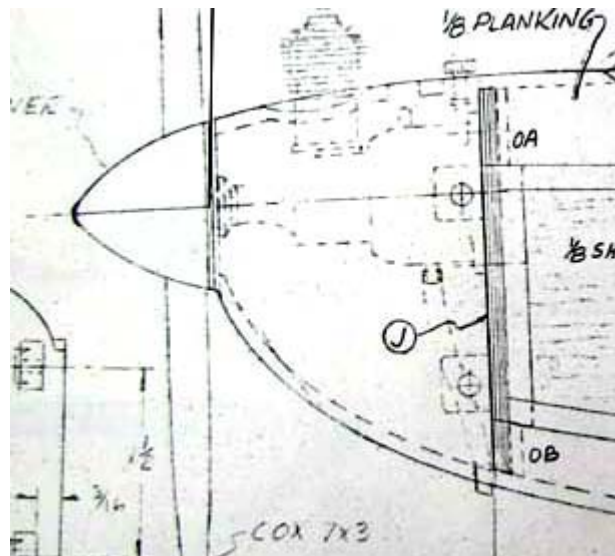


David Harding

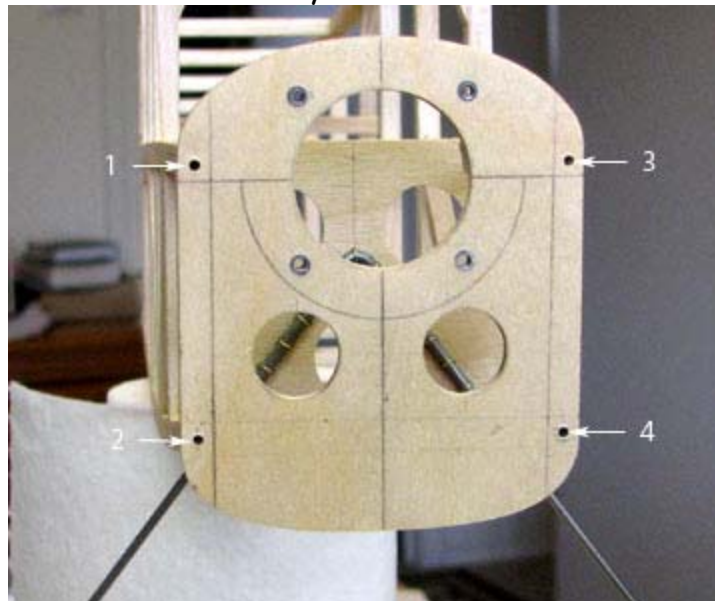
From: Tandy C. Walker [tandyw@flash.net]
Sent: Wednesday, January 27, 2010 5:08 PM
To: Undisclosed-Recipient: ;@smtp103.sbc.mail.mud.yahoo.com
Subject: 50 Speed 400 Cloudster - Construction the Cloudster's Cowl Frame

Speed 400 Cloudster Project

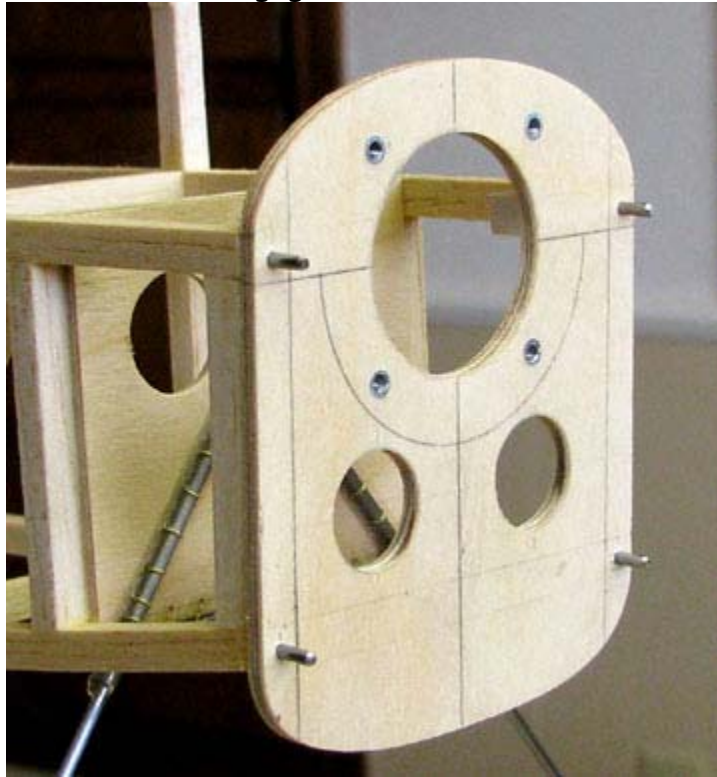
The Jim Adams plan has a sculptured cowl that fairs into the back of a spinner as shown below.



