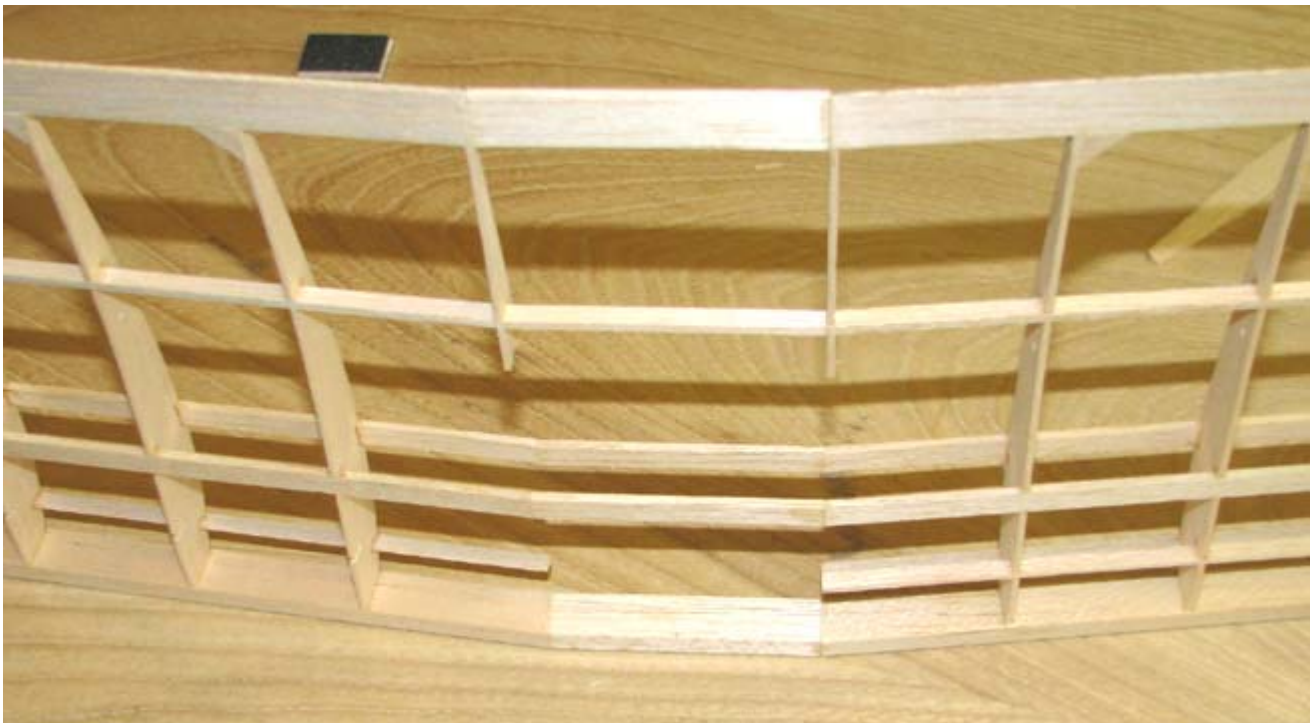


David Harding

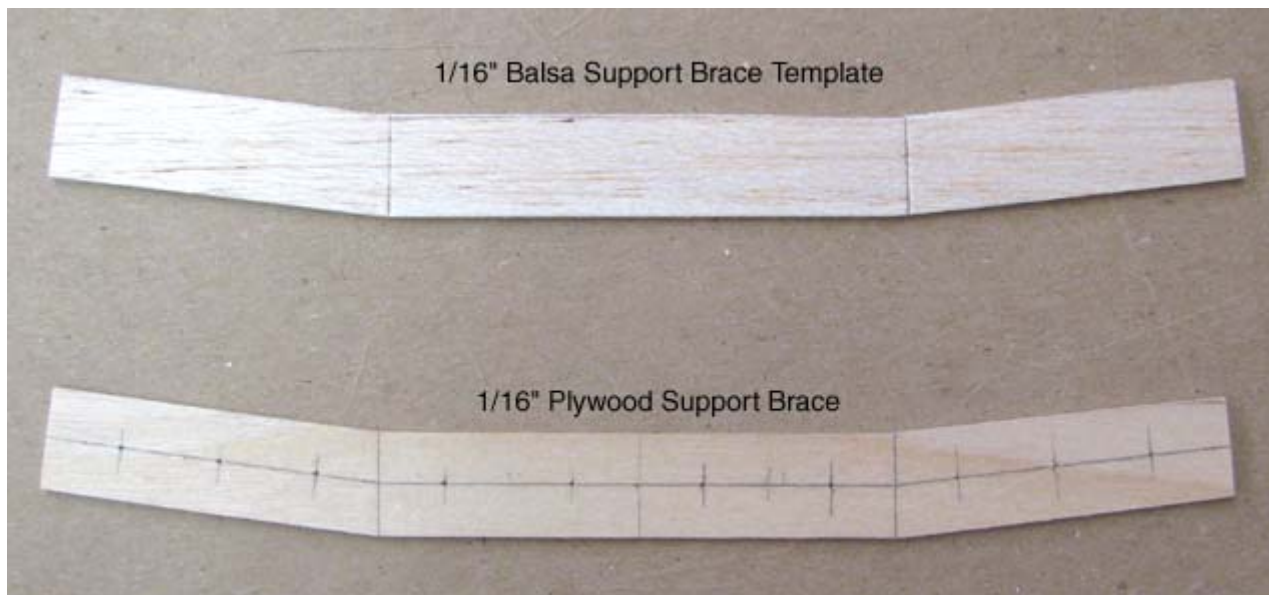
From: Tandy Walker [tandyw@flash.net]
Sent: Saturday, January 09, 2010 2:53 PM
To: Undisclosed-Recipient: ;@smtp108.sbc.mail.mud.yahoo.com
Subject: 42 Speed 400 Cloudster - Wing's Center Section Support Brace

