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Date: 1/24/2018 3:04:13 PM

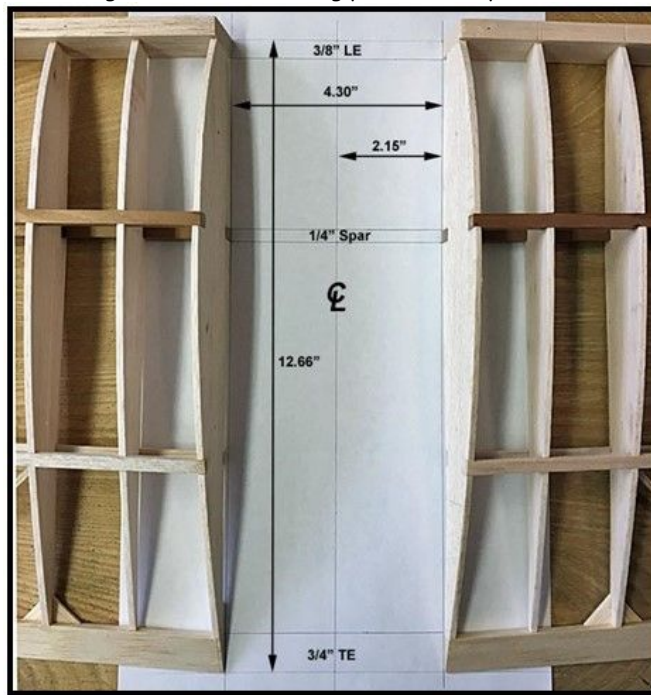
Subject: 43 Lancer 850 - Jig Approach for Joining Wing Panels (Part 1)

New Cyclone Lancer 850

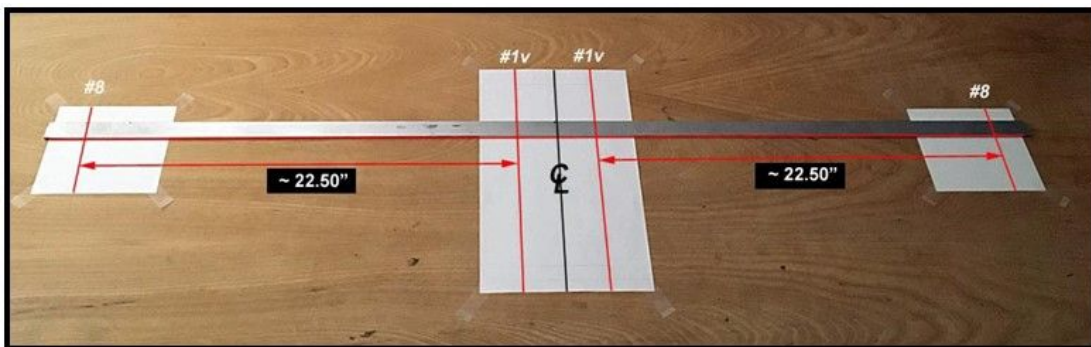
January 24, 2018

Joining the Lancer 850 two wing panels to the wing's center section is not a task to be approached lightly. The design of the jig for building in the wing's 10.164° dihedral angle must also make certain that the main spars of the two long tapered wing panels be collinear (aligned) so that they are straight from tip to tip.

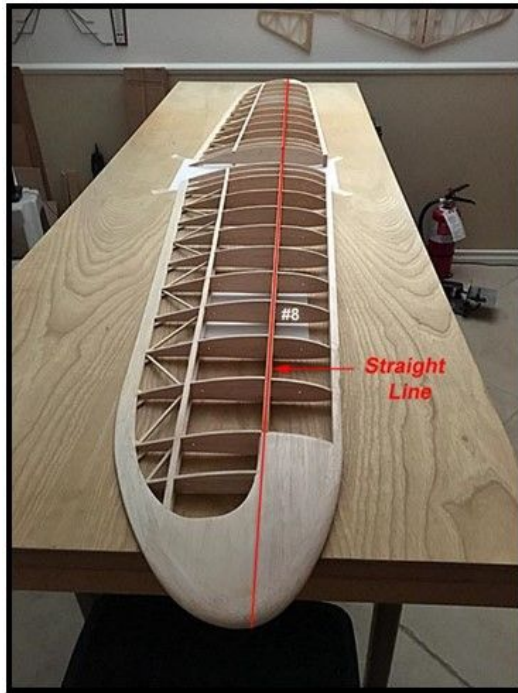
First the wing's center section was drawn on legal size bond paper. This close up of the drawing shows the center section's critical dimensions. The width of the 4.30" center section is the same as the width of the fuselage, which places the wing's dihedral breaks on the outer edges of the fuselage's top longerons. However, the slightest error in jiggling the root of wing panels will result in a significant misalignment of the two long panel's main spars.



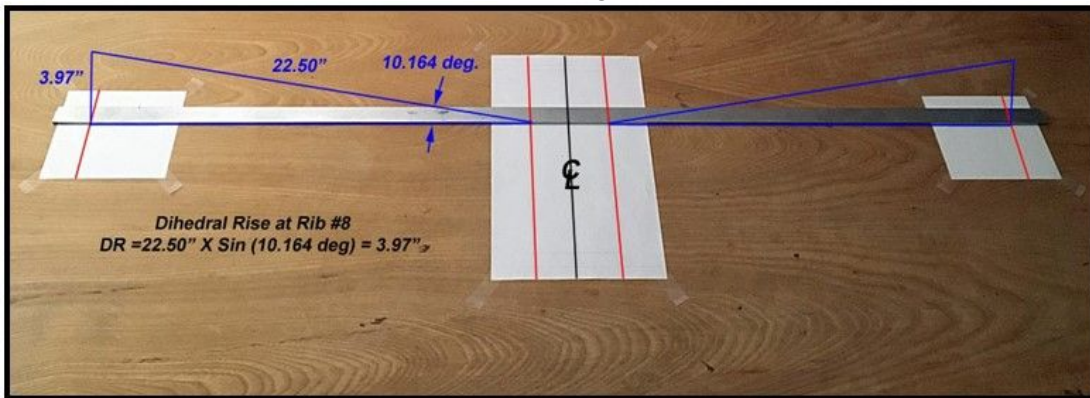
To eliminate this potential spar alignment problem, the center section drawing was taped down to the center of the work table. A ~ 53" aluminum straight edge was centered over the drawing and aligned with the rear edge of the 1/4" sq. main spar. Since the straight edge only extended out just beyond rib #8, a piece of bond paper was taped down to the work table in the vicinity of rib #8 and a line was drawn on this paper corresponding to the rear edge of the main spar. This layout on the work table is shown below.



