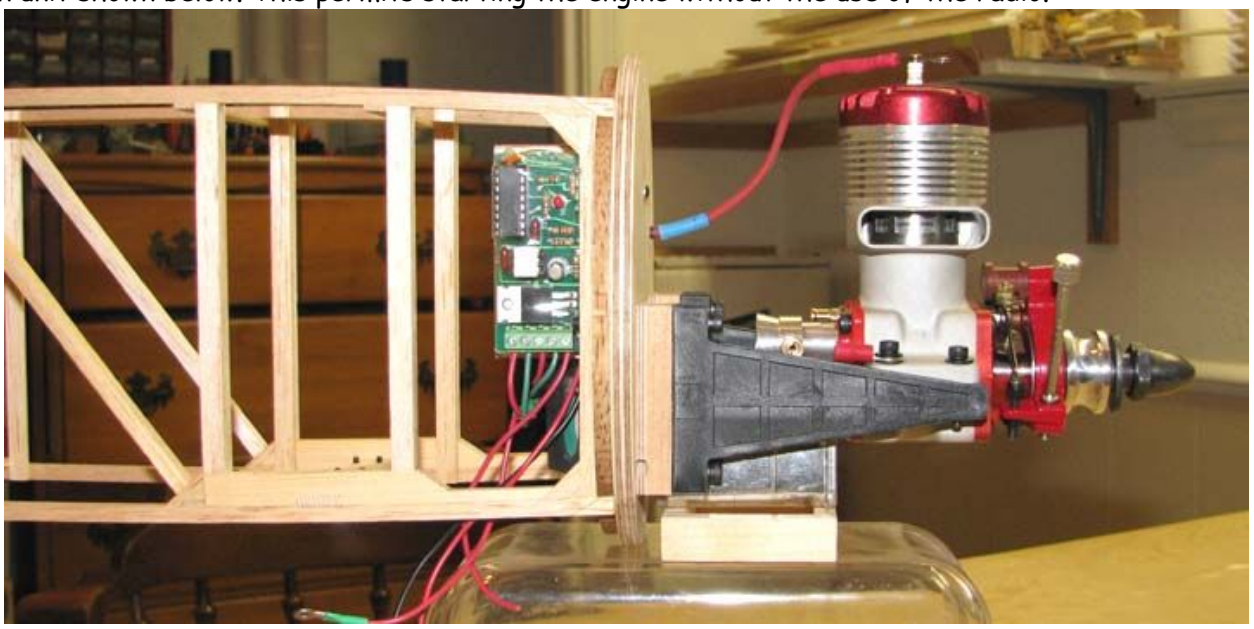
From: "Tandy C. Walker" <tandyw@flash.net>
To: Undisclosed-Recipient:
Date: 8/3/2009 10:30:07 PM
Subject: 144 Sailplane More Details

Comet Sailplane Project

Today I finished up clear doping all of the Sailplane's components as shown in the table below. As you can see, there is total of 14 coats of clear dope on all 12 components. At 1-1/2 hours per coat, I spent 21 hours just doping the wing! Thank goodness that is over. :O<

