SPIRIT BY RICHARD SPREADBURY

FREE PLAN ISSUED WITH RCM&E JUNE '82

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Engine mounted on commercial nylon mount directly onto F1 (upright, inverted or side winder) make nose area between spinner ring and F1 from 9mm sheet and carve to shape. *No down or side thrust!*

Commercial canopy cut down to fit. Don't forget to add a pilot!

F3

6mm balsa top decking

F4

6mm sq. balsa longerons

Fin strake — 6mm balsa

Fill in both sides of fin with scrap balsa sheet

F5

Fuselage side extends forward to this line

Top deck — 9mm balsa

Lower top deck — 9mm × 25mm balsa strip each side

F1

F2

HB25 used on prototype

1.5mm front ring

9mm × 45° stock

Nicads above tank

FUEL TANK BAY

RECEIVER AREA

SERVO POSITION

9mm × 45° stock

1.5mm ply fuselage doubler

Upper side decking — 3mm balsa

Incidence of tailplane (0°)

1.5mm ply tail doubler

Main fuselage sides from 3mm medium grade balsa

0° incidence

C. of G.

Commercial nylon wing fixing screw and bracket — bolt or epoxy bracket to fuselage doubler

Entire LH side omitted to show internal structure

Tail skid from 6mm hard balsa

44mm dia. spinner

19mm × 45° stock

3mm balsa tower sheet (make into removable hatch for access to tank and Ni-Cads)

Scrap balsa

3mm balsa underside — note — grain crossways

12 swg noseleg in commercial steerable mount (use 10 swg for rough field work)

12 swg piano wire u/c (increase to 10 swg for rough fields)

6mm sq. longerons fit in these corners

Control Surface Movements

Elevator — ½in. up and down
Aileron — ½in. up and down
Rudder — ¾in either way
(Measured at T.E. of surface)

Tailplane from 6mm balsa — round off all edges

Fin and rudder from 6mm balsa — round off all edges of fin (except bottom) rudder has rounded LE and tapered TE

Commercial nylon hinges used throughout

Elevator from 6mm balsa taper to section and round off LE

12 swg piano wire hinge

F1 — 4.5mm ply (note chamfer on cut outs)

44mm dia. nose wheel

50mm dia. main wheels

F2 — 3mm ply

Typical cross-section of fuselage after sanding sides to shape

Scrap view of front of ply fuselage doubler shows how dovetails fit into chamfers on sides of F1

Drill to suit engine mount etc.

F5 — Hard 3mm balsa

F4 — Hard 3mm balsa

F3 — 3mm ply

Note chamfer to clear doubler

Cut suitable holes in formers to clear pushrods

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W10 W9 W8 W7 W6 W1 W2 W3 W4 W5 W6 W7 W8 W9 W10

6mm × 12mm balsa leading edges

B2

Drill hole for 12 swg wire leg

1.5mm ply u/c doubler

1.5mm sheet top and bottom

Commercial nylon bellcrank on 1.5mm ply support plate

Soft block wing tips

Dihedral is 12mm under each tip

Join wings via dihedral braces: reinforce with glass tape and polyester resin from **W2** to **W2**

AILERON SERVO

u/c block*

u/c block re-enforcement

1.5mm × 6mm balsa cap stripe top and bottom

1.5mm balsa webs between ribs

B1

1.5mm balsa centre section sheet

3 layers of 1.5mm balsa to support horn

1.5mm sheet top and bottom

Cut aileron out of finished wing and add facing strips and end ribs. Add horn and hinge to suit.

6mm up and down movement

NO WASHOUT NEEDED

Cut out in rib **W3** & **4** only

W1 — 6mm hard balsa

W3 — W10 1.5mm balsa

Wing ribs may be made by the "sandwich" method

W2 — 15mm ply

u/c doubler and dihedral braces **B1** and **B2** from 1.5 mm ply

u/c doubler

B1

B2

1.5mm sheet balsa

Main spars — 3mm × 6mm hard balsa

Rear spars — 3mm × 6mm hard balsa

1.5mm sheet (chamfer TE to fit top sheet)

6mm sq. packing block

WORK BENCH

Entire wing is built upside down on board as shown

*Make u/c block from 6mm × 12mm hardwood with 6mm × 12mm reinforcement to carry u/c leg

Keep this gap as small as possible

Detail of aileron hinging and horn

Make horn from paxolin, glassfibre board or plastic laminate offcut keep holes in line with hinge

NO DIFFERENTIAL USED ON PROTOTYPE