 Continued

use by the Air Corps at outlying stations and the Ordnance Department is initiating procurement for quantities of the final standard.

6. The Ordnance2Department has been requested to obtain a quantity of the anti-tank bomb from the British in order to test its suitability for purposes intended. Immediately upon the availability of these bombs a test program will be initiated.

O.P.E.
Chief, Materiel Division

Incl. n/c

---

5. AAF A-4 AAF A-3 1941 11/15

AAF/A-4
JJO/ccc

1. Your attention is invited to Item 4.

2. In this connection the Sub-Committee on the Revision of Air Corps Ordnance Requirements (Major Picher) has recommended 6000 tons as the requirement for Depth Bombs, Navy type.

EPS
C/A-4

1 Incl. n/c

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DOD Dir.
8 Jan. & 20 June 1974
By: JJHM SC Date: 3-10-77

Tactical Requirements for Bomb Development.

471.6 (22)

AAF/A-4
JJO/mhh

2. AAF
C/AS C/AC 10/31

1. Your comments and recommendations regarding development of an anti-submarine mine and an anti-tank bomb as outlined in basic communication are requested.

2. It is understood from informal conversation with the Armament Branch (Major Moore) that steps are being taken for the standardization of a Depth Bomb, Navy type, which will meet the anti-submarine mine requirements as outlined.

Dispatched
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AAG

1 Incl. n/c

CS
C/AS

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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Tactical Requirements for Bomb Development.

AAF/A-3
HSV-ds

1	AAF A-3	AAF A-4	1941 10/17	It is believed desirable that the development of an anti-submarine bomb of the general characteristics enumerated in paragraph 2 of the basic communication be pushed without delay. Until more factual data can be furnished this Division by A-4 upon the results obtained with such a bomb, it is believed undesirable to establish a basis for computations of requirements.

1 Incl.
Ltr frm AFCC to CAAF
10/6/41, subj. as above
(ACC 471.6 (10-6-41))

ELN
C/A-3

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8 Jan. & 20 June 1974
By: TS Ltr. 1 Dec. Date 3-10-77

HEADQUARTERS AIR FORCE COMBAT COMMAND

BOLLING FIELD, D. C. (E-13)

ACC 471.6 (10-6-41) October 6, 1941

Subject: Tactical Requirements for Bomb Development.

To: The Chief of the Army Air Forces, Washington, D. C.

1. A study of the weapons used by aircraft in attacking submarines during the present hostilities reveals that no entirely satisfactory weapon has yet been developed. The use of demolition bombs with various fuses has proven ineffective and uneconomical due to the small size of the target and the requirement for a direct hit or very near miss on a surfaced submarine to accomplish destruction. The use of the air borne depth charge has limited possibilities, due to the fact that it has limited effect on surfaced submarines and practically no effect from a direct hit, is not suitable for accurate bombing, and, up to the present time, can not be properly fused to be released from our standard bomb racks.

2. In view of the above, it is believed that a requirement exists for the development or adaption of an anti-submarine bomb having the following general characteristics:

a. Capable of being carried in the #500 bomb stations with standard release gear.

b. High capacity type, capable of defeating submarine pressure-hull structure by explosion on impact, and also maximum effect as a depth charge.

c. Desired effect to be attained by using two fuzes; the first, a nose impace fuze which will not act upon impact with the surface of the water, but will have instantaneous action upon impact with a solid metal surface; the second, a delay fuze to permit underwater detonation at approximately 30 feet.

d. Both of the above fuzes to be part of the complete round and both armed upon bomb release.

3. With a supply of bombs of the type described above available, it would then be possible for any of our aircraft equipped with bomb racks to effectively engage in anti-submarine work, either by precision, pattern, or dive bombing.

4. Reports from observers in England indicate that the British have developed and are completing the service test of a 9-pound anti-tank, "sticky" bomb with a plastic explosive filling. The action of this bomb is

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AOC 471.6 (10-6-41), Hq AFCC, October 6, 1941, continued.

approximately as follows: Upon impact, the failure of the thin case allows the plastic filler to form a gummy pancake, which adheres to the surface impacted. The tail fuze of the bomb remains in and detonates the explosive mass. The effect of this explosion is to blow a hole the size of the "pancake", or about 15" in diameter, through armor plate up to 1½ inches thick.

5. It is believed advisable to obtain a sample of this bomb from the British for the purpose of further development or adaption for our use, in the event it proves effective in combat. For further details of this bomb, you are referred to the MID report recently submitted by Major E. P. MECHLING, ordnance Department, who has just returned from England.

For the Commanding General:

C. W. RUSSELL,
Brigadier General, G.S.C.,
Chief of Staff.

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8 Jan. & 20 June 1974
By JS/MM LC. Date 3-10-77

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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.

471.6 (21) B

SUBJECT: 650 lb. Depth Bomb Mark XXIX

NO.	FROM	TO	DATE	DATA
1.	Materiel Division (4-E-1)	Air Staff	1941 11-17	1. Attention is invited to R & R from this Division dated October 2, 1941, in which your comments and recommendations were requested regarding the use of the 1000 lb. Mark IX demolition bomb fitted with a hydrostatic fuze as a substitute for or in place of the 650 lb. depth bomb Mark XXIX. 2. In this connection your attention is invited to copy of report prepared as a result of an investigation to determine the suitability of carrying the 650 lb. depth bomb Mark XXIX on airplanes now in production or contemplated for production. 3. Your comments and recommendations are requested in order that a reply may be made to the Navy, Bureau of Ordnance, regarding the suitability of the proposed bomb for standardization. TDO O.P.E. Chief, Materiel Division
Incl. Memo Rpt.	EXP-M-53-552-65			

See R&R on above subject 11-28-41 from C/AC to AAF-C/AS which was sent to A-3 for comments and recommendation as to whether the 650# depth bomb or 1000# bomb should be proposed for standardization. No action required on this paper.

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By [illegible] J.C. Date [illegible]

WAR DEPARTMENT
AIR CORPS, MATERIEL DIVISION

WRR-dac-53

MEMORANDUM REPORT ON

SUBJECT: GPI-[illegible], 650-lb. Depth Bomb Mark XXIX.

Date October 30, 1941

SECTION: Experimental Engineering

SERIAL No. EXP-M-53-552-65

Contract No.
Expenditure Order No. 552-1-455
Purchase Order No.

A. Purpose: To submit a report on the suitability of the subject bomb for installation and release from Air Corps airplanes and to make recommendations concerning the standardization of the subject bomb.

B. Factual Data:

1. The subject bomb is not interchangeable with any standard bomb now used by the Air Corps. The dimensions correspond most nearly to those of the M-44 1000-lb. Bomb except that the diameter of the subject bomb is 1.1 inches less and the overall length 4.6 inches greater than the M-44 Bomb.

2. The subject bomb has a hoisting lug and two trunnion pins. The hoisting lug is mounted between the two carrying lugs for attachment of a Navy Hoist cable. The trunnion pins are located on the sides of the bomb for launching purposes. These features are for application to dive bombers and will serve no purpose when the bomb is installed in Air Corps airplanes other than dive bombers.

3. The hoisting lug on the subject bomb will prevent its attachment to a Type B-7 Bomb Shackle because of interference between the lug and bottom of the shackle. B-7 Shackles are used for supporting all bombs having lugs spaced 14 inches apart in all Air Corps airplanes except Light Bomber (A-24) and the first 200 Medium Bomber (B-26) Airplanes. The B-26 airplanes mentioned use a type of shackle which will not interfere with the hoisting lug.

4. The trunnion pins on the subject bomb will cause interference with the bomb hoist slings during hoisting and with the bomb racks upon attachment and release of bombs in all Air Corps airplanes other than the A-24.

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5. The Mark XXIV Hydrostatic Fuse protrudes beyond the surface of the subject bomb on each side at a position in line with bomb rail. Upon hoisting the bomb into Air Corps airplanes an end of the fuse might bump the forward bomb rack rail if loading personnel are careless about positioning the bomb in the hoist sling. When the bomb is rolled into position for attachment to a station, the fuse will be completely clear of the bomb rack rail.

6. If interferences of the hoisting lug and the trunnion pins are neglected, the internal bomb racks on Air Corps airplanes provide space (but no shackles for the installation and release of the subject bombs) with required clearances as follows:

Airplane Model	Bomb Rack Station	No. of Bombs
B-17B, -C,-D,-E.	8, 11, 15, 18.	4
B-17F	12, 18, 30, 34, 37, 41.	6
B-24	2, 7, 12, 17.	4
B-25	4, 5.	2
B-26A	3, 4, 16, 17, 28, 29	6
XB-28	11A, 12A, 15A, 16A.	4
XB-29	All 1000-lb. Stations	12
XB-32	All 1000-lb. Stations	12
XB-33	3 bombs per inboard rack	12
A-20, A-20A	Station 11	1
A-20B	1000-lb. Station	1
A-24	1000-lb. Station	1

7. If interference of the trunnion pins is neglected, the bomb racks on Medium Bomber (B-26) Airplanes provide space and shackles for installation of the subject bombs at Stations 3, 4, 16, 17, 28 and 29, making a total of 6 bombs.

8. One additional bomb may be supported in Medium Bomber (B-25) Airplanes at Station 10 with fuse clearance reduced to 2 inches. Two additional bombs may be supported in Heavy Bomber (B-24) Airplanes at Stations 15 and 20 with fin and fuse clearance each reduced to 2-1/2 inches. Two bombs may also be supported in B-24 Airplanes at Stations 5 and 10, but here the clearance between the bomb fin and rear bulkhead is reduced to zero.

C. Conclusions:

1. The subject bomb as shown on Bureau of Ordnance Drawing No. 300432 may be installed and released from Light Bomber (A-24) Airplanes, without modification to either airplane or bomb.

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Exp. Engr. Section Mem. Report
No. EXP-M-53-552-65
October 30, 1941

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2. If the hoisting lug and trunnion pins are removed, the subject bomb may be attached to and released from all stations provided for the M-44 1000-lb. bomb in all Air Corps airplanes listed in Paragraph B-6 with the exception of Station 10 in B-25 Airplanes and Stations 5, 10, 15 and 20 in B-24 Airplanes.

3. By exercising a reasonable amount of care during hoisting, the loading of the 650-lb. depth bomb can be attained without damage to the Mark XXIV Hydrostatic Fuze from striking the bomb rack rails which are standard in all bombardment airplanes except the dive bombers.

D. Recommendations:

1. Since the Mark XXII Depth Bomb cannot be loaded on most of the Army airplanes without standardization of a special shackle and removal of the trunnions from each bomb, it is recommended that the bomb be delivered to the Air Corps without hoisting lug and trunnions and that a trunnion band be used similar to the Type M-2 now standard for 1000-lb. M-44 Bombs.

Prepared by W. N. Ryan
(Name)

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MX-173

Approved by F. C. WOLFE, Major, A.C.,
Chief, Armament Laboratory

Concurrence:

Approved by F. O. CARROLL, Lt. Colonel, A.C.,
Chief, Exp. Engr. Section

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8 Jan. & 20 June 1975
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680 Depth Bomb - Mark XXXX

AAF/A-4
RSC/mhh

11. AAF C/AS OCAC C/Mat. Div. 1941 12/11

1. Inviting attention to Item 10 preceding: This office concurs in the recommendations contained therein and desires that 4,000 tons be set up immediately as an initial requirement for this bomb.

Incls. n/c

CS
C/AS

Dispatched
DEC 15 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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By JS/HM LC Date 3-10-77

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650-Lb. Depth Bomb - Mark XXIX.

6. C/AC Matl. 11/14/41 For information requested.

s/BHM

7. Mat. Div. (4-E-1) Chief, Air Corps 1941 11/18

1. Information regarding production type airplanes which can carry the 650 lb. depth bomb was transmitted to your office by Routing & Record dated November 17, 1941, subject "650 lb. depth bomb-Mark XXIX".

2. No thorough study has, as yet, been made with respect to the carrying of the 1000 lb. Mark IX bomb on American bomb racks, however, no difficulties which cannot be corrected by the Sub-Committee on Standardization is forseen if this bomb is contemplated for carrying on 2000 lb. bomb rack stations. In a few instances it might be possible to carry this bomb on 1000 lb. bomb stations; however, the 1000 lb. bomb stations require a 14" spacing between the carrying lugs whereas the 2000 lb. bomb stations require 30" between carrying lugs and, therefore, it should be considered for only one or the other position.

s/ O.P.E.
Chief, Materiel Division

8. C/AC C/AS 1941 11/21

1. Infiviting attention to number 7 above which is in response to request contained in number 5.

2. The R&R sheet dated November 17, referred to in paragraph 1, number 7 was forwarded by Materiel Division direct to Chief of Air Staff.

s/M. S. F.
Executive.

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650 Depth - Mark XXIX

AAF/A-4
JJO/coc

9. AAF
A-4 A-3 1941
11/26

1. As requested in item 4 attached hereto is copy of Memorandum Report on Subject Bomb by the Experimental Engineering Section, Materiel Division listing production type airplanes which can carry subject bomb.

2. On the supposition that both the subject bomb and the 1000-lb. Mark IX demolition bomb, (which carries more TNT and has sufficient case strength to penetrate light targets) can be made to function satisfactorily for the intended purpose your comments and recommendation are requested as to which would be the preferable type. This information is necessary in order that a reply may be made to the Navy, Bureau of Ordnance, regarding the suitability of the proposed bomb for standardization.

1 Incl. n/c
1 Incl. Added
Cpy Memo Rpt on
Subject Bombs

EPS
C/A-4

10. AAF
A-3 A-4 12/5

1. The 650-lb. Depth Bomb - Mark XXIX is unable to be carried on all types of production airplanes. Also, on those airplanes that can carry it, it possesses peculiarities of conformation which make its use dangerous under certain conditions. For these reasons it is recommended that the 1000-lb. Mark IX bomb be adopted as standard.

2. This bomb should be provided with carrying lugs that will permit its use on all currentproduction types of Bombardment airplanes.

Incls. n/c

s/ELN
C/A-5

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By 35 HHT1 NARA, Date 3-10-77

NAVY DEPARTMENT
BUREAU OF ORDNANCE
WASHINGTON, D. C.

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September 27, 1941

MEMORANDUM

From: The Chief of the Bureau of Ordnance.
To: The Chief of the Air Corps,
War Department

Subject: 650-Lb. Depth Bomb - Mark XXIX

Reference: (a) Report of the Joint Sub-Committee on Standardization of Bombs of the Joint Aircraft Commission, "Standardization of Aircraft Bombs - Case No. 217" dated 3 March, 1941.

Enclosure: (herewith) (A) One copy of BuOrd dwg. 300432, general arrangement of aircraft depth bomb, 650-Lb., Mark XXIX.

The agreements recorded in reference (a) require the Bureau of Ordnance in the Navy Department to develop a 650-lb. aircraft depth bomb. Enclosure (A) is an advanced copy of the general arrangement of the depth bomb designed in accordance with this agreement. Attention is invited to the fact that three alternative fusings have been provided for this bomb.

(a) The hydrostatic fuze Mark XXIV mounted in an athwartships tube. This fuze can be set for either 50 feet, 75 feet or 100 feet depth, but the setting must be made at an ammunition depot, and the bomb can only be set for the depth desired by exchanging fuze bodies before take-off. Although this fuze does not use the arming fan principle, it does use arming wires and therefore can be dropped safe. This fuze is now in production for 325-lb. Mark XVII depth bombs, and in recent tests has given a reliability of functioning of seven out of eight, or better; and has apparently always functioned very near the set depth.

(b) The Mark XXIX tail hydrostatic fuze. This is a new hydrostatic fuze which has been tested very successfully in experimental lots, but of which no production lots have yet been manufactured. It can be set at any desired depth from 50 feet to 150 feet by a simple adjustment which can be made before take-off by an ordnance man. It therefore does not require interchange of whole fuze bodies to obtain different

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depth settings, as does the Mark XXIV hydrostatic fuse. This fuse operates on the arming vane principle and makes use of an arming wire.

(c) The Mark XIX instantaneous nose fuse. This is the Navy's standard instantaneous nose fuse whose reliability in production lots has been established in the course of numerous tests over a period of several years. This fuse is included in the bomb in order that, should a plane equipped for selective fusing attack a target on the surface, it may utilize the Mark XXIX depth bomb as a surface weapon, rather than as an underwater weapon, if so desired.

The Bureau of Ordnance will produce a quantity of the Mark XXIX depth bombs for tests at high priority.

Concurrently with the production of the design of the Mark XXIX depth bomb, the Bureau of Ordnance experimented with the application of the Mark XXIV hydrostatic fuse to the Mark IX light case, 1,000 lb. bomb. Eight of these bombs were dropped in the open sea and seven detonated at high order at the set depth. In the case of the eighth, there is doubt as to whether the arming wires functioned properly.

The Bureau of Ordnance accordingly offers these two weapons, the Mark XXIX 650-lb. aircraft depth bomb and the Mark IX 1,000 lb. demolition bomb fitted with a hydrostatic fuse, for consideration as to which should be considered for standardization as the Army-Navy-British standard aircraft depth bomb. The Bureau itself prefers the 1,000-lb. bomb for the following reasons:

(a) It is the stronger weapon as it carries approximately 730 lbs. of TNT, as against about 408 lbs. for the Mark XXIX.

(b) The technique for manufacture of the case is well developed, and the ballistics are already known.

(c) The Mark IX 1,000-lb bomb is known to have sufficient case strength to penetrate light targets, such as the decks of merchant ships, destroyers, or the light weather decks of practically all battleships, carriers and cruisers. It can be fused with the Mark XXI short delay nose fuse and Mark XXIII short delay tail fuse. In combination with either the Mark XXIV or the Mark XXIX hydrostatic fuses, it

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can, by use of selective arming, be used either for underwater attack or penetrative attack upon such targets.

Comment upon which bomb is preferred for standardization is requested. If the Mark XXIX 650-lb bomb is preferred, comment upon any interferences caused by its structural details is requested.

Identical correspondence on this matter is being addressed to the following interested agencies:

Chief of the Bureau of Aeronautics,
Navy Department.

Joint Aircraft Committee
Lt. Col. D. G. Lingle, A.C., U. S. A., Recorder,
Special Sub-Committee for Standardization of
Aircraft Bombs,
Aeronautics Board, Room 4844,
Navy Building.

Chief of Ordnance,
War Department.

British Air Commission
Air Marshall R. M. Hill
1785 Massachusetts Avenue,
Washington, D. C.

/s/ W. H. P. Blandy
G. V. David
G. B. David
Acting

ELP

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DOD Nrs.
3 Jan. & 20 June 1974
By: JS/MM LC. Date 3-10-77

MEMORANDUM REPORT ON

SUBJECT: OTI-341, 650-lb. Depth Bomb Mark XXIX. DATE October 30, 1941.

B. Factual Data:

1. The subject bomb is not interchangeable with any standard bomb now used by the Air Corps. The dimensions correspond most nearly to those of the M-44 1000-lb. Bomb except that the diameter of the subject bomb is 1.1 inches less and the overall length 4.6 inches greater than the M-44 Bomb.

2. The subject bomb has a hoisting lug and two trunnion pins. The hoisting lug is mounted between the two carrying lugs for attachment of a Navy Hoist cable. The trunnion pins are located on the sides of the bomb for launching purposes. These features are for application to dive bombers and will serve no purpose when the bomb is installed in Air Corps airplanes other than dive bombers.

3. The hoisting lug on the subject bomb will prevent its attachment to a Type B-7 Bomb Shackle because of interference between the lug and bottom of the shackle. B-7 Shackles are used for supporting all bombs having lugs spaced 14 inches apart in all Air Corps airplanes except Light Bomber (A-24) and the first 200 Medium Bomber (B-26) Airplanes. The B-26 airplanes mentioned use a type of shackle which will not interfere with the hoisting lug.

4. The trunnion pins on the subject bomb will cause interference with the bomb hoist slings during hoisting and with the bomb racks upon attachment and release of bombs in all Air Corps airplanes other than the A-24.

5. The Mark XXIV Hydrostatic Fuze protrudes beyond the surface of the subject bomb on each side at a position in line with bomb rail. Upon hoisting the bomb into Air Corps airplanes an end of the fuze might bump the forward bomb rack rail if loading personnel are careless about positioning the bomb in the hoist sling. When the bomb is rolled into position for attachment to a station, the fuze will be completely clear of the bomb rack rail.

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MEMORANDUM REPORT ON (continued)

SUBJECT: OTL-341, 650-lb. Depth Bomb Mark XXIX.

6. If interferences of the hoisting lug and the trunnion pins are neglected, the internal bomb racks on Air Corps airplanes provide space (but no shackles for the installation and release of the subject bombs) with required clearances as follows:

Airplane Model	Bomb Rack Station	No. of Bombs
B-17B, -C, -D, -E	8, 11, 15, 18.	4
B-17F	12, 18, 30, 34, 37, 41	6
B-24	2, 7, 12, 17	4
B-25	4. 5.	2
B-26A	3, 4, 16, 17, 28, 29	6
XB-28	11A, 12A, 15A, 16A	4
XB-29	All 1000-lb. Stations	12
XB-32	All 1000-lb. Stations	12
XB-33	3 Bombs per inboard rack	12
A-20, A-20A	Station 11	1
A-20B	1000-lb. Station	1
A-24	1000-lb. Station	1

7. If interference of the trunnion pins is neglected, the bomb racks on Medium Bomber (B-26) Airplanes provide space and shackles for installation of the subject bombs at Stations 3, 4, 16, 17, 28 and 29, making a total of 6 bombs.

8. One additional bomb may be supported in Medium Bomber (B-25) Airplanes at Station 10 with fuse clearance reduced to 2 inches. Two additional bombs may be supported in Heavy Bomber (B-24) Airplanes at Stations 15 and 20 with fin and fuse clearance each reduced to 2-1/2 inches. Two bombs may also be supported in B-24 Airplanes at Stations 5 and 10, but here the clearance between the bomb fin and rear bulkhead is reduced to zero.

C. Conclusions:

1. The subject bomb as shown on Bureau of Ordnance Drawing No. 300432 may be installed and released from Light Bomber (A-24) Airplanes, without modification to either airplane or bomb.

2. If the hoisting lug and trunnion pins are removed, the subject bomb may be attached to and released from all stations provided for the M-44, 1000-lb. bomb in all Air Corps airplanes listed in Paragraph B-6 with the exception of Station 10 in B-25 Airplanes and Stations 5, 10, 15 and 20 in B-24 Airplanes.

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SUBJECT: OTL-341, 650-lb. Depth Bomb Mark XXIX

3. By exercising a reasonable amount of care during hoisting, the loading of the 650-lb. depth bomb can be attained without damage to the Mark XXIV Hydrostatic Fuse from striking the bomb rack rails which are standard in all bombardment airplanes except the dive bombers.

D. Recommendations:

1. Since the Mark XXIX Depth Bomb cannot be loaded on most of the Army airplanes without standardization of a special shackle and removal of the trunnions from each bomb, it is recommended that the bomb be delivered to the Air Corps without hoisting lug and trunnions and that a trunnion band be used similar to the Type M-2 now standard for 1000-lb. M-44 Bombs.

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000 Hrs.
By [illegible] NC, Date 5-8-77

SUBJECT: 650-Lb. Depth Bomb - Mark XXIX.

9/16/41

5 AAF C/AS C/AC and Mat.Div. 11/8

AAF/A-4
JVH/lml

1. Request early advice relative production type airplanes which can carry 650 lb. and 1,000 lb. Navy depth bombs, and quantities.

CS
C/AS

Incl.
Memo fr Bu of Ord. 9/27/41

SEP 14 1941

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: JS 1141 LC; Date: 3-10-77

650-Lb. Depth Bomb - Mark XXIX.

1	Materiel Division (4-E-1)	Air Staff THRU Chief of the Air Corps.	1941 10-2

1. Attached is a copy of a memorandum received from the Bureau of Ordnance dated September 27, 1941, with respect to the Navy 650 lb. Depth Bomb, Mark XXIX, which has been recommended for standardization by the Joint Aircraft Sub-Committee on Standardization of Aircraft Bombs when a completely satisfactory article is obtained.

2. Your attention is invited to the last main paragraph on the 2nd page of the attached memorandum indicating that the Bureau of Ordnance submits the 1000-lb. Mark IX demolition bomb fitted with a hydrostatic fuze as a substitute for or in place of the 650 lb. depth bomb Mark XXIX.

3. On the supposition that both bombs can be made to function satisfactorily and for the intended purpose your comments and recommendations are requested as to which would be the preferable type.

4. In the meantime a study is being made to determine on which of the production type airplanes the 650 lb. depth bomb can be carried and in what quantity.

Incl.
Memo. fr. Bu. Ord.
dated 9-27-41

O.P.E.
Chief, Materiel Division

(X-1)

2	Ch/AC	AAF Ch/AS	1941 10-3

1. Forwarded for comment.

Incl: N/C

M.S.F., Exec.

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650-Lb. Depth Bomb - Mark XXIX.

3 AAF A-4 AAF A-3 1941 10/10

AAF/A-4
MFS/mr

1. For recommendation.

Incl. n/c

CS
C/AS

---

4 AAF A-3 AAF A-4 10/24

1. This division is unable to make a recommendation concerning the more preferable type of bomb until information is obtained as to the production type airplanes which can carry the 650-lb. depth bomb and in what quantity.

Incl. n/c

ELN
C/A-3

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5 AAF C/AS C/AC and

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NAVY DEPARTMENT
BUREAU OF ORDNANCE
WASHINGTON, D. C.

(Reb)

September 27, 1941

M E M O R A N D U M

From: The Chief of the Bureau of Ordnance.
To: The Chief of the Air Corps,
War Department

Subject: 650-Lb. Depth Bomb - Mark XXIX

Reference: (a) Report of the Joint Sub-Committee on Standardization of Bombs of the Joint Aircraft Commission, "Standardization of Aircraft Bombs - Case No. 217", dated 3 March, 1941.

Enclosure: (herewith) (A) One copy of BuOrd dwg. 300432, general arrangement of aircraft depth bomb, 650-Lb., Mark XXIX.

The agreements recorded in reference (a) require the Bureau of Ordnance in the Navy Department to develop a 650-lb. aircraft depth bomb. Enclosure (A) is an advanced copy of the general arrangement of the depth bomb designed in accordance with this agreement. Attention is invited to the fact that three alternative fuzings have been provided for this bomb.

(a) The hydrostatic fuze Mark XXIV mounted in an athwartships tube. This fuze can be set for either 50 feet, 75 feet or 125 feet depth, but the setting must be made at an ammunition depot, and the bomb can only be set for the depth desired by exchanging fuze bodies before take-off. Although this fuze does not use the arming fan principle, it does use arming wires and therefore can be dropped safe. This fuze is now in production for 325-lb. Mark XVII depth bombs, and in recent tests has given a reliability of functioning of seven out of eight, or better; and has apparently always functioned very near the set depth.

(b) The Mark XXIX tail hydrostatic fuze. This is a new hydrostatic fuze which has been tested very successfully in experimental lots, but of which no production lots have yet been manufactured. It can be set at any desired depth from 50 feet to 150 feet by a simple adjustment which can be made before take-off by an ordnance man. It therefore does not require interchange of whole fuze bodies to obtain different

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depth settings, as does the Mark XXIV hydrostatic fuze. This fuze operates on the arming vane principle and makes use of an arming wire.

(c) The Mark XIX instantaneous nose fuze. This is the Navy's standard instantaneous nose fuze whose reliability in production lots has been established in the course of numerous tests over a period of several years. This fuze is included in the bomb in order that, should a plane equipped for selective fuzing attack a target on the surface, it may utilize the Mark XXIX depth bomb as a surface weapon, rather than as an underwater weapon, if so desired.

The Bureau of Ordnance will produce a quantity of the Mark XXIX depth bombs for tests at high priority.

Concurrently with the production of the design of the Mark XXIX depth bomb, the Bureau of Ordnance experimented with the application of the Mark XXIV hydrostatic fuze to the Mark IX light case, 1,000 lb. bomb. Eight of these bombs were dropped in the open sea and seven detonated at high order at the set depth. In the case of the eighth, there is doubt as to whether the arming wires functioned properly.

The Bureau of Ordnance accordingly offers these two weapons, the Mark XXIX 650-lb. aircraft depth bomb and the Mark IX 1,000 lb. demolition bomb fitted with a hydrostatic fuze, for consideration as to which should be considered for standardization as the Army-Navy-British standard aircraft depth bomb. The Bureau itself prefers the 1,000-lb. bomb for the following reasons:

(a) It is the stronger weapon as it carries approximately 730 lbs. of TNT, as against about 408 lbs. for the Mark XXIX.

(b) The technique for manufacture of the case is well developed, and the ballistics are already known.

(c) The Mark IX 1,000-lb bomb is known to have sufficient case strength to penetrate light targets, such as the decks of merchant ships, destroyers, or the light weather decks of practically all battleships, carriers and cruisers. It can be fuzed with the Mark XXI short delay nose fuze and Mark XXIII short delay tail fuze. In combination with either the Mark XXIV or the Mark XXIX hydrostatic fuzes, it

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can, by use of selective arming, be used either for underwater attack or penetrative attack upon such targets.

Comment upon which bomb is preferred for standardization is requested. If the Mark XXIX 650-lb bomb is preferred, comment upon any interferences caused by its structural details is requested.

Identical correspondence on this matter is being addressed to the following interested agencies:

Chief of the Bureau of Aeronautics,
Navy Department.

Joint Aircraft Committee
Lt. Col. D.G. Lingle, A.C., U.S.A., Recorder,
Special Sub-Committee for Standardization of
Aircraft Bombs,
Aeronautics Board, Room 4844,
Navy Building.

Chief of Ordnance,
War Department.

British Air Commission
Air Marshall R.M. Hill
1785 Massachusetts Avenue,
Washington, D. C.

ELP

W.H.P. Blandy
/s/ G.B. David
G. B. David
Acting

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DOD ltrs.
8 Jan. & 20 June 1974
By: JS IMM LC. Date 3-10-77

Written Oct. 27, 1941

471.6

(20) B

MEMORANDUM FOR THE CHIEF OF STAFF:

Subject: Bombs and Ammunition Required for Russia.

I. Discussion.

1. It is intended that this memorandum supersede the secret memorandum to the Chief of Staff, dated September 27, 1941, subject as above (copy attached, Tab C).

2. Recent conferences between the undersigned and representatives of the British Government (Captain Balfour) have resulted in a revision of airplane allocations to Russia in order to consummate the agreement signed in Moscow by the representatives of the United States (Mr. Hopkins) and Great Britain (Lord Beaverbrook)(Tab A, revised airplane allocation to Russia).

3. Revision in allocation of airplanes of necessity has entailed a revision in munition requirements (revised munition requirements presented in Tab B).

4. The wish of the Russian Government has been transmitted to this office (per General Chaney) insofar as munitions for the airplanes to be delivered to Russia are concerned. They consist of "20 refills" in ammunition (i.e. 20 complete replacements of maximum initial load) and 20 missions of maximum bomb load for bombing airplanes. It has been considered desirable to include as an addition three missions of 20# fragmentation bombs for each P-40E airplane.

5. It has been agreed that the British Government will provide bombs, guns and ammunition from sources currently available to it for the 300 A-20 type airplanes which the British are lending for the U. S. bomber commitment. These airplanes are shown under column 4 of Tab A.

6. It was further agreed that "the U. S. will endeavor to convert all remaining A-20 airplanes under U. S. commitment to .30 caliber guns and will supply bombs, guns, racks and ammunition for these

HEADQUARTERS ARMY AIR FORCES - COORDINATION

Chief of Staff	Air Staff	A.A.G.	A-1	A-2	A-3	A-4	A-MPD	A. Insp.	Budget	Statistics
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airplanes". The assumption has been made for a basis for computation that the conversion would be completed on all A-20 airplanes other than the 300 airplanes to be supplied by the British Government.

7. Inasmuch as the urgency of the Russian demand has been the basis of diverting airplanes from the intended original beneficiaries under the Defense-Aid program, it is believed that, if necessary, Defense Aid munition commitments must be surveyed to make munitions available to fulfill the commitments to Russia involved under Tab B of this study.

II. Action Recommended.

The Secretary of War directs that:

1. The Assistant Chief of Staff, G-4 initiate action to make munitions available to the Russian Government in accordance with the quantities and dates indicated in Tab B of this study.

2. The Chief of the Ordnance accelerate ammunition and bomb procurement in order to replace as soon as practicable any diversions from the reserve stocks of the Army to meet the commitments of Tab B of this study.

Incl:
Tab A-Airplane Commitments to Russia
Tab B-Munition Require.
Tab C-Cy memo to C/S

(Gen Arnold holding original as an Exhibit to Conference minutes of meeting held by A.A.F. representatives & British representatives Oct 21-22, 1941

copy furnished to
Ch/AS
Col. Aurand
Ea

Minutes to duty Simson 6/28 Ea.

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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By: JS/HM LC; Date 3-10-77

AIRPLANE COMMITMENTS TO RUSSIA

TAB. A

* * * * * * * *

2. After discussion of the availability of airplanes, a decision on allocations made by General Arnold as follows:

a. Allocations to Russia and the sources thereof.

CONTRACTS	Defense Aid A-20	U.S. Army A-20	British A-20	Defense Aid & U.S. Army P-[illegible] & [illegible]	U.S. Army [illegible]	U.S. Army [illegible]
OCTOBER			100	95	20	
NOVEMBER			100	107		
DECEMBER	60		50	100		
JANUARY	60		50	100		12
FEBRUARY	95			100		12
MARCH	100			100		12
APRIL	67	13		100		12
MAY	100			100		12
JUNE	10			100		12
	515	13	300	600	20	72

* * * * * * * *

/s/
Captain the Right Honorable H. H. Balfour,
Under Secretary of State for Air

/s/
Major General H. H. Arnold,
Chief of the United States
Army Air Forces.

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MUNITION REQUIREMENTS TO MEET AIRPLANE ALLOCATION TO RUSSIA

TAB B

	800# GP Dem.	300# GP Dem.	100# GP Dem.	20# Frag.	.50 Cal.	.30 Cal.
OCTOBER				934	2,[illegible],160	1,[illegible],000
NOVEMBER				1,926	3,[illegible],040	
DECEMBER	720	2,[illegible]	8,400	1,800	4,[illegible],000	3,000,000
JANUARY	1,[illegible]	5,312	22,[illegible]	1,800	4,471,200	3,144,000
FEBRUARY	1,[illegible]	5,136	15,160	1,800	4,[illegible],200	5,044,000
MARCH	1,[illegible]	5,[illegible]	15,440	1,800	4,951,200	5,144,000
APRIL	1,[illegible]	5,[illegible]	15,440	1,800	4,951,200	5,144,000
MAY	1,[illegible]	5,[illegible]	15,440	1,800	4,951,200	5,144,000
JUNE	[illegible]	912	2,840	1,800	3,871,200	644,000

NOTE: Bombing Mission Distribution 20% - 800#
30% - 300#
50% - 100#

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8 Jan. & 20 June 1974
By: JS/HM LC; Date 3-10-77

TAB C

MEMORANDUM FOR THE CHIEF OF STAFF:

Subject: Bombs and Ammunition Required for Russia.

1. In accordance with contemplated airplane allocation to Russia from Army, Army Defense Aid and British (in U.S.) sources (Tab A - allocation schedule), the following bomb and ammunition requirements are established:

a. If U. S. Army guns and bombs racks are substituted with equivalent rounds of ammunition and numbers of bombs on airplanes under procurement for British:

"Tab B"

b. If British guns and bomb racks remain on airplanes currently under procurement for British use and British type ammunition and bombs are supplied from British production sources (in U.S., Canada or British Isles):

"Tab C"

2. Bombs and ammunition have been computed on the basis of 10 missions and 22% attrition per month. Supply has been computed on basis of providing each month sufficient bombs and ammunition for 30 days' operations of each airplane to be delivered in the months and 30 days' operations for each airplane remaining in operation in Russia after deducting a postulated 22% attrition per month.

Notes: (a) B-25B and A-20B airplane bombing missions divided as follows: 20% - 500 lb., 30% - 250 lb. (or 300 lb.), 50% - 100 lb.

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TAB C Cont'd

(b) A-20S missions = 50% - 500 lb. and 50% - 250 lb. bombs.

(c) A-29 missions = 50% - 250 lb. and 50% - 100 lb. bombs.

(d) Pursuit provided 3 missions of bombs per month, all 20 lb. fragmentation.

3. Informally, this office has been advised by the British Air Commission (Wing Commander G. T. C. Worsley) that: British type 250 lb. bombs are under production in United States, British type 500 lb. bombs in Canada, .303 cal. ammunition in United States, and .303 cal. guns in Canada.

4. In view of the very small production of 300 lb. and 500 lb. bombs for the Army during this period of the contemplated airplane allocation, it is believed desirable to secure British type bombs from British sources for the A-20S and A-29 airplanes.

5. In the instance of the A-20S and A-29 airplanes, the Materiel Division of the Air Corps advises that a considerable delay in airplane production will be caused if a changeover of guns and bombs racks to U.S. Army types is required.

/s/
H. H. ARNOLD,
Major General, U. S. A.,
Deputy Chief of Staff for Air.

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8 Jan. & 20 June 1974
By: JS/MM ic Date 3-10-77

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WRB/ich

(Written September 27, 1941)

SEP 2 7 1941

MEMORANDUM FOR THE CHIEF OF STAFF:

Subject: Bombs and Ammunition Required for Russia.

1. In accordance with contemplated airplane allocation to Russia from Army, Army Defense Aid and British (in U.S.) sources (Tab A - allocation schedule), the following bomb and ammunition requirements are established:

a. If U. S. Army guns and bomb racks are substituted with equivalent rounds of ammunition and numbers of bombs on airplanes under procurement for British:

"Tab B"

b. If British guns and bomb racks remain on airplanes currently under procurement for British use and British type ammunition and bombs are supplied from British production sources (in U.S., Canada or British Isles):

"Tab C"

2. Bombs and ammunition have been computed on the basis of 10 missions and 20% attrition per month. Supply has been computed on basis of providing each month sufficient bombs and ammunition for 30 days' operations of each airplane to be delivered in the months and 30 days' operations for each airplane remaining in operation in Russia after deducting a postulated 20% attrition per month.

Notes: (a) B-25B and A-20B airplane bombing missions divided as follows: 20% - 500 lb., 30% - 250 lb. (or 300 lb.), 50% - 100 lb.

Orig. given direct to Gen Moore by Gen Arnold 9/27/41 — One copy furnished to Mr Lovett by Gen Arnold 9/29/41.

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(b) A-20C missions = 50% - 500 lb. and 50% - 250 lb. bombs.

(c) A-29 missions = 50% - 250 lb. and 50% - 100 lb. bombs.

(d) Pursuit provided 3 missions of bombs per month, all 20 lb. fragmentation.

3. Informally, this office has been advised by the British Air Commission (Wing Commander G. T. C. Worsley) that: British type 250 lb. bombs are under production in United States, British type 500 lb. bombs in Canada, .303 cal. ammunition in United States, and .303 cal. guns in Canada.

4. In view of the very small production of 300 lb. and 500 lb. bombs for the Army during this period of the contemplated airplane allocation, it is believed desirable to secure British type bombs from British sources for the A-20C and A-29 airplanes.

5. In this instance of the A-20C and A-29 airplanes, the Materiel Division of the Air Corps advises that a considerable delay in airplane production will be caused if a changeover of guns and bombs racks to U.S. Army types is required.

