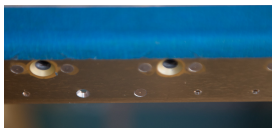
Main Spar work - 30/05/2012 - 9h30

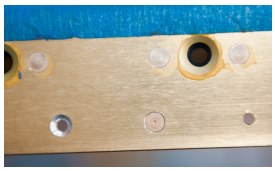
Category: 2.3. Main Spar
Published: Friday, 01 June 2012 13:34
Hits: 1582

Started countersinking the main spar. For some reason, everytime I have to take material away from the main wing spar, it gives me the creeps.

The countersinking is required because the spar flanges are 0.063 thick and this is too thick to dimple.
Everywhere the skin touches the spar, the holes need to be machine countersunk.

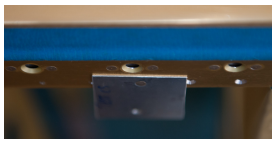
First I determined how deep the countersink needed to be. This is always difficult. I made the following 2 shots to give you an idea how it should look like.
On most pages they say, countersink until the rivets fits perfectly flush and then go 2 clicks under. But this is according to me not always enough.
I always make a small test plate the same gauge as the skin and then make a 3/32 dimpled hole. I used the c-frame to dimple it as to have the same shape as the skins.





I then rivetted the small plate on the spar and you see that the plate lays perfectly flat.

You have to do this test rivetting because the dimple will still reshape a bit when you rivet it in. Even when a dimple doesn't perfectly make the plate lay square to the spar, sometimes after rivetting it will pull in.
I drilled the rivet out and used the test plate rivetted side of to test measure my new countersinks.



Verify the depth often. As the countersink cage sets after some holes and the tool warms up, the depth will vary and you will start to go deeper and deeper. You will have to return 1 or 2 clicks after doing some 30 countersinks. That's normal.

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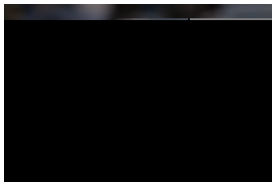
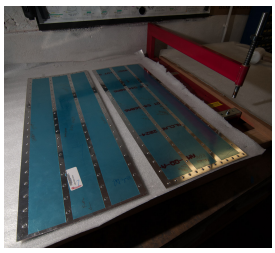
As usual, verify that the holes are nice and round and concentric. No bumps in the countersink, you want nice and smooth surface.

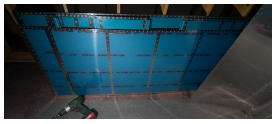
Some shots :



To change ideas, I also dimpled the wing walk doublers and the remaining wing skins of the left wing



They are all finished now.



Smooth ! Right wing is done, left wing is half done. One more side to go in the next work session.

In the meanwhile, my replacement parts for the fuel tank baffle have arrived so I may switch back to fuel tank work this weekend.

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