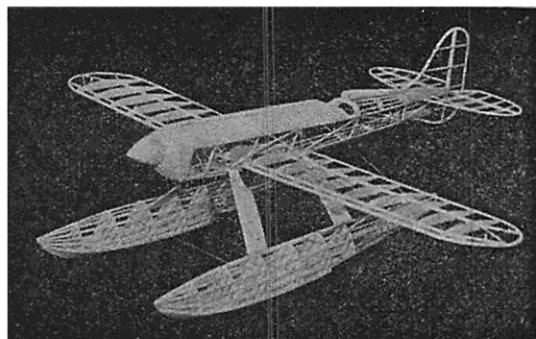


The uncovered model shows attention to details



A model worthy of your skill

Building the Macchi-Castoldi Seaplane

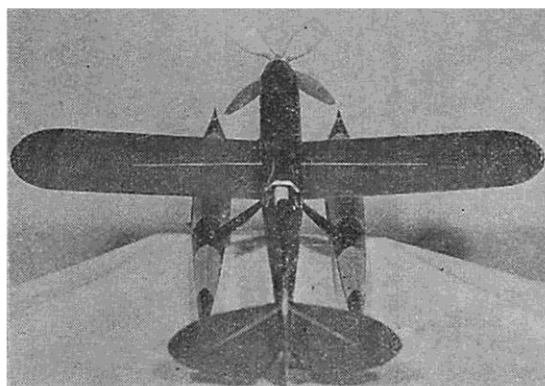
THE "Red Bullet of Italy," more properly known as the Macchi-Castoldi 72 and holder of the world's speed record at 423.7 m.p.h., provides the builder of flying scale models with new and interesting material. Two propellers in close tandem arrangement and revolving in opposite directions provide a power unit that is without torque, a feature of considerable value in the model as well as the large seaplane.

The builder who studies all drawings carefully and reads all instructions prior to beginning work, will have no difficulty in making this model. Its construction is entirely conventional excepting the power plant, in which the rear prop is driven from the rear end of the rubber motor by means of a balsa driving tube and hollow propeller shaft, which in turn acts as a bearing for the front prop of conventional structure.

Plates 1 and 2 joined together at the section lines provide a side view fuselage layout with all stations shown in cross section. The fuselage is made entirely of balsa pieces of the size shown in drawings. Two sides composed of the longerons and all uprights and diagonals between, should be assembled and joined together. Top cross members B, C, D and Q are identical in size and shape and should be sanded together as in rib construction. Observe the heavy lower cross member at the point of greatest stress, section C-C. It is important that this piece be carefully cut and securely cemented in place as it maintains body alignment.

Data and Plans from Which You Can Create a Cleverly Designed Model of the Fastest Airplane in the World

By C. L. BRISTOL



The plane finished, ready to fly

Spinners S and S' should, for accuracy, be lathe turned and center drilled as one piece, cutting them apart afterward. They are also of balsa and may be shaped by hand where the above equipment is not available to the builder. Propeller blades are cut and carved separately, see Plate 3, and mounted to these spinners on bamboo plugs at an angle of 30 degrees. The balsa nose block is shown in side, top, front and rear elevations. It may be hand-carved and must fit the rear spinner S' in front and the bulkhead A-A' at the rear, at which point it is drilled for short pieces of hardwood dowels. These plugs, cemented only to the bulk-

head, facilitate easy removal of the nose block, motor, etc.

The driving tube for the rear propeller can be made from a sheet of 1/32" balsa by soaking in hot water and rolling it around any suitable piece of dowel, pipe or tubing. When dry, the seam can be cemented and the ends trimmed to the correct length. This tube is provided with round end plugs, P and P' in drawing, and attached to the hollow bearing JKJ' which is shown assembled at top K. The pieces I, J and J' are of sheet brass, .45 in thickness, while K is of brass tubing 1/8 inch outside diameter. The center hole in I should fit K, and the plates J and J' are drilled to fit the front prop shaft L.

Assembly of these parts should be as follows: solder J to K, centering carefully, slip spinner S' and bearing I on K, placing a fibre washer I' behind I. Next solder J' in place and cement to the plug P. In the rear end of this assembly, the pin X and washer X' form a free bearing which is attached to the fuselage by means of the cross-piece V', see drawings 2 and 4. V' of pine or hard balsa, slides across the fuselage between the side blocks V and is removable. The piece U is a rear motor hook of music wire and is secured to the tube T at the plug P'.

