

From: "Tandy Walker" <rd435021@icloud.com>

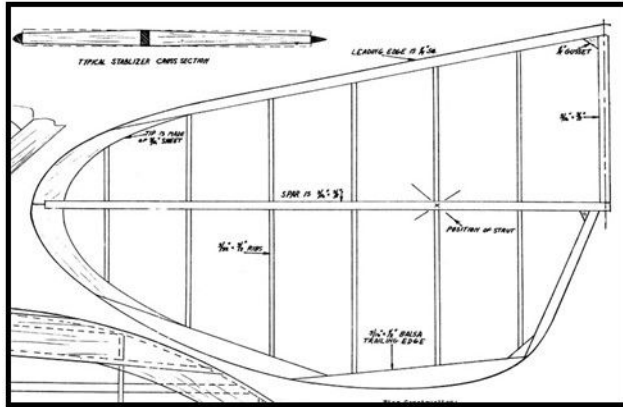
To: "Tandy Walker" <rd435021@icloud.com>

Date: 2/23/2018 2:06:37 PM

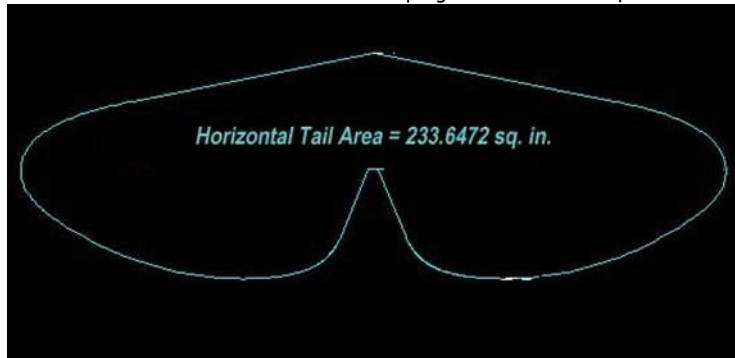
Subject: 69 Lancer 850 - Sizing the Elevator and Framing Fuselage Sides

Report No. 69
 New Cyclone Lancer 850
 February 23, 2018

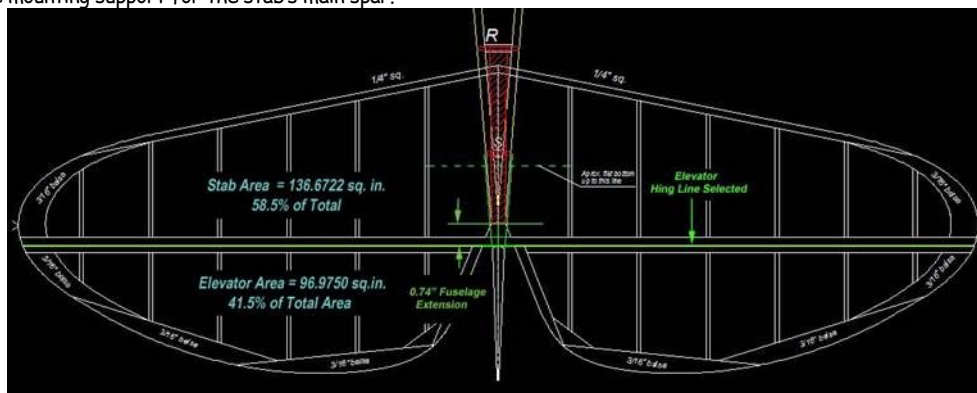
The Lancer 72 was designed as free flight and therefore the stab drawing below does not show an elevator hinge line required for R/C. Typically when converting a free flight to old timer R/C, the elevator's leading edge is simply a second spar added behind the main spar with the hinge line in between. However in the case of the Lancer's stab, this would make the elevator area some ~ 60% of the horizontal tail area which was considered to be too large.



