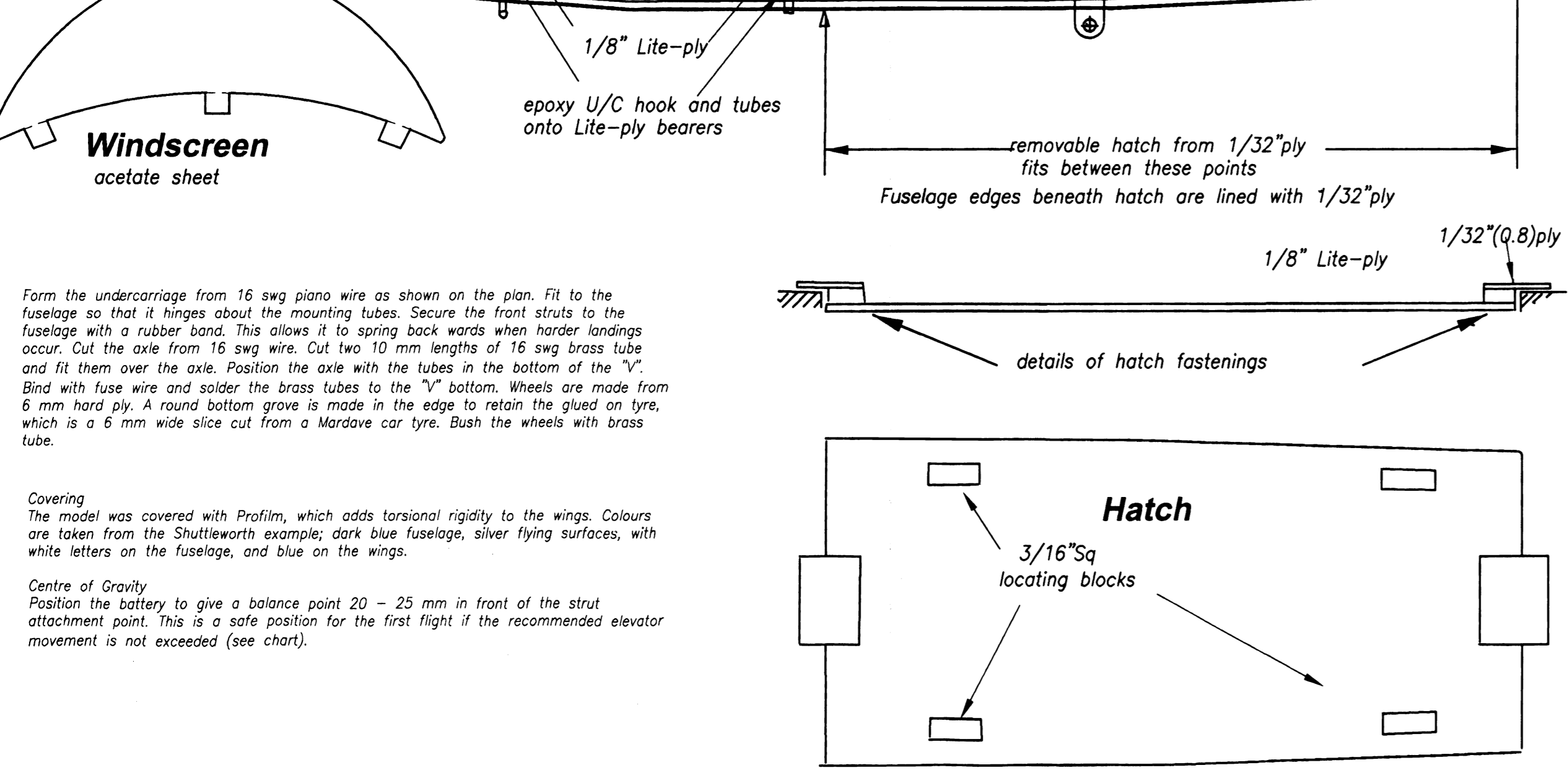
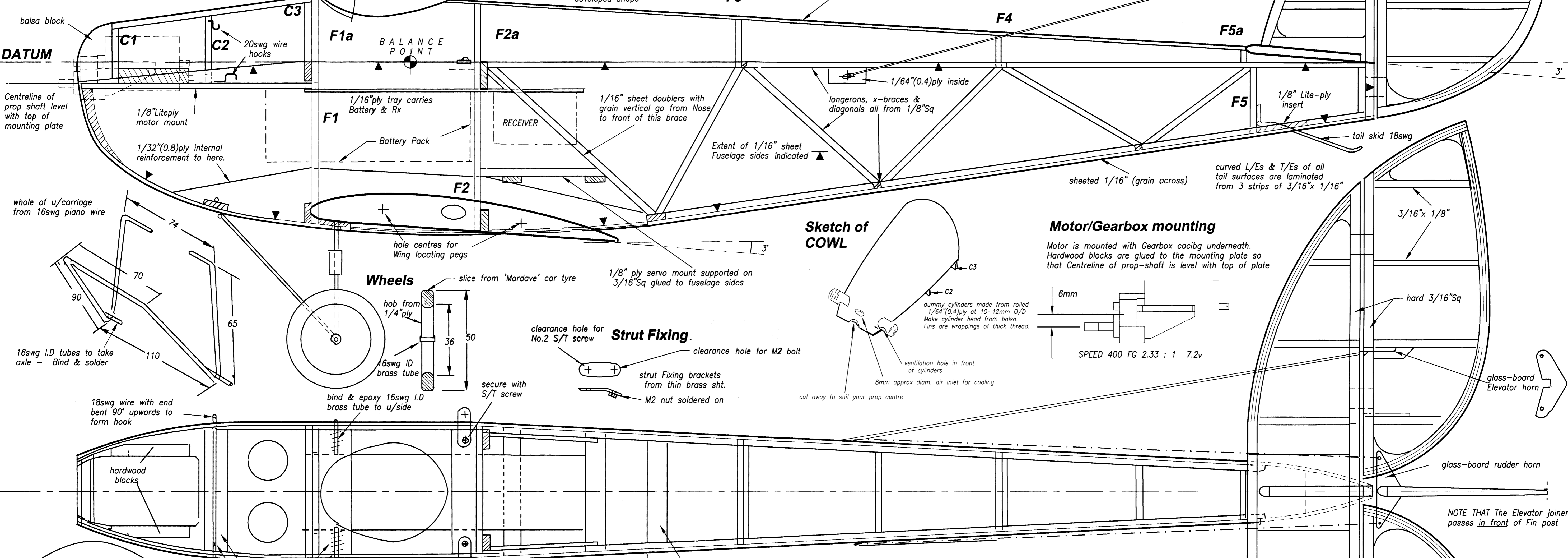


