

From: "Tandy C. Walker" <tandyw@flash.net>

To: [Undisclosed-Recipient:](#)
[@smtp102.sbc.mail.re3.yahoo.com](#)

Date: 10/9/2010 2:22:21 PM

Subject: 184 Sailplane's New Exhaust Extension

An exhaust extension shown below was made for the McCoy 60 to conduct the hot exhaust gases out of the Sailplane's cowl to prevent them from setting the cowl on fire. Lead solder was used in the extension's bottom seam as well as the little clips on the side for the retention spring to hook onto. However, when an engine test run was made on the bench, the exhaust gases were so hot that they melted all of the solder off. Bill Taylor from Tulsa, Oklahoma, had warned me about this and said to use 2-56 screws and nuts to hold the bottom seam together with, which I did. However, I wasn't sure how to hold the two side clips on the extension.



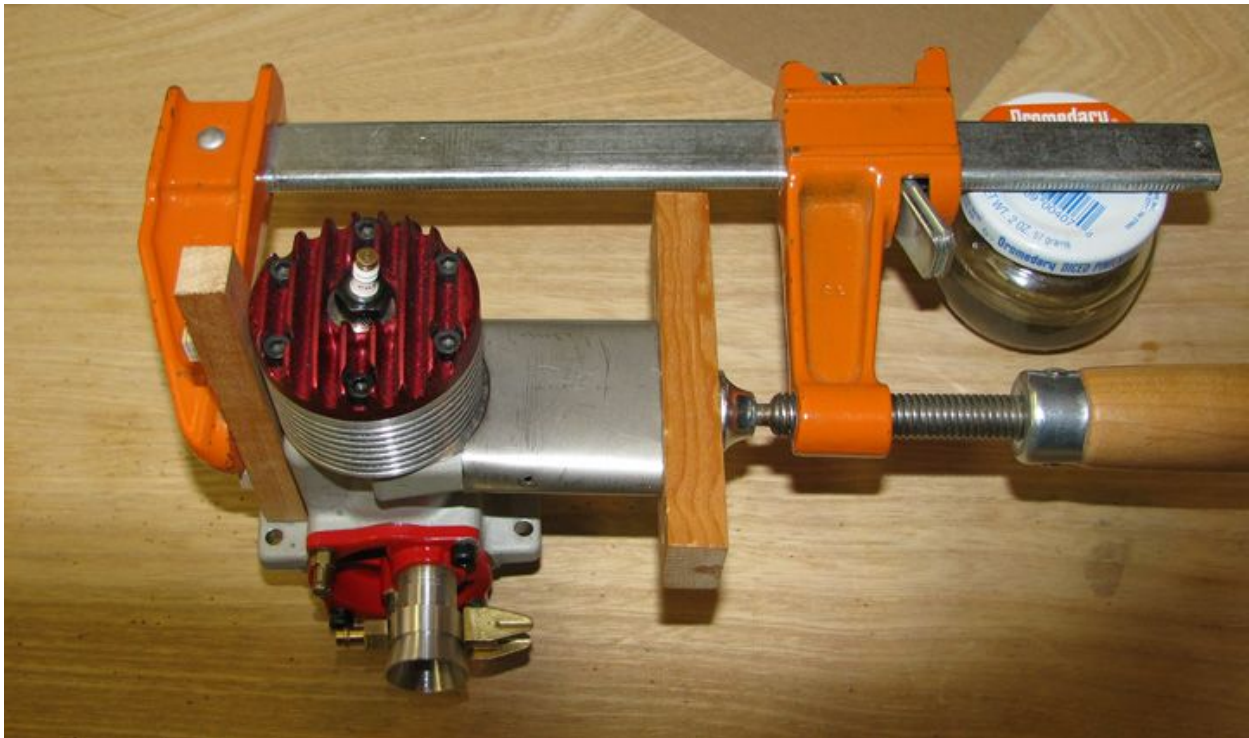
At the SAM Champs, I flew the Sailplane without the cowl because I had not yet resolved the needle valve problem or the exhaust extension problem. My good friend Migual Salvador from New Jersey (*who I call Mike*) said the brass extension needed to silver soldered and for me to give him the extension and he would silver solder it when he got home. Well, as you can see below, the heat required to silver solder also melted the extension's thin brass stock.