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DOD Hrs.
8 Jan. & 20 June 1974
By JS/MM Date 3-10-77

AAF/A-4
JOS/coc
Written December 31, 1941.

MEMORANDUM FOR THE JOINT AIRCRAFT COMMITTEE:

Subject: Tactics and Employment of Low Flying Aircraft.

1. In reply to memorandum your office same subject dated September 29, 1941, it is requested that the 15-second delay tail fuse be standardized for all general purpose or demolition bombs being procured for the Army Air Forces.

For the Chief of the Air Staff:

Incl:
Memo fm JAC to GAS
9-29-41 w/2 Incls:
Case No. 217 dated 9/5/41
Case No. 255 dated 8/2/41.

EDGAR P. SORENSEN,
Colonel, Air Corps,
Assistant Chief of the Air Staff, A-4/

DISPATCHED
JAN 2 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	
					EGN by OGP	[illegible]					

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DOD ltrs.
8 Jan. & 20 June 1974
By: JS/HM LC; Date 3-10-77

JOINT AIRCRAFT COMMITTEE
WASHINGTON, D. C.

September 29, 1941

MEMORANDUM FOR: The Chief of the Air Staff

SUBJECT: Tactics and Employment of Low Flying Aircraft.

1. The Joint Aircraft Committee has directed that it be ascertained whether the tactics and employment of low flying aircraft have been changed by the War Department so that either the 12-second delay, the 45-second delay, or an intermediate-time delay fuse can be used in order that only one type will have to be developed and procured. (Reference: Page 5, Part VI, Paragraph 2 of Case No. 217 dated September 5, 1941.)

2. It is requested that this information be forwarded to the Joint Aircraft Committee for incorporation in the study of the standardization of aircraft bomb fuses.

C. MATHEWSON
Assistant Recorder

Incls:
Case No. 217 dated 9/5/41
Case No. 235 dated 8/2/41

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8 Jan. & 30 June 1951
Sp. TS 891 LC Date 3-10-77

HEADQUARTERS [illegible] AIR FORCES
ROUTING AND RECORD SHEET

CONFIDENTIAL

1258

Note.--A line will be drawn across sheet after each comment.

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File No. .....

Tally No. AAF .....

SUBJECT: Tactics and Employment of Low Flying Aircraft.

NO.	FROM	TO	DATE	COMMENTS
1	AAF C/AS	Hq.AFCC	1941 10/7	For comment and recommendation to this headquarters. 1 Incl. Memo frm Jt.Aircraft Comm. to C/AS -- 9/29/41 - subj. [illegible] and [illegible]
2	AAF A-3	AAF A-4	12/31	AAF/A-3 OSP/jg 1. G-3 Air Force Combat Command does not believe 45-second delay fuze should be standardized, and desires 12-second delay fuze. 2. This Division concurs with this recommendation. 1 Incl. no change. ELN A-3

RECEIVED OCT 9 1941 HEADQUARTERS AFCC

AAF/A-3 HSV-ds

CS C/AS

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8 Jan. & 20 June 1974
By: [illegible] LC. Date 3-10-77

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Subject: Military Characteristics for Small Incendiary Bombs.

1st Ind.

AAF/A-3
OSF-epb

War Department, Office, Chief of the Army Air Forces, Washington, D.C. DEC 1 1941
(written 11/25/41) To: Joint Aircraft Committee, Washington, D.C.

1. It is the recommendation of this headquarters that the 2-pound incendiary bomb be standardized, and that provisions be made for clustering it in 100-pound adapters.

2. Your attention is invited to the attached Disposition Form and 1st Indorsement thereto from the Chief, Chemical Warfare Service.

2 Incls.
Case No. 217 dated 9/5/41.
D/F from AAF to C/CWS --
10/20/41 -- Subj.: 2-lb
incendiary bomb w/1st ind.

471.6 (19)

For the Chief of the Army Air Forces:

WILLIAM W. DICK
Lt. Col., A.G.D.
Air Adjutant General

DEC 2 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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By: JSIHH LC; Date 3-10-77

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JOINT AIRCRAFT COMMITTEE
WASHINGTON, D.C.

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September 29, 1941

MEMORANDUM TO: Chief of the Air Staff

SUBJECT: Military Characteristics for Small Incendiary Bombs

1. At a meeting of the Joint Aircraft Committee on September 15, 1941 it was directed that the attached correspondence be referred to the Air Staff for recommendation before further action is taken to standardize this type of incendiary bomb. (Reference: Page 3, Part IV, of the attached case.)

2. It is requested that the Air Staff recommendations on the subject be returned to the Joint Aircraft Committee for incorporation in the study of the standardization of small incendiary bombs.

C. MATHEWSON
Assistant Recorder

Incl.
Case No. 217 dated 9/5/41

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By: JS/HH LC; Date 3-10-77

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October 30, 1941

SUBJECT: 2-lb incendiary bomb.

TO: C/CWS

FOR: Comment

AAF/A-3
OSP-epb

1. The Special Sub-Committee for the Standardization of Aircraft Bombs on September 4, 1941, deferred action on standardization of the 2-lb incendiary bomb until recommendation on its tactical need was secured from the Chief of Army Air Forces. This was partly due to the statement of the British members that the bomb was ineffective against roofs of buildings and factories, which in Europe are generally of brick or stone. An additional need for our forces exists for use against paper and lightly constructed buildings near the Philippine Islands, where a 2-lb bomb will be effective and double the number of bombs than can be carried over the 4-lb bomb.

2. Your comment is requested on the effectiveness of the 2-lb bomb as an incendiary against light wooden and paper structures, and your opinion on whether it can be clustered in 100-lb adapters.

For the Chief of the Army Air Forces:

EDWARD P. CURTIS
Major, Air Corps,
Secretary of The Air Staff

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By JJH NARA, Date 3-10-77

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CWS 471.6/23 Conf.
(10-30-41)

1st Ind.

War Department, C-C, CWS, November 17, 1941. To: The Chief of the Army Air Forces, War Department, Washington, D. C.

1. No valid reason is seen why a satisfactory 2-pound incendiary bomb could not be designed and procured. Such a bomb would be suitable for all targets except exceptionally well-protected roofs made of brick or hollow tile.

2. It is to be recalled that the German incendiary bomb weighs only 2 pounds 2 ounces and has been used against all British targets with evident efficiency. Eighty-eight per cent of the weight of this bomb is incendiary material. With the exception of the fuse mechanism, which is made of brass (weight 2 ounces), and a stabilizer made of thin sheet iron (weight 2 ounces), the body of the bomb is made entirely of magnesium and weighs 1 pound 7 ounces. The remaining 7 ounces constitute the charge of thermit which ignites the bomb. This bomb reaches a terminal velocity of 300 feet a second.

3. By seeking to increase the penetration, the British designed the 4-pound incendiary bomb with a heavy cast iron nose weighing 1-3/4 pounds. This limits the amount of burning magnesium to 1 pound 4 ounces, which is less than the magnesium of the German incendiary bomb. The British bomb has a terminal velocity of about 600 feet per second.

4. It is submitted that the attack with incendiary bombs of buildings of such construction as would require the penetration of the British incendiary bomb would prove, on the whole, ineffective. Such buildings would be modern in construction, more or less fireproof and, in all probability, further guarded against incendiary attacks by complete removal from the upper stories of highly inflammable material. On the other hand, the roofs of old buildings would be easily penetrated, even by a 2-pound bomb, and these buildings will be far more likely to be ignited than the well-constructed modern ones. The experience in London has been greatly to that effect. Most of the buildings that have been gutted by fire were old and inflammable. The modern buildings have suffered little from fire, both because the penetration of the German bomb was insufficient, and second, because even if the roofs were ruptured by high explosive bombs, the propagation of the fire was comparatively slow and gave time to the fire-fighting forces to stop its spread.

5. A 2-pound magnesium bomb could be nearly as effective an incendiary as the present 4-pound British bomb. It is doubtful, however, if a 2-pound substitute thermit bomb would be as good as the present 4-pound substitute thermit bomb (AN-M54), because the thermit charge being small would burn in a short time, would barely melt through the

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steel case, and could be rather easily put out.

6. No reason is seen why a satisfactory cluster could not be made to hold the 2-pound bomb.

WILLIAM N. PORTER,
Major General, C.W.S.,
Chief, Chemical Warfare Service.

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HEADQUARTERS ARMY AIR FORCES

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ROUTING AND RECORD SHEET

(To be filed with correspondence)

Note.—A line will be drawn across sheet after action by each office concerned.

SUBJECT: 2-lb. Incendiary Bomb.

NO.	FROM	TO	DATE	DATA
1.	AAF A-4	AAF ~~A-WP~~ AWP ~~A-3~~ ~~A-2~~ A-3	1941 10/1	AAF/A-4 MFS/mwb 1. Action was initiated some months ago by the Chief of the Air Corps to develop and standardize a 2-lb. incendiary bomb. 2. When the requ[redacted] considered by [redacted] Sub-C[redacted]liza-tion [redacted] a bomb b[redacted]nd-[redacted] Committee [redacted]tion. [redacted] The A-4 representative requested that the matter be referred to the Air Staff before the Sub-Committee took official action. Such request, made because the ~~united~~ initial request for development was submitted prior to the creation of the Air Staff, now results in the reference of these papers (see Part IV pages 2 and 3). 4. If there is a tactical requirement for a 2-lb. incendiary bomb that the 4-lb. bomb does not fill, a defense of the 2-lb. bomb will be required. If there is no tactical need that the 4-lb. will not fill, the correspondence should be withdrawn. 5. Copies of the pertinent correspondence are available in Central Files. Incls: Memo to Ch/AS, 9/29, "Military Characteristics for Small Incendiary Bombs" w/case No. 217. EAH E.P.S. C/A-4
2	AWPD	A 2	10/13	Noted 1 Mo for HLG

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AWPD 10-11-41
AWPD 10/3/41

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A 2 10/13

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471.6

Tactics and Employment of Low Flying Aircraft.

AAF/A-3
HSV-ds

1 AAF Eq.AFCC 1941 For comment and recommendation to this headquarters.
G/AS 10/7

1 Incl.
Memo from Jt.Aircraft Comm.
to G/AS -- 9/29/41 - subj.
as above w/Case #217 9/5/41
and Case #235 8/2/41.

GS
C/AS

Dispatched
OCT 8 1941
AAG

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Chief of Staff	Secy Air Staff	A.A.G.	A-1	A-2	A-3	A-4	A- WPD	A. Insp.	Budget	Statistics	
	[signature]				[signature]						

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JOINT AIRCRAFT COMMITTEE
WASHINGTON, D.C.

September 29, 1941

MEMORANDUM FOR: The Chief of the Air Staff

SUBJECT: Tactics and Employment of Low Flying Aircraft

1. The Joint Aircraft Committee has directed that it be ascertained whether the tactics and employment of low flying aircraft have been changed by the War Department so that either the 12-second delay, the 45-second delay, or an intermediate-time delay fuse can be used in order that only one type will have to be developed and procured. (Reference: Page 5, Part VI, Paragraph 2 of Case No. 217 dated September 5, 1941.)

2. It is requested that this information be forwarded to the Joint Aircraft Committee for incorporation in the study of the standardization of aircraft bomb fuses.

C. MATHEWSON
Assistant Recorder

Incls.:
Case No. 217 dated 9/5/41
Case No. 235 dated 8/2/41

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AAF/A-4
JYY

Rewritten Sept. 22, 1941.

SEP 25 1941

MEMORANDUM FOR THE ASSISTANT CHIEF OF STAFF, G-4:

SUBJECT: Procurement of Four (4) Pound Incendiary Bombs.

1. The Chief of the Army Air Forces has secured from the Deputy Chief of Staff, General Moore, an agreement to increase the allotment for the purchase of four pound incendiary bombs from approximately $50,000,000.00 to $80,000,000.00. This increase is to be taken from the approximate $150,000,000.00 which is available from the 1942 regular appropriation and the first supplemental 1942 appropriation for the purchase of four pound incendiary bombs.

2. The increase in the funds for the purchase of four pound incendiary bombs from $50,000,000.00 to $80,000,000.00 is necessary to provide greater productive capacity to meet future emergency needs and at the same time to provide an adequate stock of this type of bomb for the use of the Army Air Forces.

3. It is requested that action be taken to sub-allot to the Chemical Warfare Service the additional $30,000,000.00 required to meet the needs of this project.

Sgd. H. H. Arnold

gwd

H. H. ARNOLD
Major General, U.S.A.
Chief of the Army Air Forces

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By JS/MM1 JC; Date 3-10-77

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RECEIPT

DATE _____

SUBJECT: Procurement of Four (4) Pound Incendiary Bombs.

Received from the Headquarters, Army Air Forces, memorandum to the Assistant Chief of Staff, G-4, above subject.

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Office Rank

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Office

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September 26, 1941

Trunnion Bands for Bombs for Navy use at Army Bases.

X G-4

471.6 (13)

AFF/A-4
JYY/mr

I. 1. The Chief of Army Air Forces does not concur in the action taken on the attached disposition slip, par 2

2. While it must be recognized that existing stock of bombs at Army Bases are insufficient to meet Army needs, to say nothing of supplying bombs to the Navy or Marine Corps, it is possible that in some instances, Army units capable of carrying particular types of bombs may not be present at the Army Base in an emergency, or if present, the course of events may be such as to make it imperative that the Navy assist in discharging bombs during intense periods of air combat. In addition, it would be considered that as time goes on, a greater stock of bombs may be available so that in extreme emergency, some bombs might be spared for Navy use. It is therefore recommended that the Navy be permitted to stock such Trunnion Bands as they may desire to place at Army bases. Such stockage to be made with a distinct understanding that this stockage does not carry without any priority or other rights in the use of bombs belonging to the Army.

Copy for Air Adjutant General

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3. Otherwise, as above noted, the Chief of Army Air Forces concurs.

1 Incl.
W/T G-4/22796-86, 9/19/41,
w/2 Incls.(1Ar.fm.OCnOrd
6/22/41) & (memo.fm.ChBureauOrd,
6/6/41) above subj.

For the Chief of the Army Air Forces:

EDWARD P. CURTIS,
Major, Air Corps,
Secretary of The Air Staff

Dispatched
OCT 2 1941
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WAR DEPARTMENT GENERAL STAFF
DISPOSITION FORM

471.6 (8-22-41)
G-4/22396-86

Trunnion Bands for Bombs for Navy use at Army Bases.

September 19, 1941

X TAG

I ORD

X S/W directs

I Ind.

I. 1. The determination of the number of bombs to be stored at outlying Army Bases and Air Corps Stations along the Atlantic Coast will be based upon the estimated requirements of the Army Air Forces to be operated from these areas in the event of an emergency. Any diversion of bombs for Navy use at these locations will correspondingly reduce the effectiveness of Army Air Force Units.

2. Present procurement will not permit the storage of Army bombs at outlying bases in excess of Army Air Force requirements in order to provide bombs for possible emergency needs of the Navy and Marine Corps. The procurement and storage of trunnion bands over and above Army requirements will, therefore, serve no useful purpose.

3. In the event the Navy Department desires to store Navy trunnion bands and bombs at Army Air Bases and Stations in order to provide for any emergency which may require the operation of Naval aircraft in these areas, requests for such storage at locations other than those under the control of the Chief of Ordnance should be submitted to the War Department for consideration. The Chief of Ordnance is authorized to make the necessary detailed arrangements with the Navy Department for storage at Ordnance Depots.

Concurrence:
Chief of Army Air Forces ( )
A.C. of S., WPD ( )

Incls:
Ltr fm OChOrd
(8-22-41)
w/1 Incl.

R. A. WHEELER,
Colonel, Corps of Engineers,
Acting Assistant Chief of Staff.

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By ISHPI, HC, Date 5-10-77

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AG 471.6 (8-22-41) September 19, 1941
G-4/22396-86
Subject: Trunnion Bands for Bombs for Navy use at Army Bases.

FOR RECORD ONLY:

1. In the basic communication the Ch/Ord incloses a memo from the Chief, Bureau of Ordnance, Navy Department, wherein it is requested that the Ch/Ord arrange to stock trunnion bands for bombs at such Army stations as might be visited by Naval aircraft in case of active operations. The Ch/Ord requests information relative to the policy with respect to release to the Navy of bombs stocked for Army use.

2. Trunnion bands, M1 and M2, for the 500-lb. and 1,000-lb. demolition bombs respectively, have recently been standardized (G-4/22396-86, August 13, 1941).

3. Ch/AAF, in a memo to G-4, September 11, 1941, advises that there is no objection to the Navy stocking trunnion bands at Army air bases and stations, but that the stockage of bands must not be construed to earmark the corresponding bombs for Navy use.

4. No policy has been established for the emergency use of Army bombs by the Navy. Since the action requested is entirely for the convenience of the Navy there seems to be no reason why trunnion bands for bombs should be stocked at outlying bases or other stations at Army expense to provide for possible Navy needs. It is believed that the Army should cooperate and store Navy bands and bombs wherever such action is feasible in the event the Navy desires wider distribution of their own stocks.

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War Department
Office of the Chief of Ordnance
Washington

ASR/jeb

August 22, 1941.

Subject: Trunnion Bands for Bombs.

To: The Adjutant General.
Washington, D. C.

1. Inclosed is memorandum from the Chief of Bureau of Ordnance to the Chief of Ordnance, Subject: "Trunnion Bands for Bombs," dated August 8, 1941, for statement of policy.

2. This matter is referred to you in view of the fact that stockage of Trunnion Bands as requested in inclosed memorandum is intimately related to established policy with respect to release to the Navy of Bombs stocked for War Department use.

For the Chief of Ordnance:

P. M. Seleen,
Major, Ord. Dept.,
Executive Assistant.

1 Incl.

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NAVY DEPARTMENT
BUREAU OF ORDNANCE
WASHINGTON, D.C.

MEMORANDUM

From: The Chief of the Bureau of Ordnance.
To: The Chief of Ordnance, War Department.

Subject: Trunnion Bands for Bombs.

One of the objectives of the current program for the standardization of bombs is to make it feasible for aircraft of either the Army or the Navy to obtain usable bombs from the stations of the other service on very short notice. In view of the large number of dive bombers in the Naval aeronautical organization, which require trunnion bands in order to bomb in a dive, it is requested that the Chief of Ordnance arrange to stock bands at such Army stations as might be visited by Naval aircraft in case of active operations.

It is suggested that the following views be given consideration in determining distribution and total quantities:

(a) Trunnion bands are at present used by the Navy only on 500 and 1,000 lb. bombs. Bands are desirable for demolition bombs of current production, as well as for the prospective SAP and GP bombs, in these two sizes.

(b) It is probable tha the need for bands will arise most frequently at -

(1) Outlying bases, such as Iceland, Newfoundland, Bermuda, Trinidad, Panama, Hawaii, etc. The above list is not exhaustive. It is suggested that bands should be available for half the 500 and 1,000 lb. bombs at these stations.

(2) Stations along the Atlantic Coast, east of the Appalachians, on the Pacific Coast, west of the Sierra Nevadas and Cascades, and along the Gulf Coast. It is suggested

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Subject: Trunnion Bands for Bombs.

that bands should be available for one-eighth of the 500 and 1,000 lb. bombs at these stations.

(c) In regard to a total supply to take care of unexpected contingencies, it is suggested that as -

(1) The number of dive bombers is about 20% of the total Navy program, and

(2) The number of planes in the Navy program is about 25% of the number in the Army program,

a total number of bands equal to 2-1/2% of the total number of bombs in the 500 and 1,000 lb. sizes should be sufficient.

The above request is considered to take care of the Marine Corps Squadrons, as well as those of the Navy proper.

W. H. P. BLANDY

BB

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Air Corps
Marine Corps

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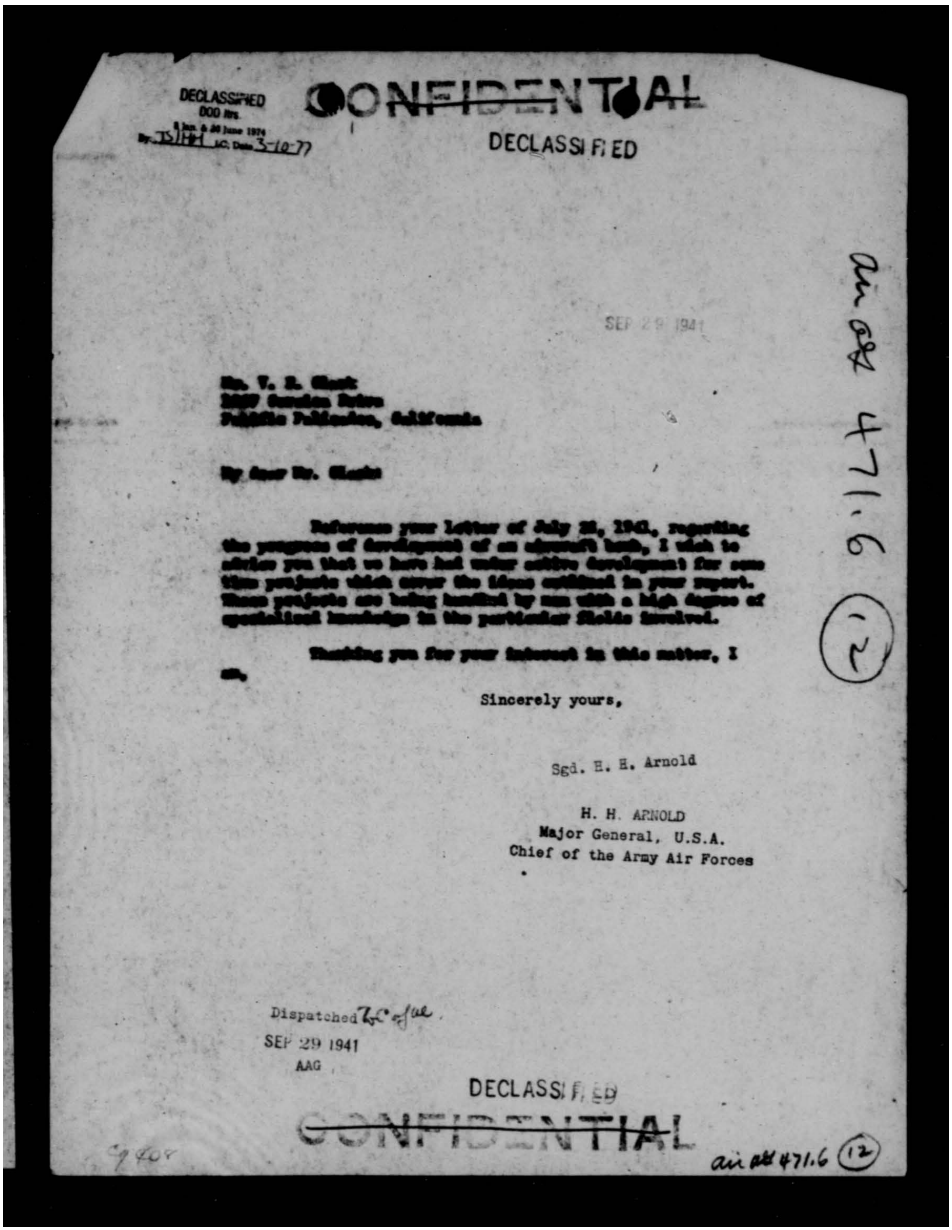

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8 Jan. & 20 June 1974
By: JS/HH LC Date 3-10-77

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SEP 29 1941

Mr. V. E. Clark
[illegible] Garden Drive
Pacific Palisades, California

My dear Mr. Clark:

Reference your letter of July 28, 1941, regarding the progress of development of an aircraft bomb, I wish to advise you that we have had under active development for some time projects which cover the ideas outlined in your report. These projects are being handled by men with a high degree of specialized knowledge in the particular fields involved.

Thanking you for your interest in this matter, I am,

Sincerely yours,

Sgd. H. H. Arnold

H. H. ARNOLD
Major General, U.S.A.
Chief of the Army Air Forces

Dispatched to C of AC
SEP 29 1941
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V. E. CLARK
1067 CORSICA DRIVE
PACIFIC PALISADES
CALIFORNIA

July 26, 1941

General Henry H. Arnold, U. S. Army

Dear General Arnold;

I send you herewith, by the hand of Colonel John H. Jouett, a brief preliminary report on the progress of developement of an aircraft bomb.

You may remember that this project was suggested by, and has been supported by, Mr. Howard Hughes.

I have not discussed the matter with Mr. Hughes for many months,- this report goes to you without his authority,- but I believe that he is quite earnest that I should continue on the work without stint of effort or expense, and with the greatest expedition. This, of course, I am anxious to do.

It seems to me, however, that, should there be merit in any of the ideas present, these should, in the interest of the national defense, be developed by men having greater specialized knowledge and ability in the field than have I; and it is with this thought that I submit them to you.

Colonel Jouett has been so kind as to deliver, in person, another copy of the report to each of the following:

Rear Admiral John H. Towers;
Doctor Charles F. Kettering.

Sincerely,

V. E. Clark

vec

1 Enc.

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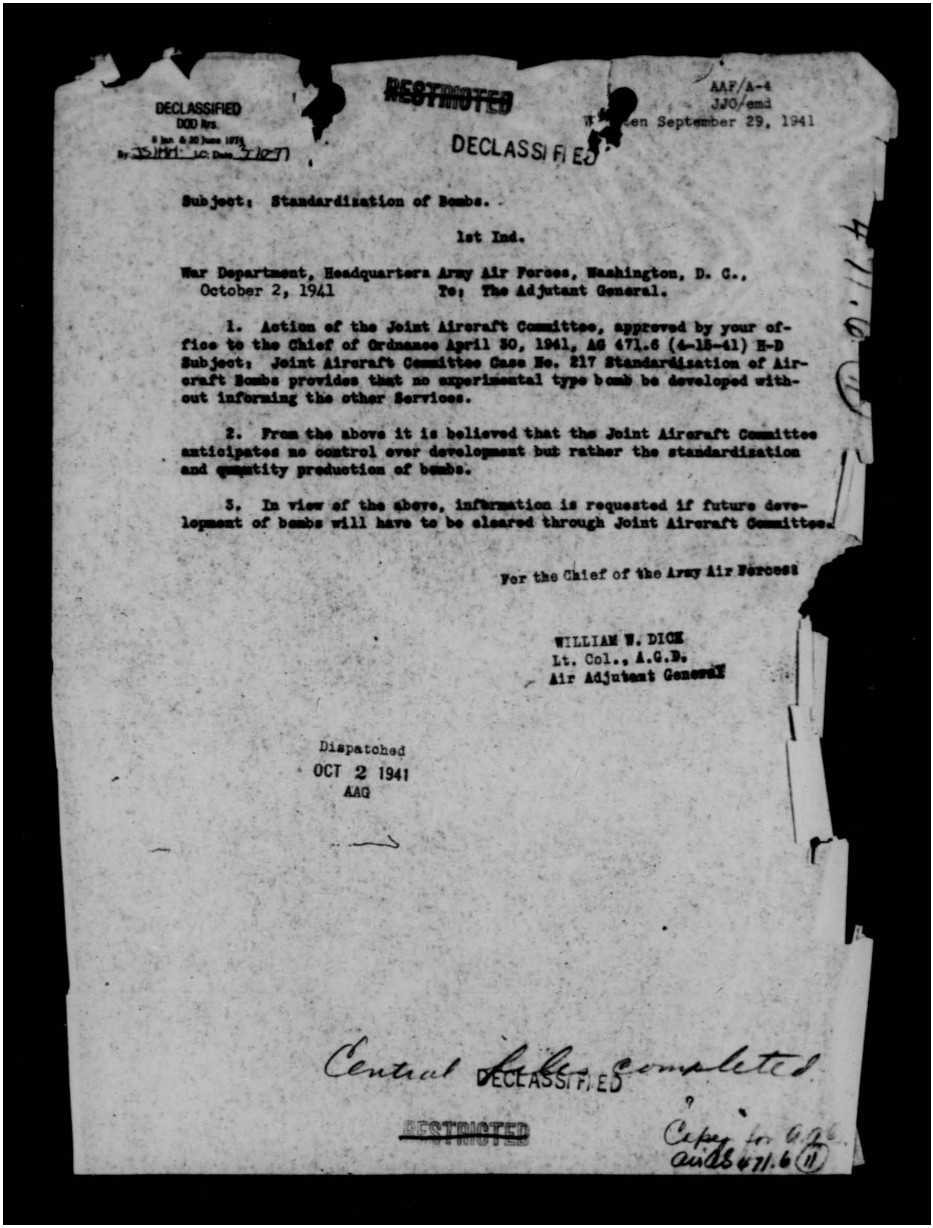

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8 Jan & 20 June 1974
By JSIMM LC Date 3-10-77

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AAF/A-4
JJO/emd
[illegible]en September 29, 1941

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Subject: Standardization of Bombs.

1st Ind.

War Department, Headquarters Army Air Forces, Washington, D. C.,
October 2, 1941 To: The Adjutant General.

1. Action of the Joint Aircraft Committee, approved by your office to the Chief of Ordnance April 30, 1941, AG 471.6 (4-15-41) H-D Subject: Joint Aircraft Committee Case No. 217 Standardization of Aircraft Bombs provides that no experimental type bomb be developed without informing the other Services.

2. From the above it is believed that the Joint Aircraft Committee anticipates no control over development but rather the standardization and quantity production of bombs.

3. In view of the above, information is requested if future development of bombs will have to be cleared through Joint Aircraft Committee.

For the Chief of the Army Air Forces:

WILLIAM W. DICK
Lt. Col., A.G.D.
Air Adjutant General

Dispatched
OCT 2 1941
AAG

Central files completed

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Copy for A.G.
air AS 471.6 (11)

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DOD Dir.
5 Jan. & 20 June 1974
By: JS/MM LC Date 3-10-77

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SUBJECT: Proposed Military Characteristics for 4,000 Pound Bomb.

AG 471.6 (7-28-41)MC 2nd Ind. RPM/sts/1712

War Department, A.G.O., Aug. 7, 1941.- To: Chief of the Air Corps.

1 Incl. n/c

3d Ind.

OCAC, Aug. 14,1941 to Chief, Army Air Forces.

Incl. n/c

H.W.B.
Asst.Exec.

471.6 (8)

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air ag 471.6 (8)

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DOD Ltr.
8 Jan. & 30 June 1974
By JS/HM LC, Date 3-10-77

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O.O. 471.623/782 1st Ind. AA/eff

War Department, Ordnance Office, Washington, D. C. August 1, 1941.
To: The Adjutant General.

1. The military characteristics for the 4000-lb. bomb as stated in the attached memorandum for the Chief of Staff are concurred in by the Chief of Ordnance.

2. A bomb which it is felt fully meets these characteristics has already been tested at the Aberdeen Proving Ground and an Ordnance Subcommittee action has been prepared recommending standardization which will be presented to the Ordnance Technical Committee on August 7 if concurred in by the Air Corps representatives.

For the Chief of Ordnance:

46 A G O
AUG 6 1941
Received

G. M. BARNES
Brig. Gen., Ord. Dept.
Asst. Chief of Industrial Service
Research and Engineering

55

1 Incl. n/c

AUG - 6 1941

RECEIVED MISC. DIV., AGO.
W. P. SUB SECTION

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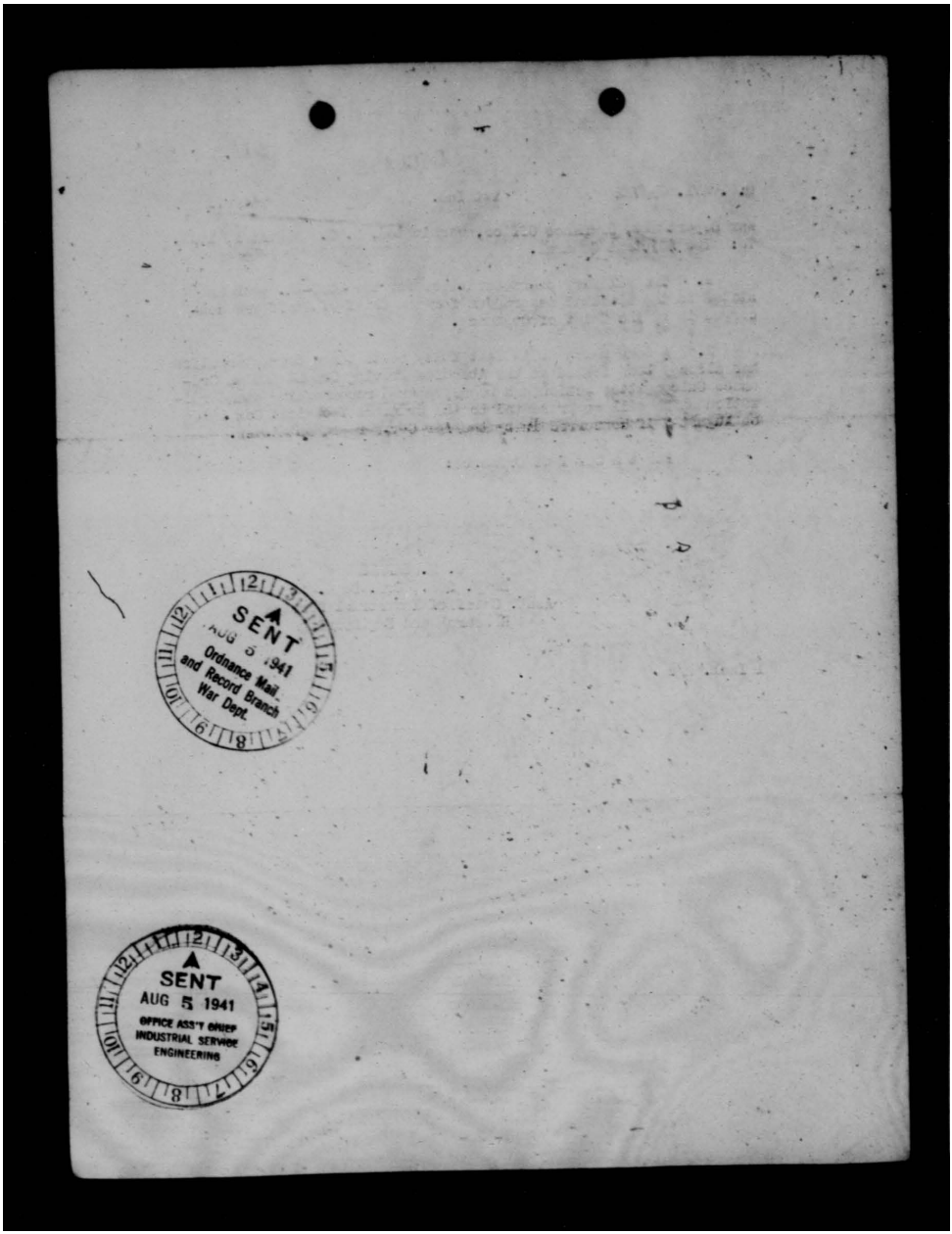

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ADDRESS REPLY TO
CHIEF OF THE AIR CORPS
WAR DEPARTMENT
WASHINGTON, D. C.

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000 ltrs.
6 Jan. & 30 June 1974
By JS/HM I.C. Date 3-10-77

WAR DEPARTMENT
OFFICE OF THE CHIEF OF THE AIR CORPS
WASHINGTON

JUL 28 1941

O. O. WAR DEPT.
471.623
JUL 30 1941
782

SUBJECT: Proposed Military Characteristics for 4,000 Pound Bomb

TO: The Chief of Ordnance

1. Forwarded herewith is memorandum for the Chief of Staff, subject "Proposed Military Characteristics for 4,000 Pound Bomb", for concurrence by the Chief of Ordnance.

For the Chief of the Air Corps

F. I. Ordway, Jr.

F. I. ORDWAY, JR.,
Major, Air Corps,
Asst. Exec., Mat. Div.

Incl.
Ltr. to Chief of Staff not no.

471.6

(7-28-41)

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CE-17 A7-29(5-a)

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8 Jan. & 20 June 1974
By JS/MM LC; Date 3-10-77

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4/23

WAR DEPARTMENT
OFFICE OF THE CHIEF OF THE ARMY AIR FORCES
WASHINGTON

MEMORANDUM FOR THE CHIEF OF STAFF:

Subject: Proposed Military Characteristics for 4,000 Pound Bomb.

I. Discussion.

1. As a result of information received from overseas and letter dated May 8, 1941, from Deputy Chief of Staff for Air, subject "4,000 Pound Bomb", the Chief of Ordnance was directed to procure 4,000 pound, light case bombs for test. These bombs were manufactured and were tested at Aberdeen Proving Ground on July 2, 1941. From the reports of the present war and the results of the test at Aberdeen, there is a requirement for a bomb of this type and weight.

II. Action recommended.

The Secretary of War directs that the following military characteristics for a demolition bomb, light case, total weight 4,000 pounds, be approved:

1. Item: 4,000 pound demolition bomb, light case.

2. Purpose: For use against military objectives where destruction of target is anticipated primarily due to blast effect.

3. Characteristics:

a. Design to be similar in shape to the present M-Series Demolition Bomb.

b. The bomb to have as high an explosive content as possible consistent with the design.

c. Explosive content to be approximately 80%.

d. The bomb to have center to center distance between carrying lugs equivalent to the present 2,000 pound bomb.

e. The bomb to be equipped with "instantaneous" fuze in order that all the blast effect possible may be anticipated above the ground.

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CO-568
CO-993 CO-17 CO-685

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Incl. #1

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To: The Chief of Staff

III. Concurrences.
Chief of Ordnance ( ) See attached correspondence
Chief of the Air Corps ( )
Chief of the Army Air Forces ( )

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AAG 471.6

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8 Jan. & 20 June 1954
By JSIHM LC; Date 3-10-77

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JUL 31 1941

MEMORANDUM FOR THE ASSISTANT CHIEF OF STAFF, G-4:

Subject: Bombs and Fuses, Philippine Department.

It is requested that the Chief of Ordnance be directed to increase the number of bombs now in the Philippine Department by the amounts tabulated below:

2000#	--	75
1000#	--	[illegible]
500#	--	[illegible]
100#	--	2500

It is desired that these bombs reach the Philippines at the earliest possible date.

[illegible]
A.C. of S., WPD ( )

For the Chief of the Army Air Forces:

CARL SPAATZ
Brig. General, Air Corps,
Chief of The Air Staff.

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8 Jan. & 20 June 1974
By JS/HM, MC, Date 3-10-77

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BY AUTHORITY OF A. C. OF S., WPD

WAR DEPARTMENT
WAR DEPARTMENT GENERAL STAFF
WAR PLANS DIVISION
WASHINGTON

WPD 4373-1

7/22/41 Date
Initials.

July 22, 1941.

MEMORANDUM FOR GENERAL ARNOLD:

Subject: Demolition Bombs to Alaska.

