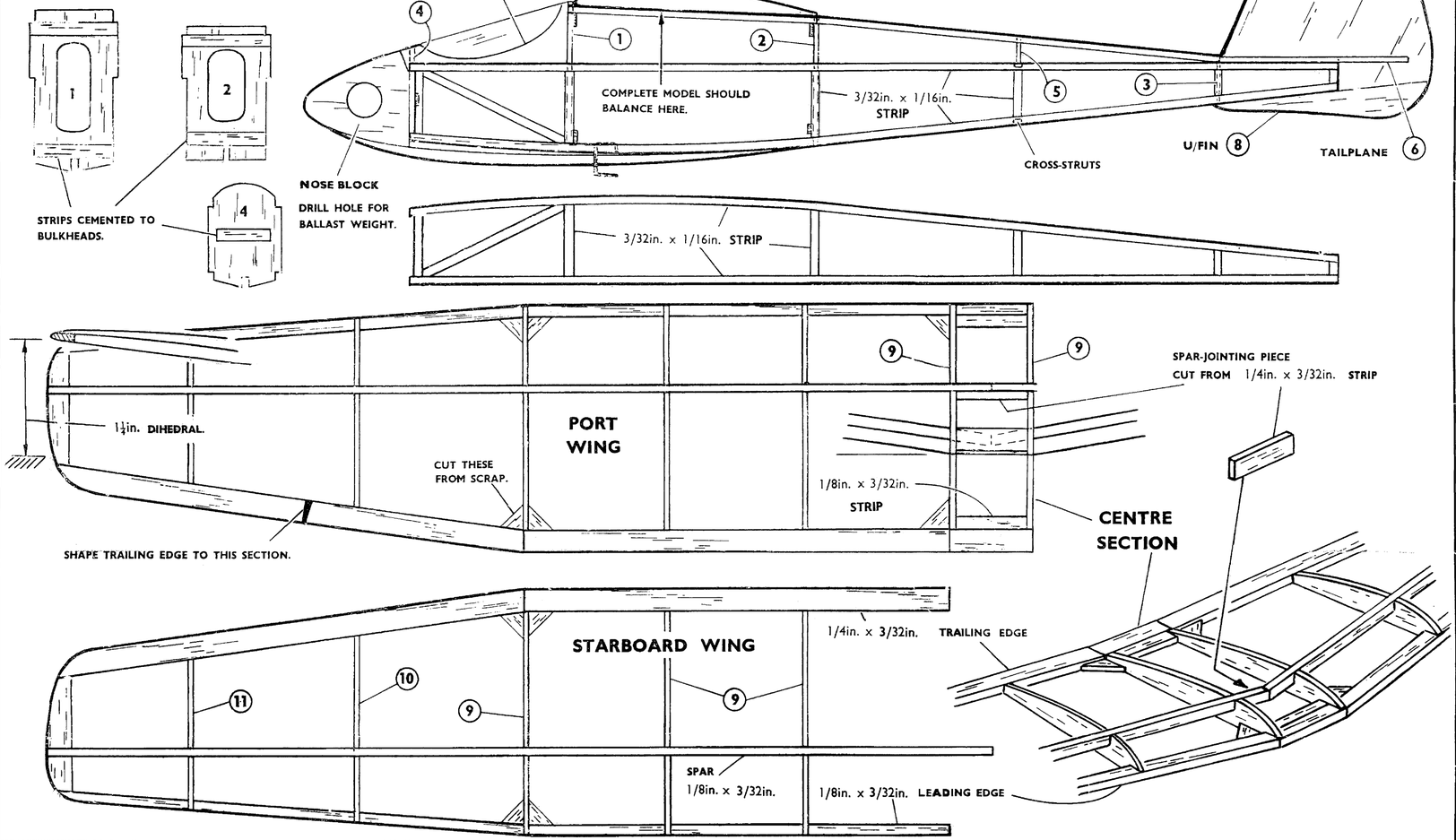
CAT. No. 720GK.

