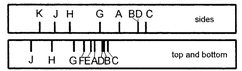


Nose sheeting 3/32 thick.

Gussets at bottom of fuselage



Spacer lengths

These scales can be used to form a cutting jig. See above left. Stick two pieces of 3/8 x 1/8 on to a base 3/32 apart. Stick the scales on top. Pin a piece of 3/32 in place as a stop. Insert stock into slot and cut spacers to length flush with the left hand end of the jig.

1/8 bore aluminium tube, flattened to take end of undercarriage leg

Recess wires into spacers and add gussets to assist covering.

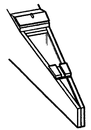
Omit tissue but retain 'Mylar' in this bay as a window

1/32 sheet for mounting incidence packing. Use two pieces of packing with a gap between to accept the key on the tailplane. See sketch below.

E

F

Bottom only



Parasol struts, 0.036 piano wire

SECTION AA

1/16 gussets

3/32 gusset at rear of tube in the corner of the spacers

3/32 x 5/16 balsa on top of tube

3/16 dia aluminium tube for snuffer

3/16 dia aluminium tube

3/32 gusset in front of tube

A

A

1/8 x 3/32 hard balsa rails bound to wires with tissue

After covering fuselage apply aluminium foil around fuze.

1/16 sq.

A

B

C

D

D

D

D

D

D

1/16 sq.

3/32 sq.

D/T line guide

'S' hook for fuze band approx 0.02 dia wire

When the undercarriage leg is in place this 'tail' acts as the front hook for the fuze band. Adjust the width of the top of the leg to give a firm friction fit in the tube.

1/16 balsa faced both sides with 1/64 ply. Motor peg is 5/32 OD aluminium tube

D/T hinge block. A sandwich of 1/16 balsa at the bottom and 1/64 ply at the top. The centre is 1/32 balsa sanded down until the hinge wire on the leading edge of the tailplane is held snugly. Bend hook from paper clip and CA in place.

G

H

J

K

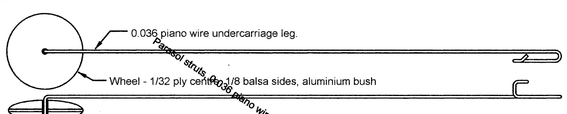
1/16 x 1/4

3/32 OD aluminium tube

1/16 x 1/4

Leave open for D/T line

2 off D/T line guides, one here and one at the front end of line. Made from paper clip wire. Insert prongs 3/32 deep and fix with CA

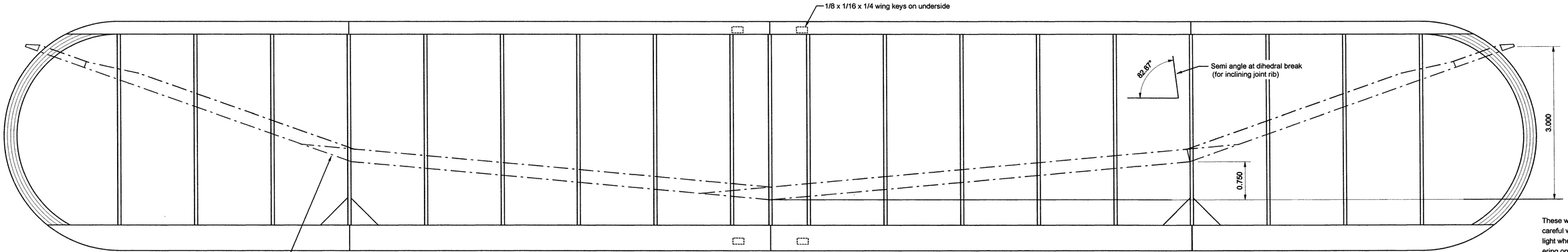


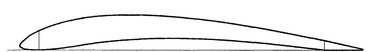
MATERIAL NOTES for FUSELAGE (unless otherwise specified)

Wood Weights are approximate
Longerons - 3/32 sq. 12 lb/ft³. Spacers - 3/32 sq. 8 lb/ft³.
Sheet items - 1/16 thick, 6 lb/ft³
D/T line is button thread
Covering - first, clear 'Mylar', attached with contact cement, heat shrunk and given one thin coat of dope. Then the 'Mylar' is covered with wet 'Esaki' tissue attached with thinners.