The following report of status of demolition bombs supplied to Alaska was furnished to War Plans Division by the Assistant Chief of Staff, G-4:

	100#	300#	500# 600#	1000# 1100#	2000#	Date arrived in Alaska
	1037	395	186	78	0	3-25-41
	1828	324	42	42	12	4-20-41
	3891	685	1240	108	36	4-20-41
		1881				4-20-41
Total	6756	3285	1468	228	48	

L. T. Gerow
L. T. GEROW,
Brigadier General,
Acting Assistant Chief of Staff.

Gen Spaatz
note + file
WPD

A-259

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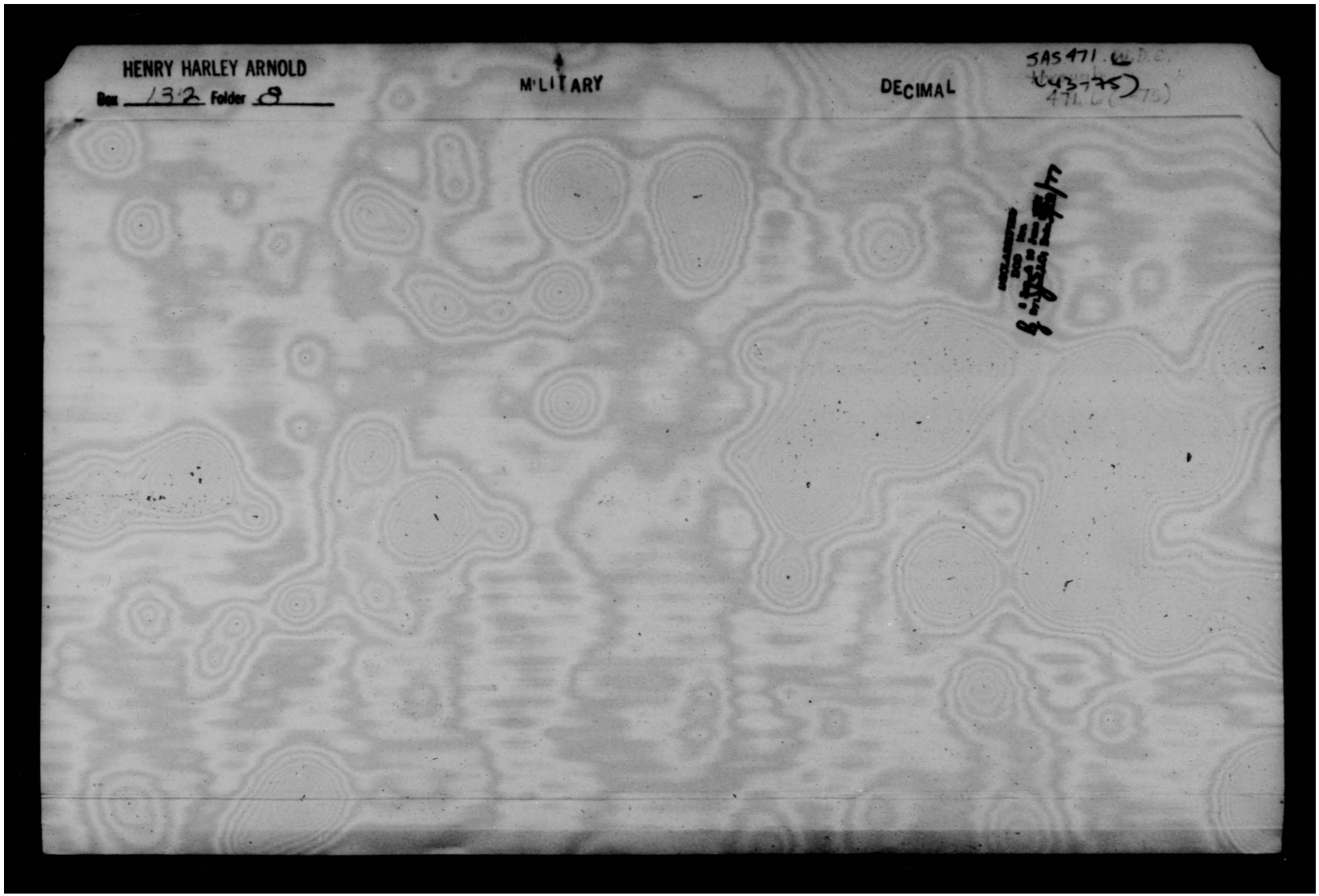

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8 Jan. & 30 June 1954
By TS/MM LC, Date 5-10-71

CWS 471.6/500 1st Ind.
(12-6-41)

War Department, O-C of CWS, December 11, 1941. - To: The Chief of the Army Air Forces, War Department, Washington, D. C.

1. There will be available for shipment from West Hanover, Massachusetts, by December 25, 1941, a total of 51,000 bombs, 4-lb., AN-M54. These bombs are packed in 1,500 boxes, in clusters, 34 bombs to the cluster.

2. In view of the recent War Department instructions which suspended shipments to the Philippine Islands, it is advised that the 51,000 bombs will be shipped to the Chemical Section, Utah General Depot, pending further instructions.

For the Chief of the Chemical Warfare Service:

Charles E. Loucks
CHARLES E. LOUCKS
Lt. Col., C.W.S.
Executive

New instructions have been issued x

Schmeck

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an ab 471.6 (75)

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

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8 Jan. & 30 June 1974
By: JS/MM LC. Date: 5-10-77

WAR DEPARTMENT
OFFICE OF THE CHIEF OF THE ARMY AIR FORCES
WASHINGTON

IN REPLY REFER TO:

DEC 6 - 1941

SUBJECT: Four (4) Pound Incendiary Bombs.

CWS 471.6/500

TO: Chief, Chemical Warfare Service.

1. It was understood in a conference in General Arnold's office on Monday, December 1, 1941, that a number of four (4) pound thermate incendiary bombs would be available for disposition during December.

2. General Arnold expressed the desire that fifty thousand (50,000) of these be put aboard ship before the end of December for delivery to Plum.

3. It is desired that the possibility of meeting the request above stated be verified in order that instructions may be secured for accomplishment of the shipment.

For the Chief of the Army Air Forces:

W. W. Dick

WILLIAM W. DICK
Lt. Col., A.C.
Air Adjutant General

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DEC 10 1941
OFFICE CHIEF, CWS
WASHINGTON

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CWS 471.6 (75)

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WAR DEPARTMENT
WAR DEPARTMENT GENERAL STAFF
WAR PLANS DIVISION
WASHINGTON

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592

November 5, 1941.

471.6 (74)

MEMORANDUM FOR GENERAL SPAATZ:

Subject: Airplane Bombs

With further reference to our discussion, I have just received the following information from Major Cotulla, G-4:

AIR FORCE COMBAT COMMAND Reserve

	Authorized	Drawn	Credit on Depot Stocks or Production
100#	5250	2212	3038
300#	1750	700	1050
500#	6750	2570	4180
1000#	1000	522	478
2000#	300	152	148

R. W. CRAWFORD,
Colonel, G.S.C.,
Chief, Projects Group.

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8 Jan. & 20 June 1974
By: JS/HM LC; Date 3-10-77

2d Ind. (Air AG)

HQ ARMY AIR FORCES, Washington, D. C. January 5, 1942
TO : Joint Aircraft Committee.

It is assumed that the information requested under paragraph G 2 sub paragraphs a and b (page 10) of inclosed case No. 235 is desired.

Attached is copy of Memorandum to Chief of Ordnance covering the points in question.

For the Chief of the Army Air Forces:

Dispatched
JAN 5 1942
AAG

WILLIAM W. DICK
Colonel, A.G.D.
Air Adjutant General.

Incls.:
Cy Memo G/Ord 12-2-42
Cy case No. 235

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 ab 471.6 (93)

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8 Jan. & 20 June 1974
By JS/MM LC Date 3-10-77

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JOINT AIRCRAFT COMMITTEE
Washington, D.C.

November 19, 1941.

MEMORANDUM TO: Chief of Air Force Combat Command
Bolling Field,

SUBJECT: Case No. 235, Standardization of Aircraft Bomb Fuzes.

1. In accordance with a request by Lieutenant Colonel, D. G. Lingle, Air Corps, there are transmitted herewith two copies of Case No. 235. It is requested that necessary action be taken in conforming to the agreement of the Joint Aircraft Committee on the standardization of aircraft bomb fuzes.

2. Case No. 235 was approved in the Joint Aircraft Committee meeting on November 10, 1941.

/s/

P. W. TIMBERLAKE
Major, Air Corps
Recorder, Joint Aircraft Committee

Incls:
2 copies Case No. 235.

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8 Jan. & 30 June 1974
By: JSH/4-1 LC Date 3-10-77

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AGC 334.8 (11-19-41) 1st Ind. (K-28)

HEADQUARTERS AIR FORCE COMBAT COMMAND, Bolling Field, D.C., DEC 4 - 1941
To: The Chief of the Army Air Forces, Washington, D.C.

In view of the request noted in paragraph 1, basic memorandum, it is believed that the correspondence should have been sent to your headquarters rather than to Headquarters, Air Force Combat Command.

For the Commanding General:

Hq. Army Air Forces
DEC 5 41
AAG Received
Incls.
No change.

C. W. RUSSELL,
Brigadier General, G.S.C.,
Chief of Staff

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- 2 -

air AG 471.6 (73)

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8 Jan. & 20 June 1974
By: JSMM LC Date 3-10-77

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WAR DEPARTMENT
OFFICE OF THE CHIEF OF THE ARMY AIR FORCES
WASHINGTON

MEMORANDUM FOR THE JOINT AIRCRAFT COMMITTEE:

Subject: Case No. 235 Standardization of Aircraft Bomb Fuzes.

1. Reference attached Memorandum your office to the Air Force Combat Command requesting that necessary action be taken to conform to agreement of the Joint Aircraft Committee as contained in Case No. 235.

2. It is assumed that the information requested under paragraph G 2 sub paragraphs a and b (page 10) of inclosed Case No. 235 is desired.

3. Attached ~~hereto~~ is copy of Memorandum to Chief of Ordnance covering the points in question.

Incls:
Cy Memo C/Ord, 12/2/42,
Ltr JAC to C/AFCC ,
11/19/41 w/1st Ind. and
Cy case No. 235.

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8 Jan. & 20 June 1974
By JS/HM LC Date 3-10-77

MEMORANDUM FOR THE JOINT AIRCRAFT COMMITTEE:

Subject: Case No. 235 Standardization of Aircraft Bomb Fuses.

1. Reference attached Memorandum your office to the Air Force Combat Command requesting that necessary action be taken to conform to agreement of the Joint Aircraft Committee as contained in Case No. 235.

2. It is assumed that the information requested under paragraph G 2 sub paragraphs a and b (page 10) of inclosed Case No. 235 is desired.

3. Attached hereto is copy of Memorandum to Chief of Ordnance covering the points in question.

Incls:
Cy Memo C/Ord, 12/2/41,
Ltr JAC to C/AFCC,
11/19/41 w/1st Ind. and
Cy case No. 235.

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8 Jan. & 20 June 1974
By: JS/MM LC; Date 3-6-77

2d Ind, (A r AG)

WD HQ ARMY AIR FORCES, Washington, D.C. January 5, 1942
TO : The Joint Aircraft Committee

Since standardized items referred to in case No. 217 inclosed and for which there is an Air Force requirement are at present under procurement by the Chief of Ordnance, it is believed that further action is unnecessary.

For the Chief of the Army Air Forces:

WILLIAM W. DICK
Colonel, A.G.D.
Air Adjutant General.

Incls- n-c

Dispatched
JAN 5 1942
AAG

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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
By: JSMM Ltr Date 5-10-77

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WAR DEPARTMENT
OFFICE OF THE CHIEF OF THE ARMY AIR FORCES
WASHINGTON

MEMORANDUM FOR THE JOINT AIRCRAFT COMMITTEE:

Subject: Case No. 217 Standardization of Aircraft Bombs.

1. Reference attached memorandum from your office to Air Force Combat Command requesting necessary action be taken in conforming to the agreement of the Joint Aircraft Committee and 1st Indorsement from Air Force Combat Command.

2. Since standardized items referred to in case No. 217 inclosed and for which there is an Air Force requirement are at present under procurement by the Chief of Ordnance it is believed that further action is unnecessary.

Incls:
Ltr fm JAC to AFCC abv sub
12-15-41 w/1 Inds & 1 Incl.
Case No. 217.

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8 Jan. & 20 June 1974
By JS/HM LC, Date 3-10-77

ACC 334.8 (12-15-41) 1st Ind. (K-28)

HEADQUARTERS AIR FORCE COMBAT COMMAND, Bolling Field, D.C.,
To: The Chief of the Army Air Forces, Washington, D.C.

In view of the request noted in paragraph 1, basic memorandum, it is believed that the correspondence should have been sent to your headquarters rather than to Headquarters, Air Force Combat Command.

For the Commanding General:

Incls.
No change.

C. W. RUSSELL,
Brigadier General, G.S.C.,
Chief of Staff.

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8 Jan. & 20 June 1974
By [illegible] LC, Date 3-10-77

JOINT AIRCRAFT COMMITTEE
WASHINGTON, D. C.

December 15, 1941.

MEMORANDUM TO: Chief of Air Force Combat Command
Bolling Field.

SUBJECT: Case No. 217, Standardization of Aircraft Bombs.

1. In accordance with a request by Lieutenant Colonel D. G. Lingle, Air Corps, there are transmitted herewith two copies of Report No. 6 of Case No. 217. It is requested that the necessary action be taken in conforming to the agreement of the Joint Aircraft Committee on the standardization of aircraft bombs.

2. Report No. 6 of Case No. 217 was approved in the meeting of the Joint Aircraft Committee on December 8, 1941.

P. W. TIMBERLAKE
Lieut. Colonel, Air Corps
Recorder, Joint Aircraft
Committee

Incls.:
2 Cys. Case No. 217

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SUBJECT: Case No 217 Standardization of aircraft bombs.

Basic fr Joint Aircraft 11-28-41 to C AFCC

request action be taken on case No 217.
Approved by J.Aircr. Com. on 11-24-41

1st Ind.

Hq AFCC to C AAF

Believe correspondence should have been sent to you.

2d Ind. (Air AG)

WD HQ ARMY AIR FORCES, Washington, D. C. January 5, 1942
TO : The Joint Aircraft Committee.

Since standardized items referred to in case No. 217 inclosed and for which there is an Air Force requirement are at present under procurement by the Chief of Ordnance, it is believed that further action is unnecessary.

For the Chief of the Army Air Forces:

WILLIAM W. DICK
Colonel, A.G.D.
Air Adjutant General.

Incls- nc

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: JS/MM J.C. Date 5-10-77

JOINT AIRCRAFT COMMITTEE
WASHINGTON, D. C.

November 28, 1941

MEMORANDUM TO: Chief of Air Force Combat Command
Bolling Field.

SUBJECT: Case No. 217, Standardization of Aircraft Bombs

1. In accordance with a request by Lieutenant Colonel D. G. Lingle, Air Corps, there are transmitted herewith two copies of Case No. 217. It is requested that the necessary action be taken in conforming to the agreement of the Joint Aircraft Committee on the standardization of aircraft bombs.

2. Case No. 217 was approved in the Joint Aircraft Committee meeting on November 24, 1941.

P. W. TIMBERLAKE
Major, Air Corps
Recorder, Joint Aircraft Committee

Incls.:
2 Cys. Case No. 217

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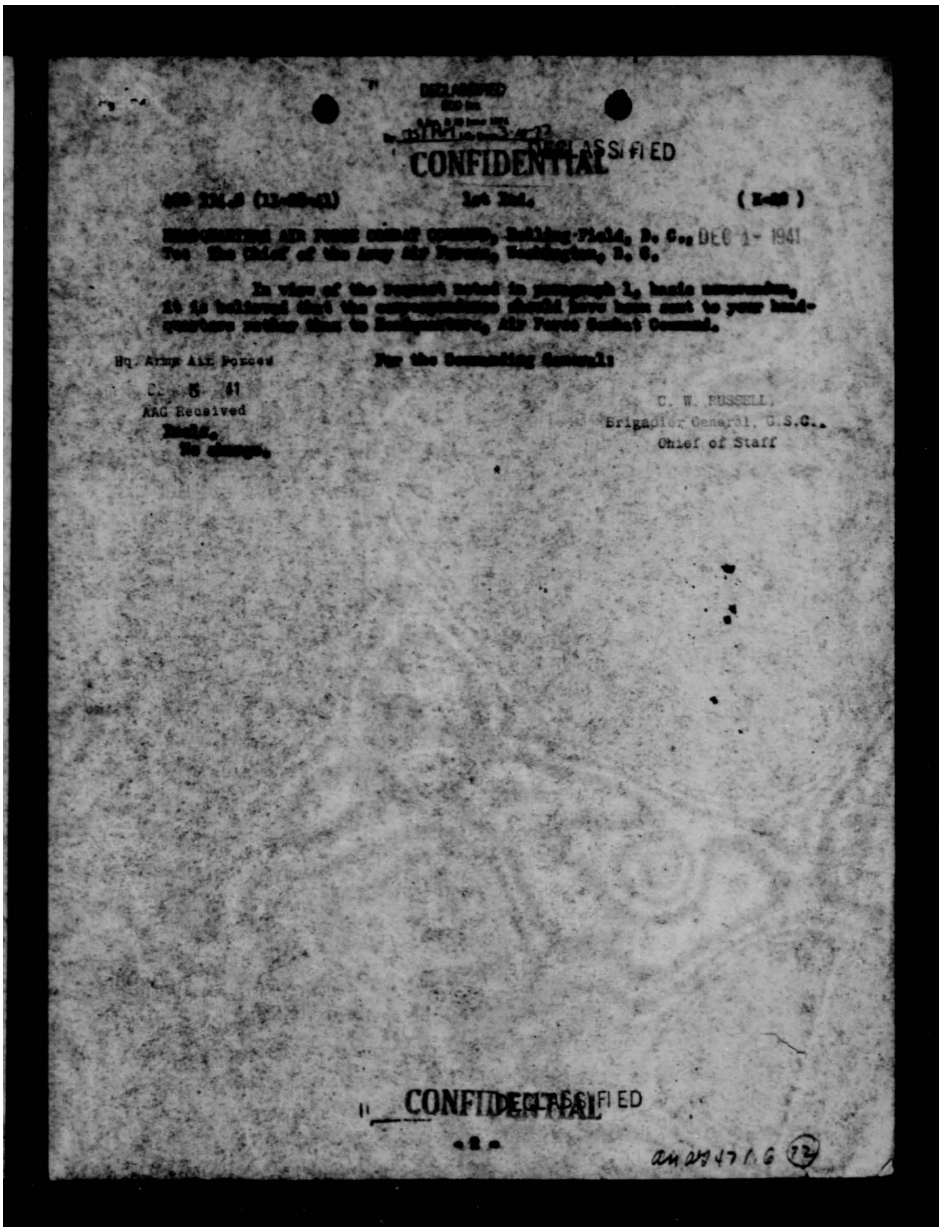

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By [illegible] Date [illegible]

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[illegible] (11-[illegible]-41) 1st Ind. ([illegible])

HEADQUARTERS AIR FORCE COMBAT COMMAND, Bolling Field, D. C., DEC 1 - 1941
To: The Chief of the Army Air Forces, Washington, D. C.

In view of the request noted in paragraph 1, basic memorandum, it is believed that the correspondence should have been sent to your headquarters rather than to Headquarters, Air Force Combat Command.

Hq. Army Air Forces
Dec 5 41
AAG Received
Incls.
No change.

For the Commanding General:

C. W. RUSSELL,
Brigadier General, G.S.C.,
Chief of Staff

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DOD ltrs.
8 Jan. & 30 June 1974
By: JS/MM LC; Date 3-10-77

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WAR DEPARTMENT
HEADQUARTERS OF THE ARMY AIR FORCES
WASHINGTON

MEMORANDUM FOR THE JOINT AIRCRAFT COMMITTEE:

Subject: Case No. 217 Standardization of Aircraft Bombs.

1. Reference attached memorandum from your office to Air Force Combat Command requesting necessary action be taken in conforming to the agreement of the Joint Aircraft Committee and 1st Indorsement from Air Force Combat Command.

2. Since standardized items referred to in case No. 217 inclosed and for which there is an Air Force requirement are at present under procurement by the Chief of Ordnance it is believed that further action is unnecessary.

Incls:
Ltr fm JAC to AFCC abv sub
11-28-41 w/1 Inds. & 2 Cys.
Case No. 217.

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6 Jan. & 20 June 1974
By: JSIMM LC; Date 3-16-77

1594

SUBJECT: Adapter, Cluster, M2 and Cluster, Fragmentation Bomb, M5, For Bombs, Fragmentation, 30-lb., M5 - Standardization of.

AS 471.6 (11-21-41)MC-D 2nd Ind. LFL/cjm-1712

War Department, AGO, December 1, 1941 - To the Chief of Ordnance.

1. The items Adapter, Cluster, M2 (for Fragmentation Bomb, M5) and Cluster, Fragmentation Bomb, M5 (100-lb. size)(6 bombs, Fragmentation 30-lb., M5) are classified as follows:

a. Required type
Adopted type
Standard articles.
b. War Reserve, critical items.

2. The Ordnance Department is charged with the storage and issue of these items.

3. It is desired that you recommend appropriate action to finance the procurement of 6128 Cluster Adapters, M2, which are required to assemble the 36772 Fragmentation Bombs, M5, which are on hand.

By order of the Secretary of War:

D. R. Van Sickler

1 Incl. n/c. Adjutant General.

COPY TO: Chief the Air Corps, w/cy of Basic and 1st Ind.
Under Secretary of War, re his 1st Ind. 11/26/41.
Chief of the Army Air Forces, w/cy of Basic and 1st Ind.

471.6 (71)

DECLASSIFIED
~~CONFIDENTIAL~~
an AS 471.6 (71)

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DOD ltrs.
8 Jan. & 20 June 1974
By: JS IMM LC; Date 3-10-77

~~CONFIDENTIAL~~

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WAR DEPARTMENT
OFFICE OF THE CHIEF OF ORDNANCE
WASHINGTON

Adelman/mfm

O.O.334.8/7817

November 21, 1941.

Ammunition Division
Industrial Service.

Subject: Adapter, Cluster, M2 and Cluster, Fragmentation Bomb, M3, for Bombs, Fragmentation, 30-lb., M5.

To: The Adjutant General THROUGH
The Under Secretary of War:

1. There is being forwarded herewith a copy of the report of the Subcommittee of the Ordnance Technical Committee dated November 18, 1941, which report has been approved by the Ordnance Committee and by the Chief of Ordnance and is recorded as Item 17443, Ordnance Committee Minutes. This report contemplates classification as standard of a Cluster Adapter, M2 for Fragmentation Bomb, M5 and for a Cluster assembly consisting of six bombs which is approximately the size of the 100-lb bomb and is therefore adapted for carrying on stations for the 100-lb. General Purpose Bomb. The bomb is a limited standard type with approximately 36,772 being on hand, thus requiring 6,128 of the adapters.

2. It is recommended that clearance for procurement be granted by the Under Secretary of War and that the Communication be forwarded to The Adjutant General for action in the matter of classification. It is recommended: -

a. that the Adapter be designated:

Adapter, Cluster, M2 (for Fragmentation Bomb, M5)

that the Assembly be designated:

Cluster, Fragmentation Bomb M3 (100-lb. size)
(6 bombs, Fragmentation 30-lb., M5).

b. that the items be classified:

Required type
Adopted type
Standard

c. that the Ordnance Department be charged with the storage and issue.

d. that the items be classified:

Essential - Critical.

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3. Requirements are given in the addendum to paragraph 3 of the Subcommittee report, namely, 6,128; total cost $24,512.00. Funds have not been allocated.

/s/ B. S. MERICK, MAJOR

For EARL McFARLAND
Brigadier General
Asst. to the Chief of Ord.

1 Incl. Cy. Item 17443,
O.C.M.

1st Ind.

War Department, Office of the Under Secretary Washington, D. C., November 26, 1941 - To The Adjutant General, Washington, D. C.

1. The following items are cleared forprocurement as to type:

Adapter, Cluster, M8 (for Fragmentation Bomb, M5)

Cluster, Fragmentation Bomb, M3 (100-lb. size)
(6 bombs, Fragmentation 30-lb. M5)

2. The Ordnance Department is charged with the procurement of these items.

By direction of the Under Secretary of War:

/s/ J. K. FITCH

For BYRON A. FALK,
Lt. Col., Signal Corps,
Chief, Standards Division.

1 Incl. n/c.

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RECEIPT

DATE 1-1-42

SUBJECT: Trunnion and Suspension Bands for Navy Use at Army Bases.

1. Received from the Headquarter, Army Air Forces, one Memorandum, above subject, w/incls.:-

BZ O.O. 471.62
3.20

Cy memo for AC/S, G-4 12/12/41; cy memo for C/NO, w/ltr fr C/NO to C/S, U.S.A., 12/2/41, w/cy memo frm C/Ord., (Navy) to C/Ord W.D., 8/8/41, w/cy ltr to Bur/Ord Abv. subj., 10/7/41 frm Ord. Dept. W. D.

M E Elley
OFFICER RANK
Chf & C Mgr

Ordnance
OFFICE

Ans Adj 471.6 (9)

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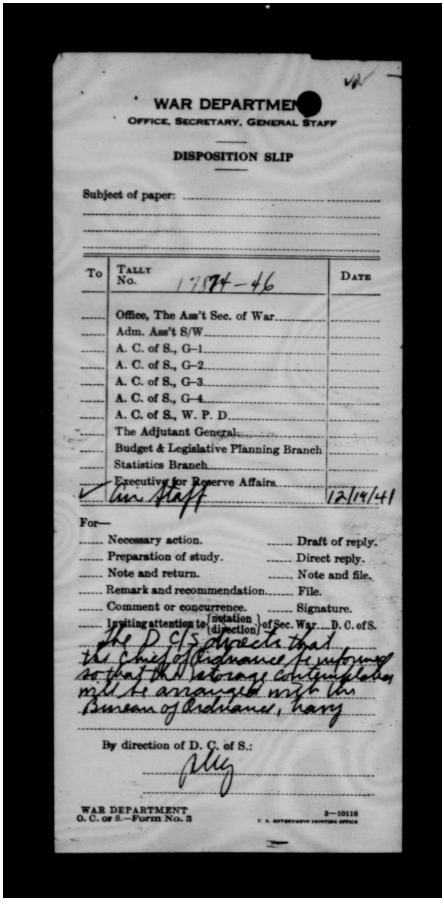

WAR DEPARTMEN

OFFICE, SECRETARY, GENERAL STAFF

DISPOSITION SLIP

Subject of paper:

To	Tally No. 17874-46	Date
	Office, The Ass't Sec. of War	
	Adm. Ass't S/W	
	A. C. of S., G-1	
	A. C. of S., G-2	
	A. C. of S., G-3	
	A. C. of S., G-4	
	A. C. of S., W. P. D.	
	The Adjutant General	
	Budget & Legislative Planning Branch	
	Statistics Branch	
	Executive for Reserve Affairs	
✓	Gen Staff	12/19/41

For—

- Necessary action.
- Preparation of study.
- Note and return.
- Remark and recommendation.
- Comment or concurrence.
- Inviting attention to {notation / direction} of Sec. War.
- Draft of reply.
- Direct reply.
- Note and file.
- File.
- Signature.
- D. C. of S.

The D C/S directs that the Chief of Ordnance be informed so that the storage contemplated will be arranged with the Bureau of Ordnance, Navy

By direction of D. C. of S.:

[signature]

WAR DEPARTMENT
O. C. of S.—Form No. 3

3—10116
U. S. GOVERNMENT PRINTING OFFICE

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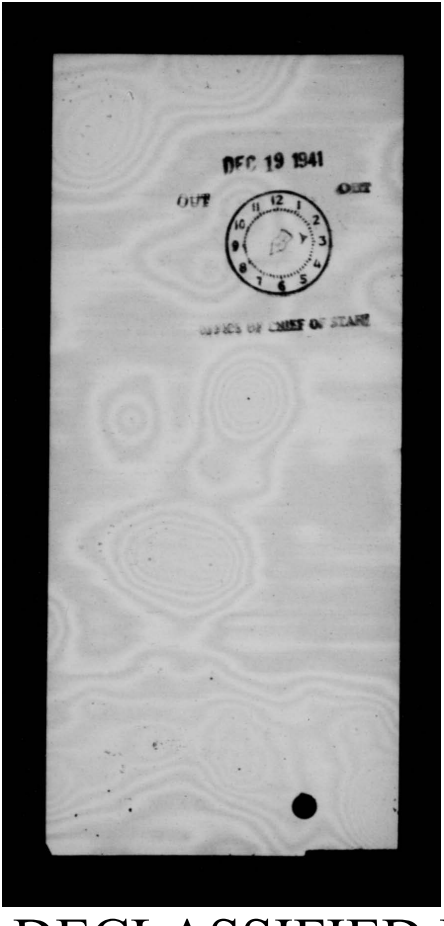

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DOD ltrs.
8 Jan. & 20 June 1974
By: JS [illegible] LC, Date 3-10-77

DEC 29 1941

MEMORANDUM FOR THE CHIEF OF ORDNANCE:

SUBJECT: Trunnion and Suspension Bands for Navy Use at Army Bases.

1. Inviting attention to the inclosed correspondence which is furnished for your information. Arrangements will be made by this office with the Bureau of Ordnance, Navy Department for suitable distribution of this material when it becomes available.

Incls:
Cy Memo for AC/S, G-4, 12/12/41
Cy Memo for C/NO, w/ltr fr C/NO to C/S, U.S.A., 12/2/41, w/cy memo frm C/Ord. (Navy) to C/Ord W.D., 3/3/41, w/cy ltr to Bur./Ord. abv.subj. 10/7/41 frm Ord.Dept. W.D.

For the Chief of the Air Staff:

EDGAR P. SORENSEN
Colonel, Air Corps
Assistant Chief of Air Staff, A-4

Dispatched
DEC 31 1941
AAG

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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	Sta [illegible]	
						[illegible]					

AAF 39

Air Ord 471.6 (69)

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EO 13526
5 Jan. & 30 June 1954
By JSIMM NC Date 3-10-77

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DECLASSIFIED

December 12, 1941

MEMORANDUM FOR THE ASSISTANT CHIEF OF STAFF, G-4, W. D.

SUBJECT: Trunnion and Suspension Bands

1. It is requested that the Chief of Ordnance be directed to procure as soon as practicable trunnion and suspension bands in the following quantities. These are in addition to the previous quantities requested, and are to meet further needs of the Air Forces and the Navy for this material.

a. Trunnion bands for the 1000# general purpose, demolition and semi-armor piercing bombs, 2½ per cent of the total bomb requirements.

b. Trunnion bands for the 500# general purpose, demolition and semi-armor piercing bombs, 2½ per cent of the total bomb requirements.

c. Suspension bands M-30 for the 100# demolition and chemical bombs, 2½ per cent of the total bomb requirements.

NOTE: AN bombs under procurement will not need bands.

2. Shipping instructions for this material will be furnished at a later date.

3. The Chief of Ordnance (Col. Kutz) has been requested informally to contract immediately for 5000 - 1000# M2; 10,000 - 500# M1; and 20,000 - 100# M1 bands in anticipation of this requirement.

4. Estimate cost of this material is $500,000.

For the Chief of the Air Staff:

EDGAR P. SORENSEN
Colonel, Air Corps,
Assistant Chief of the Air Staff, A-4

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DOD ltrs.
9 Jan. & 20 June 1974
By: BJMM LC, Date 3-10-77

DEC 19 1941

MEMORANDUM FOR THE CHIEF OF NAVAL OPERATIONS:

Subject: Trunnion and Suspension Bands for Navy Use at Army Bases.

1. Inviting attention to the inclosed correspondence and particularly your letter of December 8, 1941. The War Department has reconsidered this matter in view of the urgent need of tactical flexibility between the operating air units of the Army and Navy in connection with possible unexpected contingencies.

2. You are advised that the Chief of Ordnance has been directed to procure and distribute trunnion bands for 500 and 1000-pound general purpose and demolition bombs and suspension bands for 100-pound general purpose and chemical bombs in the quantities and stored in locations requested in memorandum dated August 8, 1941 from the Chief of the Bureau of Ordnance to the Chief of Ordnance, War Department.

3. Again it is desired to point out that present procurement will not permit the storage of Army bombs at outlying bases in excess of Army Air Force requirements in order to provide bombs for possible emergency needs of the Navy and Marine Corps. The procurement and storage of trunnion and suspension bands over and above requirements of the Army and the use of this equipment by the Navy or Marine Corps is justified only for extreme urgency to meet a contingency arising out of an unforeseen situation.

(Signed) H. H. ARNOLD

Incls.
Ltr.fr.C/NO to C/S,U.S.A.,
12/2/41 w/cy.memo from C/Ord.
(Navy) to C/Ord., W.D., C/S/Ltr
w/cy.ltr.to Bureau/Ord abv.subj.
10/7/41 frm. Ord.Dept.,W.D.

DEC 19 1941

Deputy Chief of Staff, for Air.
OUT

OFFICE OF CHIEF OF STAFF

COPY FOR:
Gen. Arnold

ORIGINAL DISPATCHED FROM
OFFICE CHIEF OF STAFF

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OCS/17874-46

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DOD ltrs.
8 Jan. & 20 June 1974
By: JSIMM LC Date: 3-10-77

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NAVY DEPARTMENT
OFFICE OF THE CHIEF OF NAVAL OPERATIONS
WASHINGTON

Op-22-B5
(SC)F41-6
Serial 0135222

December 2, 1941

SECRET

From: The Chief of Naval Operations.

To: The Chief of Staff, U. S. Army.

Subject: Trunnion Bands for Bombs for Navy Use At Army Bases.

Enclosure: (Herewith)
(A) Copy of memorandum dated 8 August, 1941, from Chief of the Bureau of Ordnance to Chief of Ordnance, War Department.

(B) Copy of Chief of Ordnance, War Department, letter O. O. 471.62/1777 of 7 October, 1941.

1. At the personal instance of the Chief of Naval Operations the Chief of the Bureau of Ordnance addressed a memorandum, enclosure (A), to the Chief of Ordnance, War Department, requesting the latter to give consideration to the storage of trunnion bands at various Army Air Stations. This request was made in order that, should Navy dive bombers be forced to put into an Army station in an emergency, there would be available the necessary material for them to make use of some of the bombs stored there. It has been the understanding of the Chief of Naval Operations that one of the important reasons for the extensive work recently done by both departments on the standardization of bombs was in order to obtain tactical flexibility of this nature between the operating air units of the two services. The Navy has every intention of rendering a service of this nature to Army squadrons should they be compelled to put into naval stations in an emergency.

2. In his reply, enclosure (B), the Chief of Ordnance, War Department quoted at length from instructions in the premises issued by the Adjutant General of the Army. These instructions state in effect that the proposal of the Bureau of Ordnance will be entertained only in case the Navy

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Serial 0135222

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SECRET

Department provides bombs as well as trunnion bands at Army Stations. The Bureau of Ordnance will be glad to provide the trunnion bands in question, but provision of the bombs will entail both great expense and also a considerable increase in the manufacturing load of the country. It is realized that if naval planes operate from Army Stations for considerable periods of time, or vice versa, the service to which the planes belong should take steps to provide the requisite bombs. It is, however, strongly considered that either service should be prepared to furnish bombs and other items of ordnance equipment to the other in an emergency. Otherwise much tactical flexibility would be lost, and a needless restriction would be placed upon the strategical deployment of combined Army and Navy air power.

3. In view of the above, it is requested that earnest consideration be given to a reconsideration of the present viewpoint of the Adjutant General.

/s/ H.R.STARK
H.R.Stark

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F41-6(1/1067) BuOrd No.
o.o. 471.62/1777

COPY

WAR DEPARTMENT
OFFICE OF THE CHIEF OF ORDNANCE
WASHINGTON

DECLASSIFIED
DOD ltrs.
8 Jan. & 20 June 1950
By JSU#1 LC; Date 3-10-77

A. S. Rice/oke
October 7, 1941

SECRET DECLASSIFIED

Subject: Trunnion Bands for Bombs for Navy Use at Army Bases.

To: Bureau of Ordnance,
Navy Department,
Washington, D.C.

1. Reference your memorandum to the Chief of Ordnance, War Department, dated August 8, 1941, subject: Trunnion Bands for Bombs, the following instructions have been received from the Adjutant General:

"1. The determination of the number of bombs to be stored at outlying Army Bases and Air Corps Stations along the Atlantic Coast will be based upon the estimated requirements of the Army Air Forces to be operated from these areas in the event of an emergency. Any diversion of bombs for Navy use at these locations will correspondingly reduce the effectiveness of Army Air Force Units.

"2. Present procurement will not permit the storage of Army bombs at outlying bases in excess of Army Air Force requirements in order to provide bombs for possible emergency needs of the Navy and Marine Corps. The procurement and storage of trunnion bands over and above Army requirements will, therefore, serve no useful purpose.

"3. In the event the Navy Department desires to store Navy trunnion bands and bombs at Army Air Bases and Stations in order to provide for any emergency which may require the operation of Naval aircraft in these areas, requests for such storage at locations other than those under your control should be submitted to this office for consideration. You are authorized to make the necessary detailed arrangements with the Navy Department for storage at Ordnance Depots."

For the Chief of Ordnance:

P. M. SELEEN,
Major, Ord. Dept.
Executive Assistant.

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DOD ltrs.
8 Jan. & 20 June 1974
By: JSIMM LC. Date 3-10-77

NAVY DEPARTMENT
BUREAU OF ORDNANCE
WASHINGTON, D.C.

~~CONFIDENTIAL~~

F41-6(10
(Reb)

August 8, 1941

DECLASSIFIED

MEMORANDUM

From: The Chief of the Bureau of Ordnance.
To: The Chief of Ordnance, War Department.

Subject: Trunnion Bands for Bombs.

One of the objectives of the current program for the standardization of bombs is to make it feasible for aircraft of either the Army or the Navy to obtain usable bombs from the stations of the other service on very short notice. In view of the large number of dive bombers in the Naval aeronautical organization, which require trunnion bands in order to bomb in a dive, it is requested that the Chief of Ordnance arrange to stock bands at such Army stations as might be visited by Naval aircraft in case of active operations.

It is suggested that the following views be given consideration in determining distribution and total quantities:

(a) Trunnion bands are at present used by the Navy only on 500 and 1,000 lb. bombs. Bands are desirable for demolition bombs of current production, as well as for the prospective SAP and GP bombs, in these two sizes.

(b) It is probable that the need for bands will arise most frequently at -

(1) Outlying bases, such as Iceland, Newfoundland, Bermuda, Trinidad, Panama, Hawaii, etc. The above list is not exhaustive. It is suggested that bands should be available for half the 500 and 1,000 lb. bombs at these stations.

(2) Stations along the Atlantic Coast, east of the Appalachians, on the Pacific Coast, west of the Sierra Nevadas and Cascades, and along the Gulf Coast. It is suggested

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F41-6(1)
(Reb)

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Subject: Trunnion Bands for Bombs.

that bands should be available for one-eighth of the 500 and 1,000 lb. bombs at these stations.

(c) In regard to a total supply to take care of unexpected contingencies, it is suggested that as -

(1) The number of dive bombers is about 20% of the total Navy program, and

(2) The number of planes in the Navy program is about 25% of the number in the Army program,

a total number of bands equal to 2-1/2% of the total number of bombs in the 500 and 1,000 lb. sizes should be sufficient.

The above request is considered to take care of the Marine Corps Squadrons, as well as those of the Navy proper.

W. H. P. BLANDY

BB

Copy to:
OpNav
BuAero
Air Corps
Marine Corps
Pr6
Re3

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RECEIPT

DATE_____

SUBJECT: Trunnion and Suspension Bands for Navy Use at Army Bases.

