

SIDE VIEW (Full size)

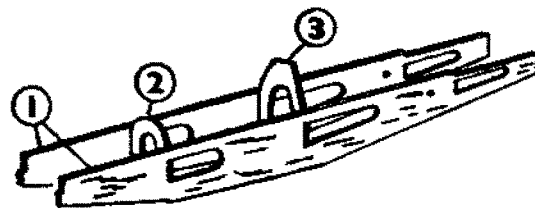
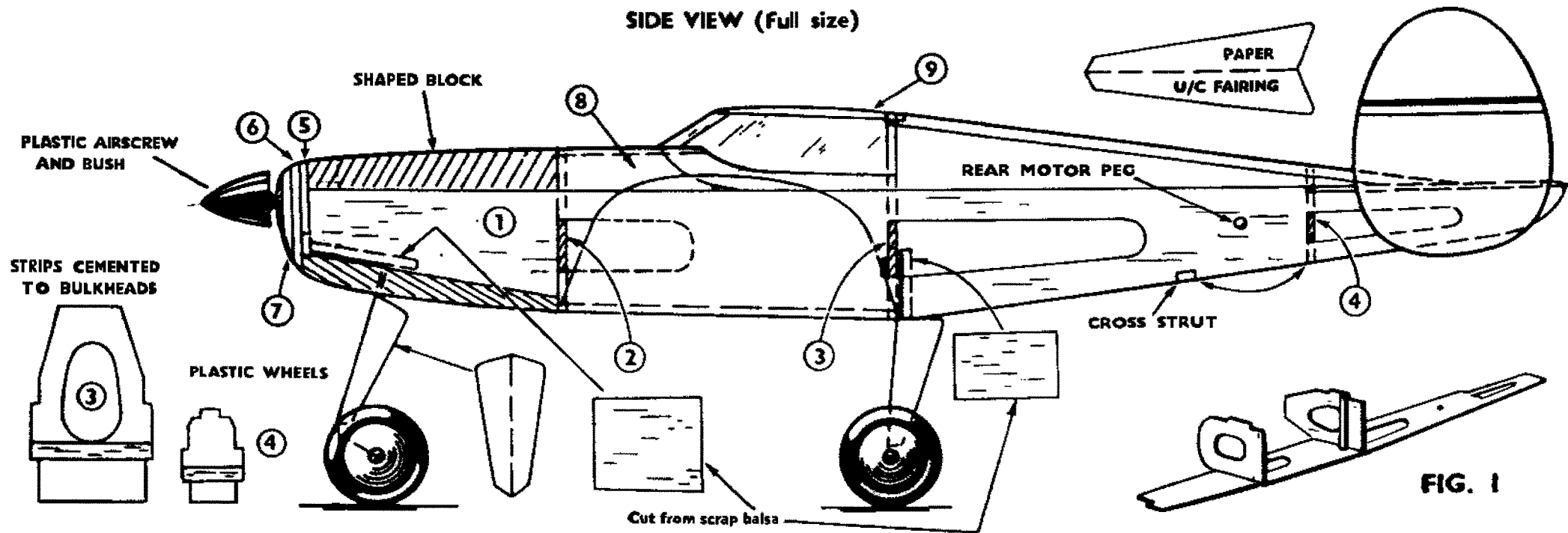


FIG. 2

### BUILDING INSTRUCTIONS.

The Frog Junior Series comprises a range of models of near-scale design and appearance, and embodying very simple and quick construction methods. All the parts are ready-cut to shape, so only require cementing together.

To ensure a satisfactory job, study the plan and check the parts with it before commencing. Assemble the model step by step as shown.

Cement and "dope" are not included in this kit, but they can be bought at any model shop. Use quick-drying balsa-cement (glue) such as Frog Universal. You will also need a balsa knife or razor blade and a few pins.

If you enjoy building this model, remember there many others in this series equally attractive.

