

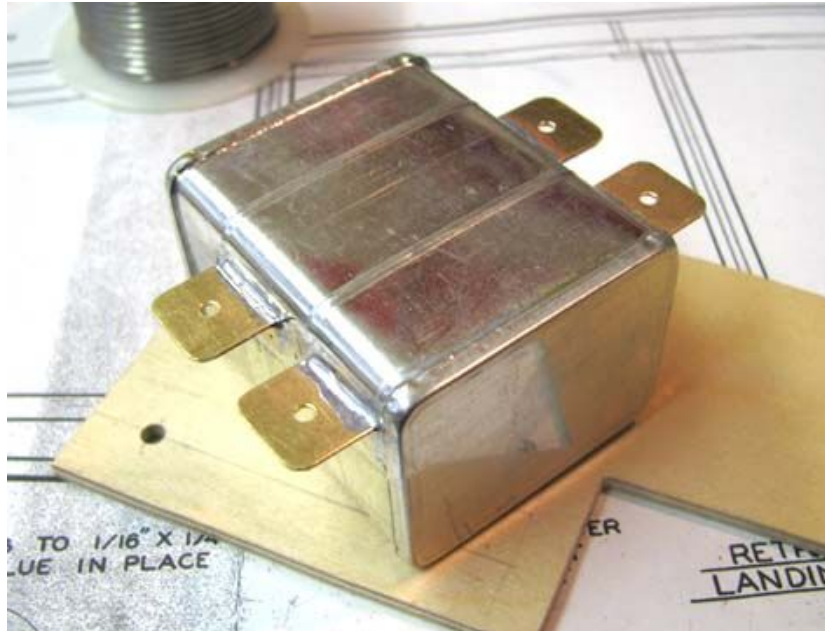
From: ["Tandy C. Walker" <standyw@flash.net>](mailto:standyw@flash.net)

To:

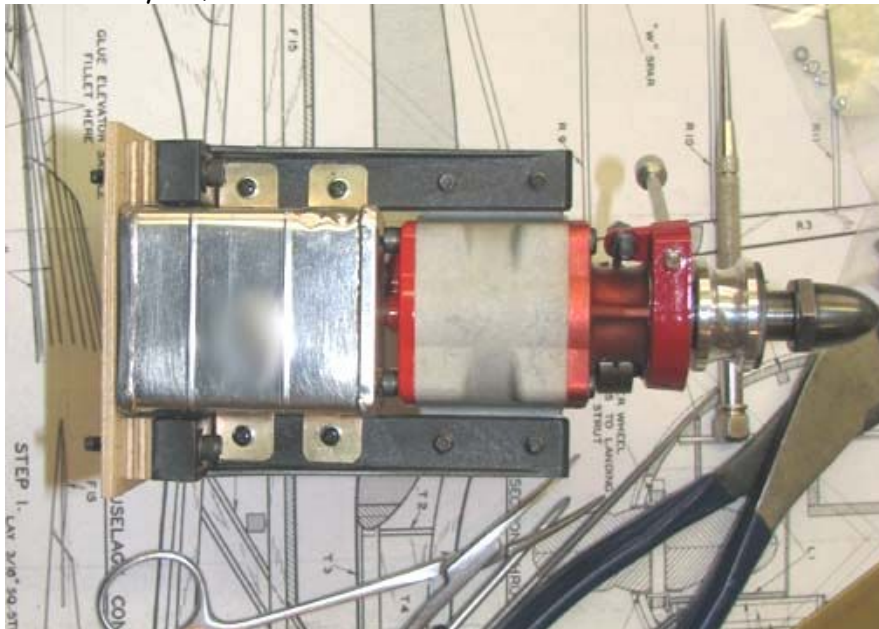
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Subject: 182 Sailplane Fuel Tank Modification for Shock Mounting

Four brass tabs were soldered to the sides of the metal fuel tank shown below to provided for mounting the fuel tank in the Sailplane.