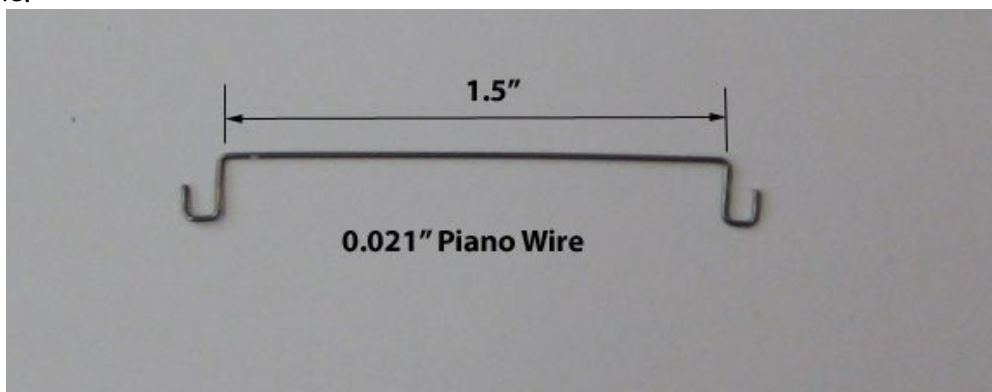
So Mike's fall back position was to make a completely new exhaust extension out of stainless steel and bolt the bottom seam together as shown below.



Now mike made the new extension, but he did not have a McCoy 60 to form fit it to. When I received the new extension it didn't fit, but it was close. So I did forming fit by carefully pressing the stainless extension onto the McCoy 60's exhaust stack a little at a time using a carpenter's clamp to apply pressure as shown below.



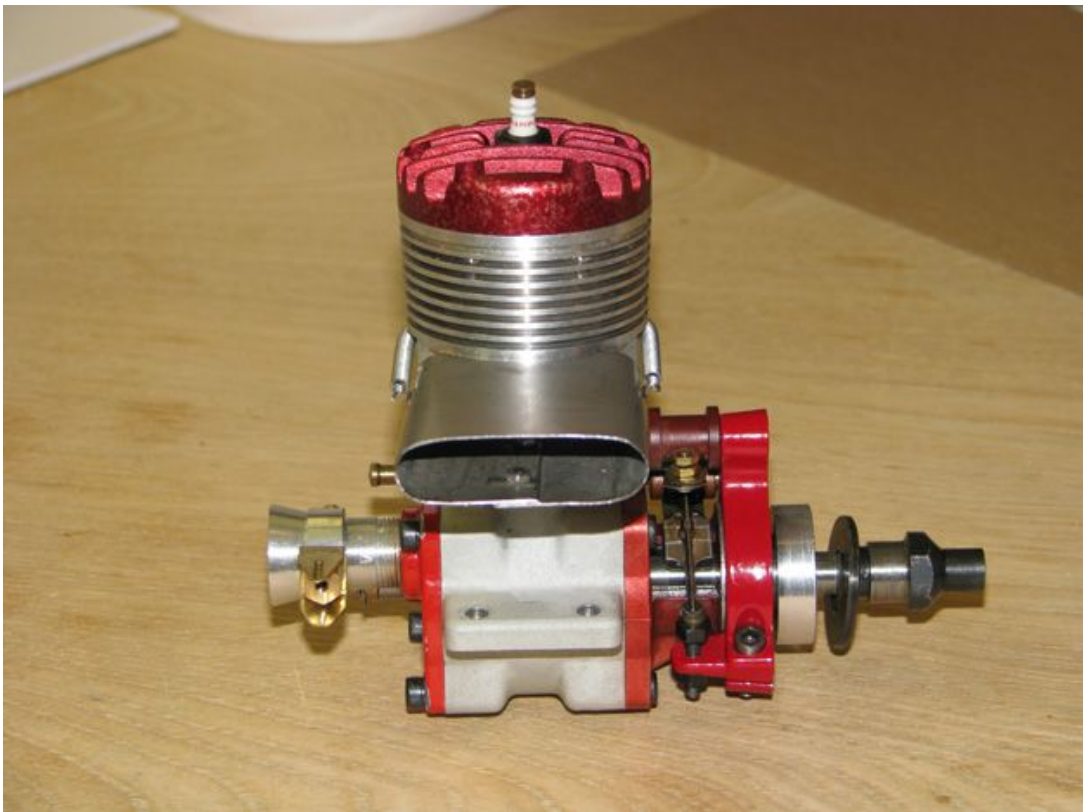
The next issue to be addressed was how to make the little clips on each side for the retention spring to hook onto. I came up with idea of making the two clips as a thin single one piece piano wire that would pass through the interior of the extension shown below. The total exhaust area blocked by the wire is only 0.00208 sq. in., which is negligible.



