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Date: 12/30/2017 11:25:41 AM
Subject: 23 Lancer 850 - Change in Wing Spar Wood

New Cyclone Lancer 850

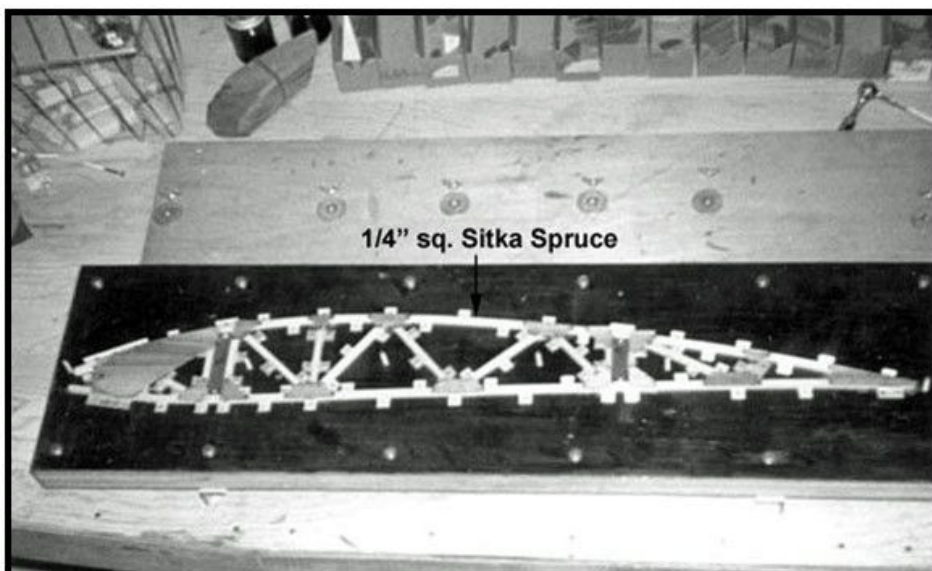
December 30, 2017

I had a little down time between Christmas and New Year's so I thought I would start framing up the right wing panel Lancer 850. When I started trying to select the two med-hard 1/4" X 1/4" X 48" balsa strips for the main spars, I found only one strip that I could use and all 5 of the other strips were unsatisfactory! They were generally too soft and the 1/4" sq. cross sections were noticeably less than a 1/4" on one side, so I decided to use some shorter spruce strips I have been saving for a long time.

Early in 1962 I ordered the plans and started to build an experimental aircraft called the Smith Miniplane shown below.



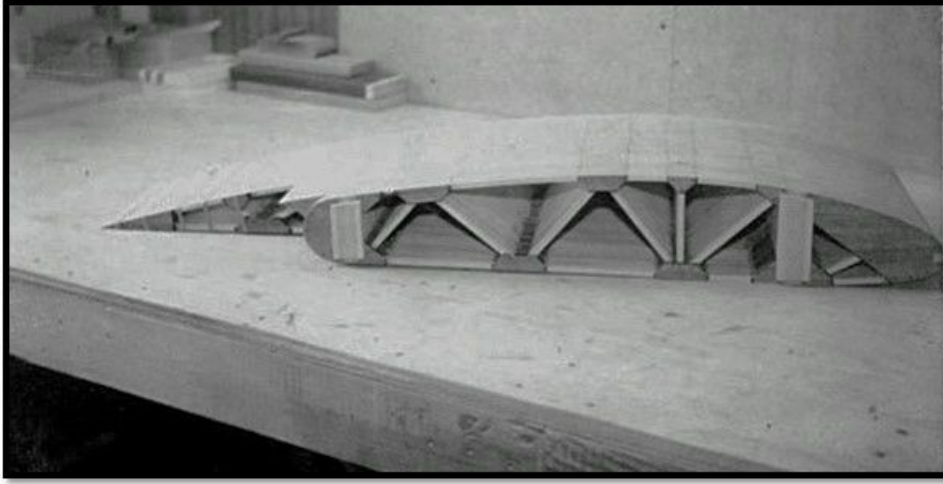
The wing ribs were constructed on a steel plate jig using 1/4" X 1/4" X 36-3/4" Sitka spruce strips and 1/16" Pilipino mahogany gussets as shown below. These materials were "aircraft certified" and were ordered from the Aircraft Spruce & Specialty Company in California. The 1/4" sq. strips were accurately cut at exactly a 1/4" inch on all four sides with almost no variation.



