INSTRUCTIONS FOR BUILDING THE "SPRITE"

In common with all other 'Frog' products this model has first been designed to give the most enjoyment by the constructor; the constructional methods have been carefully worked out to enable even the beginner to make a satisfactory job.

The skeleton of the Sprite is nearly 100% balsa wood, so that the few unshaped parts require a minimum amount of labour. It is also interesting to note that if due to accidents in building or flying, a component breaks, it can be replaced with the cement supplied and it is unlikely that a break will occur again at the joint.

Another feature of the 'Frog' kits is the full scale working drawing, comprehensively numbered with the instructions, so that you can place the drawing on a soft wood board or old table, and build the toy by pinning the parts to it. Carefully cementing every joint, and leaving for about 30 minutes to dry, pins may be pushed right through the pieces of balsa, to keep them in position, without causing any damage.

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\[ Diagram of the Sprite model with numbered parts and notes on assembly. \]
For most efficient performance in its class, it is desirable to make a simple and satisfactory job of the wings. These parts may be prepared with the minimum of care. Parts are broken, they may be numbered and detailed for easy reference. Build the various parts of the model on a flat surface to prevent any damage to the parts. Sandpaper wing tips:

**WING CONSTRUCTION:** As in sketch No. 1 pin down spars at ribs No. 8. Cement in place all ribs. Join No. 1. Both port and starboard wings can be made together as in sketch No. 2. Support the tips on 2in. centre section and add the two pieces 14, followed by the mid ribs. Add rib No. 9. Cement into the four corners shown. Rub this in well. With piece of stout paper provided. Sandpaper wing tips:

WING PLAN

$\frac{1}{4}'' \times \frac{3}{2}''$

$\frac{3}{8}'' \times \frac{3}{2}''$

All other wing ribs 3-7 are similar in shape but vary in size.

Approximate position of wing when ready to fly.
...down the leading and trailing edge spars on the drawing, also main spar 12 and 13. Glue all the ribs from 2 to 8, followed by the wing tips Nos. 10 and 11, and the tip rib to the two main spars 12 and 13 on 2 mm blocks to give the correct dihedral angle. On each side of the main spar the missing pieces of leading and trailing edge to complete the centre section. Finally, rubber band attachment pins bent up slightly, and cover the whole centre section tips and leading and trailing edge spars round and smooth, and clean up all ribs.

Covering

The wing is secured with one rubber band round fuselage on to these pins.

Make up motor with a skein of 6 strands round skein. Apply a liberal application of motor. Attach one end to hook on propeller shaft through the skein.
COVERING AND DOPING.

Use a flour and water paste as an adhesive. Do not attempt to pull tissue tight. Water spray and do covering each piece uniformly with no deep wrinkles. The following is a recommended sequence of parts to cover:

- Wing under-surface in two pieces.
- Wing top surface in two pieces from centre section each way.
- Tailplane top surface, followed by under surface. Pin one side, followed by other side. Fuselage in for each side.

Spray water lightly over all the tissue. Handle carefully while wet. Pin down wings, tailplane and fuselage to prevent warping while water dries.

Finally give one coat of clear dope and again pin down.

2” block to give correct

if 6 strands, 16” long of $\frac{7}{8}” \times \frac{1}{10}”$ rubber. Keep each end secure with small rubber bands bound to prevent rubber and make it capable of taking more turns without breaking. Then shaft. Lower through fuselage and secure at rear end with birch dowel through parts F.9 and
ior Duration Model.

and dope will do this. Aim at parts to cover.
way.
age in four sections, one piece for ne and fin, as for assembling, to

SKETCH No. 1

SKETCH No. 2

correct

Drawing

PROPELLER
securely int block prov
PELLER ASSEMBLY—Cement the two blades together into the diagonal slots in the blade hub lock provided. When set sandpaper the blades to a convex surface on the side facing...
NOSE PIECE ASSEMBLY. Round off the block provided as shown and to the flat back surface add F.1 and F.2 (the centres from F.3 and F.4). Cement the plastic bush in place and thread through the propeller shaft from rear end, slide on one cup washer followed by the propeller. Bend the shaft over into a U shape, push it back into the hub and secure with cement.

SKETCH No. 7 showing how top undercarriage legs is sandwiched betw blocks of 1/2 x 3/8 cemented together the fuselage is finished this is cement the lower longerons in front of
TAILPLANE CONSTRUCTION:—Pin down the leading edges of \( \frac{1}{4}'' \times \frac{1}{2}'' \) strip and then that the latter is double. Now add the main spar of \( \frac{5}{32}'' \times \frac{3}{16}'' \) strip, pulling it down edge push one pin as a securing hook. To the leading edge cement two pins as show rubber band round the fuselage from these front two, and a band between the sing!
FUSELAGE CONSTRUCTION:—Pin down top and bottom longerons in place. Also F.5, F.6 and F.9. This completes one fuselage side which these two sides together with bulkheads F.7 and F.8, cementing the sides in equally at the rear and join the two F.9's together. Add F.11. composite bulkhead F.3 and F.4. Hold with small rubber band until and cement in place as in Sketch No. 6.

...rip and to the ends cement in place the tips T.1. Now add the ribs T.2, T.3 and T.4, noting it down at each end and cementing to T.1. Remove when set and into the centre of trailing as shown, each one being bent round into the centre double rib. The tail unit is secured by a the single one at the rear and the one in the fuselage.

FLYING THE MODEL:—For your first flights wait launch the model on an even keel. If it noses up ground without climbing the wing must go forw...
Cut all the upright struts to length and cement which is removed when dry. Make another in exactly the same way, joining them to appropriate upright struts as in Sketch No. 5. Now pull the d F.11. Pull the sides inwards equally at the nose and cement to the I until set. Add F.10 top and bottom. Finally cut all cross struts to length.

THE RIN is easily constructed from the parts F.1, F.2, F.3, F.4, and F.5. Remove when dope as directed at time of building. Covered and do up to the two centre ribs until upright.

It is a calm day. Place the wing in the approximate position shown, give the propeller about 50 turns; it rises up and stalls. The wing must be pushed back a bit until level flight is obtained. If it goes straight to the right, forward. Once trimmed, the turns can be increased gradually up to 600.
easily constructed by pinning down and cementing all F.2, F.3, F.4 followed by the cross pieces of \( \frac{3}{16} '' \times \frac{3}{16} '' \)
when set, sandpaper edges round and covered at top of drawing. When tailplane has been and doped, this fin is cemented permanently to the ribs on the tailplane, making sure it

Both legs are in one length of wire, bent to shape as shown here in this frontal view. Fit the wheels in place before bending up the ends of the wheel axles.
See Sketch No. 7 for further instructions.

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PIPELLER ASSEMBLY:—Cement the two blades securely into the diagonal slots in the balsa hub block provided. When set sandpaper the blades to a convex surface on the sides facing forward, leaving the rear side flat as shown by the dotted sectional line.

Finally round off all edges and corners as shown here, and balance the propeller by sandpapering the side which drops when balanced on a pin through the shaft hole.

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