WAR DEPARTMENT
AIR TECHNICAL SERVICE COMMAND
~~MATERIEL DIVISION, AIR CORPS~~
OFFICE OF THE CHEMICAL WARFARE SERVICE LIAISON OFFICER

AIRMAIL!

WLB:eb:TSXCW
WRIGHT FIELD, DAYTON, OHIO

CWWF 471.6/378-Secret SECRET

19 June 1945.

Subject: 250 Kg. German Bomb Installation in AAF Planes.

SECRET
AUTH: Chief, C.W.S.
Initials: WLB
Date: 19 June 45.

To: Chief, Technical Division, Office, Chief, Chemical Warfare Service, Army Service Forces, Washington, D. C.

1. This office, in conjunction with the Armament Laboratory, Engineering Division, has made a study on ways and means of using the subject munition in future operations. Since the bomb approximates the 500-lb. G.P. bomb in size, the goal was established as equivalent loading at 500-lb. stations. Further conditions imposed were: a. Fuze, AN-M-103, located in the nose, and, b. Field modifications minimum in number.

2. Since an adapter for the M-103 is required, it was felt that discarding the nose cover was an advantage, as it was used for carrying purposes primarily. This results in a desired reduction in length. The burster tube could be shortened but would be difficult to do in the field. The M-103 is recommended to be attached by an adapter - see Sketch A. Fairing for the nose is included with the adapter. Overall length of bomb with M-103 fuze is 64-1/4 inches.

3. The method of suspension had a number of variables: a. 14-inch spacing required; b. box-type fins require that the lugs be in line with one fin; c. if fuze well is used, no obstruction to be present; d. field modification required. These requirements can be met by the use of a curved plate with lugs spaced 14-inches and attached by standard metal band strapping available in the field. See Sketch B and photo. Rotation or longitudinal variations can be accomplished. For fore and aft movement, the banding was considered sufficient. Adopting these changes as suitable, space checks were started.

4. To obtain maximum loading in B-17, B-24, B-25, B-26, and all pursuit planes, a location of the front lug at 50 inches forward of tail or 8-3/4 inches forward of C.G. (center line of German suspension lug), is required.

5. This same spacing of 8-3/4 inches forward of C.G. is suitable for the rear bomb bays of the B-29 and B-32. To carry on the front rails of B-29 and B-32, a location of 4 inches forward of C.G. was found necessary. This spacing is also best for the A-26. (Due to special equipment location in the A-26 only, four bombs may be carried, or a reduction of two from the standard).

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6. Sketch B and photo show the design and application of the recommended suspension bar. Calculations indicate that four straps .020 x 3/4 inches are required to carry this bomb under a 11 g load.

7. The use of the T-51 fuze is not suitable to produce maximum 500-lb. loadings. Use of T-51 can be accomplished with the suspension bar located with C.G. midway between lugs. This will give maximum loading in B-17, B-24, B-25, B-26, all pursuits, A-26 (four only), and reduced load (24 per bomb bay reduced from maximum 40) in B-29 and B-32.

8. The use of the German fuze was not investigated thoroughly, as its operation details were not known. If electric current is required, it should not be too difficult to provide for in our aircraft.

9. It is suggested that consideration be given to a new fuze designed especially for this bomb and located in the side fuze well. Height of the fuze, if protruding from the bomb, will require a review of these results.

10. In summation, the following is suggested for use of subject munition:

a. replace nose fairing and vertical suspension casting,
b. install by clips or set screw M-103 fuze adapter and nose fairing,
c. install by use of four straps a suspension plate with 14-inch lug spacing. Two locations are required as per paragraphs 4 and 5 above.

Willis L. Banks

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Major, C. W. S.,
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3 Incls.
Incl. 1 - Sketch A.
Incl. 2 - Sketch B.
Incl. 3 - Photo.
} 1 cy w/d & sent to Richmond 6/23 by ltr.

cc: Chief, Tech. Command,
Edgewood Arsenal.
Air Chemical Officer,
Washington.
Maj. Carr, Tech. Div.,
Edgewood Arsenal.

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