

# TRU-FLITE

## COMPER SWIFT

### BUILDING INSTRUCTIONS

This series of "VERON" Flying Scale Models of popular and world-famous planes are the essence of simplicity and make ideal beginners' models, giving initial experience in construction and assembly. You need only a "VERON" Balsa Knife, balsa wood cement, small half-inch pins (called "Lillipins" in the shops) and a pair of small round-nose or side-cutting pliers, thread and fine garnet paper. A tube of tissue paste, a small jar of shrinking dope and a soft brush will complete your requirements.

Study the plan carefully and identify all the parts on the printed sheets of balsa. Familiarize yourself with the sequence and method of construction. Cut out all the balsa parts, taking great care when cutting out the  $\frac{1}{16}$ " notches in the formers. Cover the plan with waxed or greaseproof paper and pin both to a flat building board. The fuselage is built by constructing two lower sides of  $\frac{1}{16}$ " square balsa directly over the plan, these being then joined by two basic formers. This system of construction by inserting formers of a pre-determined width obviates the necessity for a fuselage top view as the alignment can be checked by sighting along the fuselage. Wings and tailplanes are similarly constructed over the plan on the flat.

#### FUSELAGE.

Pin the lower member K.1 in place directly over the plan, then build up one complete side of  $\frac{1}{16}$ " x  $\frac{1}{16}$ " balsa as in diagram 1. Make neat joints, double-coating with cement, the first coat being allowed to dry into the wood before applying the second. Secure all struts in place with pins either side of the wood, never through it. When quite set, move from the board and build a second identical side, where possible using the same pin-holes to locate strips. The two sides when complete are joined together by basic formers F.7 and F.8. Chamfer inner face of sides at rear and pull together, joining with cement and securing with a clip or spring clothes peg. Add rear top formers F.9, 10 and 11 with K.3's for rear rubber motor securing dowel, making holes a tight-sliding fit on the  $\frac{1}{16}$ " dowel. Do not fit  $\frac{1}{16}$ " x  $\frac{1}{16}$ " stringers until tailplane is in place. Cut lengths of  $\frac{1}{16}$ " x  $\frac{1}{16}$ " to sizes given on plan for lower cross members and cement in location. Steam front longerons over a kettle-spout, pulling gently and evenly together; then fit front former F.4. Secure with a rubber band whilst drying. Also add formers F.5, 6 and the lower former F.12. Add top keel member K.4. At this stage build tailplane and, when covered, fit in place to permit positioning of stringers level with leading edge at rear top of fuselage. Add all  $\frac{1}{16}$ " stringers, cementing in their respective slots. Lower stringers extend from F.4 to bottom of F.7.

Laminate nose formers F.1, 2 and 3 to front of F.4; then, when dry, carve and sand to shape shown in sketches. Ensure that plastic bush is a tight fit in hole.

Trace pattern of cockpit coaming on to thin cartridge paper or post card; then cut out and cement over cockpit aperture.

#### UNDERCARRIAGE.

Bend undercarriage wires to shape as indicated on plan. Front and rear struts are bound with thread, rubbed with cement, to the top and bottom respectively of the keel K.1. The main axle projects through loops on the ends of the rear struts and is secured by cement or solder. The front legs have fairings of  $\frac{1}{16}$ " x  $\frac{1}{16}$ " balsa scraps or strips of post card wrapped round. The tail skid is similarly bent to shape and bound to the rear longerons where indicated. The wheels are retained upon axles with blobs of cement, soldered washers or pieces of rubber tubing off single-strand radio wire.

#### WINGS.

Pin leading edges of  $\frac{3}{16}$ " x  $\frac{1}{16}$ " and trailing edges of  $\frac{3}{16}$ " x  $\frac{1}{16}$ " in place over plan with tip pieces W.1, 2 and 3 laminated together. Add short lengths of  $\frac{3}{16}$ " x  $\frac{1}{16}$ " at base of each trailing edge. Erect base ribs R.1 with slight angle to allow for dihedral of wings when joined, checking with template given mounted on card. Also erect remaining ribs R.2 and 3. Spar of  $\frac{3}{16}$ " x  $\frac{1}{16}$ " has end tapered from last bay to tip to  $\frac{1}{16}$ " x  $\frac{1}{16}$ ", and is then cemented in rib slots. Add tip brace W.4 and  $\frac{1}{16}$ " scrap gussets against base rib R.1. When quite dry, raise from board and sand all edges smooth. Cement faces of two base ribs together and with one wing panel flat to the building board, the other wing tip should be supported on a block  $\frac{1}{2}$ " high to give  $\frac{3}{4}$ " of dihedral and each wing when level. Pin in place whilst drying.

