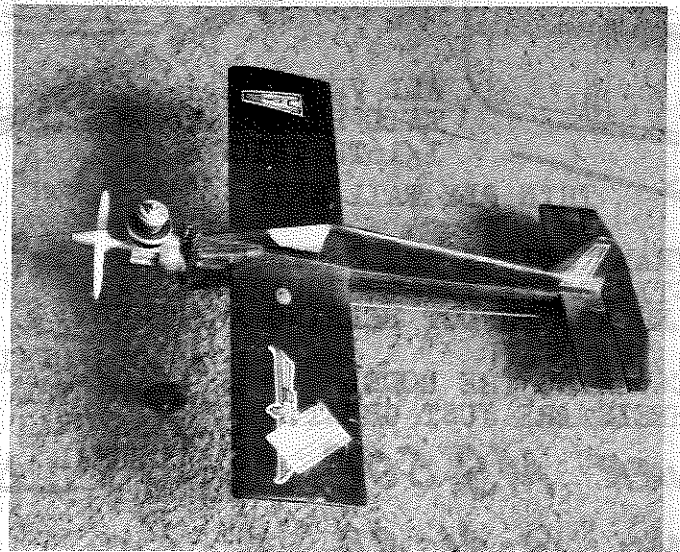


Control details are incredibly simple: a control horn, pushrod, bellcrank, and two lead-in wires.



The Templeton Mk II is the perfect "first airplane" for the tyro interested in something that "really flies!"

TEMPLETON MK II

By JAMES MARTIN . . . For Juniors and other circle burners on a restrictive budget, the Templeton Mk II can be the answer to a lot of frustrations. Here's a two-for-the-price-of-one model . . . just for you.

• As I walked into a local auto parts shop the other day, the young man in back of the counter said, "I remember you! You're the guy with the 1/2A proto racers. I still got mine." This enlightened my ego as I thought back to how the 1/2A Templeton was developed.

The juniors of the club had been throwing hand launch gliders, but now they just sat and watched the grown-ups fly Ringmasters and Flite Streaks with their screaming .35s. Watching is no fun. Why not get some balsa, wheels, an engine, some line, and get those kids in the air?

It is not easy to come up with a decent 1/2A design; and often 1/2A designs are taken too lightly. The design we needed must be simple, easy to maintain, fly well, cost little, and be intended for an activity in which all juniors can participate.

How about sport racing where there are speed, time, and distance aspects?

With only a sheet of 1/4-inch balsa, some 1/8-inch balsa scrap, 1/8-inch plywood, music wire, wheels, and an

.049 reed engine . . . there were possibilities. Maybe two airplanes could be made from the one 1/4 x 4 x 36-inch sheet of balsa?

With all of these design objectives in mind, the Templeton Mark II was born. What follows are the instructions for building two of these great little 1/2A racers.

PREFABRICATED PARTS

1) Mark the 1/4 x 4 x 36-inch sheet with a ruler and a felt pen as shown on the plan. These are the wing and fuselage parts.

2) Cut out these parts using a sharp modeling knife (Uber Skiver) with a number 11 blade and a straightedge.

3) Sand all parts lightly with 400 grit sandpaper so that the edges are square.

4) On the 1/8 x 2 x 36-inch medium grade sheet balsa, lay out a pair of rudders, horizontal stabilizers, and elevators as shown on the plan. Note that the grain of the wood for the rudder runs vertically.

5) Cut out the 1/8 sheet parts.

6) Sand the 1/8 sheet parts lightly,

rounding the edges.

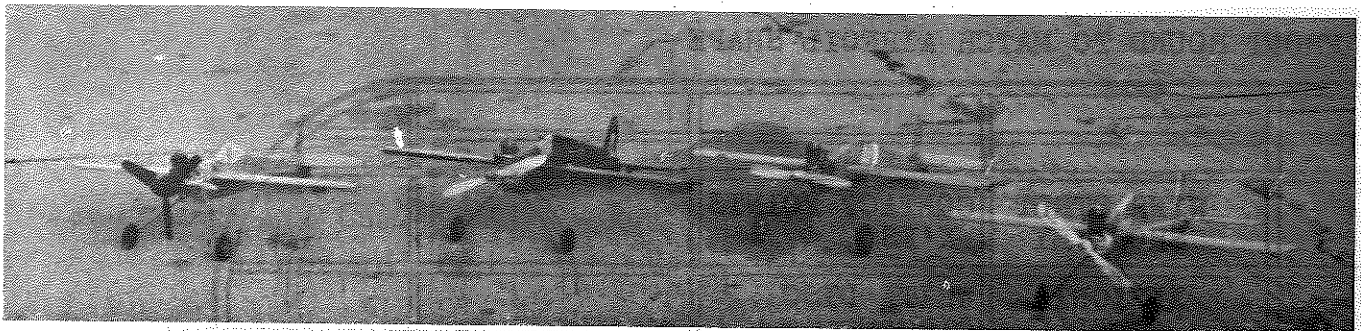
7) From popsicle sticks, cut out tail skids, elevator horns, and line guides. Drill holes before cutting to length. Drill 1/16-inch holes in the elevator horn and 1/8-inch holes in the line guide. Note: 1/8 plywood can be substituted.

