

The Porterfield



A smooth, slow-flying scale model for any system — and any flyer.

HERB CLUKEY

THE 1939 Porterfield Model 50 was one of the best known light planes of the era. A fully cowled 50-hp engine in the nose, wheel pants, plus parallel wing struts made this tandem stand out. Our thanks to the late E. E. Porterfield, Jr., the designer and president of Porterfield Aircraft Corp. for making this article possible.

Our model was first designed as a 1/2 A R/C beauty called the Porterfly (Sept. '67 American Aircraft Modeler) and was such a success that it was decided to build a larger model which could incorporate any of the radio gear on the market today. Hence the semi-scale Porterfield which American Aircraft Modeler displayed on the front cover of its June '67 issue.

Since the Porterfield is tagged as semi-scale, let's explain the phrase. Any time areas are added or subtracted, landing gear positions shifted, struts changed or any other deviation from absolute scale, you have a semi-scale airplane. The joy of all this is the fact that you have improved the ability of the model but have retained the original looks of the prototype. So semi-scale does not necessarily mean an ugly out-of-proportion airplane.

On our Porterfield the chord was increased by one inch, airfoil thickened by 2% and horizontal tail group increased by 20%. The landing gear location was advanced 1 1/4 inches which showed up on takeoffs, landings and touch-and-goes. V-type struts were used instead of parallel struts, thus making two groups to hook up instead of four which allows for easier alignment. With these minor changes the Porterfield is one of the best semi-scale sport trainers available.

The plans have been drawn as self-explanatory as possible. Before starting to build, bear in mind that good material is half the battle, so choose it wisely. The fuselage is a good place to start so obtain two sheets of 1/8 x 6 x 48 medium balsa and two sheets of 1/8 x 4 x 48 balsa of the same weight and texture, if possible. Cement a 6" and a 4" sheet together to form a 10" wide plank. Make two. Draw in fuselage sides, mark bulkheads and sections.

Cut out #10 and #11 from 1/4 sheet and glue in place. Install the 1/2 and 3/4 bass mounts and let dry. Meanwhile, cut out #1 (nose block) and #2, 3, 4, 5, and 6. Glue to fuselage sides, then add the 1/4 x 1/2 balsa cross members and uprights from section 6A on back to section 9. Add 3/8 square cabin brace, then #12's on outside of cowl and all blocks on top and bottom of nose section. Next, bend the strut from 1/16 wire and epoxy to ply floor, then install as shown on side view. Follow up by installing remainder of ply cabin floor. Cover top and bottom of rear fuselage then add #14 and also the dowel windshield braces. At this time cut out cabin windows and trim all cowl blocks to conform with fuselage.

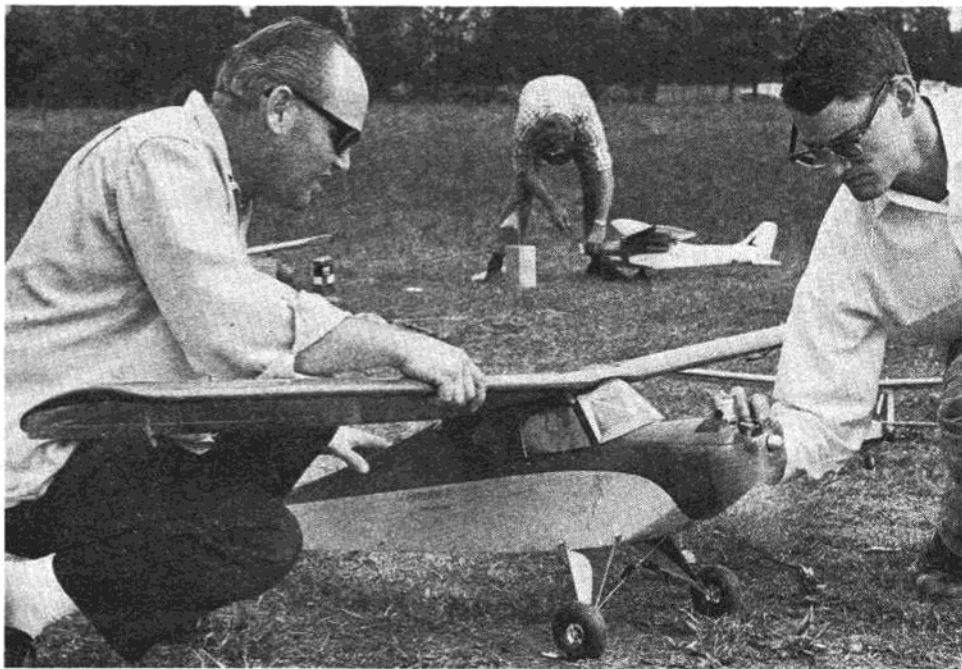
Using a razor saw or sharp knife, cut top nose cowl off as shown by cowl sepa-

ration on the drawings. Shape #13 and drill for particular engine to be used and install as shown. Cut out engine cowl to suit. Also, all servos and receiver shown on plans are of no particular type and are shown for positioning purposes only. This is due to the wide variety on the market.

For the tail group obtain medium light C-grain balsa and butt join for proper width. C-grain balsa has a flaky appearance. Insert bass inlays where shown for horn attachment. Two type hinges are shown but all hinges are optional to the builder.

The wing is of standard construction. Make a right and a left panel first. Do not add any sheeting at this time. Now cut two each of the spar reinforcement from a sheet of 3/32 x 12 x 24 plywood.

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Herb Clukey and Ed Sweeney tuning up the big Porterfield for a test flight. That 58 is excessive power for this design, but pull whatever power you need. Majestic in flight, it will do all primary scale maneuvers. Will also loop, barrel roll, and spin gently.

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Mark off where indicated by the dotted line, not the centerline. Block up each wing panel 2 inches at point shown on plan utilizing a true flat surface. Glue the spar reinforcement pieces in place having the outside rib A on each panel on the dotted line of each spar reinforcement. This will automatically give the correct center section width. Follow by adding the leading edges, trailing edges and ribs to same then proceed to sheet the entire wing. Leave bottom open where servo board located.

The landing gear is the conventional knock off type and very durable. The $\frac{1}{16}$ ply inserts as shown on the side view enhance the appearance and also greatly strengthen the structure. Epoxy in place.

Finishing the Porterfield is strictly up to the individual, but just a little more output will be appreciated later. The only way to get a good finish is to cover all parts with silk after two coats of clear dope have been applied and finely sanded. This hides all wood grain. Next we have to fill all pores in the silk, so a minimum of five coats of clear is applied to the silk with fine sandings in between each two coats. Use 8/0 garnet paper for the job. Color used depends on how many coats are needed.

Our Porterfield was cream and red with black trim so three coats were enough. If the basic color had been white, it would have taken at least five coats to get a solid color, so go accordingly. Now spray a coat of clear over entire aircraft to eliminate all masking tape ridges and bring out the color.

Now comes the rough part of this article. How can we explain feelings beyond words! The craft has been put through just about all tests possible. Ground handling is very good. Takeoffs are straight with no wandering signs. Rough grass takeoffs are beautiful because with each bump you can actually see the load transfer from wheels to wing.

Now the touch-and-goes! We think that anybody having halfway knowledge of R/C flying could do this. The way this bird handles on low throttle is very similar to flying a glider. Up high on low motor, the Porterfield will float around in the same fashion but with the '58 revved up full, it will climb at a 40-degree angle and keep going! Build a Porterfield and we'll bet you can't describe it either!