

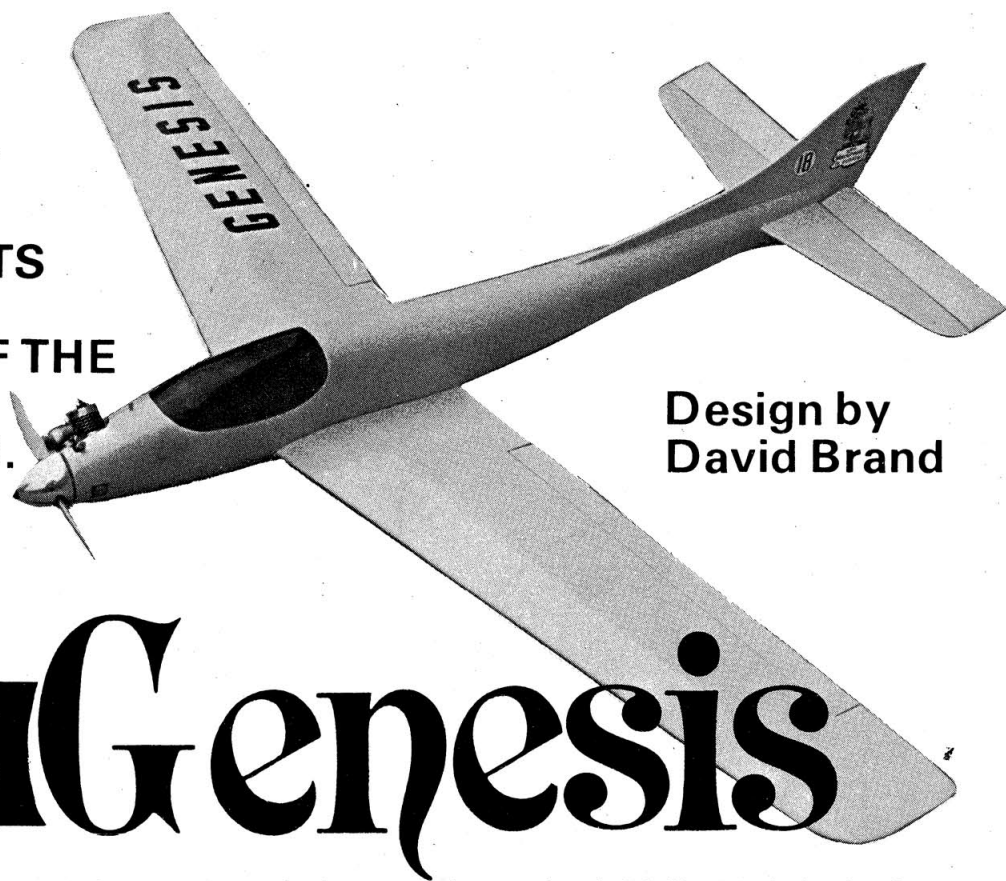
**YOU'VE JUST GOT  
TIME TO BUILD  
THIS SLEEK SPORTS  
MODEL TO SLIP  
INTO THE BACK OF THE  
CAR FOR THOSE  
SUMMER PICNICS.**

**41in. SPAN  
FOR 2 FUNCTION  
R/C SYSTEMS &  
0.9-15 MOTORS**

**FULL SIZE  
PULL-OUT PLANS**

# Genesis

**Design by  
David Brand**



**W**HILE suffering from a recent illness I had this vision of Bill Burkinshaw attired like an avenging angel demanding a reason for not supplying him with an aircraft for publication before it was too late (*R.C.M.&E.* always gets their plan). After this vision had extracted a design promise from me, my health improved rapidly so I was obliged to put pencil to paper immediately on convalescing.

Having marvelled at the performance of aerobatic slope soarers operating off pure lift I decided that it must be possible to design similar lightly loaded and very clean aerobatic aircraft for small engines. One drawing pad, three 1/8 scale balsa silhouettes and two full size cardboard cut-outs later, Genesis was born. Why Genesis? Because in an enthusiastic moment I thought it would be the first of many.

May I point out to anybody who might be a little concerned by its sleek lines, that this is an easy aircraft to fly. It is extremely smooth and positive without being oversensitive.