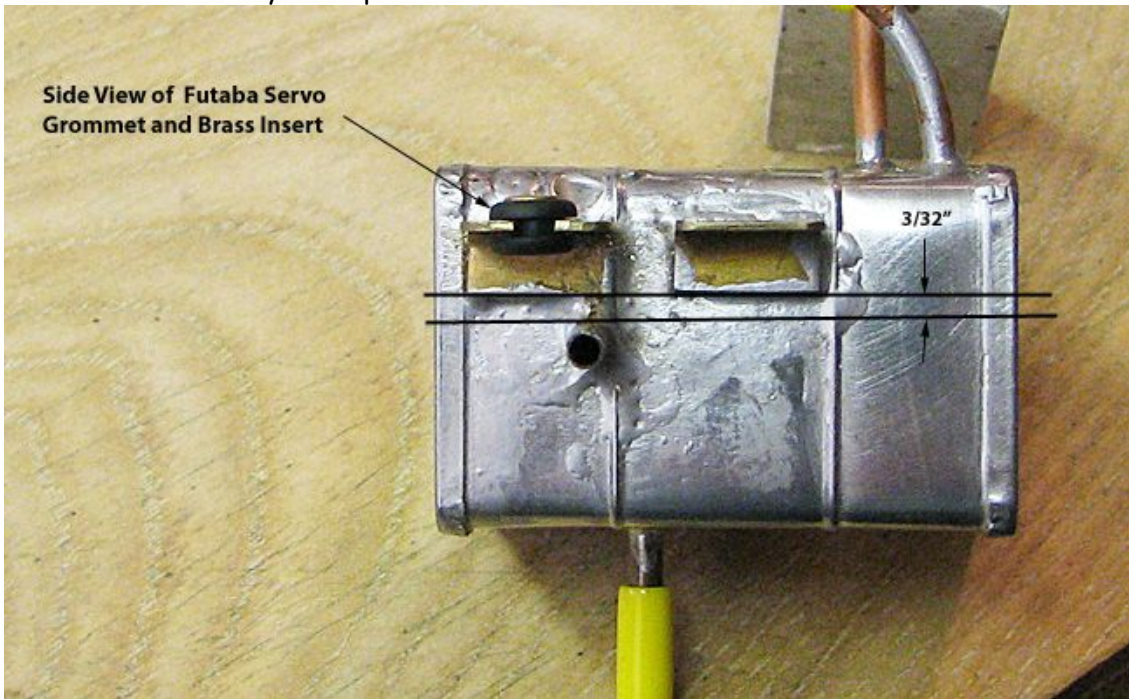
However, fuel foaming problems are being experienced in the Sailplane. The metal fuel tank was positioned on the bottom of the composite motor T-Mounts and the holes in the four tabs were marked. Pilot holes were drilled and four small screws were used to mount the tank as shown below. What apparently is happening is at high RPM, the McCoy 60's vibration is foaming the fuel in the tank. While this does not seem to overly affect the running of the McCoy 60, it is an undesirable situation and needed to fixed.



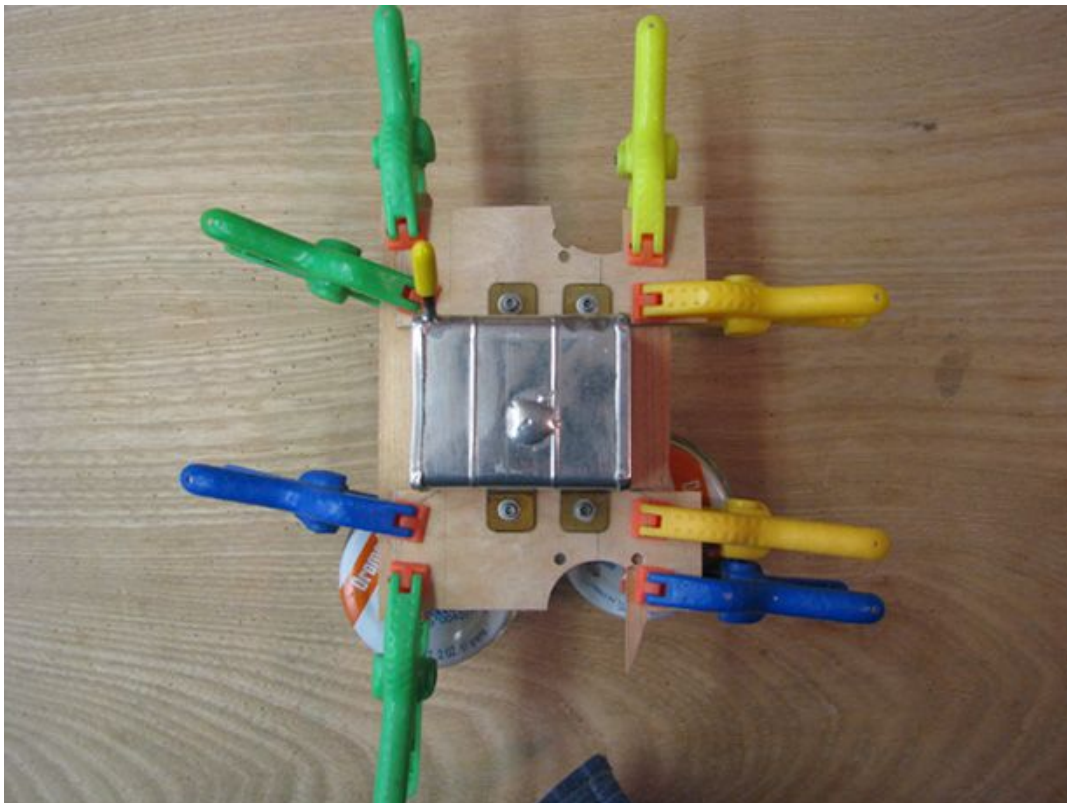
#### Problem

The location of the bottom of the fuel tank in the Sailplane is constrained by the Sailplane's cowl so the tank can not be displaced downward. Also the fill and overflow tubes must remain in their same locations to match the hole cut outs in the back of the cowl. These two requirements put a little different twist on shock mounting than that used with the Bomber. Therefore, in order to use the same shock mounting technique that was developed for the Bomber (*four Futaba servo grommets*), it will be necessary to move the four brass tabs

down on the side of the tank precisely  $\frac{3}{32}$ " as shown below to account for the Futaba grommet thickness so the fuel tank will remain exactly in its present location.



