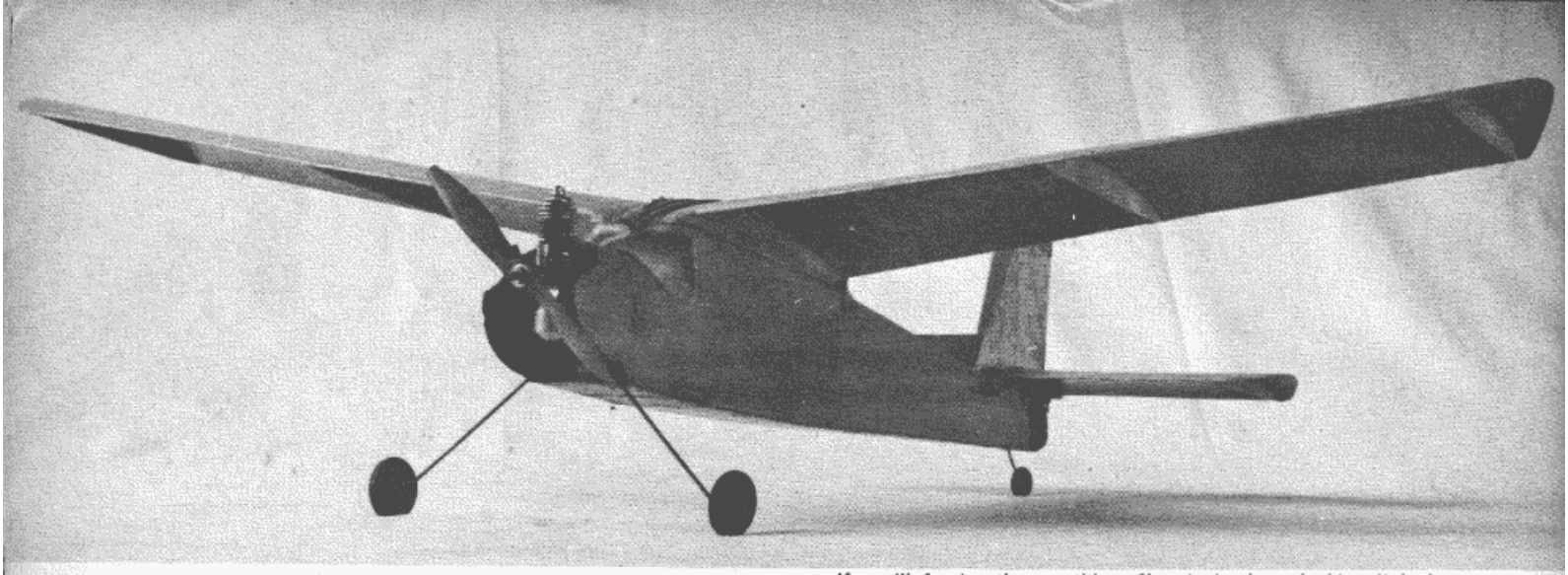
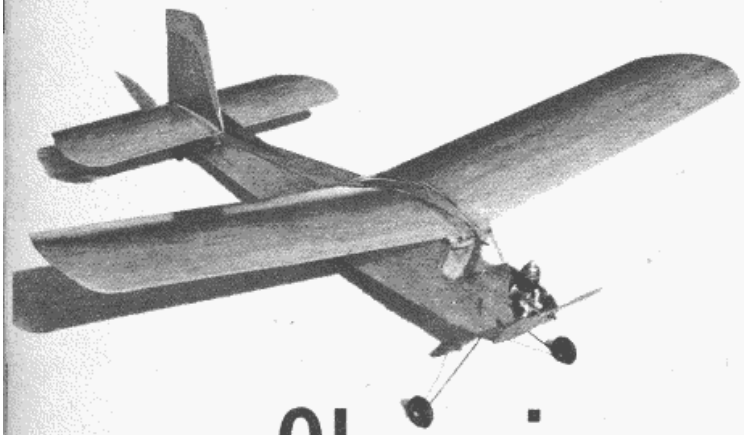


If you'll forgive the repetition, Sharpie is sharp looking little buggy. . Model shown here has been flown successfully on .02's, .039's, .049's.



Sharpie

By KEN WILLARD

An all-balsa free flight model for Half-A engines. Proved performance makes it an ideal sport job and, incidentally, for beginners.

The basic idea underlying the design of Sharpie was to come up with a sport flier that would be very simple to build, yet have pleasing lines and good performance. The all-balsa construction certainly makes it simple enough, and the curved sheet wing, already proven on the Pelican, gives very satisfactory climb and glide characteristics. The added feature of the tapered trailing edge, which results in built-in washout, makes a very stable arrangement. As for appearance, it speaks for itself, and the name came from the remark of a friend, who, on seeing the model for the first time, remarked: "That's a real sharpie!" The name struck.

