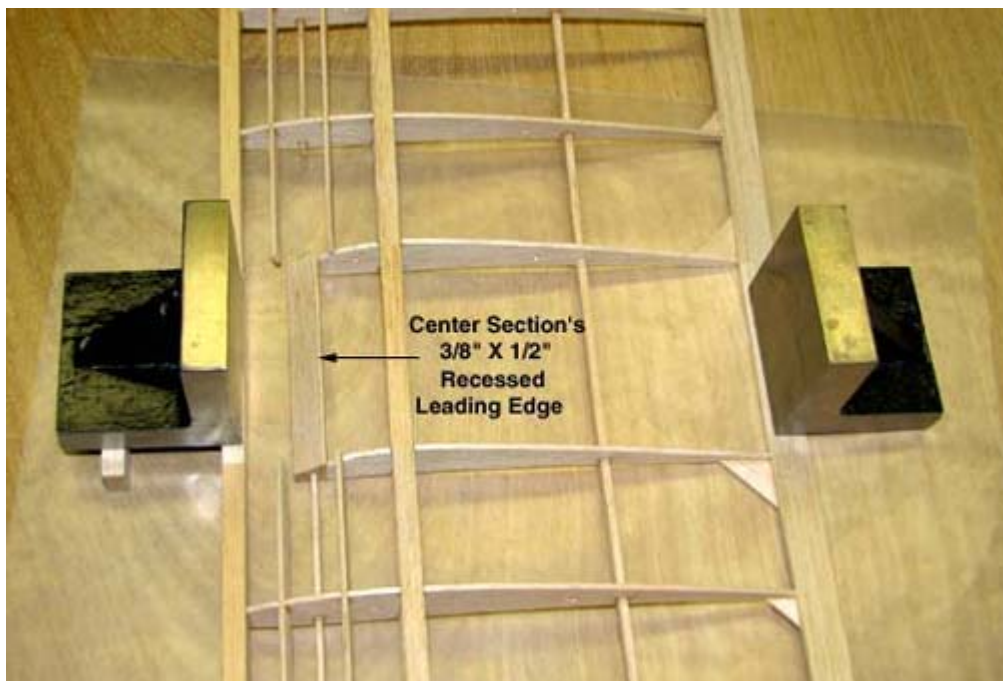


David Harding

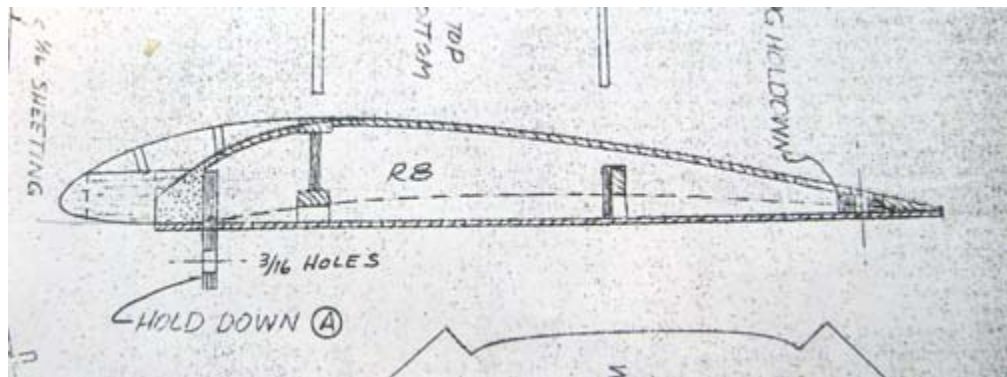
From: Tandy Walker [tandyw@flash.net]
Sent: Tuesday, January 12, 2010 6:01 PM
To: Undisclosed-Recipient: ;@smtp108.sbc.mail.mud.yahoo.com
Subject: 44 Speed 400 Cloudster - Construction of Wing's Recessed Leading Edge (Part 1)

Speed 400 Cloudster Project

The first step in creating the wing's recessed leading edge is to make the center section's portion of the leading edge out of 3/8" X 1/2" balsa stock. The forward portion of the 1/2" height is beveled down so that the front face is only 1/4" high. Next the forward portion of the two R1 center section ribs are trimmed down and then the leading edge is glued in place as shown below. To make sure the bottom face of the leading edge lies in the same plane as the center section's temporary leading and trailing edges, the wing center section's temporary leading and permanent trailing edges were firmly weighted down to the work table with two square steel blocks as shown below.