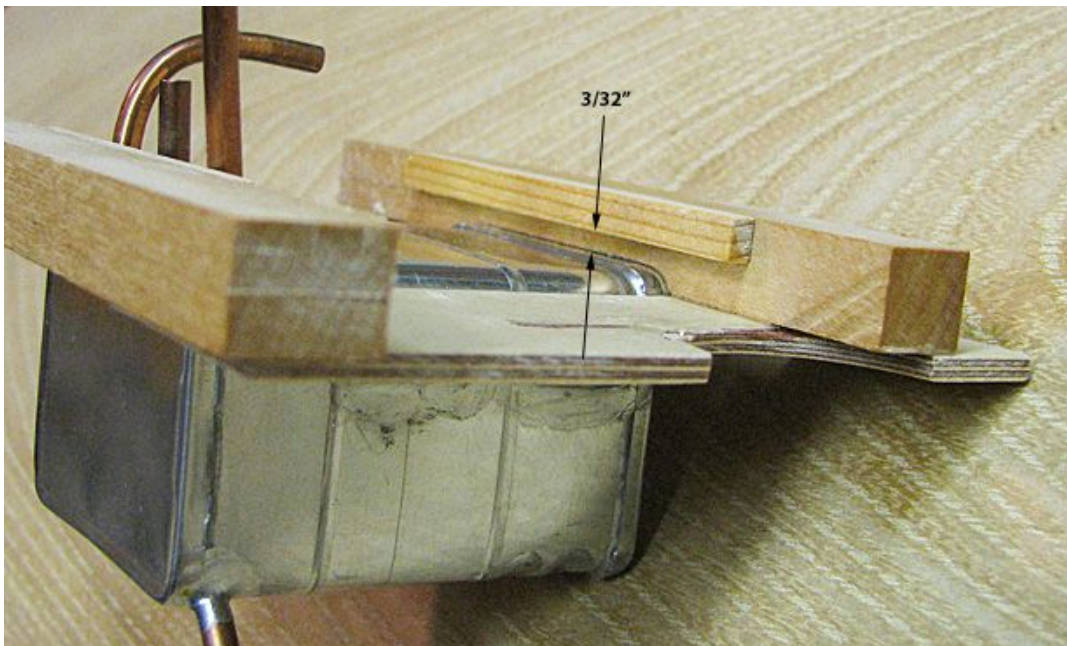
The first step was to build a rigid jig of plywood and maple around the fuel tank's perimeter and secure the four brass tabs with screws as shown below.



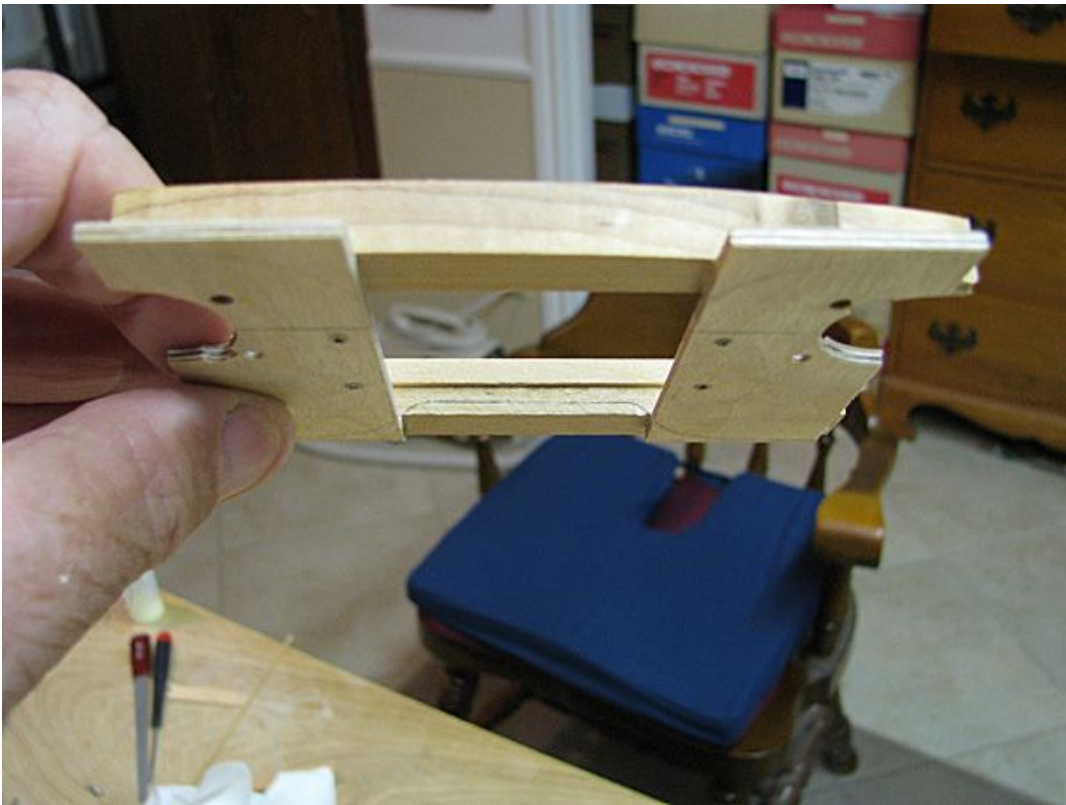
This is a side view of the wooden jig the fuel tank is mounted in.