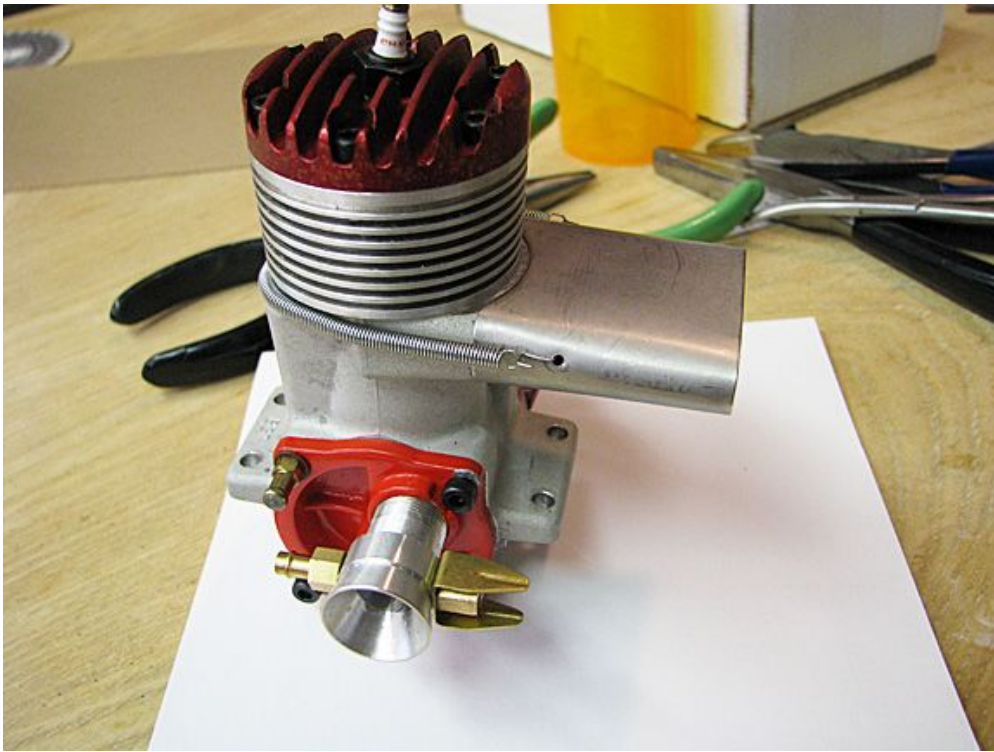
Because the wire is so fine, I was able to carefully work it through the two holes in the extension as shown in the front view below.



