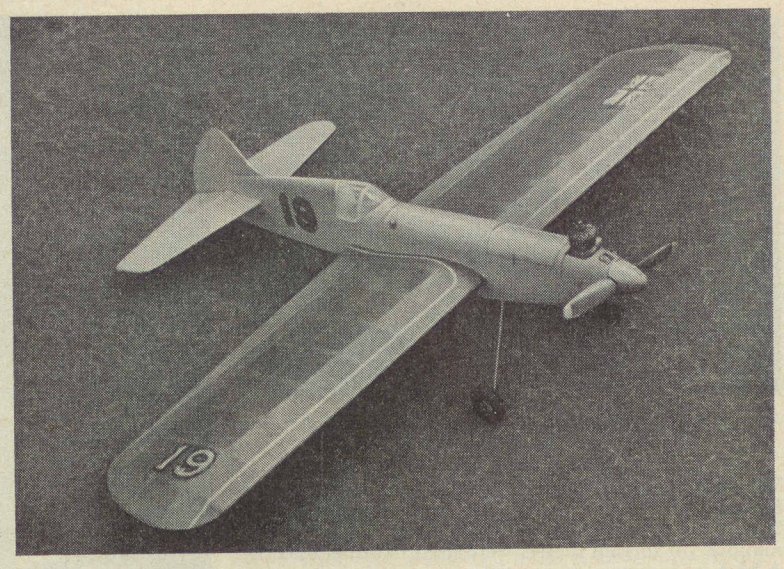


COUGAR

45-in. span flapped stunter for 3·5-5c.c. by T. W. J. Stoker

COUGAR was designed specifically for flying in the 1956 Gold Trophy, but unfortunately, fuel feed troubles did not allow it to show its full paces. Normally it flies extremely smoothly through the whole stunt schedule at 72 m.p.h. with a K & B 19 in the original. With a little modification the popular Frog 500 or any of the powerful 3·5 diesels and "19" glow engines would be ideal.

Begin construction with the wing. This is best tackled with the leading and trailing edges packed up. The lower spars and leading edge sheeting are cemented in place after removal from the board. Next the flaps are hinged on with nylon and the bellcrank assembly fitted. The flap push rod is connected and the elevator push rod is cut to the correct length and also fitted to the bellcrank.

Lead-outs are heavy Laystrate, and are threaded through holes cut in the ribs and through tubes held in the inboard tip with nylon. Next the centre-section of the wing is sheeted with $\frac{1}{16}$-inch sheet, and all the ribs capped. Holes will have to be cut in the centre section sheeting to clear the push rod. Finally, $1\frac{1}{2}$ ounces of lead is cemented securely into the outboard tip. Note that the inboard wing panel is two inches longer than the outer panel.

The $\frac{1}{8}$-inch sheet fuselage sides and doublers are cut out first and the doublers cemented to the sides. If a Frog 500 is being used, $\frac{1}{16}$-inch ply doublers could be used to allow for the greater width of the Frog crankcase.

Bearers are next cut to length and cemented in place on F1 and F2. F1 should have been previously drilled for the tank feed pipe, and for the undercarriage, which should now be sewn in position and cemented. When this is set the whole assembly is cemented to the fuselage sides, which are drawn together at the tail end and cemented. Next, the rest of the formers are cemented in place.

The curved top in front of and behind the cockpit is of $\frac{1}{16}$-inch sheet soaked in water and then held in place with rubber bands until dry, when it can be cemented in place. The tank box is $\frac{1}{16}$-inch sheet, and is made separately on formers H1, H2 and H3.

The wing is added to the fuselage by cutting away the sides immediately below the wing slots. The fuselage formers already have slots cut from the bottom to take the push rod, but the rear fuselage side below the elevator push rod hole will have to be cut away so that it can be accommodated. When the wing is cemented in place the pieces cut away are replaced and securely cemented. The tailskid and fuselage bottom are now added.

Tail surfaces are now hinged together, the split elevators like the flaps, being joined by wire. The control horn is cemented in place, and the tail-plane slotted into the fuselage and cemented. The elevator push rod is then connected to the elevator horn.

Next, the fin is added and the cowling made from block or $\frac{1}{2}$-inch sheet balsa. Both cowling and tank box are held in place with hooks, round which is wrapped fuse wire.

The inside of the cockpit is painted (silver on the original) a dashboard and pilot fitted if desired, and a cockpit formed from two pieces of celluloid. Cockpit frames being unsightly, one was not used in the original, and it has not caved in after a full season's flying.

