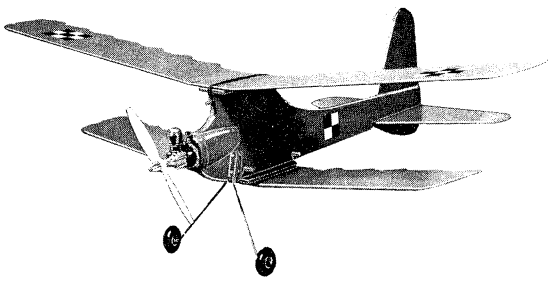
VERON

# 'VESPA' MINI-BIPE



# 23" All Balsa Sport Biplane

## BUILDING INSTRUCTIONS

The "VESPA" Mini-bipe all balsa Sport Biplane has been designed expecially for the Cox "Pee-Wee" .020 cu.ins, and the Cox "Tee-Dee" .020 cu.ins (.33cc) Glow-plug motors. It is essentially simple to build, a tough and stable model to fly.

Simple tools are needed; VERON Balsa Knife, sanding block with coarse and fine garnet paper; small screw-driver; G-clamps or strong spring clothes pegs; hand-drill and small drills (3/32" & 1/16"). A set-square will prove useful.

You will also need "BRITFIX" Sanding Sealer or Banana Oil (NOT Dope); "BRITFIX" Colour dope to suit; "BRITFIX" 55 White P.V.A. Adhesive or "BRITFIX 66" Balsa Cement. A small stiff brush and jam-jar will be useful for thinning cement if using "66" Cement. Use of a soldering iron.

READ INSTRUCTIONS CAREFULLY

1. PREPARATION OF FUSELAGE.

Thin "Britfix 66" cement with cellulose (dope) thinners in a jam jar. Brush cement onto 1/32" (.8mm) ply facings and ¼" (.6mm) fuselage. Allow to dry. Alternatively use "Britfix 55" White P.V.A. Adhesive.

2. LOCATING UNDERCARRIAGE.

Insert undercarriage wire through fuselage hole. Swing U/C legs forward. Re-coat joining surfaces of ply and balsa, then locate ply facings.

3. ASSEMBLING FUSELAGE.

Clamp ply facings with spring clothes pegs. Allow to dry absolutely hard. Sand smooth and remove excess glue.

4. UNDERCARRIAGE ATTACHMENT.

Position undercarriage legs to slightly forward angle, locate one clamp plate and mark four bolt holes with pencil, then drill holes with No.37 or 3/32" (2.5mm) drill for 8BA x ½" bolts supplied. Fit two clamp plates, coating inner faces with cement, locate and tighten four bolts.

5. WHEEL ATTACHMENT.

Wheels are retained upon axles with soldered washers or short lengths of brass tubing. See note on optional VERON 1½" Sponge Rubber Wheels in "Flying" paragraph.

6. ENGINE FAIRINGS.

Carve and sand fairing blocks to streamline, checking against ¼" (6mm) round engine mount. Cement in place. Double coat ½" ply mount and fairing with cement, then locate. Optional strengthening may be added by countersunk screw through round mount into fuselage. Sand whole nacelle smooth.

7. INDUCTION SLOT FOR "PEE-WEE".

To permit air vent to Cox "Pee-Wee", cut 1/16" (1.5mm) deep slot in lower front face of ¼" (6mm) ply approx. ¼" wide. Mark and drill four 1/16" holes for engine attachment screws.

8. TOP AND BOTTOM WING MOUNTS.

Laminate 1/32" (.8mm) cross-grained ply to 3/32" balsa wing mounts, double coating jointing surfaces. When set, cement very firmly in place, ply to balsa fuselage, temporarily pinning, filleting with cement, lower mount set level with rear edge of ply fuselage facings. Balsa externally on mounts permits trimming if necessary to correct dihedral angles. Check both mounts for squareness.

9. WING SECURING PEGS.

Drill ⅛" (3mm) holes fore and aft of top wing mount ½" deep, also two holes through lower fuselage for wing securing pegs. All pegs 1" (25mm) long are cemented very firmly.

10. FIN AND UNDERFIN.

Use hardwood sanding block to streamline the fin, rounding leading edge, tapering the trailing edge. Round edges only of lower fin. Cement each very firmly in slots. Check accurately their alignment with fuselage. Cut two slits in fin for trim tab - 1" (25mm) high, 1" above fuselage.

11. WINGS.

Sand both wings to aerofoil section, rounding leading edges and tapering last 1" (25mm) of trailing edge to not less than 1/16" (1.5mm) thick.

Mark scalloped trailing edge (optional) around a coin, or with compasses, and cut out.

12. DIVIDING WINGS FOR DIHEDRAL.

Mark centre line of wings, then mark edges of centre section 1" either side of that. Cut clean through. Place outer top wing panels on table edge, tips on 1½" (38mm) blocks. Sand edges square to table edge, creating dihedral angle. Coat ends with thinned cement, and allow to dry. Lower outer wings rest on 1¼" (32mm) blocks for same dihedral angle (due to shorter span).