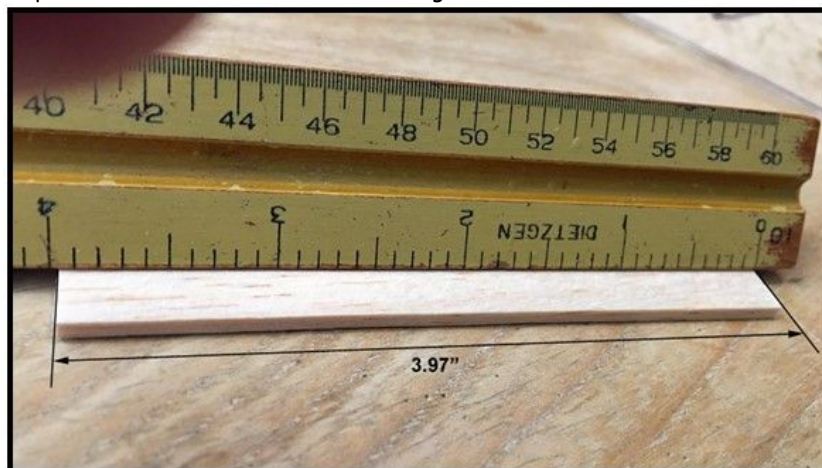
As a check, the two wing panels were carefully placed on the table layout. This picture was taken to show you that the main spars line up straight tip to tip.



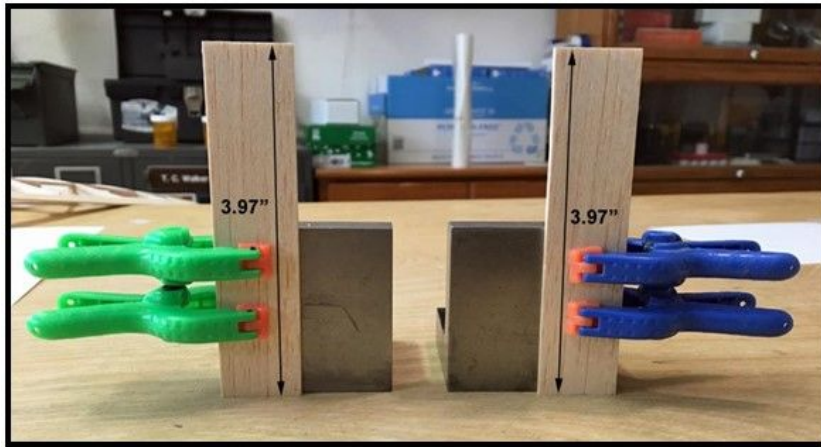
The vertical rise at rib #8 for the 10.164° dihedral angle was calculated to be 3.97" as shown below.



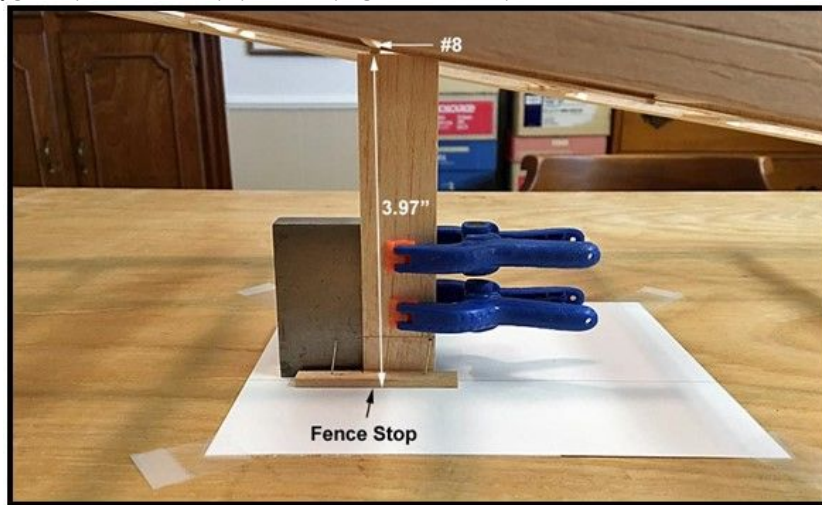
Two pieces of 3/32" balsa were cut to a length of 3.97", one of which is shown below.



A pair of vertical rise jigs were made by clamping the balsa pieces to the edges of two 2" steel block squares shown below.



For jig placement repeatability, a 2" strip of 1/8" X 1/4" balsa "Fence Stop" was pinned on the paper line. The balsa face of the vertical rise jig was placed on the paper line up against the stop under rib #8 as shown below.



This is a frontal view of the two wing panels elevated to a dihedral angle of 10.164 deg., which are supported by the pair of vertical rise jigs.



Another view from the rear.



The next step will be to start building in the wing's center section between the two wing panels, but that discussion is forthcoming in Part 2 of this series.....Tandy