1. Received from the Headquarter, Army Air Forces, one Memorandum, above subject, w/incls.:-

Cy memo for AC/S, G-4 12/12/41; cy memo for C/NO, w/ltr fr C/NO to C/S, U.S.A., 12/2/41, w/cy memo frm C/Ord., (Navy) to C/Ord W.D., 8/8/41, w/cy ltr to Bur/Ord Abv. subj., 10/7/41 frm Ord. Dept. W. D.

_____
OFFICER RANK

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8 Jan. & 20 June 1974
By: JSHM LC; Date 3-10-77

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2249

WAR DEPARTMENT
HEADQUARTERS ARMY AIR FORCES
DISPOSITION FORM

Date December 16, 1941

AG

AAF

SUBJECT: Trunnion and Suspension Bands for Navy Use at Army Bases.

	USW	ASW	ASWA	B-LP	BOWD	BPR
	C/S	G-1	G-2	G-3	G-4	WPD
X.	Sec.G/S	NGB	JAG	1G	QMG	SG
TO:	OCAC	CSO	Fin.	Ord.	Ex.R.A.	ENGR
	AFCC	Inf	FA	Cav	CAC	CWS
	TAG					

FOR: SW directs
Draft of reply attached
Approved
Disapproved
File

Comment or concurrence
Direct reply made
Inviting attention to
See notation of _____
Information

Information for reply
_____ Ind. approved
Primary interest
Notation and return
Noted _____

AAF/A-4
RCC/mhh

X. Transmitted for signature.

DEC 19 1941
NOTED - DEPUTY CHIEF OF STAFF A

DEC 18 1941
17874-46

For the Chief of the Air Staff:

EDGAR P. FORENSEN
Colonel, Air Corps
Assistant Chief of Air Staff, A-4

WAR DEPARTMENT
OFFICE OF CHIEF OF STAFF

Incls.
Memo fr.C/S to C/NO abv.subj.
Ltr.fr.C/NO to C/S,U.S.A.,
12/2/41 w/cy.memo from C/Ord.
(Navy) to C/Ord., W.D.,8/8/41,
w/cy.ltr.to Bureau/Ord.abv.subj.
10/7/41 frm. Ord.Dept.,W.D.

MEMORANDUM FOR THE RECORD: Chief of Staff reconsiders information furnished the Chief of Naval Operations under date of 12/2/41 signed by the Chief of Ordnance regarding Trunnion and Suspension Bands for Navy Use at Army Bases and advises the Chief of Naval Operations that procurement of trunnion and suspension bands in the amounts requested by the C/NO will be stored at Army Bases namely in quantities aggregating 2½% of the bombs concerned.

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1-25,12/19.

W-4689, A.C.

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DOD ltrs.
8 Jan. & 20 June 1974
By: JSMM LC; Date 3-10-77

December 16, 1941

D

Written Dec. 15, 1941

Trunnion and Suspension Bands for Navy Use at Army Bases.

E. Sec.G/3

471.6 (69)

AAF/A-4
RCG/mhh

X. Transmitted for signature.

For the Chief of the Air Staff:

Inclos. fr.C/S to C/NO abv.subj.
Ltr.fr.C/NO to C/S,U.S.A.,
12/2/41 w/cy.memo from C/Ord.
(Navy) to C/Ord., W.D.,8/2/41,
w/cy.ltr.to Bureau/Ord.abv.subj.
10/7/41 frm. Ord.Dept.,W.D.

Dispatched
DEC 16 1941
AAG

EDGAR P. SORENSEN
Colonel, Air Corps
Assistant Chief of Air Staff, A-4

MEMORANDUM FOR THE RECORD: Chief of Staff reconsiders information furnished the Chief of Naval Operations under date of 12/2/41 signed by the Chief of Ordnance regarding Trunnion and Suspension Bands for Navy Use at Army Bases and advises the Chief of Naval Operations that procurement of trunnion and suspension bands in the amounts requested by the C/NO will be stored at Army Bases namely in quantities aggregating 2½% of the bombs concerned.

AAF-39

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DOD Rts.
8 Jan. & 20 June 1974
By JSIMM LC; Date 3-10-77

AAR/A-4
RCC/mhh
(Written Dec. 13, 1941)

MEMORANDUM FOR THE CHIEF OF NAVAL OPERATIONS:

Subject: Trunnion and Suspension Bands for Navy Use at Army Bases.

1. Inviting attention to the inclosed correspondence and particularly your letter of December 2, 1941. The War Department has reconsidered this matter in view of the urgent need of tactical flexibility between the operating air units of the Army and Navy in connection with possible unexpected contingencies.

2. You are advised that the Chief of Ordnance has been directed to procure and distribute trunnion bands for 500 and 1000-pound general purpose and demolition bombs and suspension bands for 100-pound general purpose and chemical bombs in the quantities and stored in locations requested in memorandum dated August 8, 1941 from the Chief of the Bureau of Ordnance to the Chief of Ordnance, War Department.

3. Again it is desired to point out that present procurement will not permit the storage of Army bombs at outlying bases in excess of Army Air Force requirements in order to provide bombs for possible emergency needs of the Navy and Marine Corps. The procurement and storage of trunnion and suspension bands over and above requirements of the Army and the use of this equipment by the Navy or Marine Corps is justified only for extreme urgency to meet a contingency arising out of an unforeseen situation.

Incls.
Ltr.fr.C/NO to C/S,U.S.A.,
12/2/41 w/cy.memo from C/Ord.
(Navy) to C/Ord., W.D.,8/8/41,
w/cy.ltr.to Bureau/Ord.abv.subj.
10/7/41 frm. Ord.Dept.,W.D.

Chief of 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	
						RSG					

AAF-39

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DOD ltrs.
8 Jan. & 20 June 1974
By JSIMM LC. Date 3/10/77

NAVY DEPARTMENT
OFFICE OF THE CHIEF OF NAVAL OPERATIONS
WASHINGTON

Op-23-B5
(SC)F41-6
Serial 0135222

December 2, 1941

SECRET DECLASSIFIED

~~S E C R E T~~

From: The Chief of Naval Operations

To: The Chief of Staff, U. S. Army.

Subject: Trunnion Bands for Bombs for Navy Use At Army Bases.

Enclosure: (Herewith)
(A) Copy of memorandum dated 8 August, 1941, from Chief of the Bureau of Ordnance to Chief of Ordnance, War Department.

(B) Copy of Chief of Ordnance, War Department, letter O.O. 471.62/1777 of 7 October, 1941.

1. At the personal instance of the Chief of Naval Operations the Chief of the Bureau of Ordnance addressed a memorandum, enclosure (A), to the Chief of Ordnance, War Department, requesting the latter to give consideration to the storage of trunnion bands at various Army Air Stations. This request was made in order that, should Navy dive bombers be forced to put into an Army station in an emergency, there would be available the necessary material for them to make use of some of the bombs stored there. It has been the understanding of the Chief of Naval Operations that one of the important reasons for the extensive work recently done by both departments on the standardization of bombs was in order to obtain tactical flexibility of this nature between the operating air units of the two services. The Navy has every intention of rendering a service of this nature to Army squadrons should they be compelled to put into naval stations in an emergency.

2. In his reply, enclosure (B), the Chief of Ordnance, War Department quoted at length from instructions in the premises issued by the Adjutant General of the Army. These instructions state in effect that the proposal of the Bureau of Ordnance will be entertained only in case the Navy

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S E C R E T

Department provides bombs as well as trunnion bands at Army Stations. The Bureau of Ordnance will be glad to provide the trunnion bands in question, but provision of the bombs will entail both great expense and also a considerable increase in the manufacturing load of the country. It is realized that if naval planes operate from Army Stations for considerable periods of time, or vice versa, the service to which the planes belong should take steps to provide the requisite bombs. It is, however, strongly considered that either service should be prepared to furnish bombs and other items of ordnance equipment to the other in an emergency. Otherwise much tactical flexibility would be lost, and a needless restriction would be placed upon the strategical deployment of combined Army and Navy air power.

3. In view of the above, it is requested that earnest consideration be given to a reconsideration of the present viewpoint of the Adjutant General.

/s/ H. R. STARK
H. R. Stark

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8 Jan. & 30 June 1974
By: JS/HM LC; Date 3-10-77

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NAVY DEPARTMENT
BUREAU OF ORDNANCE
WASHINGTON D.C.

F41-6(1)
(Reb)

Aug. 8, 1941.

MEMORANDUM

From: The Chief of the Bureau of Ordnance.
To: The Chief of Ordnance, War Department.

Subject: Trunnion Bands for Bombs.

One of the objectives of the current program for the standardization of bombs is to make it feasible for aircraft of either the Army or the Navy to obtain usable bombs from the stations of the other service on very short notice. In view of the large number of dive bombers in the Naval aeronautical organization, which require trunnion bands in order to bomb in a dive, it is requested that the Chief of Ordnance arrange to stock bands at such Army stations as might be visited by Naval aircraft in case of active operations.

It is suggested that the following views be given consideration in determining distribution and total quantities:

(a) Trunnion bands are at present used by the Navy only on 500 and 1,000 lb. bombs. Bands are desirable for demolition bombs of current production, as well as for the prospective SAP and GP bombs, in these two sizes.

(b) It is probable that the need for bands will arise most frequently at -

(1) Outlying bases, such as Iceland, Newfoundland, Bermuda, Trinidad, Panama, Hawaii, etc. The above list is not exhaustive. It is suggested that bands should be available for half the 500 and 1,000 lb. bombs at these stations.

(2) Stations along the Atlantic Coast, east of the Appalachians, on the Pacific Coast, west of the Sierra Nevadas and Cascades, and along the Gulf Coast. It is suggested

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F41-6(1)
(Reb)

Subject: Trunnion Bands for Bombs.

that bands should be available for one-eighth of the 500 and 1,000 lb. bombs at these stations.

(c) In regard to a total supply to take care of unexpected contingencies, it is suggested that as -

(1) The number of dive bombers is about 20% of the total Navy program, and

(2) The number of planes in the Navy program is about 25% of the number in the Army program,

a total number of bands equal to 2-1/2% of the total number of bombs in the 500 and 1,000 lb. sizes should be sufficient.

The above request is considered to take care of the Marine Corps Squadrons, as well as those of the Navy proper.

W. H. P. BLANDY

RB

Copy to:
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Air Corps
Marine Corps
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F41-6(1/1067) BuOrd No.

COPY

O.O. 471.62/1777

WAR DEPARTMENT
OFFICE OF THE CHIEF OF ORDNANCE
WASHINGTON

A. S. RICE/okc
October 7, 1941

Subject: Trunnion Bands for Bombs for Navy Use at Army Bases.

To: Bureau of Ordnance,
Navy Department,
Washington, D. C.

1. Reference your memorandum to the Chief of Ordnance, War Department, dated August 8, 1941, subject: Trunnion Bands for Bombs, the following instructions have been received from the Adjutant General:

"1. The determination of the number of bombs to be stored at outlying Army Bases and Air Corps Stations along the Atlantic Coast will be based upon the estimated requirements of the Army Air Forces to be operated from these areas in the event of an emergency. Any diversion of bombs for Navy use at these locations will correspondingly reduce the effectiveness of Army Air Force Units.

"2. Present procurement will not permit the storage of Army bombs at outlying bases in excess of Army Air Force requirements in order to provide bombs for possible emergency needs of the Navy and Marine Corps. The procurement and storage of trunnion bands over and above Army requirements will, therefore, serve no useful purpose.

"3. In the event the Navy Deparmtnet desires to store Navy trunnion bands and bombs at Army Air Bases and Stations in order to provide for any emergency which may require the operation of Naval aircraft in these areas, requests for such storage at locations other than those under your control should be submitted to this office for consideration. You are authorized to make the necessary detailed arrangements with the Navy Department for storage at Ordnance Depots."

For the Chief of Ordnance:

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P. M. SELEEN,
Major, Ord. Dept.
Executive Assistant.

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8 Jan. & 20 June 1974
By: JSIMM LC. Date 3-10-77

RECEIPT

DATE _____

SUBJECT: Trunnion and Suspension Bands for Navy Use at Army Bases.

1. Received from the Headquarters, Army Air Forces, one Disposition Form, above subject, w/incls.:-

Memo fr.C/S to C/NO abv.subj.
Ltr.fr.C/NO to C/S,U.S.A.,
12/2/41 w/cy.memo from C/Ord.
(Navy) to C/Ord., W.D., 8/8/41,
w/cy.ltr.to Bureau/Ord.abv.subj.
10/7/41 frm. Ord.Dept.,W.D.

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8 Jan. & 20 June 1974
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OFFICE OF THE CHIEF OF THE AIR CORPS

ROUTING AND RECORD SHEET

Note.—A line will be drawn across sheet after each comment.

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File No. _____

Tally No. AAF _____

Subject: Release of Funds for Authorized Expenditure Program for 74,913,935 bombs, Incendiary, 4-lb.

NO.	FROM	TO	DATE	COMMENTS
1.	OCAC Air Ser.Com.	AAF C/AS	1941 12-20	OCAC (14-S) AEB:crh 1. The attached letter from the Adjutant General dated December 1, 1941 relative to funds for the Authorized Expenditure Program in the amount of $69,827,870., for the procurement of bombs, incendiary, 4-lb., has been noted, and basic papers are returned herewith. 1 Incl. Cy. Ltr. 12-1-41 w/2 Incls. LDM H. J. F. M. C/ASC

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Page No. 1

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6 Jan. & 30 June 1976
By: JS/MM-TC, Date 5-18-77

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WAR DEPARTMENT
THE ADJUTANT GENERAL'S OFFICE LFL/ved-1712.
WASHINGTON

IN REPLY AG 112.05
REFER TO (11-17-41)MC-D

December 1, 1941.

SUBJECT: Release of Funds for Authorized Expenditure Program for 74,913,935 Bombs, Incendiary, 4-lb.

TO: Chief of the Army Air Forces.

1. Attention is invited to the inclosed copy of 1st Indorsement, this office, to the Chief of Chemical Warfare Service, December 1, 1941, subject and classification as above, together with copy of basic letter.

2. Attention ~~is~~ also invited to Paragraph 4, inclosed copy of Memorandum to the Deputy Chief of Staff, General Moore, November 22, 1941, G-4/22396-78, subject as above, which was approved November 24, 1941.

By order of the Secretary of War:

Adjutant General.

2 Incls.
#1 - Cy 1st Ind. AGO to CWS 12-1-41, w/cy basic ltr.
#2 - Cy Memo to Gen Moore, 11-22-41, G-4/22396-78.

Incl #1.
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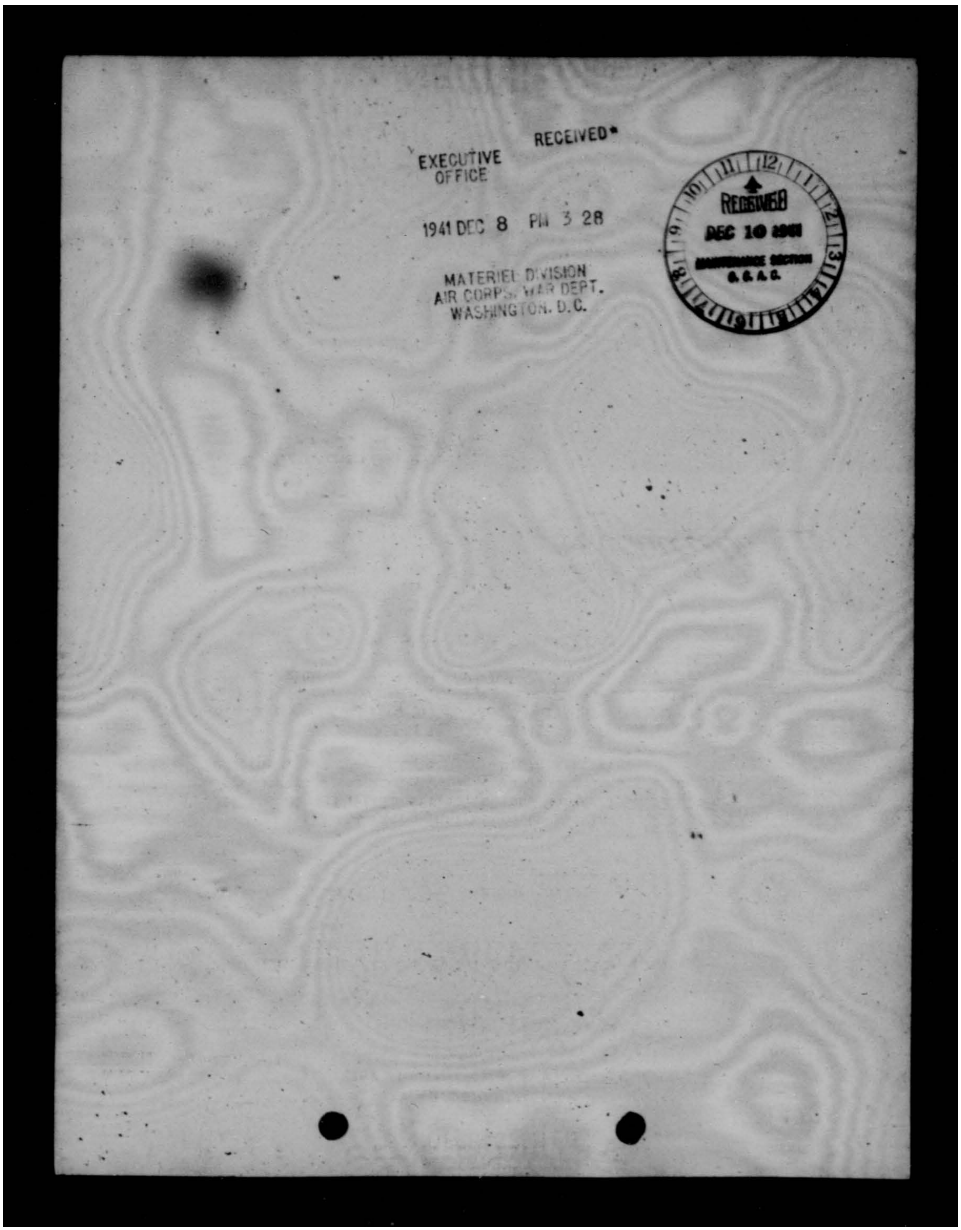

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DOD ltrs.
8 Jan. & 30 June 1974
By: JSJMM LC; Date 3-10-77

CONFIDENTIAL

WAR DEPARTMENT
Office Chief Chemical Warfare Service
Washington, D. C.

CWS 471.6/48 Conf. November 17, 1941.

SUBJECT: Release of Funds for Authorized Expenditure Program for 74,913,935 Bombs, Incendiary, 4-lb.

TO: Major General Richard C. Moore, Deputy Chief of Staff.

1. For the original expenditure program on 4-lb. Incendiary Bombs, $149,827,870 was made available to the Chief of Ordnance for the procurement of 74,913-935 bombs at the estimated cost of $2.00 each. In addition, the original British Government requisition called for 25,000,000 bombs manufactured and packed according to their design at an estimated cost of $3.00 each.

2. The procurement, manufacture, storage and issue of Incendiary Bombs having been approved as a responsibility of the Chemical Warfare Service, immediate consideration was given to initiating an adequate procurement program to meet all U.S. and anticipated Lend-Lease requirements for these bombs. The approved program visualized the procurement of all metal components in industry to the extent initially of 20,000,000 bombs, and the eventual loading of 6,000,000 bombs per month by industrial concerns and 3,000,000 per month in a government arsenal, all procurement over 20,000,000 bombs to be of the magnesium type.

3. The procurement procedure outlined above and for which complete plans have been consumated on the procurement of metal components is applicable to the procurement of the 40,000,000 bombs for which funds have been transferred from the Ordnance Department in the amount of $80,000,000 plus the 15,000,000 bombs ordered by the British Government and for which $45,000,000 has been made available. However, information recently secured from our procurement districts as a result of conferences with commercial firms who are interested in loading contracts is to the effect that such firms do not desire to submit bids for loading except on an annual basis. The "annual basis" loading contract is justified in order to permit loading contractors to amortize equipment and construction costs that are necessary to permit the loading of this hazardous item in conformity with state and insurance safety regulations, and for the complete expenditure program will insure large production and deliveries each month beginning inJanuary 1942.

4. It is therefore requested that the original expenditure program be approved for immediate procurement and that the Chief of Ordnance be authorized to transfer to the Chief of Cehmical Warfare Service the additional $69,827,870 required to complete the program.

/s/ WILLIAM N. PORTER,
Major General,
Chief of Chemical Warfare Service.

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8 Jan. & 30 June 1974
By JSMM LC Date 3-10-77

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WAR DEPARTMENT
War Department General Staff
Supply Division, G-4.
Washington, D.C.

G-4/22396-78

November 22, 1941.

MEMORANDUM TO THE DEPUTY CHIEF OF STAFF, GENERAL MOORE:

Subject: Release of Funds for Authorized Expenditure Program for 74,913,935 Bombs, Incendiary, 4-lb.

1. In the attached letter to General Moore on the above subject, November 17, 1941, the Chief, Chemical Warfare Service, states:

a. In the original Expenditure Program on 4-lb. Incendiary bombs, $149,827,870 was made availabe to the Chief of Ordnance for the procurement of 74,913,935 bombs at the estimated cost of $2,00 each.

b. The approved program visualized the procurement of all metal components in industry to the extent initially of 20,000,000 bombs, and the eventual loading of 6,000,000 bombs per month by industrial concerns and 3,000,000 per month in a government arsenal; all procurement over 20,000,000 bombs to be of the magnesium type.

c. Funds in the amount of $80,000,000 have been transferred from the Ordnance Department to the Chemical Warfare Service for the procurement of 40,000,000 bombs. Commercial firms which are interested in loading contracts have indicated that they desire to submit bids for loading on an annual basis. The "annual Basis" loading contract is justified in order to permit loading contractors to amortize equipment and construction costs that are necessary to permit the loading of this hazardous item in conformity with state and insurance safety regulations, and for the complete Expenditure Program will insure large production and deliveries each month beginning in January, 1942.

2. The Chief, Chemical Warfare Service, requests that the remaining $69,827,870 provided in the Expenditure Program, be released by the Chief of Ordnance to the Chief, Chemical Warfare Service, in

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order to complete the procurement of 74,913,935 bombs, incendiary, 4-lb.

3. The Chief of Army Air Forces (Col. Sorenson) states informally that it appears that the Air Force requirements in 4-lb. incendiary bombs to December 31, 1942, will not exceed 36,000,000, and that the requirements for the six months period, January 1 to June 30, 1943, will not exceed 28,000,000. This would indicate an estimated expenditure at the rate of about 5,000,000 bombs per month. It is apparent that the plans made by the Chief, Chemical Warfare Service, for procurement of 4-lb. incendiary bombs are based upon quantities far in excess of present needs. Even though it may be desirable to establish production capacity slightly greater than the estimated rate of expenditure in order to build up a reserve of bombs, in view of the above requirements it is difficult to justify the development of capacity and production of bombs which would require the full appropriation of $149,827,870.

4. G-4 concurs with the view expressed informally by the Chief of the Army Air Forces (Col. Corenson) and recommends that the transfer of additional funds from the Chief of Ordnance to the Chief, Chemical Warfare Service, be held in abeyance pending further study by the Army Air Force of the total requirements and monthly production rates of the 4-lb. incendiary bomb.

/s/ S. J. CHAMBERLIN,
Colonel, General Staff,
Acting Assistant Chief of Staff,

Incls:
DS/17874-44
(11-17-41)
Ltr fm OCh/CWS
(11-17-41)

Nov 24 1941
Approved
By order of the Secretary of War
R.C.MOORE
Deputy Chief of Staff.

/s/By JOHN R. DEANE
Lt. Col. G.S.C., Asst. Sec.WDGS

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DOD ltrs.
8 Jan. & 20 June 1974
By JS/MM I.C. Date 5-10-77

SUBJECT: Release of Funds for Authorized Expenditure Program for 74,913,925 Bombs, Incendiary, 4-lb.

AG 112.05 (11-17-41)MC-D 1st Ind. LPL/ved-1712.

War Department, A.G.O., December 1, 1941. - To: Chief of Chemical Warfare Service.

The transfer of $69,827,870 from the Chief of Ordnance to your office to finance the manufacture of 4-lb. Incendiary Bombs in addition to the 40,000,000 now authorized for procurement is not favorably considered at this time.

By order of the Secretary of War:

D. R. VanSickler

Adjutant General.

COPY TO:
Chief of the Army Air Forces as Incl to ltr, 12-1-41, w/cy basic letter and memo to Gen Moore, 11-22-41, G-4/22936-78.

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WAR DEPARTMENT GENERAL STAFF
DISPOSITION FORM

AG
G-4/22396-93

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DOD ltrs
8 Jan. & 30 June 1974
By JS JMM LC. Date 3-10-77

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SUBJECT: Procurement of 325-lb. Navy Mark XVII Depth Bombs.

Date DEC 29 1941

TO:						
___C/S	___G-1	___G-2	___G-3	___G-4	___Air Staff	
___TAG	___WPD	___USW	___ASW	___ASWA	___CG	___Army
___AC	___BLP	___BOWD	___ExRA	___NGB	___CG	___Army Corps
___INF	___FA	___CAV	___CA	___ENGR	___CG	___CA
___ORD	___QMG	___CSO	___SG	___FIN	___CG	___Dept.
___GHQ	___JAG	___CWS	___IG	___B/PR	X Ch/AAF	

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

X. 1. Reference is made to a memorandum for the Assistant Chief of Staff, G-4, December 26, 1941, Subject: "Procurement of 325-lb Navy Mark XVII Depth Bombs," and to the request contained therein, that the Ordnance Department be directed to procure the subject bomb in the total amount of 3,000 tons.

2. The Chief of Ordnance (Lt. Col. Luke) advises informally that orders were placed with the Navy Department in November, 1941, for 18,750 Navy Mark XVII Depth Bombs (3,000 tons).

471.6 (66) c

BREHON SOMERVELL,
Brigadier General,
Assistant Chief of Staff.

Robert A Case

R. A. CASE
Lt. Colonel, General Staff,
Chief, Requirements Section

Copy for the Chief of Army Air Forces

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8 Jan. & 20 June 1974
By: JS/MM LC Date: 3-10-77

AAF/A-4
JOS/coc
Written December 22, 1941.

DEC 26 1941

MEMORANDUM FOR THE ASSISTANT CHIEF OF STAFF, A-4:

Subject: Procurement of 325-lb. Navy Mark XVII Depth Bombs.

1. In the minutes of the Subcommittee of the Air Corps Technical Committee on Revision of Air Corps Ordnance Requirements dated May 8, 1941 page 6 item b., the War Reserve for Depth Bombs Navy type was set at 3000 tons.

2. It is requested that Ordnance be directed to procure the 325-lb. Navy Mark XVII Depth Bombs in the total amount of 3000 tons.

For the Chief of the Air Staff:

EDGAR P. SORENSEN,
Colonel, Air Corps,
Assistant Chief of the Air Staff, A-4.

471.6 (66) 8

Dispatched
DEC 28 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 1972
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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.

SUBJECT: Depth Bombs - Navy Type

NO.	FROM	TO	DATE	DATA
1.	OCAC Materiel Division (4-E-1)	AAF/ C/AS	1941 12/12	1. Reference is made to Routing & Record from this office dated November 27, 1941, and your 2nd Entry thereon dated November 28, 1941. 2. Attached is copy of a letter addressed to the Chief of Ordnance requesting that procurement be made in accordance with directive contained in 2nd Entry of Routing & Record referred to above. There is also attached copy of 1st Indorsement from the Chief of Ordnance to the Chief of the Air Corps under date of December 11, 1941, indicating that approval must be obtained from G-4 in order to make procurement as requested. O.P.E. Chief, Materiel Division
Incl. Cy of ltr to Ch/Ord dated 12/9/41 w/1st Ind.				

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WAR DEPARTMENT
OFFICE OF THE CHIEF OF THE AIR CORPS
WASHINGTON

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DOD Ltr.
8 Jan. & 20 June 1974
By: JS/MM I.C. Date 3-10-77

December 9, 1941

SUBJECT: Depth Bomb -
Navy Type.

To: The Chief of Ordnance

1. In the minutes of the Subcommittee of the Air Corps Technical Committee on Revision of Air Corps-Ordnance Requirements, dated May 5, 1941, page 6, item b., the War Reserve for depth bombs, Navy type, was set at 3,000 tons. A new study being conducted by the Air Staff for the revision of Air Corps-Ordnance requirements is recommending the reserve of 6,000 tons.

2. It is recommended that the present War Reserve of 3,000 tons be filled by procuring the 325-lb. Navy Mark XVII depth bombs and that when the increased requirements is approved the additional 3,000 tons be filled by procuring the larger size depth bomb now being developed.

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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By JS/MM I.C. Date 3-10-77

O.O.471.62/2669
AC 471.6 1st Ind. Shaler/ddm

War Department, Ordnance Office, Washington, D. C., December 11, 1941.
To: Chief of Air Corps.

1. The Procurement Program of the Ordnance Department is set forth in Expenditure Programs approved by G-4 and may be changed only by authority of G-4.

2. It is suggested that this request be addressed to G-4.

For the Chief of Ordnance:

/s/ H. R. Kutz
H. R. Kutz
Col., Ord. Dept.,
Assistant.

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8 Jan. & 20 June 1974
By JSIMM LC; Date 3-10-77

Depth Bomb.

AAF/A-4
JJO/cmd

2 AAF C/AS 1941 11/28

1. At present a Staff Study has recommended an increase in the requirement for depth bomb from 3,000 tons to 6000 tons.

2. Since the 325 lb. depth bomb has been standardized it is recommended that 3000 tons of 325 lb. depth bomb be procured. When the proposed revisions of Air Corps-Ordnance requirements is approved there will be an additional 3000 tons available for procurement of either the 650 lb. or the 1000 lb. depth bomb depending on which is recommended for standardization.

CS
C/AS

DEC 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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Depth Bombs.

1. Matl. Div. (4-E-1) Air Staff (A-4) 1941 11-27

1. Page 6, paragraph b. of the Minutes of the Subcommittee of the Air Corps Technical Committee on revisions of Air Corps-Ordnance requirements, dated May 5, 1941, calls for a War Reserve Requirement for depth bombs, Navy type, shall be fixed at 3,000 tons. The Bomb Standardization Committee for standardization between the Army, Navy and British, has standardized a 325 pound depth bomb. A larger type is included for standardization, but is held up temporarily pending a decision by the Air Staff and the Navy Department as to whether they desire a 650 pound size or a 1,000 pound size.

2. The Ordnance Department, based on the above referred to requirement, have initiated procurement for 3,000 tons of the 325 pound depth bombs. It is requested that a decision be obtained if the total requirement shall be increased and 3,000 tons of 325 pound depth bombs be procured with additional tonnage for the larger sizd when standardized. If this is desired, what will be the tonnage for the larger size bombs, or, if the total tonnage is to be 3,000, what percentage shall be 325 pound size and what percentage shall be of the larger size depth bombs?

/s/
O.P.E.
Chief, Materiel Division

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8 Jan. & 20 June 1974
By JSHM LC; Date 3-10-77

AAF/A-4
RCC

DEC 1 1941

WD 381 (11-28-41)MC-8

SUBJECT: Navy Western Hemisphere Defense Plan No. 5 (WPL-52).

TO: Secretary of the Navy.

1. Reference letter on the above subject copy of which was forwarded the Chief of Naval Operations from the Adjutant General of the Army to the Chief of Staff, GHQ; The Chief of the Army Air Forces; Commanding Generals, Northeast, Southern, Western and Caribbean Defense Commands, and Hawaiian Department; superseding Navy Western Hemisphere Defense Plan #4, and containing the following instructions issued the Army Air Forces.

"Consistent with the execution of their normal mission and with the state of readiness of forces and means under their command, the Chief of the Army Air Forces, the Chief of Staff, GHQ, and the Commanding Generals, Northeast, Southern and Caribbean Defense Commands, will cooperate with and support appropriate Naval Forces listed above in the execution of N.W. to R. No. 5 Plans for cooperation air support by units of the Army Air Forces in continental United States will envisage minimum interference with the current training activities of those units."

2. In order to increase the effectiveness of this cooperation it is requested that deliveries on the requirement of 18,750 Depth Bombs 325# Mark 17 for the Army Air Forces be expedited. This represents an immediate requirement for the Atlantic Operations and foreign possessions.

DEC 1 1941

OUT

OUT HENRY L. STIMSON

Secretary of War

DISPATCHED

DEC 2 1941

FROM A. G. O.

OFFICE OF CHIEF OF STAFF

NOV 29 1941
16374-33

coc

Noted in Air Staff

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OFFICE OF CHIEF OF STAFF

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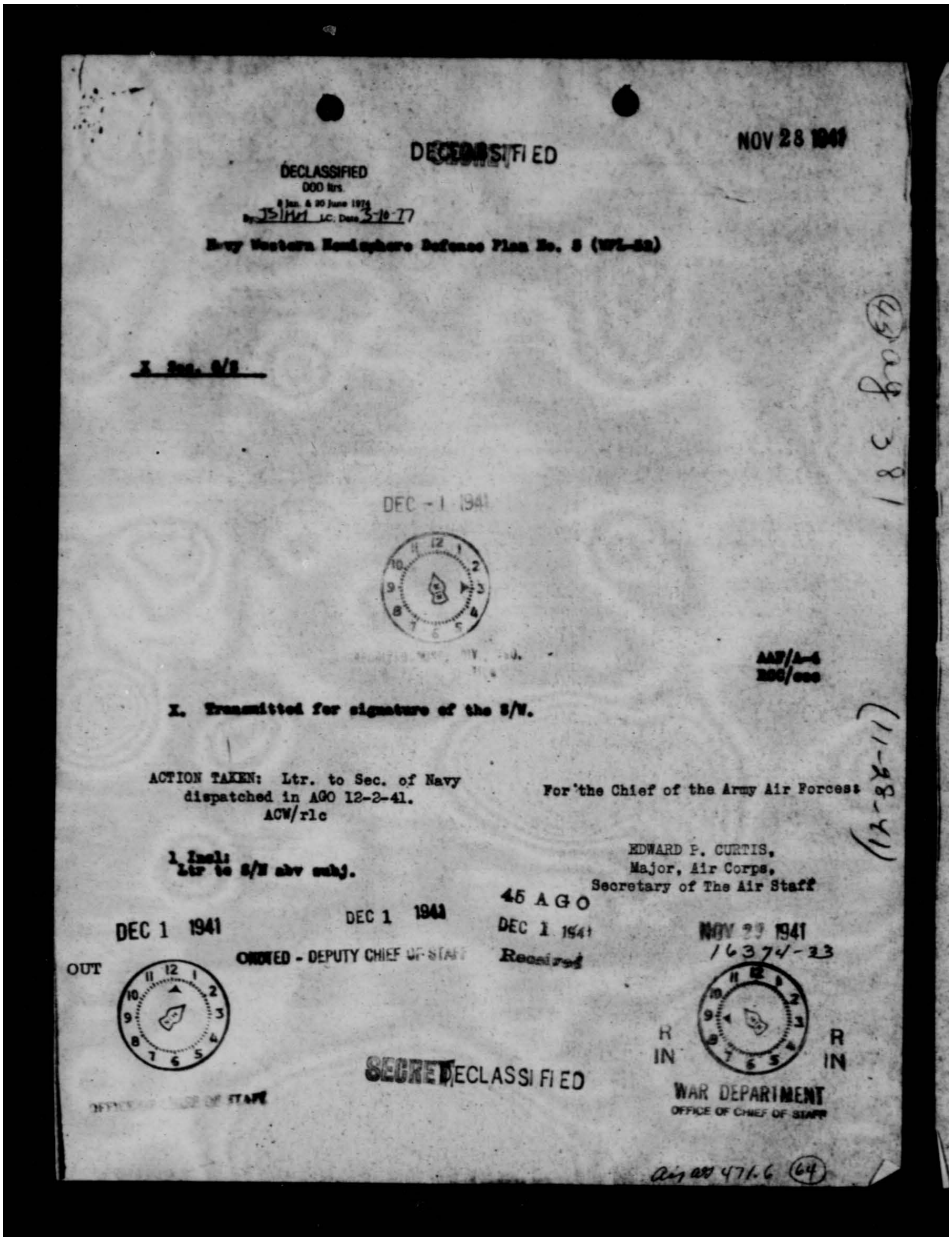

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8 Jan. & 20 June 1974
By JS/HM LC, Date 3-10-77

Navy Western Hemisphere Defense Plan No. 5 (WPL-52)

X Sec. G/S

DEC - 1 1941

AAF/A-4
RCC/ccc

X. Transmitted for signature of the S/W.

ACTION TAKEN: Ltr. to Sec. of Navy dispatched in AGO 12-2-41.
ACW/rlc

For the Chief of the Army Air Forces:

EDWARD P. CURTIS,
Major, Air Corps,
Secretary of The Air Staff

1 Incl:
Ltr to S/N abv subj.

45 AGO

DEC 1 1941

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NOV 29 1941

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Air ad 471.6 (64)

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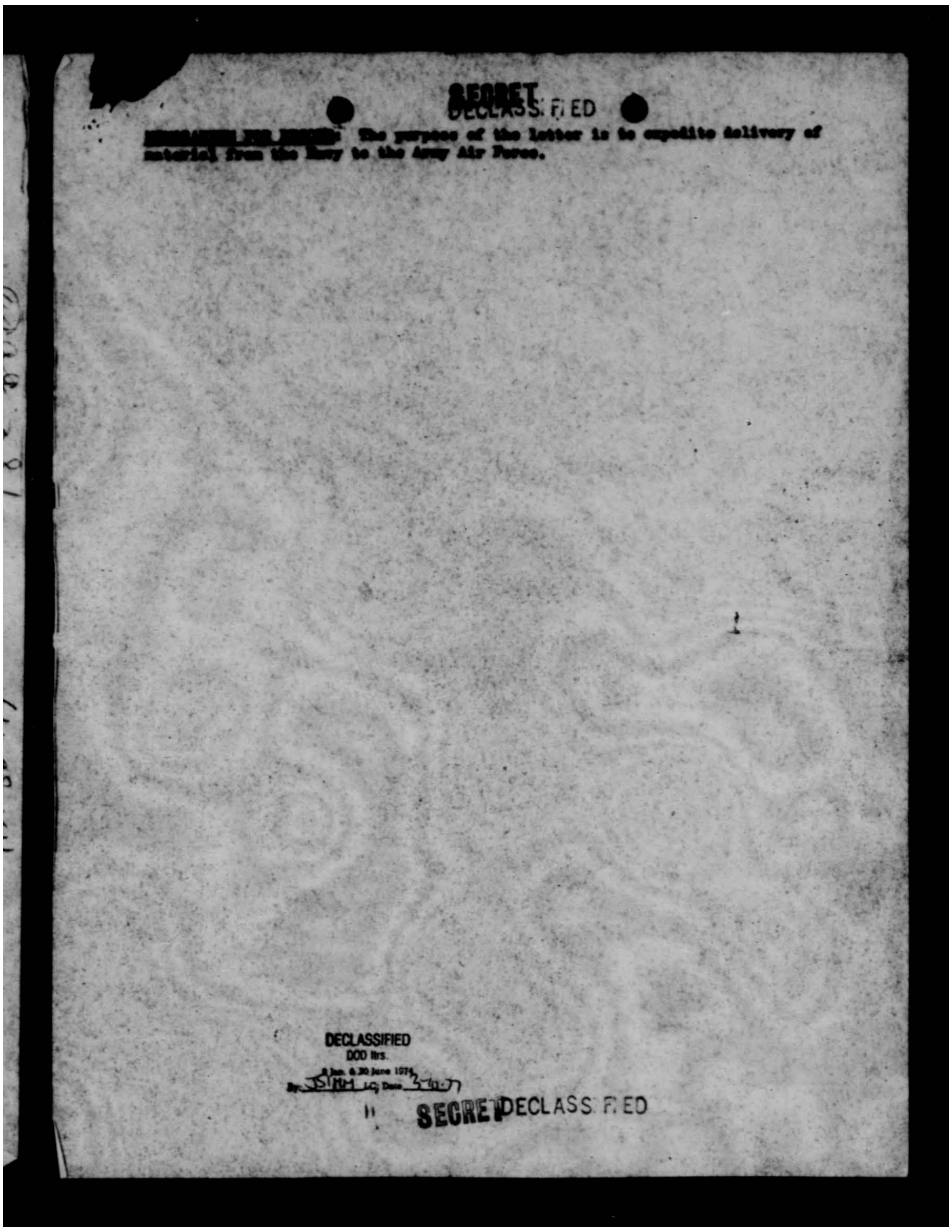

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[redacted]: The purpose of the letter is to expedite delivery of material from the Navy to the Army Air Force.