13. WING JOINTING.

Check ends of wings and centre sections for accurate fit. Double coat with cement and join - tips supported on blocks, 1½" (38mm) each panel top wing, 1¼" (32mm) for lower wing. Set up over glass or grease-proof paper. When set check there are NO warps.

14. TAILPLANE.

Sand to streamline top surface only - NOT too thin at trailing edge. Cement firmly in slot. Check for squareness, and that undersurface is PERFECTLY flat without camber or warps.

15. FINISHING.

Give whole model two coats of Banana Oil (or Sanding Sealer) - both sides of flying surfaces at once to prevent warps. Check this at all times. Give one coat only of coloured dope - preferably sprayed. Always sand lightly between coats. Finally add fuel proofer to fuselage, fin and stabilizer - allow 24 hours to harden. Add optional VERON checker transfers or VERON Trimming-Strip to wings. Add VERON Wing Transfers to fin.

FLYING.

Locate engine firmly with 2 or 4 brass wood-screws - ⅜" or ½" (9 or 13mm) No.2 Round head. Downthrust is designed in. Model flies best with no sidethrust, and 1/32" (.8mm) right tab deflection, AFTER trimming. Check C.G. location - 1" from trailing-edge of top wing.

Thorough glide testing is essential over long grass in windless conditions. Attach wings with rubber bands NOT TOO TIGHTLY. Hold model by underfin between forefinger and thumb of right hand, rest bottom centre section on fingers of left hand. Launch into wind at gliding angle-slightly nose down.

Do not throw model with one hand. If model dives, move top wing foreward; if model stalls, move top wing back. If bottom wing requires similar adjustment - re-check balance or tail for warps. Mark wing locations with pencil lines.

For first power flights, put propeller on backwards to reduce thrust. Check 1/32" right deflection on trim-tab, bend gently by finger pressure.

Use plastic hypodermic needle (from Chemists) for fuel, to limit power run. Short runs for first flights. Model will take off from very short grass and even land upright if VERON 1½" Sorbo Rubber Wheels are fitted.

Model should climb and glide to the right, but is not critical if set for a left turn. When trimmed, spot cement tab slots to secure.

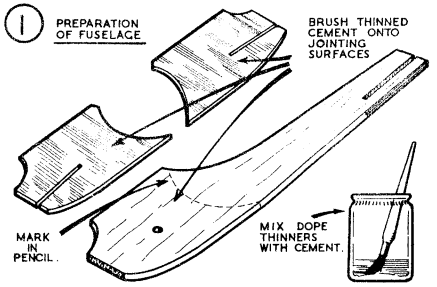
MODEL AIRCRAFT ( B'MOUTH ) LTD. NORWOOD PLACE · BOURNEMOUTH

# VERON VESPA Minibipe

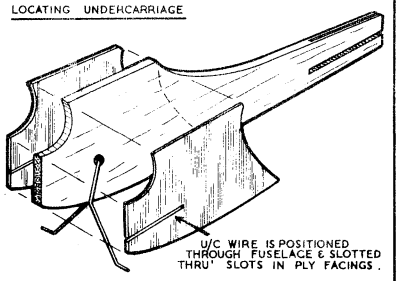
23" SPAN.

DESIGNED ESPECIALLY FOR COX 'PEE-WEE' AND COX TEE-DEE ·020 (·33 c.c.) GLOW MOTORS.

