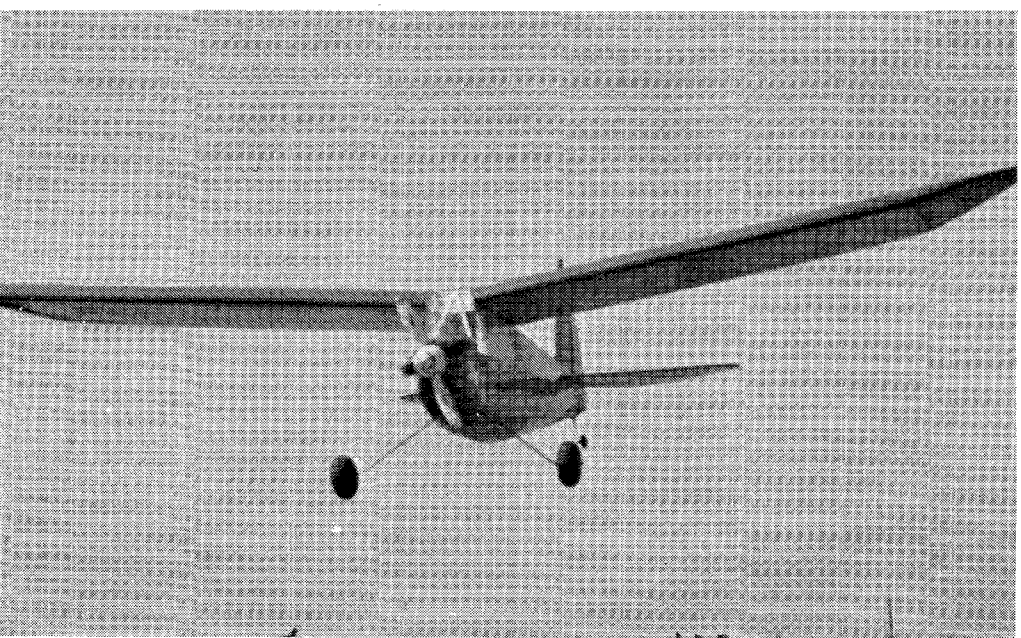
DOT I

A modern-day old-timer, if you can believe that! Dot I is a 3-channel trainer for beginners yearning to try a builder's project; not hard to build and you'll learn a lot!

by Vince Micchia

DOT I
TYPE: R/C Trainer, OT style
WINGSPAN: 72 inches
WING AREA: 738 square inches
LENGTH: 51 inches
FLYING WEIGHT: 3.5 pounds
RADIO: 3-channel

Scanning By Hlsat



Although Dot I has "Old Timer" lines, it is a new design for training purposes.

Dot I settles back to a landing. Flying qualities are very gentle and forgiving.

• After looking through some old magazines, I decided to design a good old free-flight model. Something that could be constructed mainly of strips. Something easy to build and simple to fly. I surely hope I succeeded.

There is nothing difficult in the construction, as it is all straightforward building. The aircraft is certainly a dream to fly. The takeoffs are short and sweet, and a pleasure to watch. Just point Dot I into the wind, give it a little power, keep it straight, and that's it. Dot I will lift its tail and in about 10-15 feet it's off. With a little more power it will climb, so let it go.

Once the desired altitude is attained, throttle back to just above idle, set your trim for level flight, and just fly. There are no tensions, no jitters, just plain fun. A little more power and she'll loop. Dot I will not spin, yet will fly inverted—but I suggest you have some altitude, as she is a little bashful.

The flight isn't over just because the engine quit, it's just beginning. The first day we took Dot I out, we caught two thermals. It's really very easy with this model. Dead-stick landings are very slow, but give yourself a lot of room and start your approach a long way off.

Now for the construction of Dot I. There is one thing I do want to stress during the construction (not only when building Dot I, but for the construction of any model). *Make sure the parts fit well before you cement them together.* I put this little rule in mostly for the beginner. Some old-timers will build first and read later. So, for the beginner, read as you go; and for the old-timer, you can use this article as a construction reference.

FUSELAGE. Place waxed paper over the fuselage side view. Note that the frame is marked with X's at the crossbraces on the top and side views. Pin the 1/4" x 1/4" x 42" balsa strips in position from the firewall to the tail. For the first upright, cut a piece of 1/4" x 1/2" balsa and cement it in place at the firewall. The balance of the uprights and diagonals are 1/4" sq. Cement all uprights first, and fit and cement the diagonals later. Make two of these frames so you'll have a left side and a right side.