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8 Jan. & 30 June 1976
By: JSIMM LC Date 3-10-77

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5 Jan. & 30 June 1954
By 25 [illegible] Date 3-10-77

NOV 28 1941

Written November 25, 1941

Navy Western Hemisphere Defense Plan No. 5 (WPL-52)

X Sec. 8/S

471.6 (64)

AAF/A-4
[illegible]

X. Transmitted for signature of the S/W.

Dispatched
NOV 28 1941
AAG

For the Chief of the Army Air Forces:

EDWARD P. CURTIS,
Major, Air Corps,
Secretary of The Air Staff

1 Incl:
Ltr to S/N abv subj.

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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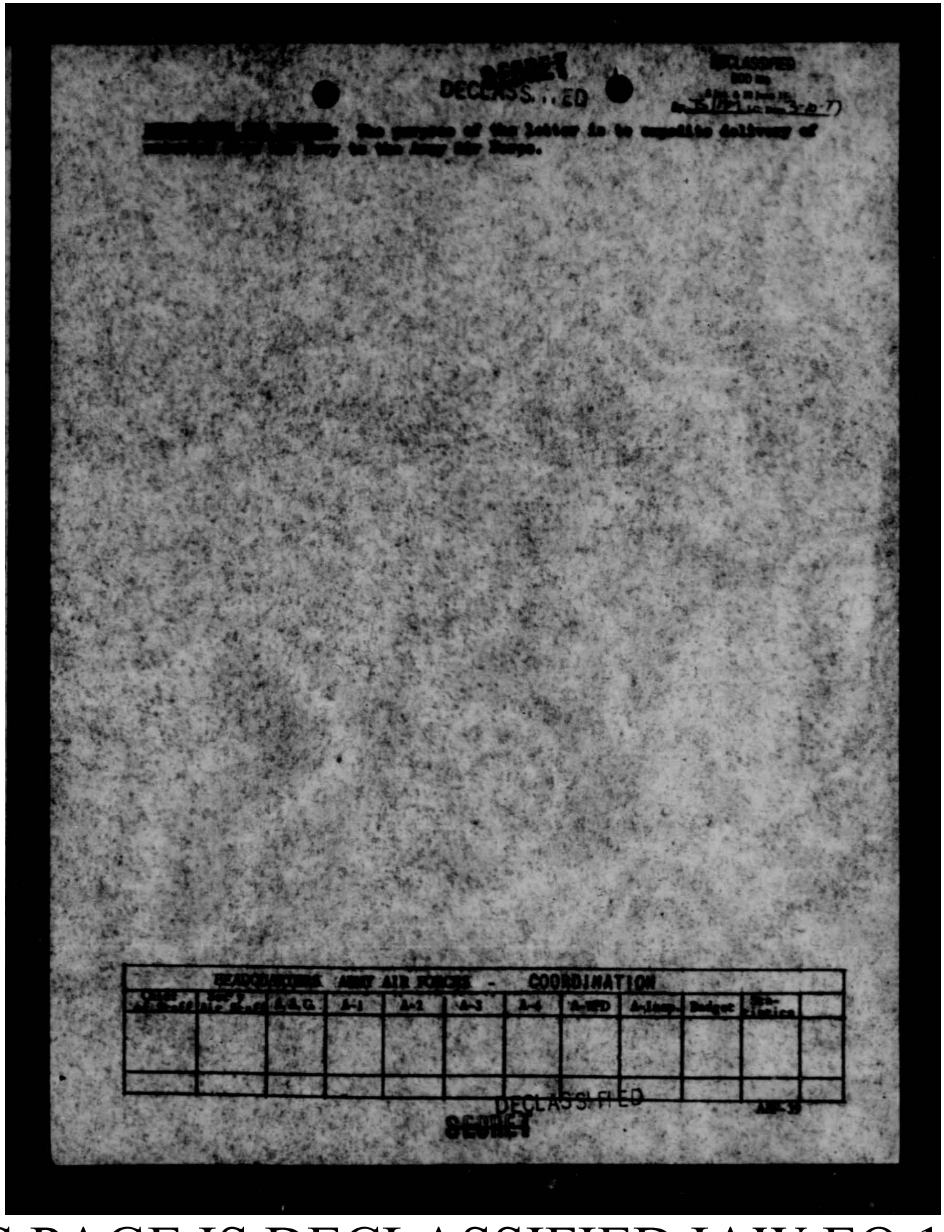

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8 Jan. & 20 June 1972
By JSTPS JC, Date 3-10-77
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AAF/A-4
RCC/coc
Written November 26, 1941.

SUBJECT: Navy Western Hemisphere Defense Plan No. 5 (WPL-53).

TO: Secretary of the Navy.

1. Reference letter on the above subject copy of which was forwarded the Chief of Naval Operations from the Adjutant General of the Army to the Chief of Staff, USA; The Chief of the Army Air Forces; Commanding Generals, Northeast, Southern, Western and Caribbean Defense Commands, and Hawaiian Department; superseding Navy Western Hemisphere Defense Plan #4, and containing the following instructions issued the Army Air Forces.

"Consistent with the execution of their normal mission and with the state of readiness of forces and means under their command, the Chief of the Army Air Forces, the Chief of Staff, USA, and the Commanding Generals, Northeast, Southern and Caribbean Defense Commands, will cooperate with and support appropriate Naval Forces listed above in the execution of W.P. No. 5 Plans for cooperation air support by units of the Army Air Forces in continental United States will envisage minimum interference with the current training activities of these units."

2. In order to increase the effectiveness of this cooperation it is requested that deliveries on the requirement of 18,780 Bomb 2000 Mark 17 for the Army Air Forces be expedited: This represents an immediate requirement for the Atlantic Operations and foreign possessions.

Secretary of War.

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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OFFICE OF THE CHIEF OF THE AIR CORPS

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8 Jan. & 20 June 1974
By JS/MM LC; Date 3-10-77

ROUTING AND RECORD SHEET

1478

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File No. _____

Tally No. AAF _____

Subject: Glide Bomb Test at Muroc Lake.

NO.	FROM	TO	DATE	COMMENTS
1.	(4-E) Mat. Div.	C/AAF	1941 11-25	1. With reference to R&R, dated 11-21-41, same subject, attached is the first report submitted from Muroc. It was not expected that everything would work satisfactorily at the first trial, but we had hoped for better luck than is indicated by this report. 1 Incl. As above. O.P.E. Chief, Mat. Div.

471.6 (62)

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V-4071, AC, Rev. 8/1/41

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air ag 471.6 (62)

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MDAC-312-WF-6-27-41-100M

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ADDRESS REPLY TO
ASS'T. CHIEF, MATERIEL DIVISION

WAR DEPARTMENT
AIR CORPS
MATERIEL DIVISION
OFFICE OF THE ASSISTANT CHIEF OF DIVISION

DECLASSIFIED
DOD Ltr.
8 Jan. & 30 June 1974
By: JSIMM JC Date 3-10-77

WRIGHT FIELD, DAYTON, OHIO

November 17, 1941.

Subject : Testing of Special Weapons at Muroc Dry Lake.

To : The Assistant Chief of the Materiel Division,
Wright Field, Dayton, Ohio
Attention: Chief, Experimental Engineering Section.

1. The following tests have been made as of this date:

a. Three flights of the N.D.R.C. - R.C.A. controllable glide bomb, on November 7th, 10th, and 11th, 1941.

b. Three flights of the Aeronca controllable glide bombs on November 12th and 13th, 1941.

c. One flight of the General Motors Corporation power driven controllable bomb on November 15th, 1941.

2. a. All flights of the N.D.R.C. - R.C.A. controllable glide bombs resulted in spins. The parachute device saved one of the two bombs for a second release. On this occasion the parachute did not save the equipment.

b. Photographic and other records were made of the flights. It is understood that personnel of the N.D.R.C. and the R.C.A. propose study of the records and aerodynamic redesign of the structure. No action is indicated by the Materiel Division at this time since the development is an N.D.R.C. project.

3. a. For the first flight of the Aeronca controllable glide bomb, gyro stabilization equipment for roll only was installed, and the elevators were locked. The flight was intended to secure aerodynamic data. The bomb was highly unstable, for either aerodynamic or mechanical reasons, and appeared to spin. Duration of the flight was twenty-six seconds. The altitude of release of all the Aeronca bombs was 7000 feet over the surface.

b. To more definitely ascertain the cause of improper flight, gyro stabilizing equipments were removed and the second bomb dropped as a pure glider with all surfaces locked. Modifications had been made in both the fixed and movable horizontal surface

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WAR DEPARTMENT
AIR CORPS
MATERIEL DIVISION
OFFICE OF THE ASSISTANT CHIEF OF DIVISION

ADDRESS REPLY TO
ASS'T. CHIEF, MATERIEL DIVISION

WRIGHT FIELD, DAYTON, OHIO

settings. The bomb weight was reduced to 1000 pounds in lieu of 2140 pounds. This bomb glided poorly in a steep spiral path. The flight duration was 29 seconds.

c. A third release with a bomb identical with the second except for additional modification of the elevator surface setting, resulted in somewhat improved flight. Duration of this flight was thirty-five seconds.

d. Releases will be continued with the remaining Aeronca bombs, with a view of achieving stabilized controllable flight.

4. The General Motors Corporation power driven bomb achieved a speed of ninety-seven miles per hour on the take off track and lifted off the carrying truck, but after a flight of about 200 feet settled to a crash. The cause is unknown at this time. Motion picture film of the flight has been sent to Lowry Field, Denver, Colorado for development. This film will be studied here upon its return. It is expected that the next General Motors Corporation bomb will be ready for test within two weeks.

Randolph P. Williams

Randolph P. Williams,
Lieut. Colonel, Air Corps.

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Q-891

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8 Jan. & 20 June 1974
By: JS/MM LC. Date 3-10-77

10,000# H.C. Bomb.

AAF/A-4
RCC/mhh

1. AAF 1941
C/AS C/AC 11/21

It is desired that
1. The Chief of Ordnance ~~should~~ will be requested to design a 10,000# high capacity bomb with proportions similar to the 4000# H.C. bomb, and furnish a sketch to the Material Division as soon as practicable in order that a determination may be made as to whether or not such a bomb can be carried in airplanes now under consideration.

Dispatched
NOV 27 1941
AAG

CS
C/AS

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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Reconsideration of Requirements for Semi-Armor Piercing Bombs.

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6 Jan. & 20 June 1974
By JSIMM LC; Date 3-10-77

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471.6 (60)

WWD/WDG/jd
(Air AG)

4. Eq.AAF CG, 1941 For comment and recommendation.
AFCC 12/9

W. W. D.
Air Adjutant General.

Dispatched
DEC 9 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: JS/MM LC, Date 3-10-77

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Reconsideration of Requirements for Semi-Armor Piercing Bombs.

(15-B1) ims

3. C/AC A.A.F. 1941
12/6

1. This office concurs in the recommendations made by the Air Corps Board. However, it is believed that the recommendation of this office should be secondary to those of the Commanding General, Air Force Combat Command, whose views should determine, to a large extent, the types of bombs that his Bomber Commands will use.

Incl. n/c

M. S. F.
Brig. Gen. A.C.
Executive.

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Reconsideration of Requirements for Semi-Armor Piercing Bombs.

471.6 (60)

AAF/A-4
RSC/mth

2. AAF 1941
C/AS C/AC 12/1

1. Inviting attention to inclosed letter from the Air Corps Board on the subject of reconsidering requirements for 500# SAP bomb.

2. Your comments and recommendations are desired.

Incl. n/c

C/AS

Dispatched
DEC 4 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	
	JPL					RBC					

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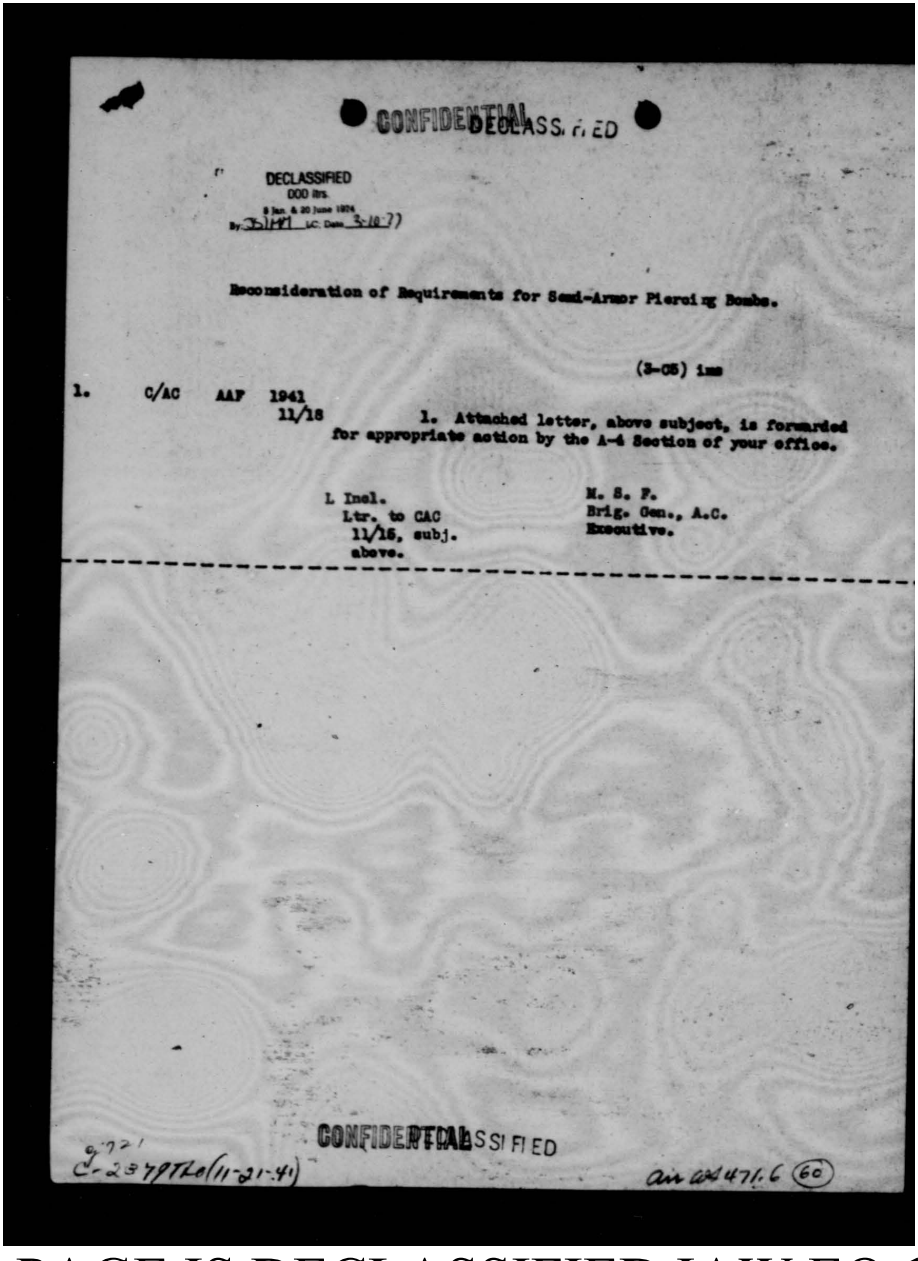

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8 Jan. & 20 June 1974
By: JSIMM LC Date 3-10-77

Reconsideration of Requirements for Semi-Armor Piercing Bombs.

(3-C5) ims

1. C/AC AAF 1941
11/18

1. Attached letter, above subject, is forwarded for appropriate action by the A-4 Section of your office.

L Incl.
Ltr. to CAC
11/15, subj.
above.

M. S. F.
Brig. Gen., A.C.
Executive.

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8 Jan. & 20 June 1974
By: JS/HH LC; Date 2-10-77

THE AIR CORPS BOARD
EGLIN FIELD, FLORIDA

15 November 1941

SUBJECT: Reconsideration of Requirements for Semi-Armor Piercing Bombs.

TO: The Chief of the Air Corps,,Washington, D. C.

1. The Joint Aircraft Committee's Special Sub-Committee on the Standardization of Bombs at its meeting on November 3, 1941, recommended that the Heavy-Walled (30% H.E. - 70% Metal) Bomb be adopted as the Army-Navy-British Standard Semi-Armor Piercing Bomb, in the 500-lb. and 1000-lb. sizes.

2. It is understood that the Army has established a requirement for a large number of the 500-lb. size of the Semi-Armor Piercing Bombs. The explosive charge of the 500-lb. S.A.P. Bomb is approximately 150 lbs. It is the opinion of the Air Corps Board that the destruction of a target sufficiently resistant to defeat the 500-lb. Demolition (G.P.) (50% ex.) Bomb will require a materially larger high explosive charge than is contained in the 500-lb. S.A.P. Bomb (150 lbs. of H.E.).

3. It isrecommended that the Army's requirements for Semi-Armor Piercing Bombs be reconsidered with a view to eliminating the requirements for the 500-lb. S.A.P. size.

s/Robert Kauch,
ROBERT KAUCH,
Colonel, Air Corps,
Director.

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By JSHMM JC; Date 3-10-77

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SUBJECT: Priority Loading of Bombs.

NO.	FROM	TO	DATE	COMMENTS
3	AFCC	AAF	NOV 26 1941	ACC 471.6 (11-11-41) (E-13) Since Bomb Priority depends on the anticipated employment of Air Force Combat Command units, it is believed the War Plans Division of your staff is the appropriate activity to furnish the information desired. It is therefore recommended this communication be referred to that section for action. C.W.R. C of S.

471.6 (59)

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Air AS 471.6 (59)

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8 Jan. & 30 June 1974
By: JSM LC. Date: 3-10-77

HEADQUARTERS AIR FORCES
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ROUTING AND RECORD SHEET

11/21

Note.--A line will be drawn across sheet after each comment.

File No. .....

Tally No. AAF .....

SUBJECT: Priority Loading of Bombs.

NO.	FROM	TO	DATE	COMMENTS
1.	AAF A-4	AAF A-3	1941 11/11	1. Due to a shortage of T.N.T., it is desired to furnish the Chief of Ordnance a priority listing for loading bombs. 2. The following bombs affected by T.N.T. are standard. Request you furnish a list indicating desired priority. 4000# ~~HC~~, 2000# M-34, 1600# AP, 1000# SAP, 1000# M-44, 500# M-43, 500# SAP, 250# M-31, 100# M-30, 20# M-4 (Frag.), 20# (Parachute Frag.), 325# AN Mark 17 (Depth Bomb) 3. When production of bombs placed in high priority meets the Air Corps monthly requirement, such bombs should be maintained at the monthly requirement level and the excess loading capacity diverted, if practicable, to the next bomb on the priority list. EPS C/A-4
2	AAF C/AS	AFCC	11/19	Forwarded with request for information outlined in Comment 1 above. CS C/AS

~~AAF/A-4~~
RCC/mhh

AAF/A-3
TAL-ds

RECEIVED NOV 24 1941 HEADQUARTERS AFCC Bolling

AAC 471.6 (11-11-41)

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W-4071, AC.Rev.8/14/41

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DOD ltrs
8 Jan. & 20 June 1974
By: JS/HH LC Date 3-10-77

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SUBJECT: Priority Loading of Bombs.

AAF/A-4
RCC/mhh

1 AAF A-4 AAF A-3 1941 11/11

1. Due to a shortage of T.N.T., it is desired to furnish the Chief of Ordnance a priority listing for loading bombs.

2. The following bombs affected by T.N.T. are standard. Request you furnish a list indicating desired priority.

4000# AP, 2000# M-34,
1600# AP, 1000# SAP, 1000# M-44,
500# M-43, 500# SAP, 250# M-31,
100# M-30, 20# M-4 (Frag.).,
20# (Parachute Frag.), 325# AN
Mark 17 (Depth Bomb)

3. When production of bombs placed in high priority meets the Air Corps monthly requirement, such bombs should be maintained at the monthly requirement level and the excess loading capacity diverted, if practicable, to the next bomb on the priority list.

EPS
C/A-4

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8 Jan. & 20 June 1974
By: JS/MM LC: Date 3-10-77

AAF/A-4
MFS/mhh
(Written Nov. 14, 1941.

SUBJECT: Increase of Program for the Procurement for 4-lb. Incendiary Bomb.

1st Ind.

War Department, Headquarters, Chief of the Army Air Forces, Washington, D. C.
NOV 21 1941 To: Chief of Chemical Warfare
(Att. Lieutenant Col. Patrick F. Powers).

1. Inclosed herewith are the following:

a. The approved Minutes of the Subcommittee of the Air Corps Technical Committee as amended, establishing the basis for the computation of Air Corps Requirements for Items of Air Corps Ordnance Equipment.

b. "Study of Monthly Requirements for Aircraft Bombs" prepared by the War Plans Division, Ordnance Office (Office, Chief of Ordnance).

2. The requirements set forth in the study are based on the mission rates and bomb type distribution prescribed in the Subcommittee Minutes. There is being processed through the War Department at this time, however, a revision of these minutes that will increase the monthly requirements for small incendiary bombs per airplane about 20% in the case of heavy bombers and about 60% in the case of light bombers.

3. The effect of this increase will be to raise the monthly requirements above those given in the Ordnance Study. The actual increase will be less than the "per airplane" increase would indicate, because actual aircraft production will be less than OPM Report 8-F shows and because certain aircraft procured initially for the Army Air Forces have been diverted to other users. Balancing all factors, it would appear that total U. S. Army Air Force requirements for 4# incendiary bombs to December 31, 1942 would not exceed 36,000,000 total, and that requirements for the six months period, January 1 - June 30, 1943 would not exceed 28,000,000 total. These requirements should govern monthly production schedules.

4. A new OPM report showing anticipated aircraft production to June 30, 1943 will be issued shortly. When the revised basis for the computation of bomb requirements is approved, total requirements should be recomputed with a view

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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SUBJECT: Increase of Program for the Procurement for 4-lb. Incendiary Bomb. 1st Ind. fm. Eq. AAF to Ch. of Chem Warfare. (continued).

to securing a more up-to-date picture of the production problem. A lead of 60 days, i.e., production of bombs 60 days ahead of the airplanes, would be desirable to allow for distribution.

5. It is apparent that on the basis of the capacity of available airplanes (during successive months in the near future) to carry them, the plans made by your office for procurement of 4# incendiaries are based upon quantities far in excess of needs. Even accepting the necessity for production capacity greater than current war rates of expenditure in order to establish a comfortable reserve, it is, in accordance with best estimates of the moment, quite impossible to justify development of capacity and production of bombs to the extent of your plan and which would require the full appropriation of $149,827,870.

6. It is believed to be necessary that your plans be revised for reasons stated above. This office will cooperate fully insofar as necessary and possible and will furnish revised statement of requirements as soon as basis of computation has been approved.

2 Incls. added.
#1 - Min.Subcom.ACTC on Rev.of AC Ord. Req. 9/17/41.
#2 - Study of Rq.for Bombs 8/7/41.

For the Chief of the Army Air Forces:

CARL SPAATZ
Brig. General, Air Corps,
Chief of The Air Staff.

Incls. att. to original only.

Dispatched
NOV 22 1941
AAG

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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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CWS 471.6/48 Conf.
(11-12-41)

November 12, 1941.

Subject: Increase of Program for the Procurement for 4-lb. Incendiary Bomb.

Memo to: Col. Edgar P. Sorenson, Air Corps, Room 2223, Munitions Building, Washington, D. C.

1. In accordance with your request to Col. A. M. Heritage, Chemical Warfare Service, and the undersigned, there is submitted herewith a resume' of the need for the approval of the 4-lb. incendiary program as originally contemplated, that is approximately 75,000,000 bombs.

2. Early in October, 1941, after the decision had been made to give the Chemical Warfare Service the responsibility of procurement, storage, and issue of 4-lb. incendiary bomb, it was anticipated that the funds in the amount of $149,827,870, previously made available to the Ordnance Department for approximately 75,000,000 bombs, would be turned over to the Chemical Warfare Service, and these funds, plus the funds for 25,000,000 bombs for the British Government, would necessitate a planned program for the procurement of 100,000,000 bombs. Consequently, a general plan for the procurement of incendiary bombs on this basis was set up with the eventual objective of obtaining a capacity of 9,000,000, 4-lb. incendiary bombs of either magnesium or substitute type per month, of which 6,000,000 per month were to be procured from industry and 3,000,000 per month were to be loaded at a Government arsenal. This plan was approved by the Under Secretary of War, on October 16, 1941.

3. Since it had been determined that no material quantity of magnesium could be made available for this program earlier than six months, or approximately April, 1942, it was therefore decided to make plans for the immediate procurement of 20,000,000 of the approved substitute bomb filled with the mixture thermit and M-8 flare mixture which is known as therm-8.

4. To comply with existing instructions of the Under Secretary of War to spread all government work to the utmost, instructions were issued to the five Chemical Warfare Procurement Districts to obtain bids for their allocated share of the metal components required for 20,000,000 substitute 4-lb. incendiary bombs. Since this program was limited to the period of December 1, 1941, through April 1, 1942, the plan called for the manufacture of these metal components in each of the five procurement districts in the amount of 1,000,000 per month, or a total of 4,000,000 per district, over the four-month procurement period. This work has now been completed in three of the procurement districts, and by November 15, 1941, will be complete in the other two districts.

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Col. Edgar P. Sorenson,
Air Corps,
Washington, D. C.

5. At the same time it was planned that four of the procurement districts would secure approximately four contracts for 200,000 per month on loading, providing for the filling of a total of 3,200,000 per month in four districts; and in the Boston district, it was planned to eventually build up the National Fire Works Company to a capacity of 3,000,000 per month. Thus, we would obtain the capacity of 6,000,000 per month in industry by April, 1942, and by September, 1942, our Government Arsenal would provide the additional loading capacity of 3,000,000 per month, at which time we would have the full 9,000,000 per month capacity as planned.

6. However, information recently secured from our procurement districts as a result of conferences with commercial firms who are interested in loading contracts, is to the effect that such firms do not desire to submit bids for loading on a four-month basis. To amortize construction costs, they require loading contracts on a twelve-month basis in order to keep down the unit loading cost of loading. Since the Secretary of War has limited the number of bombs to be immediately procured to 40,000,000, and furnished funds to this Service on the basis of $2.00 per bomb, or $80,000,000, it is impossible to negotiate loading contracts with industry on a twelve-month basis which will correspond with the monthly planned procurement of metal components. To conform with our present metal components program, the twelve-month loading program should likewise be based on a monthly loading rate which is equal to the flow of components of 4,000,000 a month for five months on the substitute bomb, and the immediate change over to the magnesium type bomb at the rate of 6,000,000 per month until September, 1942, when our Government loading plant at Pine Bluff, Arkansas, will be completed, at which time the production of components and loading will be 9,000,000 a month. Thus, a loading program spread out on an annual basis corresponding to the manufacturing program of metal components would require funds for a minimum of 86,000,000 bombs. Since funds on the British Program have been made available for 15,000,000 bombs, the balance of the U. S. Program is required to round out a loading program on an annual basis.

7. The program for the procurement of metal components and loading as outlined above can be accomplished without loss of time and with the greatest economy to the Government if the additional funds of $69,827,870 are made available to the Chief, Chemical Warfare Service. Thus, the early procurement and loading of 20,000,000 substitute bombs and a change over to loading of magnesium bombs when and as this metal becomes available, can be carried out on an even monthly basis.

8. In view of the contemplated increase in the 4-lb. incendiary bomb program over and above that originally contemplated due to the new Air Corps Program, and

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Col. Edgar P. Sorenson,
Air Corps,
Washington, D. C.

the present critical situation in the Pacific area, it is urgently requested that the Chief, Air Corps take the necessary action to secure approval of the execution of the original expenditure program for 74,913,935 bombs which will release the additional funds requested above and permit a coordinated loading and procurement program to be executed as planned.

For the Chief, Chemical Warfare Service:

PATRICK F. POWERS,
Lt. Col., C. W. S.,
Ass't Chief, Industrial Service.

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WAR DEPARTMENT
Headquarters Army Air Forces
Office Chief of the Air Staff
Washington, D. C.

Date. 9 Dec 41

TO:

___ Chief, A-4 Division
___ Equipment Section
___ Facilities Section
___ Colonel Sorensen
___ Lt. Colonel York
___ Lt. Colonel Schneider
___ Lt. Colonel Crumrine
___ Major Perrin
___ Captain Katzman
___ Captain Donoghue
___ Captain O'Shea
___ Lieutenant Burt
___ Mr. Gibson
___ Miss Hamer

FOR:

___ Information
___ Coordination
___ Preparation of reply
___ Necessary Action
___ Note and Return
___ Confer with
___ Recommendation
___ File
___ Circulation

This has been covered by other papers. Should be destroyed - and record cleared in front office GPA

EDGAR P. SORENSEN,
COL. AIR CORPS.
A-4 Division
AIR STAFF

AAF-82-1

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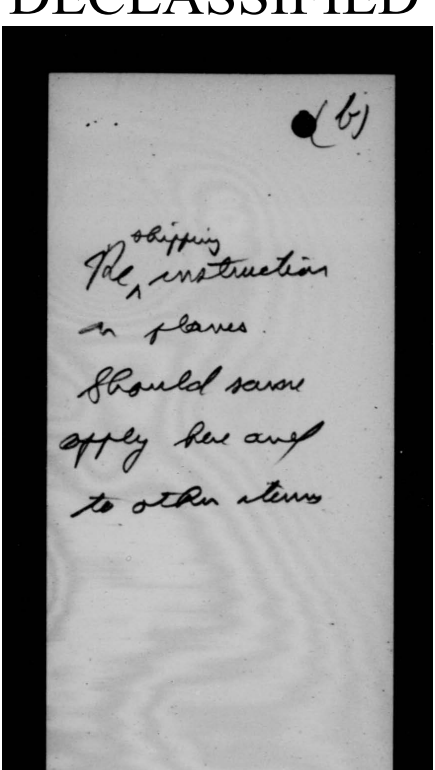

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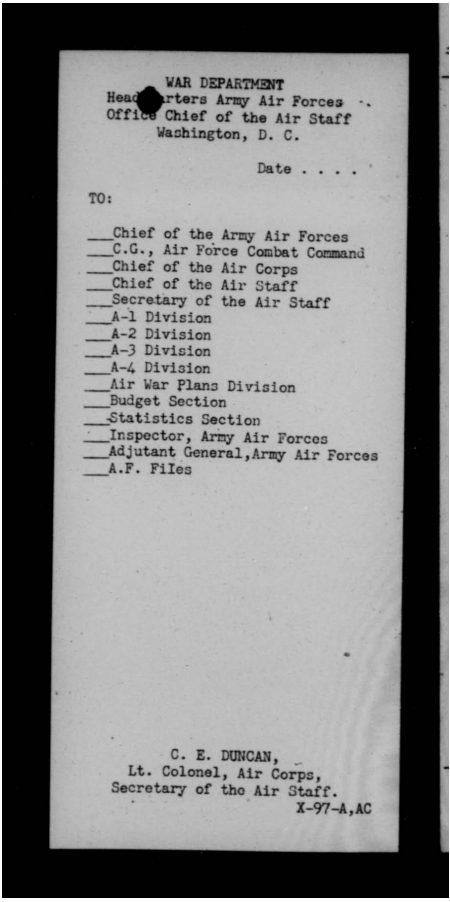

WAR DEPARTMENT
Headquarters Army Air Forces
Office Chief of the Air Staff
Washington, D. C.

Date . . . .

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
___Inspector, Army Air Forces
___Adjutant General, Army Air Forces
___A.F. Files

C. E. DUNCAN,
Lt. Colonel, Air Corps,
Secretary of the Air Staff.
X-97-A,AC

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DOD Dir.
6 Jan. & 20 June 1974
By: JS/HM LC. Date 3-10-77

HEADQUARTERS ARMY AIR FORCES
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ROUTING AND RECORD SHEET

11/14

Note.--A line will be drawn across sheet after each comment.

File No. .....

Tally No. AAF .....

SUBJECT: Shortages of Bombs in the Philippines.

471.6 (25)

NO.	FROM	TO	DATE	COMMENTS
1.	AAF C/AS	C/AAF	1941 11/13	AAF/A-4 EPS/gwd

1. This is in reference to your query as to when shortages of bombs in the Philippines can be eradicated.

2. Conference has been held with Colonel Crawford, War Department General Staff, with respect to the release of additional bombs to be shipped immediately to the Philippines. His concurrence was secured and a memorandum was written by him and signed by General Gerow on November 10, 1941. This was approved by General Moore and instructions have already been given for shipment of 1300 three hundred pound bombs, 3200 five hundred pound bombs, 350 one thousand pound bombs, and 200 two thousand pound bombs.

3. It is our intention to secure approval of further shipments on high priority and it is believed that the concurrence of War Plans Division of the General Staff can be secured in this plan. To do so it will be possible to eliminate the shortages which now exist by shipments from the United States about as follows:

300# bombs by January 10, 1942
1000# bombs by March 10, 1942
2000# bombs by February 1, 1942
20# fragmentation bombs by December 1, 1941
100# incendiaries (gasoline filled) by December 1, 1941

4. Action is being taken to speed up, if possible, the preparation of component parts of the substitute armor piercing bomb which is being made from Coast Artillery armor piercing shells of 14" caliber. The purpose is to provide some of these at the earliest practicable date as a stop-gap to compensate for the shortage in 1000 and 2000 pound bombs which will not be overcome for another two months.

5. It is pertinent to state that while certain shortages exist at the present time, they are shortages of amounts which

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HEADQUARTERS ARMY AIR FORCES
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ROUTING AND RECORD SHEET

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File No. .....

Tally No. AAF .....

SUBJECT: Shortages of Bombs in the Philippines. (Continued.)

NO.	FROM	TO	DATE	COMMENTS
1. (Cont.)	AAF C/AS	C/AAF	1941 11/13	are required to provide for the full combat life of all airplanes which will be in the Philippines by about the end of February. Under the present plan, the required ammunition for the full combat life (5 months) for pertinent airplanes will be in the Philippines at approximately the same time that the last of the airplanes will arrive there. EPL CS C/AS EH

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Page No. 2

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WAR DEPARTMENT
Headquarters Army Air Forces
Office of the Air Adjutant General
Washington, D.C.

Date Jan 2, 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. EAT
___Air War Plans Division.
___Budget Section.
___Statistics Section.
___Air Inspector.
X A.F. Files

for necessary action

Col. Schneider - What do you want done with this paper?

WM. W. DICK,
Lt. Col., A.G.O.
Air Adjutant General.

A.A.F-10-A.

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DOD ltrs.
8 Jan. & 20 June 1974
By JSLMM LC. Date 3-10-77

OFFICE OF THE CHIEF OF THE AIR CORPS

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ROUTING AND RECORD SHEET

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(To be filed with correspondence)

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SUBJECT: Primer Detonator Assembly for Bombs

- 4 -

NO.	FROM	TO	DATE	DATA
3 (cont'd)	AAF C/AS	CG AFCC	1941 12-9	AAF/A-4 RCC/mhh c. For the extra primer detonators to be used in fuses indicated in sub-paragraph b, par. 3 preceding, 25% each of the two .01 and .1 second delayed or (one per two fuses mentioned in sub-paragraph b) or one per four demolition or general purpose bombs. Incls. n/c. CS C/AS
4	C/S AFCC	AAF C/AS	12/31	1. Reference comments #3 from AAF C/AS to CG AFCC, paragraph 3 a, further study by this headquarters of tactics employed in bombing, eliminates the need of a delay of 45 sec. fuzing and for the type of bombing employed a delay of 11 sec. is considered sufficient. 2. This headquarters concurs in paragraphs 3 a, b and c with the exception that the delay action in paragraph 3 a be reduced from 45 sec. to 11 sec. 1 Incl. n/c C/S AFCC

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Hq. Army Air Forces
2 1942
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DOD ltrs.
0 Jan. & 20 June 1974
By: JJ 1491 I.C. Date 3-10-77

WAR DEPARTMENT
Office, Chief of the Air Corps
Form No. 176
(Rev. Aug. 22, 1939)

OFFICE OF THE CHIEF OF THE AIR CORPS

ROUTING AND RECORD SHEET

(To be filed with correspondence)

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SUBJECT: Primer Detonator Assembly for Bombs

NO.	FROM	TO	DATE	DATA
1.	Materiel Division (4-E-1)	Chief, Air Staff thru OCAC	1941 11/17	1. Attached hereto is a copy of Case 235, Standardization of Aircraft Bomb Fuzes, which was approved by the Joint Aircraft Committee at the meeting of November 10, 1941. 2. In this case, it was agreed that standard tail fuzes equipped with the M14 primer detonator would be shipped with primer detonator assemblies of 0.1 second delay. It was also agreed that the standard AN M100A1, AN M101A1, and AN M102A1 tail fuzes would be equipped with M14 primer detonators of the following additional delays which can be assembled to the fuzes without tools: non-delay, 0.025 second, and 0.01 second. 3. In order that the Ordnance Department, USA, may proceed with the procurement of these fuzes and primer detonator assemblies, it is requested that this office be supplied the following information at the earliest practicable date for coordination with the Navy Department and the British Air Commission through the Subcommittee for Standardization of Bombs: a. The number of primer detonator assemblies of standard delay, other than 0.1 second, in terms of the percentage of total bombs being procured for the Air Force. b. The number of extra standard fuzes, without primer detonators, desired by the Air Force, in terms of percentage of total number of standard bombs requiring these fuzes. O.P.E. Chief, Materiel Division

1 Incl.
Case #235, Standardization of Aircraft Bomb Fuzes.

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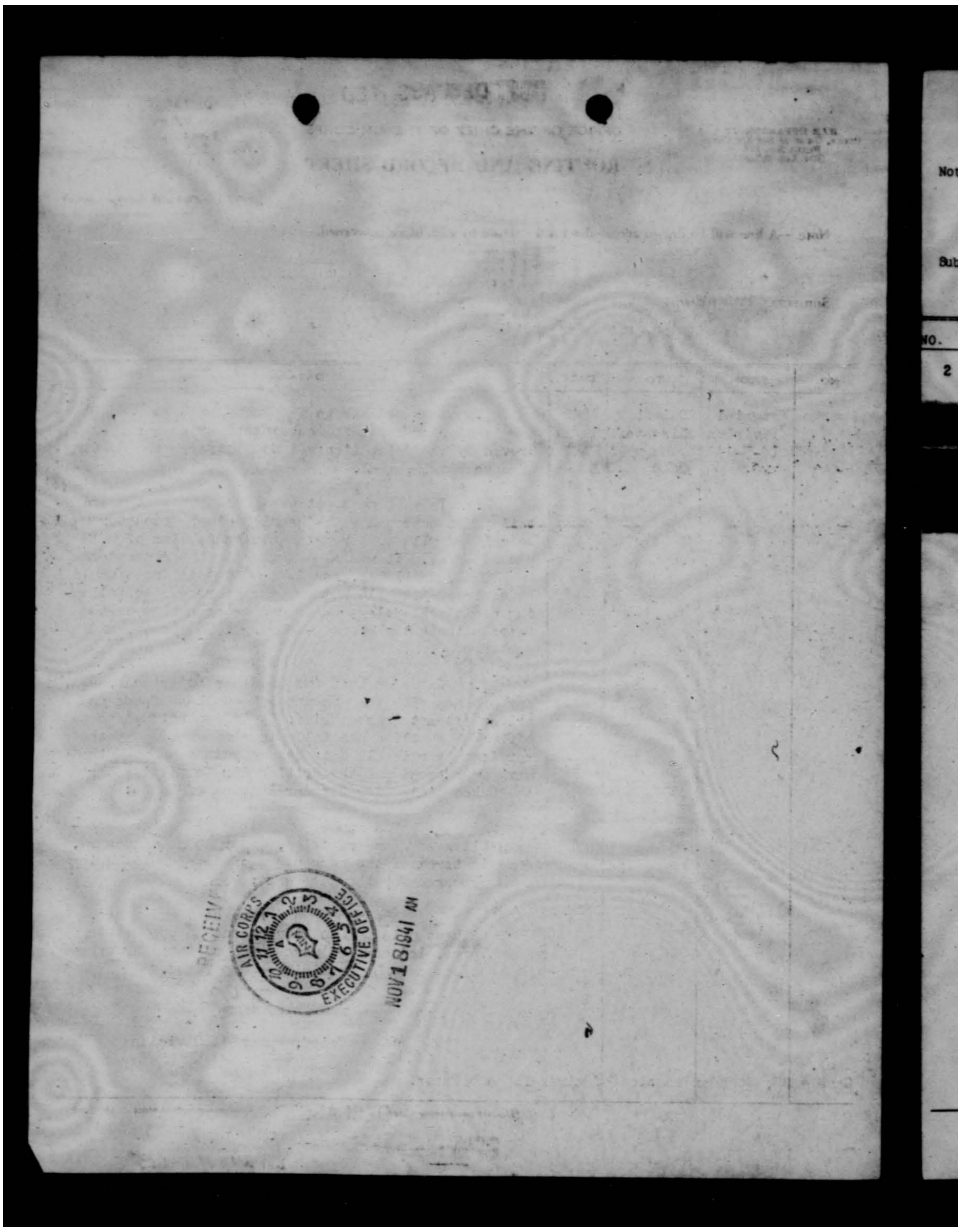

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ROUTING AND RECORD SHEET

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File No. _ _ _ _ _ _ _ _ _

Tally No. AAF/ _ _ _ _

Primer Detonator Assembly for Bombs.