FROG "JUNIOR" SAILPLANE

20" SPAN LIGHTWEIGHT



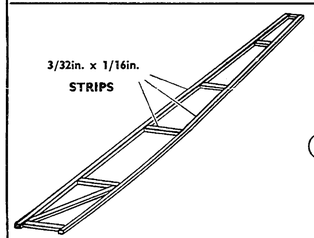


Fig. 1 COMPLETE FUSELAGE SIDES BUILT ON DRAWING.

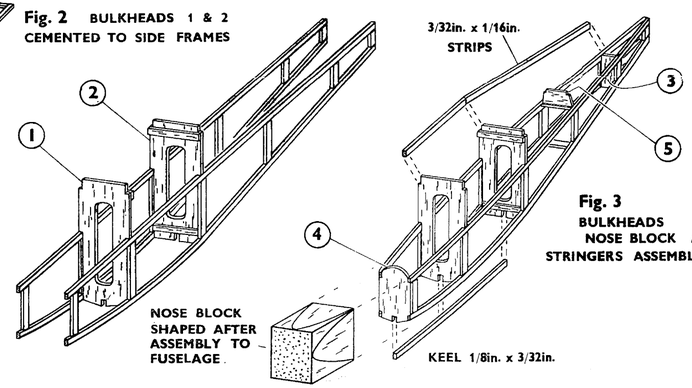


Fig. 2 BULKHEADS 1 & 2 CEMENTED TO SIDE FRAMES

Fig. 3 BULKHEADS NOSE BLOCK AND STRINGERS ASSEMBLED

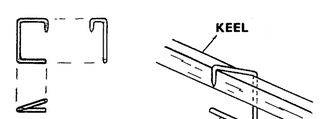


Fig. 4 BEND TOWING HOOK TO THIS SHAPE.

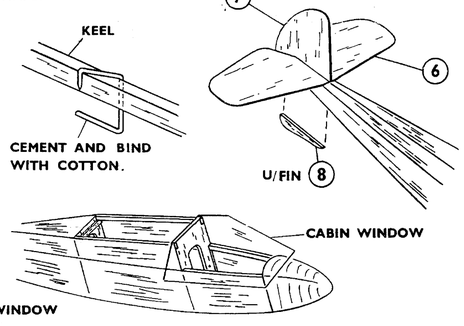


Fig. 6 CEMENT CABIN WINDOW AT CENTRE FIRST.

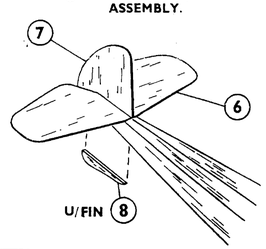


Fig. 5 TAILPLANE AND FIN ASSEMBLY.

BUILDING INSTRUCTIONS.

This model is very simple to construct, the kit incorporating the usual Frog practice of supplying most of the parts cut to shape and numbered to correspond with the drawing, leaving very little shaping to be done. The pre-cut parts can be eased out of the panel with a balsa-knife, or a razor-blade to sever the edges that are left uncut.

Pin the drawing to a flat board to work on, and cover it with a sheet of greaseproof paper to protect it from the cement. Dope and cement are not included in this kit, but can be obtained at any model shop. Use quick-drying balsa cement, such as Frog Universal.

CONSTRUCTION.

FUSELAGE.

This is a simple structure which can be built mainly over the plan. First build the two sides from 3/32in. x 1/16in. strip as in Fig. 1. Remove bulkheads 1 and 2 from the panel and cement strips cut from scrap sheet balsa across them as shown on drawing. Then cement these bulkheads to the side frames; see Fig. 2. When these have set, cement bulkhead 3 into place and cement the ends of the side frames together as in Fig. 3. Next cement bulkhead 4 and part 5 into place. Cut the keel-piece to length from a piece of 1/8in. x 3/32in. strip, and cement it in position between bulkheads 2 and 4. The top stringers, of 3/32in. x 1/16in. strip, can now be cemented into place. The nose block is fitted next; pre-cement one end of it, and also bulkhead 4. Allow these to dry, then apply another coat of cement, and fix the nose-block finally into place. When this has set, shape it with a sharp knife, and sandpaper it smooth.

