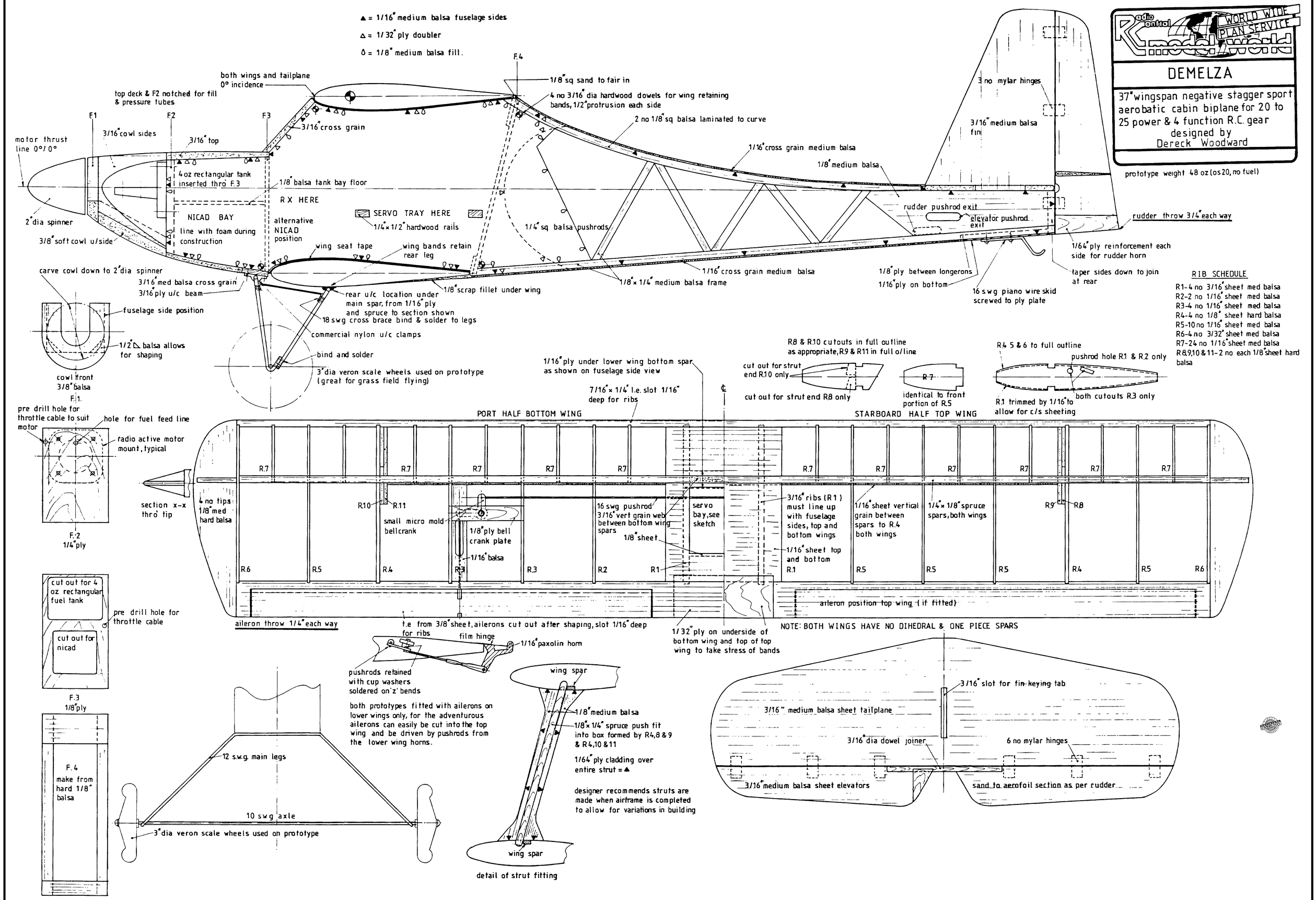
▲ = 1/16" medium balsa fuselage sides
△ = 1/32" ply doubler
δ = 1/8" medium balsa fill.