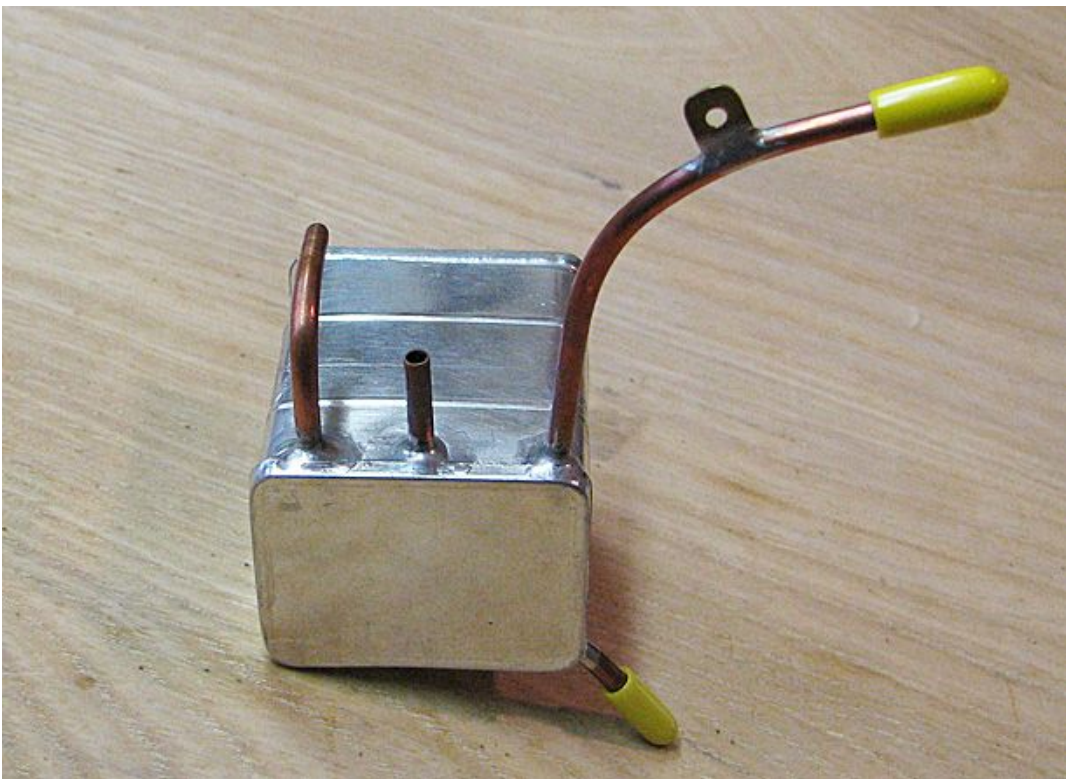
Next a wooden strip was glued in place whose bottom edge was exactly  $3/32$ " above the top of the tank's two end plates as shown below.



This picture shows the completed wooden jig after the fuel tank has been removed.