TOWING HOOK.

This is made from a 1in. pin with the head cut off. Bend it to the shape shown in Fig. 4, and bind and cement it in the position shown on the side view drawing.

The skid is fitted after the fuselage has been covered. This is made from a 1/8in. x 3/32in. strip 5in. long. Cement it in position from bulkhead 2 to the nose block, holding it until it has set; then shape it as shown in side view.

WINGS.

Cut the leading and trailing edges to length from the strips supplied, and lay them over the drawing, holding them in position with pins. The wing tip pieces are cut from a strip of 1/4in. x 3/32in. Then cement the three outer ribs 9, and also ribs 10 and 11 to the leading and trailing edges. Do not cement the two centre-section ribs in place yet. Cut the spars to length from 1/8in. x 3/32in. strip, and cement them in place in the rib slots. When the wing halves are set, remove them from the drawing, and build the centre-section in the same manner over the drawing. Place the port wing back on the drawing and cement it to the centre-section with the tip raised 1½in. Then fix the starboard wing in place, together with the spar jointing piece. The gussets are cut from spare sheet balsa, and cemented in place where indicated. Sandpaper the trailing edge and tips to shape, and smooth down the whole structure before covering.

COVERING.

Cover the model with the paper supplied, in the following order, fuselage top and bottom, then sides. Wing under-surfaces, then top. Use office paste or dope for fixing it. Cut the paper to the approximate shapes first, leaving a 1/4in. margin all round. Apply paste to the edges of the frame, then lay the tissue over it and pull gently all round. Do not attempt to get it drum tight, but aim at getting an even surface, with no deep wrinkles. The water-spraying and doping will tighten it.

Before doping, lightly brush or spray each part with water and leave to dry. Spray half a wing at a time, and pin it down to a flat board to prevent warping whilst it is drying. When they are completely dry, give each part a coat of dope, and pin down the wing when the dope begins to dry. A coat of clear cellulose lacquer over the whole of the model is beneficial.

TAILPLANE AND FIN.

Carefully remove these parts from the panel and sandpaper them smooth. The tailplane 6 is cemented in position on the fuselage first, followed by the fin 7 and under-fin 8, see Fig. 5.

Make sure they are quite square with the fuselage when viewed from either end. The cabin window is already shaped and ready to fix to the fuselage. Cement it at the centre first as shown in Fig. 6; when this has set, fix the sides down and hold them in position until they are set.

Cement the wing in position, using plenty of cement, and make sure it is "square" with the tail. Drill a hole in the nose block and cement ballast weight into it until the model balances where indicated on the drawing.

FLYING.

Choose a calm day if possible for the first tests. Hand-launch the model first to check the balance. If it shows a tendency to nose-up and stall, add more weight to the nose, and if the model dives to the ground, take weight out of the nose. It is almost impossible to know exactly what trimming a model will require until it is test-flown, but if the C. of G. is in the position shown on the drawing, and there are no warps in the wing or tailplane, the model should fly quite well straight away. A tendency for it to turn sharply either way indicates a warped wing, and this should be corrected. A wide turn is desirable to prevent the model flying too far in a straight line.

When a satisfactory glide is obtained, a tow-line launch can be attempted. For this, a length of thin kite string with a ring attached to one end is required. Tie a piece of tissue paper just below the ring to help it disengage from the hook on the model. Use a reel if possible to facilitate winding in the line. Un-reel the line, loop the ring on to the hook on the model, and get an assistant to launch it (into wind) while you gently pull on the line. If the model is inclined to weave from side to side when being towed, slow up the launching and do not release it until it has levelled out to its normal gliding angle.

Do not forget to put your name and address on the model before flying.

