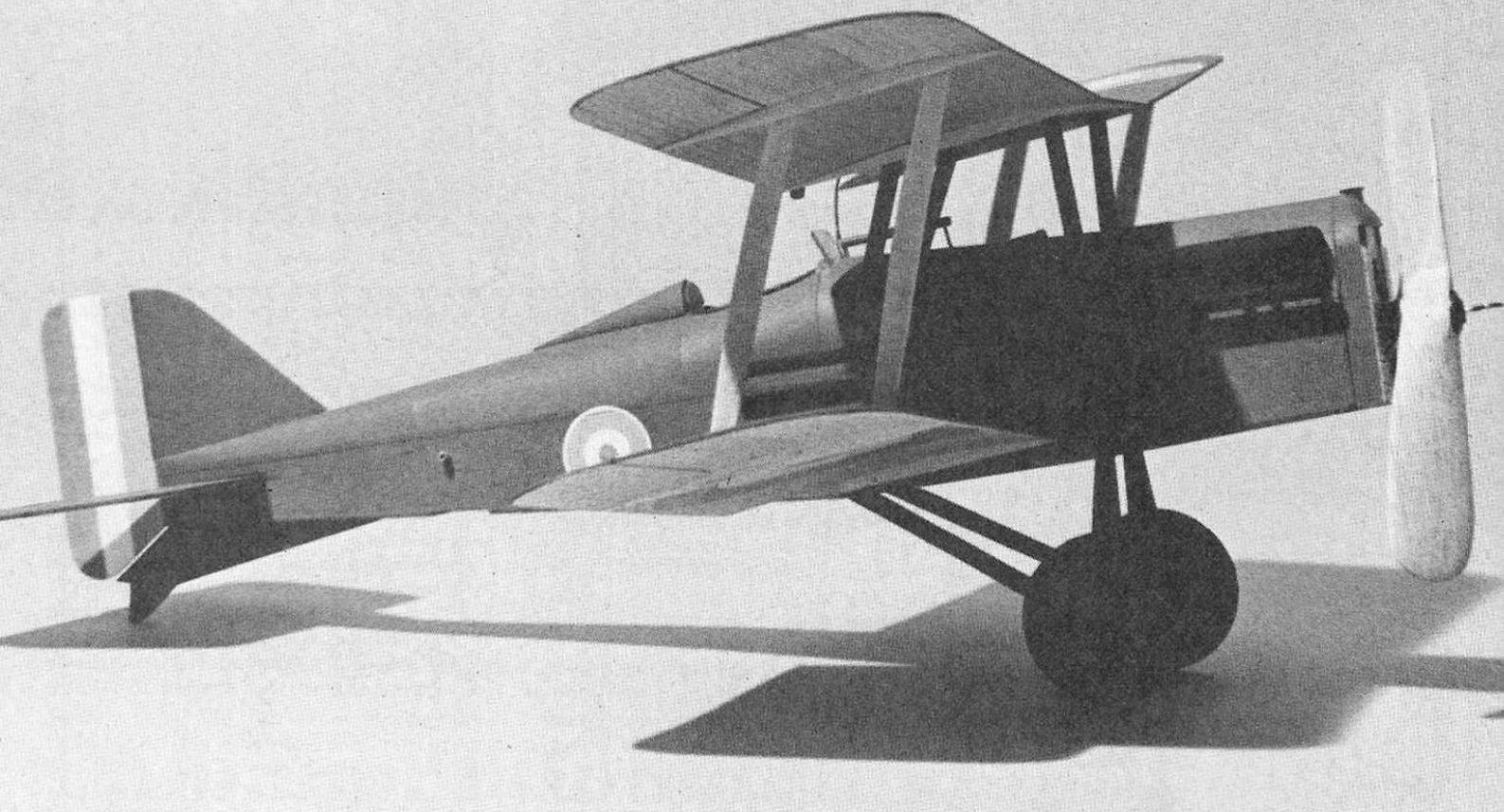


# Try an "SE-5a"

by John Blankenship



Photos by the Author

**World War I might flare up again. Be ready with the proper aircraft. A capable Rubber Scale design for quiet moments.**

The "SE-5a" is a longtime favorite of model builders and is seen in all modeling forms. This Peanut Scale model was designed for active flying and color schemes are well documented. Profile Publications #1 gives a number of examples of the basic olive drab or khaki painting for this World War I favorite.