Fuselage
Initial assembly is done with the sides pinned upside down over the plan. Threading a piece of piano wire of similar diameter to the wing pegs through the front peg holes helps with alignment. Dry fit F1 and F2. When everything is square, add cyano. Bring the rear fuselage together at F5, glue this former in place, then bring together the rear end making sure the sides extend beyond the last uprights to provide a slot for the fin post. Add top and bottom cross braces, and bottom sheeting from about F3 back to F5 to make the assembly more rigid to handle. Remove from the board and fit the motor mounting plate, undercarriage mounting plate, servo bearers, 3 mm ply strut fixing plates and brackets. Fit the tail plate mounting plate chamfering it to give a 3 degrees incidence. Form the tail skid from 20 swg piano wire, bind and epoxy it to the mounting plate and glue into the fuselage.

Dihedral Rigging
Make the struts from 1/4 by 1/8 spruce slightly over length with the fixing tabs fitted at the fuselage end only. Attach the wings ensuring they are square to the fuselage with the rubber band, and attach the struts to the fuselage. Jig up fuselage about 25 mm above the board with the sides vertical and the bottom of the wing parallel to the building board. Pack up the wings to give 12 - 15 mm dihedral on each side at R 10. Cut the struts to length allowing for the fixing tabs, bind and glue the tabs in place, then drill through the tab screw holes into the wings.
Hinge the elevator, then align the fixed tail plane with the wings and glue in place ensuring sufficient space in front of the fin post for the elevator to move freely. Offer up the fixed fin, check vertical and longitudinal alignment and glue in place. Add fuselage top formers. Decking will roll round and fit in one piece if cut to the diagram shown on the plan and wetted on the outer surface. The cockpit opening is cut after the deck has dried out. Temporarily fit the motor and gearbox. Tack glue the cowl formers in place, and plank the cowl from fairly soft 3/16 balsa using aliphatic glue. When dry remove the cowl, sand the planking flush with the front former, then add pieces of suitably thick balsa to build up the nose shape. Hollow out the front of the cowl to clear the gearbox, then sand the cowl to shape. Epoxy small wire hooks to cowl former C2 and the motor plate, to take a securing rubber band.



