

DUNCAN INTELLIGENCE

Gulfstream Wing Attach Fitting Corrosion May Require Wing Demate

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Several recent Wing To Fuselage Attachment-Inspections and Checks have revealed corrosion at the clothespin attach fittings. We have seen several different levels of corrosion ranging from light surface corrosion to severe pitting corrosion. There are eight wing to fuselage attach fitting locations identified in this article:

- Forward fittings at F.S.345.875 B.L.33.187 L/H and R/H
- Forward fittings at F.S.345.875 B.L.40.187 L/H and R/H
- Aft fittings at F.S.452.500 B.L.33.187 L/H and R/H
- Aft fittings at F.S.452.500 B.L.43.812 L/H and R/H

The models affected were the GII through GIV.

Several of these clothespin fittings were pitted beyond blend limits and required removal and replacement. The most recent Wing To Fuselage Attachment-Inspection revealed pitting corrosion at the wet clothespins locations F.S.345.875 B.L.33.187 L/H & R.H and F.S.452.500 B.L.43.812 L/H&R/H and required the wing to be demated. In this case the clothespin fittings at F.S.345.875 B.L.33.187 L/H & R/H required replacement and could not be changed without removing the wing from the fuselage. The other six wing to fuselage clothespin attach fittings can be changed without removal of the wing. All clothespin fittings noted were the Teflon coated, first generation style. The first generation style clothespin fittings were production installed on all GII, GIII and early serial number GIVs. The second generation and reworked clothespin fittings, which are chrome-plated at the mid upper section, are installed on the later serial number GIVs and can be found installed on reworked GII, GIII and early GIVs.

There are several modifications to include ASCs that installed these second generation chrome-plated clothespin fittings. On these early aircraft, you may find none, some or all eight clothespin fittings replaced with the chrome-plated fittings.

In the above cases it was also noted that the rusting/pitting was in the areas where the clothespin plating/ finish was not present due to improper sealant removal and cleaning techniques. The Gulfstream Maintenance Manual calls out to prepare the clothespins and doublers surfaces for fillet sealing by removing corrosion inhibiting compound and lightly scuff-sanding clothespin Teflon in areas for sealant application. The Gulfstream Maintenance Manual also has a Caution: When sanding clothespin Teflon area, ensure paint is not removed. Sanding should be done to allow for sealant adhesion only. This only applies to the forward outboard clothespins (F.S.345.875 B.L.40.187 L/H & R/H) and aft inboard clothespins (F.S.452.500 B.L.33.187 L/H & R/H) since these are the only four clothespin fittings to get a fillet seal. Any damaged areas must be refinished. The intent here is to lightly rough the finish without completely removing the finish to enhance the adhesion. If the finish is removed it must be refinished.

In some cases the pitting corrosion was noted at the clothespin fitting to seal plate/doubler interface that is inherent to the wet clothespin locations. This is because there is a seal installed between the seal plate/doubler and the wing plank that acts a fuel barrier. But the seal will also allow this area to retain water/moisture. That is why it is important to pay particular attention to directing the corrosion inhibiting compound application downward into joints between the seal plate/doubler and the clothespin fittings. This issue highlights the importance of preserving/ maintaining the protective finishes and applying the corrosion inhibiting compound as directed in the areas mentioned.

If you have any questions about this or any other Gulfstream issue, please contact me at James.Overheul@DuncanAviation.com or 269.969.8477.

