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Subject: 81 Lancer 850 - Completing Rear Wing Attachment

Report No. 81

New Cyclone Lancer 850

March 7, 2018

Having shown the wing's alignment with the fuselage to be satisfactory, the next step was to complete the fuselage's attachment block and permanently integrate it into the fuselage's 1/4" frame work. The bottom of the attachment block was carved and sanded down as shown below to be flush with the bottom of the top longerons.



A 1-1/8" sq. plywood doubler was drilled and glued to the bottom attachment block as shown below. Then the 1/4-20 tap was run through the block and plywood to cut the threads in the doubler.



The ends of the attachment block were pre-glued with aliphatic glue and let dry. A sheet of aluminum foil was placed on the bottom of the wing's center section and folded over on top of the trailing edge to prevent any glue from accidentally sticking to the bottom of the wing's center section.

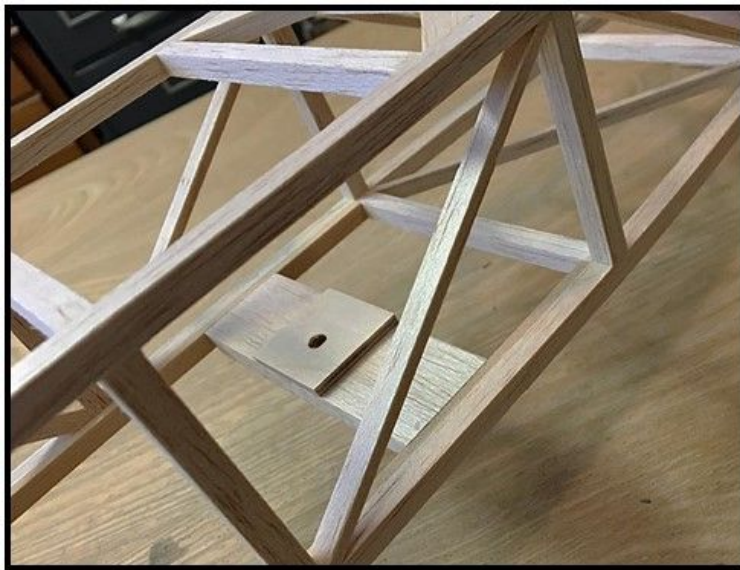
Next the attachment block was screwed to the bottom of the wing's center section. Aliphatic was brushed onto the insides of the longeron's spruce doublers. The attachment block was pushed down between the two top longerons and the wing was pushed forward which inserted the wing dowels into bulkhead C, slid the ends of the attachment block into the glue on the insides of the longeron's spruce doublers, and firmly positioned the wing on the fuselage's frame.

4/27/2018

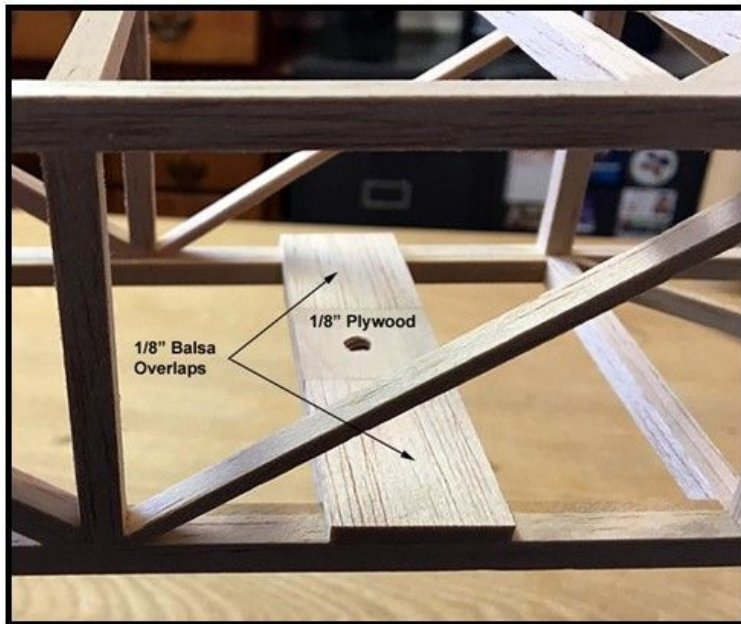
As you can see below, a piece of reversed trailing edge was placed on the center section's trailing edge and two Quick-Grip clamps were used to clamp the rear of the wing to the fuselage's two top longerons. The assembly was turned over and all of the excess glue was removed with a wet Q-Tip. Then the assembly was placed on the work table and left to dry overnight.



