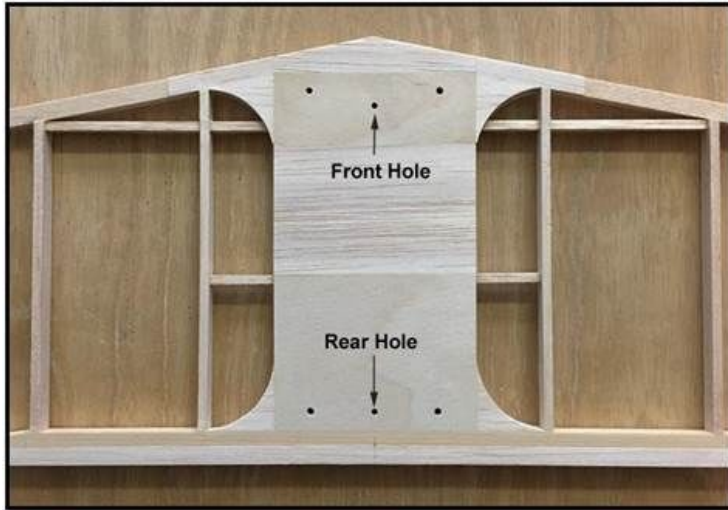


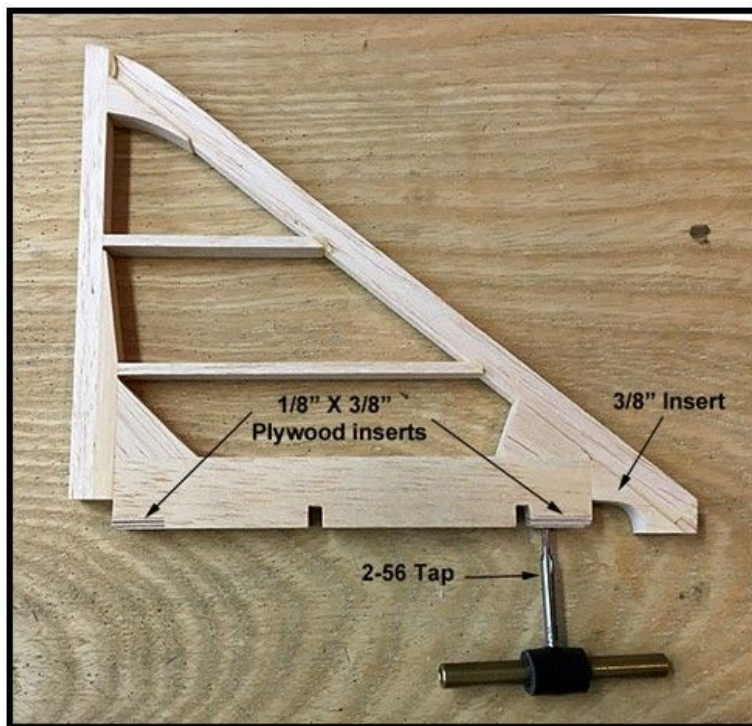
From: ["Tandy Walker" <rdb435021@icloud.com>](mailto:rdb435021@icloud.com)
 To: ["Tandy Walker" <rdb435021@icloud.com>](mailto:rdb435021@icloud.com)
 Date: 4/6/2018 2:32:46 PM
 Subject: 106 Lancer 850 - Vertical Tail Construction (Part 3)