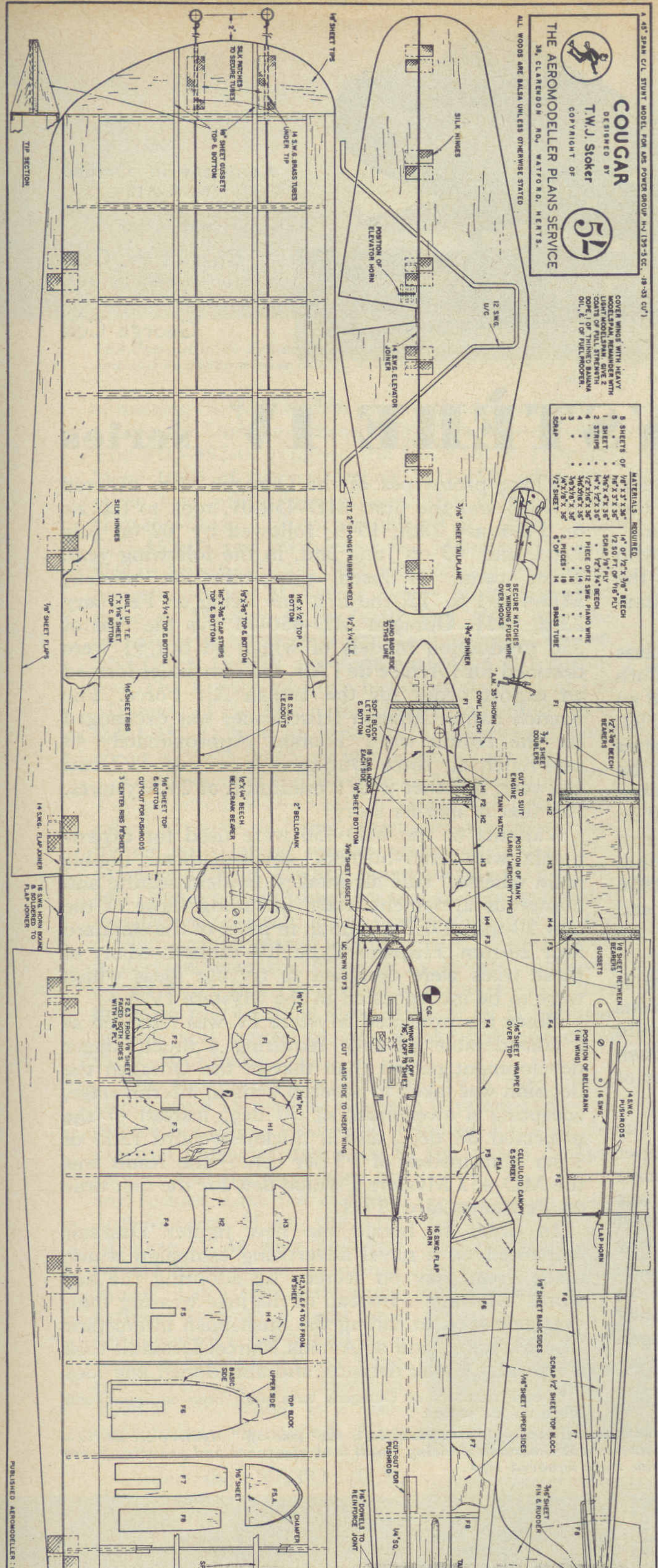
The fuselage and tail surfaces are covered with lightweight Modelspan doped on, and given as many coats of grain-filler as one can afford, sanding between coats. The wings are covered with heavy-weight Modelspan, with one coat of full-strength dope, followed by one of thinned banana oil.

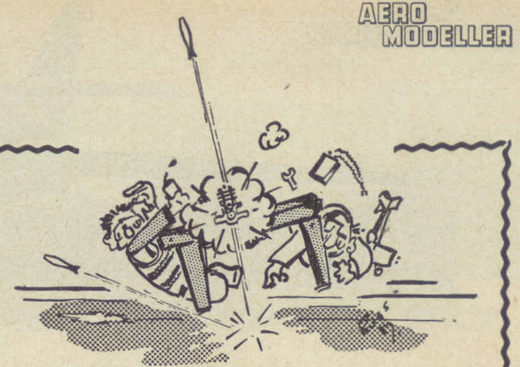
Final finish is much improved by Aerolac. The original had the wing covered with red Modelspan, with a finish of red Aerolac. The rest of the model was pale blue, and the whole fuel-proofed.

Use 56 feet light Laystrate lines. Thinner lines can be used, and the length increased to over 60 feet, if desired.

A final warning! Do not have the C.G. to the rear of that shown on the plan. The position indicated is perfect for full sensitivity and contest performance.

Full-size copies of the 1/5th scale plan opposite are available Price 5/- post free from Aeromodeller Plans Service as CL.673





What's the Answer!

—on plastic props

John Jones always thought that plastic propellers were tougher than wooden ones, so he was more than somewhat peeved when one burst on a bench run. "You should have used a nylon one," his friend told him. "Or high-impact polystyrene". "But how can I tell the difference?" John wanted to know. See answer below.

WOOD OR PLASTIC... IT STILL HURTS

ANSWER: Commonly, the four plastic materials used for propellers are acetate, polystyrene, high-impact (or modified) polystyrene and nylon. Acetate plastic has been preferred by British manufacturers for most plastic mouldings until the last year or so because of its greater availability and cheaper cost. It is a relatively "dead" material which will break on impact, but generally quite suitable for propellers, provided it is run at moderate speeds. Acetate mouldings are susceptible to warping and so sections used are generally thick and fairly symmetrical.

For really thin sections, which are free from warping, polystyrene is superior (*e.g.* small rubber model propellers). But this is a very brittle plastic, and sounds brittle if tapped. To overcome this defect, high-impact polystyrene was introduced—basically polystyrene modified with rubber. High impact polystyrene mouldings generally lack the high gloss finish which can be obtained on acetate or polystyrene mouldings, which is one way of identifying them. Also if a thin section, like a propeller blade, is flexed, the material tends to show up white at the bend.

Nylon is the toughest of the common plastics used for mouldings. You can always recognise a moulding since (in this country at least) it is only available in translucent "off-white" colour.

REMEMBER LADS, THEY ARE ONLY EQUAL TO A COUPLE OF 9x6's.