

From: ["Tandy C. Walker" <tandyw@flash.net>](mailto:Tandy C. Walker <tandyw@flash.net>)
To: [Undisclosed-Recipient:](#)
Date: 6/23/2009 8:49:21 AM
Subject: 119a Sailplane Cowl Exit Cooling Air Venting

I screwed up at the end of last night Report No.119. If you are saving my Sailplane construction reports, replace No. 119 with this No. 119a.....Tandy

Comet Sailplane Project

I have spent the day today laying out and cutting a series of holes in the aft part of the cowl. In addition to the cylinder and exhaust cut outs for the McCoy 60, this picture below shows the three exit air vent holes from a top view.



This shows the four holes on the right side of the cowl in addition to the exhaust cut out. Notice that the four holes are irregularly spaced.



The reason for the hole spacing is to avoid cutting through the cowl's internal structure as shown from this inside view of the right side of the cowl.



This bottom view shows the three holes in the bottom of the cowl.



This shows the four holes on the left side of the cowl. Notice that the four holes are irregularly spaced.



Again the reason for the hole spacing is to avoid cutting through the cowl's internal structure as shown from this inside view of the left side of the cowl.



There are nine (9) exit air vent holes in total and each hole has a 0.8" diameter. So the total exit air vent area provided by the nine holes is $[9 * (\text{Pi}/4) * .8 * .8] = 4.5 \text{ sq.in.}$, not counting what ever additional exit air venting occurs around the cylinder and exhaust cut outs.

I sent out an opinion inquiry on the adequacy of these nine holes for exit cooling air flow to several experienced builders. About 85% of the responses I have gotten back so far felt that the vent area was not only adequate, but more than enough for engine cooling.

The vented cowl was installed over the engine on the fuselage and I took the following pictures for you to see.

View of Right Side

6/13/2018



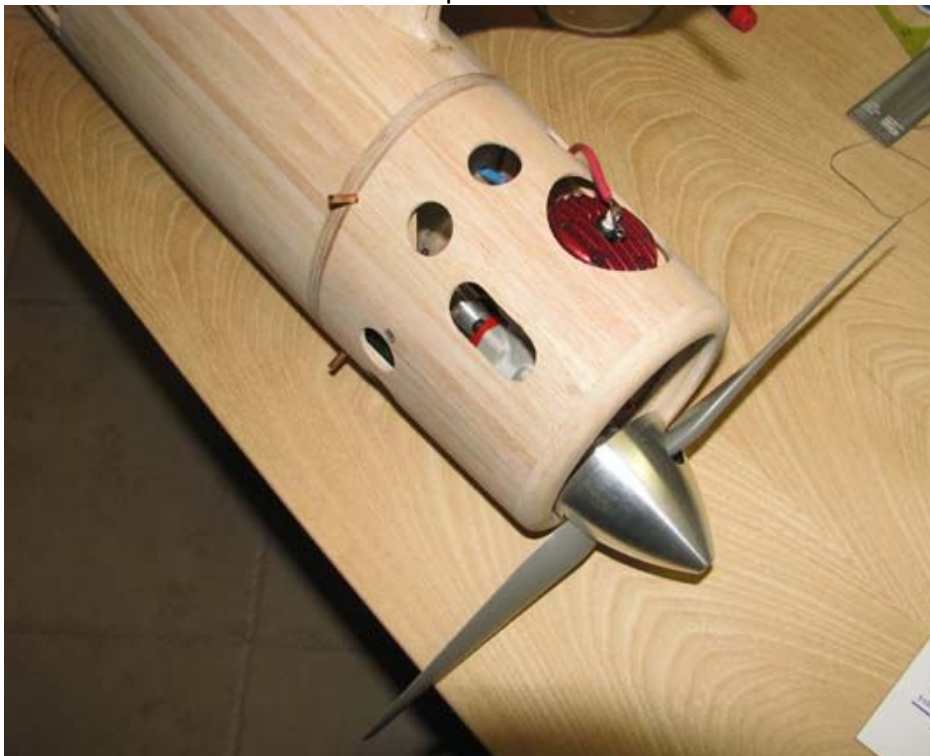
View of Left Side



Bottom View



Top View



There is one task left to do and that is build an exhaust extension to flow the hot exhaust out the cowl's exhaust cut out to prevent edge burning, which I will do tomorrow. Then I will start the covering process on the wing and later the fuselage.....Tandy