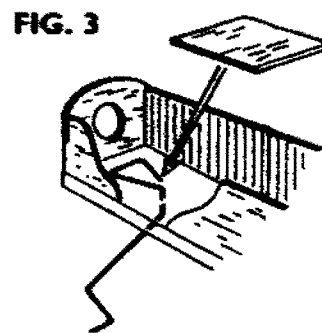


FIG. 3

### FUSELAGE ASSEMBLY.

Carefully remove all the parts from the balsa sheet using a balsa knife or a piece of razor-blade to separate them with a clean edge. Start by cementing pieces of balsa strip cut from scrap to bulkheads 3 and 4, and cement bulkheads 2 and 3 to one of the side panels 1, as shown in fig. 1. Make sure they are upright, and allow to dry. Then cement the other side in place as in fig. 2. When these are set, assemble the other bulkhead 4, and the front piece 5. Trim the ends of the lower cowl block and cement this into place.

Shape it finally after the wing has been fitted.

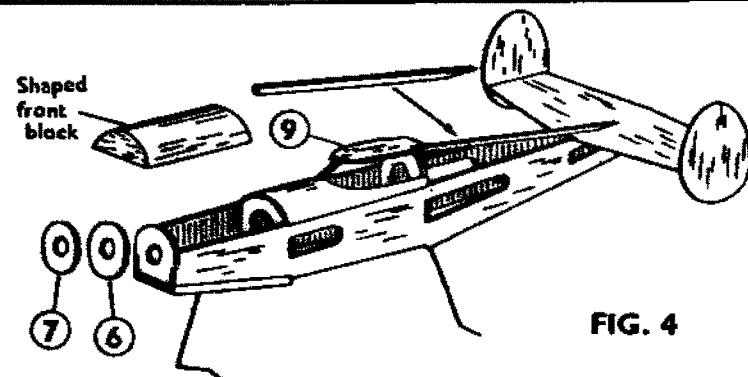


FIG. 4

### UNDERCARRIAGE.

Bend the front leg to shape first from the piece of wire supplied. Form a triangle at one end, as shown in fig. 3. Bend it at right angles, then push the other end through a hole in the lower block, and cement the wire to the inside. Cut a piece of spare balsa to shape as shown, and cement it over the wire. When it has set, bend the lower part of the wire to shape.

The rear U/C wire is supplied ready-bent, and only requires assembling, as shown in the Side View.

Fit the wheels in place and bend over the ends of the wire, or glue small paper washers to the axles to hold them on. Cut the three fairings from paper to the shape given, fold them, and glue them to the wire legs.

INSTRUCTIONS (cont'd).

**FUSELAGE AND TAIL ASSEMBLY.**

Cement the nose-rings 6 and 7 to the front of the fuselage, together with the shaped cowl block, see fig. 4. The underside of this should be cut away at the front, to allow more freedom for the rubber motor.

Remove the cockpit piece 8 from the balsa sheet, damp it on the outside with water to help bond it to shape, and cement it in place over bulkhead 2 and to the sides of bulkhead 3.

Cement part 9 in place on the top of bulkhead 3, together with a small strip cut from scrap for the front support.

Remove the Tailplane and Fin parts from the balsa sheet, and sandpaper them to obtain a smooth finish. Cement the tailplane in place on the fuselage and make sure it is quite "square" with it when viewed end on as shown in the 1/4-scale Front View.

Cement the rear stringers in position over the tailplane, then fix the twin fins to each end.

Fix the cabin in place on the cowling, holding it in position until the cement has set.

**WING.**

Remove the cut-out wing piece from the balsa sheet, and sandpaper the surface and edges smooth. Score-lines are made at the centre, as shown in fig. 5, to help bend the wing to the required angle.

Place the wing on a flat board or table, fix down the centre as indicated with a strip of paper and pins, and raise each end 1in. with a match box or similar article.

Apply cement along the score lines and allow to dry. When it is quite set, remove the wing from the board and fix it to the fuselage between bulkheads 2 and 3, with the bulkhead 3 fitting into the notch. Make sure that both sides of the wing are level and free from warps.

Shape the front cowl blocks with a sharp knife and sandpaper, and smooth down the whole model to obtain a good finish.

**COVERING.**

Only the fuselage needs to be covered. Cut strips of the tissue supplied, to cover each side separately. Use paste or dope for sticking it to the framework.

Apply some to one side of the fuselage, stretch a strip of the tissue over it, and smooth out any wrinkles. When all the sides are covered and set, apply a coat of dope or lacquer to the whole fuselage, to "proof" and strengthen it.