Starting with the crossbraces, begin by cutting 1/4" sq balsa at F-3A top view. Cut six of these pieces all the same length and cement these crossbraces in place as shown on the plans. Cut two 1/4" x 1/2" crossbraces for the firewall location. The rest of the crossbraces are cut from 1/4" sq. Check the frame for squareness as you go. Cut the first and second cabin uprights, and cement them in place. Cap this with 1/8" x 1/4" balsa as shown. Cement the first cabin top brace, which is 1/4" x 3/8" balsa, in place and cap this on both sides with 1/4" sq. Cut the 1/8" plywood landing gear

mounts, and cement them in place to fit around the crossbraces and to the inside of the frame. Bend the landing gear from 1/8" diameter wire and cut 1/8" plywood for the bottom of the landing gear mount.

The landing gear is of the crossover type and is held in place with two 2-hole metal straps and four wood screws. Install landing gear and secure it. Cut and cement 1/4" balsa to each side of the frame. Cut all bottom formers from 1/8" balsa and cement them in their proper location as per the plans. Plank the bottom front of the fuselage with 1/8" balsa. The three bottom stringers are 1/8" x 1/4" spruce or very hard balsa. The rest of these stringers are 1/8" x 1/4" medium hard balsa. Keep the side stringers as straight as possible and evenly spaced. The small X's mark the location of the side fuselage stringers as shown on the plans.

Cut the top rear formers from 1/8" balsa. Cut T-7A from 1/8" plywood and cement it to the rear of F-7T. Cement the balance of these formers in place as shown. Cement 1/4" sq strips into the notches on the sides of these top formers as per the plans. Cement the fuselage top 1/8" x 1/4" stringer in place; this stringer should be straight when sighted from the rear of the fuselage. Cut the tail section parts of the fuselage from 1/8" balsa. Cement 1/8" x 1/4" balsa to the bottom 1/8" piece as doubler for the stabilizer. Cement the top 1/8" piece stabilizer mount in place as per the plans.

Cut the firewall from 1/4" plywood and drill all holes as necessary for engine mount, throttle pushrod, and fuel tank outlets. Cut and cement the tank floor in place to fit across from the top edges of the landing gear mounts. This wood is cemented in cross-grained. Cut dash block and cement in place. Cut dash contour from 1/16" plywood. Cut two 1/2" balsa pieces to make the top front of the cabin. Cement them in, flush with each side of the fuselage. Cut 1/8" plywood to fit between these two pieces, and allow for 1/16" sheet balsa to go on top later. You will find the pattern for these on the top of the plans (see top view). The side windows are cut from 1/16" balsa. The other uprights on the cabin sides are 1/4" balsa wedges. The rear side windows are cemented to the top of the outside edges of the 1/8" x 1/4" balsa on the stringers. Cement the 1/8" x 1/4" upright inside the window and the 1/8" balsa gussets as shown.

Cement a piece 1/16" x 1/4" to each side of the 1/4" sq top stringer and feather-edge it at the rear (see top view rear of wing mount). Cement all top 1/8" x 1/4" diagonals in place so they will not interfere with the covering later. Cut 1/16" balsa and cement it to the top of F-7T and to butt to top stringer.

