

Center fuselage rivettingskin 9/6/2014

Category: 3.8. Center Fuselage

Published: Thursday, 12 June 2014 14:13

Hits: 1660

In this worksession, started rivetting the bottom skin to the skeleton structure of the center fuselage. I actually did this in a couple of smaller sessions but didn't get the time yet to update the weblog. I started of by turning the center fuselage upside down on some sawhorses with wood support but found out that the position to buck underneath was just too painful to maintain this for longer periods. The picture below shows the best way I found to rivet. I put a wood plate on 2 sawhorses and clamped the center fuselage to it on it's side.

Then rivetted the bottom side as close as possible to the bottom. Then flipped the whole structure over to rivet the other side (to avoid too much moving while rivetting).



Hugo came out and gave me a hand rivetting. This is a job you can't do by yourself and it's the point where you realise a RV12 with pop rivets would have been easier :)

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Use that blue painter tape to protect the ribs while bucking.

A normal tungsten bucking bar will do the job, but it's even easier using a tungster with one side angled.

I had to use -4 length rivets instead of 3.5 because of the thickness of the primer. 4 was just too long and made the rivetting difficult but 3.5 was just too short.



At one spot, we really ran into a problem. Had to drill out a AD3-4 rivet out multiple times. The reason we found out is that the dimple was damaged near the bottom side and the hole in the rib was slightly oval. Because of that, the rivet kept tilting downwards. We decided to up-drill to #30 and set a AD4-4 rivet. The drilling went fine and dimpling apparently also, but when setting the rivet (which still is slightly down), we noticed a small crack on the top of the dimple.



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Location of this cracked dimple in the rib is where the blue tape is near the bulkhead for the seatrests.



I sent the following mail to Vans support to ask if it is an issue:

I have noticed a problem while riveting my bottom center fuselage skin on the seat ribs .

I had some problems setting one rivet near the intersection of F705 bulkhead, F776 center bottom skin and F716 inboard seat rib. After having to drill out the rivet a couple of times, the dimple looked deformed on the bottom side.

We decided to up-drill to #30, pop dimple for 1/8 and set a AN426AD4 rivet in the original hole. The final rivet is not perfect but it is acceptable.

However, after setting, we noticed a crack in the upper side of the dimple. Probable occurred while using the pop dimpler for 1/8. I removed some primer to take the picture attached so the bare material is visible. The crack is only in the dimple of the rib, not in the skin

Can you please let me know if there is a way I can solve this or if this not a problem. I assume that in that location, the crack would in the worst case go further and move up to the seat rib flange. There are plenty of rivets around it so I assume the plane won't fall apart because of this

The answer came from Joe Blank

Hi,

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This can be disregarded as an issue. Build on...

Best Regards,

So I'm moving on...