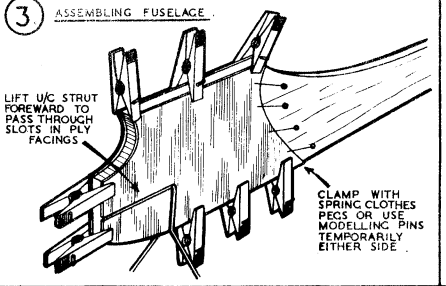
## 1 PREPARATION OF FUSELAGE



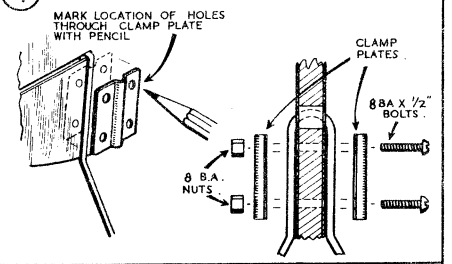

## 2 LOCATING UNDERCARRIAGE



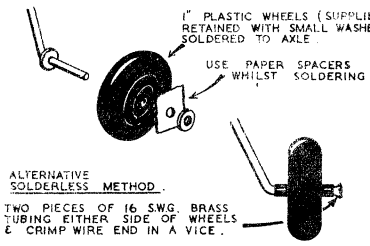

## 3 ASSEMBLING FUSELAGE.



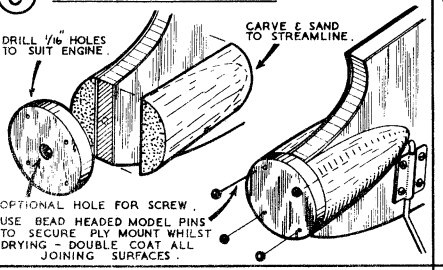

## 4 UNDERCARRIAGE ATTACHMENT.



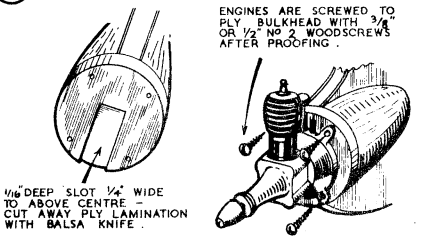

## 5 WHEEL ATTACHMENT.



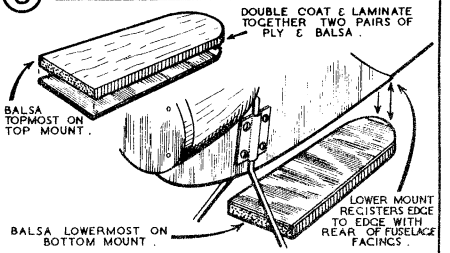

## 6 ENGINE FAIRING & ENGINE MOUNT



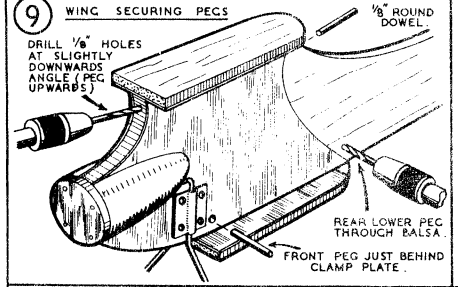

## 7 INDUCTION SLOT FOR "PEE-WEE" ·020



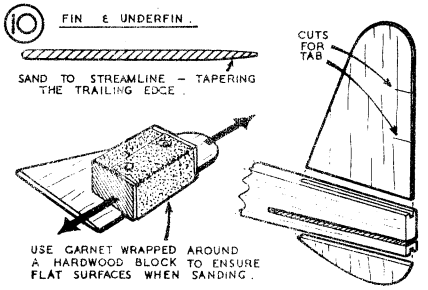

## 8 UPPER & LOWER WING MOUNTS.



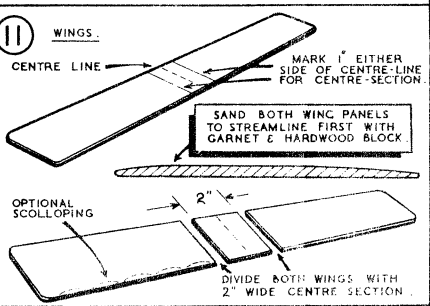

## 9 WING SECURING PEGS



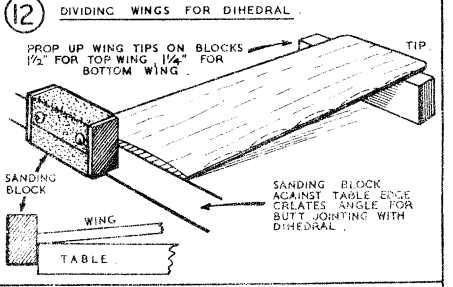

## 10 FIN & UNDERFIN.



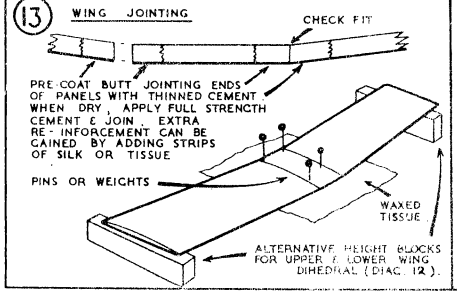

## 11 WINGS.



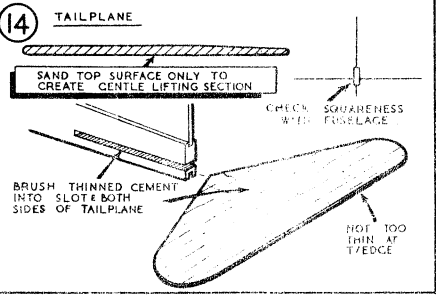

## 12 DIVIDING WINGS FOR DIHEDRAL.



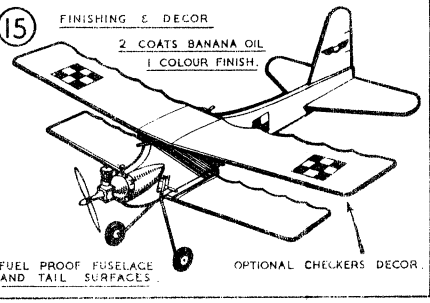

## 13 WING JOINTING




## 14 TAILPLANE




## 15 FINISHING & DECOR




## 16 FLYING