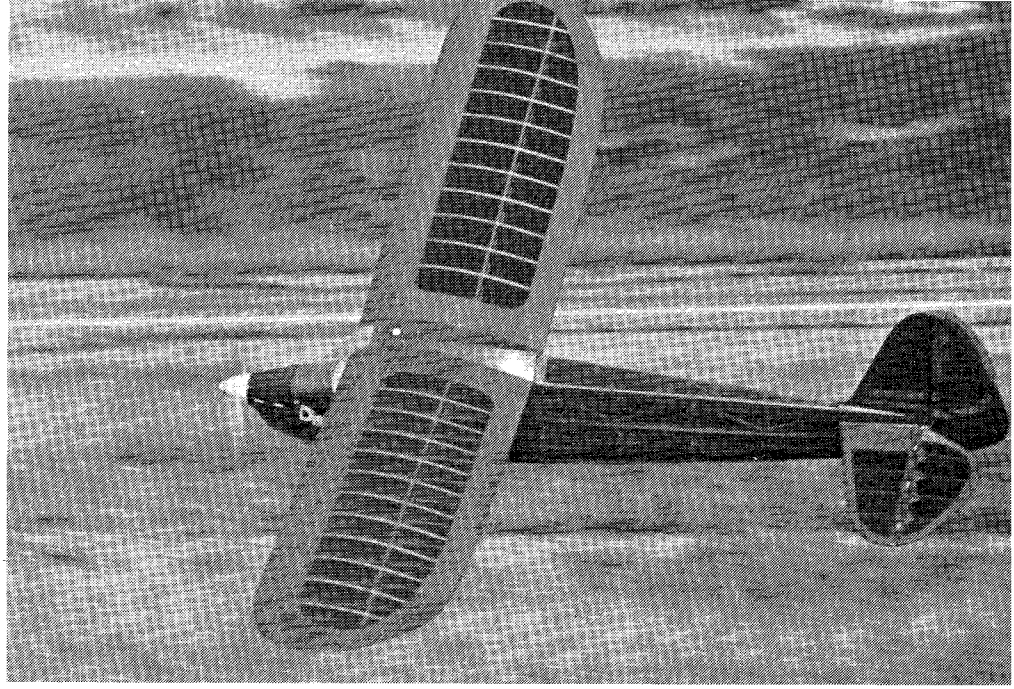
The bottom cowl is only a quarter cowl and is made of 1/2" laminated balsa. Install the engine mount and cut two 1/2" balsa blocks to fit around the mount on the left side only. Shape this to conform with the fuselage and up to the spinner. On the engine side of the cowl, a piece of aluminum beer can was cut and epoxied to serve as a heat shield for the cowl. The top cowl is made mainly of 1/64" plywood over a 3/16" balsa frame. Cut 3/16" balsa to fit front of dash block and another to fit behind spinner. Cut and fit 3/16" balsa to go between these pieces and cement as per the plans. A small drawing that shows the cowl detail is on the plans. After this frame is complete, remove it from the fuselage and cover the frame with 1/64" plywood. Use Zap cement and apply another covering of 1/64" plywood. Coat the inside of the top cowl with epoxy cement. Hinge the cowl as shown; the other side of the cowl is held down with a small hook. Cut front cabin braces from 3/16" hardwood dowels and cement in place.

Cut the bottom tail block from 1/2" balsa and shape as per bottom of fuselage. Cut groove for tailwheel bracket. Cut two pieces of 1/4" balsa for the top of the fuselage at the rudder. Cement these two pieces with 1/4" sq balsa to act as the rudder, and shape as per fuselage cross-section. The center 1/4" sq is removed when the rudder is to be cemented in place. The three side stringers will have to be tapersanded to conform with the rudder later. The windshield is cemented in place after the fuselage has been covered.

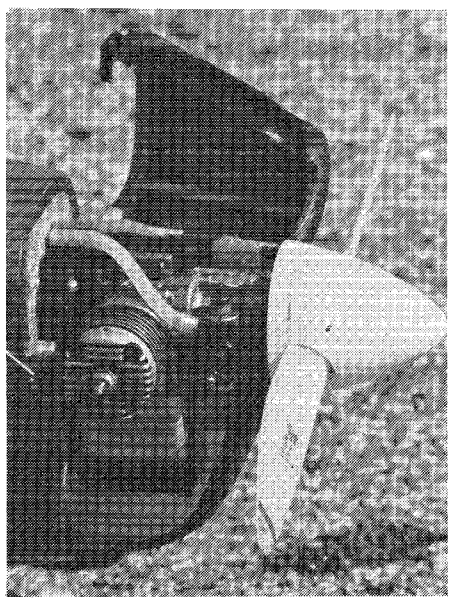
WING. To save space on the plans, the two wing halves are overlaid. The right wing panel is shown dotted. The rib locations are also marked with the letter "R."

Start the wing construction by laying waxed paper over the left wing panel. Cut the complete wing-tip parts from 1/16" balsa and cement them together. Note that there is a slight break on the bottom of the wing at W-5 rib, so score the balsa here. Cement the trailing edge and leading edge in place over the plans. The dotted line on the rear

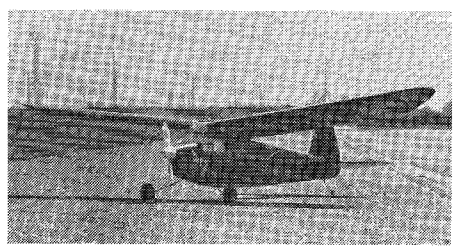
(Plans on next two pages; text continued on page 100.)