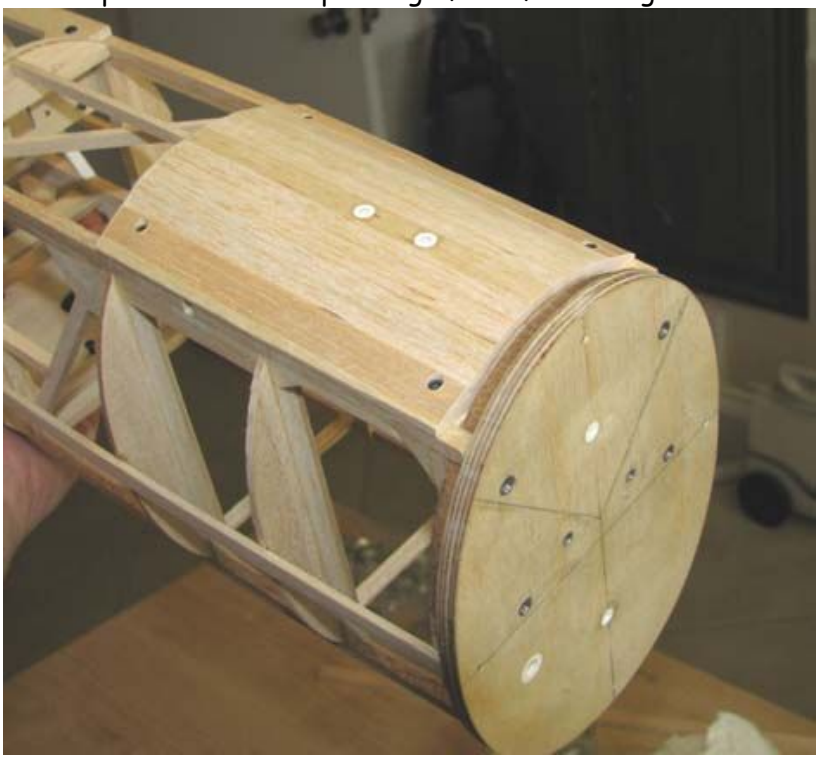
Component	Wood	Polyspan	Silk	Orange Tint	Yellow Tint	Orange Tint	Yellow Tint
Mix	50D/ 50T	50D/50T	50D/ 50T	50D/50T	50D/50T	40D/60T	40D/60T
Retarder	None	None	None	None	None	1/2 oz	1/2 oz
Stab	3	3	3	3	3	2	2
Sub Fins	3	3	3	3	None	2	None
Elevators	3	3	3	None	3	N/A	2
Fin	3	3	3	3	None	2	None
Rudder	3	3	3	3	None	2	None
Sub Rudder	3	3	3	3	None	2	None
Wing	3	3	3	3	3	2	2
Hatches	3	3	3	3	None	2	None
Fuselage	3	3	3	3	None	2	None
Cowl	3	3	3	3	None	2	None

I always use two external pins for the (+) charging terminal to the ignition battery and the (+) booster terminal. Grounds for both are provided by the landing gear, which is grounded to the engine. Our good friend, Marvin Stern has recently incorporated provisions booster wiring in his outstanding Aero Tech IGN-SW ignition unit shown below. This permits starting the engine without the use of the radio.

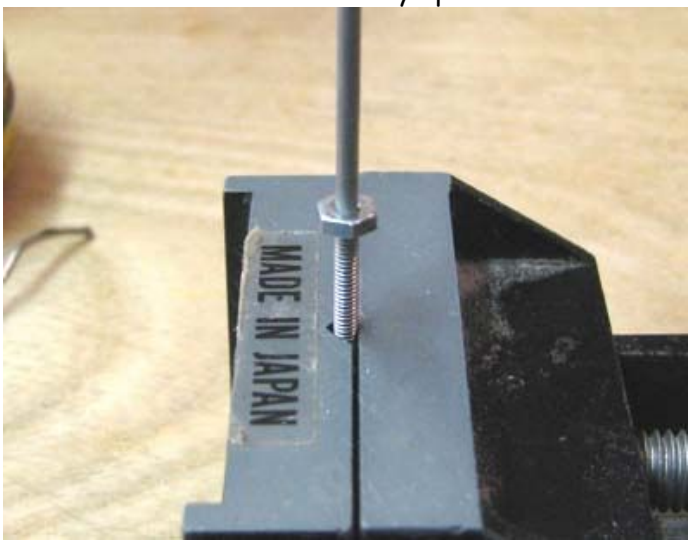


The forward hatch cover behind the firewall was designed to support both the (+) booster external pin and the (+) ignition battery charge external pin. From Report No. 35, the hard points for these two pins were integrated into the cover's planking. Shown below are the hard point assembly consisting of two 2-56 blind nuts embedded into a piece of 1/8" plywood with ABS plastic stand offs. A strip of the 3/32" X 1/4" strip planking with two holes to receive the stand offs is also shown.

