



NUCLEUS
 M.A. 253 W.P. WOODROW 3/6
 SPAN 22" LENGTH 22"
 COPYRIGHT MODEL AIRCRAFT
 19-20 NOEL ST LONDON W1

DELTA WING TEAM RACER

NUCLEUS



for
CLASS 'A' or 'B'

2.5 c.c. — 5 c.c.
Engines

NUCLEUS is the development of four models, and though primarily designed for Class A racing, owing to its large wing area it can quite easily be converted into a Class B job by modification of engine mounting only. The Class A version with an E.D. Racer and 8 x 6 Stant prop has regularly clocked 75 m.p.h., while the Class B version with an O.K. Hothead, has been timed at 95 m.p.h. The model is very stable and easy to fly, and it is an ideal trainer for the newcomer to C/L flying.

Wing

Make up the rear undercarriage from 16 S.W.G. wire and bind and cement to the ply mount. Cut out the centre section ribs, cutting the lead-out holes in the port rib only. Cement the undercarriage in place. Cut out formers W.1 to W.4 and cement into place, carefully checking that the assembly is square. Whilst the centre section is setting, make up the trailing edge and elevon from laminated sheet as shown on the plan, recessing both to take the silk or tape hinges. Fit the elevon horn, and when set, sand to shape.

Now cement to the front of the trailing edge the $\frac{3}{8} \times \frac{1}{8}$ in. rib support and then cement the assembly to the centre section, again ensuring that the whole assembly is square. Cement the centre section and leading edge into place, also the tips. Do not forget the tip weight in the starboard tip. Make up the leading edges from $\frac{1}{8}$ in. sheet and add the rib supports, then cement into place. Add the two spars either side. Now cement into place the strip ribs, making them from hard balsa. If soft or medium is used, they will buckle as the wing covering shrinks.

Drill the port leading edge to take the lead-out wires and cement the brass tubes into place. Drill, and cement the bellcrank mounting platform of $\frac{1}{8}$ in. ply between W.1 and W.2. Make up the control mechanism and fit into place, taking the extra precaution of soldering the two locknuts of the bell-

crank pivot. Holding the elevon in the neutral position by bulldog clips at the tips, bend and fit the push rod to the horn, at the same time ensuring that the bellcrank is also in the neutral position. Check for freedom of movement and then bend the ends of the leadout wires to take the lines.

Now cover the centre section with $\frac{1}{8}$ in. sheet and cut a slot in the underside for the push rod. Sand the leading

designed

by

W. P. WOODROW

edge to shape and also the tips. Do not yet fit the wheels to the rear undercarriage.

Fuselage

Make up the two nose doublers. Cut the bearers to length and cement to the $\frac{1}{8} \times \frac{3}{8}$ in. strips. Drill the bearers to take the 6 B.A. screws, fit the screws, and lock by soldering wire across the slots. Now cement the bearer assembly to the doubler.

Cut out former F.1A from $\frac{1}{8}$ in. ply, make up the front undercarriage complete with wheel and cover, then bind and cement into place on F.1A. Make formers F.2, F.3 and F.3A and cement into place thus completing the nose doubler assembly. Cement tank into position.

If a Class B version is being built, do not fit F.2 but double the length of the tank. Cement into place the $\frac{1}{8}$ in. sheet doubler base. When the assembly has fully set, cement the assembly to the centre section. Cut out the two sides and cement into place, noting how the top sides come together at the rear to form the fin. Fill in with soft sheet as shown on the plan view. Cement into place the $\frac{3}{32}$ in. sheet bottom and cut out the exhaust air port and fit baffle.

Now fit rear undercarriage wheels. Partially shape the $\frac{1}{8}$ in. sheet fuselage

top and cut out the recess to take the pilot and dummy ejector seat. Cement neoprene tubing temporarily into place on the tank filler and vent, and fit the $\frac{1}{8}$ in. sheet into place. When set, remove the neoprene tube. Now make up nose block from soft block, recessing to fit over the bearers and flush with the engine mounting face of the bearers. Finally, sand the whole fuselage to shape, after suitably blanking off the tank.

Cowling

The cowling is made up by sand-wiching the front block between $\frac{1}{8}$ in. sheet and a base of $\frac{1}{8}$ in. sheet. Before finally shaping, fit the two dowels and locate them in bearers. Place cowling into place and cement F.1 in position. Now sand to shape.

The cowling is held in position by the dowels and needle valve, this being done by soldering on the needle an extra knurled lug from an old valve. Fit the filler and vent fairing and the neoprene tube to the tank vent and filler.

Covering

Cover the complete model in lightweight Modelspan and give all sheeted parts of the model two coats of sealer; then colour as required. Do not colour dope the wings but give them three coats of clear dope and, if required, a coat of Aerolac. Fuel proof the entire model, but before doing so, fit the pilot, canopy, R.A.F. roundels and paint in the ejection warning triangles in red.

Flying

Nucleus flies the same as any other C/L model and has no peculiarities through being a delta. It will fly on lines of up to 65 ft. radius and has a very fast landing speed. An ordinary screw-on spinner was fitted to the original model, but later a supersonic was fitted which greatly improved the appearance. Note: The c.g. must be as indicated on plan, for on delta wing models of this nature it is critical.