**DECORATING.**

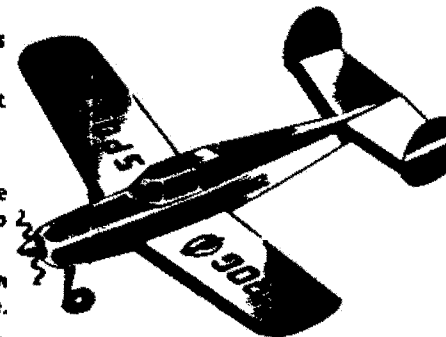
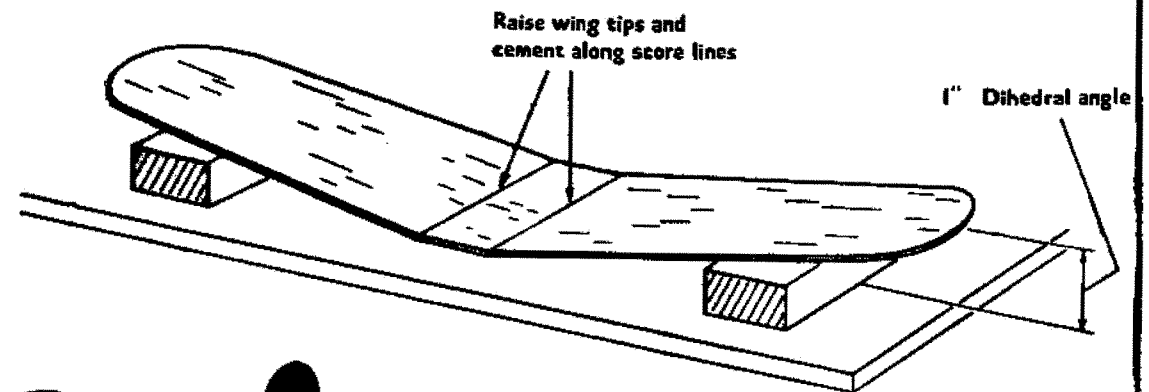
Painting should be restricted to the fuselage, and edging on the wing and tail, to save weight. Use Cellulose Lacquer, and apply it quickly and evenly with a soft brush. Do not put it on heavily, or the model will not fly well.

Transfers can be affixed to the wing or fin, and any other lettering or decoration required.

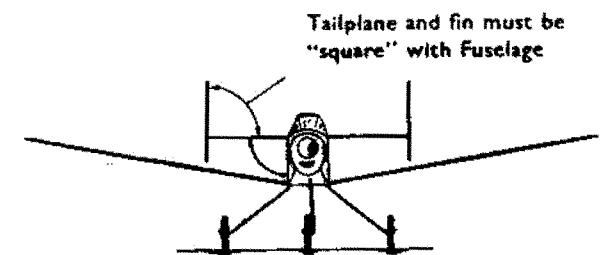
**MOTOR.**

This is an elastic band 6in. long. Lubricate it with Frog Rubber Lubricant, or Castor Oil, and insert it with the help of a length of wire or thread. Bend a hook at one end of the wire and insert it into the front end of the fuselage. Hook the band on to it through the opening at the rear, and insert the rear motor pin (cane) through the holes in the fuselage and through the loop of elastic. Pull the band out through the front, and hook it on to the Airscrew shaft (complete with airscrew). The model is now complete and ready for flying. A drop of thin oil on the airscrew shaft will improve the running.

FIG. 5



VIEW OF FINISHED MODEL.



FRONT VIEW 1/4 SIZE

**FLYING.**

This model can be flown indoors or out, but it should only be used out-doors on a calm day, owing to its size.

Test-glide the model first to check the balance. Hand-launch it in a slight downward direction. If it dives to the ground, add a small weight such as a small nail or pin to the rear end of the fuselage. If the model climbs steeply and stalls, add a small weight to the nose or the fuselage. A small nail or drawing pin can be pushed into the cowl block for this.