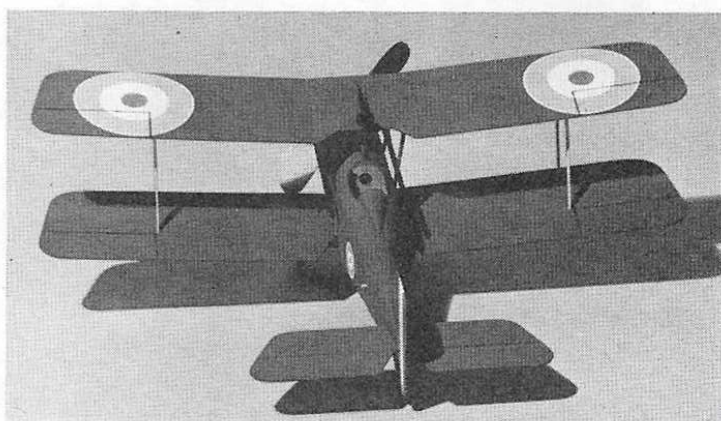
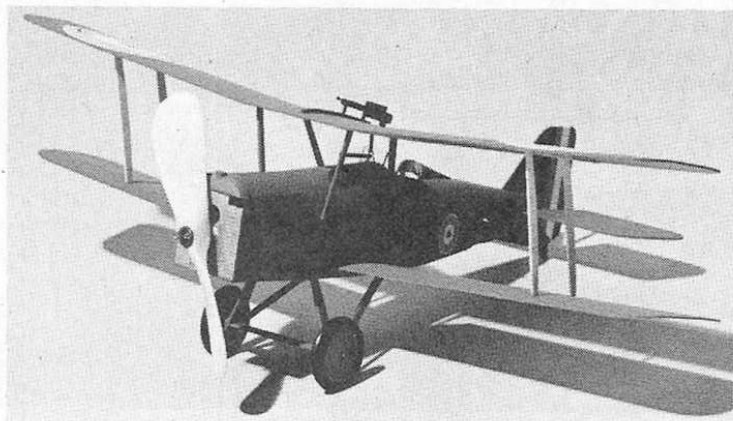
## The Fuselage

Cut the  $\frac{1}{32}$ " fuselage sides from light quarter-grain sheet. Former A is  $\frac{1}{16}$ " and B through E are  $\frac{1}{32}$ ". With a pencil, lightly mark the locations of the formers on the

inside of the fuselage side pieces. Make a light cut on the inside of each side piece just behind the location of former D, and crack the pieces sharply inward to form the break as seen in the fuselage top view. Glue in formers A and D, align carefully over the fuselage top view and allow to dry. Now pull the rear ends together and glue, again checking alignment over the fuselage top view. Glue in the remaining formers and the  $\frac{1}{16}$ " square stringer across formers D and E to the fuselage rear end.

Add the bottom  $\frac{1}{32}$ " sheeting with grain running crosswise to the fuselage. Cut a

flexible piece of  $\frac{1}{32}$ " sheet to fit the top of formers A and B and glue in place. Fuselage top pieces S-1, S-2, and S-3 are cut from bond paper. Check the fit of these pieces and make adjustments, if needed, before gluing in place. Build the two landing gear struts on the plan, and cut the  $\frac{1}{16}$ "x $\frac{5}{16}$ " spreader bar. Cut small notches into the bottom sheeting for the landing gear strut ends. Glue the struts to the fuselage, and glue the spreader bar in place. Check alignment carefully from the front. Vintage wheels should be used for authentic appearance. Bush the wheels with  $\frac{1}{16}$ " aluminum tubing and mount with straight pins for axles. Push the pins into the spreader bar very carefully to avoid splitting. The dummy engine cylinder heads and exhaust pipes are made up from soft



balsa, but should not be glued on until the fuselage has been painted. Cut the tailskid from  $\frac{1}{32}$ " sheet and glue to the fuselage rear.