- 2 -

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OM	TO	DATE	COMMENTS
	Chief, Air	1941 11/18	Forwarded.

/AS	AFCC	12-9	RCC/mhh

1. Reference preceding, your comments and recom mendations are desired in connection with par. 3, sub-par. a. and b. For your information, the Air Co Board has expressed an opinion that the Army does not require one each of AN-M100A1, M101A1 or M102A1 type of tail bomb fuse, with the 0.1-second delay primer-detonator assembled, for Demolition bombs of the 100- to 2000-lb. sizes, inclusive. The special bomb tail fuse (12-second or 45-second delay), in conjunction w the AN-M103 nose fuse would provide the desired fusin arrangement for the attack of all penetrable land targets with Demolition or G.P. bombs fused for delay action. When weather conditions at the target make i necessary, this fusing arrangement provides a means for dropping the bombs armed from low altitude (less than 1000 ft.) without endangering the dropping air-planes and without loss of effectiveness when the bom are released from higher altitudes for the following sons:

a. In high altitude bombing, with Demolitio or G.P. bombs fused for delay action against penetrab land targets the tail fuse is essentially insurance against failure of the nose fuse to detonate the bomb

b. On impact with penetrable land targets i is generally accepted that the bomb will come to rest in approximately 0.1 second after impact.

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OFFICE OF THE CHIEF OF THE AIR CORPS

ROUTING AND RECORD SHEET

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SUBJECT: Primer Detonator Assembly for Bombs.

- 3 -

NO.	FROM	TO	DATE	DATA
				AAF/A-4 RCC/mhh
3. (con'd)	AAF C/AS	CG AFCC	1941 12-9	c. When complete penetration is obtained there will be no appreciable difference in effect whether the bomb detonates 0.1 second or 45 seconds after impact. 2. The Army does have a requirement for the AN-M100A1, M101A1 or M102A1 type of tail fuses for 100-lb. to 2000-lb. sizes of Demolition or G.P. bombs, inclusive, for use against the following types of targets: a. Surface vessels. b. Impenetrable land targets. c. Single storied factory buildings (with roofs sufficiently resistant to function the tail fuse). It is believed that against such targets the delay in the tail fuse should be appreciably less than 0.1 second. 3. For your consideration the following has been suggested in an informal conference held in this office with members of the Air Corps Board: a. Bombs to be provided with 45-second delay tail fuses assembled to the bomb giving 100% procurement of such fuses or one for each general purpose or demolition bombs. b. That for the AN-M100A1, AN-M101A1 and AN-M102A1 type tail fuses, 50% should be provided or one for each two general purpose or demolition bombs procured which uses the particular fuse involved. This 50% should be initially loaded and delivered with the .025 second delay primer detonator.

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Case No. 235
Copy No. ____

DECLASSIFIED
DOD ltrs
6 Jan. & 20 June 1974
By: JSIMM I.C. Date 5-18-77

SPECIAL SUB-COMMITTEE
for the
STANDARDIZATION OF AIRCRAFT BOMBS

November 5, 1941

MEMORANDUM FOR: The Recorder
Joint Aircraft Committee

SUBJECT: Standardization of Aircraft Bomb Fuzes

The Special Sub-Committee for the Standardization of Aircraft Bombs met in Room 4846, Navy Building, on October 28, and November 3, 1941.

Members present:

Colonel Robert Kauch, A.C.
Colonel J. E. Zanetti, CWS
Lt. Colonel S. R. Stribling, Ord.
Lt. Colonel S. P. Huff, Ord.
Lt. Colonel D. G. Lingle, A.C., Recorder
Major J. G. Moore, A.C.

Commander M. F. Schoeffel, USN, Chairman
Commander W. F. Boone, USN
Lt. Commander W. S. Parsons, USN
Lieutenant J. N. Kelty, USN

Group Captain C. Crawford, BAC
Mr. S. J. Curtis, BAC

Recommendation:

The following action agreed upon is recommended for the approval of the Joint Aircraft Committee.

(A table of the Standard Army-Navy-British Bombs and Fuzes, summarizing the action agreed upon, is attached for reference.)

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I. In accordance with Paragraph 3 of Case No. 235, dated August 2, 1941, and approved by the Joint Aircraft Committee, August 4, 1941, the following types of fuzes were considered for use with the standard Army, Navy, and British bombs.

A. Fuze for Armor Piercing Bomb.

Discussion:

Commander Schoeffel, Bureau of Ordnance, presented the Committee with drawings and sample of the Navy Mark 28 tail fuze for use in the standard AN Mark 1, Armor Piercing 1600 lb. bomb. The test and development of this fuze were presented and discussion was had with regard to the use of this fuze.

The British representative stated that considerable trouble had been experienced through the use of a similar type of fuze on the lower wing of a flying boat and questioned the ability of the fuze to withstand water and keep it from getting inside the fuze thereby causing damage through corrosion and ice.

The Navy representative stated that this type of fuze was a modification of a type which had been used for some time by the Navy and that no such trouble had been reported. Tests on this point will, however, be run in the immediate future.

Action:

1. The Navy Mark 28 type tail fuze, as referred to in Navy Drawing No. 236,220, was adopted as standard for use by the Army, Navy and British with the standard Armor Piercing 1600 lb. AN Mark 1 Bomb. This fuze will arm in 450 to 650 feet of air travel and will have a delay of .09 ± .01 seconds.

2. Nomonclature agreed upon - Fuze, Bomb, Tail, AN Mark 28.

3. Drawings and specifications were turned over to Mr. Beckman, Recorder of the Technical Sub-Committee.

B. Fuze for Semi-Armor Piercing Bomb.

Discussion:

Colonel Stribling presented drawings and specifications of the fuzes to be used with the standard semi-armor piercing bomb.

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Action:

1. Fuzes for 500 lb. AN-M58 Semi-Armor Piercing Bomb

   a. Nose Fuze.

      None.

      This bomb will be equipped with a solid steel nose plug in an opening of such size and dimension as will accommodate the Standard AN-M103 nose fuze, if desired.

   b. Tail Fuze.

      (1) The tail fuze, as shown in Army Ordnance Drawing No. 73-8-7, was adopted as standard for use by the Army, Navy and British with the 500 lb. AN-M58 semi-armor piercing bomb.

      (2) Nomenclature agreed upon - Fuze, Bomb, Tail, AN-M101A1.

      (3) Drawings and specifications were turned over to Mr. Beckman, Recorder of Technical Sub-Committee.

2. Fuzes for 1000 lb. AN-M59 Semi-Armor Piercing Bomb.

   a. Nose Fuze.

      None.

      This bomb will be equipped with a solid steel nose plug in an opening of such size and dimension as will accommodate the Standard AN-M103 nose fuze, if desired.

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b. Tail Fuze

(1) Tail Fuze, as shown in Army Ordnance Drawing No. 73-8-8, was adopted as standard for use by the Army, Navy and British in the 1000 lb. AN-M59 semi-armor piercing bomb.

(2) Nomenclature agreed upon - Fuze, Bomb, Tail, AN-M102A1.

(3) Drawings and specifications were turned over to Mr. Beckman, Recorder of Technical Sub-Committee.

C. Fuzes for General Purpose Bombs

Discussion:

Colonel Stribling, Ordnance Department, presented the drawings and specifications for the standard general purpose bombs.

Action:

1. Fuzes for 100 lb. General Purpose Bomb

a. Nose Fuze

(1) It was agreed that the Army M103 Nose Fuze, as shown in Ordnance Drawing No. 73-8-14, be accepted as standard for use by the Army, Navy, and British in the 100 lb. AN-M30 general purpose bomb.

(2) Nomenclature agreed upon - Fuze, Bomb, Nose, AN-M103.

(3) Drawings and specifications were turned over to Mr. Beckman, Recorder of Technical Sub-Committee.

b. Tail Fuze

(1) Tail fuze, as shown in Army Ordnance Drawing No. 73-8-3, was adopted as standard for use by the Army, Navy and British in the 100 lb. AN-M30 general purpose bomb.

(2) Nomenclature agreed upon - Fuze, Bomb, Tail, AN-M100A1.

(3) Drawings and specifications were turned over to Mr. Beckman, Recorder of Technical Sub-Committee.

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2. Fuzes for 250 Lb. AN-M57 General Purpose Bomb.

a. Nose Fuze.

(1) It was agreed that the Army M103 Nose Fuze, as shown in Ordnance Drawing No. 73-8-14, be accepted as standard for use by the Army, Navy, and British in the 250 lb. AN-M57 general purpose bomb.

(2) Nomenclature agreed upon - Fuze, Bomb, Nose, AN-M103.

(3) Drawings and specifications of the AN-M103 fuze were turned over to Mr. Beckman, Recorder of the Technical Sub-Committee

b. Tail Fuze.

(1) Tail fuze, as shown in Army Ordnance Drawing No. 73-8-3, was adopted as standard for use by the Army, Navy and British in the 250 lb. AN-M57 general purpose bomb.

(2) Nomenclature agreed upon - Fuze, Bomb, Tail, AN-M100A1.

(3) Drawings and specifications were turned over to Mr. Beckman, Recorder of the Technical Sub-Committee.

3. Fuzes for 500 Lb. AN-M43 General Purpose Bomb.

a. Nose Fuze.

(1) It was agreed that the Army M-103 Nose Fuze, as shown in Ordnance Drawing No. 73-8-14, be accepted as standard for use by the Army, Navy and British in the 500 lb. AN-M43 general purpose bomb.

(2) Nomenclature agreed upon - Fuze, Bomb, Nose, AN-M103.

(3) Drawings and specifications were turned over to Mr. Beckman, Recorder of Technical Sub-Committee.

b. Tail Fuze.

(1) Tail fuze, as shown in Army Ordnance Drawing No. 73-8-7, was adopted as standard for the tail fuze of the 500 lb. general purpose bomb.

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(2) Nomenclature agreed upon - Fuze, Bomb, Tail, AN-M101A1.

(3) Drawings and specifications were turned over to Mr. Beckman, Recorder of Technical Sub-Committee.

4. Fuzes for 1000 Lb. AN-M44 General Purpose Bomb.

a. Nose Fuze.

(1) It was agreed that the Army M103 nose fuze, as shown in Ordnance Drawing No. 73-8-14, be accepted as standard for use by the Army, Navy and British in the 1000 lb. AN-M44 general purpose bombs.

(2) Nomenclature agreed upon - Fuze, Bomb, Nose, AN-M103.

(3) Drawings and specifications were turned over to Mr. Beckman, Recorder of Technical Sub-Committee.

b. Tail Fuze.

(1) Tail fuze, as shown in Army Ordnance Drawing No. 73-8-8, was adopted as standard for use in the 1000 lb. AN-M44 general purpose bomb.

(2) Nomenclature agreed upon - Fuze, Bomb, Tail, AN-M102A1.

(3) Drawings and specifications were turned over to Mr. Beckman, Recorder of Technical Sub-Committee.

5. Fuzes for 2000 Lb. AN-M34 General Purpose Bomb.

a. Nose Fuze.

(1) It was agreed that the Army M103 nose fuze, as shown in Ordnance Drawing No. 73-8-14, be accepted as standard for use by the Army, Navy, and British in the 2000 lb. AN-M34 general purpose bomb.

(2) Nomenclature agreed upon - Fuze, Bomb, Nose, AN-M103.

(3) Drawings and specifications were turned over to Mr. Beckman, Recorder of Technical Sub-Committee.

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b. Tail Fuze.

(1) Tail fuze as shown in Army Ordnance Drawing No. 73-8-8, was adopted as standard for use in the 2000 lb. AN-M34 general purpose bomb.

(2) Nomenclature agreed upon - Fuze, Bomb, Tail, AN-M102A1.

(3) Drawings and specifications were turned over to Mr. Beckman, Recorder of Technical Sub-Committee.

D. Special Fuzes for General Purpose Bombs. (Long Delay)

Action:

The following special fuzes for general purpose bombs were agreed upon. These fuzes will have a delay of either 12 seconds or 45 seconds as will be decided later.

100 Lb. and 250 Lb. Bomb.

1. The tail fuze, as shown in Army Ordnance Drawing No. 73-8-73 was adopted as standard for special use with the 100 & 250 Lb AN-M57 general purpose bomb.

2. Nomenclature agreed upon - Fuze, Bomb, Tail, AN-M112.

3. Drawings of this fuze were turned over to Mr. Beckman, Recorder of Technical Sub-Committee.

500 Lb. Bomb.

1. The tail fuze, as shown in Army Ordnance Drawing No. 73-8-74 was adopted as standard for special fuzes to be used with the 500 lb. general purpose bomb.

2. Nomenclature agreed upon - Fuze, Bomb, Tail, AN-M113.

3. Drawings of this fuze were turned over to Mr. Beckman, Recorder of Technical Sub-Committee.

1000 and 2000 Lb. Bombs.

1. The tail fuze, as shown in Army Ordnance Drawing No. 73-9-75 was adopted as standard for special fuze to be used with the 1000 and 2000 lb. general purpose bomb.

2. Nomenclature agreed upon - Fuze, Bomb, Tail, AN-M114.

3. Drawings of this fuze were turned over to Mr. Beckman, Recorder of the Technical Sub-Committee.

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E. Fuze for 325 Lb. Depth Bomb.

Commander Schoeffel, Bureau of Ordnance, presented drawings of fuzes submitted for use in the standard 325 lb. AN Mark 17 Depth Bomb.

Considerable discussion was had with regard to the usefulness of a nose fuze in this type of bomb.

It was agreed, however, that as this bomb is in production, no changes should be recommended at this time.

Action:

Hydrostatic Fuze.

1. The Navy hydrostatic fuze, as shown in Navy Drawing No. 233,404, was accepted as standard for use by the Army, Navy and British with the 325 lb. standard AN Mark 17 depth bomb. This fuze has settings for 50 feet, 75 feet, and 125 feet.

2. Nomenclature agreed upon - Fuze, Hydrostatic, AN Mark 24.

3. Drawings and specifications of this type of fuze were turned over to Mr. Beckman, Recorder of the Technical Sub-Committee.

Nose Fuze.

1. The Navy Mark 19 nose fuze, as shown in Navy Drawing No. 202,656, was adopted as standard for use by the Army, Navy and British in the 325 lb. standard AN Mark 17 depth bomb. This fuze will arm in 450 to 650 feet of air travel and is instantaneous.

2. Nomenclature agreed upon - Fuze, Nose, AN Mark 19.

3. Drawings and specifications were turned over to Mr. Beckman, Recorder of the Technical Sub-Committee.

F. Fuze Settings for General Purpose Bombs.

1. Fuze Settings.

Discussion:

The following are the fuze settings approved by the Joint Aircraft Committee, August 4, 1941, as part of Case No. 235, dated August 2, 1941.

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Nose Fuze Settings:

a. Instantaneous

b. 0.1 Second.

(The nose fuze setting can be changed by means of a setting pin integral with fuze on ground or in the air, if fuze is accessible.)

Tail Fuze Settings.

a. Non-delay. ——

b. 0.025 Seconds. —

c. 0.050 Seconds.

d. 0.1 Seconds.

(Primer detonator assembly in the tail fuzes are interchangeable by field personnel before assembly to the bomb without the use of tools.)

Action:

After discussion, it was agreed that tail fuze settings of the primer detonators, as shown above, should be changed to:

a. Non-delay. ——

b. 0.025 Seconds. —

c. 0.01 Seconds. —

d. 0.1 Seconds. —

G. Primer Detonator Settings for Fuses when Shipped.

Discussion:

Colonel Stribling stated that it was believed that the best shipping settings for the standard fuzes equipped with M14 primer detonator was 1/10 second delay. However, the percentages of the other delays should be shipped in accordance with the requirements of the Services.

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Action:

1. It was agreed that all standard tail fuzes equipped with an M14 primer detonator assembly be equipped, when shipped, with 1/10 second delay.

2. The Recorder was instructed to address a communication to the Bureau of Aeronautics and Bureau of Ordnance, Navy Department, the Air Corps, War Department, and the British Air Commission, requesting that the following information be supplied the Ordnance Department, War Department.

   a. The percentage of additional primer detonator assemblies for the standard AN-M100A1, AN-M101A1 and AN-M102A1 tail fuzes desired shipped in delays other than 1/10 second agreed on above, namely, non-delay, 0.025 second or 0.01 second.

   b. The percentage of extra standard tail fuzes without primer detonator assemblies required by the Services.

H. Fuze Arming Time:

An agreement upon a standard time of arming a fuze after the bomb leaves the aircraft was considered desirable. Because of the short distance air travel of the bomb when used in dive bombing, it was felt that the present requirements are too long and that a standard time should be agreed upon by this Committee in adopting standard fuzes.

The Navy representatives expressed a desire that extreme limit of arming be not less than 50 feet at 100 miles per hour in order to prevent the bomb from becoming armed when accidentally dropped while landing or taking off from carriers.

The British representative stated that under war conditions, R.A.F. had considered it necessary that the bomb be capable of arming while traveling through air at distance representative of 50 ft. altitude at 150 miles per hour. The Air Corps representative said that requirements of the Air Corps have been much higher. The Air Corps is also faced with the problem presented in dive bombing and felt that the British requirements meet those of the Air Corps.

Action:

1. It was agreed that the fuzes, AN-M103, AN-M100A1, AN-M101A1, and AN-M102A1, will be designed to arm only after an air travel of 450 - 650 feet.

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2. It was agreed that the special fuzes, AN-M112, AN-M113, and AN-M114, will be designed to arm when dropped at 50 feet at a speed of 150 m.p.h. and not arm at the longest practicable arming time consistent therewith.

II. Method of Approving Standard AN Bombs and Fuzes.

In accordance with Paragraph 2, Part 4, Case No. 217, dated March 3, 1941, it was agreed that the Chief of Air Corps, Chief of Ordnance Department, U. S. Army, Chief of Bureau of Aeronautics and Chief of Bureau of Ordnance, U. S. Navy, and the Director General of the British Air Commission, (and the Chief of the Chemical Warfare Service, War Department, for material under his cognizance), would be requested, upon the completion of the studies by the Technical Sub-Committee of the Special Sub-Committee for the Standardization of Aircraft Bombs, to indicate individual approval by letter referring to the standard AN bombs and fuzes by type drawings and specifications. When these approvals are received the drawings will be suitable marked to indicate the various approving authorities and the dates of the approvals. Thereafter no changes shall be made which affect the following:

1. Safety,

2. External dimensions and fittings,

3. Tactical use,

without prior approval of the officials listed above. Changes not affecting these features may be made without prior approval, but the Service responsible for the design of the material in question must inform the other interested Services in the premises. The Service responsible for the design must keep the other interested Services supplied with up-to-date drawings and specifications at all times.

Approval will be shown on drawings as follows:

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Approved as AN Standard by:

Chief of Ordnance, U.S.A. . . . . (date)

Chief of Air Corps, U.S.A. . . . . (date)

Chief of Chemical Warfare Service, U.S.A. . . . . (date)

Chief of Bureau of Aeronautics, U.S.N. . . . . (date)

Chief of Bureau of Ordnance, U.S.N. . . . . (date)

Director General of British Air Commission . . . . . (date)

D. G. LINGLE,
Lt. Colonel, Air Corps
Recorder, Special Sub-Committee
for the Standardization of
Aircraft Bombs.

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DOD Dir.
By JS/NSA, HC Date 3-10-77

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TABLE OF STANDARD ARMY-NAVY-BRITISH BOMBS AND FUZES
(as of November 4, 1941)

BOMB TYPES	WEIGHT	STANDARD AN-DESIGNATION	AS PER DRAWING NO.	FUZES TYPE	FUZES DRAWING NUMBER
I. Armor Piercing	1600 lb.	AN-Mark 1	Navy - 294,198	Tail, AN-Mark 28	Navy - 236,220
II. Semi-Armor Piercing	500 lb.	AN-M58	Ord. - 82-0-61		
				Tail, AN-M101A1	Ord. - 73-8-7
	1000 lb.	AN-M59	Ord. - 82-0-62		
				Tail, AN-M102A1	Ord. - 73-8-8
III. General Purpose	100 lb.	AN-M30	Ord. - 82-0-12	Nose, AN-M103	Ord. - 73-8-14
				Tail, AN-M100A1	Ord. - 73-8-3
				*Tail, AN-M112	73-8-73
	250 lb.	AN-M57	Ord. - 82-0-60	Nose, AN-M103	Ord. - 73-8-14
				Tail, AN-M100A1	Ord. - 73-8-3
				*Tail, AN-M112	Ord. - 73-8-73
	500 lb.	AN-M43	Ord. - 82-0-27	Nose, AN-M103	Ord. - 73-8-14
				Tail, AN-M101A1	Ord. - 73-8-7
				*Tail, AN-M113	Ord. - 73-8-74
	1000 lb.	AN-M44	Ord. - 82-0-28	Nose, AN-M103	Ord. - 73-8-14
				Tail, AN-M102A1	Ord. - 73-8-8
				*Tail, AN-M114	Ord. - 73-8-75
	2000 lb.	AN-M34	Ord. - 82-0-16	Nose, AN-M103	Ord. - 73-8-14
				Tail, AN-M102A1	Ord. - 73-8-8
				*Tail, AN-M114	Ord. - 73-8-75
IV. Depth Bomb	325 lb.	AN-Mark 17	Navy - 294,379	Hydro-AN-Mark 24	Navy - 233,404
				Nose, AN-Mark 19	Navy - 202,656

*Additional Tail Fuzes for Use with General Purpose Bombs.

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DOD ltrs.
6 Jan. & 20 June 1974
By: JSIMM LC. Date 3-10-77

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Primer Detonator Assembly for Bombs.

471.6 (55)

3. AAF CC 1941
C/AS AFCC 12-9

AAF/A-4
RCC/mhh

1. Reference preceding, your comments and recommendations are desired in connection with par. 3, sub-par. a. and b. For your information, the Air Corps Board has expressed an opinion that the Army does not require one each of AN-M100A1, M101A1 or M102A1 type of tail bomb fuse, with the 0.1-second delay primer-detonator assembled, for Demolition bombs of the 100-lb. to 2000-lb. sizes, inclusive. The special bomb tail fuse (12-second or 45-second delay), in conjunction with the AN-M103 nose fuse would provide the desired fuzing arrangement for the attack of all penetrable land targets with Demolition or G.P. bombs fused for delay action. When weather conditions at the target make it necessary, this fuzing arrangement provides a means for dropping the bombs armed from low altitude (less than 1000 ft.) without endangering the dropping airplanes and without loss of effectiveness when the bombs are released from higher altitudes for the following reasons:

a. In high altitude bombing, with Demolition or G.P. bombs fused for delay action against penetrable land targets the tail fuse is essentially insurance against failure of the nose fuse to detonate the bomb.

b. On impact with penetrable land targets it is generally accepted that the bomb will come to rest in approximately 0.1 second after impact.

HEADQUARTERS ARMY AIR FORCES										
Chief of Staff	Sec'y Air Staff	A A G	A 1	A 2	A 3	A 4	A WPD	A Insp	Budget	Sta-tistics

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Primer Detonator Assembly for Bombs.

AAF/A-4
RCC/mhh

3. (cont'd) AAF C/AS CG AFCC 1941 12-9

c. When complete penetration is obtained there will be no appreciable difference in effect whether the bomb detonates 0.1 second or 45 seconds after impact.

2. The Army does have a requirement for the AN-M100A1, M101A1 or M102A1 type of tail fuses for 100-lb. to 2000-lb. sizes of Demolition or G.P. bombs, inclusive, for use against the following types of targets:

a. Surface vessels.

b. Impenetrable land targets.

c. Single storied factory buildings (with roofs sufficiently resistant to function the tail fuse).

It is believed that against such targets the delay in the tail fuse should be appreciably less than 0.1 second.

3. For your consideration the following has been suggested in an informal conference held in this office with members of the Air Corps Board:

a. Bombs to be provided with 45-second delay tail fuses assembled to the bomb giving 100% procurement of such fuses or one for each general purpose or demolition bombs.

b. That for the AN-M100A1, AN-M101A1 and AN-M102A1 type tail fuses, 50% should be provided or one for each two general purpose or demolition bombs procured which uses the particular fuse involved. This 50% should be initially loaded and delivered with the .025 second delay primer detonator.

HEADQUARTERS ARMY AIR FORCES					COORDINATION					
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Primer Detonator Assembly for Bombs

3 AAF CG 1941
(cont'd) C/AS APCC 12-9

AAF/A-4
RCC/mhh

c. For the extra primer detonators to be used in fuses indicated in sub-paragraph b, par. 3 preceding, 25% each of the two .01 and .1 second delayed or (one per two fuses mentioned in sub-paragraph b)er one per four demolition or general purpose bombs.

Eg. Army Air Forces
DEC 22 941
AAG Received

Incls. n/c.

CG
C/AS

Ind attached to original only

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DOD ltrs.
8 Jan. & 20 June 1974
By: JSIMM LC. Date 3-10-77

SUBJECT: Primer Detonator Assembly for Bombs.

1. Materiel Division (4-E-1) Chief, Air Staff 11/17 thru OCAC 1941

1. Attached hereto is a copy of Case 235, Standardization of Aircraft Bomb Fuzes, which was approved by the Joint Aircraft Committee at the meeting of November 10, 1941.

2. In this case, it was agreed that standard tail fuzes equipped with the M14 primer detonator would be shipped with primer detonator assemblies of 0.1 second delay. It was also agreed that the standard AN M100A1, AN M101A1, and AN M102A1 tail fuzes would be equipped with M14 primer detonators of the following additional delays which can be assembled to the fuzes without tools: non-delay, 0.025 second, and 0.01 second.

3. In order that the Ordnance Department, USA, may proceed with the procurement of these fuzes and primer detonator assemblies, it is requested that this office be supplied the following information at the earliest practicable date for coordination with the Navy Department and the British Air Commission through the Subcommittee for Standardization of Bombs:

a. The number of primer detonator assemblies of standard delay, other than 0.1 second, in terms of the percentage of total bombs being procured for the Air Force.

b. The number of extra standard fuzes, without primer detonators, desired by the Air Force, in terms of percentage of total number of standard bombs requiring these fuzes.

O.P.E.
Chief, Materiel Division

1 Incl.
Case #235, Standardization of Aircraft Bomb Fuzes.

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SUBJECT: Primer Detonator Assembly for Bombs.

2.	OCAC	Chief, Air Staff	1941 11/18	Forwarded.

M.S.F.
Executive.

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800 Hrs.
8 Jan. & 30 June 1974
By JSHM LC, Date 3-10-77

OFFICE OF THE CHIEF OF THE AIR CORPS
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ROUTING AND RECORD SHEET

1406

Note.--A line will be drawn across sheet after each comment.

File No. _____

Tally No. _____

Subject: Fragmentation Bomb, 30-lb.

NO.	FROM	TO	DATE	COMMENTS
3.	Matl. Div. (4-E-1)	Air Staff (A-4) THRU: Chief, Air Corps	1941 11-28	1. The Ordnance Department has been requested to provide cluster adapters for the 30-lb. M5 fragmentation bombs in quantities equivalent to the present existent stocks of these bombs, and they have also been requested to expedite the procurement and ship same to stations having these bombs and in quantities equivalent to one (1) per six (6) bombs. 2. Copy of letter to the Ordnance Department is attached, for your information. FEO O. P. E. Chief, Materiel Division. Incl.: As above.
4.	C/AC	AAF A-4	1941 11/29	1. Forwarded. MSB For M. S. F. Executive

File
JHF per JGG

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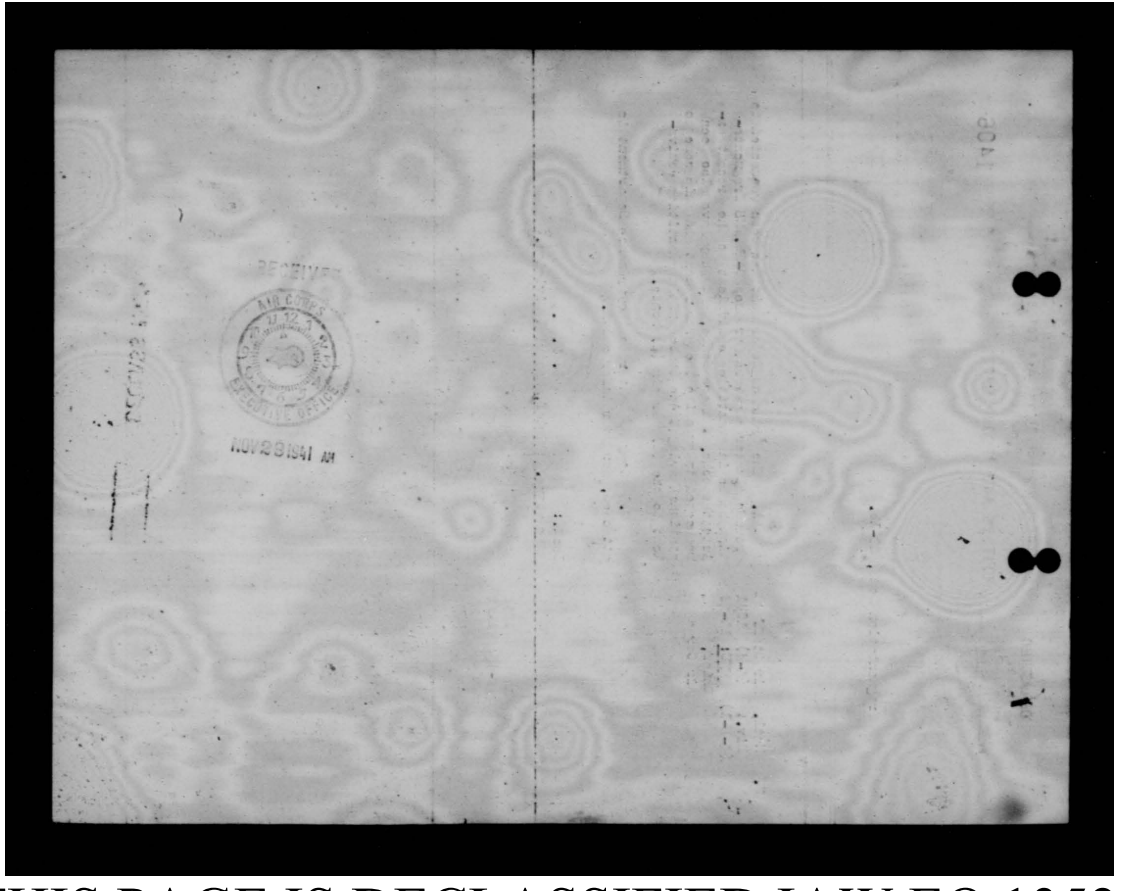

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8 Jan. & 20 June 1974
By JS/MM LC Date 3-10-77

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Written November 28, 1941

Cluster Adapters for
20-lb. M5 Fragmentation Bombs.

The Chief of Ordnance

1. It is understood that there are some 50,000 - 20-lb. M5 fragmentation bombs now in storage and at various Air Corps stations. The only airplanes on which these bombs can be carried and released are those airplanes which have provisions for carrying these bombs in the vertical position. Comparatively few airplanes are at present available with vertical suspension provisions and, therefore, the use of this bomb is limited.

4-B-1
IGB:BM

2. In order that these bombs may be released from a greater number of airplanes, and due to the shortage of T.N.T. (making it inadvisable to free issue this bomb), it is requested that cluster adapters be developed and procured in quantities equal to one (1) per every six (6) 20-lb. fragmentation bombs on hand. Immediately upon the availability of these adapters they should be shipped to the various stations at which the 20-lb. bombs are now on hand in quantities equivalent to the available stock.

3. Every effort should be made to obtain these cluster adapters at the earliest practicable date.

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8 Jan. 0 20 June 1974
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HEADQUARTERS ARMY AIR FORCES
CONFIDENTIAL
ROUTING AND RECORD SHEET

11/15

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File No. .....

Tally No. AAF .....

SUBJECT: Fragmentation Bomb, 30#.

NO.	FROM	TO	DATE	COMMENTS AAF/A-4 RCC/mhh
1.	AAF C/AS	C/AC	1941 11/13	1. Some 50,000 - 30# fragmentation bombs are in stores or in the hands of troops. The majority of these bombs are in the overseas possessions. 2. To utilize 30# fragmentation bombs on the majority of airplanes now in service, cluster racks will be necessary. 3. A satisfactory cluster-rack handling six 30# bombs has been developed by the Ordnance Department and is ready for production. 4. It is desired that you request the Chief of Ordnance to procure, as soon as practicable, sufficient cluster racks to handle all 30# bombs on hand, and ship cluster racks in the required quantities to stations stocked with 30# bombs. CS C/AS
2	OCAC	Mat Div	11/19	1. Inviting your attention to Item #1 A.A.B.

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A 11/18 (16-B)

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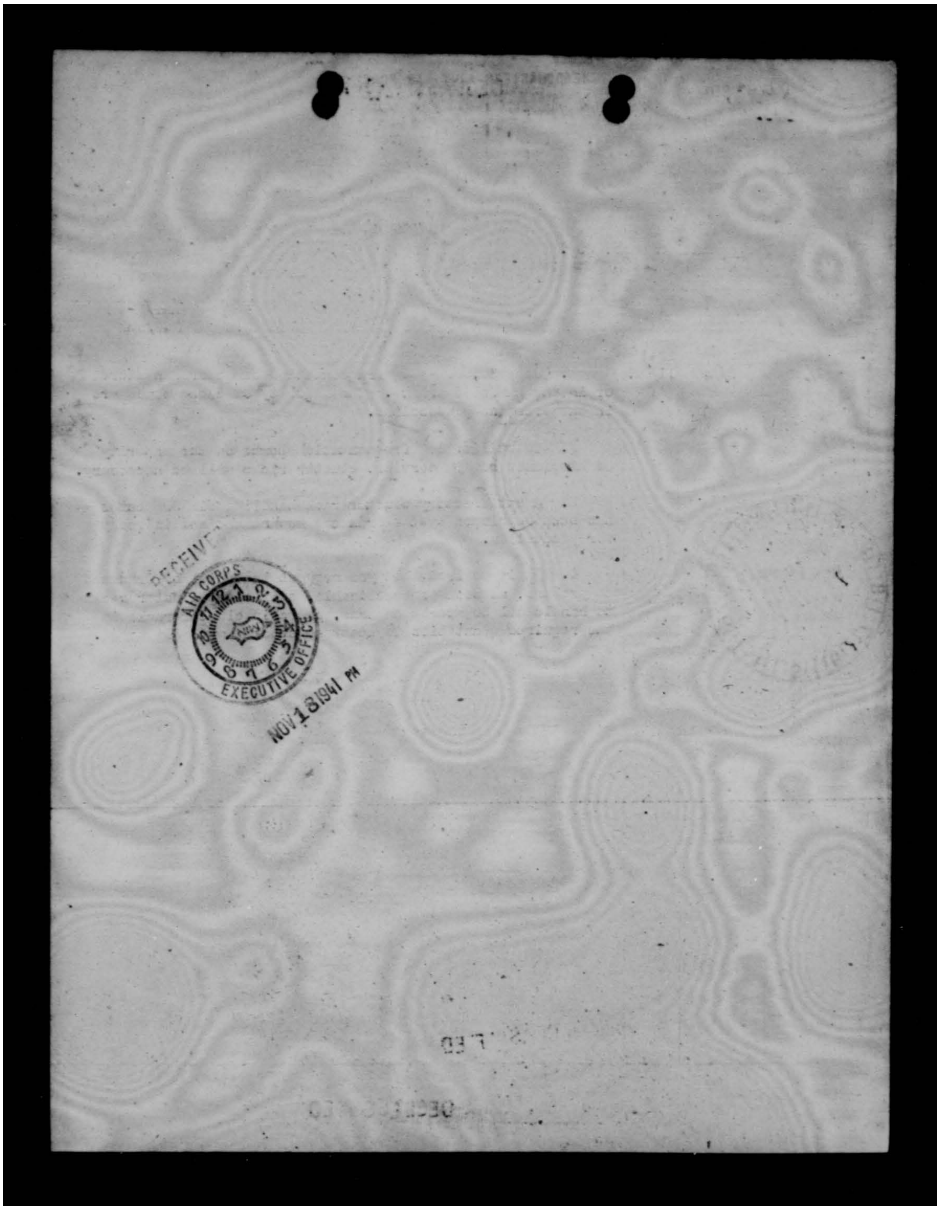

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8 Jan. & 20 June 1974
By JS/HH JC; Date 3-10-77

AAF/A-4
JFW/emd
Written Nov. 13, 1941.

