



# The "TIPPY"

By A. ABBOTT

## Construction—Fuselage.

First of all, obtain a block of soft balsa, 2 in. by  $1\frac{1}{4}$  in. by  $2\frac{1}{2}$  in., and carve carefully to shape. When this is done, split the block down the centre-line and hollow out to wall thicknesses shown, not forgetting to leave a  $\frac{1}{4}$  in. hole for nose-button. The rest of the fuselage is made on the stringer principle. Pin master stringers on the drawing and cement half-formers on to these. When dry, remove from plan and complete the fuselage by adding opposite half-formers, the two side stringers and the tail-blocks. Cover the entire fuselage except the turtle-back with  $1/64$  in. balsa; add bamboo stringers and cover with tissue. Also cut a portion of the balsa covering away for insertion of rubber.

Pierce holes in fuselage and cement drinking straws firmly into position.

## Wings.

Place spars in position on plan, also the trailing edges. Slot ribs and cement on to the spars. Rib C is cut from hard  $\frac{1}{4}$  in. balsa, to which the landing gears are fitted. Cement wing tips in position and cut slots for and fit leading edges. Cover wing to dotted lines with  $1/64$  in. sheet balsa and place  $\frac{1}{8}$  in. sheet stiffening in position on underside of wings. Locate wing dowels from straws in fuselage and cement in position. Cover rest of wing with tissue.

## Empennage.

The construction of the tail and elevator is very similar to that of the wings. Cut *all* ribs to streamline section and cement spars in position; attach movable parts by means of aluminium hinges. Stabiliser rib A-A is made of  $\frac{1}{4}$  in. by  $\frac{1}{8}$  in. balsa, and tips are of  $\frac{1}{8}$  in. sheet.

## Undercarriage.

Cut two shapes of  $\frac{1}{4}$  in. balsa and four of  $\frac{1}{8}$  in. balsa. Cement one piece of  $\frac{1}{4}$  in. each side of  $\frac{1}{4}$  in. sheet after space to take wheel is cut out. Carve to streamline section and fit  $\frac{1}{4}$  in. balsa balloon wheel. Strut is carved to section Y-Y and cemented to spat. Force a  $\frac{1}{8}$  in. diameter bamboo peg into the strut, and attach landing gear to rib C.

## Covering and General Finish.

Sand fuselage with extremely fine "garnet" paper and give one coat of clear and two coats of coloured dope. Cover turtle-back with tissue paper and add the dummy engine, which may be made by winding thick thread round balsa cylinders and adding valve rods and spark plug leads to make a realistic job.

## Flying.

Fit a 5 in. "wind shovel" type propeller and two or three 12 in. loops of  $\frac{1}{4}$  in. by  $1/30$  in. rubber. Add very small weights to nose or tail until correct trim is obtained.