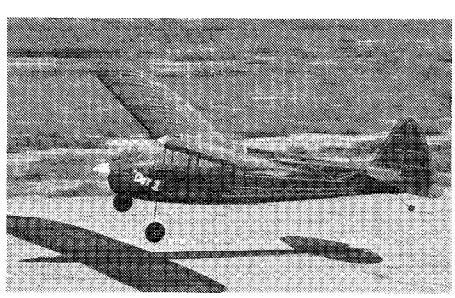
While easy to fly, Dot I is capable of basic maneuvers. It has very clean lines.



Interesting cowl setup. Beginners will learn a lot from building Dot I, not hard.



Nose design gives bird a modern look, and open framework is more from the Thirties.



Takeoffs are simple and give experience for tail-dragger fans; for .19 power.

DOT I

(Continued from page 15)

of the trailing edge represents the taper of the trailing edge here. Cement the 1/16" x 1/4" capstrips in place. Now cement the two bottom spars onto the capstrips and allow for all breaks in the wing. Cement ribs from W-1 to W-5 in place. Note that the first W-1 rib is tilted a little, so use the dihedral gauge shown on the plans. Elevate the tip up 1 1/2", and support the bottom of the tip so it will not bend while you're working.

Now cement ribs W-6 and W-7. Cement the 3/8" x 3/4" leading edge in place from W-1 to W-5. Sand bevel for break in wing at W-5, and cement the balance of the leading edge. Cement W-6 and W-7 in their proper location. Cut the 1/4" balsa that makes the leading edge of the tip and cement as per the plans. Taper this piece to conform with the leading edge of the W-6 and W-7 ribs, so the leading edge sheeting can be cemented in smoothly later. Cement the 1/4" sq top spars to fit into the notches of the ribs from W-1 to W-5. Cement another 1/4" sq from W-5 to W-7. These top spars will have to be tapered so that they fit flush with the top of the ribs, front and rear. The spars from W-7 to the tip are cut from 1/4" balsa. Cut two 3/32" plywood dihedral braces and cement in place as shown on the plans. Cement the 1/4" sq spars to the center-section top and bottom. Make the right wing panel in the same manner.

After the two wing panels are built, cement them together. Fit wing to fuselage and cement the small wedged piece shown on the top right-hand corner of the plans to the wing. Cement the face of the wing center-section with 1/16" plywood. Sheet the top and bottom of the wing with 1/16" balsa. Cement the piece shown just above the fuselage side view to the rear of the wing. The next piece is cemented to it and to the first piece cemented. Insert 1/4" diameter hardwood dowel and build up inside to hold dowel in place; use epoxy here. Plank the center section of the wing. Drill hole for 1/4-20 nylon bolt through the center of the main spars, while the wing is still in position on the fuselage. Remove the wing and tap into the 1/4" plywood at the top of the fuselage. Cover the bottom of the center section with nylon cloth and epoxy cement. Prepare the wing for covering.

RUDDER and ELEVATOR. Cut all parts for rudder and elevator from 1/4" balsa. (Again, lay waxed paper over the elevator section.) Cement the complete stabilizer leading edge and tips together. Using a straight piece of 1/4" x 1/2" for the center of the stabilizer at the hinge line, draw a line down the center from end to end. This will be the hinge line later.

Pin 1/8" scrap balsa piece to shim up leading edge of the stabilizer, and pin 1/4" x 1/2" hinge spar in place. Cement completed stabilizer leading edge to both ends of the spar. Cut stabilizer ribs from 1/16" x 1/2". Note that the center-section ribs will have to be undercut 1/16" top and bottom to allow for 1/16" sheet. Remove stabilizer from building board and shape the ribs. That was easy, wasn't it? The balance of the tail parts are done in the same manner.

The bottom of the rudder is built up with 1/8" balsa to both sides and shaped as per top view at this section, as is the center of the elevator.

Drill hole into bottom of rudder to accommodate 1/16" wire for tailwheel. This can be reinforced with nylon cloth and 5-minute epoxy. The servos were installed by cutting two pieces of 1/8" balsa to fit the inside of the frame and notched for servo rails. The top inside of the cabin was lined with 1/16" plywood at the wing saddle.

I'd like to thank Dot Forster for her help with this article, and also Ron Harris, who took the photos. I hope you have as many enjoyable hours of flying the Dot I as I did. With care, this model will last a long time. Happy flying! ■