

Simla Scratch Build Description

After reading a March 2011 Model Aviation Article, I wanted to scratch build the Simla, so I ordered the plans through the AMA Plans Service @: <https://plans.modelaircraft.org/>. You can download the Model Aviation Article from a Simla Build Thread located online @: <https://www.rcuniverse.com/forum/classic-rc-pattern-flying-379/10640660-simla-build-thread.html>, or from the online Model Aviation Library @: <https://library.modelaviation.com/edition/model-aviation-201103>.

The Simla was RC pioneer and legend Ed “Kaz” Kazmirski’s boldest and most ambitious design. In 1965 the Simla was a giant leap into the unknown world of large-scale RC Aerobatics (Pattern) airplanes, decades before big models would be commonplace. The Simla was an experimental, one-of-a-kind effort employing out-of-the-box thinking at a time when aircraft design was as much intuition as scientific. It featured adjustable high-, mid-, and low-wing positions; adjustable dihedral and stabilizer incidence; and, best of all, an early form of plug-in wings in an era when dowels and rubber bands were holding all other models’ wings on.

A man in a green polo shirt and blue jeans is kneeling on a grassy field, holding a large model airplane. The airplane is red and white with black accents. The background shows a line of trees under a clear blue sky. The man is looking at the airplane with a focused expression.