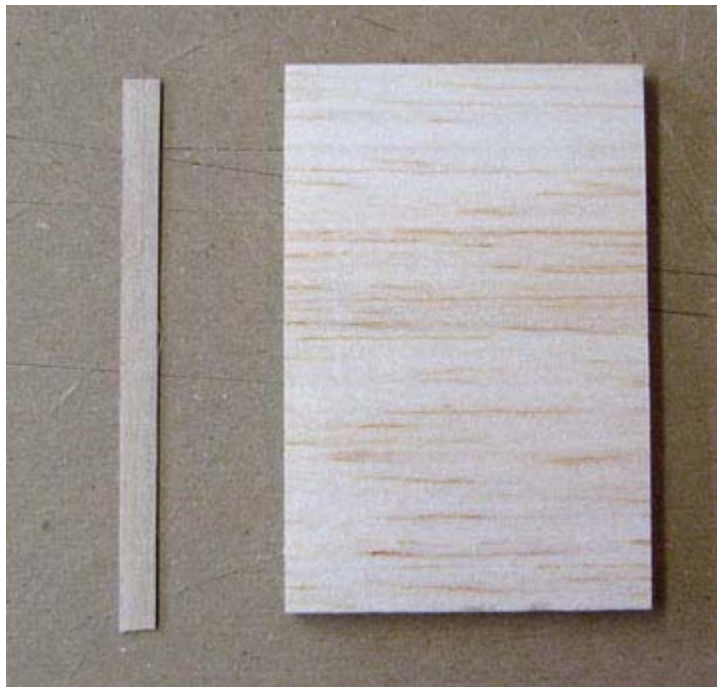
After several concept considerations for constructing a cowl, an approach finally emerged. Four 1/16" holes were carefully hand drilled into the firewall as shown below.



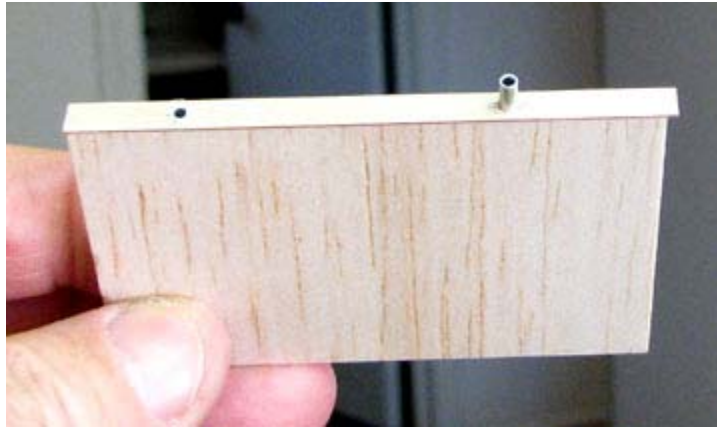
Four $\frac{7}{16}$ " lengths of $\frac{1}{16}$ " piano wire were cut and inserted into the holes in the firewall. The length of these cowl alignment pins allow the pins to protrude out of the front face of the firewall $\frac{3}{16}$ " to engage the rear face of the cowl sides.



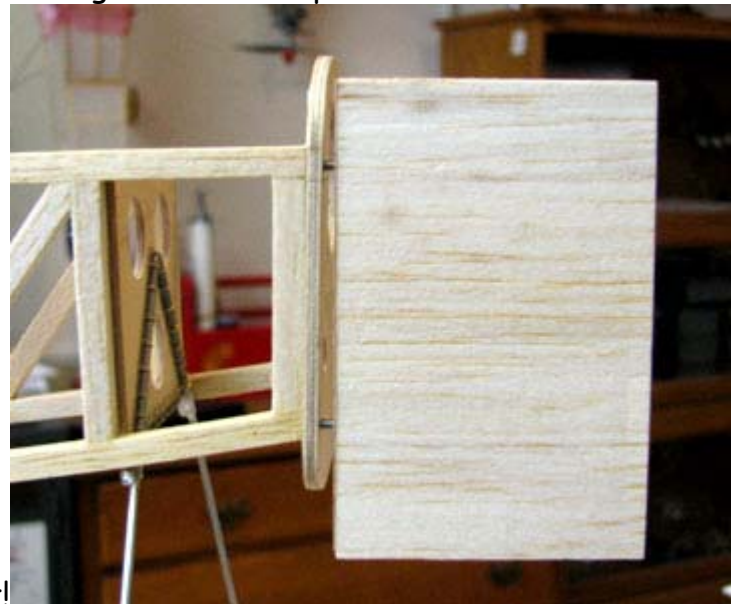
Next, a 3" wide sheet of $\frac{3}{16}$ " medium soft balsa sheet was cut to length for the cowl side shown below. A $\frac{3}{16}$ " wide strip was cut from $\frac{1}{64}$ " plywood, which is also shown below.