November 13, 1941

Mr. Robert A. Bowman, Jr.
1530 P. Street, N. W.
Washington, D. C.

Dear Mr. Bowman:

Receipt of Copy No. 26 Division 9 Progress Report Serial No. 77, forwarded with your letter of October 22, has been previously acknowledged and at present writing, report has been reviewed with interest.

In letter directed to the National Defense Research Committee by Lt. Col. H. E. Barker, Chemical Warfare Service, on October 15th considerable discussion of current development and requirements was entailed. It was indicated by Col. Barker that OSRD was acquainted with the research of Mr. Pioser as covered in Report Serial No. 77. If this is not the case, it is suggested that a copy be forwarded to Edgewood Arsenal.

In view of Col. Barker's action no further comment from this headquarters appears necessary, except the fact that we are desirous of furthering development in every way possible, and appreciate any information on the subject.

Sincerely,

H. P. [redacted]
Colonel, Air Corps

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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NATIONAL DEFENSE RESEARCH COMMITTEE
OF THE
OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT
1530 P STREET NW.
WASHINGTON, D. C.

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8 Jan. & 20 June 1974
By: JKHM LC; Date 3-10-77

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MAJ. GEN. R. C. MOORE
CAPT. LYBRAND P. SMITH

IRVIN STEWART, Executive Secretary

October 22, 1941

DECLASSIFIED
DOD ltrs.
8 Jan. & 20 June 1974
By: JK LC; Date 3/10/77

Col. E. P. Sorenson
Army Air Corps
Room 2215, Munitions Building
Washington, D. C.

Dear Colonel Sorenson:

There is attached for your information and comment Copy No. 28 of Division B Progress Report, Serial No. 77.

Will you please sign the attached receipt and return it to me for our files.

We have a limited supply of copies of this report available in this office and I shall be glad to forward additional copies to you if you desire them.

Yours very truly,

Robert A. Bowman Jr.

Robert A. Bowman, Jr.
Jr. Adm. Asst. to
Division B

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NATIONAL DEFENSE RESEARCH COMMITTEE
OF THE COUNCIL OF NATIONAL DEFENSE
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MAJ. GENERAL R. C. MOORE

IRVIN STEWART, SECRETARY

October 14, 1941

Reply to:
Chemistry Department
University of Illinois
Urbana, Illinois

DECLASSIFIED
DOD ltrs.
8 Jun 1976
By JSM Date 3-10-77

Lieut.-Col. M. S. Schneider
Air Staff
Munitions Building, Room 2216
Washington, D. C.

Dear Colonel Schneider:

After the meeting of last Wednesday, the program for work on incendiaries was immediately formulated by the NDRC group. We hope to start work very shortly. It still appeared to us, however, that the planning of a comprehensive program requires a statement of objectives from the Air Force. This, you will recall, was something which had not been answered explicitly.

Would you be willing to talk with those who are acquainted with the field and let me know exactly for what particular purposes you desire incendiaries. It was the conclusion from our private discussions that three or four types of incendiaries would be necessary in order to cover the field satisfactorily. To find a single incendiary that would be of equivalent value in igniting an evergreen woods, a dock, or a dwelling house, would be, in our opinion, almost out of the question.

With kind regards,

Sincerely yours,

Roger Adams for Chairman

Roger Adams, Chairman
Division B

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DOD Dirs.
8 Jan. & 20 June 1974
By [illegible] C; Date 3-18-77

October 24, 1941.

Dr. Roger Adams,
Chemistry Department,
University of Illinois,
Urbana, Illinois.

Dear Doctor Adams:

In Europe, the primary targets for small incendiary bombs have been industrial and housing areas containing a goodly proportion of structures that will burn readily once they are ignited. These bombs would be of negligible value and, therefore, inappropriate for use against targets composed of materials that will not suppor combustion. Such targets must be attacked with the larger incendiaries.

While the small incendiary bomb of the type the National Defense Research Committee has been asked to develop may possibly be used to fire vegetation, the requirements for that usage should not govern as they are secondary; other forms of incendiaries appear to be more suitable for the purpose.

The major function of the small incendiary bomb, therefore, is to ignite structures build of burnable materials or containing burnable stores. Other uses are secondary.

In attacking industrial and housing areas with small incendiary bombs, it is not possible to predetermine the "ignition problem" to be met by any specific bomb and hence not possible to employ the bomb with the most suitable incendiary characteristics,

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because there is no way of determining in advance just where the bomb will lodge or what particular materials it will lodge against. Therefore a large number of bombs are dropped; some will fall in yards, streets and other open spaces or lodge against non-combustible or highly fire-resistant materials and thus be ineffective. However, if enough bombs are dropped, some should find a burnable resting place. If the number that do so is beyond the capacity of the fire protective force to handle, the desired results will be obtained, i.e. an uncontrolled fire will sweep through the target area and either destroy the structures therein or so damage them as to materially reduce their economic and social value.

In the development of a small incendiary bomb, I think the performance of the magnesium bomb should be taken as "par". The small magnesium incendiary has been considered a generally satisfactory igniter in the past so I see no reason to complicate the present endeavor by seeking to make the N.D.R.C. bomb work under conditions wherein the magnesium bomb would fail. If a magnesium bomb is ineffective when it falls in a street or a yard, I do not think that we should seek to make the N.D.R.C. bomb effective under similar conditions; on the other hand, if the magnesium bomb will cause a fire under a given set of conditions, I think the aim of the N.D.R.C. should be to make their bomb do the same thing. The physical limitations of incendiary materials may, and in all probability will, prevent complete realization of the aim, but that aim should govern development nevertheless.

Sincerely yours,

DECLASSIFIED
DOD Dir. 5 Jan 1974
8 Jan & 20 Jan 1974
By: JSMM Date 3-10-77

MAX F. SCHNEIDER,
Lt. Col., Air Corps.

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DOD ltrs.
8 Jan. & 20 June 1974
By: JS/MH LC Date 3-10-77

AG 471 (11-12-41)MC-D MEE/mlh - 1712.

846

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November 13, 1941.

Auth: T.A.G.
Initials: CB
Date: NOV 13 1941

IMMEDIATE ACTION

SUBJECT: Shipment of Air Corps Bombs to the Philippines.

TO: Chief of Ordnance.

471.6 (51)

1. Confirming telephonic instructions issued to your office, (Lt. Col. Rice) November 8, 1941 (Serial No. 268), it is desired that the following bombs be shipped to the Commanding General, U.S. Army Forces in the Far East, at the earliest practicable date:

Bombs, demolition, 300-lb.	1,300
Bombs, demolition, 500-lb.	3,200
Bombs, demolition, 1,000-lb.	350
Bombs, demolition, 2,000-lb.	200

2. In view of the fact that the unobligated depot stocks of bombs are insufficient to effect the above shipments the withdrawal from depot stocks of bombs previously allocated to the Air Force Combat Command Reserve is authorized.

By order of the Secretary of War:

CARL ROBINSON

Adjutant General.

COPIES TO: A. C. of S., WPD;
Chief of the Army Air Forces;
C. G., U.S. Army Forces in the Far East.

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air ad 471.6 (51)

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DOD ltrs.
8 Jan. & 20 June 1974
By JSIMM LC. Date 3-10-77

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WAR DEPARTMENT
WAR DEPARTMENT GENERAL STAFF
Supply Division, G-4
Washington, D. C.

G-4/32033-2

MEMORANDUM FOR THE CHIEF, ARMY AIR FORCES:

Subject: Ammunition and Bombs for Newfoundland Base Command.

1. Your comments and recommendations are requested relative to the shipment of bombs and small arms ammunition recommended in the attached communication.

2. There are 5,147 500-600 pound bombs in U.S. Depot Stocks at this time available for shipment. There are no depth bombs in Depot Stocks. 88,800 rounds Caliber .30 ammunition are available for shipment.

3. It is further requested that the basic memorandum, together with your comments and recommendations, be returned to the Assistant Chief of Staff, G-4, for final action.

S. J. CHAMBERLIN,
Colonel, General Staff,
Acting Assistant Chief of Staff.

Incls:
Memo fm GHQ,U.S.Army
(11-10-41)

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8 Jan. & 20 June 1974
By: JSMM LC Date 3-10-77

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IMMEDIATE ACTION
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WAR DEPARTMENT
GENERAL HEADQUARTERS, U. S. ARMY,
Army War College,
Washington, D.C.,

471-NBC-Ord.

November 10, 1941.

MEMORANDUM FOR ASSISTANT CHIEF OF STAFF, G-4, W.D.

Subject: Aircraft Ammunition for Newfoundland Base Command.

1. In view of the imminent augmentation of the forces at the Newfoundland Base Command, it is urgently requested that the following items of aircraft ammunition be made available immediately, and shipped to Newfoundland by the earliest possible transport:

500 lb. bomb.....	720 (600 lb. bomb may be substituted, round for round)
325 lb. depth bomb.....	336
Caliber .30 ammunition ...	88,800

For the CHIEF OF STAFF:

HARRY J. MALONY,
Brig. General, G.S.C.,
Deputy Chief of Staff.

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DOD ltrs.
6 Jan. & 20 June 1974
By: JSTMM LC; Date 3-10-77

~~SECRET~~

Auth: T.A.G.

Initials: CR

Date: NOV 10 1941

~~IMMEDIATE ACTION~~

SUBJECT: Information Concerning 100-Pound, M47 Bombs.

AG 471.6 (10-7-41)MC-D 1st Ind. MHE/ihw-1712

War Department, A.G.O., November 10, 1941. - To: Chief of the Chemical Warfare Service.

1. Attention is invited to letter, this office, November 4, 1941, AG 471.6 (10-13-41)MC-D, subject: Shipment of Air Corps Bombs to the Philippines, which directs the shipment of 5,000 bombs, chemical, 100-pound, M47, (empty).

2. Attention is also invited to letter, this office, November 10, 1941, to the Chief of Ordnance, AG 381.4 (9-27-41)MC-D, subject: Priorities for Distribution of Ammunition, copy of which was furnished you, which establishes priorities for the shipment of ammunition, aircraft bombs, and pyrotechnics.

By order of the Secretary of War:

CARL ROBINSON

Adjutant General.

1 Incl. n/c
Cy ltr fm C of O,
to Ch. of Chemical
Warfare Service,
10-4-41.

COPIES TO: Chief of the Air Corps, ref. ltr fm Chief of Chemical Warfare Service, CWS 471.6/252, 10-7-41, to C of A.C. w/cy ltr, AGO, to C of CWS, 11-4-41, and cy ltr, AGO, to C of O, 11-10-41.
Chief of the Army Air Forces, w/cy basic ltr and incl.

471.6 (49)

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an AG 471.6 (49)

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EXPEDITE ACTION

WAR DEPARTMENT
OFFICE CHIEF CHEMICAL WARFARE SERVICE
WASHINGTON, D.C.

C.W.S. 471.6/252 October 7, 1941

Subject: Information Concerning 100-Pound, M47 Bombs

To: The Chief of Air Corps

1. Attention is invited to the attached copy of letter from the Chief of Ordnance with reference to subject bombs which indicates the 8,000 are urgently required by the Air Corps.

2. The records of this office indicate that no information concerning these munitions has been received from the Air Corps. In order that the Chief, Chemical Warfare Service may be able to furnish the Chief of Ordnance with shipping instructions, it is requested that this office be furnished, without delay, pertinent data concerning the approximate 23,000 bombs, chemical, 100-pound, M47 (complete round), for gasoline filling, to be used by the Air Corps.

3. Until this data is received, the Chief, Chemical Warfare Service will be unable to furnish the Chief of Ordnance with the necessary information and delivery of these bombs will be delayed accordingly.

For the Chief of the Chemical Warfare Service:

/s/ E. MONTGOMERY
Colonel, C.W.S.
Chief, Field Service

Incl. 1

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COPY

Am.Sup.Div.,F.S. October 4, 1941 Poudre/ch

Subject: Availability of 100-lb., M47 Bombs.

To: Chief of Chemical Warfare Service,
Supply Division,
Washington, D. C.

1. With reference to the 8,000 Bombs, chemical, 100-lb., M47 (complete round), for gasoline filling, which are urgently required by the Air Corps, this office is prepared to ship these bombs to a point designated by your office, upon receipt of shipping instructions, transportation funds, and funds for packing and handling.

2. In addition, this office is also prepared to ship the balance of 14,986 bomb bodies due on the second partial expenditure program of the 1942 fiscal year.

3. The balance of components will be turned over to a point designated, as they become available.

For the Chief of Ordnance:

P. M. Selzam,
Major, Ord. Dept.,
Executive Assistant.

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OFFICE OF THE CHIEF OF THE AIR CORPS

ROUTING AND RECORD SHEET

740

Note.--A line will be drawn across sheet after each comment.

File No. _____

Tally No. _____

Subject: Chemical Equipment and Chemicals for Philippine Islands ~~Depot~~.

NO.	FROM	TO	DATE	COMMENTS
1.	Matl. Div. (4-E-1)	Air Staff A-4	11-8 1941	

1. Airplanes — Equipment to be Carried

Airplanes	Equipment to be Carried
35 - B-17C & D	20 - 100-lb. bombs.
95 - B-17E	24 - 100-lb. bombs
18 - B-18	32 - 100-lb. bombs
35 - B-24D	20 - 100-lb. bombs
31 - P-40B	None
209 - P-40E	6 - 30-lb. bombs if the sway bracing is changed to take this bomb. Present equipment is for the 20-lb. fragmentation bomb.
53 - P-35A	6 - 30-lb. bombs
20 - P-26A	5 - 30-lb. or 2 - 100-lb. bombs.
55 - A-24	2 - 100-lb. bombs or chemical tank.
9 - A-27	4 - 100-lb. or 10 - 30-lb. bombs.

2. CHEMICALS:

There are no chemicals on hand in the Philippine Department. Supplies of H.S. in this country are at Edgewood Arsenal, Maryland. This could be shipped to the West coast in approximately two (2) weeks. The limiting factor in the boat shipment is the regulation that this can be carried only as a deck load. Up to the present time fifteen (15) tons has been the maximum that has been put on a boat.

471.6 (47)

File

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DOD Hrs.
8 Jan. & 20 June 1974
By: JSMM LC, Date 3-10-77

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~~CONFIDENTIAL~~ Page No. 1

W-4071, AC, Rev. 8/1/41

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OFFICE OF THE CHIEF OF THE AIR CORPS

ROUTING AND RECORD SHEET

Note.--A line will be drawn across sheet after each comment.

File No. _____

Tally No. _____

Subject: Chemical Equipment and Chemicals for Philippine Islands Depot.

NO.	FROM	TO	DATE	COMMENTS
1.	(Continued)			There are 173 tons of H.S. in Hawaii which could be shipped to the Philippines and replaced from stores in this country. Due to the light weight of the bombs employed for dispersing chemicals, it is necessary to ship the bombs and chemicals separately and do the filling after shipping. 3. CHEMICAL BOMBS: (1) 30-lb. M-1 bomb loaded with phosphorous - 1,816 complete available in this country at Curtis Bay, San Antonio and Savannah. (2) 30-lb. M-1 bomb complete loaded with phosphorous - 2,000 now in Philippines and 1,492 in shipment. (3) 30-lb. M-1 bomb bodies complete with fuses and arming wires located overseas as follows: 177 - in Panama 1,146 - in Hawaii 518 - in Philippines. (4) The following bomb bodies only available and located as follows: 30-lb. Type M-1 ——— 3,055 at Edgewood 30-lb. Type M-46 ——— 58,675 at Edgewood 30-lb. Type M-46A-1 - 38,550 at Curtis Bay (5) There are only 1,309 fuses suitable for the type M-1 available for the above indicated bomb bodies. These are located in this country. However, they do not have arming wires fabricated at the present time. These arming wires can be fabricated within a matter of hours, and need not hinder the consideration of these fuses as available.

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Page No. 2

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OFFICE OF THE CHIEF OF THE AIR CORPS

ROUTING AND RECORD SHEET

Note.--A line will be drawn across sheet after each comment.

File No. _____

Tally No. _____

Subject: Chemical Equipment and Chemicals for Philippine Islands Depot.

NO.	FROM	TO	DATE	COMMENTS
1.	(Continued)			(6) 100-lb. chemical bomb bodies only available and located as follows: 6,993 - Columbus, Ohio 5,900 - Curtis Bay 93,939 - New Cumberland 8,894 - enroute to Columbus (7) 20,700 M-7 bursters for the above bomb bodies available at Savannah and 2,300 more enroute to Savannah. (8) 8,500 arming wire assemblies for the 100-lb. chemical bomb bodies available at Curtis Bay. (9) By November 10th 13,000 fuses for the 100-lb. chemical bombs will be available, and production is proceeding at the rate of five-hundred (500) per day. As of this date there are no bursters available for the 100-lb. chemical bombs when used either as an incendiary bomb (gasoline) or chemical bomb. However, directives have been issued to the manufacturing facilities, and within one (1) week from this date there will be available 35,000 type M-7 bursters (suitable for the 100-lb. chemical bomb when filled with gasoline), and 38,000 M-4 bursters (suitable for use with the 100-lb. chemical bomb when used with chemical filling). 4. CHEMICAL TANKS: Arrangements have been made for 85 chemical tanks for use on the A-24 airplanes. No other airplanes are equipped to carry chemical tanks, and internal tanks capable of being carried in the bomb bays of any bombardment airplanes have not yet been developed. [redacted] Chief, Materiel Division.

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Page No. 3

W-4071, AC, Rev. 8/1/41

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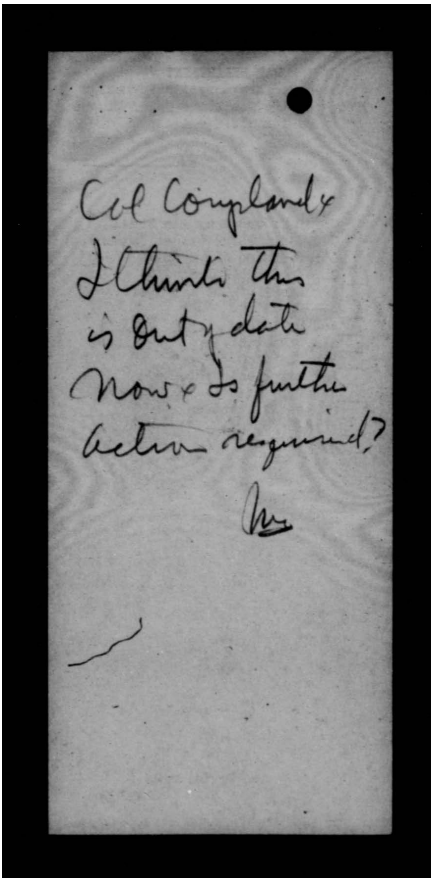
Col Copeland
I think this
is out of date
Now is further
action required?

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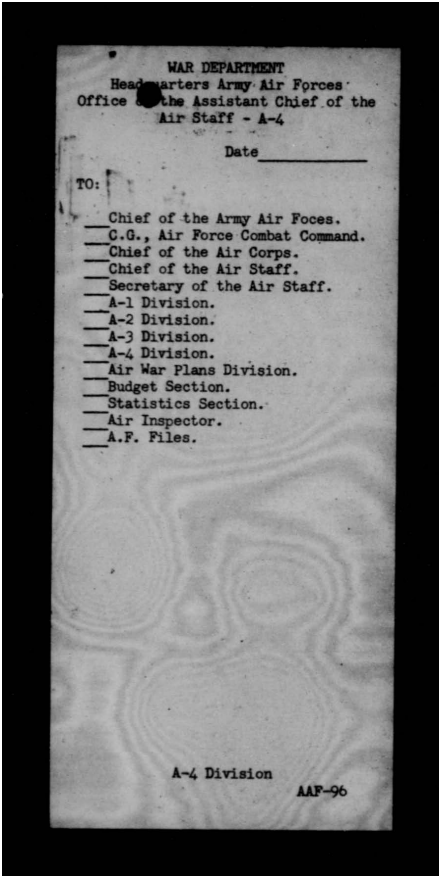

WAR DEPARTMENT
Headquarters Army Air Forces
Office of the Assistant Chief of the
Air Staff - A-4

Date_____

TO:

___Chief of the Army Air Foces.
___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.

A-4 Division

AAF-96

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O.O. 471.62/2156
Attn: Amm. Sup.Div.,F.S. 1st Ind. A.S.RICE/es

War Department, Ordnance Office, Washington, D. C., December23, 1941.
To: Chief of the Army Air Forces, Washington, D. C.

1. Returned without further action in accordance with instructions received from the Office of the Chief of the Army Air Forces, A-4, Lt. Col. Schnieder.

For the Chief of Ordnance:

Hq. Army Air Forces
D 29 1941
AAG Received

P. M. Seleen
P. M. SELEEN,
Major, Ordnance Dept.,
Executive Assistant.

1 Ltr. OO 471.62/2156
1 Incl.
cy. memo to C/Ord.
10-28-41 O.O. 471.62/
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8 Jan. & 20 June 1974
By: JSHM LC; Date 4-10-77

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DOD ltrs.
5 Jan. & 20 June 1974
By: JSMM LC; Date 5-10-77

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WAR DEPARTMENT
OFFICE OF THE CHIEF OF THE ARMY AIR FORCES
WASHINGTON

O.O. WAR DEPT.
471.62
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8156

NOV 10 1941

MEMORANDUM FOR THE CHIEF OF ~~THE~~ ORDNANCE:

Subject: Munition Accessories for Dive Bombers.

471.62/2027

1. Reference is invited to "confidential" memorandum from this office dated October 28, 1941, subject as above, of which a copy is inclosed, (Incl. 1).

2. Revisions in mission distribution and in technical requirements for airplanes assigned to the Philippine Air Force necessitate a corresponding revision in requirements for munition accessories.

3. Requirements to supersede the requirements set forth in the memorandum cited in paragraph 1 above are presented herewith:

a. Trunion Bands, A-24 Airplanes.

1560 for 1000# bombs.
2340 for 500# bombs.

b. Suspension Bands, A-24 Airplanes.

2730 for 100# bombs.
1170 for 100# incend. bombs (gasoline filled).
520 for 100# chem. bombs.
780 for clusters of 20# frag. bombs on 100# stations.

c. Cluster Adapters.

2488 for clusters of 20# frag. bombs on 100# stations.

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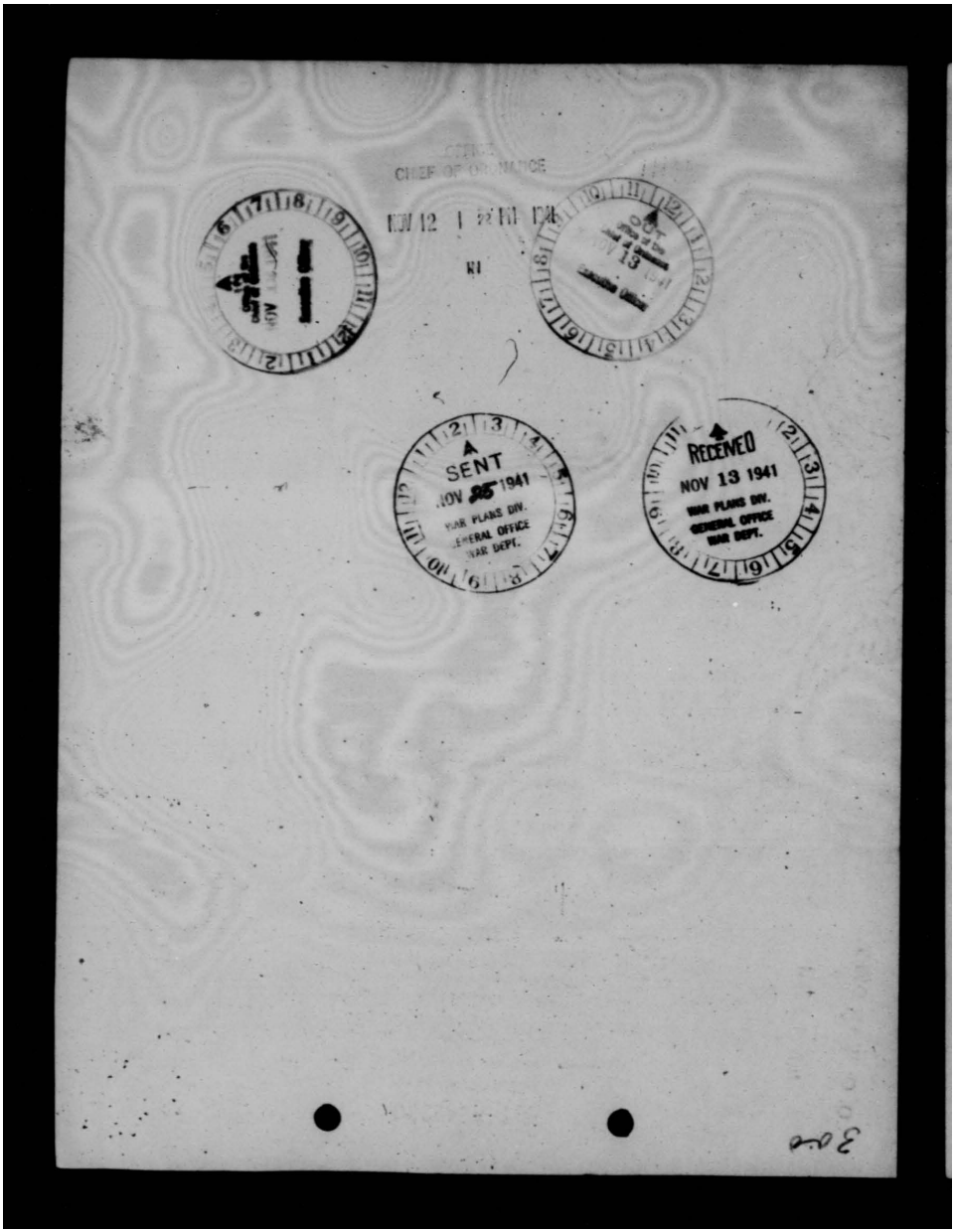

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4. It is requested that the requirements cited in paragraph 3 above be provided for the use of the Philippine Air Force as soon as practicable.

5. It is further requested that this office be advised as to the estimated dates upon which the requirements set forth above can be made available for shipment.

1 Incl.
(Cy. Memo to C/Ord.
10/28/41 O.O. 471.62
2027 acc pg)

For the Chief of the Army Air Forces:

EDWARD P. CURTIS,
Major, Air Corps,
Secretary of The Air Staff

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DOD ltrs.
8 Jan. & 20 June 1974
By: JSHM 10 Date: 3-10-77
EO 471.6 / 2027

AAF/A-4
WRB/
October 28, 1941

MEMORANDUM FOR THE CHIEF OF THE ORDNANCE:

Subject: Munition Accessories for Dive Bombers.

1. It is requested the following munition accessories be provided for the use of the Philippine Air Force as soon as practicable:

Trunnion Bands, A-24 Airplanes

1560 for 1000# bombs
2340 for 500# bombs

Suspension Bands, A-24 Airplanes

3510 for 100# GP dem. bombs
390 for 100# incend. bombs
1560 for 100# chem. bombs
780 for clusters of six 20# frag. bombs used in 100 lb. stations.

Cluster Adapters

947 for clusters of six 20# frag. bombs in 100# stations.

For the Chief of the Army Air Forces:

EDWARD P. CURTIS,
Major, Air Corps,
Secretary of the Air Staff

Incl. #1

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DOD Dir.
8 Jan. & 20 June 1951
By JSIMM LC Date 5-10-77

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O. C. of D.
Bank & Name
Date 11-15-41

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TO INSURE PROMPT ATTENTION IN REPLYING REFER TO
O.O. No. 452.1/148
ATTENTION OF
Amm.Sup.Div., F.S.

WAR DEPARTMENT
OFFICE OF THE CHIEF OF ORDNANCE
WASHINGTON

November 15, 1941

Poudre/eh

985

Subject: Correspondence Acknowledgement.

To: The Chief of the Army Air Forces,
Washington, D. C.

1. Receipt of your letter of November 10, 1941, file Air AG 471.6; OO. 452.1/145, subject: "Trunnion and Suspension Bands", is hereby acknowledged.

2. This matter is now being considered and when the results thereof are known you will be advised by indorsement on the above quoted file.

For the Chief of Ordnance:

P. M. Seleen,
Major, Ordnance Dept.,
Executive Assistant.

471.6 (46)

Hq. Army Air Forces
NOV 18 1941
AAG Received

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WRB/ccc
Written November 5, 1941.

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DOD ltrs.
5 Jan. & 20 June 1974
By JS IMM LC. Date 3-10-77

NOV 10 1941

MEMORANDUM FOR THE CHIEF OF THE ORDNANCE:

Subject: Munition Accessories for Dive Bombers.

1. Reference is invited to "confidential" memorandum from this office dated October 28, 1941, subject as above, of which a copy is inclosed. (Incl.1).

2. Revisions in mission distribution and in technical requirements for airplanes assigned to the Philippine Air Force necessitate a corresponding revision in requirements for munition accessories.

3. Requirements to supersede the requirements set forth in the memorandum cited in paragraph 1 above are presented herewith:

a. Trunion Bands, A-24 Airplanes.

1560 for 1000# bombs.
2340 for 500# bombs.

b. Suspension Bands, A-24 Airplanes.

2730 for 100# bombs.
1170 for 100# incend. bombs (gasoline filled).
[illegible] for [illegible] chem. bombs.
780 for clusters of 20# frag. bombs on 100# stations.

c. Cluster Adapters.

2488 for clusters of 20# frag. bombs on 100# stations.

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/A-4
WRB/coc
Written November 5, 1941

4. It is requested that the requirements cited in paragraph 3 above be provided for the use of the Philippine Air Force as soon as practicable.

5. It is further requested that this office be advised as to the estimated dates upon which the requirements set forth above can be made available for shipment.

1 Incl.
Cy. Memo to C/Ord.
10/28/41

For the Chief of the Army Air Forces:

EDWARD P. CURTIS,
Major, Air Corps,
Secretary of The Air Staff

Dispatched
Nov 10 1941
AAF

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 Ltr.
8 Jan. & 30 June 1974
By: JBMM LC, Date 5-10-77

AAF/A-4
WRB/
October 28, 1941

MEMORANDUM FOR THE CHIEF OF THE ORDNANCE:

Subject: Munition Accessories for Dive Bombers.

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Trunnion Bands, A-24 Airplanes

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1560 for 100# chem. bombs
780 for clusters of six 20# frag. bombs used in 100 lb. stations.

Cluster Adapters

947 for clusters of six 20# frag. bombs in 100# stations.

For the Chief of the Army Air Forces:

EDWARD P. CURTIS,
Major, Air Corps,
Secretary of the Air Staff

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Incl. #1

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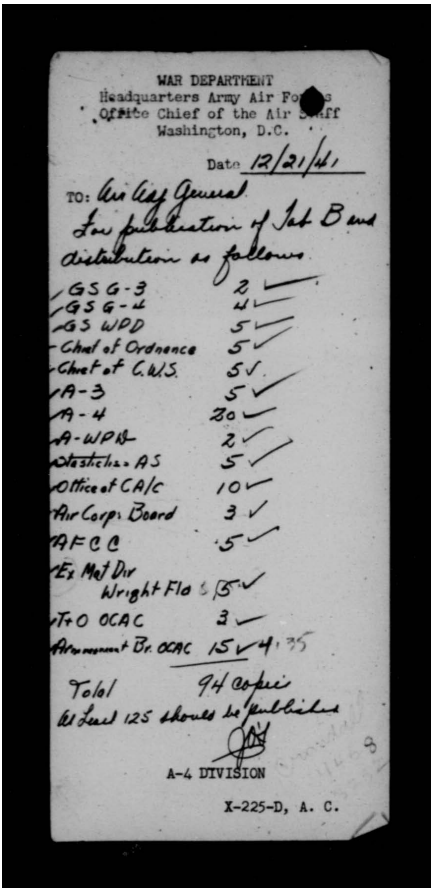

WAR DEPARTMENT
Headquarters Army Air Forces
Office Chief of the Air Staff
Washington, D.C.

Date 12/21/41

TO: The Adj General

Low publication of Sat B and distribution as follows

GSG-3	2
GSG-4	4
GS WPD	5
Chief of Ordnance	5
Chief of C.W.S.	5
A-3	5
A-4	20
A-WPD	2
Materiel - AS	5
Office of CA/C	10
Air Corps Board	3
AFCC	5
Ex Mat Div Wright Fld	15
T+O OCAC	3
Armament Br. OCAC	15 4 35
Total	94 Copies

At least 125 should be published

A-4 DIVISION

X-225-D, A. C.

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9 Jan. & 20 June 1974
By JSTAM LC Date 3-10-77

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WAR DEPARTMENT
Office of the Chief of Staff
Washington

OCS 17874-53

DECLASSIFIED

December 19, 1941

MEMORANDUM FOR THE CHIEF OF THE ARMY AIR FORCES:

Subject: Revision of Basis for Computation of Requirements for Items of Air Corps--Ordnance Equipment.

1. In accordance with paragraph 2, section II of your memorandum for the Chief of Staff, dated November 11, 1941, subject same as above, AAF/292-1, that memorandum and enclosures are returned herewith for necessary distribution.

2. Tab B is approved temporarily and will be used as the basis for the computation of requirements for the items indicated therein until the further amendment directed below has been accomplished and approved.

3. The 20-pound fragmentation bombs, parachute type, and 30-pound chemical bombs will not be eliminated as standard types of fire from light bombardment airplanes except dive bombing types.

4. Necessary action will be initiated to procure racks suited for rapid installation and removal in light bombardment type airplanes (except dive bombing types) now under procurement or included in current programs. These racks are to permit the employment of 20-pound (approximate) fragmentation bombs, parachute type, and 30-pound (approximate) chemical bombs.

5. Concurrently with the procurement of these racks, action will be initiated to further amend subject paper to include appropriate quantities of parachute type and chemical bombs.

By direction of the Deputy Chief of Staff:

/s/ L. S. Kuter

L. S. KUTER,
Major, General Staff,
Asst. Sec., General Staff.

Copies to
A.C. of S., G-3
A.C. of S., G-4

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C-158, A.C.

471.6 (45)

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TAB B

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TAB "B"

BASIS FOR THE COMPUTATION OF REQUIREMENTS FOR STANDARD AIR CORPS ORDNANCE AND STANDARD CHEMICAL WARFARE SERVICE ITEMS.

The Attrition rates shall be as follows:

(1) Theatre of Operations - all types 20% a month.

(2) Zones of Interior and Overseas Departments - all types 3% a month.

Mission rates shall be as follows:

(1) Heavy Bombardment - 8 missions per plane per month, of which 5 will be bombing missions.

(2) Medium Bombardment - 15 missions per plane per month, of which 10 will be bombing missions.
Light Bombardment, including Live Bombers - 15 missions per plane per month, of which all will be bombing missions.
Transports - 15 missions per plane per month.
Amphibians - 15 missions per plane per month, of which 5 will be bombing missions.

(3) Pursuit aircraft equipped to carry bombs - 20 missions per month, of which 2-1/2 missions will be bombing missions.

(4) All other types - 20 missions per plane per month.

Load: Computations to be based on the maximum alternate load.

Ammunition requirement shall be computed to provide a reserve of ammunition for each airplane procured, based on the attrition and mission rates stated above.

Item
1. Gun, machine, Browning, aircraft, caliber .30, M2, fixed, (Drg.51-57).
2. Gun, machine, Browning, aircraft, caliber .30, M2, flexible, (Drg. 51-76).
3. Gun, machine, Browning, aircraft, caliber .50, M2, fixed (Drg. 51-72).
4. Gun, machine, Browning, aircraft, caliber .50, M2, flexible (Drg. 51-73).
5. Gun, automatic, 37 mm., M4, (Drg. 51-92).
6. Gun, automatic, 20 mm., M1, (Drg. 54-105).

The basis for the computation of requirements of these items is established by airplane model specifications listing the number of each carried by each airplane by type and model designation. No other basis can be established. The Chief of the Army Air Forces will keep the Ordnance Department advised of the number of each of the above items required for each type and model airplane.

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Item

7. Ammunition (Fixed) 37 mm HE.
8. Ammunition (Fixed) 20 mm HE - Incendiary.
9. Ammunition (Fixed) 20 mm AP.
10. Cartridge .50 caliber AP.
11. Cartridge .50 caliber Tracer.
12. Cartridge .50 caliber - Incendiary.
13. Cartridge .30 caliber AP.
14. Cartridge .30 caliber Tracer.
15. Cartridge .30 caliber - Incendiary.

The basis for the computation of requirements of these items is established by airplane model specifications setting forth the number of rounds carried for each gun installed by airplane type and model designation. No other basis can be established. The Chief of the Army Air Forces will keep the Ordnance Department advised of the ammunition loads specified for each type and model airplane.

An ammunition expenditure rate of 35% per weapon per mission is recommended.

The following percentage distribution by types of the above ammunition is recommended for procurement:

a. Caliber .30 aircraft machine gun--50% AP; 30% Incendiary; 20% Tracer.

b. Caliber .50 aircraft machine gun--50% AP; 30% Incendiary; 20% Tracer.

c. 20 mm. aircraft gun----------40% HE-Incendiary; 60% AP.

d. 37 mm. aircraft gun----------100% HE.

Item

16. Shotgun, Remington or Winchester, sporting 12-gauge or equal (commercial standard).
17. Powder, aluminum, bronze, Type A (Federal Spec. TT-A-476) with 1-liter glass Florence flasks.
18. Bomb, practice, 20 lb. fragmentation, stabilized.
19. Bomb, practice, pursuit aviation, simulating service, 20 lb., M45.
20. Bomb, practice, pursuit aviation, marksmanship (miniature) M36.
21. Bomb, practice, bombardment aviation, simulating service, 100 lb., M39.
22. Cartridge, ball, caliber .30, M1 (Drg. B10985).
23. Cartridge, dummy, caliber .30, M1906, (B6252).
24. Cartridge, ball, caliber .50, M1 (Drg. C44820).
25. Ammunition, practice, 20 mm.
26. Ammunition, practice, 37 mm.
27. Shell, shotgun, 12-gauge (Commercial Standard No. 9 shot).
28. Bomb, practice, M38-A2.
29. Targets, Pigeons, clay.

Computations of requirements for the above items must be based on the amount and kind of training contemplated and, in some cases, the place where specified training is to be conducted. It is, therefore, not feasible to establish a permanent basis for the computation of requirements in these training items based simply upon availability of personnel or equipment.

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Requirements for these training items will, therefore, be calculated by the Chief of the Army Air Forces, and furnished to the Ordnance Department for inclusion in each annual or supplemental estimate.