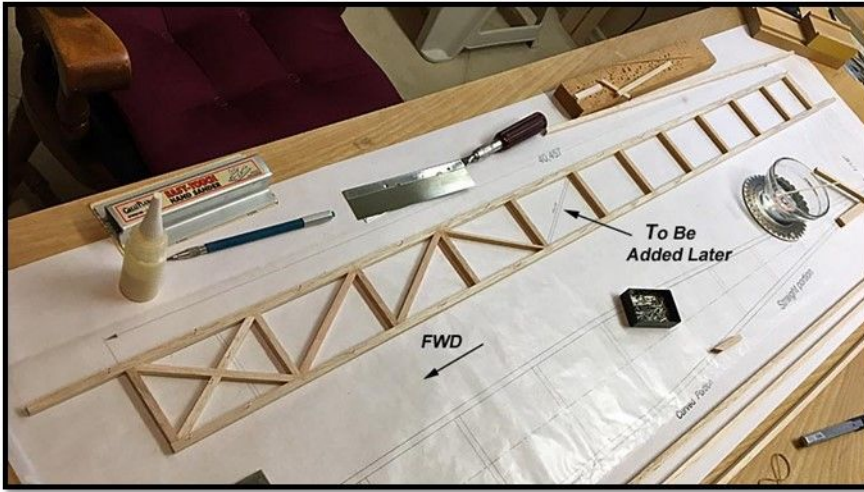
The Lancer 850 horizontal tail area was calculated in the ACAD program as ~ 233.65 sq. in. on as shown below.



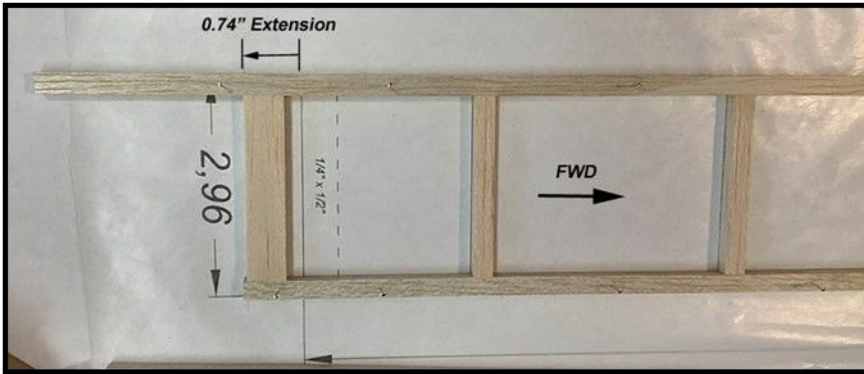
To come up with a smaller and more proportional elevator size, the horizontal tail's main spar was moved back 0.74" based strictly on a judgment of what looked about right. This resulted in an elevator area of 96.9750 sq. in. (~ 97.0 sq. in.), which is 41.5% of the total 233.65 sq. in. horizontal tail area as calculated in the ACAD program. The elevator's leading edge will be a second spar added on behind the main spar as shown below. The size and location of the horizontal tail remains the same, but moving the stab's main spar back also required an aft fuselage extension of 0.74" as shown below to provide mounting support for the stab's main spar.



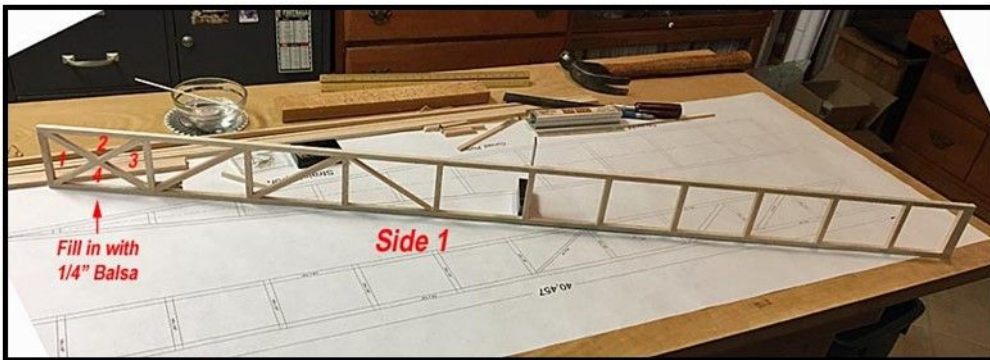
Wednesday afternoon the first side of the fuselage's primary structure was framed up as shown below using Alfredo's drawing generated on his ACAD program. Notice that 1/8" X 1/4" diagonal was omitted in the frame's 5th structural bay. This will be added later after the two sides have been joined and all of the structure's cross pieces glued in.



This close up shows the 0.74" extension on the aft end of the structure's side.



This morning Side 1 was unpinned from the plan and the ends trimmed as shown below. The four "X" openings in the front of the structure will be filled in with 1/4" balsa later.



Finally the second side of the fuselage's primary structure was framed up as shown below and will be left to dry overnight.....Tandy