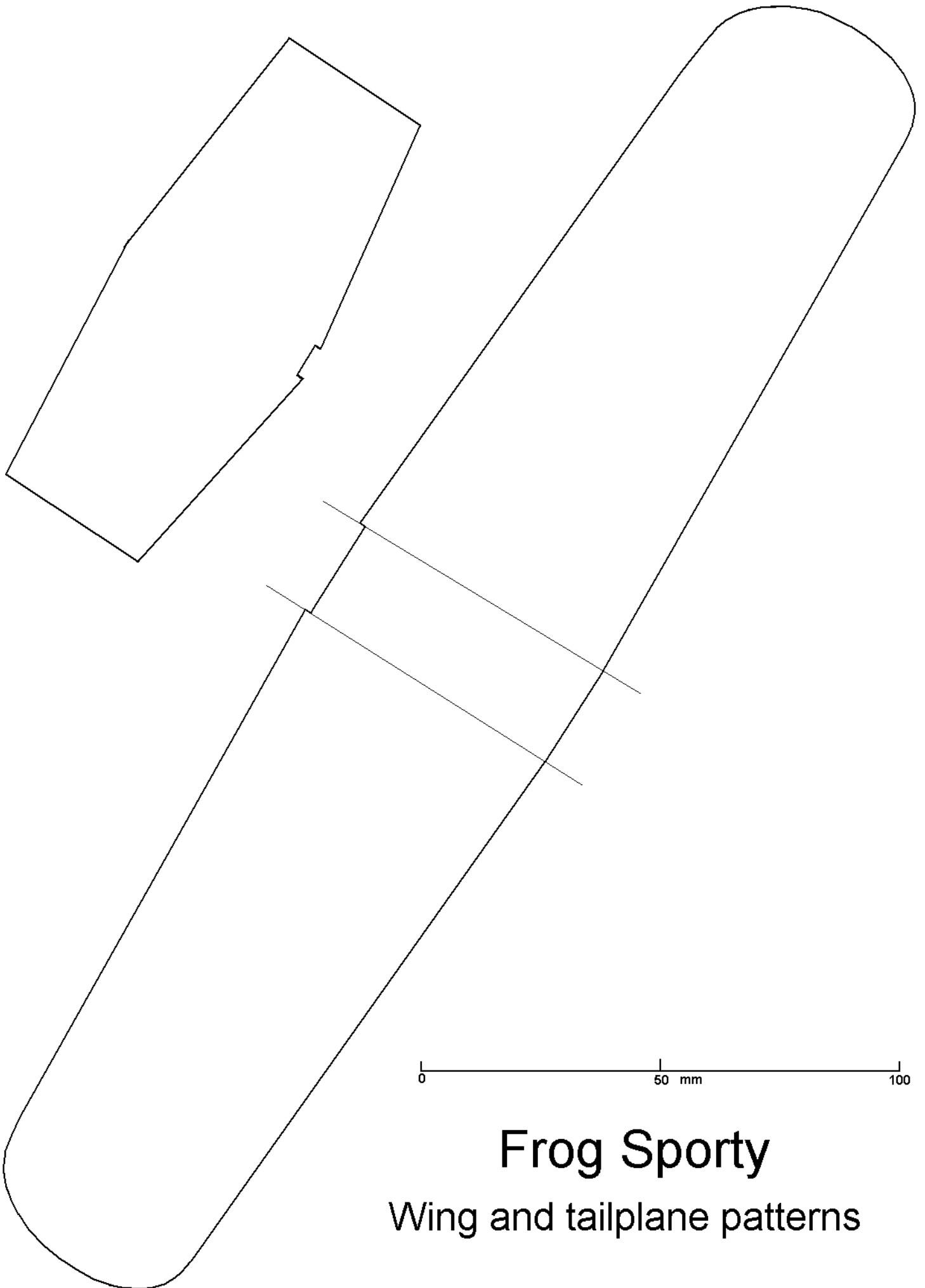
When the glide seems satisfactory, put a few turns on the motor and launch the model into wind (if any). The turn can be adjusted by bending the fin, or by twisting the wing slightly.

Increase the turns on the motor gradually, up to a maximum of approximately 300; if the motor is not lubricated, the turns must be limited to approximately 150.

Designed and Made in England by

INTERNATIONAL MODEL AIRCRAFT LTD.

MORDEN ROAD, MERTON, LONDON, S.W.19.



**Frog Sporty**  
Wing and tailplane patterns