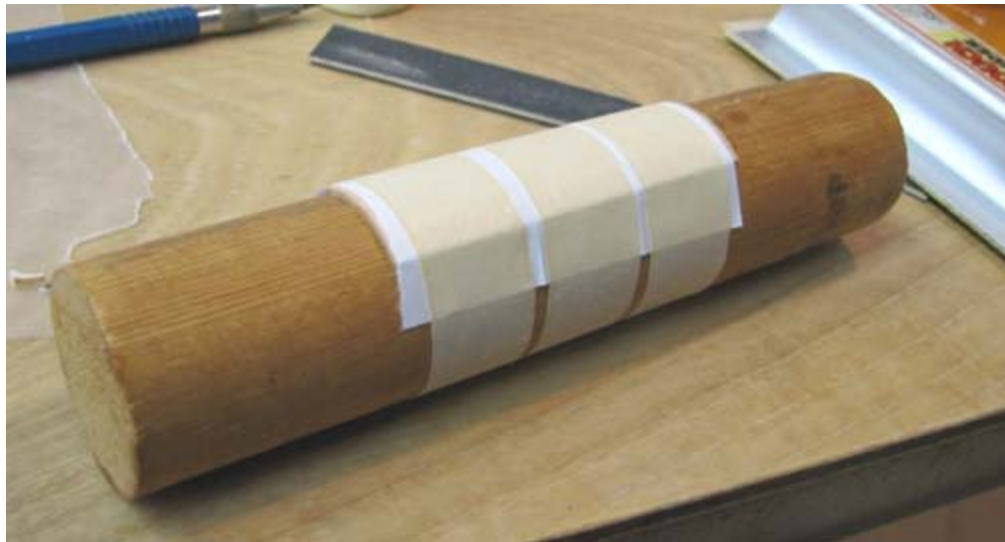
This excerpt from the Jim Adams Cloudster plan details the wing center section showing the forward plywood plate that extends down below the bottom of the center section for the forward wing attachment to the fuselage.



The picture below shows the center section structure that was added forward of the main spar. It consists of three 1/16" balsa sub ribs and a 3/32" balsa back plate with a beveled top behind the leading edge to form the slot for the 1/16" plywood plate. Notice the rather sharp curvature of the ribs between the leading edge and the main spar.



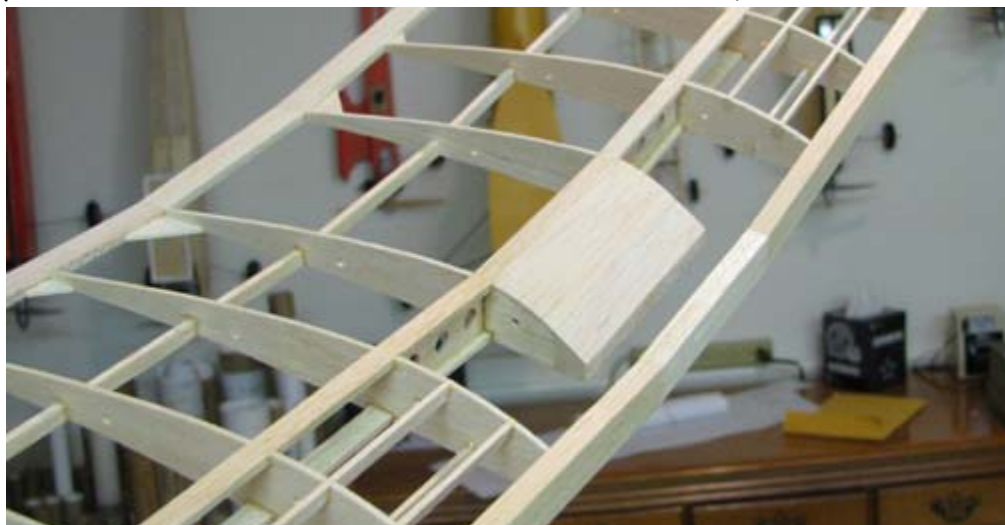
To accommodate this curvature, a piece of 1/16" balsa sheet was wetted and taped around a 1-3/8" wooden dowel to pre-form the curvature as shown below.



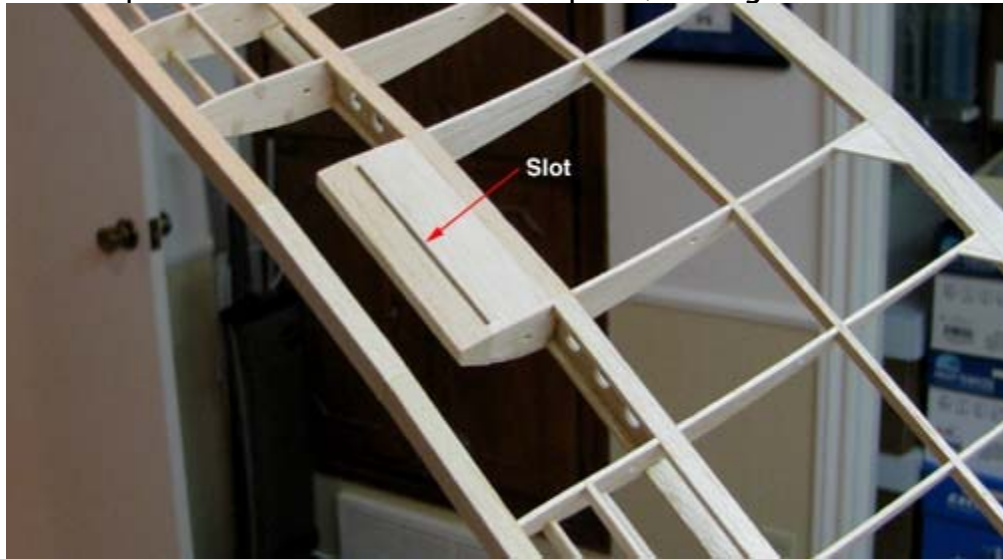
Once dry, the tape was removed and the resulting preformed 1/16" sheet is shown in the picture below.