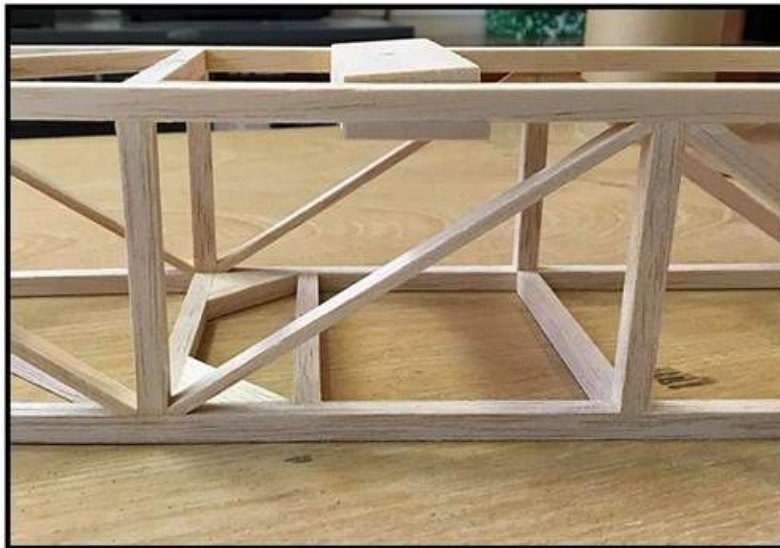
This morning the wing was removed. As you see, the butt joints of the bottom of the attachment block are in fact flush with the bottom of the top longerons.



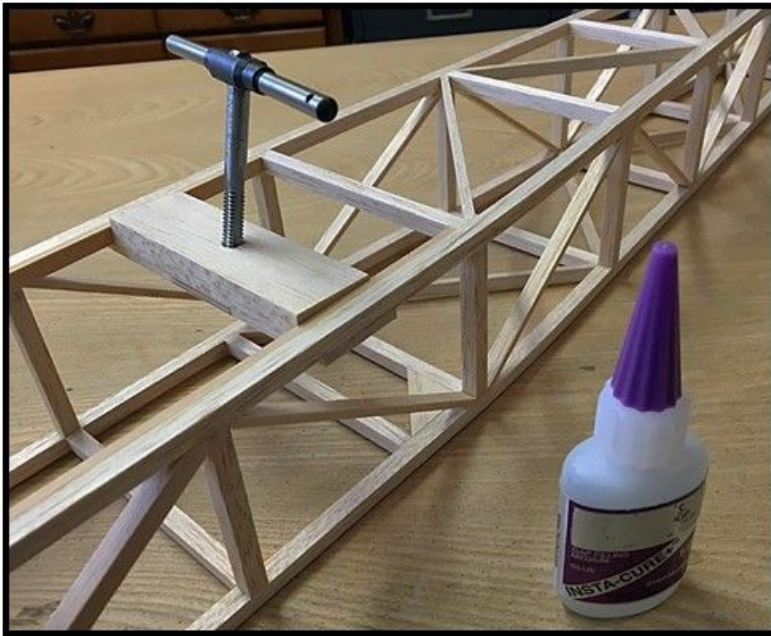
1/8" X 1-1/8" balsa doublers were glued on either side of the block and overlapped onto the longerons as shown below.



The picture below shows the attachment block glued to the top longerons. Additional support structure will be needed to transfer some of the attachment block's load down into the lower longeron, however this issue will be addressed at a later date.



The 1/4-20 threads inside the attachment block were coated liberally with medium CA to harden the threads. Once the CA had hardened, a 1/4-20 tap was run through the threads as shown below to make sure they were clean and smooth.



This is a close up of the harden threads in the top of the balsa attachment block.



This is a close up of the harden threads in the 1/8" plywood doubler on the bottom of the attachment block.



This picture shows a trial fit of the wing attachment's 1/4-20 nylon screw threaded into the attachment block. The feel of the screw verified that the threads were a good fit.....Tandy