de-Havilland DH.53 Hummingbird

By Duncan Barker
SHEET 1 of 2

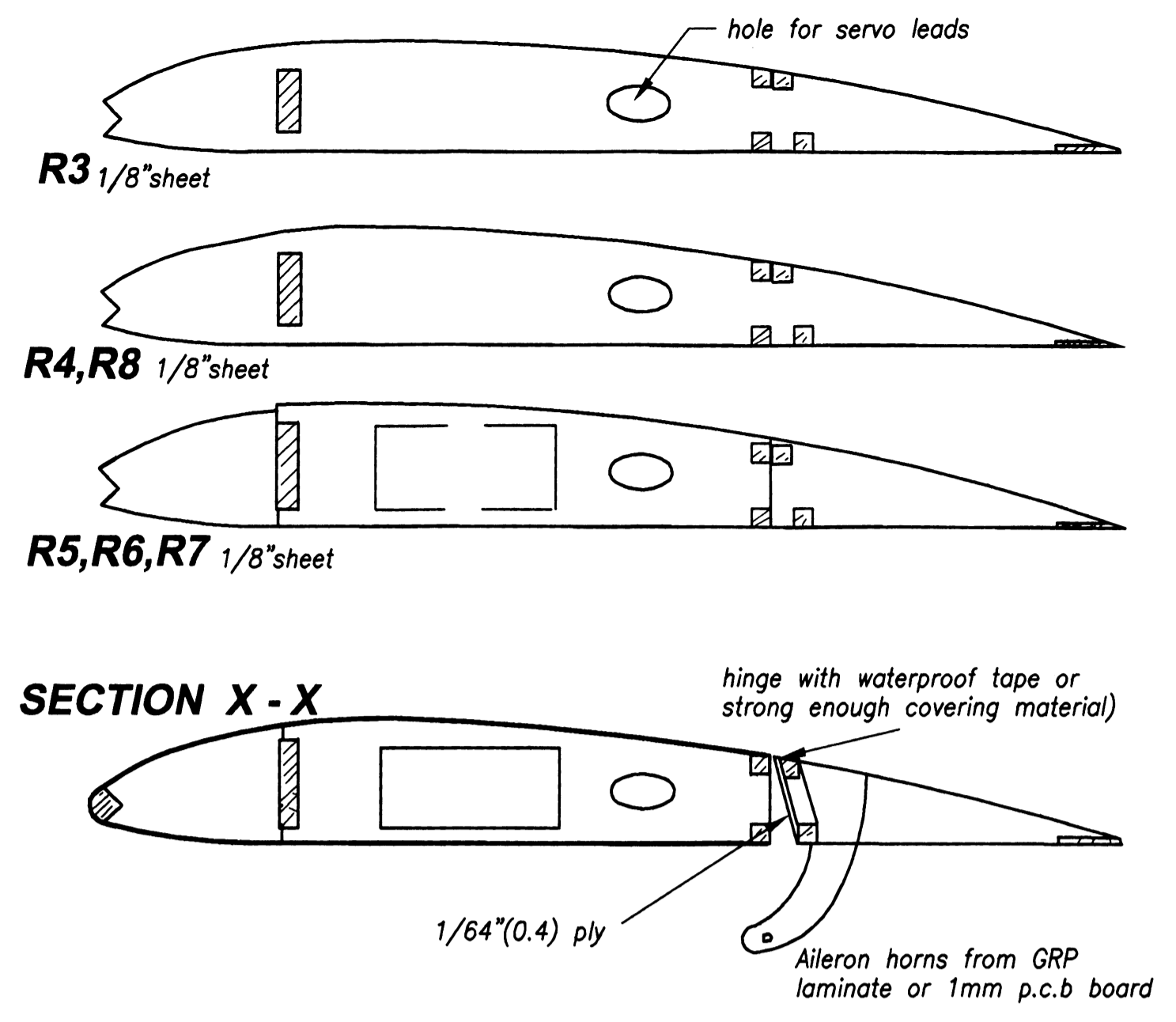
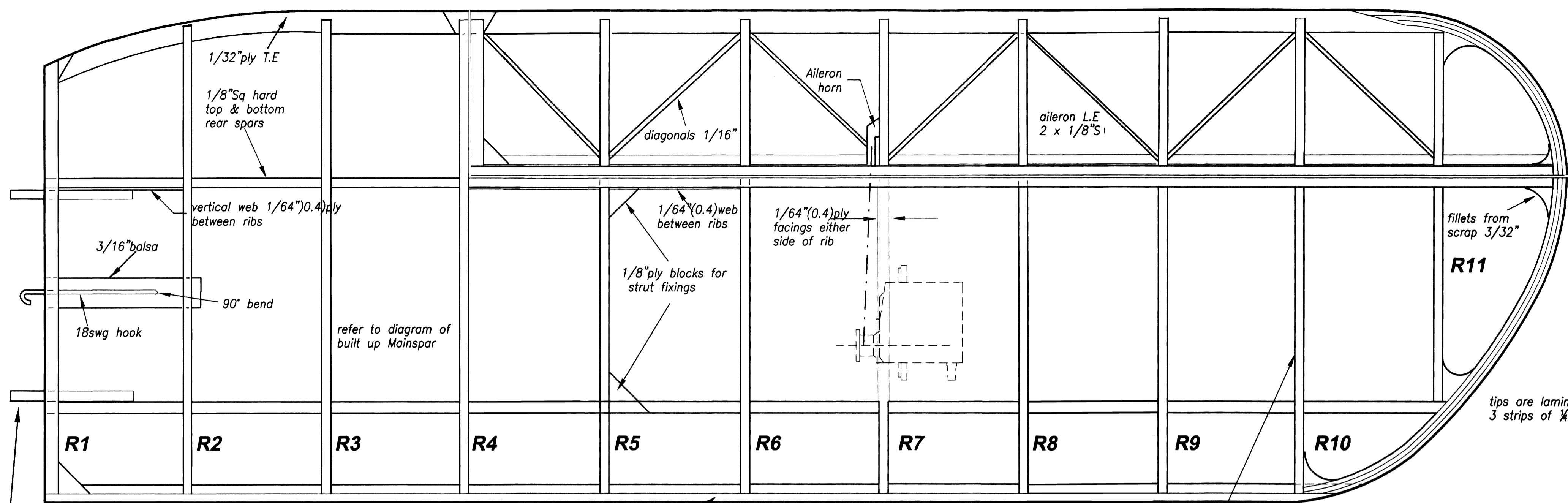
Control Throws
These are measured at the extreme trailing edge of the control surfaces.
Ailerons: 8 mm up; 6 mm down.
Rudder: 25 mm each way.
Aileron: Approximately 10 mm each way for maximum deflection.
(Aileron/Rudder coupling can be used to good effect)
Elevator: 12 mm each way.

