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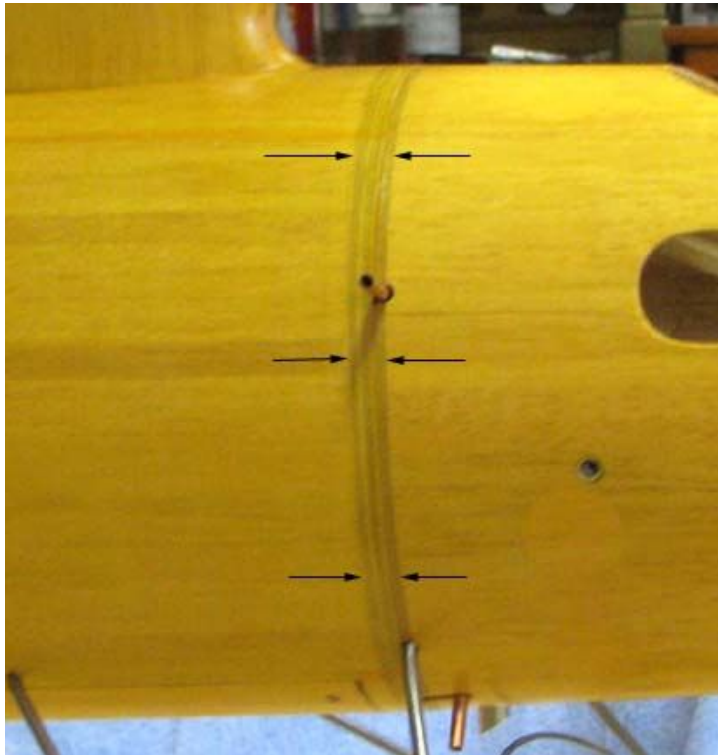
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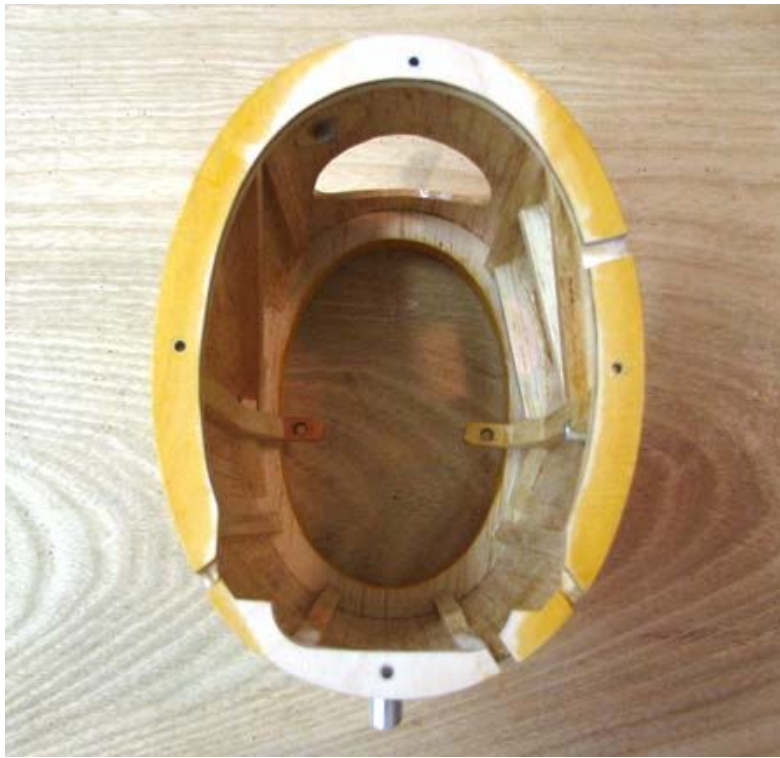
Subject: 142 Sailplane Fitting the Cowl to the Firewall and Some Flight Test Considerations

Comet Sailplane Project

I want to follow up on an item that I discussed in my last report where I said, "Because of the close tolerances on all of the holes in the back of the cowl, the epoxy had to be cleaned out and the back bulkhead of the cowl had to be sanded down some in order for the cowl to fit up against the firewall properly. The final fit is shown in the picture below.



The biggest problem with the cowl's misfit was that after it had been double covered with silk and doped several times, the cowl seemed to be high at the top and the bottom causing a slight gap in the fit in middle. I am not sure just how this happened, but it did! So as a result of bar sanding the rear face of cowl's bulkhead, most of both coverings of silk were sanded off at the top and bottom as shown below, but the overall fit was significantly improved.



I had enough silk left over that I covered the entire rear face of cowl's bulkhead again with a single covering of orange silk as shown below.



I doped the orange silk covering down three times, trimmed off the excess, and doped it twice more as shown below. By covering all of the cowl's rear face, the fit between the cowl and the firewall is preserved.

