

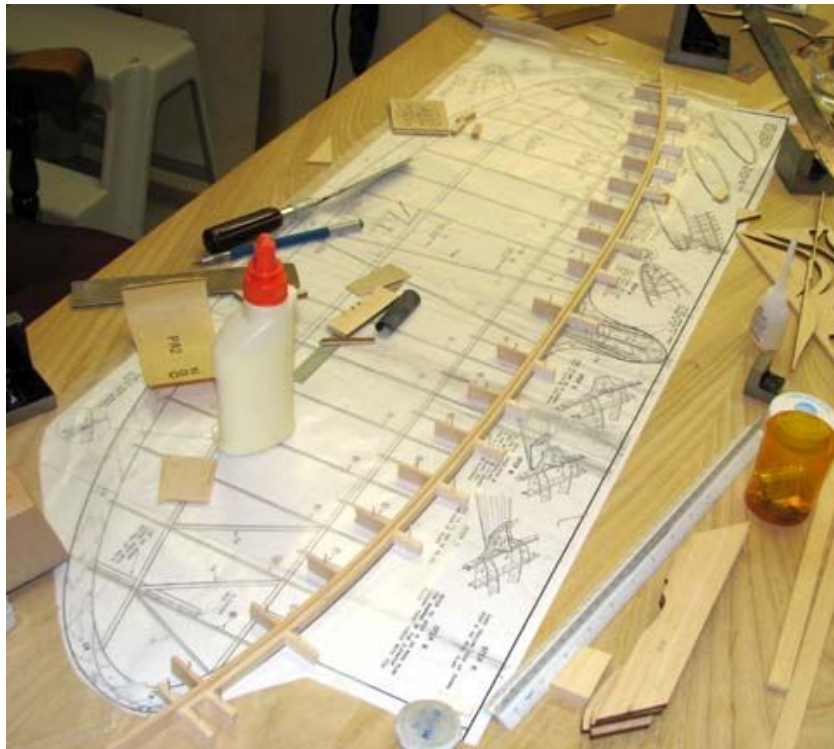
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Date: 12/9/2008 10:46:19 PM  
Subject: 15 Sailplane Starting Construction of the Stab

For the past several days I have been working on the Sailplane's large stab/elevator assembly. I have had a devil of a time thinking through the geometry and structural requirements of the elevator halves and their interface with the rear stab. Because of the stab's integrated structure and generous undercamber, the spar and hinge line design has to kind of evolved as I go along (i.e., if the stab's ribs are just cut off for the elevator portion, then the butt of the stab ribs are just sticking out above the plans all at different heights because of the stab's thickness taper and undercamber). So I have to build a little, modify a little, and then build some more.

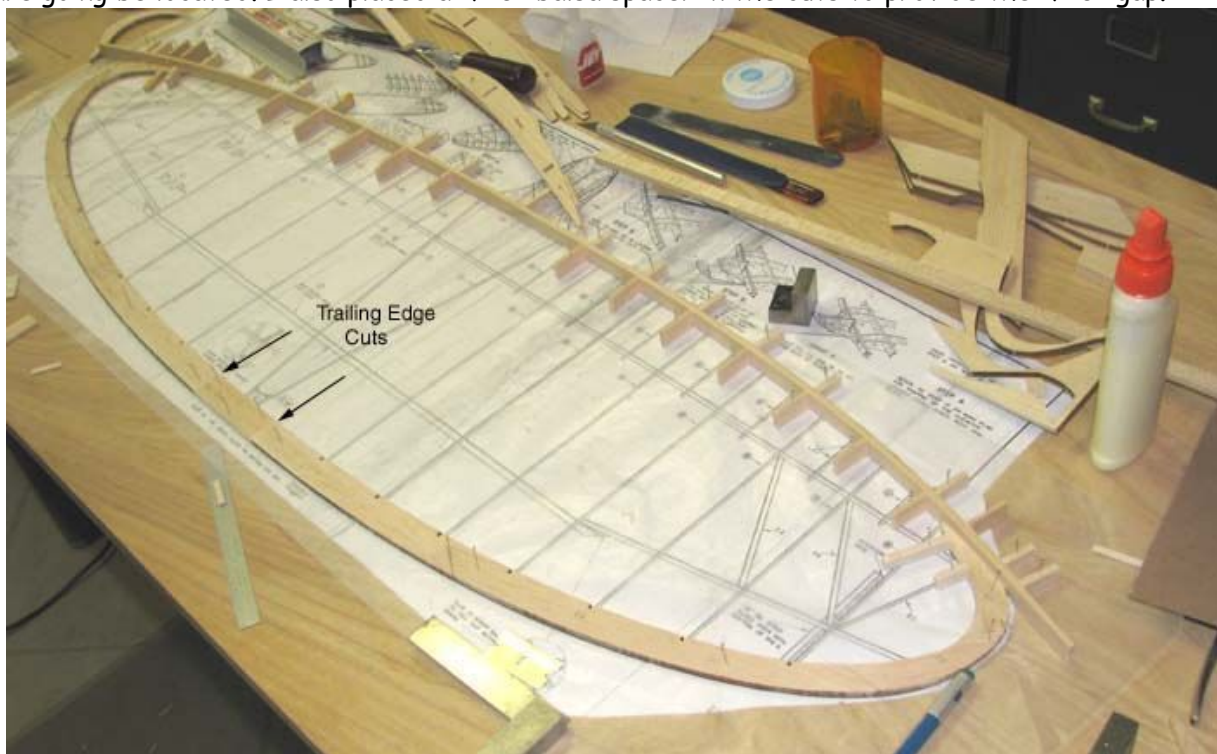
The first step was to pin down and glue the stab's wide trailing edge pieces together as shown below. The ribs were just put in place to get an idea on how to make the elevator.



