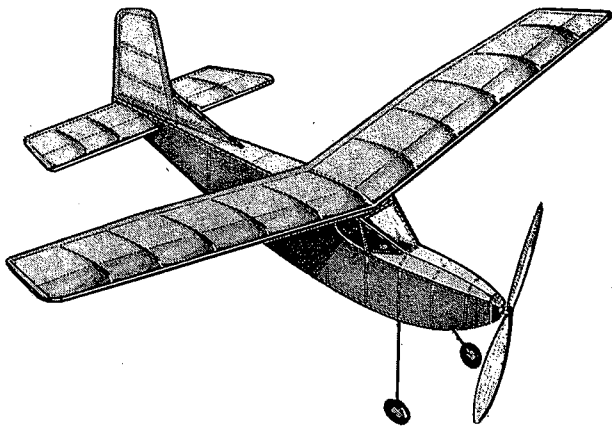


VERON

RASCAL



BUILDING INSTRUCTIONS

First, study the plan and identify all the parts on the $\frac{1}{8}$ " printed wood sheet. Familiarize yourself with these and all other instructions. The tools needed are small pliers, a few pins, either steel-backed razor blade or Balsa Knife, and fine sandpaper. The fuselage, wing and tail panels are built directly over the plan.

WINGS.

Lay the plan on the building board and cover with waxed tissue or greaseproof paper to protect from the cement. Pin on edge two lengths of $\frac{1}{8}$ " \times $\frac{1}{4}$ " balsa above spar positions, and pin in place the leading and trailing edges. Pins are set either side of strips—not through the wood. Make good close fit of "scarf" joints in trailing edges. Cut $\frac{1}{8}$ " slots for ribs in trailing edges. Cement ribs in place. Centre two ribs are cantled for dihedral. Add tips and small $\frac{1}{8}$ " scrap corner gussets. Allow to set hard, and when dry, remove from plan. Place trailing edge along edge of building board and sand to streamline section shown. Trim gussets and tips to give rounded contours and sand smooth. Lay one wing panel flat on board, cement centre section ribs firmly together with dihedral gusset G.1 in place and other tip supported on block 4" high—giving normal dihedral of 2" under each tip.

FUSELAGE.

Select four even quality longerons from $\frac{3}{32}$ " \times $\frac{3}{32}$ " strips. Bottom longerons must first be held in kettle steam and bent to a curve as near as possible fitting the lower fuselage contour. Pin these and nose and back longerons in place, then add all verticals, with R.1, rear rubber fixing panel R.2, cabin fairings C.1 and C.2. See fuselage assembly sketch on plan. Second side is then built directly above the first. Ensure that C.1, C.2, R.1 and R.2 are level with tops of longerons. Whilst these are setting, build fuselage former F.1 of $\frac{1}{4}$ " \times $\frac{1}{8}$ " directly over plan. Remove sides from plan, and split apart with razor blade. Join two sides at cabin vertical with F.1, and draw rear end of longerons together and cement. Bind with two loops of cotton for extra strength as shown on plan. Draw nose longerons together, adding crosspieces and maintaining whilst setting with rubber bands. Similarly, add all other crosspieces, top and bottom of fuselage. Check for squareness at every stage. Three sketches on plan will aid the assembly of the fuselage. Add top nose formers F.2, 3, 4 and 5, then top longerons and cabin struts. Cut cellophane into five suitable panels and cement into place—use cement sparingly. Bend 20 s.w.g. wire to shape for undercarriage, and bind securely in place with cotton, then rub binding with cement. Add wheels. Ensure that $\frac{1}{8}$ " round dowel for rear rubber fixing is tight fit in holes in R.2.

NOSE ASSEMBLY AND AIRSCREW.

Shape Balsa block supplied to fit contours of nose against former F.2—see sketches at top of plan. Add rear plug pieces B.1 and B.2. Drill hole and insert metal ferrule, firmly cementing in place with slight amount of down-thrust—see fuselage side elevation. Insert shaft and check for free running. Sand edges and faces of airscrew supplied, rounding to streamline blade shape. Section should be flat on rear and cambered in front. Rub cement in wood around hub and push pin squarely through to make shaft hole. Check for alignment and balance. Locate airscrew on shaft with cup washer against rear face of airscrew to provide bearing against ferrule; bend shaft with two right angles as shown to engage into airscrew: cement firmly in place.

