Piper PA 18 Super Cub

A really robust and simple-to-build F/F scale model for .5 – 1cc engines by Peter Lewis.

Foremost among the makers of light planes, Piper have continued their famous two-seater Cub line into the Super Cub 150. With a Lycoming engine of 150 h.p., performance reaches a top speed of 130 m.p.h. and a climb of 960 ft./min. The Cub's layout and proportions make it particularly suitable for conversion into a flying-scale model with " built-in " steady flying characteristics. Sheet fuselage and tail construction provide speedy, accurate assembly and plenty of strength to ensure a long life.

Fuselage: The sides are traced in outline on to 1/16 in. medium sheet and are then cut out. Mark one side "left" and the other " right," and, on the inner sides, indicate the positions of the vertical formers. At F5, each side is scored and bent to the angle shown on the plan view; this is set by cementing down the length of the crack. Fit the 1/2 in. hardwood or celluloid tailwheel to its 20G wire strut, which is then bound and glued to the sternpost. This, in turn, is cemented in place at the rear of the fuselage sides, which are held together by rubber bands while setting. In the meantime, formers F3 to F8 are cut from 3/32 in. sheet ready for insertion at their respective positions between the fuselage sides. As soon as the formers are firm, the undercarriage may be fitted. This is made in two parts from 16G wire, both sections being bound and glued to 3/16 x 3/16 in. crosspieces fixed between the fuselage sides. The ·3/16 x 1/8 in. top longeron is added, together with F2 of 1/8 in. sheet and the 1/4x 1/4in. hardwood engine bearers.

1/16in. sheet is used to cover the top and bottom of the fuselage, soft block forming the upper part of the cowling to fill in between formers F1 and F2. Block is used also in front of F1, being carved and sanded to shape. Some adjustment may be needed in bearer spacing to take the engine to be used in the model.

Tail unit: The fin, rudder and tailplane consist of 1/8 in. sheet, cut out and sanded to section. The tailplane is cemented firmly on to its 3/32 in. sheet platform, followed by the fin above it. Scrap balsa is used to fill in at the joints and the rudder is attached with a thin aluminium hinge pressed and cemented into the sheet.

Wings: These are constructed direct on the plan and are started by pinning down the 1/4 x 1/4 in. leading edge, the 3/4 x 1/8 in. trailing edge and the pair of 1/4 x 1/8 in. lower spars. Ribs R2 to R9 are cut from 1/16 in. sheet, with 1/8 in. sheet being used for the root ribs R1. Wing tips consist of 3/32 in. sheet, and the structure is completed with the addition of the 1/8 x 1/8 in. upper spar. 1/2 x 1/8 in. supports for the struts are cemented between the lower spars and press fasteners are sewn to them. 1 1/2 in. dihedral is set at the wing tips by cracking the spars at the roots, cementing liberally and adding 1/8 in. sheet braces to strengthen.

Covering: The entire framework is covered with medium weight tissue, water sprayed on the wing surfaces and given two coats of clear dope.

Details: The portion between the undercarriage main legs is filled with 1/16 in. sheet, leaving a 1/4 in. opening at the apex to allow springing movement of the axles. Sheet fairings arc added to the cross struts and the wing struts arc cut from hard 1/8 in. sheet. Press fasteners retain the latter in place between the fuselage and the wings. The tail unit bracing is formed from 18G wire and celluloid windows complete the cabin area and the wing centre section. Hardwood 3/32 in. dia. dowelling passes across the fuselage for the wing fixing bands. Two or three coats of coloured dope arc sprayed on, the windows being masked while this is done. Ailerons, (laps and elevators are shown with Indian ink. Finally, 1 1/2 in. dia. Celluloid wheels are retained in place with soldered washers on

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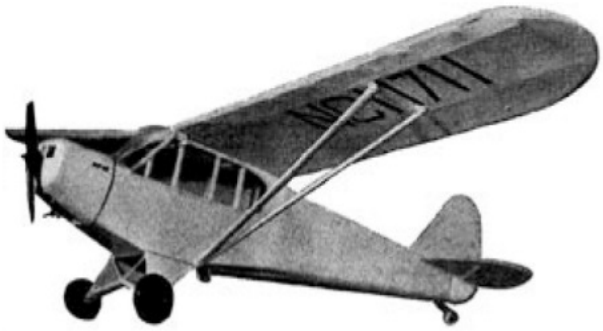
the axles and the engine is installed on its bearers. The c.g. should, on this model, come at just about the right position with very little added weight being necessary for balance.

Flying: The Cub responds readily to the usual adjustments to rudder and to the thrust line to give a steady turn both under power and on the glide.



Note the transparent center section of the wing—which makes it advisable to make a neat job of the interior.

Model Aircraft Magazine October 1958