#### TAILPLANE.

All outline parts are to be found on the printed sheets. Pin the spar T.1 and the leading edge T.3 in place and add the two tips T.2. Next set the two parts T.4 and the trailing edges T.5. Insert ribs of  $\frac{1}{16}$ " x  $\frac{1}{16}$ " wet flat. Do not remove from the board until quite set to prevent warps.

#### COVERING AND ASSEMBLY.

Cut tissue into strips about  $\frac{3}{4}$ " wider all round than the part to be covered. Use tissue paste or photo mountant paste as the adhesive. Apply paste only to the outer edges of the part being covered — covering the fuselage sides and bottom in lengthwise strips and small panels over stringers. Do not adhere tissue to individual ribs on wings and tail, but only around the edges. When the tail is covered both sides, it is cemented in place over tail bay to permit jointing with backbone stringing, checking its alignment very carefully. The tissue is then water-shrunk to initially shrink out the wrinkles. Use a modelist's spray (or old scent spray) — never brush the water on. When quite dry, cement the fin in place, checking its alignment by sighting along the fuselage. Cement the wing in place upon the formers F.7 and 8, noting that the upper edge of F.7 is level with the rear of the leading edge. Do not permit surplus cement to dry and pull the tissue into wrinkles. Check very carefully the wing position both from the front and top of the model, checking that the  $\frac{3}{4}$ " dihedral on each wing tip is square with the fuselage. When set, give the whole model one coat of clear shrinking dope and then an extra coat to the fuselage. Check all the flying surfaces for warps whilst drying.

The outline of the identification letters is given on the plan and the colouring may be optional. G - ABWW was all navy blue with silver lining and white identification letters. These may be painted on or transfers used. Any colour scheme must be very lightly applied. Wing struts are made of two laminated  $\frac{1}{16}$ " x  $\frac{1}{16}$ ", which are sanded to streamline when dry, then trimmed to length and cemented in place against K.1 immediately below F.8 and to underside of rib indicated.

#### MOTOR AND NOSE ASSEMBLY.

The motor is made up of one 9" loop of  $\frac{1}{16}$ " wide rubber strip (18" length) with the ends securely tied with a double knot. The shaft is prepared as shown, ensuring the loop is small enough to pass through the  $\frac{3}{16}$ " hole in the nose. Thread on the plastic bush, cup washer and propeller, then bend the shaft end to engage in the slot in the nose of the propeller boss. Add the rubber motor and secure by closing the wire loop with tightly-tied thread. Lubricate the motor with lubricant (available in tubes from your local model shop). Insert the rubber loop down through the fuselage or pull through with thread on a hairpin and engage with  $\frac{1}{16}$ " dowel through K.3. This can be aided by cutting away a small panel of tissue on the underside of the fuselage below the anchor dowel.

#### FLYING.

The model should balance level when supported upon the fingers at the point of the wing tips. If not, add plasticine to nose or tail as required.

Test glide over grass in calm windless conditions. Launch forward, slightly nose down, at normal gliding speed. If the model dives, add  $\frac{1}{2}$ " wide gummed paper trim tabs to the trailing edge of the tail and bend up slightly. If the model stalls (noses up, then dives) add tabs, but bend down slightly. Try to achieve a nice even glide. Turns can be similarly achieved. Wind on 50 turns to motor and launch; if satisfactory, increase the turns by 50's to maximum of 350. As power increases, add small pieces of balsa packing above nose bush to give "down-thrust."

When you have completed this model, ask your dealer to show you the others in the "VERON" range of Flying Models and for our latest free illustrated folder.