The strip of plywood was glued to the rear edge of the 3/16" balsa sheet. This protects the balsa edges from getting all dented up. The two holes were marked to align with the cowl pins and then drilled 3/8" deep. An aluminum tube with 1/16" I.D. was cut to length and inserted into the hole as shown below.

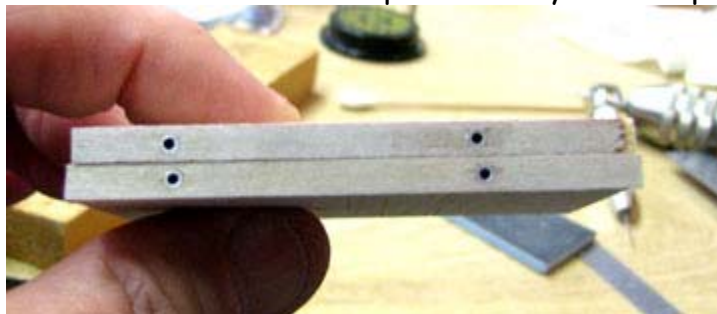


A trial fit was performed to check the alignment of the pins with the holes as shown



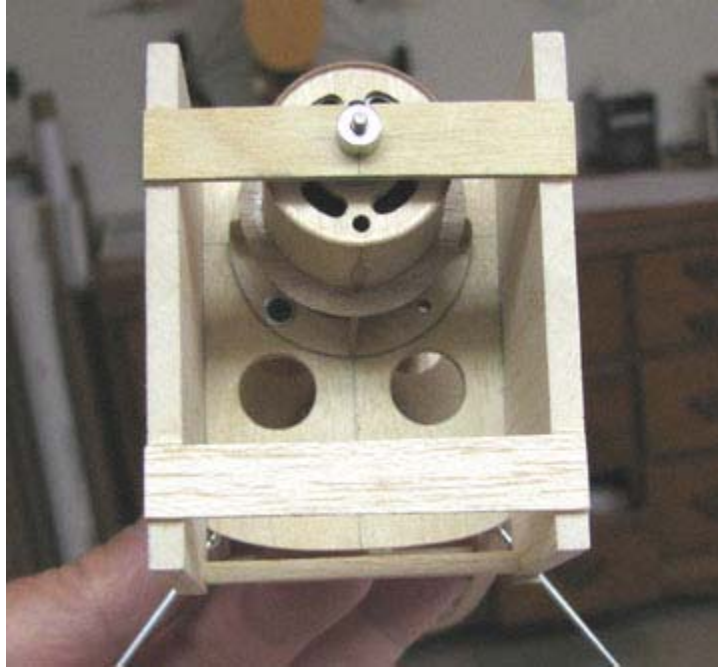
below. Thank goodness, they did fit!

The aluminum tubes were removed and then permanently CA's in place as shown below.