Radio Control Model World
WORLD WIDE PLAN SERVICE
DEMELZA
37" wingspan negative stagger sport aerobatic cabin biplane for 20 to 25 power & 4 function R.C. gear
designed by
Dereck Woodward
prototype weight 48 oz (os20, no fuel)
both wings and tailplane 0° incidence
top deck & F2 notched for fill & pressure tubes
F1
F2
F3
F4
motor thrust line 0°/0°
3/16" cowl sides
3/16" top
3/16" cross grain
1/8" sq sand to fair in
4 no 3/16" dia hardwood dowels for wing retaining bands, 1/2" protrusion each side
2 no 1/8" sq balsa laminated to curve
1/16" cross grain medium balsa
1/8" medium balsa
3 no mylar hinges
3/16" medium balsa fin
4 oz rectangular tank inserted thro F.3
1/8" balsa tank bay floor
RX HERE
NICAD BAY
line with foam during construction
alternative NICAD position
SERVO TRAY HERE
1/4" x 1/2" hardwood rails
1/4" sq balsa pushrods
rudder pushrod exit
elevator pushrod exit
rudder throw 3/4" each way
2" dia spinner
3/8" soft cowl u/side
wing seat tape
wing bands retain rear leg
1/16" cross grain medium balsa
1/8" x 1/4" medium balsa frame
1/8" ply between longerons
1/16" ply on bottom
1/64" ply reinforcement each side for rudder horn
taper sides down to join at rear
16 swg piano wire skid screwed to ply plate
carve cowl down to 2" dia spinner
3/16" med balsa cross grain
3/16" ply u/c beam
1/8" scrap fillet under wing
rear u/c location under main spar, from 1/16" ply and spruce to section shown
18 swg cross brace bind & solder to legs
commercial nylon u/c clamps
bind and solder
3" dia veron scale wheels used on prototype (great for grass field flying)
fuselage side position
1/2" △ balsa allows for shaping
cowl front 3/8" balsa
F.1.
RIB SCHEDULE
R1-4 no 3/16" sheet med balsa
R2-2 no 1/16" sheet med balsa
R3-4 no 1/16" sheet med balsa
R4-4 no 1/8" sheet hard balsa
R5-10 no 1/16" sheet med balsa
R6-4 no 3/32" sheet med balsa
R7-24 no 1/16" sheet med balsa
R8,9,10 & 11-2 no each 1/8" sheet hard balsa
R8 & R10 cutouts in full outline as appropriate, R9 & R11 in full o/line
cut out for strut end R.10 only
cut out for strut end R8 only
R7
identical to front portion of R.5
R4 5 & 6 to full outline
pushrod hole R1 & R2 only
both cutouts R3 only
R1 trimmed by 1/16" to allow for c/s sheeting
1/16" ply under lower wing bottom spar as shown on fuselage side view
7/16" x 1/4" l.e. slot 1/16" deep for ribs
PORT HALF BOTTOM WING
STARBOARD HALF TOP WING
pre drill hole for throttle cable to suit motor
hole for fuel feed line
radio active motor mount, typical
section x-x thro' tip
4 no tips 1/8" med hard balsa
R10
R11
small micro mold bellcrank
1/8" ply bell crank plate
1/16" balsa
16 swg pushrod
3/16" vert grain web between bottom wing spars
1/8" sheet
servo bay, see sketch
3/16" ribs (R1) must line up with fuselage sides, top and bottom wings
1/16" sheet vertical grain between spars to R.4 both wings
1/4" x 1/8" spruce spars, both wings
R9
R8
1/16" sheet top and bottom
R.7
R.6
R.5
R.4
R.3
R.2
R.1
aileron position top wing (if fitted)
F.2
1/4" ply
cut out for 4 oz rectangular fuel tank
cut out for nicad
pre drill hole for throttle cable
F.3
1/8" ply
aileron throw 1/4" each way
t.e from 3/8" sheet, ailerons cut out after shaping, slot 1/16" deep for ribs
film hinge
1/16" paxolin horn
pushrods retained with cup washers soldered on 'z' bends
both prototypes fitted with ailerons on lower wings only, for the adventurous ailerons can easily be cut into the top wing and be driven by pushrods from the lower wing horns.
1/32" ply on underside of bottom wing and top of top wing to take stress of bands
NOTE: BOTH WINGS HAVE NO DIHEDRAL & ONE PIECE SPARS
F.4
make from hard 1/8" balsa
12 s.w.g. main legs
10 swg axle
3" dia veron scale wheels used on prototype
wing spar
1/8" medium balsa
1/8" x 1/4" spruce push fit into box formed by R4,8 & 9 & R4,10 & 11
1/64" ply cladding over entire strut = ▲
designer recommends struts are made when airframe is completed to allow for variations in building
wing spar
detail of strut fitting
3/16" slot for fin keying tab
3/16" medium balsa sheet tailplane
3/16" dia dowel joiner
6 no mylar hinges
3/16" medium balsa sheet elevators
sand to aerofoil section as per rudder