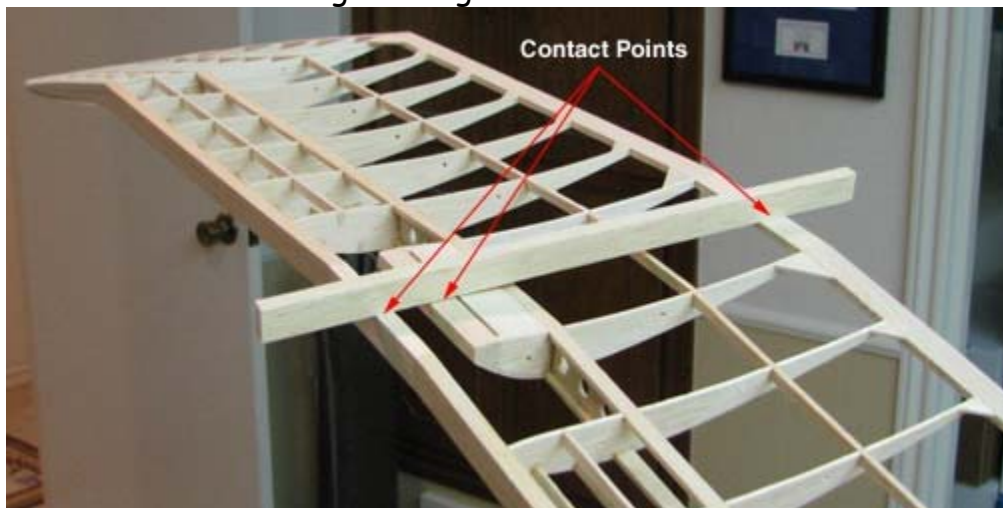
The pre-forming step makes it much easier then to glue the 1/16" balsa sheeting to the top of the forward center section structure as shown below.



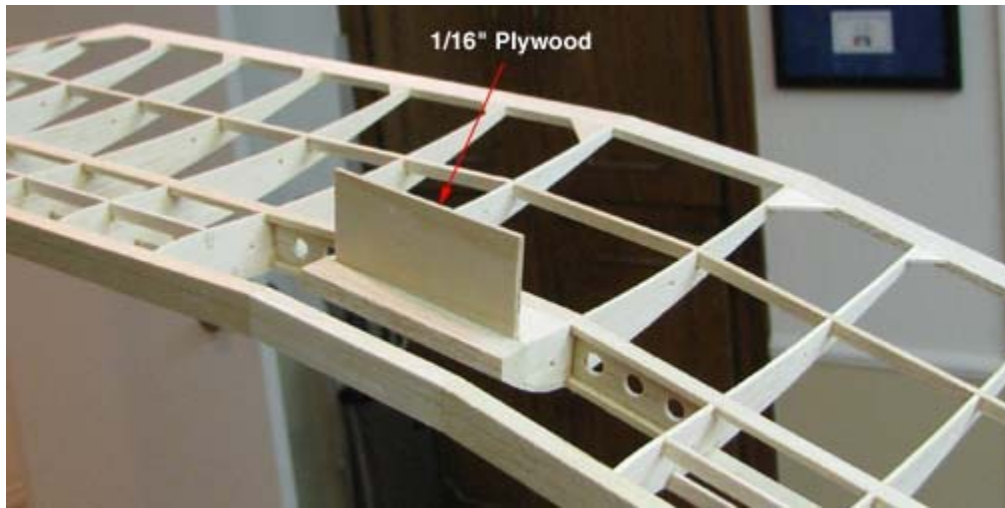
Slightly curved 1/16" balsa sheeting was also glued to the bottom of the center section between the main spar and the 3/32" balsa back plate, leaving the 1/16" wide slot open.



The temporary leading edge and permanent trailing edge have served well as a jig to accurately position the center section's permanent leading edge. In the picture below, you can see that all three lie along a straight line.



In the picture below, a piece of 1/16" plywood has been slipped into the slot for a test fit. After the wing is finished and covered, the finished wing attachment plywood plate will be glued in place.



Tomorrow the two curved portions of the recessed leading edge will be cut out and glued in place. Then the temporary leading can be removed leaving the sculptured recessed leading edge.....Tandy