

The Sharpshooter

This contest model features an airfoil-shaped fuselage for extra life. Does it help? Brother, this job has won a lot of meets.

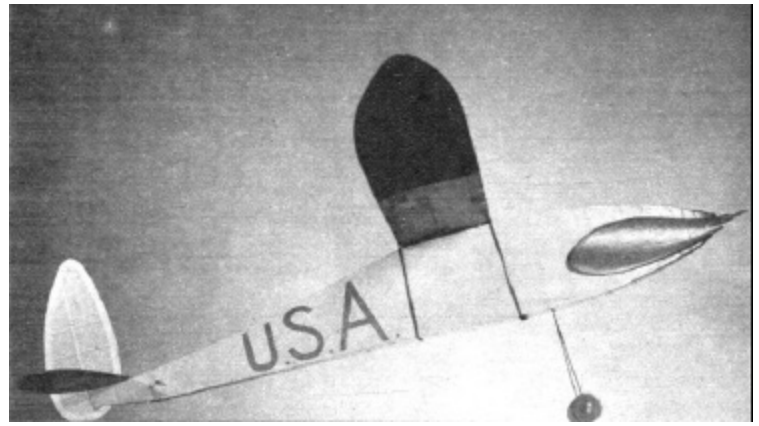
BY JOHN WULLSCHLAGER

AFTER a careful study of championship models in many contests, this particular model was designed as a combination of the best. To begin with, the fuselage is built to resemble an airfoil designed to create lift in flight, which is the secret of the plane's remarkable success. Its ability to catch weak thermals has proven itself in many contests. Another important point is the superlight wing, giving the model ballooning tendencies. You will notice the wing section is similar to the fuselage section, both giving lift. All ribs had the centers cut out to eliminate weight; this is a point to stress in construction. In making the tail, follow the ordinary procedure. The rudder is cambered to cause the model to turn to the right, which does away with rudder adjustments. The most important part is the propeller. It is a cross between the English and American type propellers. All the pulling area is at the tips, leaving very little resistance at the hubs. With an eighteen-inch prop of this design I developed a 2-1/2 minute motor run and a steep climb.

In this design we have something which meets the demands of modern Wakefield contestants. It will conform to the Wakefield rules in any man's contest. Here you have a model that will average 3-1/2 minutes in dead air, turn around and fly with the best of your so-called skyrockets or windy-weather models. It is truly a great contest model and has proven itself so.

In the first contest ever entered it established an unofficial world's record of 34 minutes and some odd seconds total for a three-flight average, only two of which were completed. First flight, unofficial, 15 minutes; second, official, 14 minutes some seconds; third, official, 19 minutes out of sight. The next meet entered was the Scripps-Howard Nationals. Again it was first in the open event, flying a total of over 22 minutes.

The last meet was at Alliance, Ohio, placing second with a total of 17 minutes, but losing the model on the second flight, never to be returned. One remarkable trait not to be overlooked is the fact that not one



Does 3:30 in dead air, yet has skyrocket climb in wind.

Airfoil fuselage, light wing construction, and concentration of blade area near prop tips are secrets.

flight in any contest entered was under 6 minutes.

CONSTRUCTION

The fuselage is very simple to construct. Select some hard 1/8" squares for longerons, pin to outline of full-size drawing and glue in cross members. When set lay second side directly on top of first side to insure accuracy, let stand till dry, then cut apart and place cross members where indicated. Fill in around nose with soft 1/8" flat balsa, using plenty of cement. Do the same at tail to reinforce rear hook, which is 3/16" basswood dowel. The nose plug is balsa, which is carved and sanded to shape and inserted with a 1/4" flat pine plug. Next bend landing gear to shape and insert as shown. Make wheels from 1/16" flat plywood, gluing small wood disks to hub to eliminate wobble, paint and attach, using small brass washers, with a touch of solder.

Select a medium-hard block for the propeller, making sure of proper dimensions. After carving, sand and give three coats of clear dope. Now very carefully cut into three parts, namely two blades and a hub. Next cement brass hinge to back of hub and brass fitting to front as indicated. Insert two No. 12 wire hooks, one through each side of hinge loop; refer to drawing. Now anchor wire hooks into blades and cement, taking caution blades are straight before cementing. Wrap cemented parts with thin stripes of silk and give two more coats of red color dope. Attach prop, bend book as shown, using hard-rubber bobbin on hook.

Now for the wing. Lay out leading and trailing edges on full-size drawing, and cement in ribs, which should be cut out for lightness. The tips are 15" split bamboo, being bent in one piece, with the tips sliced as needed. When tips are glued in place and set, cut wing at points shown and block up for dihedral. Next cement 1/16" square spars in place, using 1/16" balsa gussets at joints. Sand entire wing and cover.

The stabilizer is very similar to the wing in

construction, having no dihedral, of course. The area is 66" square to conform to Wakefield requirements. Refer to drawing for sizes of wood.

