



## How to Build a Scale Model of the Hawks Racer

Build the entire model of balsa wood which may be purchased at any popular department store or model shop. The model may be built at very little expense. Get dimensions from the accompanying plans for stock. If you wish to square off the plans, making them easier for measuring, join the corresponding dashes on border with sharp, straight pencil lines. Each square will equal one square foot in scale.

This model, known as "Time Flies," is very easy to build because of its very simple smooth flowing lines which a racer should have. Frank Hawks also has another new airplane, a Taylor Cub, which he calls "Time Flits."

Get all your tools together before beginning the construction. Those that are necessary are a razor blade, jig-saw, sand paper (coarse and fine), paint brush, model cement, and if possible a small flat chisel.

Make the fuselage first. Draw the outline of the front view on stock, neglecting any of the tail surfaces, but including the engine cowling. Go around the outline with a jig-saw. Then draw on top view and cut again once more with jig-saw and chisel. With your razor blade, cut off the edges and make the fuselage oval-shaped as shown by cross-sections on plans. The cockpit may be hollowed out if desired and cellophane used as the retractable windshield. The reason the windshield has been made retractable on the big ship is because it lessens wind resistance to a great extent in its retractable position which adds greatly to the speed of the plane.

After the fuselage has been rounded out, go over the newly cut

surfaces with coarse and then fine sandpaper until smoothness is obtained.

Make the wing next. It will be made in two sections, one for each side of the fuselage. Draw the outline of the top views of both sections as you did the fuselage. Be sure the grain of the wood is running lengthwise. Then cut with saw. Taper down the wing as shown in front elevation on plans with chisel, and then proceed simultaneously to shape out the airfoil section into the wing. When finished go over the surfaces with coarse and then fine sand- paper.

The tail surfaces are very simple to make. Cut them from pieces of sheet balsa with your razor blade and sandpaper thoroughly. They will then be ready for painting.

The propeller hub may be cut from scrap wood with your razor blade and the three thin blades cemented to it.

The landing gear struts are to be made of wood while the part that bends around the wheel to the axle is most easily made from a thick grade of copper wire flattened as required with a hammer. A small hole may be drilled at the ends just large enough to insert the wire axle with a drill or by hammering a pin through the metal. The wire may be joined to the wood strut by means of model cement and thread.

Shape out a tail wheel from scrap wood and begin the assembly.

Block the fuselage up in flying position on a flat surface. Using a large amount of model cement, connect the wing sections to the fuselage. Put blocks underneath to hold them in place. When connections have dried thoroughly, raise the model higher on the blocks and build up the landing gear, applying plenty of cement. Join the tail wheel in place and then cement the tail to the fuselage. The prop may be connected to the nose with

cement or by a straight pin as a shaft so the prop may spin around.

Go over the entire model with fine sandpaper after all joints have dried thoroughly until a smooth surface is obtained. Brush off all dust and then begin the paint job.

The entire model should be painted cream with black trimmings. Many coats will have to be applied before a smooth finish is obtained. Do not apply a second coat until the first has dried sufficiently. It is best to sandpaper the model once more after the first coat has dried for the quickest results. After the paint job is completed the model will be finished.

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