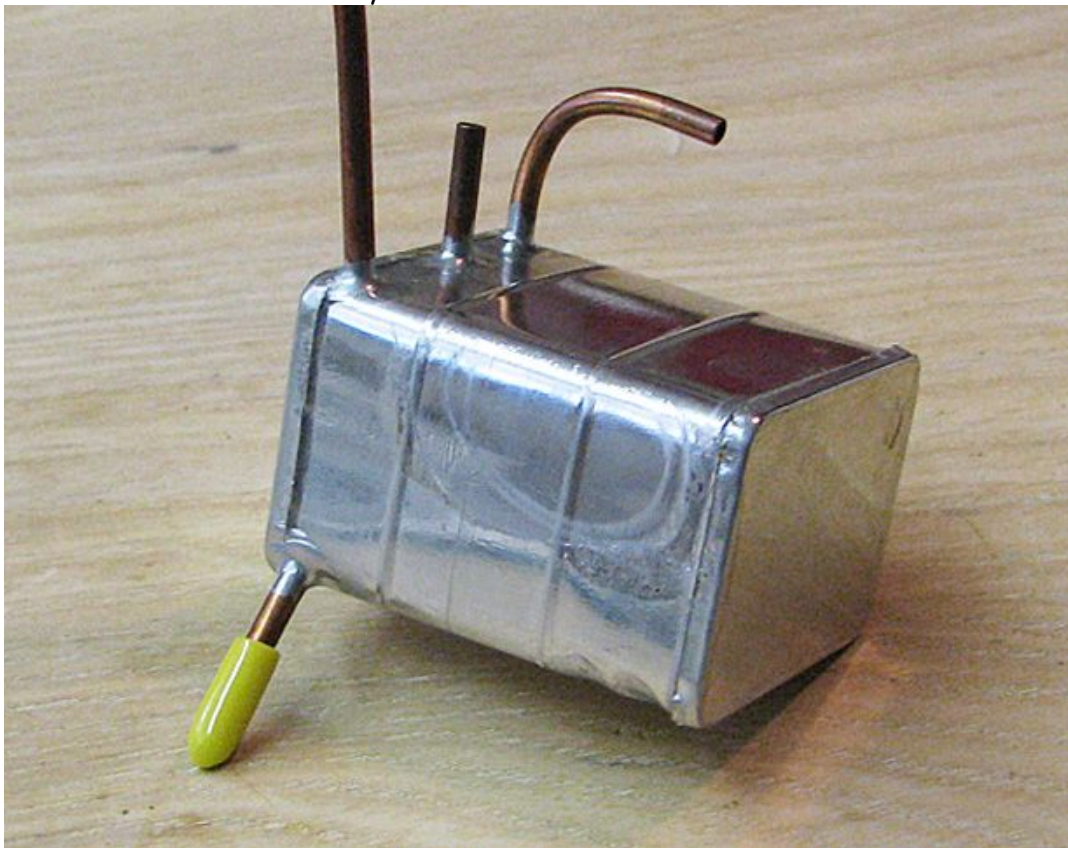
The next step was to mark each of the four brass tabs (right front, right rear, left front, and left rear) to identify their locations on the sides of the tank. Then the tabs were unsoldered and removed from the tank as shown below.



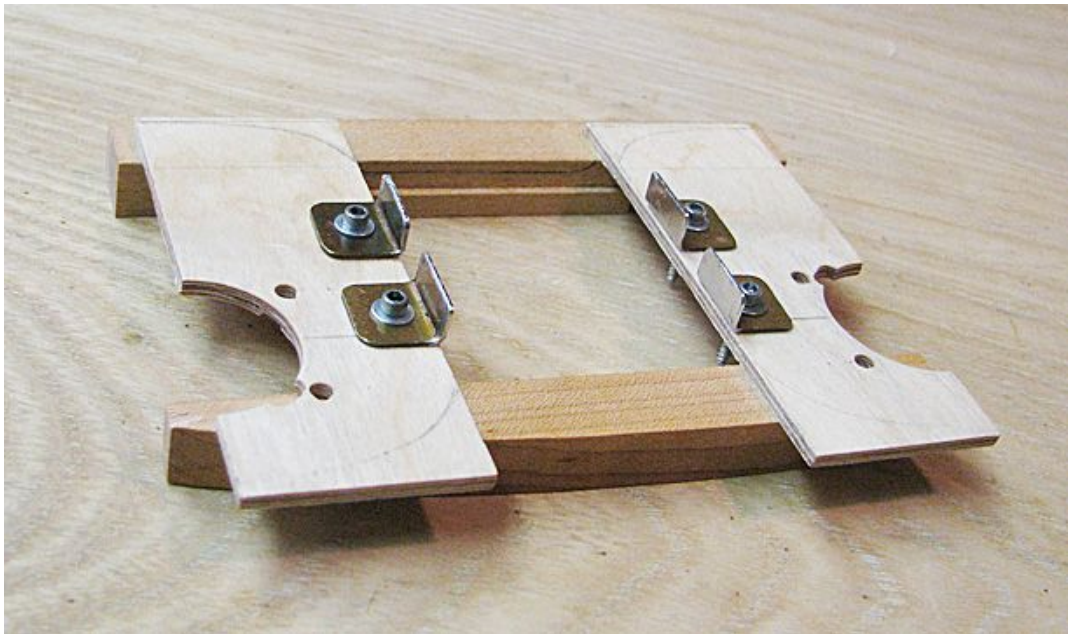
An old style soldering iron with high wattage shown below was used to quickly unsolder the tabs.