For extra glide performance on this model, a free-wheeling propeller unit is to be recommended, and is very simply made as the sketch on plan will show. This also incorporates a winding loop to enable the motor to be wound up by using a hand drill with an 18 s.w.g. hook securely held in the chuck.

STABILIZER.

Pin in place over plan three strips of balsa for leading edge, spar and trailing edge, sizes as shown. Add ribs and tips and corner gussets. When set, remove from plan, sand trailing edge, then trim and sand tips to correct outline.

FIN.

Build directly over side elevation from flat balsa strips, $\frac{1}{8}$ " \times $\frac{1}{4}$ " for verticals, front fairing and tips, with $\frac{1}{8}$ " \times $\frac{1}{8}$ " ribs. Add all corner gussets of $\frac{1}{8}$ " scrap. When set, remove from plan, sand edges smooth and check for flatness.

COVERING.

Cut tissue into strips about $\frac{1}{2}$ " wider all round than the individual panels to be covered—grain lengthwise.

Use tissue paste (photo-paste) for adhesion, and use sparingly. Rub paste lightly over outer edges of individual wing panels, centre section to tips, undersides first. Adhere tissue lightly to centre rib, and stretch evenly towards wing tips, as well as tightly between leading and trailing edges. Obviate any warps by even tension. Complete opposite lower panel, then cover top sides likewise. Similarly cover tail plane, underside first, and fin. Cover fuselage from nose to stern, two sides first, then underside and top. Cover nose panels over formers with three separate strips. Cut away surplus around cabin cellophane.

Shrink tissue with water from a mouth or scent spray—do not brush with water. When quite dry, give one coat of thin shrinking dope to wings and tail surfaces, and two to fuselage, noseblock and airscrew.

ASSEMBLY.

Cement fin upright and very firmly to top of fuselage, checking alignment of fin by sighting along top of fuselage from nose to tail. Cut away tissue over stabilizer slot and locate tailplane: this is retained by a moderately tight rubber band over the tailplane and under the lower longerons. Mainplane rests upon two strips of laminated $\frac{3}{32}$ " \times $\frac{3}{32}$ " above cabin, these being cemented in place AFTER the fuselage is covered and doped. The wing is retained in position by rubber bands around fuselage. Check that all surfaces are symmetrical and level with fuselage.

Join ends of rubber motor with a double "granny" knot, so that loops doubled into two and untensioned are just 16" long. This will keep the motor tight between nose and tail in flight, and thus preserve the balance of the model on the glide. Lubricate the motor with commercial rubber lubricant. Tie cotton loop around rubber and let down into fuselage through nose aperture, retaining cotton loop in hand. Engage rear ends of loops with piece of $\frac{1}{8}$ " dowel—this can be "fed" through the loops quite easily by watching through the semi-transparent tissue. Then pull out the other end by means of the cotton, and engage loops with noseblock shaft. It will aid the life of the rubber if the shaft hook is covered with valve tubing.

FLIGHT TESTING.

Check for balance. Model should hang slightly nose down when supported by finger-tips near last rib of wing about 50 per cent. of the wing cord back.

Choose a calm, windless day for first flight tests in preferably a grassy field. Face into wind and gently launch the model slightly nose down and observe the glide. The model should glide evenly and steadily downwards to the ground about 15 to 18 feet in front. Any tendency to stall (nose up, followed by "see-saw" action) or diving should be corrected by slight movement of the wing backwards or forwards respectively. If slight movement of the wing is insufficient to correct the fault, trim the laminated wing bearers back or front to increase or reduce the wing incidence.

Do not alter the tail setting. Continue to glide-test till no further faults are apparent. Glide should, if possible, be with a slight turn to the right, and this may be achieved by adding a small gummed paper tape trimming tab to trailing edge of the fin.

Now wind about 50 turns on to the motor and launch model level into wind. The model should climb gently to the right before settling into an even glide. If satisfactory, wind up motor to 100, 150 and 200 turns for consecutive flights. If model tends to climb and stall with increased power, add slight downthrust packing to noseblock, but do not alter wing positions or settings. Maximum safe turns on a lubricated motor will be between 500 to 550.

When you have successfully completed and flown this model, perhaps you would like to build something bigger and better. Ask your local "VERON" dealer to show you our more advanced competition designs.