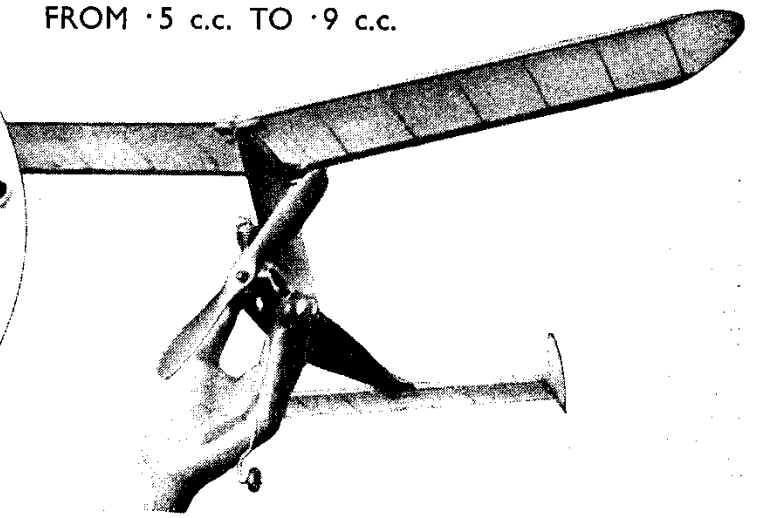
A BABY PYLON MODEL FOR DIESEL MOTORS FROM ·5 c.c. TO ·9 c.c.

Elfin Mk II

By N.J. BUTCHER.



ELFIN was designed for those modellers with baby engines who want a machine which they can not only pleasure fly but also enter for competitions with more than the usual chance of a " baby " of placing. The original has been flown consistently throughout the past season, and in spite of sundry flights into houses, trees, etc., has suffered no damage whatever apart from torn tissue, not even a broken prop.

Fuselage and Pylon. Select 4 good pieces of 3/32 sq. and build in the normal manner; when dry add the plywood formers at each end, it being advisable to shape the blocks for the engine mount and tail fixing before cementing the formers to the fuselage. Cement in the flush 3/32 in. sheeting at the point of pylon attachment and sandpaper the whole smooth. Bind undercart leg to a piece of $\frac{1}{8}$ in. sq. birch and cement firmly in the position shown, it will be necessary to cut a piece from the bottom longeron to place the wire central. Sheet cover the top two sides FIRST, leaving the bottom two uncovered. Now build the pylon; the bottom rib is of $\frac{1}{2}$ in. sq., a Vee being cut in the bottom to fit the fuselage before sanding the rib to section. The pylon is built in the same manner as a symmetrical tailplane, but make sure to leave the $\frac{1}{8}$ in. sq. spars projecting at the bottom. Sheetcover the pylon and add the two obechi dowels before cementing it to the fuselage. Now cut two holes in the top of the body to take the pylon spars, slide these through and thoroughly gusset it to the bottom longeron. You can now finish sheeting the fuselage. When dry, sandpaper and cover with tissue banana oiled on. This method of fuselage and pylon construction is one of the lightest and strongest I have yet encountered, the original taking dozens of severe knocks without any damage whatever, it was even entered in a comp after being sat upon *en route* in the car.

The Wings are built as usual, the only point being the flat bottomed centre ribs which make for a rigid wing fixing without shaping the top of the pylon. The tips can be either steamed or bent to shape over a candle flame.

The Tail is perfectly straightforward except for the plug-in part, the tongue being made from $\frac{1}{4}$ in. sq. obechi firmly cemented through the leading edge of the tailplane. After covering, fair the centre section in to the fuselage contour with scrap sheet.

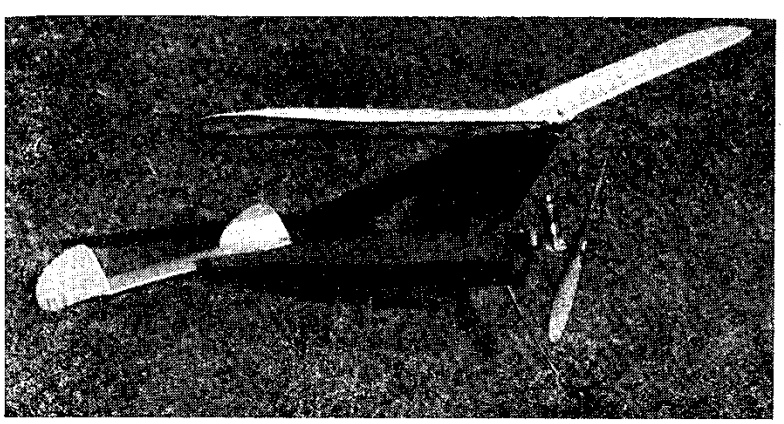
The Fins are cut from 1/16 in. sheet, sanded and covered with tissue banana oiled on.

Covering and Doping : The original was covered with jap tissue, the wings and tail being given one coat of dope, though it is advisable as the tail is in the way of the oil thrown out by the exhaust to give it a coat of banana oil as well.

Power : The original was powered with a Micron 0·8 c.c. but as you may not be able to obtain one of these, and the plane will fly equally well with any other motor of similar capacity, I have purposely omitted the sizes of the engine mount as this will, of course, depend upon whatever motor is used. The mount itself is made from 1/16 in. aluminium sheet bent to the shape shown and firmly bolted to the ply bulkhead.

Incidence : This will of course vary with the weight of the motor, but the model should fly with $1\frac{1}{2}$ positive on the wing and the tail at zero.

Flying : Assemble model and check for warps; there should be no washout or washin on the wings, but the tail should have slight turn to the right. Test glide, if nose heavy do not add negative incidence to the tail but about 1/32 in. under the front of the wing, but if model stalls put 1/32 in. or 1/16 in. under the front of the tail. The first power flights should be made at the lowest possible revs, no indication of the thrust line can be given as this will again depend entirely on the motor. After one or two satisfactory flights have been made it is advisable to cement the tailplane to the fuselage, as this prevents accidental alteration of the trim; before doing this the original spun in several times, but it has not done so since.



Full size plans are available as usual, price 3/–, from the Aeromodeller Plans Service, Ltd., Allen House, Newarke Street, Leicester (see 1/4 scale reproduction opposite)