

In the last three work sessions, I have been working hard on making everything ready for tank closure. Once the baffle plate is rivetted on , there is no way back.

I made a list of things to do but as I started working, I kept on finding new stuff that was remaining and the checklist kept growing and growing. Kind of frustrating if the end line is in sight and they keep pushing it back.

First important task to do was rivetting the K1000-3 nutplates on the z-brackets. It will soon be very difficult to do this once the brackets are rivetted on the tank baffle plate. I deburred and countersunk them months ago so this went smoothly.

Left wing brackets



And right wing brackets.

I also found out that I still had to deburr the side edges of 3 of the z-brackets that I reordered.

One of the Z-brackets has no nutplates as the nutplates of the inner z-brackets are mounted on the spar and the bolts are installed here in the opposite direction.



Then constructed the right tank fuel trap door. The idea of the trap door is -as the words says- to trap fuel in the lowest compartment on low fuel levels.

For details on working steps, see the articles in the left fuel tank work. I described the process step by step in those articles. Don't forget that for the right tank, things have to be inverted.

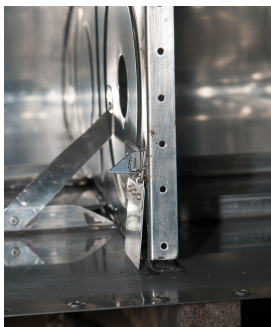
Lessons learned today : If you are in a hurry, or make a plan, you mess up...

Don't plan time, you'll get frustrated and you will never keep up. Ask me how I know...

So what did I mess up this time ? Nothing big, but by rivetting in the end ribs in the last session, I found out that I had no more room to put my rivet gun or squeezer in so I had to use CS4-4 pop rivets here to attach the upper hinge bar to the rib. Not a drama, but again one of those occasions where you think: 'I got away with this one but next time think ahead !'



Side view.



Rear view



Important here is that the fuel trap door does not get stuck halfway. This can happen if there is tension on the hinge pin. Make sure it is loose so don't put pressure on the safety wire. I plan on putting some sealant on the pin so that it stay always in the correct position all of the time.

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On the right tank, my trap door does not spontaneously fall against the rib. when very light pressure is applied, the door closes completely. I think this is ok. It may be because of some sealant on the bottom of the rib. I will try to scrape a bit away before closing.

Some more tasks on the checklist without pictures:

- deburr the flanges of the right tank baffle plate
- scuff the top side of the ribs
- seal (or glue if you want) the fuel cap holder in the fuel cap ring.
- torqued the vent line nuts AN818-4D as specified in service bulletion to 50 inch lbs (corrected mid value for crowfeet extention)
- installed the fuel sender reinforcement ring on the baffle of the right tank. Countersunk the plate, dimpled the baffle and installed the nutplates
- bent the fuel tank sender float at length and cut to length.

I have been thinking again about the AN3 bolts to keep the tank sender on the baffle and on the length of the AN3-4A bolts or to use the 8R8 screws anyway like on the plans. I find that the 8R8 screws don't match the predrilled holes in the fuel tank sender attach plate.

The pictures below show the length with AN3-4A when using a thick washer. The second picture show the length when thightened. I believe that the washer will not be required. I will install them without washers.



The mandatory Service Bulletin No. SB 06-2-23 on fuel tanks also says

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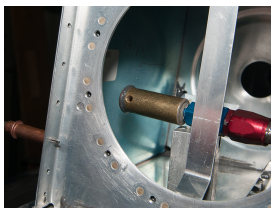
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that the forward ring must be sealed on the front of the flop tube. The rubber ring is easily removed

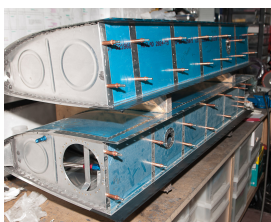


Sealed on. (the little block is just to keep the tube up and is not part of the structure.

Pay close attention to clean any excess sealant of carefully. This is the place where the fuel gets sucked in, you don't want any obstruction of the flow here. Make sure no sealant is on the openings in front or on the side of the pickup tube.



Temporarily installed the baffle plates on both tanks. I taped electric tape close to the baffle to form the filets. I saw that the ends of the ribs were not fully aligned anymore with the baffle. Putting clecoes in pulls them back in place.



I was as good as ready. One more evening to go to scuff some final parts and test and inspect the tank a final time

I was all excited that I was actually about to close both tanks the next day.

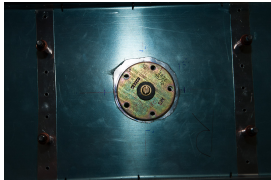
Then I noticed that on the right tank, my fuel sender does not fit the holes in the correct orientation.

AAAAaaaaargghhhh!

Some month ago when I drilled these holes, I drilled them on the wrong

side of the baffle plate. The sender is the correct one (C for the right tank), baffle fits the tank, how can I have possibly been mistaken here.

This is how it looks



Damn indeed, I did invert them. look at the picture below, this is what happens if you do it wrong !

The sender sits nicely straight, but on the opposite side of the tank. If you turn it around, the holes don't match anymore. The only way the sender fits is bottom up, which is as you can imagine not ok...



I felt warm and cold at the same time.... man, the baffle is a large piece. High cost for shipping... lots of rework... oh no...

I can tell you, this is the normal process...first there is the frustration, blame yourself of the stupidities you did.

2nd phase, you start thinking on a solution without replacement of the screwed up part.

In this project, you will have a lot of situations like this. No matter how hard you try not too.

Look at it as a learning process. If you can't handle that, don't even think of starting to build yourself.

There are a couple of options here:

1. replace the baffle, the most expensive and time consuming one.
2. I can try with another left hand sender. This L-one fits the same holes. The sender is centered in the bay so it will also work with an L version. The L and C version are actually important if you mount them on the access cover plate with fixed fuel pickup).

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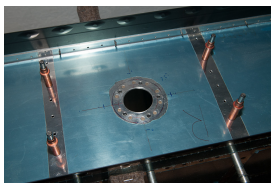
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3. cover up the hole as small as possible just outside the holes and install the fuel tank sender in the 3rd bay. (seemed to be a no-go because of the 3rd bay being a higher wing position)

4. Invert the fuel sender plastic on the fuel sender attach plate. (This soon seemed impossible)

5. Cut out the whole attach structure with reinforcement piece from the baffle to about 3.5 inch diameter. The picture below shows with the short blue lines where that would be.

Then I can cut another 5 inch circle out of some 040 stock sheet material and cover the hole up by rivetting the cover plate on and installing the fuel sender on the new cover plate that will be permanently sealed in place.



I decided to go for option 5, but slightly modified the idea.

I will order a T-407 ring and a T-411 tank access cover plate. Since the baffle is still loose and accessible, I can rivet the inner ring in without problems. In this way, it will be more or less like the inspection cover on the inboard rib side of the tank.

I will install the Stewart fuel sender on the access cover. This will certainly facilitate maintenance work if ever the fuel senders have a problem.

Actually I'm even thinking to do this also on the left baffle plate for future maintenance reasons. I am still waiting for confirmation by Vans support that this is structurally ok. I will update the post when confirmation is received.

This way, a mess up turned out to have a positive outcome.

Unfortunately, I will have to wait for the parts so I will continue on some other parts for now.