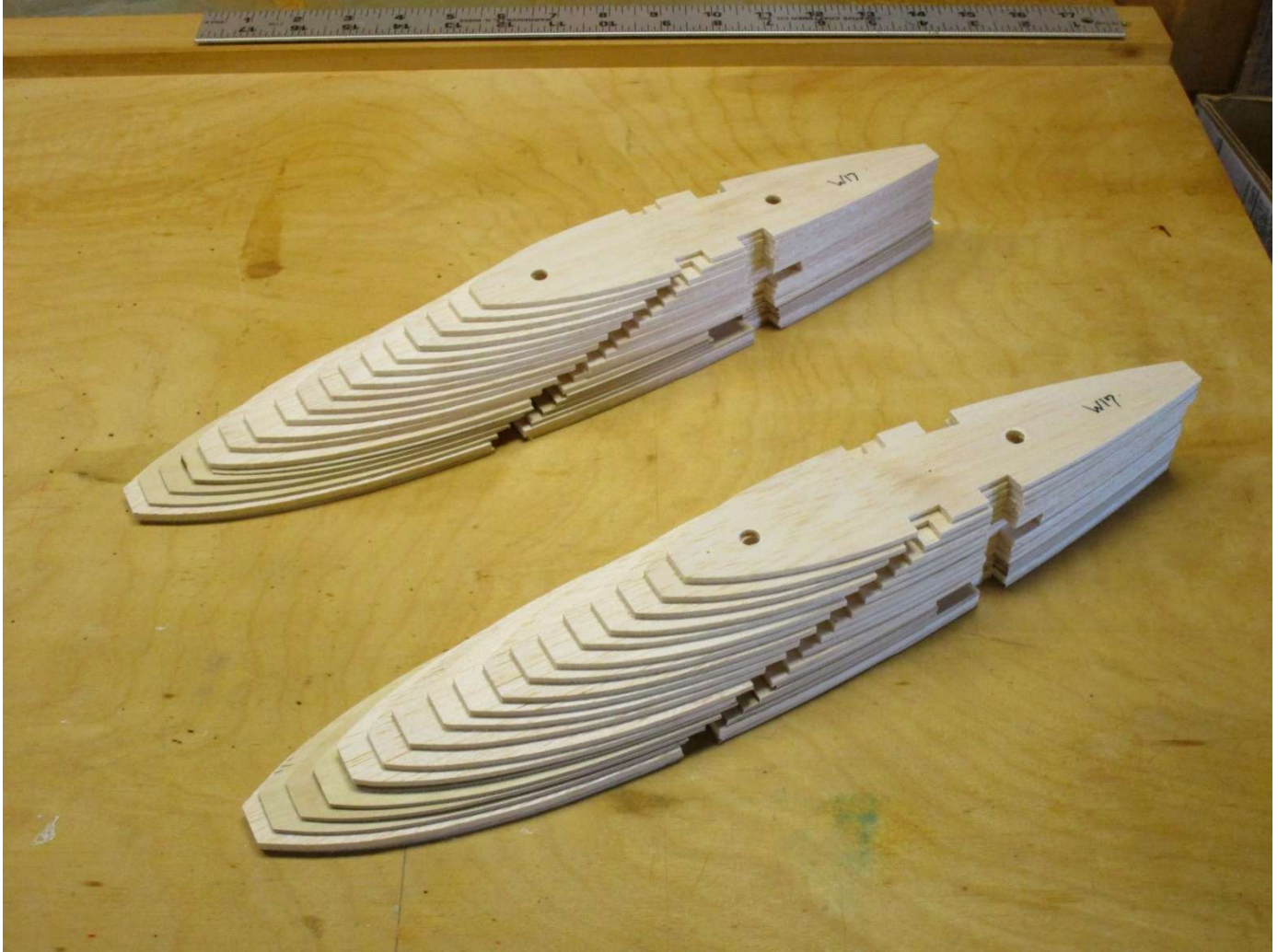
Ed Kazmirski's Simla

by Duane Wilson

The author imitates the pose with the original Simla that was featured in the World Engines ad published more than two generations earlier.

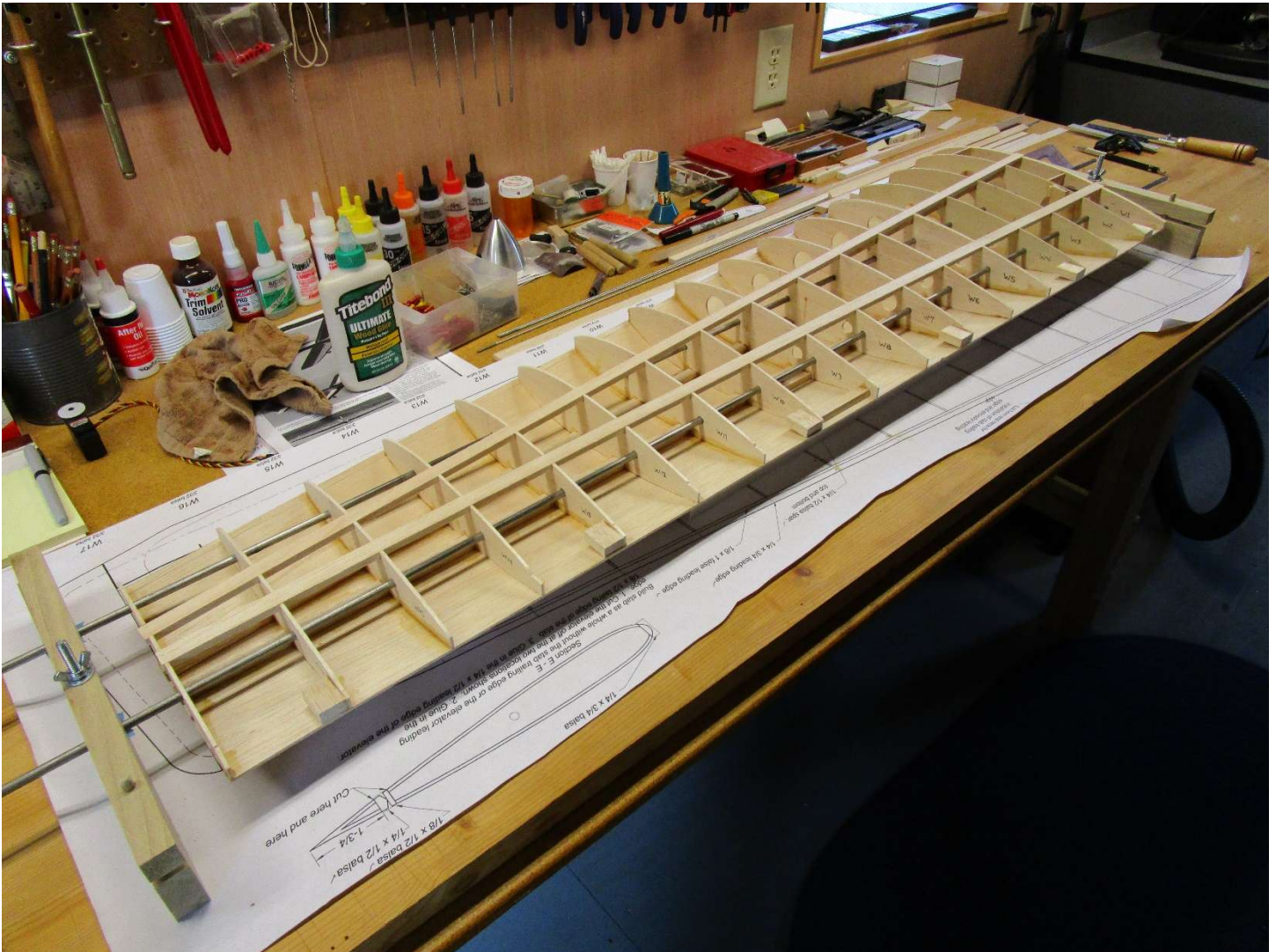
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The first image below shows all the 3/32" balsa wing ribs (a total of 18 per side), and being a tapered wing, there are no two ribs that are the same size per wing. With this being a fully symmetrical airfoil, I had to build up a wing jig, which I found on the web in an old RCM magazine. The second image below shows the left-wing ribs installed upside down on the jig rods. The wing half is 48 inches long and will have a full span aileron.