### Wings and Tail Surfaces

Cut the wing panels and top wing center section from  $\frac{1}{32}$ " sheet. Wing ribs are from  $\frac{1}{16}$ " sheet. Carefully bend the wing panels to the airfoil shape. Lightly mark the outer rib locations on the undersides of the panels and glue the ribs in place. Glue the ribs to the inner ends of the lower wing panels at a slight angle to form the dihedral. Pin the  $\frac{1}{16}$ " ribs for the top wing center-section in place over the plan. Protect the plan from glue with a piece of plastic kitchen wrap, then glue the center-section sheet to the ribs. Sand a slight curve to the inner ends of the top wing panels to give a close butt joint against the center-section sheet with  $\frac{5}{8}$ " dihedral as shown on the plan, and glue the top wing assembly together. Cut the tail surfaces from stiff, light quarter-grain sheet.

### Paint and Markings

Use a non-shrinking paint such as Polly-S model paint or thinned, well plasticized dope (2 or 3 drops of castor oil per ounce of dope will reduce shrinkage). Use ready made decals, if available, or cut sheet decal material for the cockades and rudder bars. These markings can also be painted on, using a draftsman's ruling pen and compass, and a brush as I did.

### Assembly

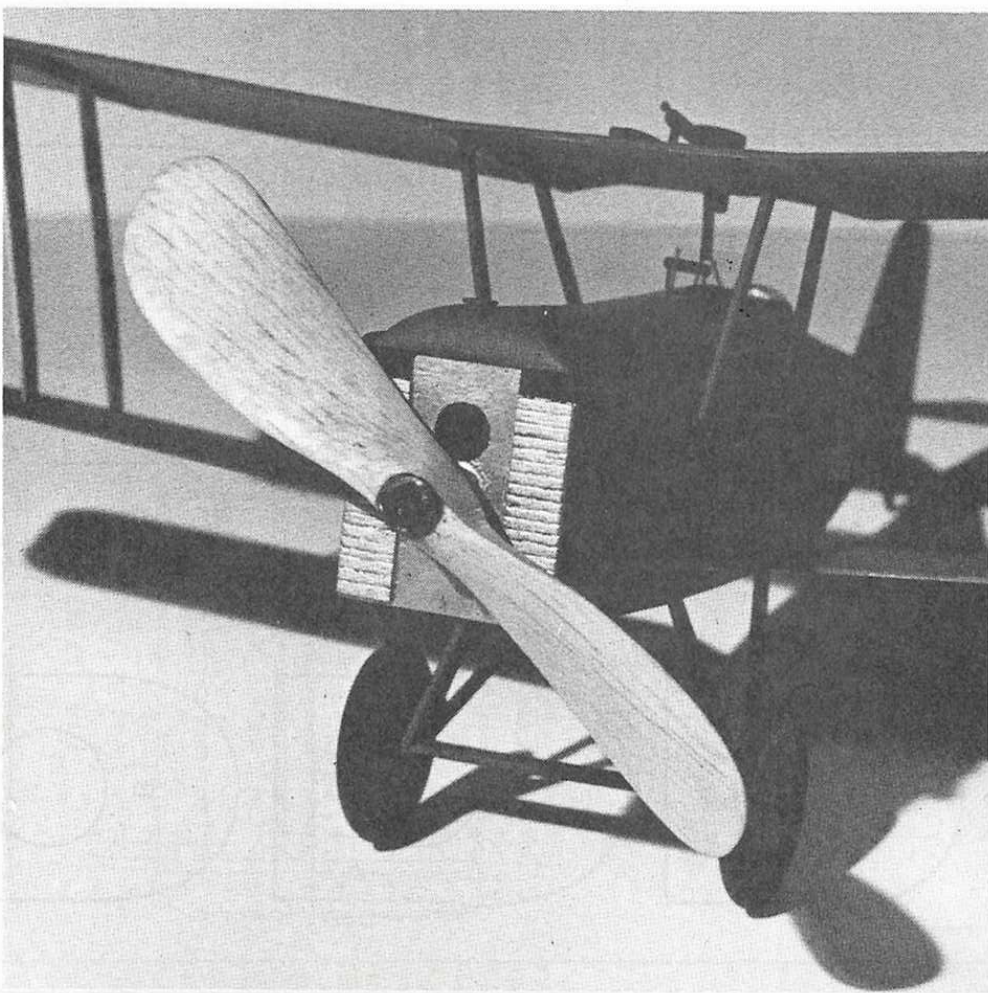
Cut the  $\frac{1}{16}$ "x $\frac{1}{8}$ " center-section struts as shown on the plan. The outer wing struts are cut from  $\frac{1}{32}$ " sheet. Cut the strut assembly jigs, J-1 and J-2, from  $\frac{1}{16}$ " sheet. Pin the upper ends of the struts into the notches in the two J-1 jigs. Glue the lower ends of the struts into the cut-outs in the fuselage sheeting piece S-1 with the ends securely against the  $\frac{1}{32}$ " fuselage side pieces. Use strut assembly jig J-2 to space the struts properly as viewed from the front. Check alignment occasionally as the glue dries. When the glue is dry, remove the strut assembly jigs. Mark the center-section and outer strut locations on the underside of the top wing, and then glue the wing carefully in place. Check for proper alignment from top and front. Hold the lower wing panels temporarily in place and check for correct dihedral by sighting from the front. If necessary, adjust the angle on the root ribs using a sanding block so that the dihedral matches the top wing. Mark the correct lower wing locations on the fuselage sides, then glue in place, pinning securely while the glue dries. Glue the outer wing struts in place, trimming the ends, if needed, for proper fit. Mount the horizontal and vertical stabilizers, checking alignment carefully.

