



## Pull-out plan for an exciting two function slope sports model

# OBELIX

Designed by Chas Gardiner

'OBELIX' originated from discussions with BATS clubmates a couple of years back and is a development of the control line and Club 20 combat theme introduced by Phil Newman, whose 'Bomcat' machine was a simple 'wing' cut from a slab of polystyrene foam.

Much midnight oil was burnt on the vexing problem of reflex sections and pitch control, solved eventually by a semi-symmetrical centre section set at an effective negative incidence whilst the wing panels went from semi to fully symmetrical. Developments threw out models like shelling peas until the present design which will fly inverted with little or no change of trim and will perform any combinations of aerobatics involving rolls, inside and outside loops. Most manoeuvres in the book are easily performed but this machine is essentially a 'fun' model as I would expect it to be outpointed by a smoother flying, larger model in an aerobatic competition. Still, they cost more etc. . . .

And so to the present developments. I am currently using blue foam panels, the completed model being covered in lightweight tissue using wallpaper paste before the iron on film. You can however cut your panels from expanded polystyrene foam building the model as per instructions but cladding with obeche veneer before final covering. In this instance, the veneer on the underside can be applied in one length tip to tip. The finished model will weigh around 4oz heavier than

the blue foam version but will motor nicely in modest lift.

Use any two channel gear, 27MHz should be OK as you do not fly at any great distance so cut yourself some panels and get cracking. (If you are stuck, we can supply panels. See ad. in the back pages). A third alternative is to use the built-up construction also shown on the plan.

### Right, here's how you do it

Cut panels from blue foam, check they are square and epoxy together to give  $\frac{3}{16}$ in. under each tip. Try not to allow epoxy to ooze out onto the surface.

While this is going off — put the kettle on . . . Next glue on leading and trailing edges using custard, glue or similar — secure with light rubber bands, add side ribs, then brew up. It is important that you satisfy yourself that there is enough room in the fuselage for your nicad pack and Rx. The original takes four AA cells and one of the cheap 27MHz receivers currently available.

Cut  $\frac{3}{16}$ in. sheet sides and formers to suit. Glue fuselage sides to bottom — add formers and sandwich of hard balsa and ply for nose block. Glue up fins from  $\frac{3}{32}$ in. sheet — note direction of grain, then cut and sand elevator and ailerons from  $1\frac{1}{4}$ in.  $\times$   $\frac{5}{16}$ in. TE section.

Sand leading and trailing edges to section — note top hinge for ailerons, bottom hinge for elevator. Lightly sand the tips square and

glue the  $\frac{3}{16}$ in. tip blocks in place — sand to section when dry. Add 2in. lengths of TE fairing cut from aileron strips. Now *carefully* mark out the fuselage width on the centre panel and cut out *square* using a backsaw, try to obtain a tight fit. Sand fuselage and epoxy in place with underside flush to wing. Apply generous fillet of epoxy all round.

Cut out foam for servo housings and line with  $\frac{1}{16}$ in. balsa sheet then check radio gear and servodirection. Reverse if necessary then locate servos with soft balsa packing using PVA or similar.

Mark route of snakes on foam and cut grooves (a  $\frac{3}{32}$ in. wide file is ideal) — apply glue, press snake to depth and fill groove using  $\frac{1}{8}$ in. soft balsa. Fit cables and links as shown, check movements and glue soft balsa hatches in place. Lightly sand flush when dry. Carve nose block and fuselage to suit, lightly sand whole model including ailerons, elevator and fins which are still separate. Note, blue foam sands well providing you use a fine grade with extremely light pressure. Cover the model with light weight tissue using wallpaper paste before iron-on film which you should tack *round the edges* and use a heat gun to shrink. Don't linger too long in any one place. Hinge elevator and ailerons

*Below left: complete 'kit' of parts for blue-foam version, always a good idea to adopt this approach to building from plans. Below: foam panels assembled with leading and trailing edge pieces retained by rubber bands.*