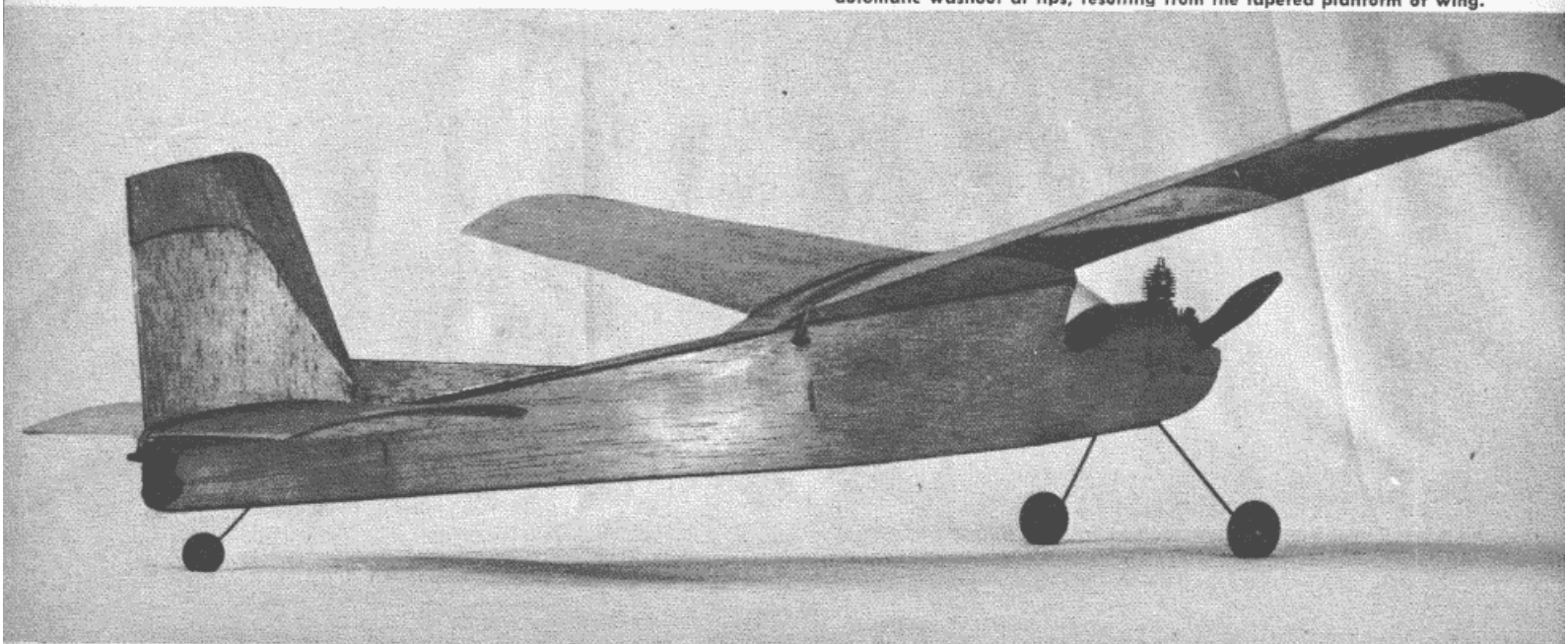
Another friend, Bill Glick, liked the lines and performance so much that we scaled up the plans and he built an RC version, which has proved equally successful. The only change in layout was a reduction in the fin area relative to wing area.