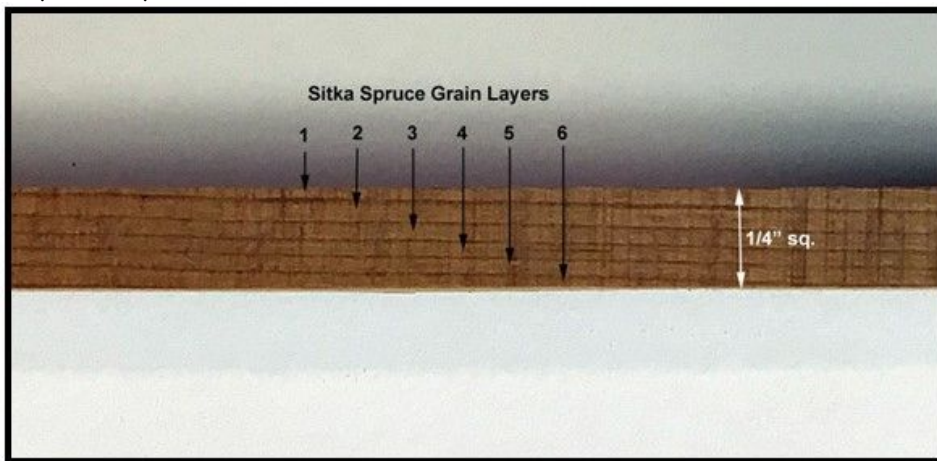
This pictures shows all of the completed wing ribs for both wings blocked together on two

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short spar stubs.



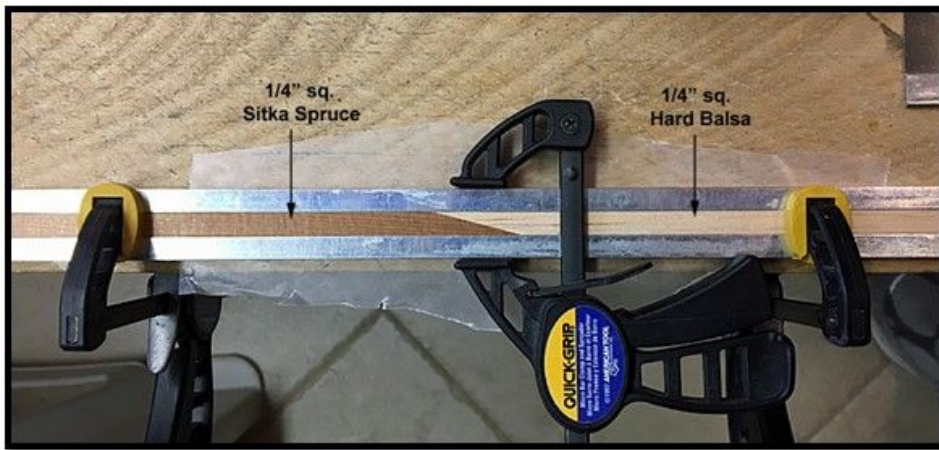
There were several of these 1/4" spruce strips left over from the rib build which I have kept stored away for years. In the picture below, you can see the 6 tight grain layers on the side of one of the 1/4" spruce strips which makes it so strong. It is hard to find this quality of Sitka spruce anymore.



The 36-3/4" length of these spruce strips was a little short out at the tip for the Lancer 850 wing panel as you can see below.



So a piece of 1/4" square hard balsa extension was scarfed spliced to one end of the spruce strip using aliphatic glue as shown below.



The hard balsa spar extension completes the wing spar as shown below.



In this close up, the balsa spar extension is only 1-3/4" long out at the wing tip. Notice that the scarf splice will also be supported by rib No. 13. This afternoon, I will add the balsa extension to the other three spruce main spars.....Tandy

