Matchdrill aft and center fuselage - 3/9/2014

Category: 3.9. Forward and Center fuselage
Published: Friday, 05 September 2014 07:51
Hits: 1635

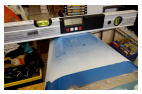
Before actually matchdrilling, I wanted to make sure that the fuselage was sitting straight on the sawhorses. The floor in my garage is not straight and at some points underneath the inverted fuselage, the fuselage was floating over the sawhorse. This made me think about straightness and twisting.
I'm pretty sure therer's not much you can do wrong here, the side skins and bottom skins are pre-punched on the cnc to match with the tailcone skins so you can't really do something wrong here. But just to make sure, I added some shims and measured (for ease of mind) before drilling.

I hung a plumb bob on the middle cleco at the F704 front cleco line using a fishingwire.

I then measured at the bottom of the F704 (inverted, so actually at the top of F704) from the side of the F704C-L and R to the wire.

If both distances are the same, then there should be no angle or twist on the fuselage.
Measure from left and right and both were at 21inches

Then measured with the digital level at F704, F705 and at aft of fuselage and all showed a steady 0.1° so straight all over. This gave me a good feeling and the green light to start matchdrilling.



At start, I started drilling the second line of #40 holes aft of the clecoes that hold the structure together (aft of F706 fuselage bulkhead).

Piece of cake and a no-brainer to get warmed up for the longeron drilling later.

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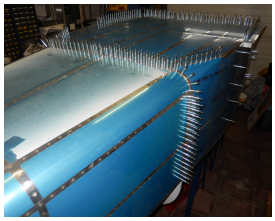
In the next picture, the second line is fully drilled. There's now a double line of riveters holding center and aft together.

I noticed at some locations at the joints of the J stiffeners that I got a little over enthusiastic when rivetting on the aft fuselage so I 'll have to drill out a couple of rivets again.



As I was progressing, I got some help clecoeing. Always nice when that happens :)

I continued matchdrilling F704, F705 and F706 lines using the #40 reamer.

Next step is drilling the #30 holes through side skin and F715 side ribs.

Also notice the pilot hole enlarged to 5/8" for a SB625-7 snap bushing that will be used for pitot tube and electrical wires. (see DWG 28

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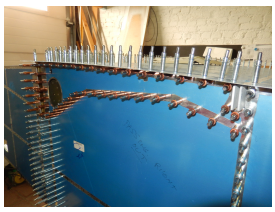
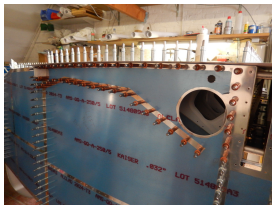
F770 forward side skin remark)

The passenger side completed



Then repeated the same on the pilot side. I drilled from both side at the same time, alternating front and aft so that the side skin would nicely mate and curve.



Next step is drilling the longerongs. I'll cover that in the next articel.

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