

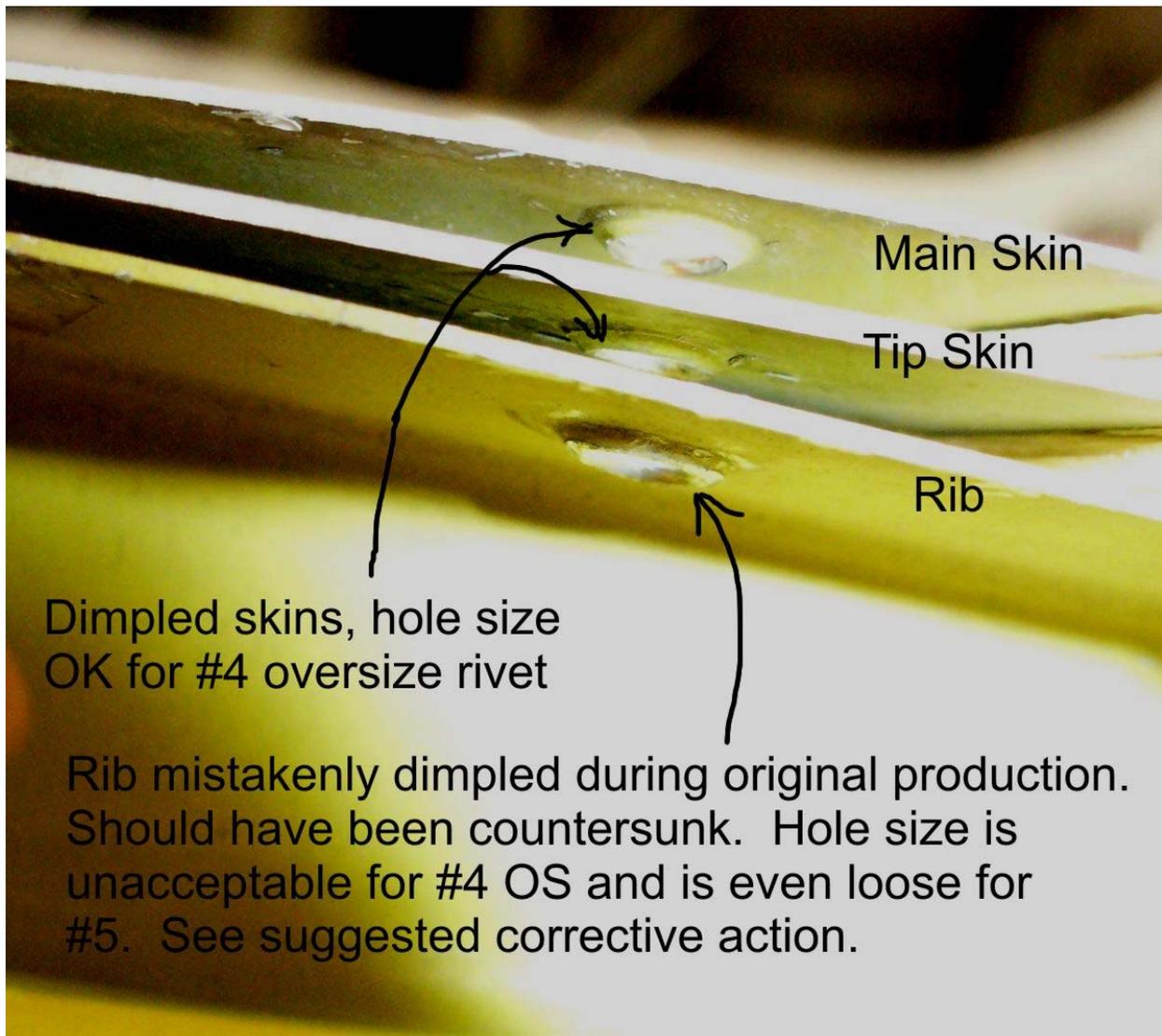
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DER is preparing a report to provide basis for the following:

Rib Installation - Riveting Procedure

Some, maybe most, of the ribs were not properly originally installed. The assembly procedures called for the two skins to be dimpled, but the ribs to be countersunk. In fact, it appears some ribs were dimpled along with the skins causing the rivet hole in the rib to be already very loose for even a #5 rivet while the skins are probably still good for a #4 oversize, see picture.