Speed 400 Cloudster Project

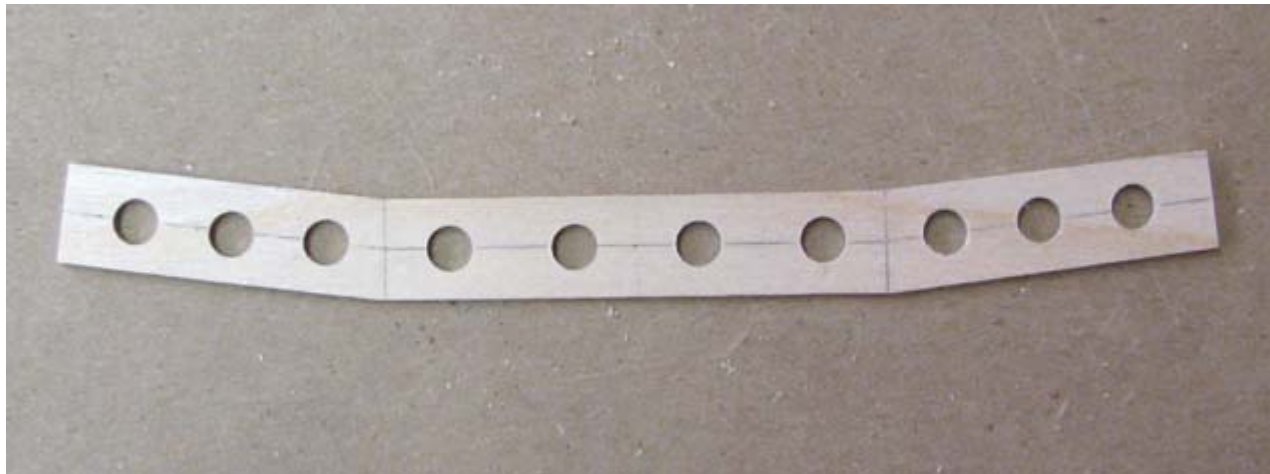
Now that the two wing halves are joined together, the remaining construction of the center section can continue. The first task was to remove a portion of the two temporary R1 ribs on either side of the center section as shown below.



In an earlier step, portions of the two temporary center section ribs between the upper and lower 3/32" X 1/4" main spars were left in place to preserve the vertical spacing between the upper and lower spars. In order to fabricate a plywood polyhedral support brace that will fit between the two main spars and bridge the center section, a template was drawn by pressing a trimmed sheet of 1/16" balsa up against the rear face of the main spars across the center section and tracing an outline from the front inside the two spars. The 1/16" balsa template was cut out as shown in the upper portion of the picture below. The balsa template was then placed on a sheet of 1/16" plywood and the pattern traced onto the plywood. The plywood support brace was cut out and sanded to fit in between the two main spars, which is shown in the lower portion of the picture below.



As part of the Cloudster's on going weight saving effort, ten 1/4" lightening holes were carefully located and made in the plywood support brace as shown below before it was glued into the center section.



The finished plywood support brace was then slipped into place between the two main spars. The 1/4" wide spars are much wider than the 1/16" brace. Since the main spars are 1/4" wide, the brace will be centered inside the spars when there is a 3/32" distance between the edges of the spars and the brace (i.e., $3/32 + 1/16 + 3/32 = 1/4$). Therefore a piece of 3/32" balsa was used to center the brace before it was permanently glued in place as shown below.



Work was stopped for today as the final design of the wing attachment to the fuselage has not yet been completed.....Tandy