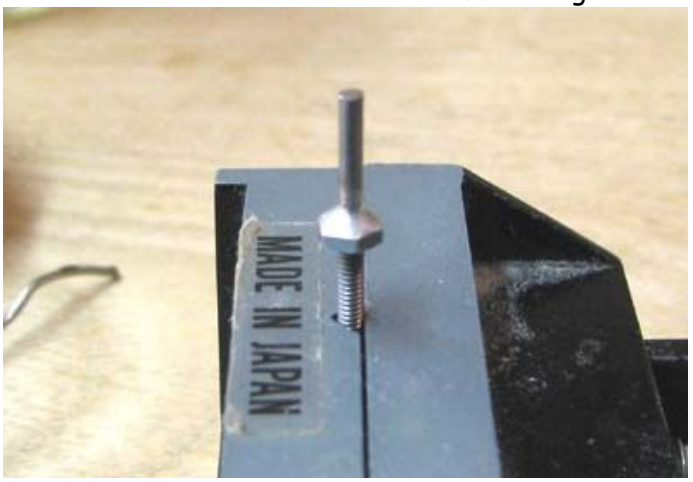
The two hard points were incorporated into the planking of the forward ignition hatch cover as shown below.



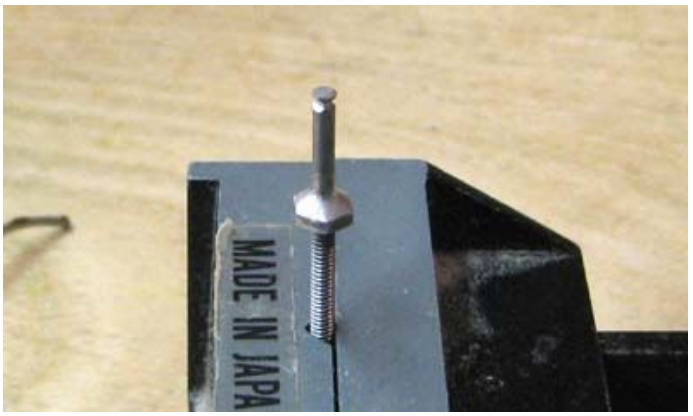
Now I want to share with you my technique for making external pins. I use a standard push rod with 2-56 threads on the end. A 2-56 steel nut is threaded all the way up to rod as shown below.



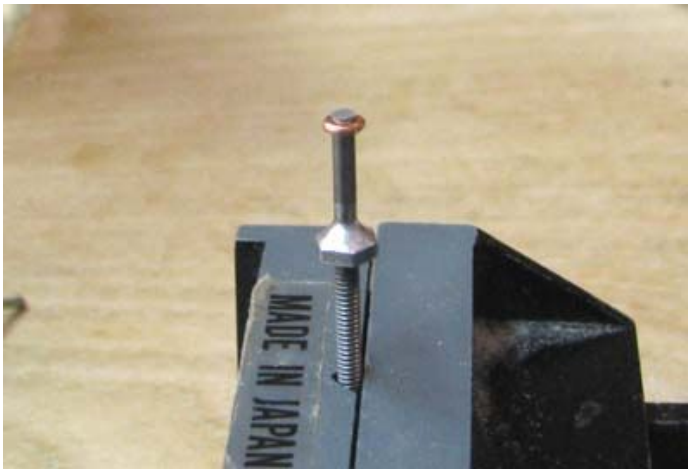
The nut is soldered to the rod and rod is cut off to length as shown below.