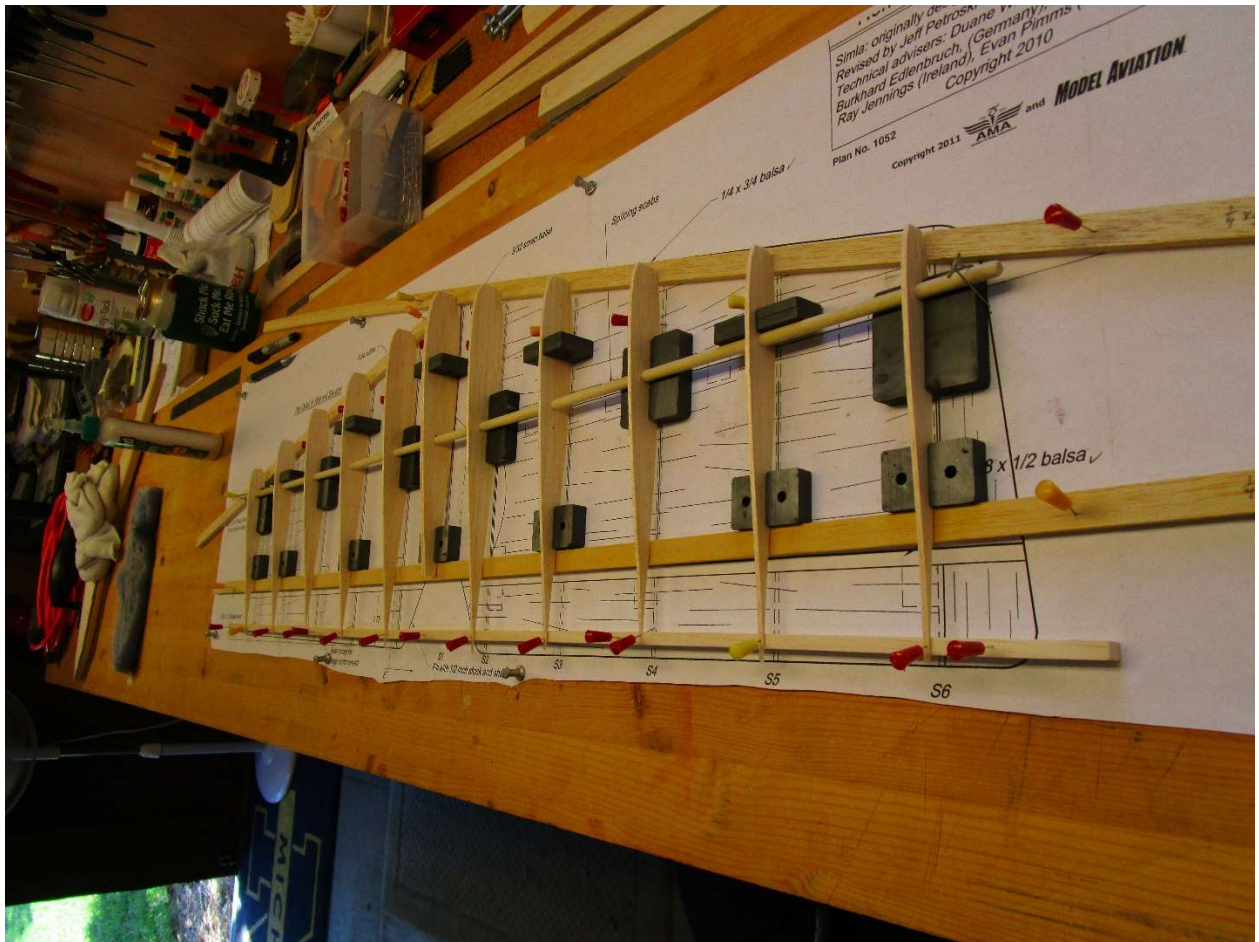
Once the ribs are glued to the bottom spars and each main landing gear mounting block is installed, the entire bottom surface gets sheeted in 1/16" balsa, and when that dries the wing is turned over in the jig (image below). Balsa blocks are installed along the back edge for the aileron hinges, upper spars are glued to all the ribs, a cord is run through the servo wire holes, and then the wing top gets fully sheeted. The second image below shows the left wing fully sheeted with the Main Landing Gear (MLG) mounting block uncovered and aileron hatch opening cut out. The full span aileron makes for a lot of control surface. You can also see the alignment pegs that go into the side of the fuselage. The wings are mated to the fuselage using a 1" carbon fiber tube that runs through the first four ribs of each wing, and 1/4" steel wing mounting bolts.



