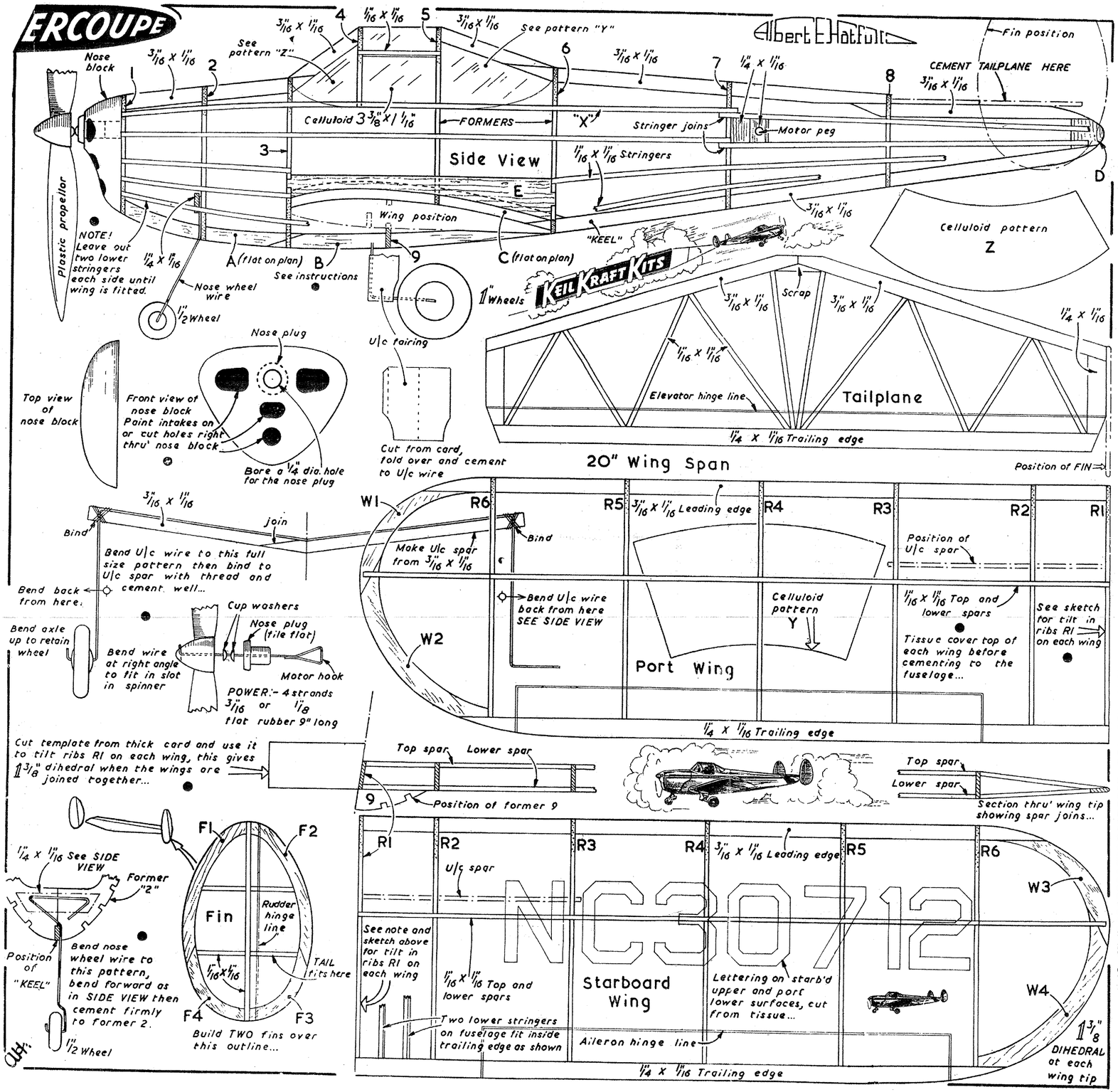


BUILDING INSTRUCTIONS

The ERCOUPE is a two seat, dual control lightplane which is reputed to be "spinproof". All metal construction is employed and the provision of a tricycle landing gear with a steerable nose wheel makes for safe taxi-ing. Power is supplied by the popular 75 hp. Continental engine.

Cover the plan with greaseproof paper.

FUSELAGE.

Pin pieces 'A' (leave out piece 'B'), 'C', 'D' and the upper and lower strips of 3/16" x 1/16" in place over the plan, cement the joins. Cement half formers 1, 2, 3, 5, 6, 7 and 8, over their correct positions on the previously laid members, keep the formers perfectly upright by placing pins on either side of them until the cement sets. Cement piece 'E' (left) and the 1/16" x 1/16" stringer marked 'X' on the plan into the correct notches in the half formers, now cement former 4 in place. Cement the remaining 1/16" x 1/16" stringers in place but LEAVE OUT the two lower stringers which pass under the WING POSITION. Notice how stringer 'X' and the one below are lap-joined at former 7. When this first side is completed and the cement set, remove from plan and cement the second (or right hand side) set of half formers in place directly opposite and using the same procedure as for the first set of half formers. Cement piece 'E' (right), stringer 'X' and former 4 in place, add the remaining stringers making lap joins at former 7 as before, and leaving out the two lower stringers. Notice the arrangement of the stringers shown in the SIDE VIEW and how some of the stringers lay over, and are cemented to piece 'D'. Cement the pieces of 1/4" x 1/16" for the motor peg flush with the stringers and in position shown. Bend the nose wheel wire to the pattern, mount the wheel on the axle then cement the wire to former 2, add the piece of 1/4" x 1/16" across the wire as shown, cement well—further gussets may be added round this point for additional strength. Cut patterns 'Z' and 'Y' from celluloid and cement in place over the cockpit. Add the centre strip of celluloid. Roughly carve the nose block to the shapes shown then cement to the front of former 1 and finish off with fine sandpaper. Using paste as an adhesive, tissue cover the top and sides of the fuselage with strips of tissue sufficient to span the gap between two adjacent stringers or more where convenient, and where possible, running the whole length of the fuselage.