Report No. 106
New Cyclone Lancer 850
April 6, 2018

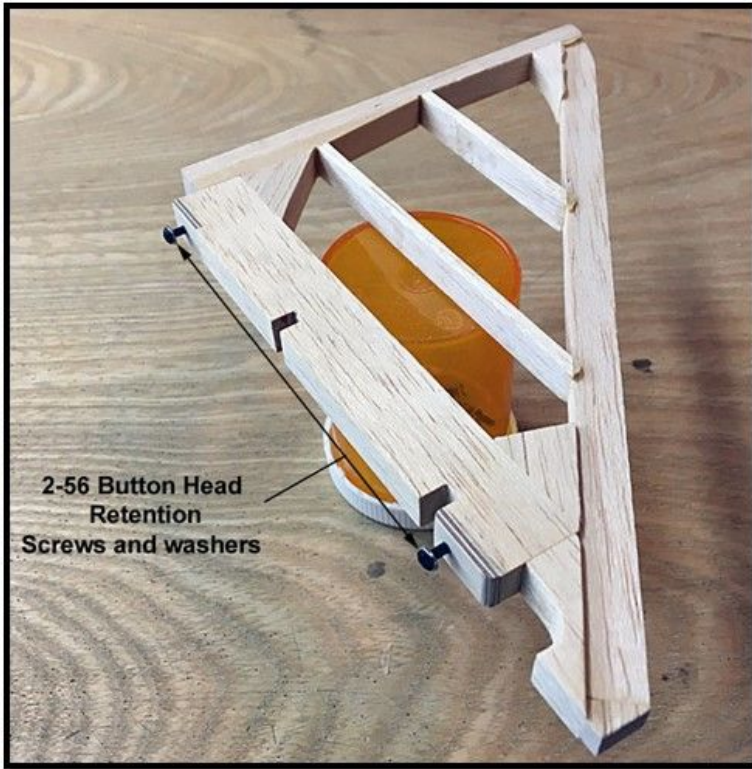
The two No. 44 holes in the center of the front and rear stab plywood plates shown below are for retaining the fin in the stab's slot on top.



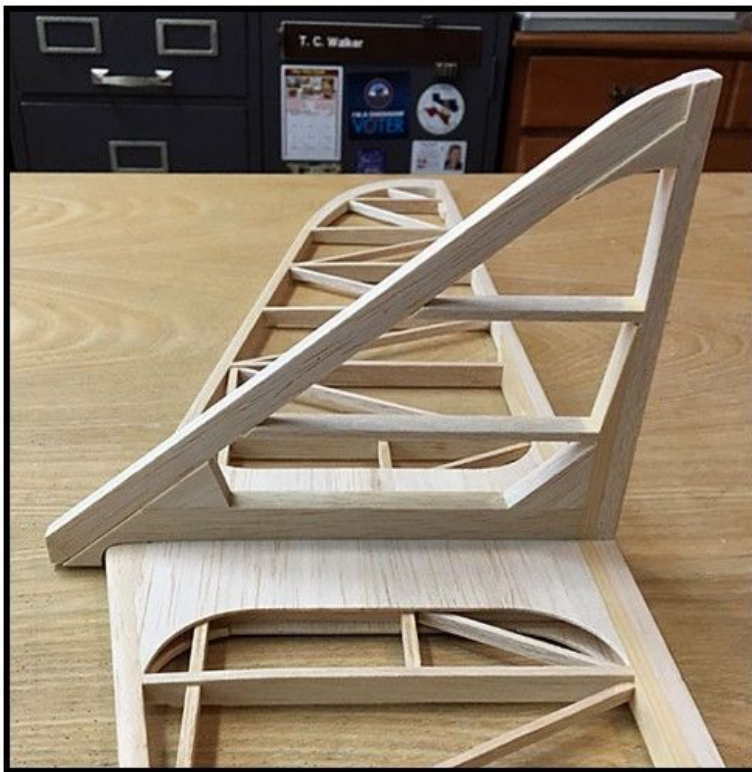
The fin's base was inserted in the stab slot and the location of the two holes were marked on the bottom of the base. Two 1/8" X 3/8" plywood inserts were drilled and threaded with 2-56 threads. The fin's base was notched on the bottom and the two inserts were glued in place as shown below. Notice the 3/8" balsa insert glued in front of the fin's base to fill in under the leading edge.



The two 2-55 button head screws shown below are used to secure the fin in the stab's top center slot.