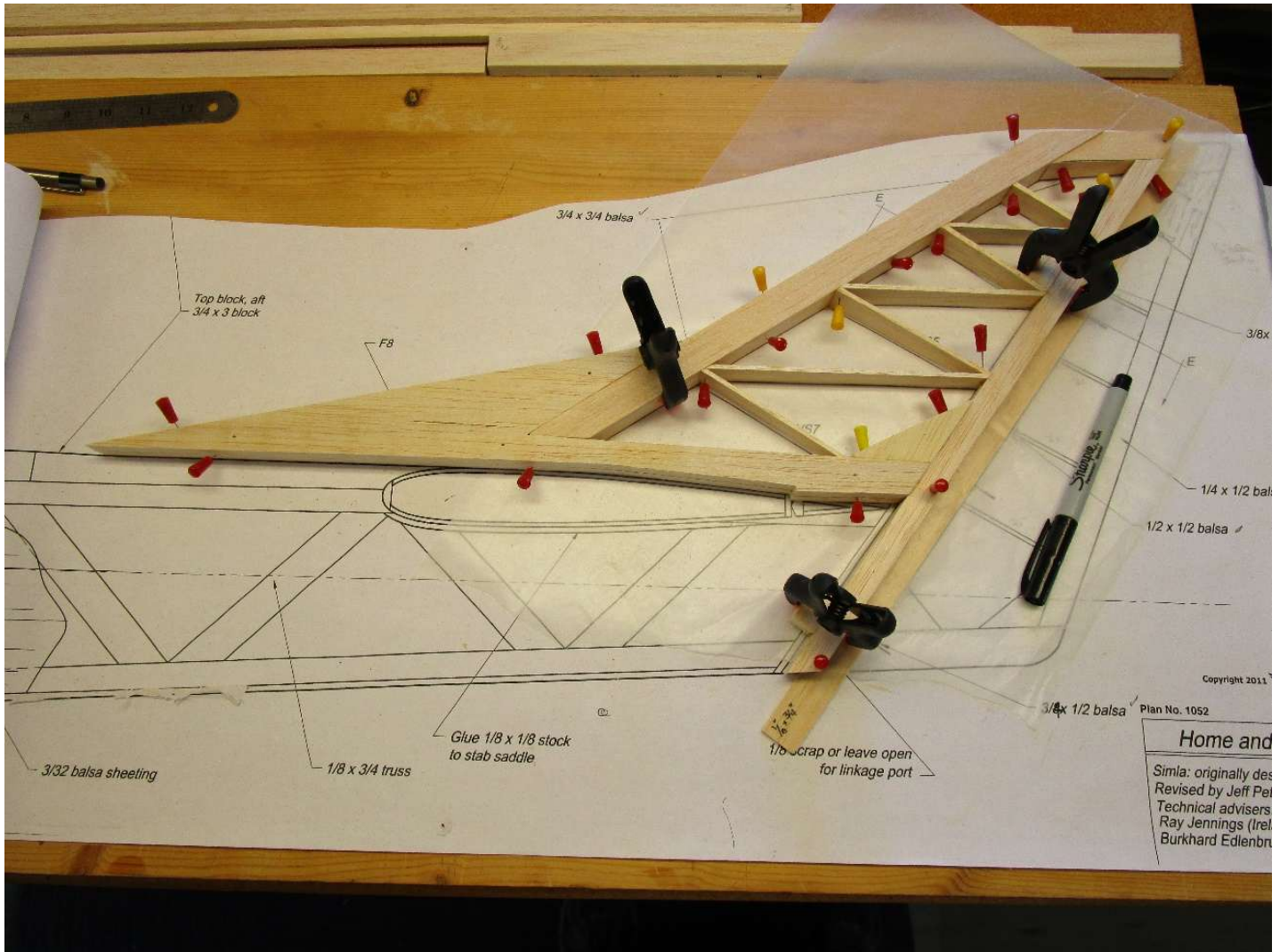


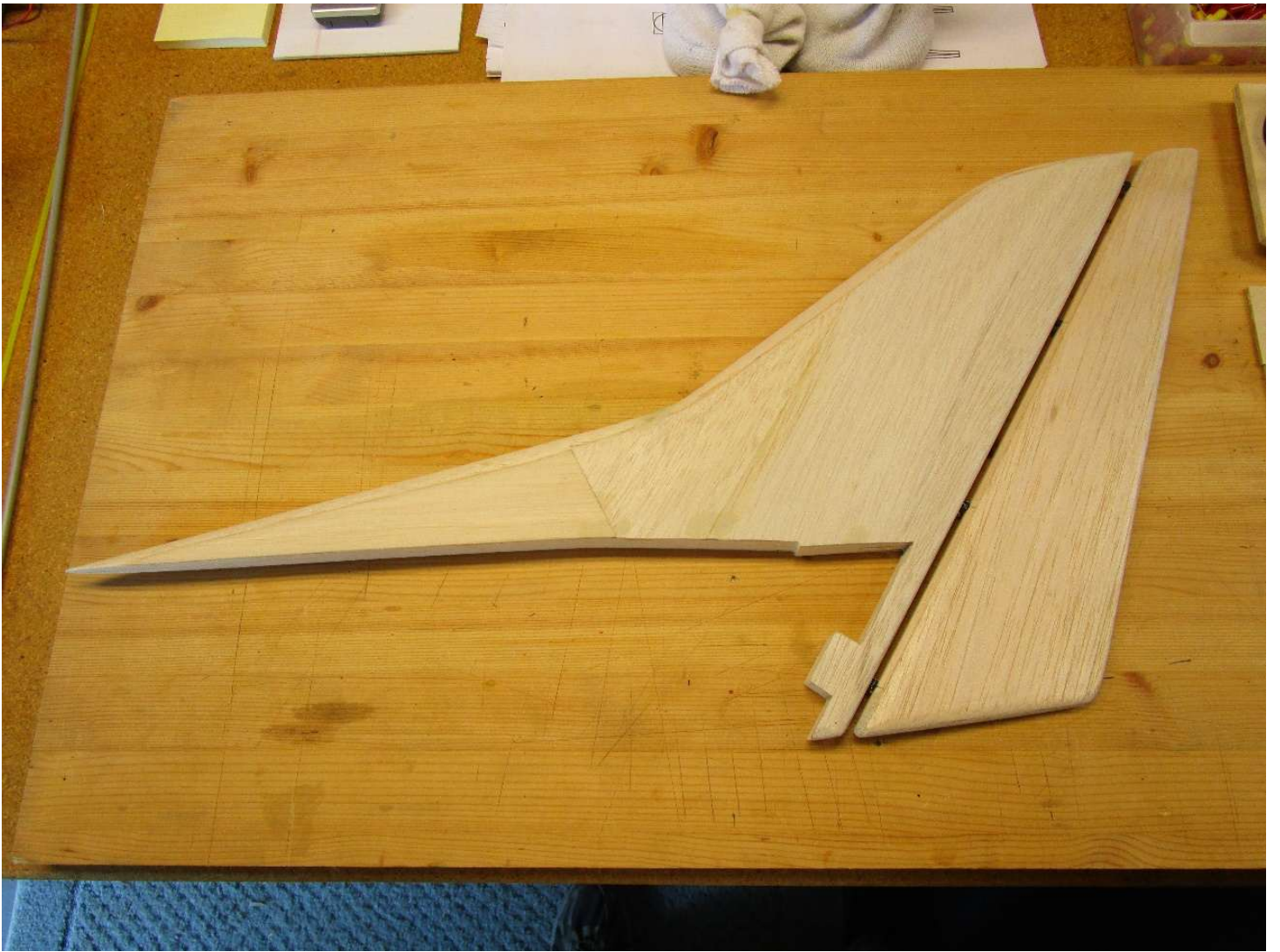
With this complete, repeat the same steps for the right wing. Install the balsa block wing tips and sand to shape. Sand the entire surface using 220 grit to prep the wings for covering. Let's move on to the tail surfaces.