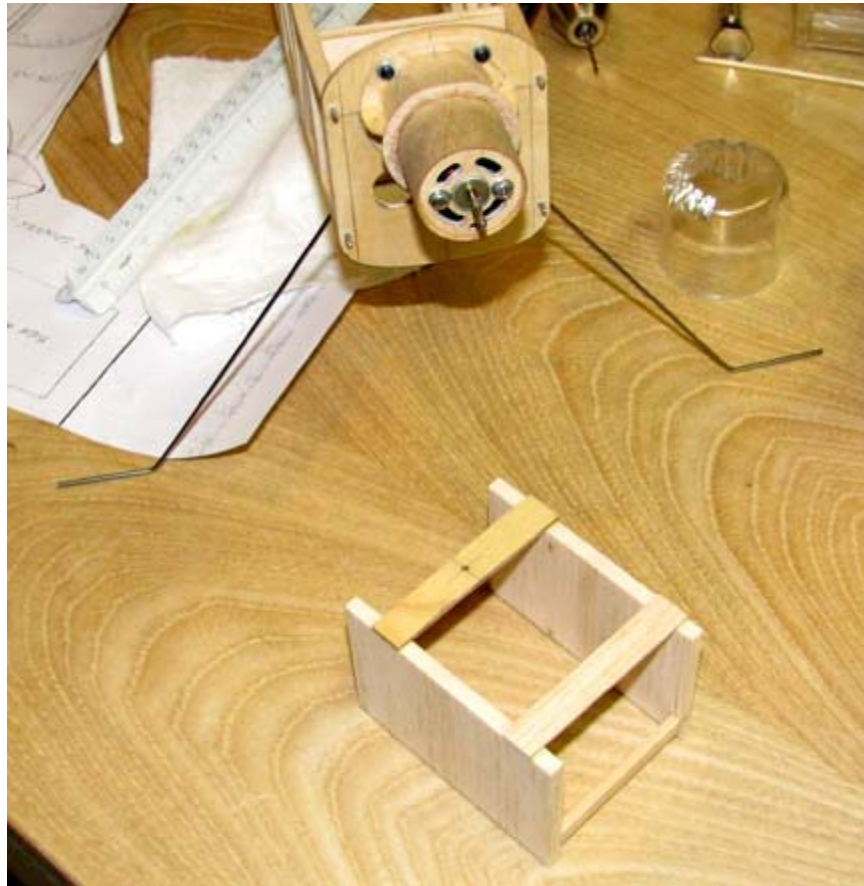


A strip of 1/16" plywood was drilled out for the Speed 400 motor shaft. This plywood

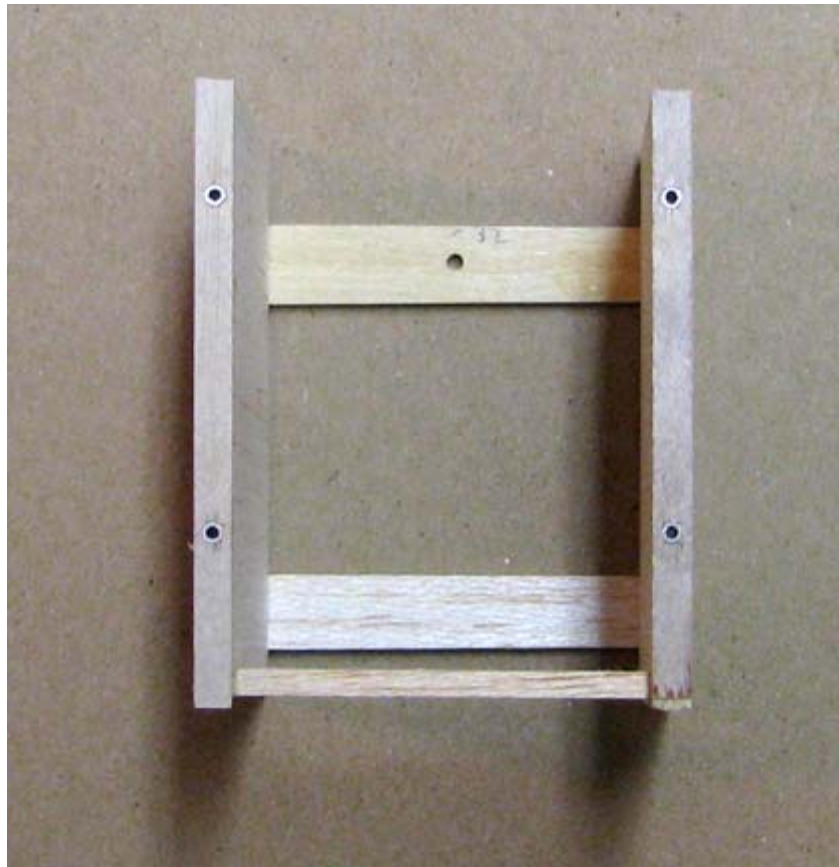
strip was forced down against the front of the cowl sides and held down with a 3/32" wheel collar as shown below. Even though the fuselage sides taper in at the front, the cowl sides were positioned perpendicular to the firewall and CA's to the plywood strip. In addition, a second balsa strip was added on the front of the cowl sides to jig the cowl sides straight. Notice that a balsa brace was also added between the cowl sides on the bottom back near the firewall to further hold the cowl sides straight.



Once dry, the wheel collar was taken off and the cowl frame was removed from the fuselage as shown below.



The cowl frame was turned over and this picture taken to show the four lined holes to receive the four cowl alignment pins. The reason the cowl sides are kept parallel is that any and all balsa rectangular blocks can be easily glued to the inside faces of the cowl sides.



Before the cowl sides are blocked in on top and bottom with balsa and the cowl carved to shape, a method for cowl retention must first be designed. However, that will be the subject of tomorrow's report. Work has stopped for the evening as the President's State of the Union speech is coming on at 8:00 p.m. and will last until 10:00 p.m. and Sue and I want to watch it in its entirety.....Tandy