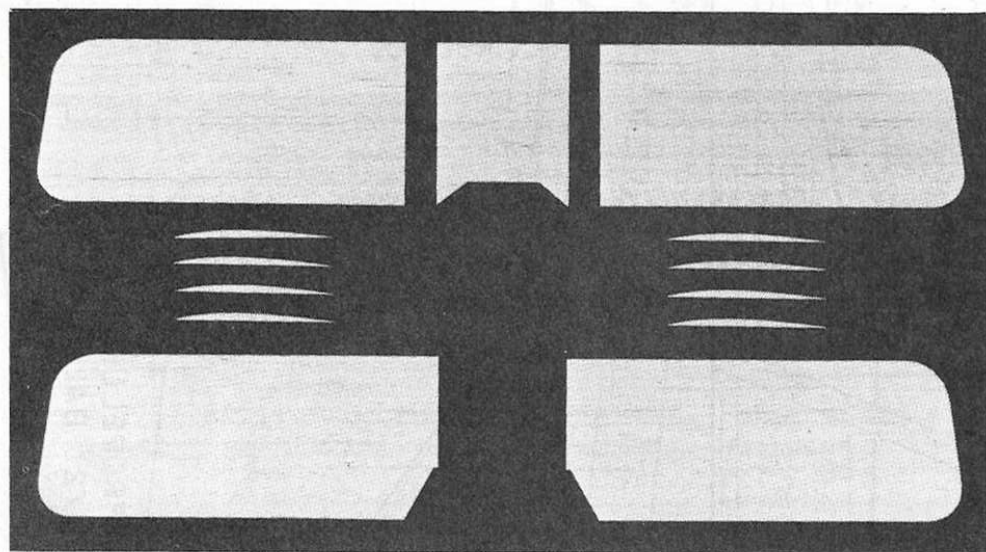
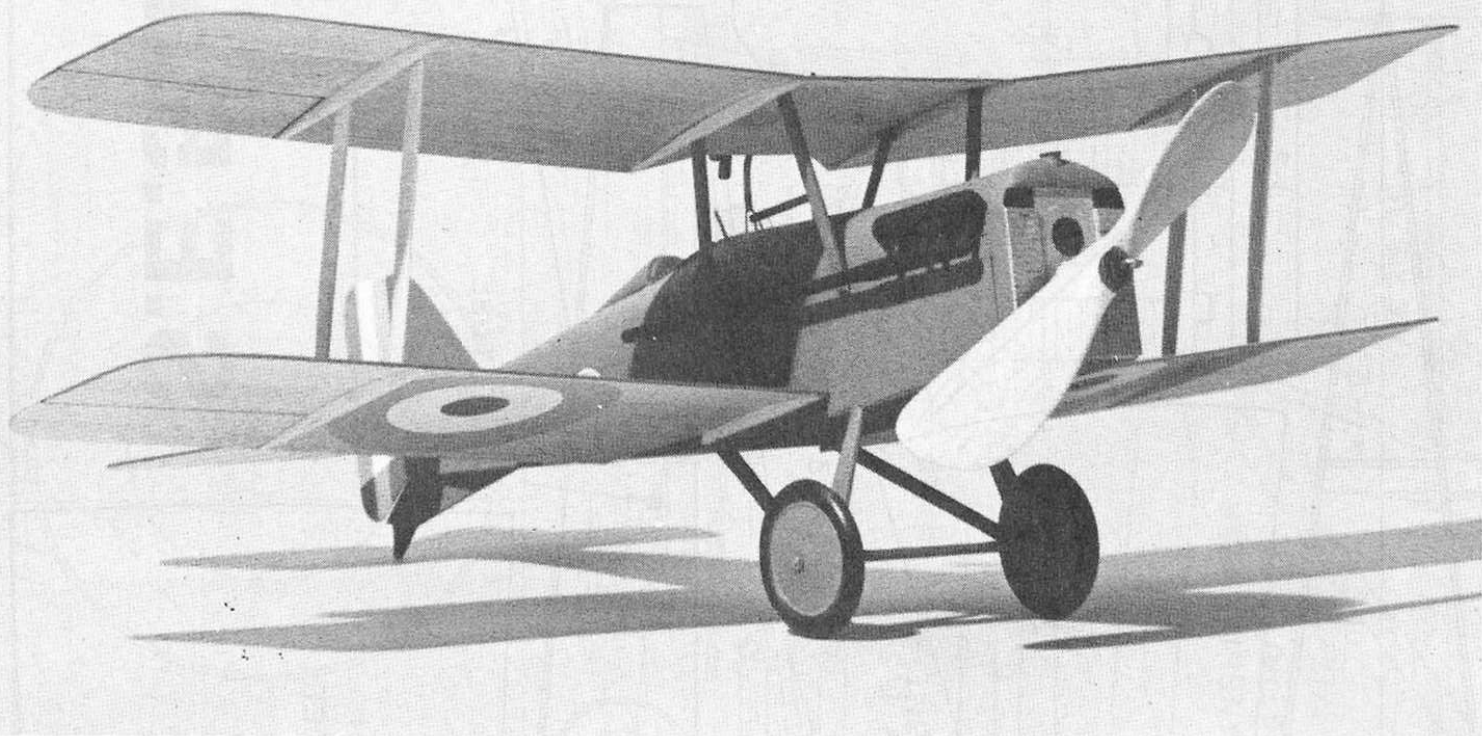
### Propeller and Motor

