rudder rivetting - 6/3/2011 - 3h30

Category: 1.3. Rudder
Published: Sunday, 06 March 2011 17:39
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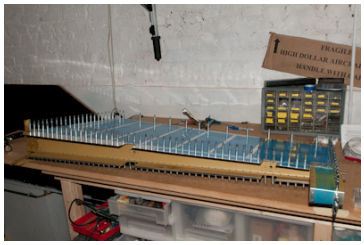
Found an extension for my torque wrench. This enabled me to install the counterweight in the counterweight support rib. These bolts are AN509 10R16, nut of the AN3 type, AN365 1032 so torqued to 20-25 inch/lb.

Then clecoed on the skins to the rudder skeleton. Half way, checked the clearence of the stiffeners to the reinforcement plate. Works out well!

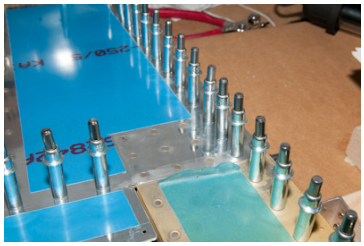
Here, the skin is fully clecoed to the rudder skeleton.



The first rivets to be set are the six rivets the hold the skin to the counterbalance skin.

Next set the 3 rivets that attach the skin and counterbalance skin to the front spar.

Don't forget to bend the edge on the outer skin to get a good joint when rivetted.



Normally the next step would be to rivet the top rib to the skin. I need to keep this open as the inspector needs to be able to access the counterbalance weight.

I also decided to only rivet one side so that one part can still be

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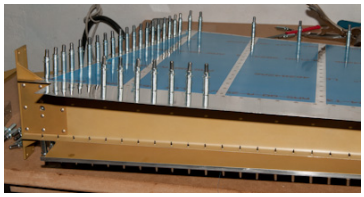
lifted for inspection.

Rivetting the skin to the spar:



The rudder horn is attached with cs4-4 pop rivets.CS stands here for countersunk.

A bit of a difficulty here. You can use the regular 426-3/3.5 rivets here, but it is almost impossible to buck.
The plans call out for optional cs4-4 rivets... I guess you figures it out by now... How to put a 4/32'' rivet in a 3/32" hole ?

The answer is NOT. The main problem here is that it is not possible to create a new dimple with 4/32" as there is no access to the rear.
I drilled to 1/8" and then used one side of the dimple dies to gently hit with a hammer. This didn't really help much. Finally, I used the hole deburr tool to take away a very small amount of material.
This did the job. It's still not perfect but acceptable to my quality standards..

Later tonight, by reinspecting the plans, I figured out I did not use the correct rivets yesterday for attaching the K100-6 nutplates (there is a small note where the rodend bearing and plate nut callout stand asking for a longer rivet then the ones on the reinforcement plate. Fortunatly I have not closed the skin. Will open it back up this week and measure the rivet shop heads. If it is sufficient according to the 0.5 / 1.5 diameter standards, I will keep them. Otherwise I'll drill them out and replace them.

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