Item

30. Pistol, pyrotechnic, M2, (Drg. 42-26).

A basis for computation of requirements of this item at the rate of one per life raft and one per airplane of the following types is recommended:

Heavy Bombardment
Medium Bombardment
Light Bombardment (including Dive Bombers)
Pursuit (all types)
Reconnaissance (Air Force and Army)
Observation, Corps and Division
Amphibian
Cargo or Transport

Item

31. Flare, aircraft, parachute, M9 (Drg. 78-0-11).

The following basis for computation of requirements is recommended:

5 M-9 observation flares per airplane of the following types:

Corps and Division Observation
Army Reconnaissance

Expenditure rate----------50% per mission.

Item

32. Signal, aircraft, red star, parachute, M11 (Drg. 78-0-10).
33. Signal, aircraft, red star, cluster, M14 (Drg. 78-0-14).
34. Signal, aircraft, white star, blinker, parachute, M15 (Drg. 78-0-16).
35. Signal, aircraft, green star, blinker, parachute, M16 (Drg. 78-0-16).

The following basis for computation of requirements is recommended:

Type of Airplane	Load Assorted Signals	Expenditure Rate Per Mission
Heavy bombardment	9	20%
Medium bombardment	9	20%
Light bombardment (including Dive Bombers)	9	20%
Night Interceptor	9	20%
Pursuit (all types)	4	25%
Air Force Reconnaissance	9	20%
Army Reconnaissance	15	75%
Observation, Corps and Division	15	75%
Amphibian	20	20%
Cargo or Transport	9	1%

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Procurement to be distributed equally between the four signals.

In addition: 5 M-11 Signals, aircraft, per life raft -- expenditure rate .....0.

Item
36. Pistol, automatic, caliber .45, M1911, A1 (Drg, 42-8).

Requirements for this item are tied in with the problem of providing means to assure adequate local security for Air Corps commands. This problem is under study in the Office, Chief of the Air Corps, and it is probable that the provision of a proportion of other organic weapons, such as rifles, sub-machine guns, light machine guns, et cetera, will be recommended. The basis for computation of requirements for pistol for Air Corps troops shall be reduced from the basis of one (1) per officer, warrant officer, flying cadet, and enlisted men of the Air Corps to: One (1) per officer, warrant officer, and non-commissioned officer of the first three grades.

Item
37. Cartridge, ball, pistol, caliber .45 M1911 (Drg. B503).

The standard Army allowance of this ammunition per pistol is recommended.

Item
38. Bombs, Armor Piercing.
39. Bombs, Semi-armor piercing, 1000 lb.
40. Bombs, Semi-armor piercing, 500 lb.
41. Bombs, general purpose, 2000 lb.
42. Bombs, general purpose, 1000 lb.
43. Bombs, general purpose, 500 lb.
44. Bombs, general purpose, 250 lb.
45. Bombs, general purpose, 100 lb.
46. Bombs, chemical, 100 lb.
47. Bombs, fragmentation, stabilized.
48. Bombs, incendiary, 4 lb. or smaller.
49. Bombs, incendiary, 100 lb. gasoline.
50. Bombs, depth, Navy Type.
51. Aerial Mine, Navy Type.

It is recommended that the present basis for computation of requirements for these items as established by the War Department in letter to the Chief of Ordnance, May 27, 1940 -- subject: "Airplane Bomb Reserves" -- A.G. 471.6 (11-2-39)M-D be amended to read as follows:

a. The requirement for Armor Piercing bombs shall be fixed at 15,000 tons.

b. The requirement for Depth Bombs, Navy Type, shall be fixed at 6,000 tons.

c. The requirement for Aerial Mines, Navy Type, shall be fixed at 3,000 tons.

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d. The requirement for Semi-Armor Piercing bombs, 1,000 and 500 lb. types, shall be computed as 30% of the total requirement for 500 and 1,000 lb. bombs.

e. The requirement for 100 lb. chemical bombs shall be computed at the rate of one mission per plane, equipped to carry 100 lb. bombs, per month.

f. The requirement for General Purpose Demolition Bombs and other types shall be computed independently of the Armor Piercing bombs, Depth bombs, Chemical bombs, and Aerial Mines, on an airplane mission basis as follows:

(1) For Heavy and Medium Bombardment:

2000 lb.	8%
1000 lb.	16% (70% GP; 30% SAP)
500 lb.	23% (70% GP: 30% SAP)
250 lb.	24%
100 lb.	9%
Incendiaries	20%, of which 15% shall be 100 lb. gasoline filled; 85% shall be 4 lb. or smaller.

(2) For Light Bombardment, other than Dive Bombers:

1000 lb.	12% (70% GP; 30% SAP)
500 lb.	22% (70% GP; 30% SAP)
250 lb.	24%
100 lb.	20%
20 lb. fragmentation, stabilized	17%
Incendiaries	5%, of which 15% shall be 100 lb. gasoline filled; 85% shall be 4 lb. or smaller

(3) For Dive Bombers (including combined loads for wing racks):

1000 lb.	40%
500 lb. plus 2-100 lb.	35%
500 lb. plus 2-100 lb. clusters of 6-20 lb. fragmentation.	10%
500 lb. plus 2-100 lb. incendiaries	5%

(4) Pursuit:

500 lb.	60%

NOTE: If 250 lb. bomb is carried as alternate, divide percentage equally between 250 and 500 lb. bombs.

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20 lb. fragmentation.. ..... 40% - NOTE: If airplane will not carry 20 lb. fragmentation bomb on wing racks, add percentage to 500 lb. bomb.

(5) Amphibians:
1000 lb..... 25% (70% GP; 30% SAP)
500 lb..... 50% (70% GP; 30% SAP)
100 lb..... 25%

(6) Requirements of bomb reserves for all other types of airplanes will be computed on the basis of assigned bombing missions per month and in types to be determined by the Chief of the Army Air Forces, predicated upon the bombs which such airplanes are equipped to carry.

f. The requirement of smoke tanks and chemicals shall provide for five missions for each airplane capable of carrying this equipment.

h. Cluster adapters for bombs.
The following basis for computation of requirements is recommended:

20 lb. fragmentation bombs:
100% of the procurement will be clustered in adapters for 100 lb. bomb stations.
4 lb. incendiary bombs:
70% of procurement will be clustered in adapters for 100 lb. bomb stations; 30% of procurement will be clustered in adapters for 500 lb. bomb stations.

i. Suspension and Trunnion Bands for Bombs.
The following basis for computation of requirements is recommended:

Suspension Bands will be procured for any bomb or cluster of bombs used on external wing racks of Dive Bombers.

Trunnion Bands will be procured for all 1000 lb. and 500 lb. bombs used under fuselage of Dive Bombers.

Item
51. Signal, drift.

The following basis for computation requirements is recommended:

Load per heavy bombardment and reconnaissance (long range) and amphibian airplane..... 10
Load per medium bombardment and reconnaissance (medium) airplane. 7
Expenditure rate - 10% per airplane of the above types per mission.

52. Flare, aircraft, landing, parachute, M8A1 (Drg. 78-0-7).

It is recommended that this item be eliminated for future procurement other than for training type aircraft.

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53. Flare, aircraft, parachute, bombing and reconnaissance.

An expenditure rate of one (1) flare per mission per airplane of the following types is recommended:

Heavy Bombardment.
Medium Bombardment.
Light Bombardment.
Air Force Reconnaissance.
Army Reconnaissance.
Observation, Corps and Division.
Amphibian.

Item
54. Bomb, photo-flash.

The following basis for computation of requirements is recommended:

Army Reconnaissance.
Observation, Corps and Division.
Air Force Reconnaissance.
Bombardment.

Expenditure rate - one (1) per mission per airplane of the Observation Corps and Division and Army Reconnaissance types, and an expenditure of 25% per mission per airplane of Air Force Reconnaissance and Bombardment types.

Item
55. Signal, distress, (smoke grenade, M8)

The following basis for computation of requirements is recommended:

Load one (1) per combat airplane of all types.
Expenditure rate - 0.

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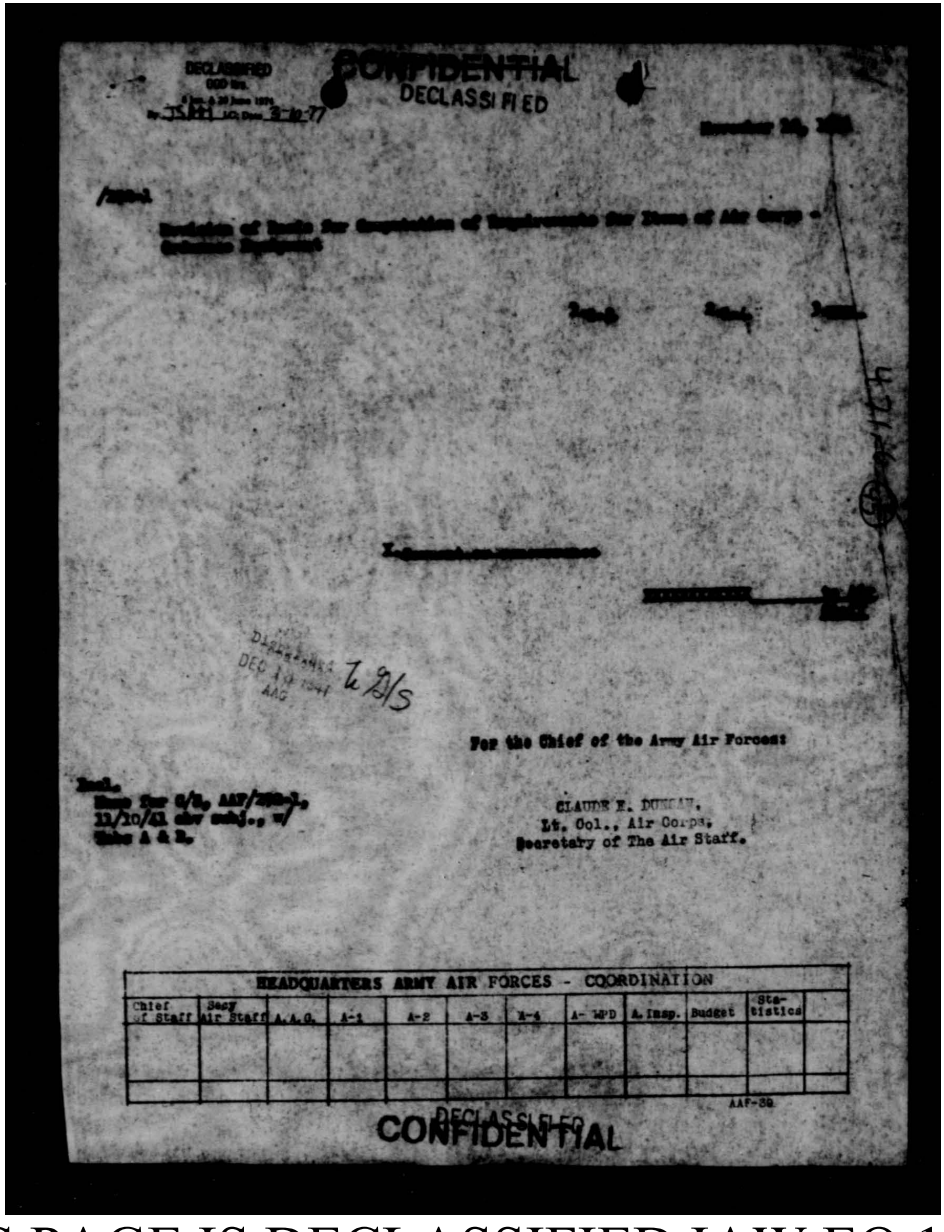

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DISPATCHED
DEC 1 0 1941
AAG

For the Chief of the Army Air Forces:

Incl.
Memo for C/S, AAF/[illegible],
11/10/41 abv subj., w/
Tabs A & B.

CLAUDE E. DUNCAN,
Lt. Col., Air Corps,
Secretary of The Air Staff.

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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E Sec. 3, 20 June 1974
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AAF/A-4
JJO/gwd
Written Oct. 30, 1941.

A.A.F./292-1

NOV 10 1941

MEMORANDUM FOR THE CHIEF OF STAFF:

Subject: Revision of Basis for Computation of Requirements for Items of Air Corps - Ordnance Equipment.

1. Discussion.

1. The basis for the computation of air requirements for items of Air Corps - Ordnance equipment is set forth in the Minutes of Subcommittee of the Air Corps Technical Committee, dated May 8, 1941, as approved by the Secretary of War, July 22, 1941, and as amended by Amendment A, dated September 17, 1941, and approved by the Secretary of War, September 11, 1941. (See Tab A).

2. Further amendment of the approved basis for computation is necessary at this time to:

a. Establish requirements for:

(1) Cluster adapters for bombs.
(2) Suspension Bands for Dive Bombers.
(3) Trunnion Bands for Dive Bombers.

b. Establish Bombing Missions for Dive Bombers.

c. Establish percentage of types of bombs for Bombing Missions of Pursuit Airplanes.

d. Delete reference to:

(1) 300 lb. bomb GP (300 lb. bomb standardized to replace it).

(2) 25 to 40 lb. Incendiary Bomb (Minutes of Joint Aircraft Committee, September 15, 1941, made the following recommendation, "It is recommended that the 40 lb. M-81 type incendiary bomb not be considered further as a standard type for the Army, Navy, British.").

(3) 20 lb. Chemical Bomb, 23 lb. Spray [illegible] and 100 lb. Chemical Bomb [illegible] elimination of these bombs, it is recommended [illegible] adapters. And further [illegible] means of carrying [illegible] bombs -- have been deleted from specifications of Air Corps.

HEADQUARTERS [illegible] AIR FORCES — COORDINATION

Chief of Staff	Secy Air Staff	A.C.								

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(4) "Chief of Air Corps" where it appears and insert "Chief of the Army Air Forces".

(5) Data on first page of original document which is purely historical.

e. Set Chemical Bomb missions up as alternate missions because of policies regarding their use and redistribute percentage allotted to chemicals to General Purpose Bombs.

f. Increase of requirements for Depth Bombs, Navy Type, because Defense Reserves set up for Atlantic and Overseas bases have exceeded the initial Air Corps Requirement.

g. Establish a requirement for Aerial Mines. (Routing and Record Sheet from Chief of Army Air Forces, Subject: "Establishment of an Army Requirement for Aerial Mines.", dated September 30, 1941.

3. Because of the extent of the revision of the original document it was impracticable to indicate in Tab B all deletions by lining them out. All changes and additions, however, have been indicated by underscoring.

II. Action Recommended.
The Secretary of War directs:

1. That the basis for computation of Air Corps requirements for items of Air Corps-Ordnance equipment as published in Minutes of the Subcommittee of the Air Corps Technical Committee, May 3, 1941, as approved July 28, 1941, and amended by Amendment A, dated September 17, 1941, as approved September 11, 1941, be approved as indicated in Tab B.

2. That this correspondence be returned to the Chief of the Army Air Forces in order that the necessary distribution may be made.

III. Concurrences.
A.C. of S., G-3 ( )
A.C. of S., G-4 ( )
A.C. of S., WPD ( )

For the Chief of The Air Staff

E. P. CURTIS
Major, Air Corps
Secretary of the Air Staff

2 Incls.-
Tab A-Minutes Subcomm.AC
Tech.Comm.on Revision
AC-Ord.Requirements,
[illegible]
[illegible]

[illegible] AIR FORCES - COORDINATION

Chief of Staff	Secy Air Staff	A.A.G.	A-1	A-2	A-3	A-4	X- WPD	A. Insp.	Budget	Statistics	
	[illegible]				[illegible]	[illegible]	[illegible]				

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Tab B - Revision of Minutes

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5 Jan. & 20 June 1954
By JSIMM LC Date 3-10-77

4,000-lb. Bomb Installation for Heavy Bombers (B-17 and B-24) Airplanes.

AAF/A-4
JSC/and

4. AAF C/AC 1941
C/AS 12/31

1. It is requested that action be taken immediately to incorporate in B-17 and B-24 type airplanes on current contracts without delay in production, all requirements necessary to carry and tactically use the 4000 lb. bomb as covered in Memo, Exp. Engr. to CMD, October 9, 1941 and item No. 3 foregoing. In this connection associated equipment, including bomb racks, shackles, hoists, etc. applicable to any airplane for use of 4000 lb. bombs should be procured and supplied on the basis of equipping one (one) squadron per heavy bombardment group, tentatively allocated to Hq. and Hq. Sqn. for purpose of supply.

Incl:
Ltr frm Mat. Div. 10/8/41 OS
to C/Mat. Div., abv. subj. C/AS

Dispatched
JAN 12 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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8 Jan. & 20 June 1974
By JSAM LC Date 3-10-77

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WAR DEPARTMENT, AIR CORPS
OFFICE, ASSISTANT CHIEF
MATERIEL DIVISION

WJH-dac-53

Wright Field, Dayton, Ohio

Date Oct. 9, 1941

TO: Chief, Materiel Division, O.C.A.C., Washington, D. C.

SUBJECT: 4,000# Bomb Installation for Heavy Bombers (B-17 and B-24) Airplanes.

1. In reply to request from your Office, Teletype No. EXP-T-938 dated July 15, 1941 states that on both B-17 and B-24 Airplanes, without requiring a major change in the structure, a 4,000# bomb may be carried underneath each wing between the fuselage and inboard nacelle. In addition, the teletype requested information as to whether or not this Office should initiate work to provide a structure for suspension of 4,000# bombs from these airplanes. To date no reply has been received.

2. Intermittently discussions have occurred which indicate that the B-17 and B-24 series airplanes will be required to carry 4,000# bombs. However, it is not clear as to whether the Air Corps will design the equipment or the builders of these airplanes will be requested to furnish proposals on wing bomb racks of the required size.

F. O. CARROLL,
Lt. Colonel, A. C.,
Chief, Experimental
Engineering Section.

Signature T. A. Sims

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T. A. SIMS,
Major, Air Corps,
Asst. Technical Executive.

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DOD Dir.
5 Jan. & 30 June 1974
By: JSHM LC Date 5-10-77

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SUBJECT: 4,000# Bomb Installation for Heavy Bombers (B-17 and B-24) Airplanes.

AAF/A-4
JFW/emd

1. AAF C/AC 1941
C/AS 11/6

1. Reference 4,000# bomb installation for heavy bomber airplanes and letter this subject from Experimental Engineer to Chief, Materiel Division, October 9, 1941 request a program be studied and report submitted as follows:

2. Based upon supply of 4,000# bombs and special projects possibly requireing use at least certain heavy bombers must be available for employment. Bomb shackles and handling equipment including hoisting apparatus, must therefor be also available.

3. B-17 and B-24 Airplanes on current procurement must be modified and equipped in the process of manufacture without delay in production; also heavy bombardment types under development.

4. Information or recommendations are desired in report Para. 1 to include: one or two bomb load with resultant range: possibility of contractor design and manufacture of bomb racks in collaboration with the Air Corps: approximate time first airplanes capable of handling this size bomb can be delivered to service: procurement necessary equipment based upon installation in one airplane out of [illegible] with provision for incorporation in all production airplanes based upon Paragraph 3.

Incl:
Memo frm Mat.Div.
10/9/41 to C/Mat.Div.

CS
C/AS

---

2. C/AC Mat. 1941
Div. 11/12

X-BHM:br

1. For necessary action and report through this office Believe you have already prepared at least a partial study on this.

Incls. n/c

M. S. F.
Executive.

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4,000-lb. Bomb Installation for Heavy Bombers (B-17 and B-24) Airplanes.

3. OCAC (MAT) (4-3-1) AAF/ A-4 6/AS 1941 12-19

1. The following information is submitted with respect to your request in first endorsement:

a. The B-17E airplane will have a 1,880 mile range with normal fuel load, plus full load of bombs in bomb bay, and two (2) 4,000-lb. bombs on wings. Cruising speed under the above conditions will be 165 miles per hour.

b. The B-17E airplane will have a 2,680 mile range if the maximum fuel load is carried (with bomb bay tanks) and two (2) 4,000-lb. bombs on wings. Cruising speed will be 165 miles per hour.

c. The B-24C airplane will have a 2,900 mile range with normal fuel load and full bomb load internally and two (2) 4,000-lb. bombs on the wings. The cruising speed will be 160 miles per hour.

d. The B-24C airplane will have a 3,000 mile range if no bombs are carried internally and only two (2) 4,000-lb. bombs under the wing. The cruising speed will be 185 miles per hour.

2. It is not recommended that provisions be made for only one (1) 4,000-lb. bomb on either one of these two airplanes. Such an arrangement will necessitate an unbalanced load at all times and take-off under such conditions would be hazardous.

3. Assuming that modifications of these airplanes will be accomplished at the manufacturers plants and on the basis of a twenty-four (24) hour day, it is estimated that the first article of either or both airplanes can be expected within sixty (60) days after the work has been initiated.

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4,000-lb. Bomb Installation for Heavy Bombers (B-17 and B-24) Airplanes.

3. (Continued)

4. Shackles for carrying 4,000-lb. bombs have been designed and are now in process of test and manufacture. It is anticipated that suitable articles of this type will be available for production release on or about January 2, 1942.

5. No troubles are anticipated with respect to bomb hoisting equipment. Two (2) of the present standard type G-2 bomb hoists which are now used to hoist the 2,000-lb. bombs will be used to hoist the 4,000-lb. bombs.

O. P. M.
Encl. n/c. Chief, Materiel Division.

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DOD ltrs.
6 Jan. & 20 June 1974
By: JSIHM LC: Date 3-10-77

4,000# Bomb Installation for Heavy Bombers (B-17 and B-24) Airplanes.

AAF/A-4
JFW/cmd

1 AAF C/AC 1941
C/AS 11/6

1. Reference 4,000# bomb installation for heavy bomber airplanes and letter this subject from Experimental Engineer to Chief, Materiel Division, October 9, 1941 request a program be studied and report submitted as follows:

2. Based upon supply of 4,000# bombs and special projects possibly requiring use at least certain heavy bombers must be available for employment. Bomb shackles and handling equipment, including hoisting apparatus, must therefor be also available.

3. B-17 and B-24 Airplanes on current procurement must be modified and equipped in the process of manufacture without delay in production also heavy bombardment types under development

4. Information or recommendations are desired in report Para. 1 to include: one or two bomb load with resultant range; possibility of contractor design and manufacture of bomb racks in collaboration with the Air Corps; approximate time first airplanes capable of handling this size bomb can be delivered to service; procurement necessary equipment based upon installation in one airplane out of ten with provision for incorporation in all production airplanes based upon Paragraph 3.

Dispatched
NOV 10 1941
AAG

Incl:
Memo frm Mat.Div.
10/9/41 to C/Mat.Div.

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	
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MX[redacted]

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DOD ltrs.
8 Jan. & 20 June 1974
By JSIMM LC; Date 3-10-[redacted]

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INTER-OFFICE MEMORANDUM

WAR DEPARTMENT, AIR CORPS
Office, Assistant Chief
Materiel Division

WJH-dac-53

Wright Field, Dayton, Ohio
Date OCT 9 1941

TO: [redacted]l Division, O.C.A.C., Washington, D. C.

SUBJ[redacted]tallation for Heavy Bombers (B-17 and B-24)

[redacted]st from your Office, Teletype No. EXP-T-938 dat[redacted] states that on both B-17 and B-24 Airplanes, without [redacted] a major change in the structure, a 4,000# bomb may be ca[redacted]neath each wing between the fuselage and inboard nacelle. I[redacted] the teletype requested information as to whether or not t[redacted] should initiate work to provide a structure for suspension o[redacted]mbs from these airplanes. To date no reply has been received.

[redacted]termittently discussions have occurred which indicate that the [redacted]d B-24 series airplanes will be required to carry 4,000# bombs. However, it is not clear as to whether the Air Corps will design the equipment or the builders of these airplanes will be requested to furnish proposals on wing bomb racks of the required size.

F. O. CARROLL,
Lt. Colonel, A. C.,
Chief, Experimental
Engineering Section.

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Signature
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DOD Nrs.
5 Jan. & 20 June 1974
By JSHM LC. Date 3-10-77

AAF/A-4
RCC/mhh
(Written Nov. 7, 1941)

NOV 10 1941

MEMORANDUM FOR THE CHIEF OF ORDNANCE:

Subject: Trunnion and Suspension Bands.

1. Request that the following material be delivered to the Post Ordnance Officer Mitchel Field, Long Island, not later than Nov. 15, 1941, to be transported by air to San Francisco, California, thence by boat to Manila, P. I. for use in connection with A-24 airplanes.

a.	Suspension bands	100#	-	400
b.	Trunnion "	500#	-	100
c.	" "	1000#	-	100

2. In case quantities of bands listed above are not available on November 15, 1941, such amounts as are available should be shipped.

3. It is further requested that drawings and specifications of the above listed bands be forwarded by air to the Commanding General, Philippine Department marked for the Ordnance Officer, with instructions that he manufacture, if practicable, additional quantities of these bands until such time as the full requirements of the Philippines can be met by shipments from this country.

For the Chief of the Army Air Forces:

EDWARD P. CURTIS,
Major, Air Corps,
Secretary of The Air Staff

471.6 (43)

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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DOD Dir.
6 Jan. & 29 June 1974
By: JS/MM LC Date 3-10-77

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O.O. 452.1/145
Attn: Amm.Sup.Div.,F.S. 1st Ind. on Memo. GLASS/es

War Department, Ordnance Office, Washington, D. C., November 17, 1941.
To: Chief of the Army Air Forces, Washington, D. C.

1. Reference Par. 1 & 2, basic memorandum, the following items of materiel were shipped to arrive at Mitchel Field, Long Island by November 15, 1941.

Band, suspension	100-lb.	-	400
Bands, trunnion	500-lb.	-	75
Bands, trunnion	1000-lb.	-	50

Information has been received that the above items were shipped by air on November 16, 1941, for delivery to San Francisco, California.

2. Reference Par. 3, inclosed herewith copy of letter to Department Ordnance Office, Philippine Department, Manila, P. I., which is self-explanatory.

For the Chief of Ordnance:

P. M. Seleen

P. M. SELEEN,
Major, Ord. Dept.,
Executive Assistant.

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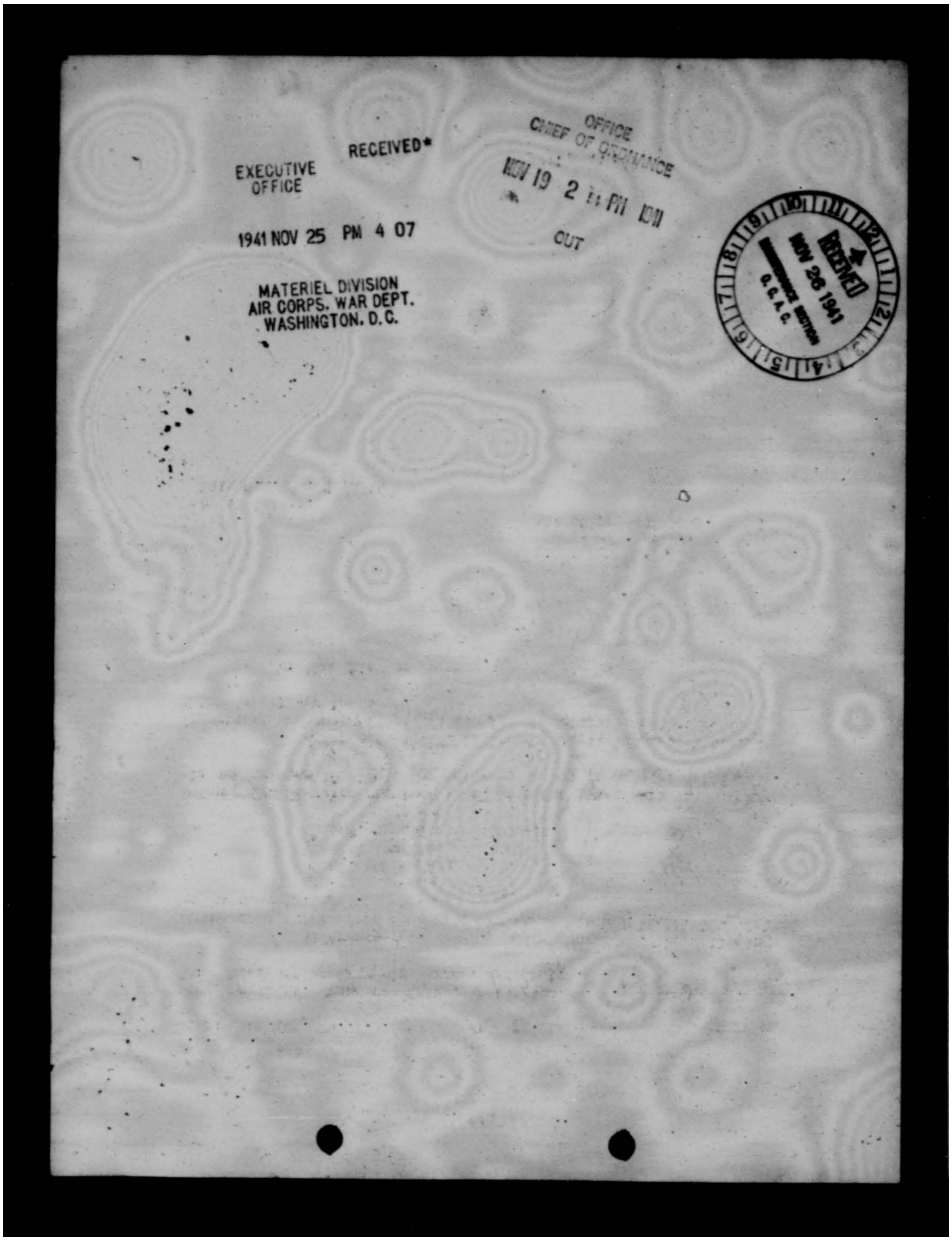

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- DOD Dir.
By JSTPM LC Date 3-10-77

WAR DEPARTMENT
OFFICE OF THE CHIEF OF THE ARMY AIR FORCES
WASHINGTON

O. O. WAR DEPT.
NOV 11 1941
45 2.1
145

NOV 10 1941

MEMORANDUM FOR THE CHIEF OF ORDNANCE:

Subject: Trunnion and Suspension Bands.

1. Request that the following materiel be delivered to the Post Ordnance Officer Mitchel Field, Long Island, not later than Nov. 15, 1941, to be transported by air to San Francisco, California, thence by boat to Manila, P. I. for use in connection with A-24 airplanes.

a.	Suspension bands	100#	-	400
b.	Trunnion "	500#	-	100
c.	" "	1000#	-	100

2. In case quantities of bands listed above are not available on November 15, 1941, such amounts as are available should be shipped.

3. It is further requested that drawings and specifications of the above listed bands be forwarded by air to the Commanding General, Philippine Department marked for the Ordnance Officer, with instructions that he manufacture, if practicable, additional quantities of these bands until such time as the full requirements of the Philippines can be met by shipments from this country.

For the Chief of the Army Air Forces:

EDWARD P. CURTIS,
Major, Air Corps,
Secretary of The Air Staff

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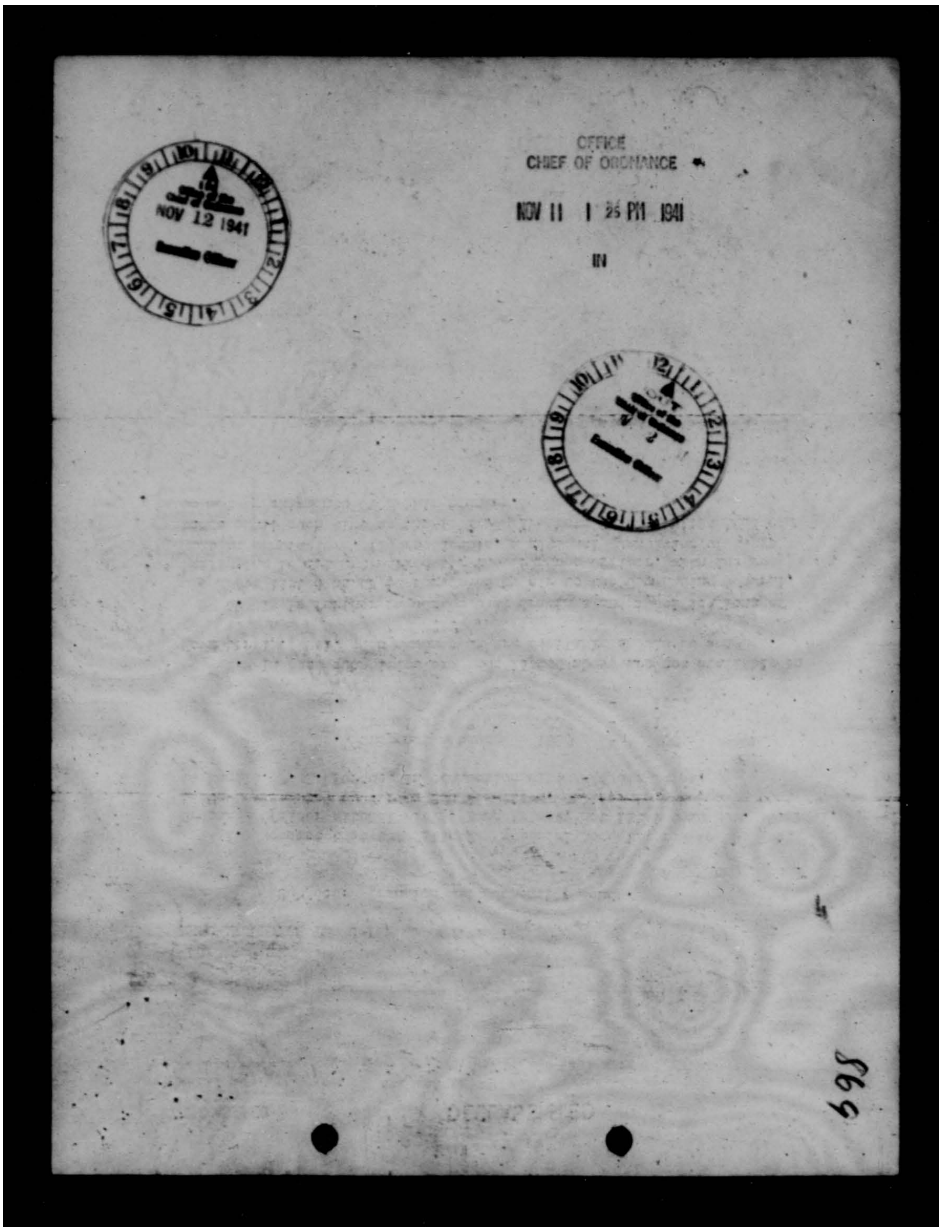

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Kalmbach/afs

Industrial Service
Ammunition Division
Bomb & Pyro. Branch

November 7, 1941

Subject: Suspension Bands for 100-lb. M30 Bomb, and Trunnion Bands for 300-lb. M43 and 1000-lb. M44 Bombs

To: Department Ordnance Officer,
Philippine Department,
Manila, P. I.

1. Every effort is being made to deliver by December 11, 1941, to the Ordnance Officer, Philippine Department the following:

100 Band, Trunnion, M2, for Bomb, Demo., 1000-lb., M44
100 Band, Trunnion, M1, for Bomb, Demo., 300-lb., M43
400 Band, Suspension, M1, for Bomb, Demo., 100-lb., M30

2. However, in case local procurement becomes necessary, the following drawings are inclosed:

82-3-308 - Band, Suspension, M1, for Bomb, Demo., 100-lb., M30.

82-3-309 - Band, Trunnion, M1, for Bomb, Demo., 300-lb., M43.

82-3-310 - Band, Trunnion, M3, for Bomb, Demo., 1000-lb., M44.

By order of the Chief of Ordnance:

R. G. BUTLER, Jr.,
Major, Ordnance Dept.,
Assistant.

3 Incls.
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#2- " 82-3-309
#3- " 82-3-310)

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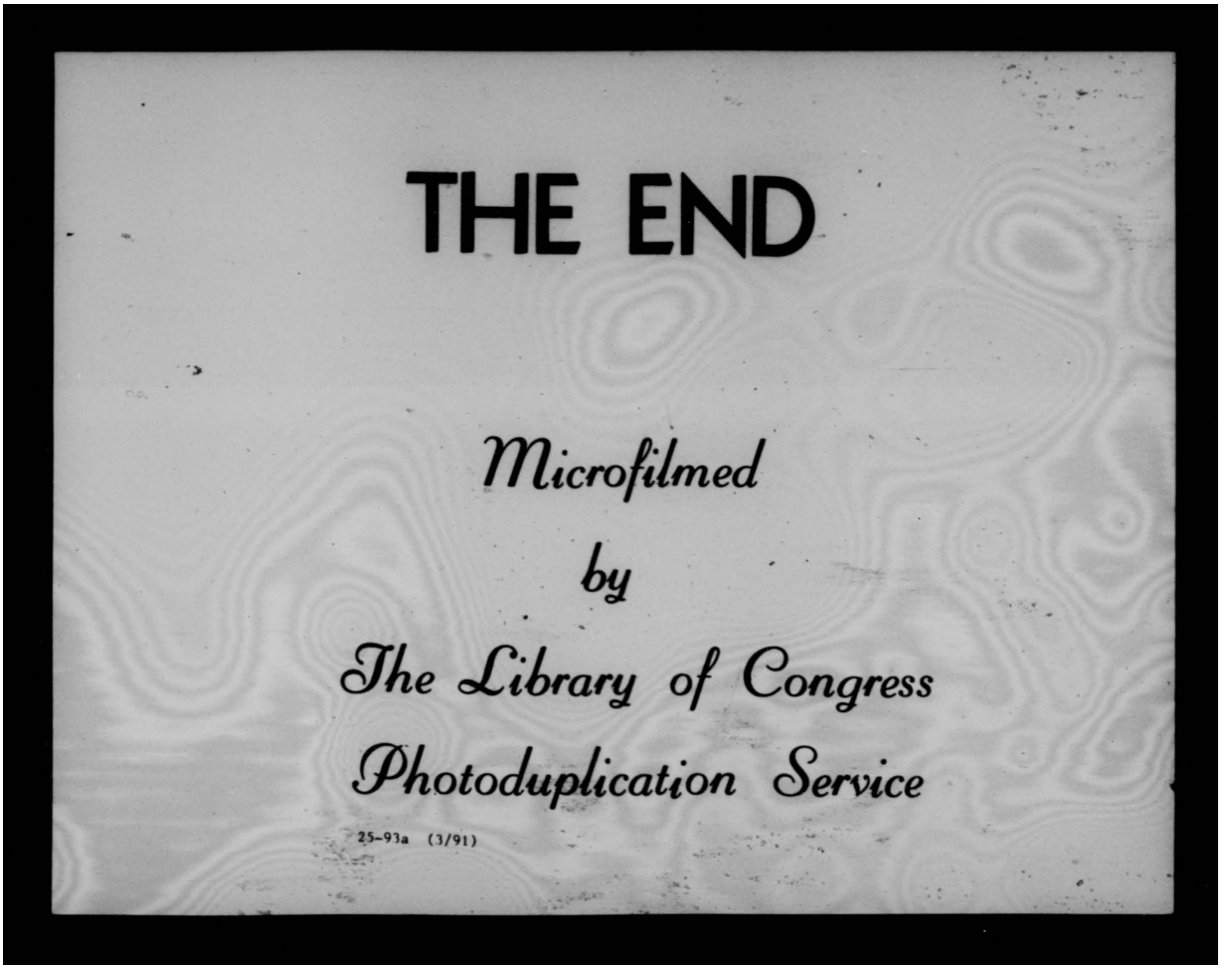

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