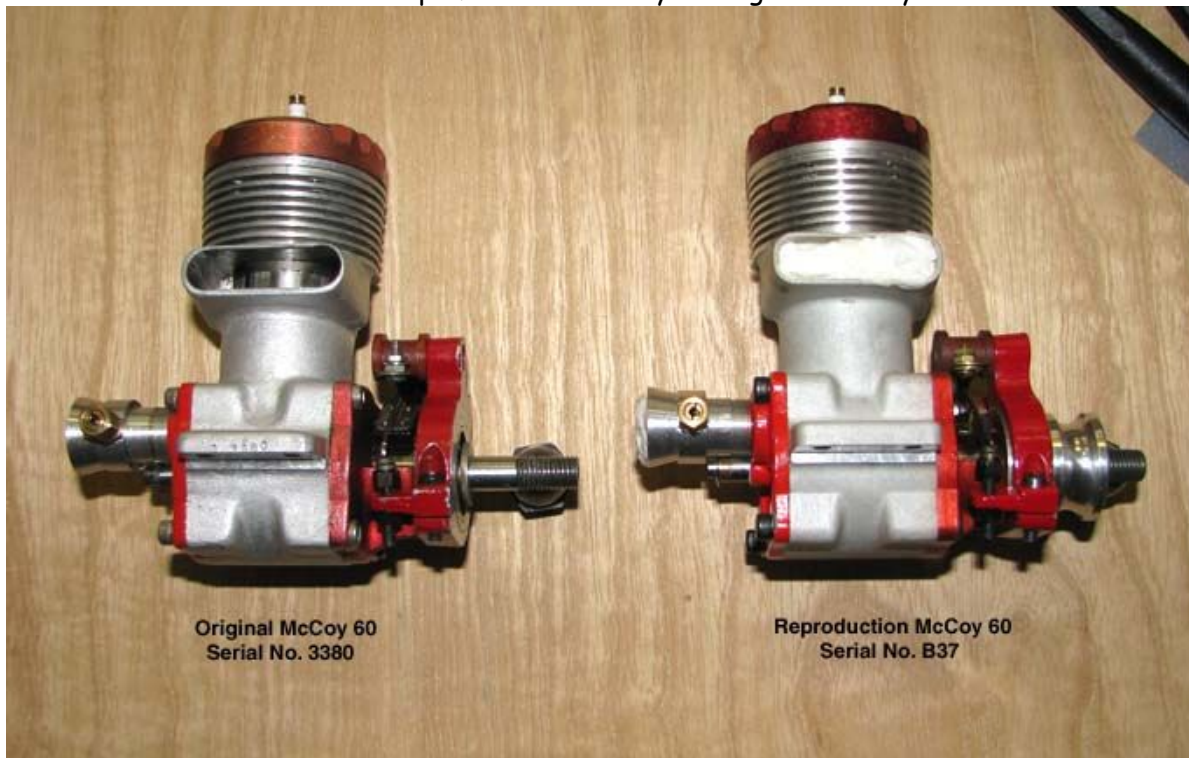


While I have been spending so much time doping on the Sailplane, I have been thinking about trying to flight test the new Sailplane with the new McCoy 60 reproduction engine. It occurred to me that I could the remove the original McCoy engine that is in the 96" Bomber and install the new McCoy 60 reproduction engine. Since the Bomber's flight characteristics are already established, I could check out the new 2.4 GHz radio and evaluate how well the new McCoy 60 reproduction engine runs in the Bomber before putting it in the new Sailplane. After some discussion with my friends James Lollar and Jerry Burk, I decided to remove the original McCoy engine that is in the big Bomber and put it in the Sailplane for the flight test phase, since this engine's behavior and performance are already known. James brought up another very good point I had not thought of. He said it would appear to him that having the original McCoy 60 in the Sailplane would be more appropriate than the not too popular Bomber.