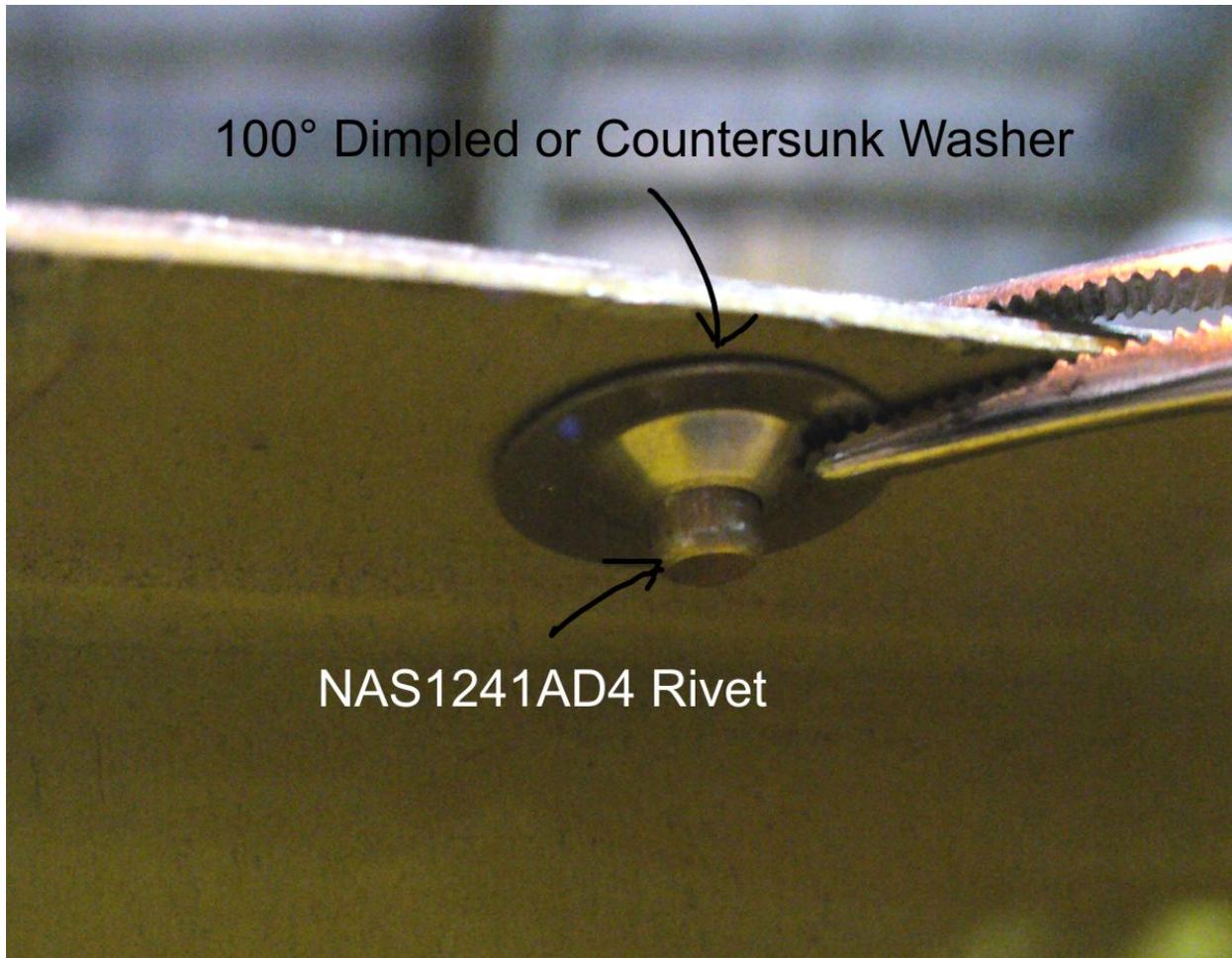
Based on field reports, it seems that 112 s/n's 1 thru 125 were built correctly.



The Gulfstream repair corrective action procedures allow for recovery of cracked or compromised dimples by dimpling an AN960 (-6 in this case) and using it as a backup. DER prefers using a CSK washer, see picture, because of the larger footprint, and recommends structural adhesive in the buildup to fill the gaps caused

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by the oversized hole in the rib. While a NAS1169DD6 aluminum CSK would be preferable from a galvanic perspective, we have found that the A3236-SS-012 stainless CSK's from Aircraft Spruce are a much better fit to the NAS1241AD4 rivets than either the DD6 CSK's or dimpled AN960's.



Shortening the Rib

The report will also provide basis for shortening the rib to extend only 0.5" aft of the center of the aft most rivet hole to provide better future access.

44285-1 Fitting Attachment

Beware the hardware combination called out in the IPC is wrong for the fitting. Using an AN3-5A bolt is OK, and recommended, but you will need an AN960-10L washer under the heads and THREE AN960-10 washers under the nuts. This should give you 2 threads of penetration through the nuts.

Use of AN3-4A bolts, as you will find existing on many fittings, is not recommended because you will not have bolt shank completely through the spar web, thus

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allowing the fitting to slide on the web. THIS IS IMPORTANT because it may have been a contributing factor to the underlying problem.

General Information

We are seeing various combinations of CherryMax and solid rivets in the ribs.

I would suggest using solids for re-assembly in every position possible, because Cherry rivets may not lock on your first try and you would need to drill them out and try again.

Suggestions:

1. Re-assemble with solid rivets wherever possible.
2. Re-assemble with size 4 wherever the fit is still reasonable.

The rivet part numbers are as follows:

Solid Rivets

Drill Size: 30 (but don't drill)

Size 4: MS20426AD4-3 or 4-4 depending on how well the dimples are formed.

Oversize 4: NAS1241AD4-3 or 4-4.

CherryMax Blind Rivets

Drill Size: 27 (only drill with all other positions tightly clecoed, or riveted)

Size 4: Will almost certainly be too loose to form properly and lock.

Oversize 4: CR3242-4-2

Only pull Cherry rivets with a Cherry Gun or Cherry hand puller. Practice first on some scrap metal. Carefully check that all Cherry rivets are locked, see next page.

Good luck,
Jim

21 April 2011