

Proceeding on the forward fuselage, the next step is installation of the F-902L and R bulkheads.

Got them out of the inventory and started deburring and sanding the parts. Lots of notches here so it took some time to complete.



As a first manipulation, I took out my step drills to enlarge the hole for the rudder cable. The pilot hole is already there, so this is a walk in the parc.

You should also make a relief notch on the other side of the flange so that you have a clear passage for the cable. I didn't do this yet but have to make a reminder to self not to forget it.



Temporarily installed F-902 and F-7101.

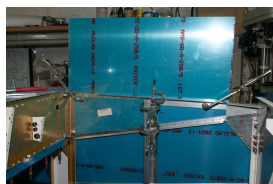
The F-7101 gets clecoed using the predrilled holes to the F-704 bulkhead. The other side rests against the F-902 and needs to be drilled in the web of the F-902.



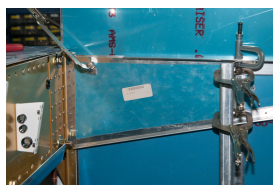
same on other side



First remark here: make sure you insert a spacer before drilling to simulate the bottom skin gauge between side skin and F-717. I used some stock plate to clamp between F-717 and side skin.



Lot's of clamps to make sure things don't move

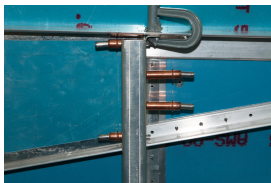


Ok, and now we get to the point where things start getting nasty...

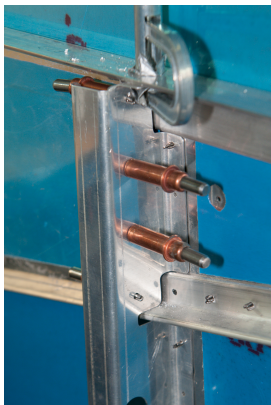
When clecoing the F-713 auxiliary longerons in place, I noticed that I couldn't get the F-7101 to sit nicely between F-713 and F-717. Even not after rounding the corners. This is where a bell should have started ringing, but what I did was grinding away a bit of the top side of the F-7101. This way, I could fit F-7101 between both longerons. Nobody got hurt at this stage (but it ruined 2 parts... without noticing). You can see the notch in the picture below. (DON'T DO THIS !)



Next, I drilled the 4 holes that mate the F-7101 flange with the F-902 bulkhead.

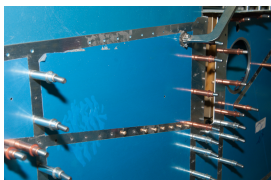


The result below

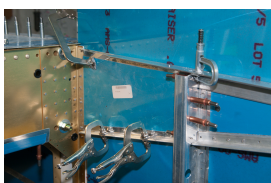


Next, I wanted to drill the F-7101 top holes using the skin and F-713 as drill guide.

A good tip here is to insert AN470AD4 rivets in the holes first to keep things aligned. This worked really well



On the other side, it's hard to keep the F-7101 from not moving inboard while drilling so I put to clamps on the F-713 to fix the position of the F-7101.



Drilled all the holes one by one.

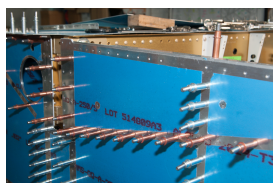


Also drilled the F-704 to F-7101.

That's all I could do for now. So repeated the same procedure on the other side.



Result on the other side.



So... where did it go wrong ?

The next day I returned to all of this to make the F-796 angles that support the fuel tank bracket.

I story will be told in a later article on this part, but in short...

The angle could not fit between F-713 and F-717.

The only thing I could do was grind away part of the angle and make it shorter. But since the hole in the skin is pre-drilled (intersection of F-902 and F-713) there is no way to fix the edge distance problem on the AN3 bolt that I create by grinding away material from the angle.

After scratching my hair for a while, it struck me... The real reason why this is not working is because I miss-drilled the F-713 auxiliary longeron to the skin.

The longeron sits too low ! Ooh crap !

How did this happen ? Well, lesson learned the hard way !

Van's instructs you to draw a center line on the F-713 angle to center the longeron on the side skin before drilling.

You should have thought, at this stage in the process, that I know how to draw a centerline on a piece of angle... but no, I don't !

My mistake was that I drew the centerline on the outside of the angle. So measure the entire width on the outside corner and divide by 2. That 's NOT what Van's wants you to do. What you need to do is measure the width on the inside of the angle. The rivet needs to sit centered on the inside of the angle.

This misalignment caused the longeron to be 0.04 inch too low. and that's what created my problem.

So what do I need to do next... order a new set of F-713 and F-7101's. All by all, it's not a disaster and just some days work are lost. Things could have been much worse but it's another sigh of relief and a lesson learned the hard way.