

Started work on the right fuel tank. The same procedure for preparing the left fuel tank will now have to be applied on the right tanks.

I didn't have the courage yet to break out the fuel tank sealant.

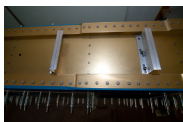
Buddy builder Jacques came by to help working on the right fuel tanks for what turned out to be probably the most productive day so far. After today, I am convinced that you can probably build the same plane in half the amount of time if you would do it a second time. It is so time consuming to figure out the first time what to do and how to do it. We did today what I did over a period of 2 weeks on the left fuel tanks.

I will not repeat the hole procedure again in detail as it is basically the same work as on the left fuel tanks. You can read more about the details in earlier articles.

Started the day by drilling 3 new z-brackets. As with the left tank brackets, some of the drilled brackets were drilled too much off center which would again lead to 'less then nominal' edge distance for the opposite side pop rivets in the tank.

I'll repeat here what I said on the left tanks as it is very important. Many builder sites on the checkoway method say to offset the initial AN3 bolt holes by 1/16" off center. DON'T DO THIS ! Keep the hole on the center line. This is a place where you modify the tool and not the plane.

Installed them reversed on the back side of the spar and then drilled the other 2 holes on the outside. Deburred and then returned them to the real location on the front side using 2 platenuts. Drawn also a centerline on the top flange so I could see when the baffle was on how far the centerline was shifted according to tank alignment.

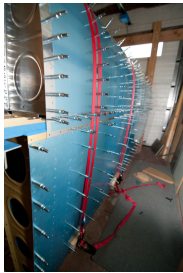


Once the brackets were bolted on, we installed the right fuel tank on the spar on top of the brackets.

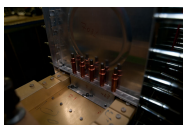
I used the Dan Checoway method again to achieve perfect alignment of the tank to the spar. Check earlier articles for the full description.

Initially there was a huge gap (> 1mm) between the aft end of the tank and the top and bottom skin.

Used the red straps to pull the hole tank down. With little pulling, the tank aligned nicely in place and the joint to the bottom and top skin were perfect. Also the joint between leading edge skin and tank via the W423 joint plate is nearly perfect. Only on the front side, there is a little gap of less then half a mm. The sids are perfectly aligned. This may be because of the power from the straps. It may become better when finally installed but even if it doesn't, the gap is perfectly acceptable.



Then drilled the first 5 connect holes for te pop rivets z-bracket to baffle. Don't drill the 4 outer holes yet. These are way too close to the spar and would be to dangerous to damage the spar if drilled now. Even with a drill stop.



The joint of the two leading edges and to the top skin. Perfect.



Then drilled the #19 holes for the 8R8 screw in the joint plate W423. Do this now as the alignment should be perfect at this stage.



Then matchdrilled the skin of the fuel tank to the ribs of the tank. Don't do the bottom line at the baffle. The inboard side is too close to the spar again and it is too dangerous to damage the spar when doing this now.

Removed the outboard leading edge to have access to the other rib and matchdrilled those to the z-bracket.

Remove fuel tank skin and the ribs except for the in and outboard one. With all straps removed and skin removed. The baffle is still in the same location. Make sure to mark the ribs position on the baffle and skin. You matchdrilled them so you have to reinstall them in the same location later.



Visual inspection of the red center line through the holes in the baffle. Dead on... Depending on how much you drilled the an3 off center, the line will be more left or right according to that offset.



Then drilled the remaining baffle to z-bracket attach holes. Here again, only drill the 5 holes that attach the bracket. The others will be drilled later.



Final view after completing the checkoway method.



Then deburred the z-brackets and Jacques drilled all the attach nutplate ear holes on the bench drill.



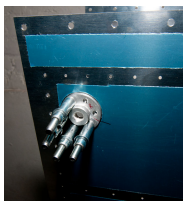
Then he did the same thing on the W-423 joint plate. Meanwhile I deburred all ribs and skin.



Then we positioned and drilled the air drain valve plate. I saw a nice trick on another website to align the plate with the skin. A sharpie pen just fits in the predrilled hole in the skin and keeps the plate nicely aligned.



Drilled all holes



Make sure to mark the plate and skin with 2 lines so that you can install the plate in the same orientation later.

The we clecoed the tank together again and reinstalled the baffle on top. Then we drilled the horizontal line of holes skin to baffle. Also drill the top holes. You don't need to re-drill the in and outboard 5 center holes as the ribs were already drilled when drilling on the spar. Only the outer holes need to be done.

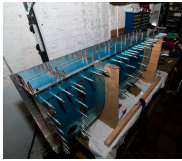
Right tank prep - 18/2/2012 - 8h

Category: 2.5. Fuel Tanks

Published: Sunday, 19 February 2012 19:24

Hits: 1630

For the inner rib, all holes have to be drilled as the ribs were not on during drilling of those z-brackets.



Overall a very good progress. Now it's countersinking and dimpling time again, but that's for the next sessions.