ENGINE RADIAL MOUNTED 5 DIESEL

FROG 50 RECOMMENDED

8BA BOLTS SOLDERED TO TINPLATE STRIP

FORMER FIA HAS ENGINE BOLTS FIRMLY FIXED BEFORE CEMENTING TO FI

FORMER FI 1/8" PLY

FORMER FIA 1/4" SHT.

FI

FIA

1/8" SHT. GUSSETS

CHAMFER AT END TO SUIT SWEEP BACK

MAIN SPAR MI 3/16" HARD SHT.

R5 R4 R3 R2 R1

CUT AWAY L E TO SUIT TANK

R6

RIBS R8 & R9 MADE BY SANDWICHING TWO PIECES OF 1/8 BALSA BETWEEN R6 & R10 AND CUT TO SHAPE

R10

R7

RIBS R1-R9 1/8" SHT. R10 1/16" SHT.

L E FROM 1/4" SHT

COVER TOP SURFACE WITH 1/16" SHT. FROM L E TO TOP SPAR

COVER BOTTOM SURFACE TO DOTTED LINE

3/32" FIN SOFT SHT.

HINGES FROM ALI SHEET

TOP SPAR. 1/8" SQ.

COVER C S TOP AND BOTTOM WITH 1/16" SHT

1/16" SHT GUSSETS

MI

1/16" SHT GUSSETS

5" DIHEDRAL AT TIPS C.S FLAT

FIN SLOTTED IN & CEMENTED

1/2" SOFT SHT TIPS

1/8" SQ BOTTOM ONLY

R1 R2 R3 R4 SPACE FOR UNDER FIN R5 R6 R7 R8 R9 R10

T E 3/4" x 3/16"

ALI HINGES

POSITION OF ADJUSTING SCREW

T E RAISED 3/16"

3/16"

ELEVON

BOLT SECURED WITH THREAD AND CEMENTED

T E

RIB

1/4" SQ

1/4" SQ

NUT SOLDERED TO BOLT

8 B A BOLT

ELEVON FROM 1/16" SHT

TENSION ELEVONS DOWN WITH RUBBER BAND

LOWER FIN 1/16" SHT 2 OFF GLUE TO R5

WASHBOARD

DELTA

M A CE READ

287 SPAN 31" LENGTH 19" 3'6

19-20 NOEL ST LONDON W1

WASHBOARD

A free flight delta sportster design for 0.5 c.c. motors

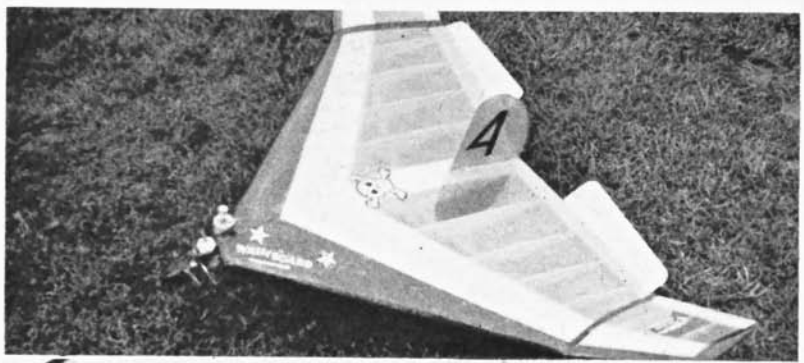
by

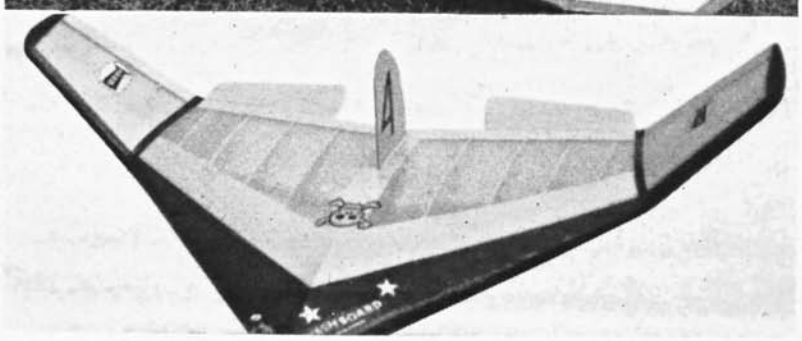
COLIN READ

Designer Read proudly displays his original model—also shown in the two views below.

THIS model was designed early in 1955 after a series of delta wing models had been built to develop a design capable of stable flights even in rough weather conditions. To make *Washboard* stable, sharply upswept wing tips are used, together with a staggered dihedral break to provide the necessary washout; the airfoil section is a normal flat bottom one, but using an inverted trailing edge to give a reflex section.

Construction is commenced by laying flat on the building board the $\frac{1}{4}$ in. sheet leading edge, $\frac{3}{16}$ in. main-spar and trailing edge (note the reverse section) then cementing the ribs in place firmly (double cementing is advised throughout). When dry, remove from the building board and add the upper $\frac{1}{8}$ in. sq. spar, then separate the wing tips where shown and cut to fit the main wing, raising the tips 5 in. When both tips are firmly in place cement the dihedral bracing gussets in position as detailed on the drawing.





Formers 1 and 1A are now added, the whole of the leading edge and front formers then being sanded to shape (before covering with $\frac{1}{16}$ in. sheet), to provide smooth contours as shown. Lastly, the centre section is covered, top and bottom, and the $\frac{1}{2}$ in. sq. wing tips added, after which the whole framework is sanded to a smooth finish.

The elevons, upper and lower fins, cut from $\frac{1}{16}$ in. and 3/32 in. medium sheet respectively, are covered with tissue (doped on) and cemented in place after the model is covered and doped.

The elevons are fixed in place with pieces of aluminium, and spring loaded with a small rubber band onto the stops which are cemented underneath the wing and elevons.

The engine used on the original was a Frog 50, radial mounted, but any power unit of 0.5 c.c. will provide sufficient power, but an increase in downthrust will be necessary if a more powerful engine is used.

It may be of interest that the original *Washboard*, recovered and redecorated, gained second place in the Unorthodox Section Concours d'elegance at the 1957 All-Britain Rally; the qualifying flight was 53 seconds.