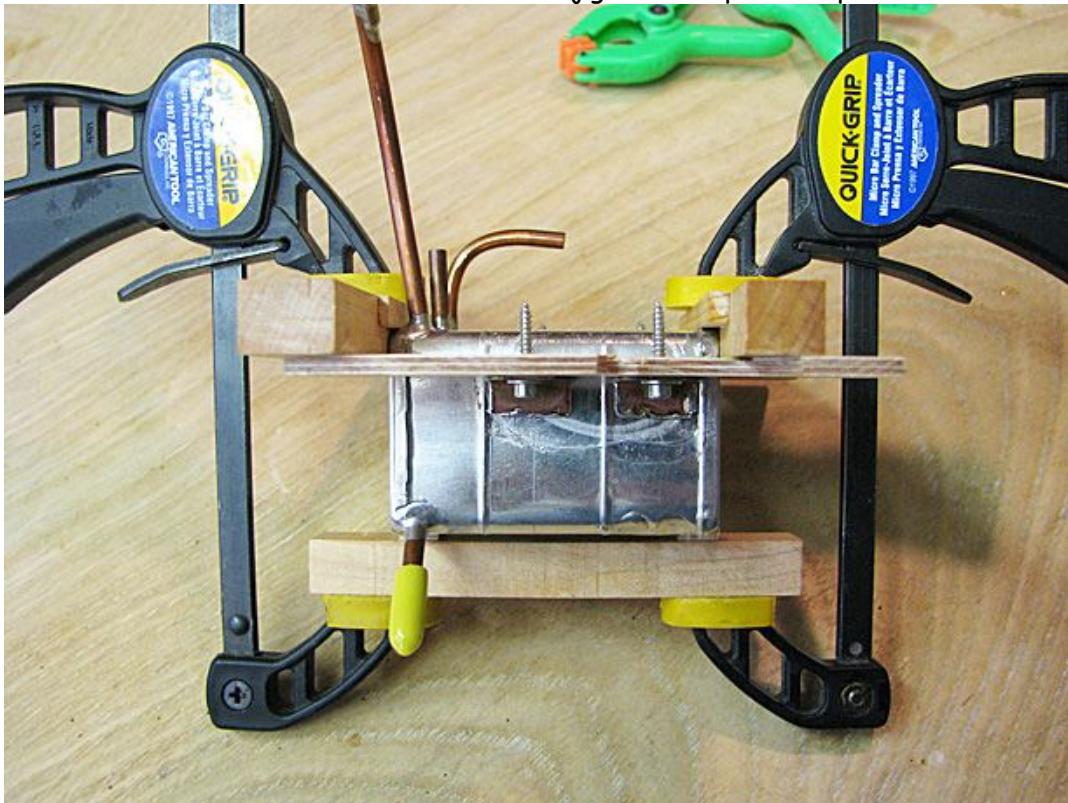
The high heat of the iron made it easy to clean the old solder off of the tank's sides as shown below.



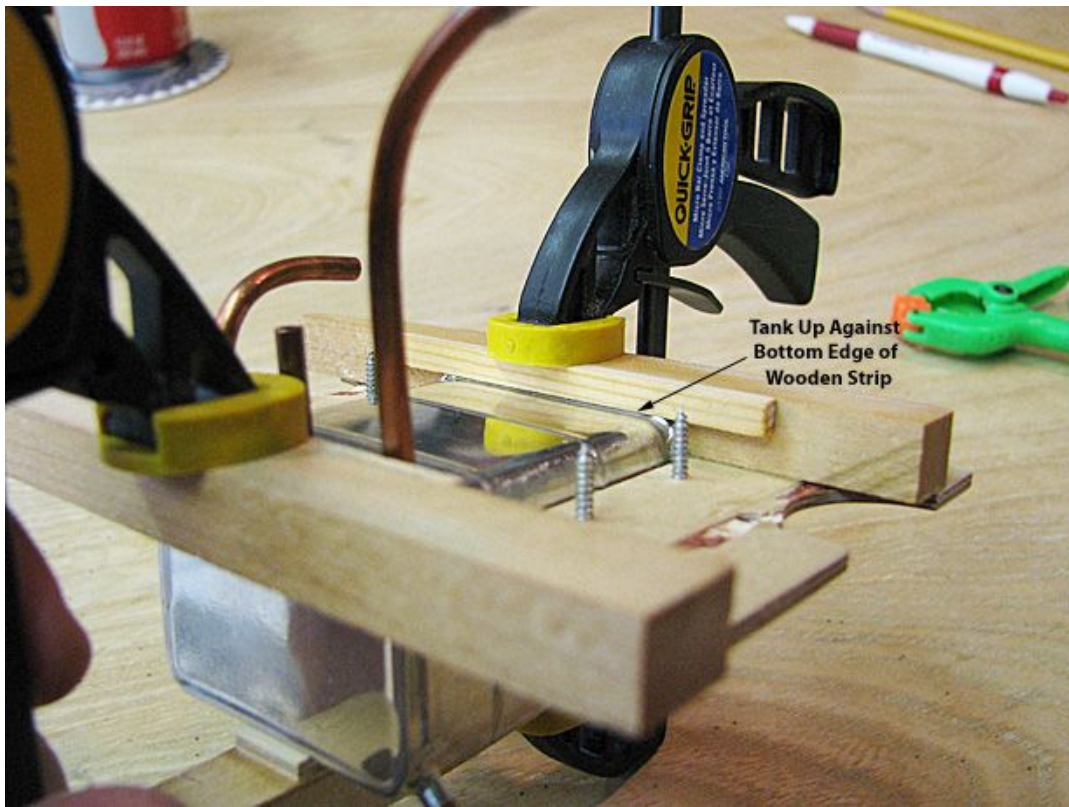
The excess solder was also removed from the four brass mounting tabs, which were then screwed back into their individual places on the wooden jig as shown below.