HEP CAT

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Wing Section

MATERIAL NOTES

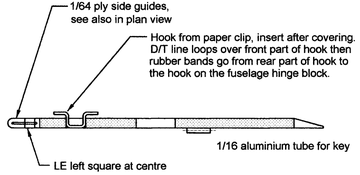
Wood weights are approximate
Leading edge - 1/4 sq. Inner panels - 9 lb/ft³. Outer panels - 7 lb/ft³
Trailing edge - 1/2 x 1/8. Inner panels - 10 lb/ft³. Outer panels - 8 lb/ft³.
Ribs - 1/16 sheet, 6 lb/ft³. Tips - 4 laminations of 1/8 x 1/16, 6 lb/ft³.
Covering - Silver 'Mylar' is preferable for water resistance and less risk of warps but tissue does give better torsional stiffness.

WEIGHTS	grams
Fuselage	15.0
Wing	11.1
Tailplane	3.5
Fins	1.5
Propeller Assy.	8.5
Total	39.6

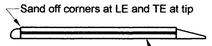
These weights are for an aeroplane built with careful wood selection; firm in many parts but light where possible. It also has 'Mylar' covering on the wing and tailplane and a fuze D/T. Mechanical timers, trackers and heavier covering materials will add many grams but any loss in performance is not likely to be noticed in normal conditions!

Note on Dethermalizing

Nobody used D/Ts in England when HepCat was designed but the rules permit them now. The type shewn here, with a wire pivotting in a hinge block suits me and is light but the usual wooden tail seat with a stop on the front edge will work just as well



Section at Centre



Section at Tip

Section at Pin Attachment

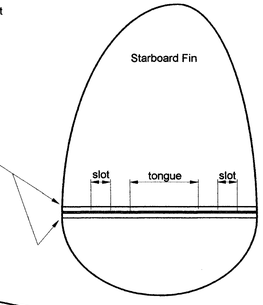
To attach a fin to the tailplane
Push the tongue on the fin into the slot in the tailplane, keeping to the forward end of the slot until fully home.
Then slide fin backwards to lock it.

The original aeroplane had fixed fins. The arrangement here makes them removeable for easier transport.

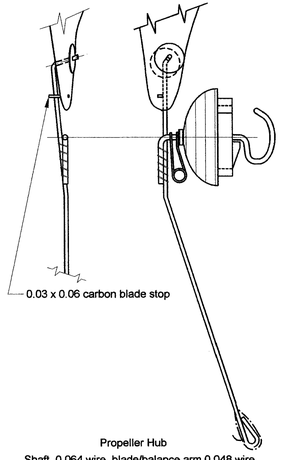
Fin material - start with 1/16 sheet about 5 - 6 lb/ft³. After generous sanding a complete fin should weigh about 0.75g.

Fin is not covered in tissue or 'Mylar'

2 pieces of 1/16 sq with the tongue and the slots for the lock plates in between





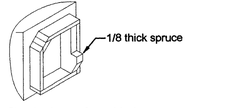


Propeller Hub

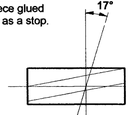
Shaft, 0.064 wire, blade/balance arm 0.048 wire. Bind together with fine soft wire and solder. Add solder to end of arm and file to smooth and balance. Spring, 0.022 wire, one and a half coils, arm length 0.5. Washers, one 'Teflon' with a steel one each side. Noseblock, 3 laminations of 1/8 balsa with a 1/32 ply lamination at front and rear. Bush, brass tube. Spigot, hard 1/16 x 3/16 strip. Spruce stop piece.

Power

Rubber is variable and so is airframe weight but about 25 - 30 g arranged in 8 - 10 strands of 1/8.



Sketch of rear of noseblock shewing spruce piece glued inside spigot to act as a stop.



Section BB

Drilling the Hinge Hole

It is convenient to drill the hole as the first job after cutting the blank. Remove wood locally to where the hole is to be drilled to give a section 3/16 thick as indicated by the sloping lines in Section BB. Push a pin through, which is easy in the thin section. Confirm the angles are correct and then open up the hole to full size. Face each end of the hole with 3/8 diameter disks of 1/32 ply. Bush hole with brass tube. Then continue carving in the usual way.