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for International Model Aircraft Ltd.

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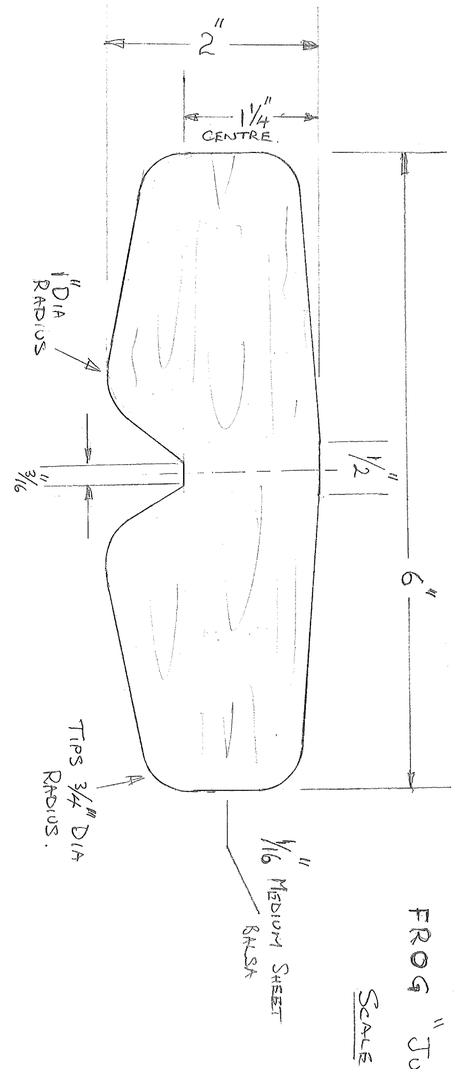

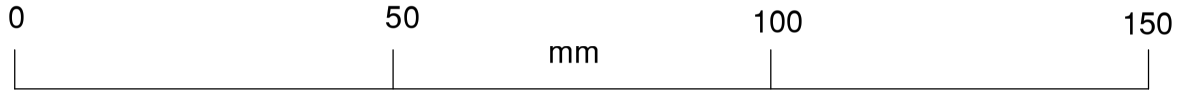

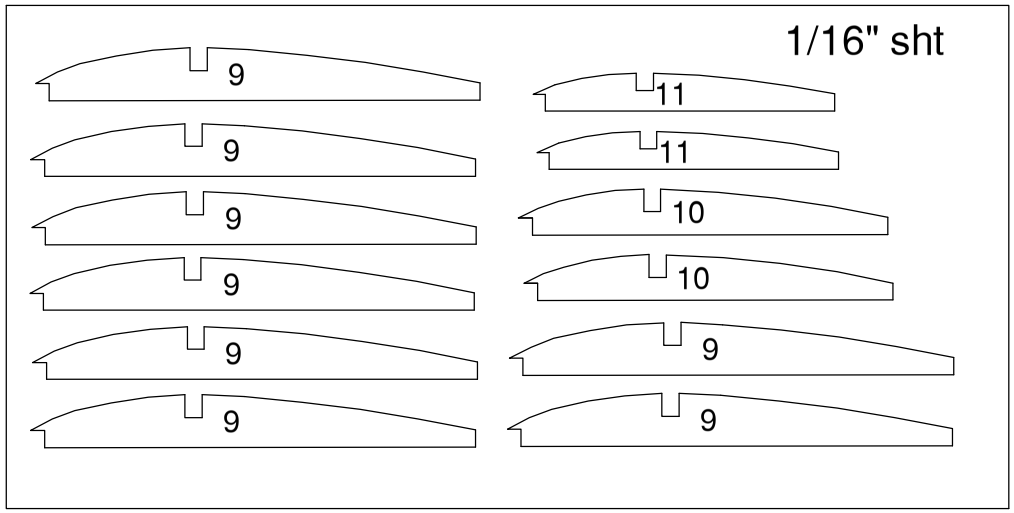

Frog Junior glider