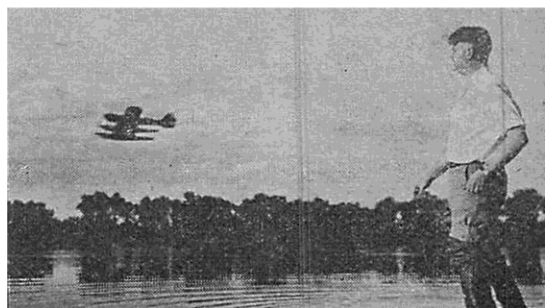
In assembling the motor, lace three loops of 1/8 inch flat rubber through the rear hook U and tie the ends in a square knot, making the loops about 11 inches long. By means of a long wire hook, pass the rubber through the tube and cement

(Continued on page 21)



Its attitude on the water shows grace and good balance

It actually performs. Its designer, Mr. Bristol, watches a flight expectantly



the plug P' in place. Reinforce the rear face of spinner S by cementing a large washer thereon. The front prop shaft L can then be passed through the hollow bearing K and secured to the front spinner S, placing three washers on the shaft. Hook the rubber motor over the hook L and cement plug P in place at the front end of the tube.

A fin and rudder layout is given on Plate 2 and may be assembled together. Rudder can be cut away afterward and sanded for clearance along its front edge. Wire mountings as shown, will allow the rudder to be moved for circular flights. Plate 4 shows one-half of the stabilizer layout. Observe that the stabilizer has a reversed camber and is also adjustable. Accurate patterns are given for wind-shield, landing gear struts and cockpit cover. The entire top portion of the fuselage forward of the cockpit is also covered with 1/32" balsa, using a single wide stringer at the top center where the seam occurs.

Sixteen ribs of 1/32" stock and two of 1/8" are required in making the wings, layout and patterns appearing on Plate 3. The layout is for the right wing and the builder may have a left wing layout by reversing the root and tip sections. Round balsa spars are used, passing through holes drilled in the ribs. A set of bamboo bows in each wing tip as shown, adds greatly to the appearance and strength at this point. Wing tip outlines are cut from 1/16" balsa. Balsa blocks are placed at the points shown to receive brace thread.

In constructing the pontoons, the builder will require one keel piece and a set of bulkheads, patterns for which appear on Plates 5 and 6. For accuracy the pieces for each float should be sanded at the same time, making two each of all bulkheads and keel. Continuation of the keel behind bulkhead number 5 is accomplished by means of a 1/8 by 1/16" strip, rear up-rights or stern posts being of the same material. Dotted lines on bulkhead number 5 indicate the position of strips cemented to its rear side to complete the step. The three top stringers extend the entire length of the floats, while all others are cut at bulkhead 5 and cement thereto in an offset position. Note that one stringer is discontinued behind the step.

Cover the bottom of each float with sheet balsa 1/32" in thickness, which should be worked down with sandpaper to about half of that thickness. All stringers fit closely at the front of the floats and require a little tapering at this point. The builder should cut all notches carefully so as to avoid sagging stringers or other irregularities.

Cover the top portion of each pontoon with strips of red tissue running lengthwise and using as many sections as appear necessary to a smooth job. Shrink with water as in the covering of wings and fuselage. The entire model should be covered with red tissue except the rudder, which bears the Italian insignia shown on Plate 2. Saddlebag radiators on the pontoons may be simulated with paper patches as shown and should be of a silver color. Paint all exposed wood parts with red lacquer, well thinned, except props and

spinners which are painted with silver dope. Pontoon bottoms may be left in the natural wood and water-proofed with a solution of paraffin and benzine. The entire model should receive two coats of banana liquid as a protection against the splash of landings.

The method of assembling the model and of rigging same with loops of number 20 cotton thread, is clearly shown in the drawings and the builder should be careful to get the floats exactly parallel and in line with the fuselage.

The center of frontal resistance is very low on this model and test flights should be made with a negative stabilizer setting of about 2 degrees. Winding is accomplished by holding the rear prop and winding the front one in the usual way. When released, they will spin in opposite directions. Adjustable tail surfaces make a variety of flights possible.

The "Red Bullet" is a trim little craft, light in weight and quite speedy in flight. It should make a worth while addition to any builder's collection.

Send this List of Material to your dealer

Balsa

- 1 block . . . 1" by 2"
- 1 sheet . . . 1/4" by 2"
- 1 " . . . 1/8" by 2"
- 1 " . . . 1/16" by 2"
- 10 " . . . 1/32" by 2"
- 30 strips 1/16" square
- 6 " . . . 1/8" square
- 6 " . . . 1/8" by 1/16"
- All balsa 18" long

Bamboo

- 2 pieces
- 1/16" sq. by 12"

Tissue

- 1 sheet white
- 1 " green
- 2 sheets red

Banana liquid, dope, cement, rubber and small hardware as described.