Notching longerons - 16/08/2014

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Published: Sunday, 31 August 2014 18:39
Hits: 1790

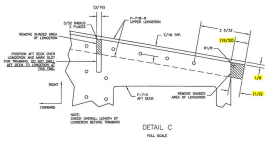
Center fuselage is ready to be joined to the aft fuselage.

But before that, a small task needs to be completed. Notching the longerons near the end.

These notches need to be made because the longerons are in the way of the two F-711C vertical bars which will hold the horizontal stabilizer in place later on in the project.

At first, needed to remove a small part of the end of the longeron, the details are shown on DWG18. Look carefully and measure twice. It's the longerons you are messing with. (read: expensive to replace and ship if you make a mistake)

I highlighted the important numbers for this first step on the drawing below.



first measure 1/2 inch from the inside using a caliper. Then determine the thickness of the angle (1/8") and mark that thickness. At that thickness, measure 19/32".

Be as accurate as possible. The idea of this cut is that the vertical leg of the longeron will sit between the side skin and the last F712 bulkhead. The horizontal part of the longer needs to end at the web of F712 so that the vertical stabilizer main spar can lay flat against F712.

After measuring, I measured the center point to drill with a 1/4" drill to get a 1/8" radius.

Then, with a very small drill, drilled on the punched location.

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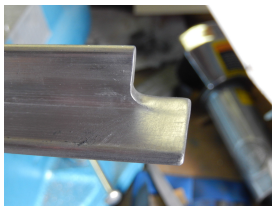
Then I gradually opened the pilot hole using a variety of step up sizes until reached the 1/4" size.

Then I took the cutting disc to make a rough cut on the longeron. The longeron is difficult to handle size wise. That's why I decided to take the cutting disc and not use the bandsaw.

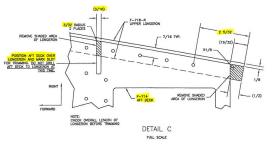
After a lot of filing with key files to smoothen things out and sanding it, it looks like he image below.



top view

Next, I needed to go for the second part of the cut that would clear for the F711 C bars.

Look again at the DWG18 details. The important numbers are highlighted in yellow.



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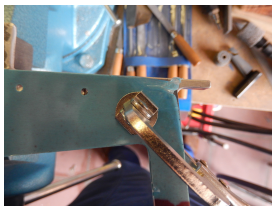
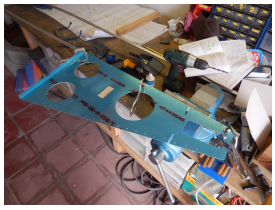
To position the cut out, you need to use the part called "aft deck cover"

First measure the dimension shown on the right 2" 5/32 from the end of the longeron and draw a line there. This will be the basis for positioning the aft deck on the longeron.

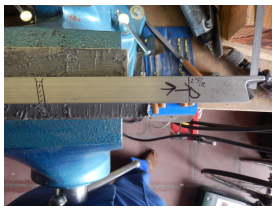
Now lay aft deck parallel to the side of the longeron and make sure that your line you have just drawn in the middle of the last predrilled hole in the aft deck.



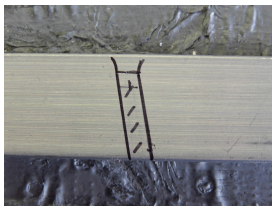
clamp aft deck on longeron.



Mark the area and make sure to measure 1/8" from the side in order not to cut into the vertical leg.



Again, define the centerpoint for a 3/16" drill leading to a 3/32" radius centered in the cutout area.



Center punched and pilot hole drilled

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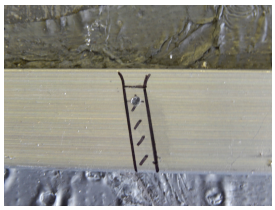
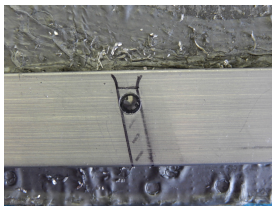


Enlarged



After this hole was drilled I took the air cutting disc and carefully made one cut to the middle of the hole.

Filed it out until got 3/16" gap and sanded it smooth.

The finished result in the pictures below.

Close-up

That concludes the work on the longeron... now have to do it again on the pilot side longeron.

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