

29/12/25 - Oil door in top cowl - 4h

Category: 6.10 Sam James Cowling

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Hits: 462

Continuing on the oil door. The SJ cowl comes without cut out for the oil door like the Vans cowl does. As such it also doesn't have preformed lower edge for the door to lay into.

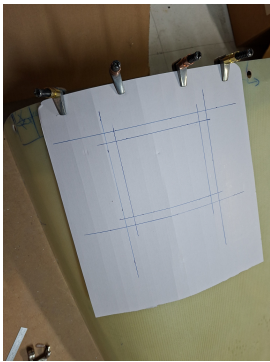
With the Sam James cowl, you have to pick the oil door location yourself and cutout the opening.

In the previous article, I showed how I determined the point on the cowl where the oil dip stick would come out using a laserpen in the oil filler neck and marking the projected dot on the cowl.

My next step is to draw the hole on a piece of cardboard in the location I'm anticipating on placing the door.

I'm going for 5" 1/2 wide and 6" 1/2 high. There will be an inner lip of half an inch so the actual opening will be 5 by 6 inch.

I made a drawing of both squares and cut out the middle part which will be the actual opening and positioned the cardboard on the top cowl in the planned location.



Next I drew some circle through the skybolt holes. After cutting out these circles, I can lay the cardboard on the exact location the top cowl would have been without it being in place.



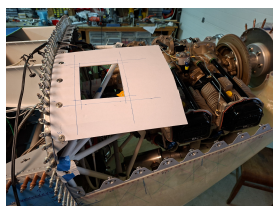
As you see in the image below, the cardboard is in the Skybolt receptacles with the studs fastened through the holes in the cardboard. This gives me a good way to test access to the oil probe without actually having to cut in the top cowl.

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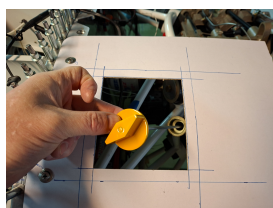
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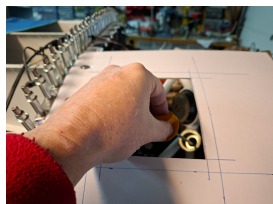
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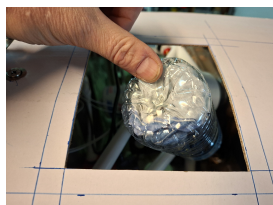
The oil filler neck is on the right side of the hole. As you see in the image below, the oil probe stick moves out at an angle and is nicely centered in the hole when it reached the height of the top cowl.



With your hand in there the way you would normally test oil level, it feels also ok. Sufficient room and easy to keep the stick centered in the oil filler neck.



A little trick we use in the flying club is to use an inverted coke bottle or water bottle when filling oil. The thread of the bottle works on the thread of the oil probe and allows easy filling of cans of oil without making a mess. I tested this also in the hole location to verify I could screw a bottle on there. It's hard to see as I put some cloth inside to avoid remains of liquid in the bottle to drop into the engine case.



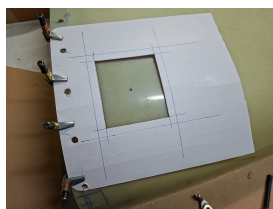
As I was satisfied with the location, I went back to the top cowling and positioned the cardboard in the same way on the cowl. You see now the laser dot is almost centered to get to this location.

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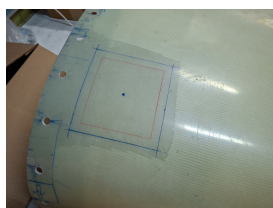
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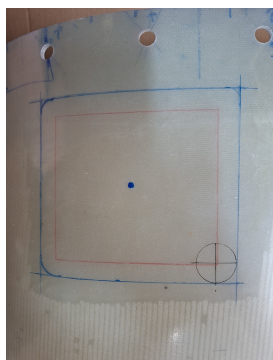
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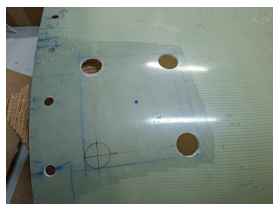
Transferred the inner square and drew the extra half inch around it as the blue line. That will be my cut out line. The hole could even go another half inch to the rear but I was afraid the amount of material on the rear side near the 15/32" holes would become too small so I'm keeping it as it is.



You want rounded corners. It looks nicer and creates less stress. So I took out the circle template and drew a 1 1/8" circle on the corners and then marked the center point.



I only had these rough cutters with large teeth available in over an inch size but in the end it worked very well. Three holes done in the image below.



When all were done, I used the plexi cutting disc on the die grinder that came with the canopy and cut the line between the circles.

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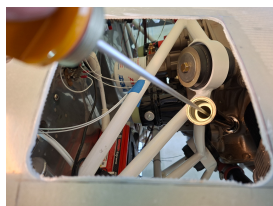
Before sanding it smooth, I checked the location once more with the top cowl on the plane.



I made a video taking out the dip stick. Remember there will be an additional 1/2" ring inside this opening where the door will lay onto.

Your browser does not support the video tag.

Looks perfect !



Then sanded for some more hours to get to a silky smooth finish. Next up will be to cut the oil door itself from a piece of epoxy that was delivered with the SJ cowl for this purpose.