WINGS.

Pin the lower 1/16" x 1/16" spar and the 1/4" x 1/16" trailing edge to the plan placing pins on either side of the wood, not through it. Cement ribs R1-2-3-4-5 and 6 in place over these strips, NOTE the template to be used to "tilt" ribs R1 on each wing, this is to provide 1¼" dihedral at each wing tip when the wing halves are joined together. Apply cement to the notches in the "noses" of the ribs then press the 3/16" x 1/16" leading edge into the notches. Cement the tip pieces W1 to W2 and W3 to W4, trim if necessary then fit between the leading and trailing edges, raise the lower spar to fit inside the tip as shown in the scrap sketch. Check the tilt in R1 again and if correct cement the top 1/16" x 1/16" spar in place. When set, remove from the plan and round off all the sharp edges with fine sandpaper, apply cement to ribs R1 and join the wings together. With one half flat, prop the other tip up to 2¼" until the cement dries. Tissue cover, water shrink and dope the top surface of the wings. Make the undercarriage spar from 3/16" x 1/16" to the pattern drawn, bend the undercarriage wire to shape, mount the wheels then bind and cement the wire to the undercarriage spar. Cement this unit up into the notches in ribs R1-2 and 3 of the wings (see dotted position on plan). The under surface of the wing may now be tissue covered and water shrunk. Apply cement to those parts of the fuselage which make contact with the wing (see "Wing Position" on plan) then gently press the wing into place in the gap in the fuselage, check that the wing is "square" with the fuselage from every angle, correct if necessary before cement sets. Cement piece 'B' in place in notch in former 3 and to the trailing edge of the wing. Pieces '9' may now be added on either side of piece 'B' and over the lower spar of the wing. The two lower stringers on each side start at former 1, pass through the notches in formers 2, 3 and 9 then fit to the inside of the trailing edge of the wing, cut slits in the tissue to allow this. Cover the underside of the nose and wing position with tissue, water shrink and dope. Cement the undercarriage fairings in place.

TAILPLANE AND TWIN FINS.

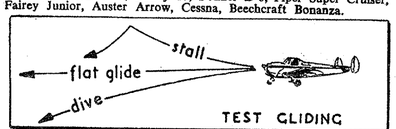
These are built flat on the plan by pinning down the outlines of stripwood and printed parts, cementing the joins then adding the cross pieces. Remove from plan when dry and finish with fine sandpaper. Cover both sides of Fins and Tailplane with tissue, water shrink and apply one coat of thin dope. Pin these members to a flat surface while the dope is drying (doped side uppermost) to avoid warping. Cement the tailplane to the fuselage in the position shown on the plan and resting on the top stringer on either side of the fuselage. Cement the fins in place at the end on each side of the tailplane (see plan).

Although colour doping is not recommended for a flying model, *thin* colour dope may be used and should not prove restrictive to short duration flights.

FLYING.

Assemble the plastic propeller on wire as indicated with the nose plug, cup washers, etc. Lubricate the rubber motor with ordinary castor oil, cut out a small panel of tissue near the rear end of the fuselage, then using a piece of hooked wire, draw the motor through the fuselage from the rear, retain the motor with the small dowel pushed through the holes in the pieces of 1/4" x 1/16" each side of the fuselage. Place a few turns on each loop separately then place both loops on the hook on the propeller shaft. With the model now fully assembled it should be held on the fingertips at the spar position of the wing and made to balance level by adding small pieces of plasticine to either the nose or tail, whichever is required. When balance has been obtained test glides may be carried out preferably over long grass to avoid undue damage. Handlaunch the model from shoulder height on a slightly downward path directly into the wind. If the model dives (see sketch) add a small piece of plasticine to the tail. If the model "stalls" add a small piece to the nose (weight previously added when statically balancing the model may be removed to obtain similar effect). Once a long flat glide is achieved hand turns may be applied to the rubber motor starting with about 75 turns and gradually increasing to 200 or more. The model may be made to "take off" from a smooth surface. When using full power, insert a piece of 1/16" balsa under the rim of the nose plug at the top, this will apply downthrust to the propeller and avoid power stalling.

Other models in this series include the:—D.H. Chipmunk, Globe Swift, Luscombe Silviare, Piper Family Cruiser, Stinson Station Wagon, Percival P.56, Fairey 17, Fokker D-8, Piper Super Cruiser, Fairey Junior, Auster Arrow, Cessna, Beechcraft Bonanza.



E. KEIL & CO. LTD., WICKFORD, ESSEX.

1/16 Sheet
SECOURE
TOP
E left
E right