For the rudder, lay out the center spar, which is 3/16" x 1/4" hard balsa. Next glue in unshaped ribs, and when dry sand to shape shown on drawings. Leading and trailing edges of rudder are 1/8" soft balsa.

Wings and tail are covered with outdoor tissue. Water-dope and then give three coats of clear nitrate dope. The fuselage is covered with silk. Give three coats of clear dope, sanding between each coat. When dry, give two coats of color dope, preferably yellow.

For the motor, use twenty-two strands of 3/16" flat brown rubber and divide into three separate sections, ten strands in two of them and two strands in the

third, each section about fifty inches in length when looped. Next tie all three together at one end, attach to a doorknob and braid. When finished, tie end with rubber to secure braid. Lubricate well before winding.

FLYING

The model may need about 1/16" left thrust inserted in side of nose block. Original model flew without any incidence, which is good. The center of gravity falls at center of wing. Elevator is set straight.

Wind about one hundred turns with three-to-one winder, launch, and if directions were followed you will see a remarkable climb. Make all adjustments with wing and thrust line. Now really pack in a few turns and get to your car for a chase.

BILL OF MATERIALS

(All balsa unless otherwise specified.)

Fuselage

1 pc.	1/4 x 2 x 2" pine, nose plug
8 pcs.	1/8 x 1/8 x 36" hard
1 pc.	1/8 x 2 x 18" soft
1 pc.	1 x 1-1/4 x 2" nose block
1 pc.	3/16 diam. x 2" basswood, dowel
1 pc.	1/16 diam. x 24" steel wire
2 pcs.	1/16 x 2 x 2" plywood
1 pc.	1-7/8 x 2-1/4 x 18"
1	ballbearing washer
2 pcs	.105 brass, 1/4 x 2"
1 pc.	1/16 diam. x 6" steel wire
1	1/8 diam. x 1/2" tension spring

Wing

2 pcs.	1/8 x 1/8 x 36"
6 pcs.	1/32 x 2 x 18"
12 pcs.	1/16 x 1/16 x 36"
2 pcs.	1/16 x 1/4 x 15" bamboo
3 pcs.	1/8 x 3/8 x 18"

Stabilizer

1 pc.	1/32 x 2 x 18"
10 pcs.	1/16 x 1/16 x 24"
2 pcs.	1/16 x 1/4 x 12" bamboo
1 pc.	1/8 x 3/8 x 24"

