

David Harding

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Sent: Saturday, November 21, 2009 5:16 PM
To: Undisclosed-Recipient: ;@smtp101.sbc.mail.mud.yahoo.com
Subject: 18 Speed 400 Cloudster - Shaping Tail Surfaces and Weighing

Speed 400 Cloudster Project

This picture shows the Cloudster's horizontal tail (stab and elevator) after the surfaces have been carved and shaped to form the rounded leading edges and tapered trailing edges. Due to concerns over the small gluing area of the elevator rib ends to the trailing edge, 1/16" gussets were added to one side of the ribs for additional support as shown below. This finishes up the horizontal tail structure, which is now ready for covering.



A weight check was done on the removable horizontal tail as shown below. You can see that the hinged horizontal tail structure weights 16 grams (0.56 oz), without the control horn attached.



The picture below shows the Cloudster's vertical tail (fin and rudder) after the surfaces have been carved and shaped to form the rounded leading edges and tapered trailing edges. A weight check was also done on the removable vertical tail and the hinged vertical tail structure weights 5 grams (0.18 oz), without the control horn attached. Also notice that 3/16" gussets were added to one side of three of the rudder ribs for additional support. This finishes up the vertical tail structure, which is now ready for covering.



This is a close up of the fin leading edge fairing that interfaces with the stabs leading edge.

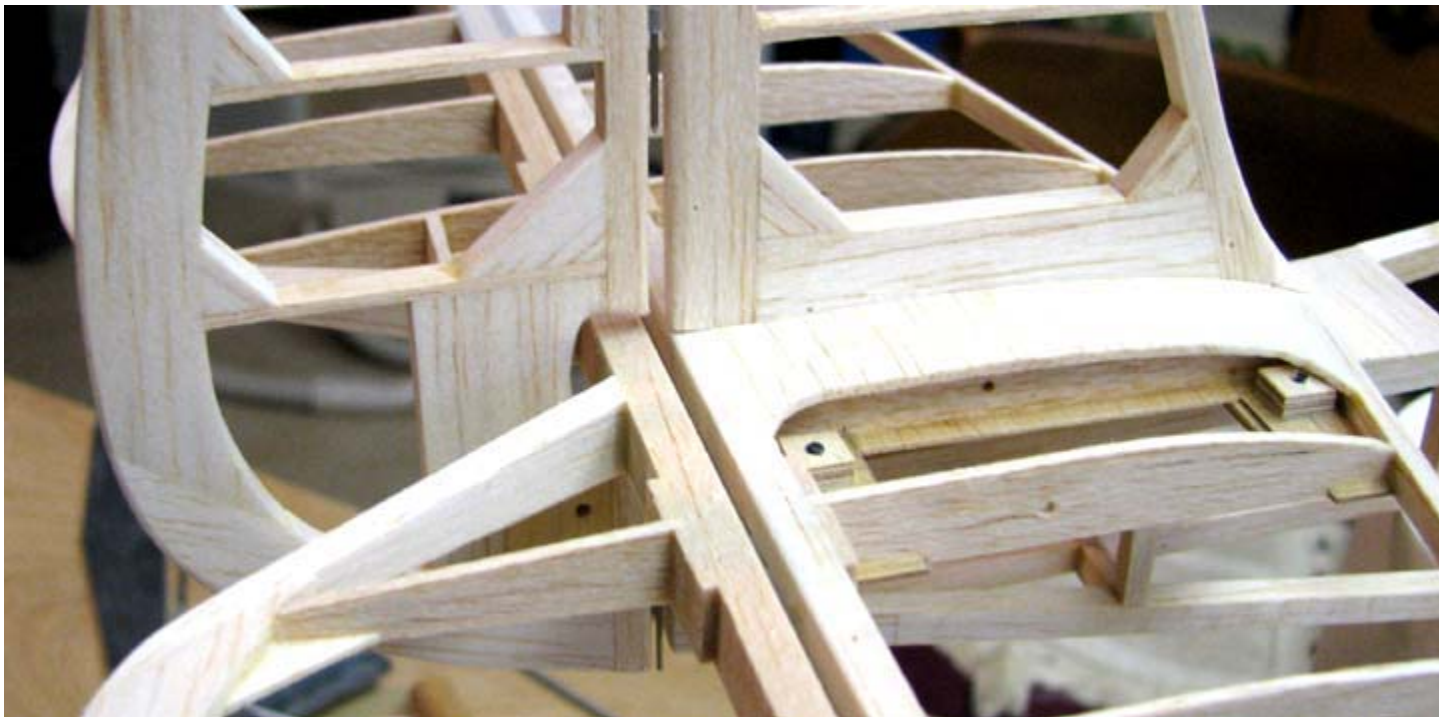


This is a close up of the of the rudder's cut out for the elevator's continuous spar pass through. Notice that a radius has been provided around the rudder's cut out opening to eliminate combination surface deflections such as full right rudder and full up elevator.