Cut the nose block from  $\frac{3}{16}$ " sheet. Add a small piece of  $\frac{1}{32}$ " sheet to the front of the block at the top to continue the contour as seen in the fuselage side view, then sand the top contour to shape. Drill a  $\frac{1}{16}$ " dia. hole and bush with  $\frac{1}{16}$ " dia. aluminum tubing for the  $\frac{1}{32}$ " dia. music wire propeller shaft. Down and right thrust adjustments will be needed for trimming powered flight. This can be allowed for when drilling the propeller shaft hole by placing a piece of

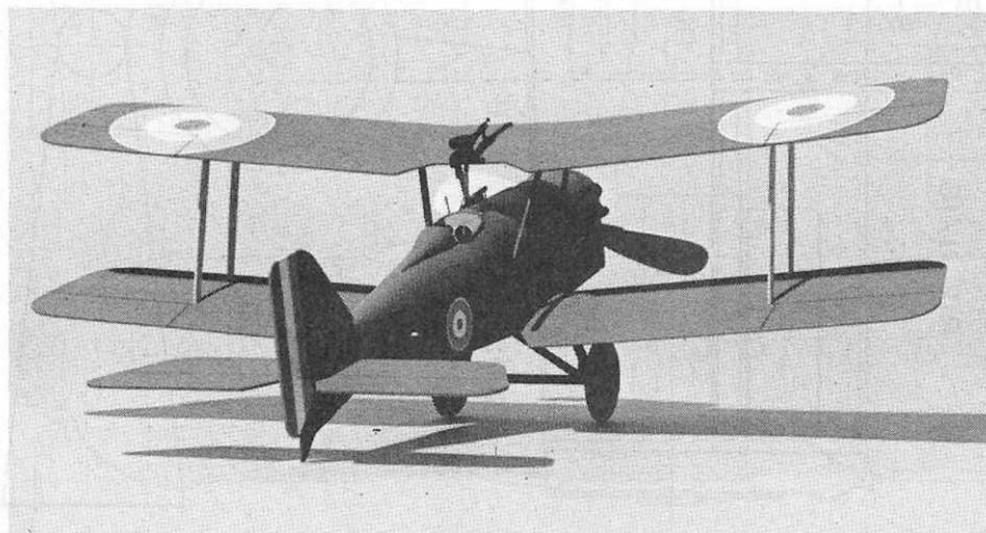


It's a big world for so small a span. Sometimes fun from a hilltop. Fly it indoors, or out, calm air. **Beneath:** Paddle-sized blades deliver more performance. Fun to fly it around a lamppost come evening.





While it doesn't take much wood, use some good stuff. Even textured, suitable balsa sheet is advised. **Top and bottom:** The box-like fuselage, generous areas make this W.W. I bipe a favorite for modeling.



$\frac{3}{32}$ " balsa under the bottom right corner of the nose block while drilling the hole from the front, under a drill press or with an electric hand drill on a drill stand.

The radiator shutters are simulated with pieces of  $\frac{1}{32}$ " sheet balsa on each side with the grain running crosswise. Using a sharp pencil, mark off the shutter lines as seen in the fuselage front view. The radiator filler cap is built up from soft balsa scrap. Finish the noseblock to match the fuselage, with the shutter panels painted silver.

A 4" commercial plastic propeller may be used, or a balsa propeller may be carved as shown. Lay out the propeller on  $\frac{1}{2}$ " balsa and drill the  $\frac{1}{16}$ " dia. hole for the aluminum tube bushing. Using epoxy, glue metal washers to the front and rear faces of the hub to absorb bearing loads. A split-ring type lock washer epoxied to the front will serve as a free-wheeler latch. Carve the blades to shape, sand, and finish with several coats of dope. For smooth running, balance the propeller carefully. Bend the  $\frac{1}{32}$ " dia. music wire propeller shaft, mounting the propeller to the nose block with a couple of small brass washers for thrust bearings. The motor is a single loop of  $\frac{1}{8}$ " flat rubber, 7" to 8" long. The rear motor peg is a short piece of  $\frac{1}{16}$ " aluminum tubing.

### Flying

With the rubber motor installed, put clay inside the fuselage at the front to bring the balance to the point shown on the fuselage side view. Bend the elevators up or down slightly to achieve a smooth glide. Downthrust and right thrust will be needed to control the power flight. A  $\frac{3}{32}$ " balsa shim between the top left corner of the nose block and former A should be about right, but additional small shims may be needed for final adjustment to eliminate power stalling.