Specification
Type: DH53 Hummingbird.
Scale: 12.5% (1:8)
Wingspan: 45 ins. (1143 mm).
Overall Length: 30.25 ins (768 mm).
Number of servos: 4 plus speed controller.
Motor type: Speed 400, with FG 2.33/1 gearbox.
Battery: 7/8 cells, 500-800 mAh.
Weight: 30 ozs. with 8 cell, 800 mAh battery pack.

RC MODEL WORLD
D-H.53 Hummingbird MW 2922
Designed by Duncan Barker
A conventionally built 45" span Speed 400 semi-scale model from the Golden Era for 4 - Function R/C
© R/C Model World Plans Service

curved Leading & Trailing Edges of all Tail surfaces are Laminated from 3 strips 3/16" x 1/16" as Wing Tips
FORMERS F3 to F5 from 1/8" Lite-ply

TIMBER IS Balsa IF NOT DESCRIBED



de-Havilland DH53 Hummingbird

SHEET TWO

Tip Lamination Template

Make from hardboard or plywood about 3mm thick

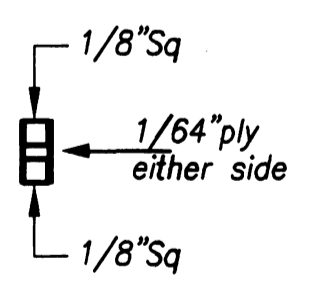
screw Template to building board

Lay up 3 pieces of 1/4" x 1/16" strip wetting them first to assist bending Use Aliphatic P.V.A and hold the set of strips in place with panel pins. When dry, remove from the board sand to 3/16" thick. - 2 Req'd

Laminated Leading & Trailing edges for Tailplane & Fin are made the same way

Tail Pieces Build the tail surfaces over the plan and sand to shape. Make elevator and rudder horns and epoxy in place. Elevator and rudder are hinged with Mylar.

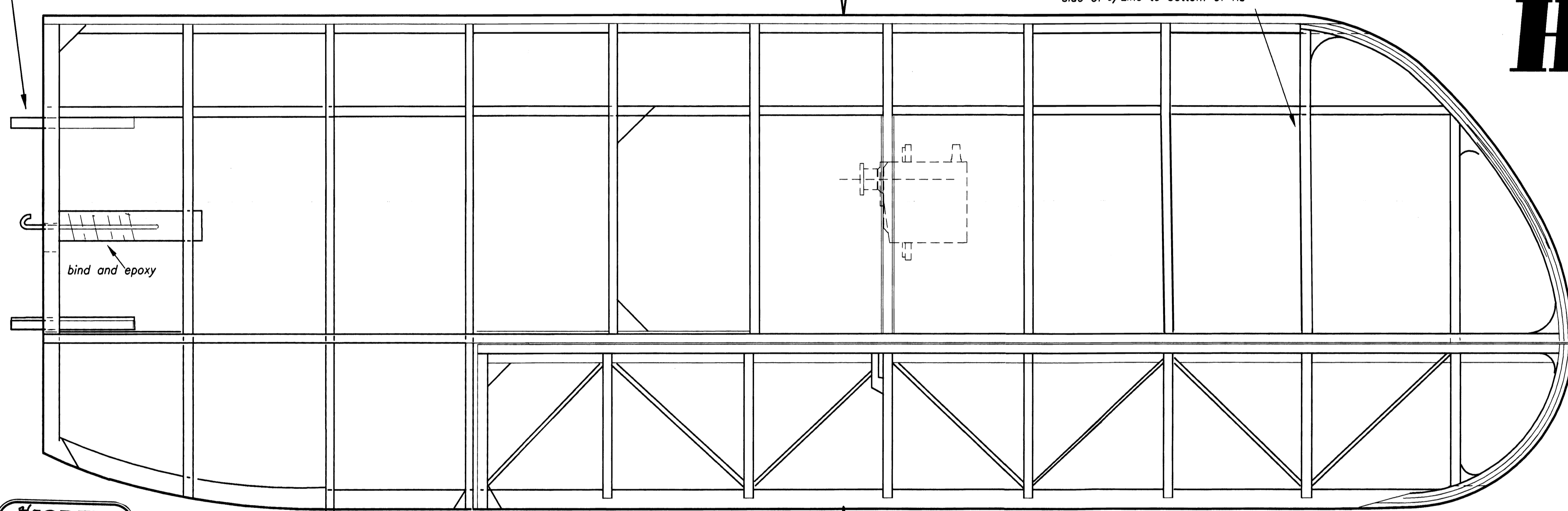
Wings Mark the rib positions on the main spars and dry fit the ribs. Pin down trailing edge, 1/8 square lower rear spar, lower aileron spar, and main spar with ribs dry fitted packing up the main spar with scrap 1/8 sheet. Line everything up and glue. Add wing tips, upper rear spar, upper aileron spar and leading edge. Remove from the board and cut out the ailerons. Face the front of the aileron with 0.4 mm ply. The rear wing spars after removal of the ailerons are not faced, the covering material is brought over from top to bottom. Make the aileron horns and epoxy them in place. Fit the aileron servos, temporarily hinge the ailerons with masking tape, and make up the control linkages. Ailerons are hinged with the covering material. Aileron servos are finally fitted prior to covering.