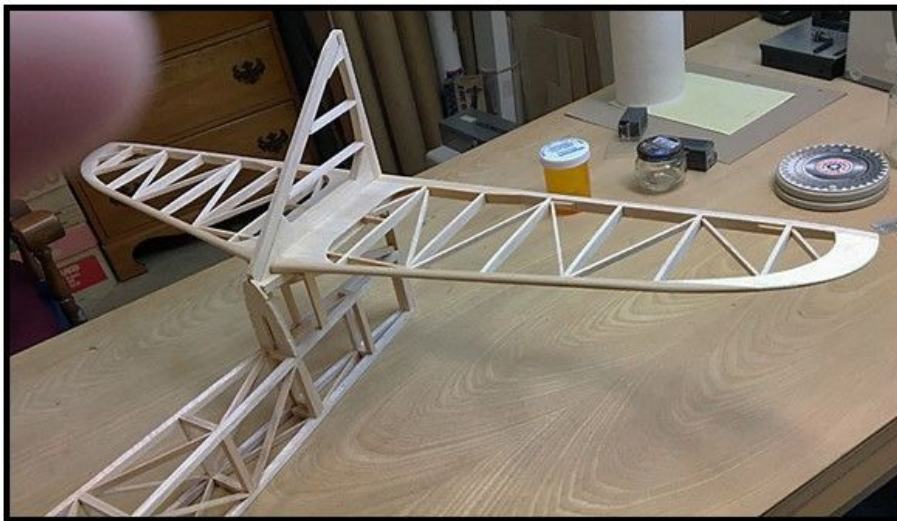
This picture shows the fin's fit in the stab slot.



This bottom view shows the two screws securing the fin to the stab.

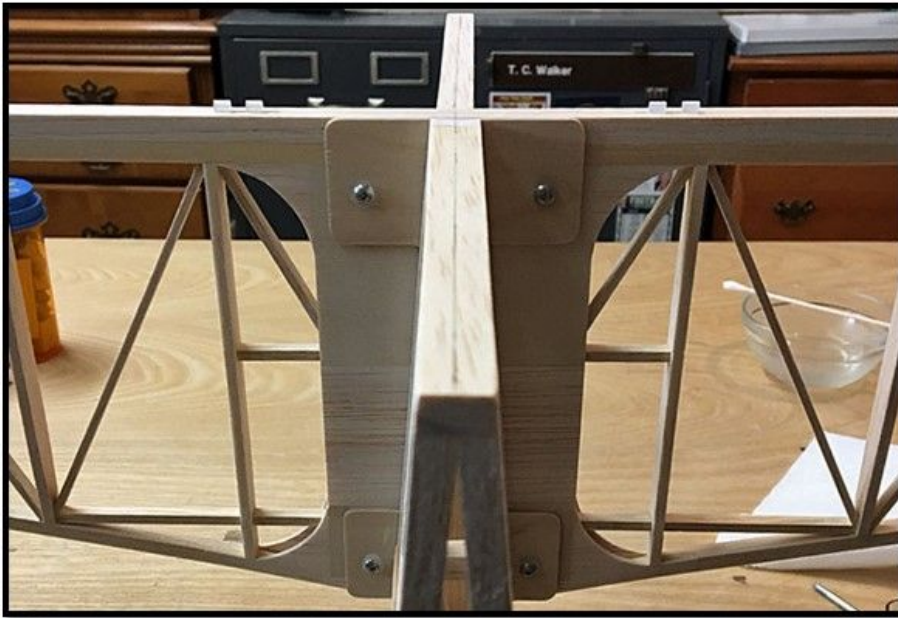


The fin/stab assembly was attached to fuselage's stab platform for a trial fit.



It doesn't seem to matter how careful you are, there is always something you miss.

It was at this point I discovered that center line of the fin trailing edge did not line up with the fuselage tail post's center line as the picture below shows! &^%\$@#* However, it wasn't clear which one was causing the misalignment.



The fuselage was again weighed down on the work table as shown below and the distances of the two stab tips above the work table were remeasured to verify that they were still equal (and they were).