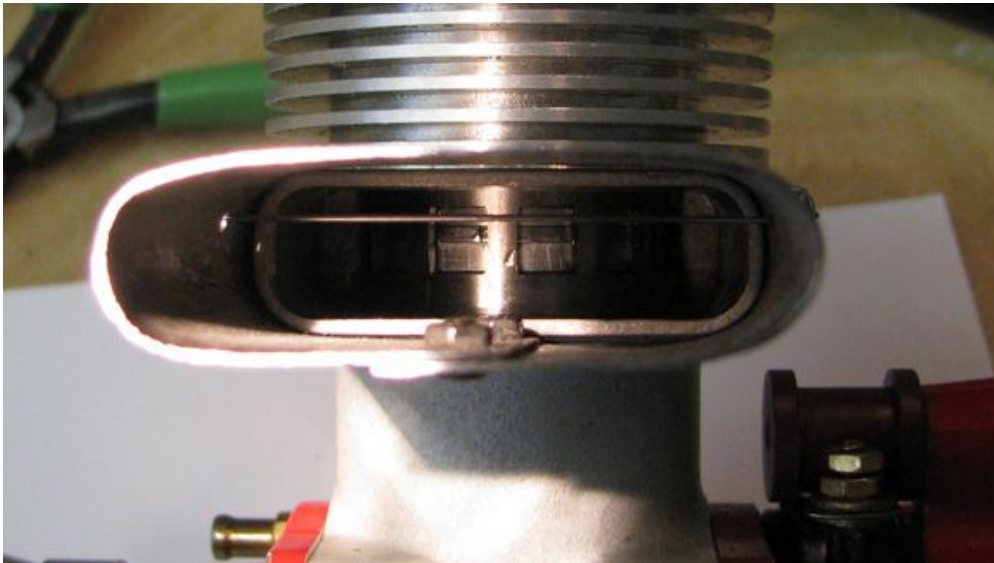
End View



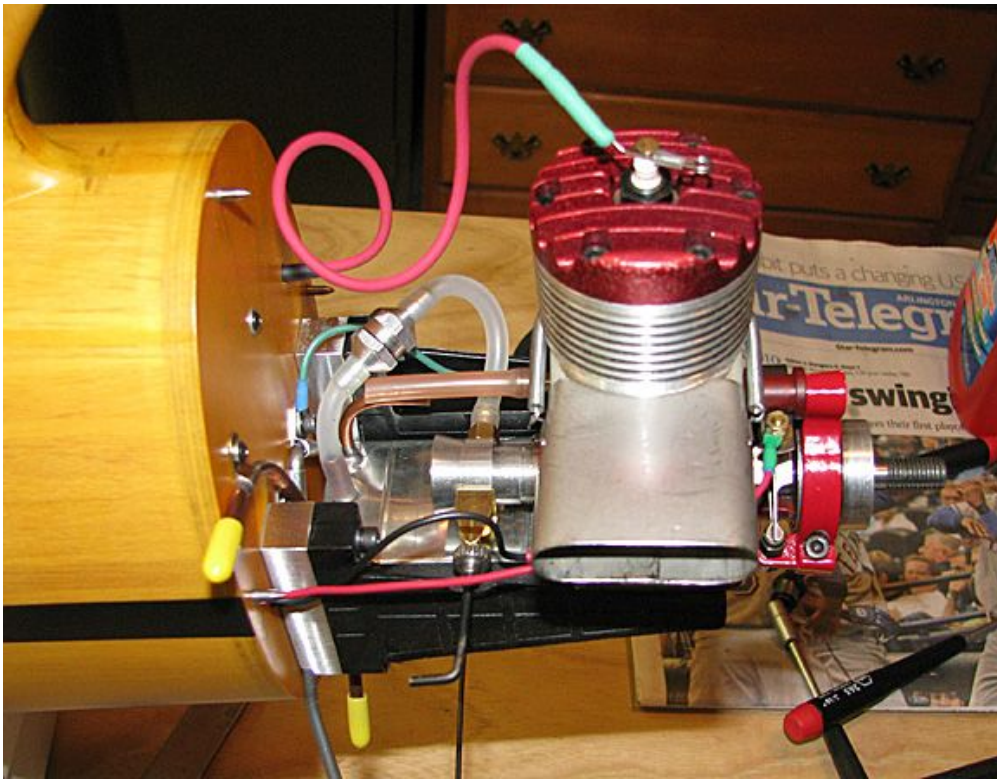
Rear View



View of the .021" wire inside the exhaust extension. Surely the exhaust gases won't melt the piano wire. Does anyone know? I guess I really need to make a test run to see if the exhaust gases will melt the .021" piano wire or not.



McCoy 60 with new extension and needle valve mounted in the Sailplane.



This final picture shows the new stainless steel exhaust extension with the Sailplane's cowl intalled.....Tandy