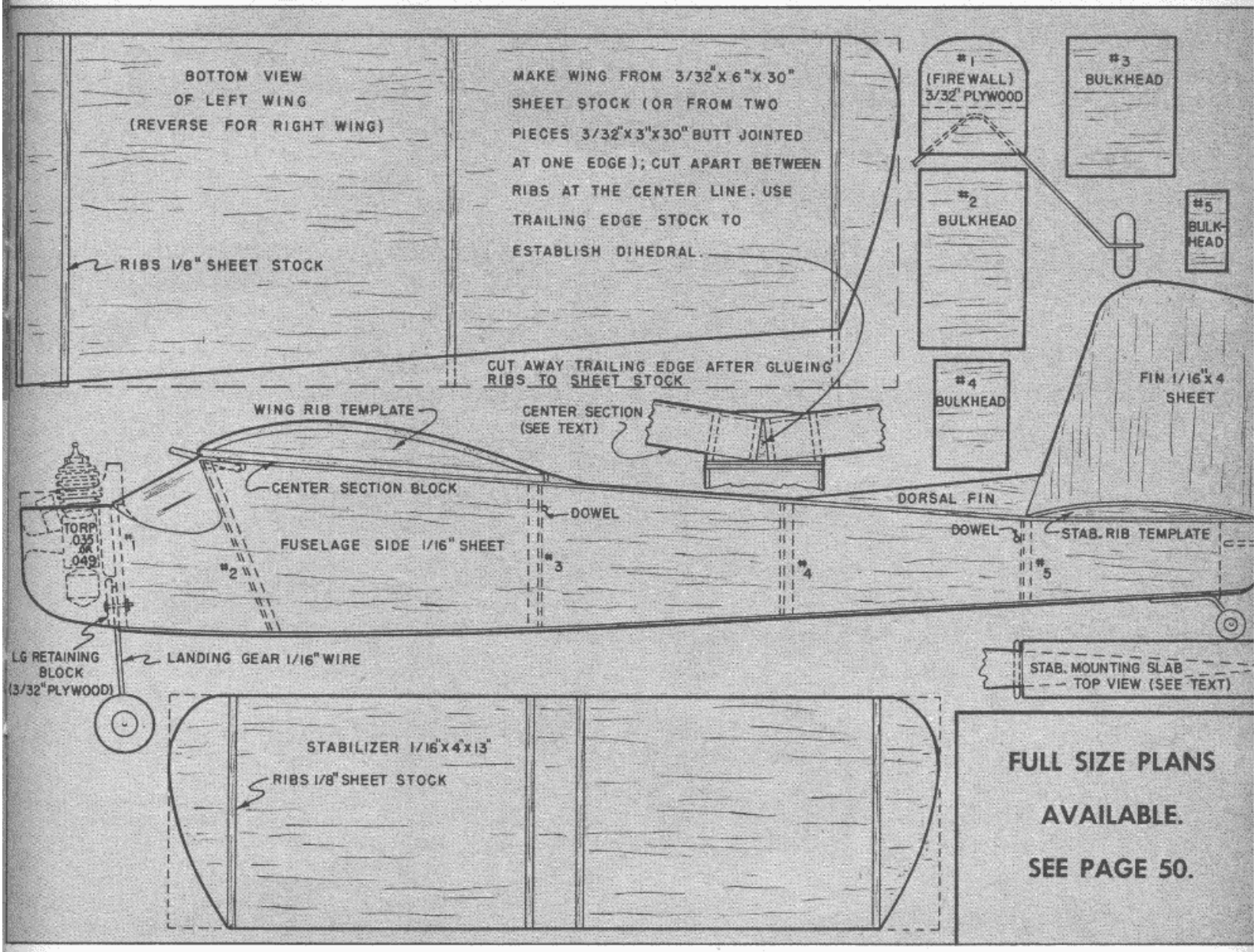
Construction of Sharpie is so easy that a brief study of the plans is about all the instruction that is needed. The following short outline may clear up one or two points on procedure for the beginner.

Fuselage

Note how the bulkheads are alined by cementing 1/8 x 1/8 strips to the fuselage sides, then cementing the bulkheads in place adjacent to the strips. This also assures a stronger bulkhead than if the bulkhead were simply butt-cemented to the sides.

One big advantage of the simple, single surface sheet balsa wing is the automatic washout at tips, resulting from the tapered planform of wing.



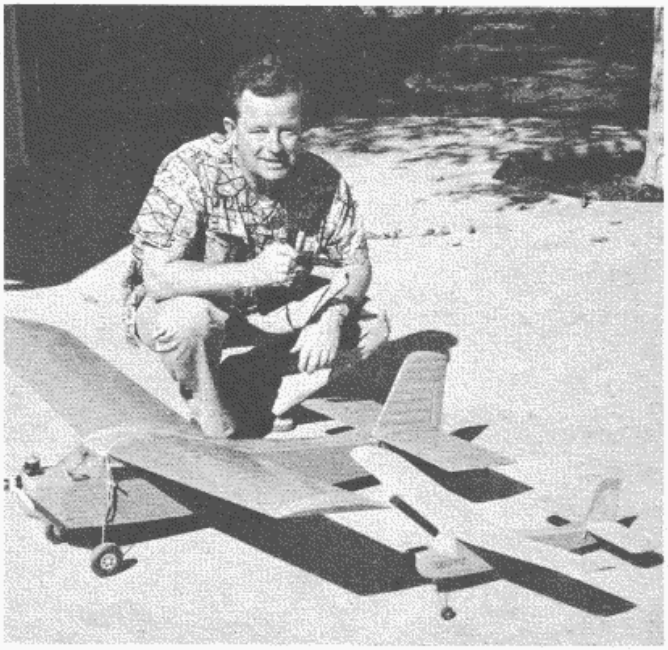


To assure good alinement, cement the firewall in place first, after the 1/8 x 1/8 strips are all cemented to the sides, and cement the tails of the fuselage sides together, carefully alining the sides so no right or left thrust is built in on the firewall. Add the remaining bulkheads after the firewall and fuselage tail cement joints are dry. Cover the top and bottom with 1/16 in. sheet, grain running crosswise, and where the stabilizer sets on the fuselage, extend the top covering out 1/2 in. on either side of the center line to make a 1 x 4 in. stab platform.