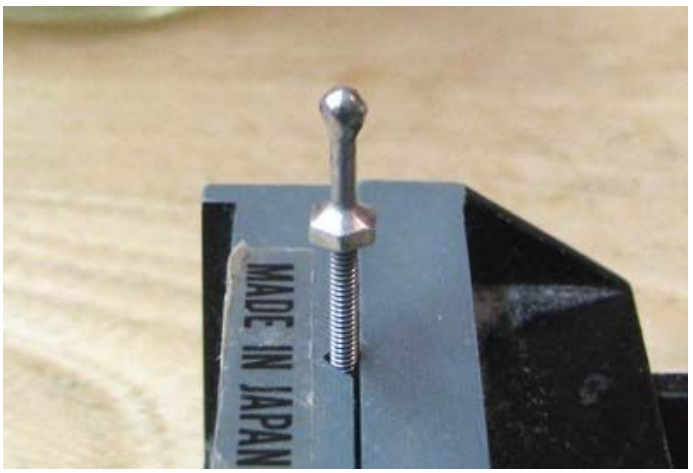
To provide a "bulb" on the end of the rod, a Dremel cut off wheel is used to cut a groove around the end of the rod as shown below.



A loop is formed out of a piece of 20 gauge copper wire and cut off. The loop is squeezed around the rod in the groove with point nose pliers as shown below.

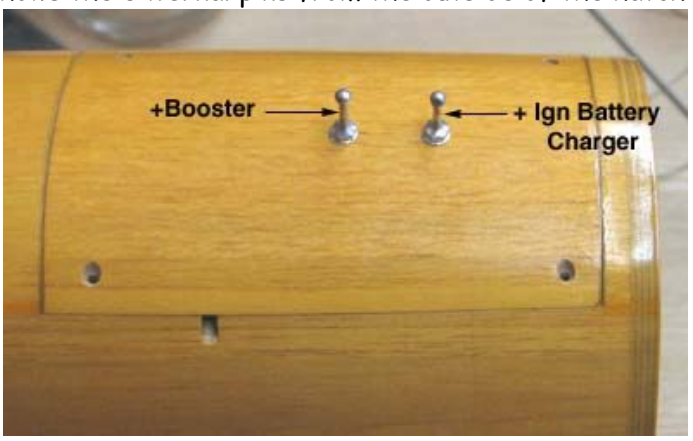


The copper wire is soldered to the rod providing a bulb for purposes of attaching an alligator clip to and having it stay on the pin.

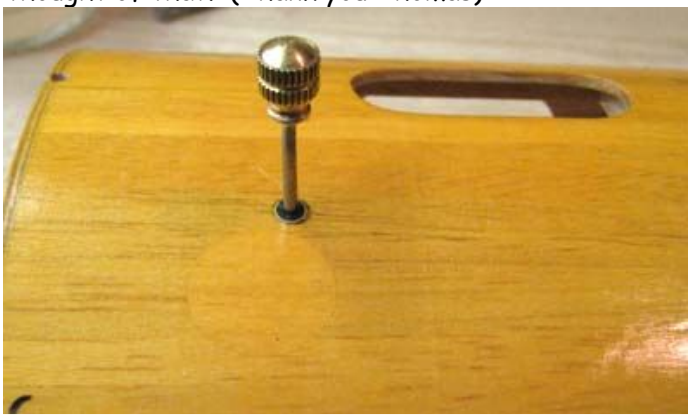


The two external pins are threaded in the blind nut hard points in the hatch cover and jam nuts are used lock the pins in place. Then wire terminals are bolted onto the external pins as shown below.

This shows the external pins from the outside of the hatch cover.



I got two very good suggestions today. First, Thomas Ryan suggested that: **"you could also cut the 2nd knurl of the knob off"**, which of course would reduce the weight out at the end of the needle valve stem by at least half. Now why hadn't I thought of that? (Thank you Thomas)



Using a Dremel cut off wheel, I carefully made several cuts around the knob until I got it cut in half as shown below.

The second suggestion came from Alfredo Herbon: "Important detail, do not forget to file a notch into the brass knob to visualize easily the needle valve setting. Lastly I'm using a dot of red paint in the notch ...," So after filing and polishing the exposed end of what remained of the brass knob, I did in fact file a notch on one side and fill it with red paint as shown below. (Thank you Alfredo)

The picture below now shows what the exposed needle valve looks like out side the cowl.....Tandy