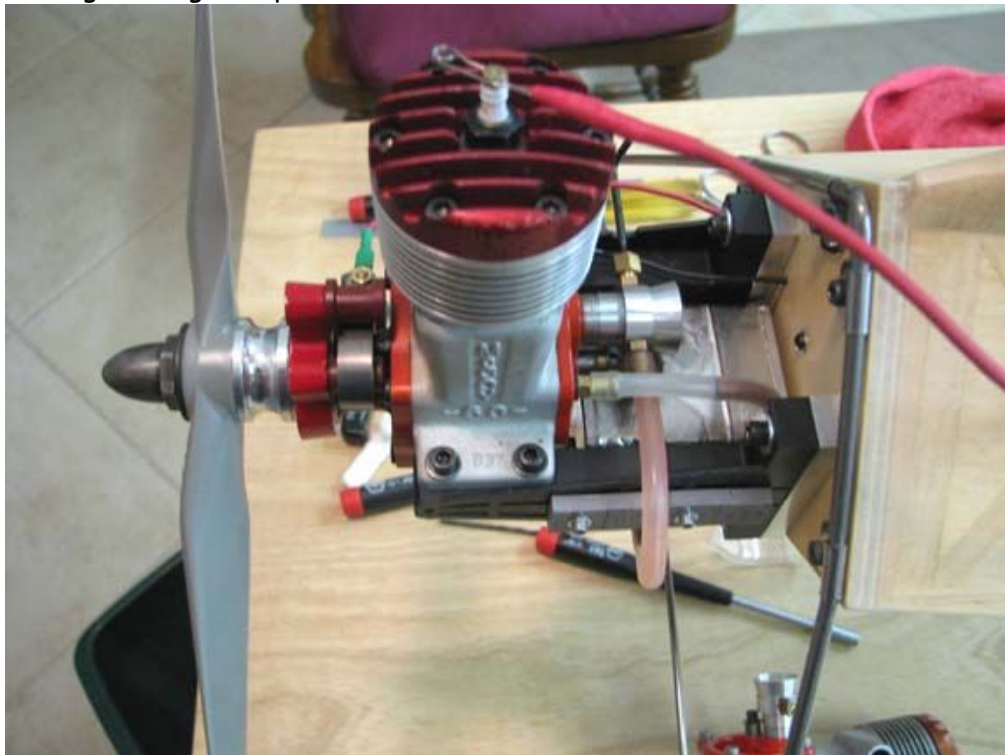
So this afternoon, I got completely side tracked from my doping effort. I removed the original McCoy 60 from the Bomber as shown below.



This is a close up of the two McCoy 60 engines side by side.



As you can see in the picture below, I now have the new McCoy 60 reproduction engine in the Bomber as a test bed for evaluating the engine's performance.



I installed the original McCoy 60 in the Sailplane mounting to check the fit and the alignment of needle valve with the hole in the cowl. I had to adjust the clock position of the rear venturi to achieve the desired alignment. Much to my surprise, when the needle valve was inserted through the cowl hole and into the spray bar, the stem was not long enough to completely close down.

So I took a spare needle valve and carefully straightened out the bend in the end to get additional stem length as shown below.



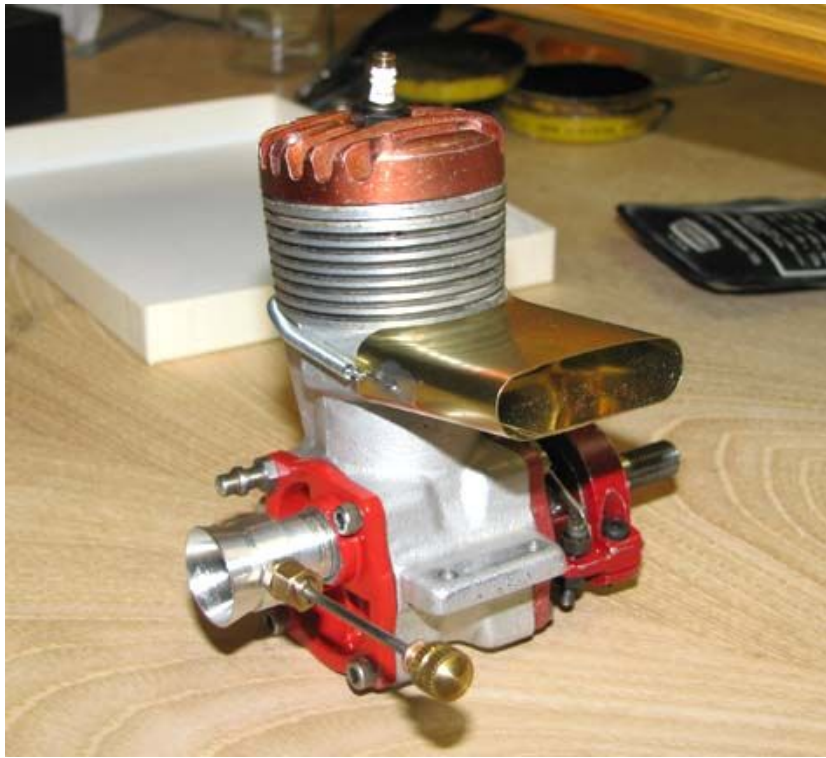
However, since I had no way to rotate the straight needle valve, I needed some kind of a knob on the end. I went through my lamp parts box and found an old lamp switch. I removed the knurled brass knob as shown below.



I wrapped the end of the needle valve stem with some thin brass shim stock to achieve a snug fit inside the brass knob and soldered the two together as shown below.



Then a test fit of the modified needle valve and the exhaust extension was done on the original McCoy 60 engine as shown below.



The final step was to mount the original McCoy 60 in the Sailplane and put on the cowl. As you can see below, the needle valve is completely closed down with some stem length remaining and the stem is accurately aligned with the center of the hole in the cowl. Well anyway, tomorrow it is back to clear doping.....Tandy