By using the usual expedient of varying the ratio of wing depth to chord over its span Genesis has very good low speed characteristics.

Finally the weight of the prototype with 280mA Ni-Cads and two channels from my *MacGregor Digimac IV* came to 1lb. 15oz., achieved quite easily by using good quality medium and soft balsa wood, contact adhesive and balsa cement.

## Fuselage construction

Cut the fuselage sides and the centre section doublers from medium 3-32in. balsa sheet. Mark out and cut the fuselage doublers from 1mm ply, glue these parts together using contact adhesive making up left and right fuselage sides. Attach the 1/2in. and 1/4in. triangular longerons to the sides using balsa cement.

Cut the formers 1 to 4 from 1/8in. ply. Join the fuselage sides with F2, F3 and F4, when thoroughly dry, draw the rear together and glue a piece of 1/4in. x 1/4in. tail spacer between the ends. Draw the front together and glue F1. Bolt the engine mount to F1 using 6BA bolts and blind nuts. Temporarily attach the engine to the mount in order to assist in aligning and fitting the fuel tank. Attach the servo rails and servos. Please note that

the elevator servo is mounted on the left side of the fuselage in order to make room for the aileron servo attached to the right side of the wing centre section.

A small combined elevator joiner and control horn is used for the elevators. I used the *Veco* type. The control horn is positioned inside the fuselage. Cut out the horizontal stabiliser and elevators from 1/2in. medium balsa sheet, slot the 1/4in. x 1/8in. end piece and slide the stabiliser into the fuselage. Fit hinges to the stabiliser, slide in elevator horn/joiner, push fit the elevators onto the elevator joiner and glue back the slotted end piece from the 1/4in. x 1/8in.

Make up the elevator push rod and connect it to both horn and servo, the push rod will then hold the joiner in place on removing the elevators.

Now glue the tailplane in place followed by the 1/2in. soft block to the top of the fuselage and the 1/4in. soft block underneath fore and aft of the wing. Refit engine with a 1 1/4in. spinner. Build up the cabin section and cowl with 1/2in. block.

Use a razor plane for shaping and finish off with sandpaper.

Fit top and bottom fins and attach the elevators after painting or covering with iron-on film.

## Wing construction

Cut the two rib jigs from 1/8in. plywood and make the ribs from soft 3-32in. balsa sheet using the normal sandwich method.

Pin down the 1/2in. x 1/2in. L.E. and 1 1/2in. x 1/2in. T.E. on a flat building board with suitable packing underneath to ensure alignment with the ribs. Glue in the ribs. When dry the assembly can be removed from the board.

Shape and fit the centre section blocks, note that the block on the right wing has a piece removed to accommodate the aileron servo. Sheet the underneath of the wing with 1/16in. balsa. Glue in the centre spar sections between each rib making sure the grain runs vertically and that each section is to the full depth of the ribs.

Sheet the top with 1/16in. balsa, add the tips and sand the whole wing to shape. Chamfer the wing root and glue both halves together with 1in. dihedral under each tip.

Cut the aileron out of the T.E. from the outer end of one aileron to the other. Cut out the centre section from this length and glue back after fitting the torque rods.

Fit small hardwood blocks for mounting the aileron servo on top of the wing and install servo. Ailerons can be fitted after the model has been painted or filmed.

Attach the wing to the fuselage with usual L.E. dowel and nylon wing bolts. Make up the wing fairing underneath from scrap balsa and sand to match fuselage.

Fit the receiver vertically between F2 and F3 as shown and finish model to choice. In order to get the centre of gravity in the position as shown on the plan the 280mA nicad was fitted behind F4.

## Flying

Recheck the centre of gravity and set the throws for the elevator to  $\pm 20^\circ$  and the aileron to  $\pm 10^\circ$ .

Ask your assistant to hand launch straight and level and the rest is up to you. The smoothness of the aircraft will delight you as the prototype has to those who have flown it.

The original flew with a standard OS10, but if you wish to exploit the full potential of this aircraft use a .15, even though certain Cotswold Club members are threatening to put .19's in theirs.

**Left: designer  
David Brand with  
Genesis. Keep it  
light and you will  
be rewarded with  
good  
performance.**