Forward of the cabin, wet the top of the fuselage sides (which are cut along the dotted line on the plans) and bend over until they meet, then cement in place. This forms a very simple engine cowl. Add the windshield, wing mounting dowels, and landing gear, and the fuselage is ready for finishing.

Wing

If your hobby shop can't supply 3/32 in. flat stock in 6 in. width, cement two pieces of 3/32 x 3 x 15 in. together, with a butt-joint at the edge, for each wing panel, or use one piece, 30 in. long, and cut down the center line after the ribs have been cemented. Use medium light balsa. Mark the location of the ribs on the wing panels. (*Continued on page 37*)



Ken Willard with RC version, by Bill Glick. Small Sharpie at the right.

great, the third line may partially choke the engine on your high speed laps. The model should be easy to control and stable at all speeds. If you have trouble, look for warps and check your balance point. Landings on the carrier deck are quite easy, after a little practice. The engine control used has proved reliable and effective. END

Sharpie

(*Continued from page* 21)

To curve the sheet stock over the ribs, several methods may be employed. Simplest method is first to cement the second rib in from the wingtip to the sheet stock, holding the two together with clothespins at the leading and trailing edges and pinning the rib to the sheet stock at any point where the sheet stock may tend to lift away from the rib. Then repeat with the rest of the ribs. When using this method, there is danger of twisting the panel slightly because of variations in the wood. Care must be used to assure that the leading and trailing edges are parallel after the ribs are mounted. A safer but somewhat longer way is to lay the ribs in place, run a bead of slow drying cement along the rib tops and then pin the sheet stock to the ribs and also to the table top along the leading and trailing edges. When dry, cut the spot cement points loose. This method assures the alinement of the leading and trailing edges. At the center section, cement the two center ribs together with a piece of 3/4 x 3/16 x 6 in. trailing edge stock in between. This automatically forms the right dihedral. Trim the excess away on top and add a 3/4 x 3/32 x 6 in. cap strip over the joint with grain along the wing. You now have a wing with 6 in. chord and 30 in span. Cut away the trailing edge, tapering the chord from 6 in at the center to 5 in. at the tip rib, and trim the bottoms of the ribs to fit. This not only tapers the wing, but gives tip washout.

Add 1/8 x 1/8 x 6 in. strips to the bottom of the two ribs which line up with the top of the cabin sides. Block sand so the bottoms are level with the center ribs; then cover bottom of the center section with 1/16 in. sheet. Add 1/8 x 1/4 in. end plates to leading and trailing edges of center for appearance, if desired.

Tail Surface

Make the horizontal tail surface just as you made one wing panel, without tapering the trailing edge. Cut the vertical fin from 1/16 in. sheet stock to shape.

Sand all surfaces smooth. Corners can be rounded, slightly. Dope with one thin coat of clear dope. Sand again, dope again, and sand again. Choose your color scheme. It can be applied either with colored dope or colored Japanese tissue. If you use tissue, dope it on, then apply at least two more coats of thin dope. Fuelproof the entire model.

Adjusting and Flying

In adjusting Sharpie for flight, I used my favorite method of mounting an Infant .02 for low power tests, then replacing it with a Torp .035 and finally a Torp .049. This is made so easy by the fact that all three engines have the same mounting arrangement.

You will note from the photos that I added some fin area after the first flights of the prototype. The additional area improved the directional stability at the relatively low speeds which result from use of a highly cambered single surface wing. We took the added area off when designing the radio version.

You'll find that Sharpie has no bad habits, and is very easy to adjust merely by shifting the whole tail section to aline the fin for a steady turn. You may have to add weight to the nose or tail to balance the model, depending on your selection of wood, and also depending on which engine you use. END

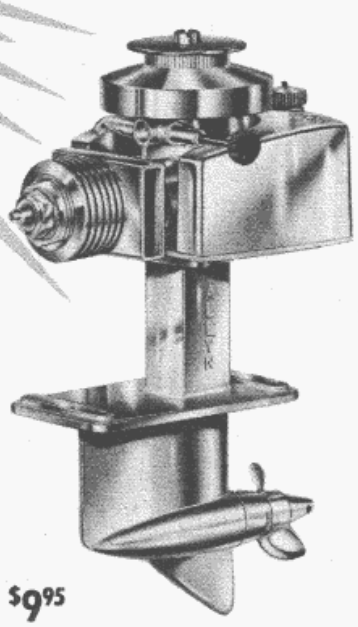
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