The fuel tank was then inserted into the wood jig and clamped into place as shown below.

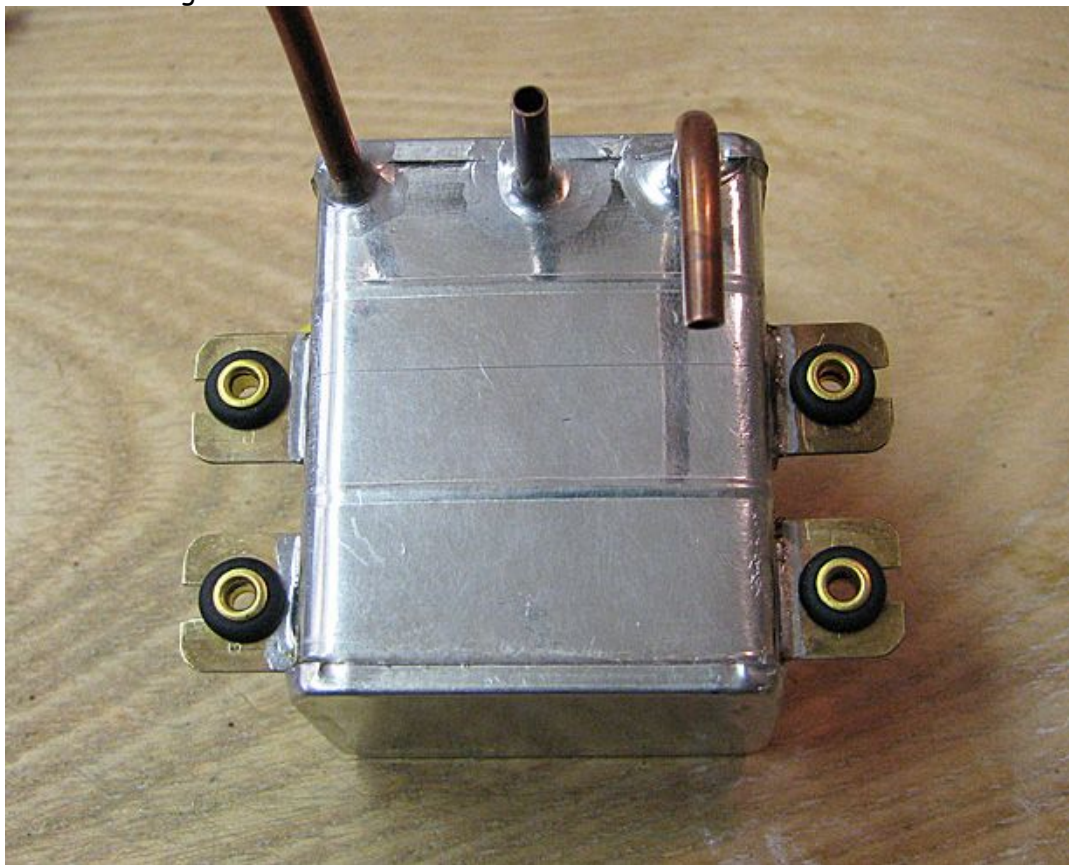


Notice in the picture below that the fuel tank has been move up through the jig exactly  $\frac{3}{32}$ " to make contact with bottom edge of the wooden strips.