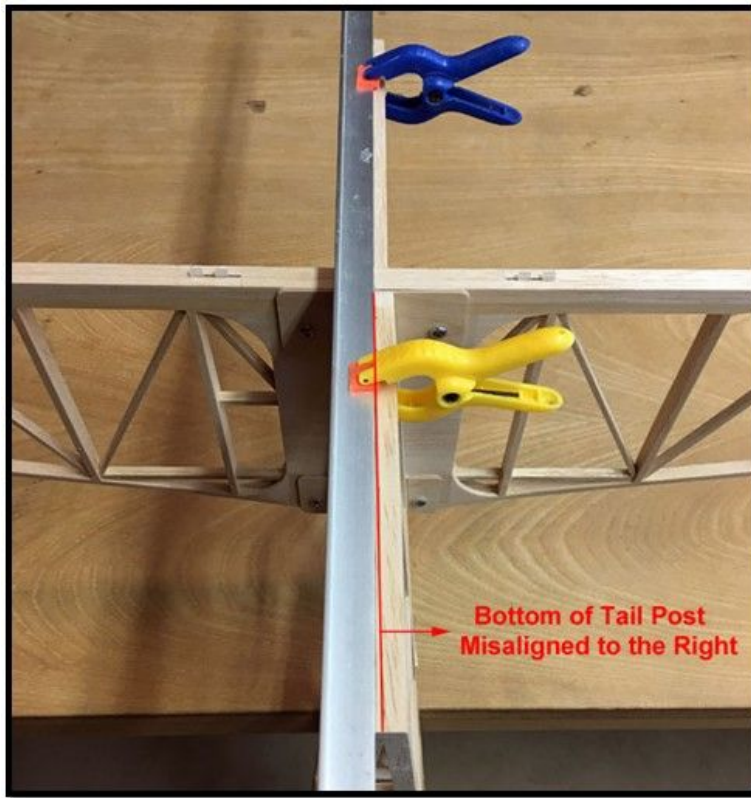
Next the fuselage was placed the heavy flat maple dinette table and weighted down. The orange triangle shown below was used to verify that the fin was perpendicular to the stab (and it was).



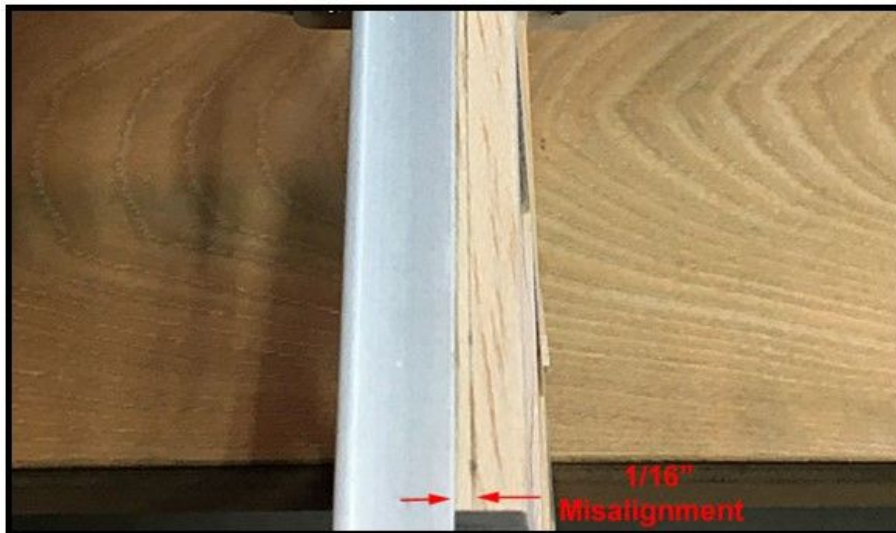
Then the orange triangle was placed on the dinette table with its top aligned with the center line at the base of the fin's trailing edge as shown below. This revealed that the tail post had somehow gotten misaligned during the assembly of the fuselage's 1/4" sq. frame structure.



The edge of a 1/2" aluminum angle straight edge was carefully aligned with the center line of the fin's trailing edge and clamped in place as shown below. As you can see by the red line, the bottom of the tail post is misaligned to the right.



In this close up, the misalignment was measured to be $\sim 1/16$ " at the base of the tail post.



Since the axis of the rudder hinge line must be absolutely straight, it will be necessary to go back now and rework the fuselage's aft structure. The left side of fuselage's tail post will be built up in a taper from 0" at the top to a 1/16" at the bottom and right side will be removed from 0" at the top to a 1/16" at the bottom. This build up modification will also be carried forward on the longerons and vertical members one to two bays and then feathered in. As large as this model is, the modification should not be too noticeable.....Tandy