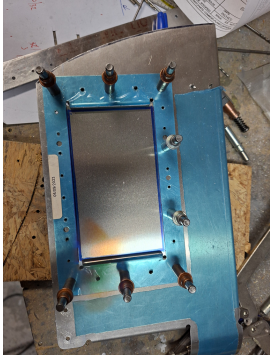


Category: 6.7 Oil System

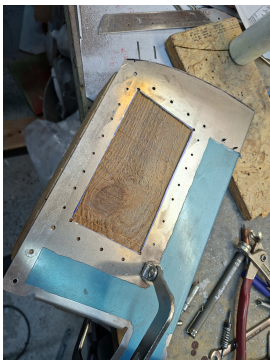
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Work on the oil cooler installation continues. With the FF-709 doubler plate in place, I traced the contours for the cut out on the CB-705A aft cylinder baffle.

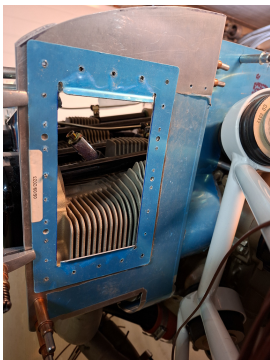


I drilled the corner holes and made a rough cut on the contour lines. The rest was removed and cleaned up with some needle files.



Reinstalled it on the engine to have a good look at the positioning of the oil cooler opening.

Some builders manage to get it even a bit higher but with the Bill Lane Plenum I think this is as high as you can possibly get without getting height problems between plenum top and cowling top. With the original Sam James plenum, the oil cooler would be a lot lower. I'm pretty confident this will work out well.



This is what it looks like from the inside with the plenum cover

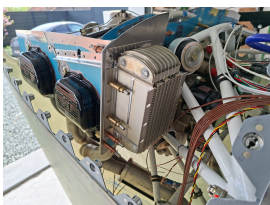
installed with and without the oil cooler in place.



The oil cooler hangs from the rear of the aft baffle with some very long AN3-42A bolts and aluminum spacers between the flanges of the oil cooler.

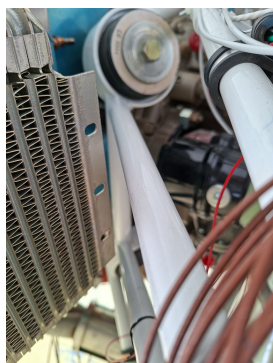
The bolts attach to nutplates on the baffles. This is a known weak spot for developing cracks. The weight of the cooler in combination with engine vibration put a lot of stress on the corner between CB-705A aft cylinder baffle and CB-1004A (cylinder 4 side baffle). I am planning - like most builders do - to install a reinforcement angle in that corner.

I also read that it is a good idea to shorten the FF-707 spacers and install a AN960-10 washer on each side against the oil cooler flanges. This also helps with some stress relief.

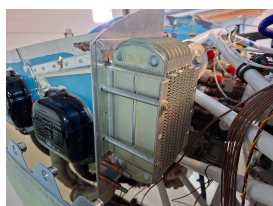


Next problem on the list... The oil cooler rear flange is pretty close to the engine mount. I will have to cut away some of the rear flange material from the oil cooler in order to get the 1/2" spacing that is preferred. The engine shakes, especially on startup and can hit the engine mount with the oil cooler flange. That would be a nono.

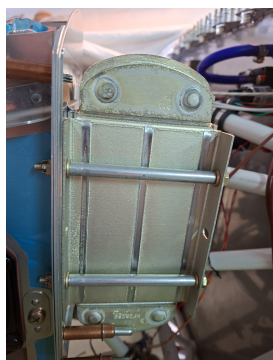
I'm a bit worried that cutting away to 1/2 inch would leave very little distance on the middle hole where the AN3 bolt is installed according the plans.



First I made the spacers according to the plans.



Then I shortened them to have the 2 additional washers installed for stress relief.



Dit the same on the inner flanges. I still don't like this. The distances to the engine mount are too close and the additional FF-708 spacer also moves the bolt close to the engine mount. (which is by the way laziness on Vans' side as they could also have delivered an AN-41A or AN-40A bolt and not having needed the spacer)



Another look at how close it is. I started wondering how to determine the cutting spot on the flange. Actually I found a good trick for this. I used a long socket wrench which had a diameter of $\pm 1/2"$. Rolling the socket over the engine mount tube and meanwhile marking the contour gives you the perfect trace to have a final spacing of $1/2"$.



Here is the final cut.
As you see, and as I expected. It leaves little edge distance on the middle flange bolt hole.
I decided to invert the 2 bolts on the inner side. The short AN3-4A bolt will go on the middle hole against the aft baffle. The long AN42-A bolt will be installed on the top 2 holes. That solves the problem of the bolt interference with the engine mount and the issue of the short edge distance.