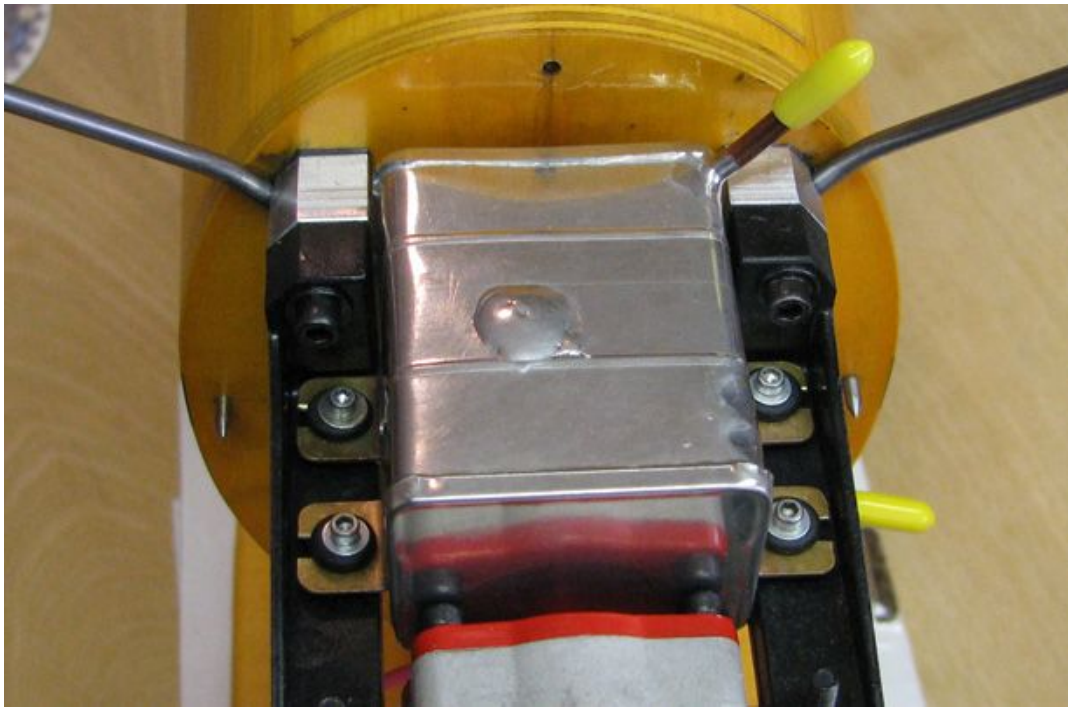


Tank Up Against Bottom Edge of Wooden Strip

The four brass mounting tabs were then resoldered to the sides of the fuel tank while in the wooden jig. The tank was then removed from the jig and the four brass tabs were modified for the installation of four Futaba servo black rubber grommets as shown below.



The fuel tank dropped right into place and was screwed to the bottom of the Sailplane's composite mounts as shown below. However, the real test was see if (1) the cowl would now go on and fit into place and (2) if the fill and overflow tubes would still be centered in the cowl's cut out hole.

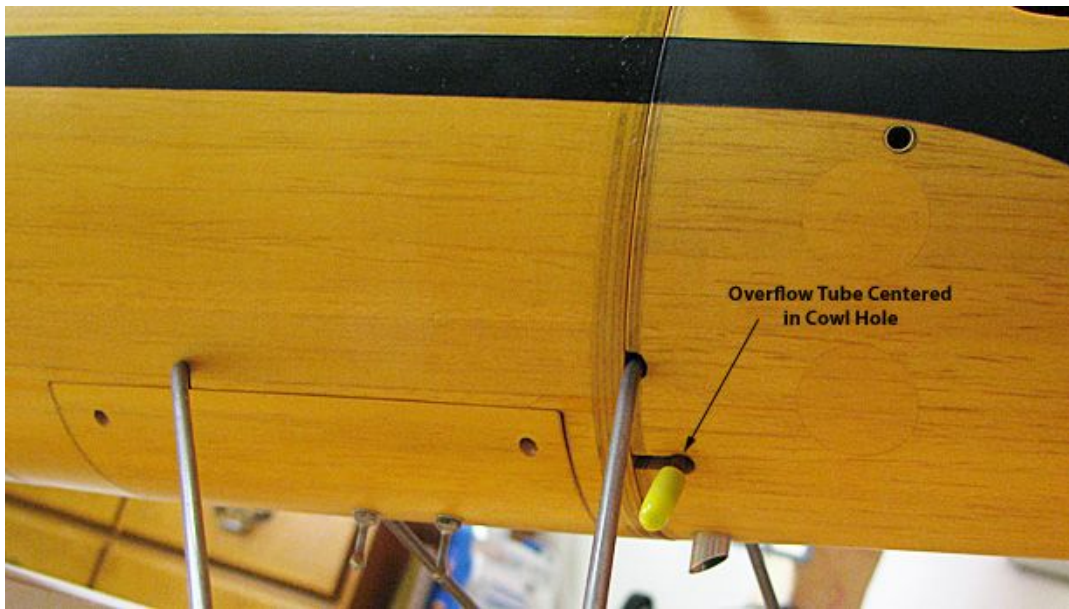


Well, the cowl slipped right on with no binding or interference with the fuel tank. The fill tube was still centered in the cowl cut out hole as shown below.



As you can see below, the overflow tube did as well.





The shock mounting of the Sailplane's fuel tank required a lot of thought and planning, but I think it turned out really well.....Tandy