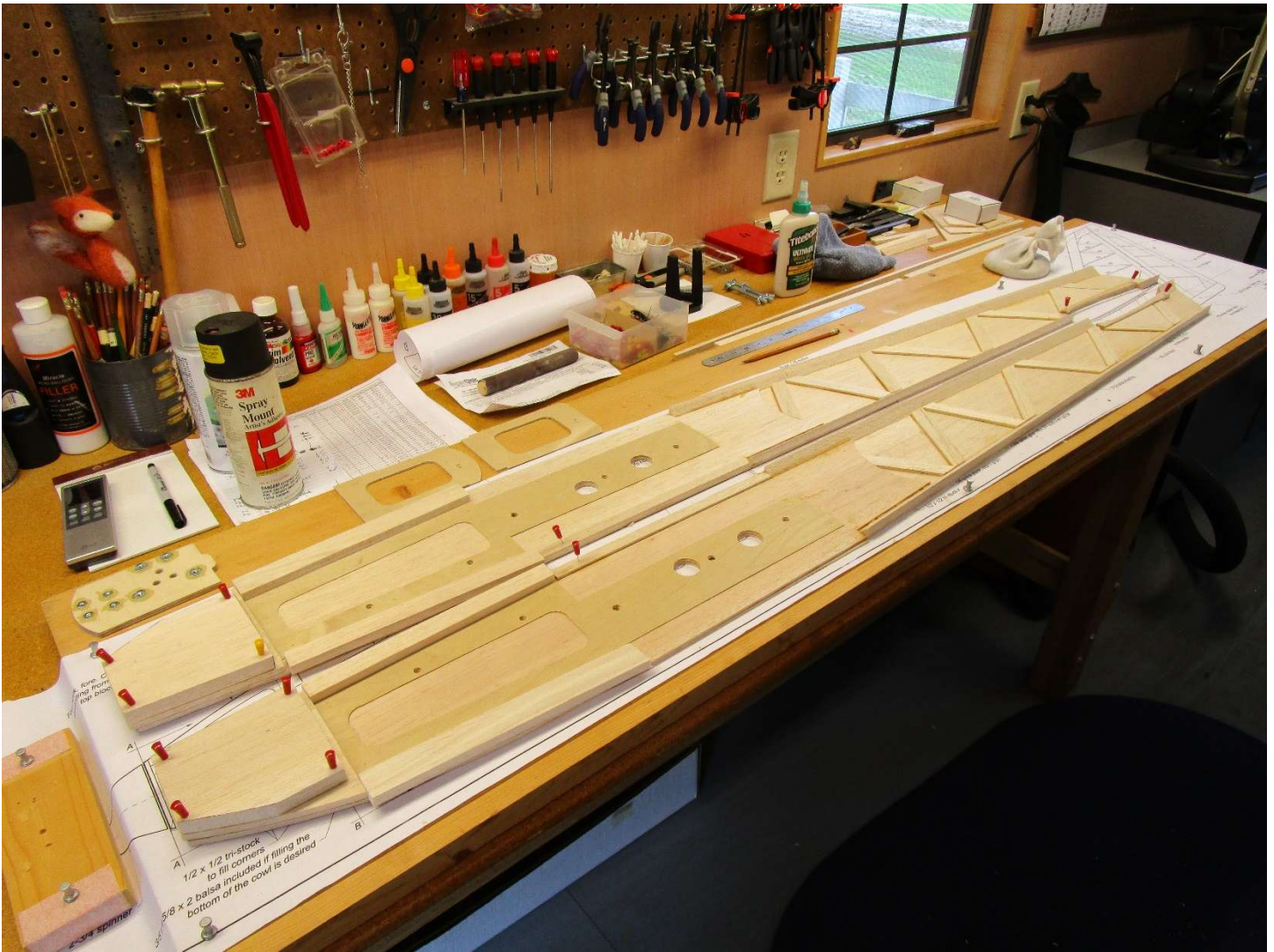
The first image below shows the horizontal stab and elevator build directly over the plan. Being a fully symmetrical airfoil, the ribs must be shimmed at the front and back edges. I use a wood dowel and small strong magnets to hold the ribs in place while I glue the balsa sheeting. The stab and elevator are built as a single piece, and once covered on both sides with 1/16" balsa sheeting the elevator is cut free from the stab. The second image below shows the completed horizontal stab and elevator with tip blocks installed.



Next came the vertical stab and rudder. The first image below shows the initial build over the plan. Both surfaces are built up, sanded to the required curved shape on both sides, and then fully sheeted with 1/16" sheet balsa. The second image below shows them covered, sanded, and ready for covering.







In the image above, you see the two fuselage sides in build-up directly over the plan. These are built using balsa sheeting that is then covered on the inside with a plywood doubler for the strength needed in the wing area and the nose. You can also see the firewall laying on the bench with all motor mount and nose landing gear assembly blind nuts installed. Also note the plywood fuselage formers that go between the two sides. Large balsa blocks are required at the nose because they are then sanded down on the outside to obtain the streamline shape required to match the prop spinner diameter. Other large balsa blocks are used along the top of the fuselage.



The image above shows the fuselage fully assembled with engine cut-out and the outside sanded down to get the required overall shape needed. A large hatch is placed in the bottom of the fuselage to obtain access to all the radio gear, servos, fuel tank, receiver battery, and wing mounting screws.



Initial test fit of the wings and horizontal stab are made to check over fitting prior to covering. I also accomplished a total up fit check with engine, MLG, NLG, and vertical tail installed to establish the amount of weight I need to put in a wingtip for proper lateral balancing.

The final two images below show my finished Simla. I used an O.S. .95 2-stroke for power. With an overall wingspan of 102 inches and nose to tail length of nearly 6 feet, **this is one big airplane**. For those of you that have seen her fly, she goes where you point her, and flies great.