WINGS

1) Shape the 1/4 x 3 x 14-inch balsa wing stock. The airfoil is flat on the bottom with Philips' entry on the lower leading edge beginning 1/2 to 1/3 inch from the L.E. radius. The top surface is contoured with the maximum thickness of the airfoil occurring 1/3 inch from the L.E. radius as shown. Sand to shape using sanding blocks with medium and fine sandpaper for smoothness. Round the wing tip edges.

2) Drill mounting holes for the 2-inch bellcranks at the following location: 1-1/4 inches back from the leading edge and 1-1/4 inches out from the fuselage on the center line of the left wing panel. Hole size will be determined by the type of bellcrank used.

3) Recess and epoxy a 1/2-inch steel



With the proper amount of scrounging in the scrap wood pile, these four 1/2A racers, (less engine) could be made for under ten bucks!

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flat washer to the underside of the right wing panel 1/2-inch from the leading edge and 1/2-inch from the wing tip.

4) Glue the line guide to the underside of the left wing 1/2-inch in from the wing tip perpendicular to the line of flight as shown on the plan. Use an aliphatic resin glue.

ASSEMBLING THE TEMPLETON

1) Glue the body sides flush with the top of the lower body, and glue the six filler triangles to the lower body. Note that all the long edges of the filler triangles face the same direction, and that all are flush with the motor mount.

2) Glue the wing to the lower body and body side: 3/4-inch back from the motor mount, and be sure the wing is perpendicular to the lower body.

3) Glue the horizontal stabilizer to the rear end of the lower body by notching the body top to fit the trailing edge of the wing and the horizontal stabilizer. Glue in place.

5) Fit and glue the cabin to the lower body. Take care to fit the cabin to the wing; this can be done by superimposing a trace line on the cabin piece. With a felt pen, place a mark on the lower edge of the cabin 3/4 inch from the front. Place the right wing panel on a flat surface, then place the cabin on the flat surface aligning the mark with the right front edge of the wing tip. Now, mark the cabin by tracing the curvature of the airfoil. Cut out the partial airfoil shape, then fit and glue.

6) Glue the remaining four filler triangles to the body top. Note that two triangles are trimmed to fit between the wing and the engine mount.

7) Fit and glue rudder. The 1/8-inch rudder pieces have an extension on their lower rear edge. This extension rests on the top of the horizontal stabilizer near its rear edge and its center line, and butts up against the 1/4-inch body top providing a greater gluing area for strength. The difference in widths provides for rudder offset.

ELEVATOR INSTALLATION

1) Stabilizer hinges are made by gluing four pieces of 3/8 in. x 3/4 in. nylon cloth to the top side of the stabilizer as shown on the plan leaving 3/8 inch hanging over the trailing edge.

2) Elevator hinges are made by gluing four pieces of 3/8 in. x 3/4 in. nylon cloth to the top side of the elevator as shown on the plan leaving 3/8 inch hanging over the leading edge.

3) Turn over the model so that the bottom side of the stabilizer is facing up. Likewise, turn over the elevator, and bring together the edges with the loose ends of hinge material. The hinges are brought up through the gap and glued to their opposite flying surface.

4) Epoxy the elevator horn and its support doubler (made out of 1/8 x 1/8 x 3/4-inch balsa) to the underside of the elevator as shown. A small nylon radio control horn can be substituted.

ENGINE MOUNT AND LANDING GEAR ASSEMBLY

1) Bend to shape two lengths of 1/16-inch music wire as shown on the plans.

2) Cut out four pieces of 1/8-inch ply 1-1/8 in. x 1-1/2 in.

3) Cut or rout out V-shaped notches on two of the four 1/8 plywood pieces to a depth of a little better than 1/16 inch.

(Use a pencil to mark the wire's position on the plywood, then with an Uber Skiver, cut along the outline. Use the end of a piece of 1/16 music wire to rout out the grooves. A little effort makes a firm engine mount and landing gear support.)

4) Epoxy the landing gear in place by sandwiching it between the two 1/8-inch plywood engine mounts.

5) Drill four holes aligned with the engine mounting holes for the 2-56 blind nuts.

6) Sand the front of the fuselage (using a sanding block with medium sandpaper) at a slight angle to provide right thrust.

7) Install the 2-56 blind nuts behind the laminated engine mount. This side is to be epoxied to the fuselage.

8) Epoxy the engine mount and landing gear assembly to the fuselage. Caution: do not put any epoxy on the blind nuts. The fuselage front may be recessed to receive the blind nuts. Use rubber bands to hold the assembly in place while it cures.

WHEELS

1) Slip the one-inch wheels on the landing gear. Wrap some small, polished bell wire around the axle to hold the wheel in place, yet allow it to spin freely, then solder the wire.

TAIL SKID

1) Make a deep, rectangular-shaped hole on the rear underside of the lower body to receive the tail skid as shown on the plans.

2) Glue the tail skid in place and tap in lightly.