

BOMBER FIGHTING SQUADRON EIGHTY FIVE

c/o Fleet Post Office
San Francisco, California

12 June 1945.

MEMORANDUM

From: The Engineering Officer.
To: The Commander, Bomber Fighting Squadron EIGHTY FIVE.
Subject: Availability of Airplanes, difficulty in maintaining availability in the period from 24 May to 13 June 1945.

1. In this last tour aboard the U.S.S. SHANGRI-LA a very noticeable "bad streak" was apparent in both this squadron and in VP-85 in maintaining the Corsair airplanes. Some planes were lost at sea, approximately four (4), and the cause and type of failure was therefore undetermined. Other planes returning aboard indicate that an engineering difficulty is present.

2. The difficulty is the result of water and other impurities, directly or indirectly, entering the fuel system of the airplanes. For one thing, the belly tank is constantly employed and de-gassed just as the other fuel tank when the plane is put below in the hangar. This, and also the draining in flight causes a condensation of moisture in the universal tank (droppable tank) which results in water and rust.

3. Recently the maintenance division pulled two carburetors apart the trouble was located, and on examining these, they found a very fine rust (caused by the corrosion of the inner wall of the droppable universal tank) too fine to be stopped at the strainers in the fuel system, throughout the carburetors. This was the direct cause of one plane making a forced landing aboard when cutting out and unable to get more than twenty-five (25) inches of manifold pressure. I believe that every plane aboard has some rust in the carburetor which is the cause of planes "cutting out". We have already used up the carburetors carried on the allowance by supply and the difficulties of cleaning every carburetor by disassembly are apparent.

4. Every effort is being made to keep 'em flying including a daily inspection of the fuel strainer, inspection of the belly tank for moisture and rust before refuelling it, and dating the belly tank so disposal can be made before the corrosion has gone too far. In spite of this I'm not optimistic about seeing the end of this trouble.

5. Many difficulties are involved - first we must evaluate the trouble. Often when a plane has been reported to be "cutting out" in the air, the maintenance people can only run a full power turn-out which often fails to disclose any discrepancy. Now, I understand, hope can be made. In combat however, it remains a serious problem. So another reason for our low availability is the fact that pilots

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experience engines cutting out or running rough while the mechanics hesitate to tear into the carburetor or induction system, or ignition system, because on the deck the engine fails to show up as a dud. We have certainly gotten into this vicious cycle more than once.

6. The universal tank is superior to the other types (viz. the center-line tank and the P-38 Type Lockheed tank) because of its design. In diving, a buffeting characteristic is very apparent with the other tanks. It is not entirely absent in the universal tank, especially if the universal tank is not very securely attached, but this type tank is a considerable improvement over the others in the flight characteristics. But the universal tank has two serious shortcomings which should be improved on at once: (a) There is no rust-proof coating inside the tank. (b) There is a drain plug but it doesn't drain the water and sediment out of the tank because the baffle plates allow only one compartment to be drained. The V2 division is making out an RUDM on this tank now. They are including pictures of the tank out open and of the carburetor in which the worst rust was found around the jets and needle seats. At best/worst we will be back in the States before a new model of the universal tank could reach us out here. The tank cannot be sprayed with zinc chromate paint because the filler neck is the only opening through which you could spray.

7. The rust factor is only one part of the problem. The water is still present in the fuel system and it is a question of what maneuvers you can safely make. The only suggestions I could make have already been followed: Frequent inspection of the strainer and more frequent check of the ship's fueling system. For the safety of the ship I wouldn't recommend not de-gassing the planes on the hangar deck. It is questionable if this would even clear up the situation altogether. We could go back to using Lockheed tanks - internally rust proof - but that would sacrifice too much in combat performance. If a plentiful supply of universal tanks could be carried I would recommend using them once and dropping them. At present the carburetors are in a rather unsafe condition and before we go into combat again I would like to see every one taken apart and cleaned. Perhaps we can get some sort of filter to strain out the impurities.

8. Other problems of maintaining a good availability are not out of the ordinary and present no particular problems.

Very respectfully,

W. V. KASTLER.