4mm O.D alum'm tube locating pegs epoxied in place
R1 - 3/16" sheet
R2 - 1/8" sheet

Leading Edge 3/16" Sq hard balsa set diagonally

dihedral at this point 15mm each side of C/Line to bottom of rib

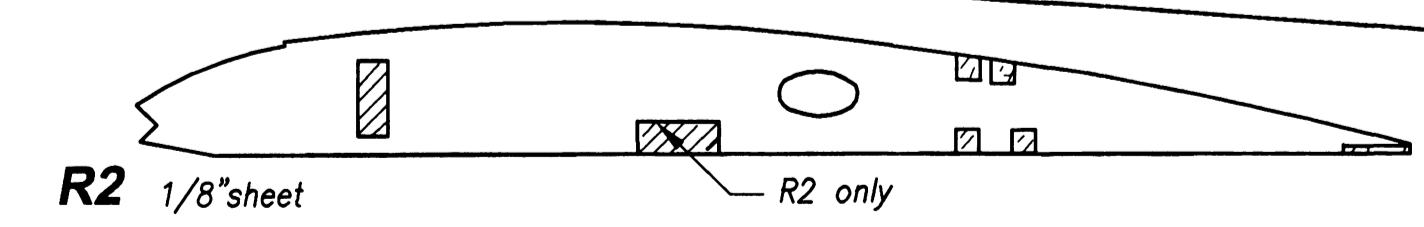


mark rib positions onto spar as an aid in assembly

MAINSPAR 1/8" Sq strips top & bottom (splice joined) with 1/64"(0.4)ply both sides - 2 Req'd thus

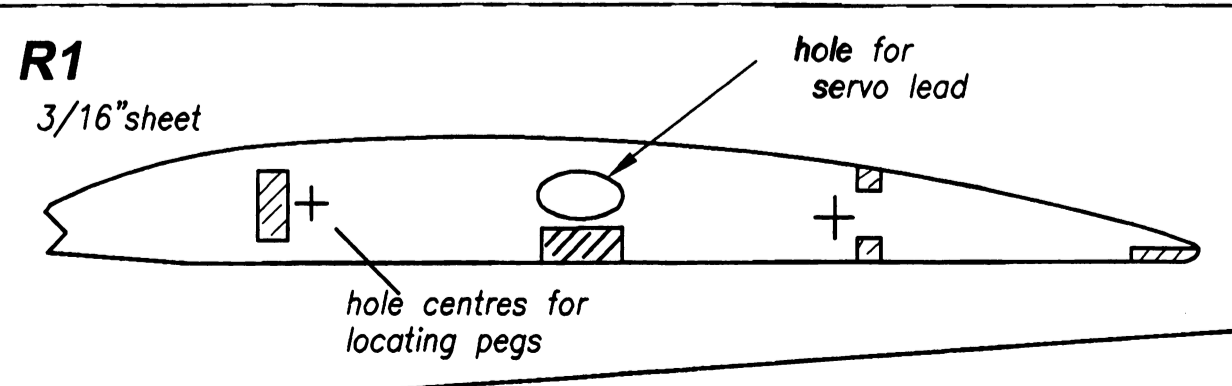
Turtle Deck Pattern

make turtle deck by joining 2 pieces of 1/16" sht. along Centreline - First glue in place from F5a to F2a then bend round and glue from F2a to F1a



R2 1/8"sheet

R2 only



R1 3/16"sheet

R13 1/8"sheet

NOTE: Slots for aileron hinge lines are cut in ribs R4 to R11 only

NOTE THAT THESE ARE WORKING STRUTS AND TO NEGLECT THE END FASTENINGS OR TO OMIT THEM WOULD BE INVITING DISASTER

clearance hole for M2 bolt

tabs from thin brass tinplate bind and epoxy tabs onto struts

Wing Struts

made from 1/4" x 1/8" Spruce

tabs made from thin brass tinplate bind and Epoxy tabs to struts

carve and sand to oval section

clearance hole for No.4 S/T screw