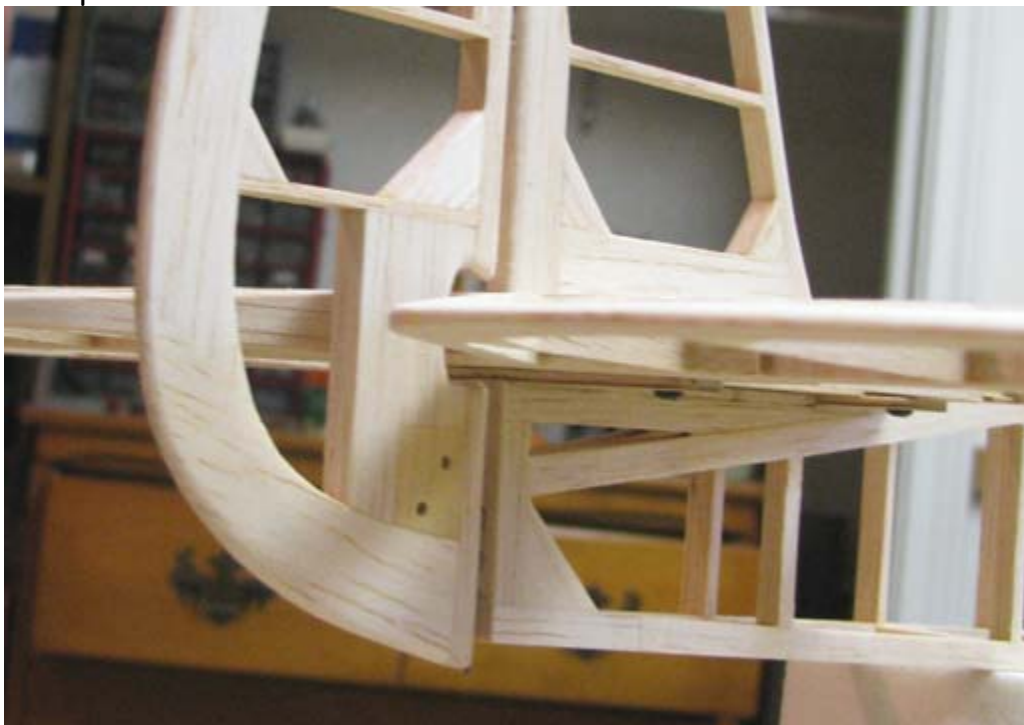


This side view close up of the tail assembly showing how the elevator's continuous spar passes through

the rudder cut out.



This is another rear view close up of the tail assembly showing the elevator's continuous spar passes through the rudder cut out. Notice that the bottom of the rudder has not been trimmed off even with the bottom of the fuselage yet. This will not be done until the fuselage's bottom bulkheads and stringers are glued in place.



As you may recall from Report No. 5, the fuselage primary structure weighed 18 grams (0.63 oz).



After building on the stab mounting platform on the rear of the fuselage, the fuselage weight has increased up to 20 grams (0.71 oz) as shown below. Therefore, the stab mounting platform only resulted in a 2 gram increase.



The completed tail assembly was mounted to the fuselage with the four 2-56 cap screws and weighed as shown below. The weight has now increased to 46 grams (1.62 oz). Notice in the picture that this weight includes the two control horns and four 2-56 cap screws to secure the control horns to the control surfaces.



This past week I have been working using a pair of +2.75 reading glasses that I bought at Walgreens for under ten bucks at Jim Lollar's recommendation. Since I broke my prescription glasses, I had to have something to provide close up vision with my single focus lens implants for distance. They took a little getting use to, but I am getting by pretty well. Hopefully my prescription glass repair will be ready Monday.....Tandy