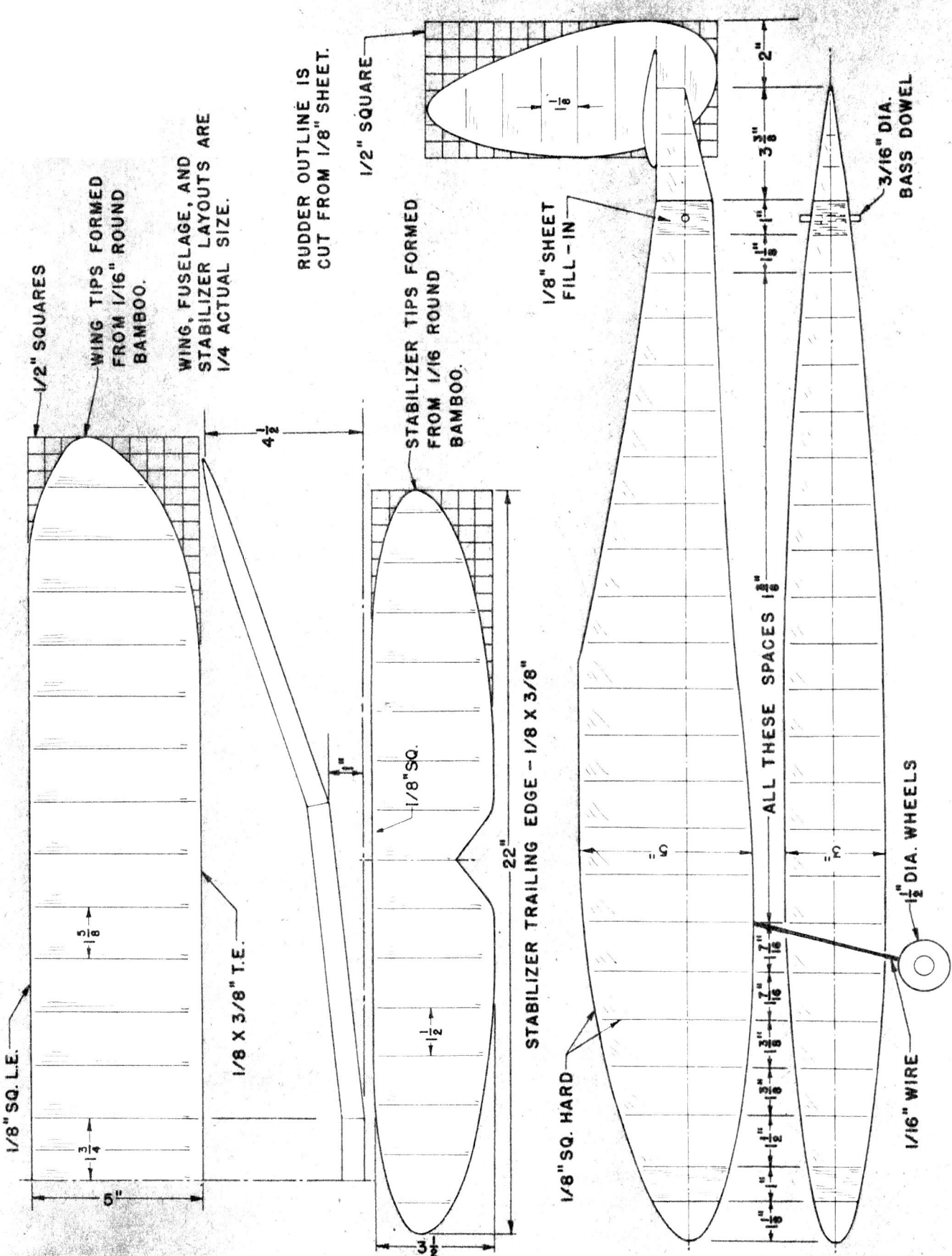
Rudder

1 pc.	1/32 x 2 x 18"
1 pc.	1/8 x 2 x 18"
2 pcs.	1/16 x 1/16 x 12"
1 pc.	3/32 X 1/4 x 10"

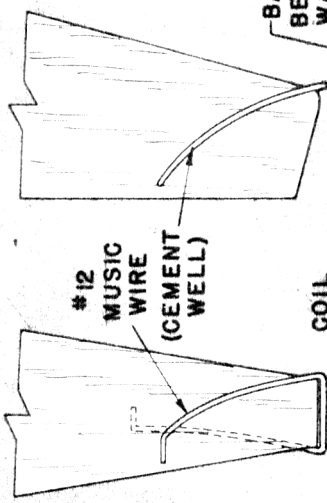
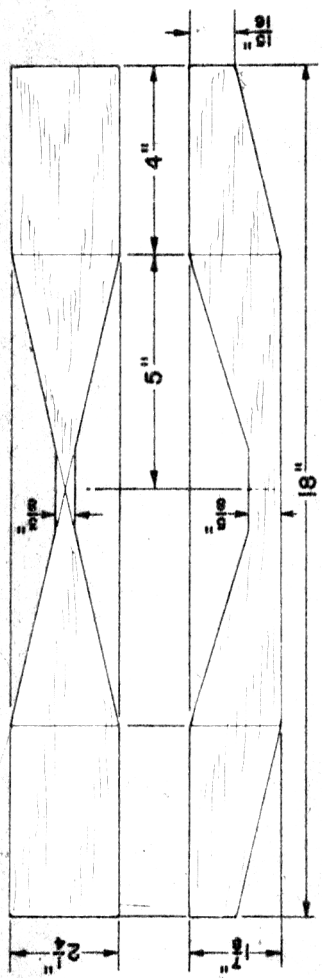
Miscellaneous

2 sheets	outdoor tissue
1/2 sq. yd.	silk
8 ozs.	clear dope
3 ozs.	cement
90 ft.	3/16" flat brown rubber
1 oz.	yellow dope
1/2 oz.	red dope

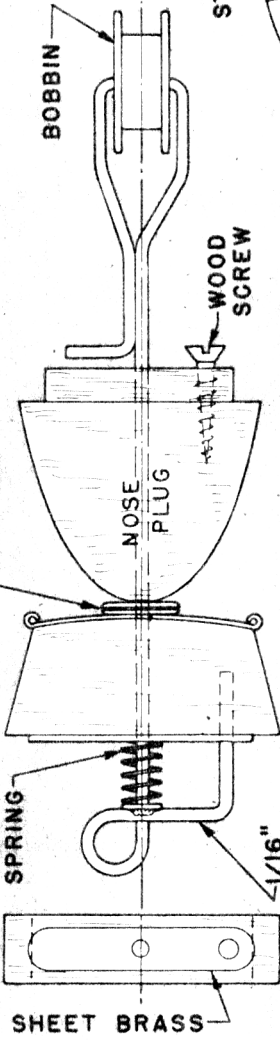
Scanned From May, 1942
Air Trails



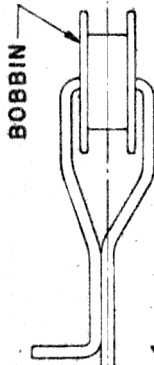
PROP DETAIL - 1/4 ACTUAL SIZE



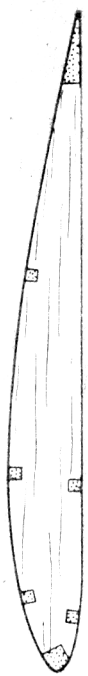
BALL BEARING WASHER



BOBBIN



FULL SIZE STABILIZER RIB - 15 REQ'D. (1/32 SHEET)



FULL SIZE NOSE DETAIL

FULL SIZE WING RIB - 29 REQ'D. (1/20 SHEET)

