



**BUILDING INSTRUCTIONS**  
This model is very simple to construct, the kit incorporating the usual Frog practice of supplying most of the parts cut and numbered to correspond with the drawing, leaving very little shaping to be done. The pre-cut parts can be eased out of the panels 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 built up over plan using 1/8" x 3/32" strip and parts S2 & S4 as shown in Fig. 1. When dry build up other side over the first, lay a sheet of greaseproof paper between them to prevent sticking. While these are setting, make up formers F3 & F4 as shown in Fig. 2.  
Remove the side frames from the plan and cement formers F3 & F4 in place, checking over plan for squareness. See Fig. 3. When dry cement in formers F1, F2, F5, F6 & F7, using thin elastic bands to hold them in place until set. Cement a short piece of 1/4" x 1/8" strip in place at rear of fuselage between parts S4, holding in place with bands. Then cut cross struts to length and cement in place in positions shown on plan view of fuselage. Cement nose block in place, and when dry, carve and sand-paper to shape; also sand-paper fuselage to remove any projections etc., on formers.  
Bend wire tow hook to shape; bind and cement it to 1/4" x 1/8" strip, and cement in place in the fuselage. Then cut the wing and tailplane fixing dowels to length and cement into place.

**CABIN.** Cut the cellastoid to shape and cement in place where shown.  
**WINGS.** Build the centre-section first. Pin down leading edge and 1/8" sq. bottom spar. Cut out notches in trailing edge and pin this in place. Cement ribs W1 & W2 in positions shown on wing view, and add top spar to shape as shown in Fig. 9. When dry remove from plan. Build up tips, cutting top spar to shape as shown in Fig. 9. When dry remove from plan, chamfer ends of leading and trailing edges to allow for dihedral. Pin down centre-section over plan, and slide in the tip sections from side, applying cement to spar joint first; pack up tips 3/4" for dihedral angle, and leave until set. Sand-paper the leading edge to shape and smooth down the whole structure.

**TAILPLANE.** Pin down the leading and trailing edges over plan, also the 1/8" x 3/32" bottom spar. Then cement ribs T1 & T2 in place as shown, also parts T6; then add top spar. When dry sand-paper leading edge to shape and smooth down as wing. Cement part S3 to the underside to locate the tailplane on fuselage. This is made up from parts T3 & T4. Cement these together over plan, and smooth down with sand-paper. Cement fin in between ribs T1 in tailplane after covering.

**COVERING.** Cover the model with the paper supplied, in the following order—fuselage top and bottom, then sides. Wing and tailplane undersurfaces, then top. Use office paste or dope for fixing it. Cut the paper to the approximate shapes first, leaving a 1/4" 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 dopping will straighten it.  
Before dopping, 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. Do the same with the tailplane. When they are completely dry, give each part a coat of dope, and pin down the wing and tailplane again, when the dope begins to dry. A coat of clear cellulose lacquer over the whole of the model is beneficial.  
Painting should be restricted to the fuselage or trimming at the edges to save weight.

**ASSEMBLY.** Use two 2 1/2 in. x 1/4 in. elastic bands to hold the wing in place. They should be stretched diagonally over the centre-section and hooked over the dowels. Use two 1 1/2 in. x 1/4 in. bands for the tailplane, stretched over the top of the tail, and hooked over the dowel at the rear of the fuselage.  
Check the rig of the complete model; the tailplane should be in line with the wing, and the fin upright. There should be no warps in the flying surfaces. If the model balances further back from the position shown on the drawing, add ballast weight to the nose; and if it is forward of this, remove some of the weight or raise the tailplane trailing edge.

**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. If this fails to correct it, raise the tailplane trailing edge with a piece of card or 1/4 in. balsa. This can be increased if necessary. 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, or tail offset too much, 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, take weight out of the nose. If this fails to correct it, raise the tailplane trailing edge with a piece of card or 1/4 in. balsa. This can be increased if necessary. 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, or tail offset too much, and this should be corrected. A wide turn is desirable to prevent the model flying too far in a straight line.  
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