



**GRUMMAN
MODEL
G-73
MALLARD**

**Customer
Bulletin
Number 89**

May 28, 1963



**RE-SEALING OF MALLARD INTEGRAL
FUEL TANKS**

Mallard airplanes have been in active service use for sixteen years and have accumulated many thousands of hours of satisfactory flying. It is the intention of the Grumman Company to keep Mallard owners informed of new or improved methods of maintaining their aircraft in the best possible operating condition.

As is well known to owners of water-craft situated along the seacoast, corrosion is the greatest maintenance problem. It has come to the attention of the Grumman Company that, on Mallards provided with the integral type wing fuel tanks sealed with Stoner-Mudge thiokol compound and operating in salt water environment over most of their service life, corrosion may occur in the lower skin of the wings in the tank areas. This corrosion usually takes place in the faying surfaces of the skin and may also attack the adjacent ribs and wing beam capstrips.

Corrosion may be suspected if one or all of the following conditions are present:

1. Chronic leakage of fuel.
2. Looseness of sealant in the tank.
3. Blisters, swelling or visible corrosion in the skin in the tank areas.

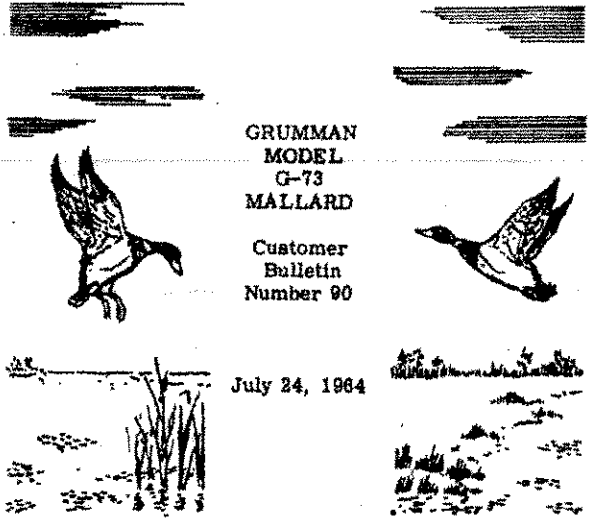
In most cases local repairs will probably correct the corrosion but if the aircraft has had much salt water operation in the past or if extended salt water operations are anticipated in the future the Grumman Company recommends complete removal of the lower wing skin in the tank areas for a thorough cleaning, inspection and re-sealing. In order to remove the skin it is first necessary to detach the wing from the hull and mount it in a convenient vertical position on suitable cradles. The power plants must of course

be removed prior to separating the wing from the hull and it is preferable, for economy reasons to defer, if possible, this tank inspection to coincide with an airframe and engine overhaul period.

The work does not require skills or equipment beyond that which can be found in any good repair or overhaul agency. Care in drilling out the old rivets is necessary to prevent defective holes, and the supporting cradles for the wing must be correctly aligned and rigid to prevent distortion when the skin is removed. The old Stoner-Mudge sealant should be cleaned out as much as possible by scraping and use of solvents. All corroded areas must be thoroughly cleaned and treated and, if necessary, repaired.

When re-assembling the bottom skin it is recommended that all faying surfaces be coated with Minnesota Mining and Manufacturing Company sealant No. EC-1004 before riveting. This sealant is compatible with the Stoner-Mudge thiokol compound and bonds with it thus serving the double purpose of increasing the fuel tightness of the tank and preventing the entrance of water from the outside. When the riveting is complete the Stoner-Mudge coating may be re-applied by brush or by filling and draining.

The Grumman Company believes that the wing skin removal and re-sealing of the fuel tanks will result in tanks that are improved in fuel tightness and corrosion resistance over those on the original new Mallards. This work has been done on one Mallard airplane at Aero Trades, Inc., Ronkonkoma, New York under the technical assistance of the Grumman Company. The Company will be glad to furnish this assistance at nominal cost to any qualified agency contemplating this work.



GRUMMAN
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Customer
Bulletin
Number 90

July 24, 1964

**INSPECTION OF MALLARD WINGS -
BLADDER TYPE FUEL CELLS**

Mallard Customer Bulletin No. 89 advised owners of Mallards equipped with the integral type fuel tanks to inspect for possible corrosion of the lower wing skin in the tank areas. It has come to the attention of the Grumman Company that corrosion can also occur in this skin area on Mallards equipped with the removable bladder type fuel cells.

All owners of Mallards having these fuel cells are advised to inspect, as soon as possible, the space in the wing center section between the bottom flooring supporting the fuel cells and the external skin. This space, about an inch and a half in height, contains important structural members running spanwise in the wing and serious corrosion can occur in these members and adjacent skin and box beam areas without revealing itself externally or resulting in fuel leakage.

This inspection is best accomplished by removing each of the bladder cells, then drilling out the rivets fastening the cell supporting floor plates and removing those floor plates. This exposes the whole wing structure to complete and unobstructed view so that cleaning and minor repairs can be easily made. If serious structural corrosion is found it may be necessary to remove the wing center section from the hull and detach the bottom skin in order that proper repairs or replacement of parts can be accomplished. This procedure would be similar to that described in Customer Bulletin No. 89.

This inspection and repair work has been done on Mallard airplanes at Aero Trades, Inc., Ronkonkoma, New York, under the technical assistance of the Grumman Company. The Company will be glad to furnish this assistance at nominal cost to any qualified agency contemplating this work.