

Finish Left Top skins and Right Top Skins - 30/07/2012

Category: 2.4. Main Wings

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The last days have been continuously racing against the clock. I had set a deadline to end of July to finish the main structure of the wings. (In Belgium, that means top skins on, bottom skins open which is mandatory for the DGLV inspection). After completing a ton of small tasks on the right wing, it was finally time to screw the right fuel tank on the spar using a screw in every other hole as per the plans.



The scarf joint on the W423 joint plate that mates right outboard leading edge with the fuel tank turned out much nicer on the right tank. The joint is nearly perfect on both sides. I do not intend to make any more adjustments to this for now.



On saturday and sunday, we held a rivetting marathon.

On Saturday, Jacques stopped by to help completing the outboard top skin on the left wing. After 4 hours, the skin was on and I completed squeezing the rear spar rivets on Sunday morning. Some of the rivets on the rear spar can not be squeezed and must be shot because the rivets of the reinforcement plates or the wing ribs are in the way. No risk here, I'll shoot them later on. Also discovered that I messed up the shop head of the rivets on the middle reinforcement plate. I drilled them out carefully and will

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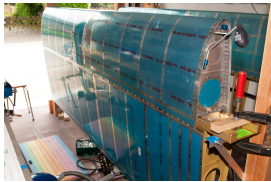
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replace them when the wing can be layed flat. There is too much vibration while the wing is in the wing stand.



This is the left wing with the top skins completed.



On Sunday, Geert stopped by to help rivetting the top skins on the right wing.

Geert used to work for Sabena Technics which was the maintenance company for the national Belgian airline (before they got bankrupt). Geert now works as a technician in a hospital maintenance department. We met eachother by accident some years ago and joined hands to work on a B737NG simulator.

He has a lot of machinery in his workplace and I'm really gratefull that i can use them from time to time when Vans asks me again in the plans to make another 'impossible' piece.



After some practice on scrap plates, we decided to give it a go on the real thing. Surprisingly, things went really well from the start.

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Shooting and bucking on the right wing. It's really important to follow a procedure while rivetting blind. As you can see in the picture below. It is impossible to see each other when doing the rivetting.

Make a simple procedure to indicate the shooter how much more needs to be shot when the first blast wasn't sufficient. We used a numbering system where 1 means, just a little single tick blast to straighten the shop head incase there was a little slope.

2 when the diameter just didn't fit the gauge yet (just a small pull on the trigger with a couple of bursts). 3 means 'insufficient, add another second', 4 means 'the rivet didn't set, do it again'

I still use 34 PSI on my pressure gauge with the 3X gun with success. Adding more (35 and up) seems to be too aggressive and has the tendency to make the rivet shaft fall over to one side. Less then 32 takes too much time to set the rivet.



Bucking on the top skins in the wing stand is physically heavy. I spent more time sitting on my knees in the last weekend as I did in my complete school career.

The lightning holes in the wing ribs are a nice support for the walk-led-light.

In the picture below, I'm bucking the rivet row in the middle section of the wing where the skins overlap.

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Shooting is easier as you can sit down... Geert was making fun of me all of the time with all the sighing from behind the wing while he was enjoying his can of beer.



More bucking gymnastics between the ribs.



We had to use 4.5 length rivets on the wing walk doubler section instead of the 4's as per the plans. 4's were just too short. I suspect the primer coating on both parts is responsible for this. I used the 4.5s and they look perfect. Did the same on the inboard rib. The only disadvantage is that there aren't that many 4.5 rivets in the kit so I'll have to remember to order extra rivets of size 4 and 4.5 as I suspect this won't be the last time I'll have to substitute to next length.

I didn't expect to finish the right wing when we started but Geert kept on pushing to get the job done, and after 6 hours, we finished both top skins.

On monday, I finalised squeezing the right wing rear spar rivets.

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Picture of the right wing top skin. The joint along the tank, leading edge and top skins is perfect. It is so nice to see the skins without clecoes.



Left wing



I'm very satisfied to have met my schedule. Now it's time for a well deserved break.

We'll be back soon with more building news but for now : Hasta la vista !