

Aer-E-17-AA
VTBFI/F41
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November 3, 1942

M E M O R A N D U M

From: VTB Design.
To: The Chief of the Bureau.
C16422
Subject: Model TBF-1 Airplanes - Extension
of Range with Partial Bomb Load.

1. An investigation of the possibility of carrying a droppable bomb bay tank of reduced size in one end of the bomb bay while carrying bombs in the other end was made by this desk.

2. It was found that this installation appears to be practicable, and that an increase of about 90 gallons fuel capacity results.

The effect on range is as follows:

	<u>1000 lb. bomb</u>	<u>500 lb. bomb</u>
Present Max. range and bomb load	1335, 1 bomb	1220, 4 bombs
With added tank, maximum range and bomb load	1600, 1 bomb	1600, 2 bombs

3. The penalties and problems are as follows:

- (a) Increase in weight permanently installed provided no change in fuel system is required (approx.) 12 lb.
- (b) Weight of tank and removable bracing (approx.) 98 lb.
- (c) Provided parts are furnished, a change to adapt the airplane to this tank in service appears to be practicable.
- (d) Division of the large bomb bay fuel tank into two tanks is not recommended because of resultant complication of the fuel system.

Aer-E-17-AA
VTBF1/F41
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4. If these smaller bomb bay tanks are to be provided, it is recommended that consideration be given to handling them as special equipment assigned to ships and stations, because of the large volume of accessory equipment now being carried by operating squadrons for each airplane.

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5. Conclusion

Provisions for a droppable fuel tank in the TBF-1 airplane, permitting carrying a 1000 pound, two 500 pound, or four 100 pound bombs in addition is practicable.

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