Then stab's two-piece leading edge bow was glued, laminated, and pinned in place for drying overnight as shown below.



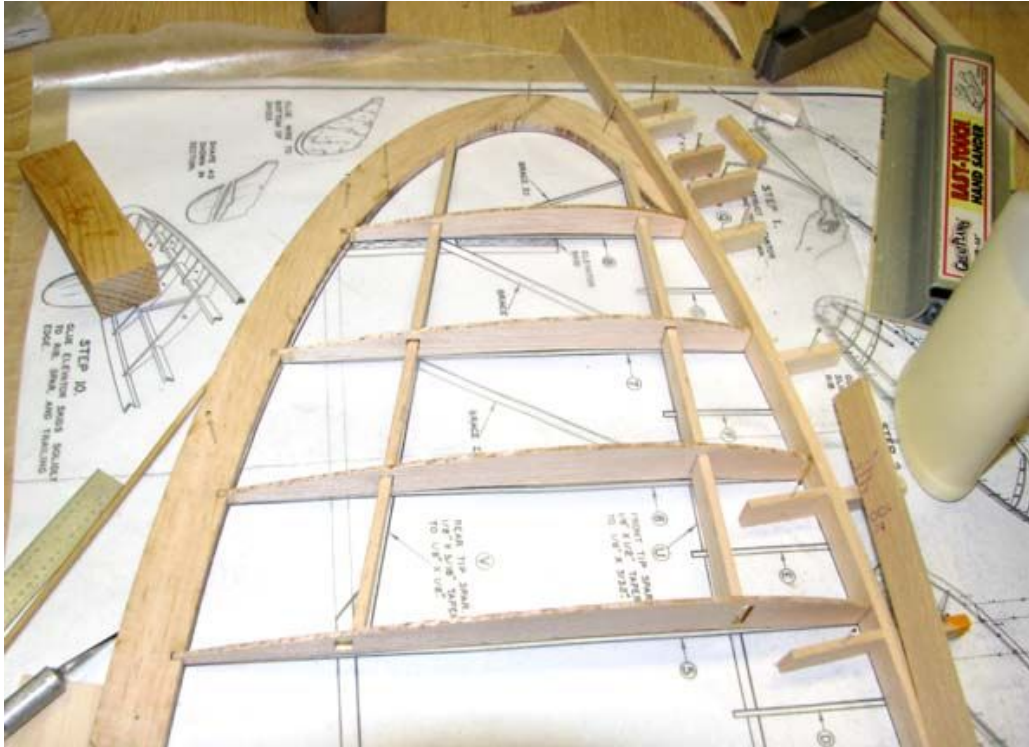
Once dry, the leading edge was then joined with the stab's wide trailing edge as shown below. As seen in the picture below, I made two cuts  $2\text{-}5/8$ " apart across the trailing edge where the roots of the two elevator halves are going to be located. I also placed a  $1/16$ " balsa spacer in the cuts to provide the  $1/16$ " gap.



The removable stab is going to have a planked center section with sufficient internal structure to secure it to the fuselage's stab platform as well as provide for a support slot for the vertical tail. Therefore, four new center section S1 ribs had to be made to accommodate  $1/16$ " planking on top and bottom. One of the new S1 ribs are shown below up against a standard rib.



Then the assembly of the stab's structure began with gluing in place the left stab tip full ribs and the two tapered spars. The stab's sub ribs will be added later.



This afternoon I did a trial fit of the stab's center ribs as shown below. Notice the three plastic clamps holding the two 3/32" ribs together with spacers in between for the vertical tail support slot. I getting very close to deciding on elevator geometry. This is quite a large stabilizer surface! My next step will be to make the two main spars for the center ribs and then glue all of this together. It is at that point, I will decide on the elevator geometry.....Tandy



