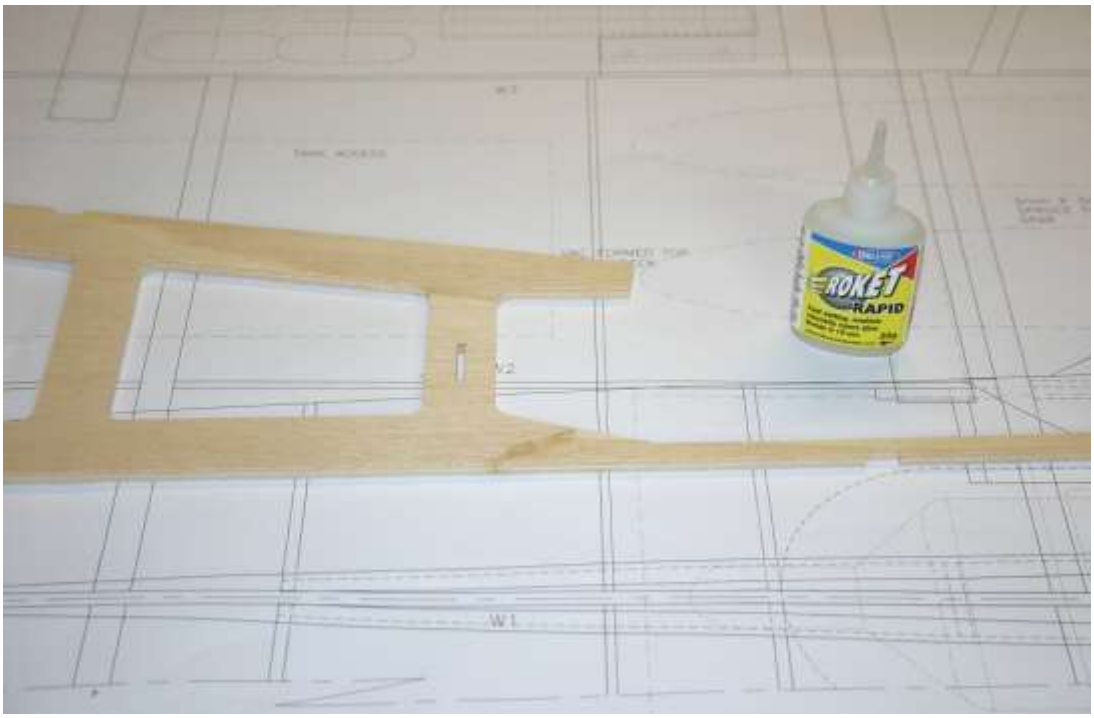
98” Turbine Vulcan Build photos

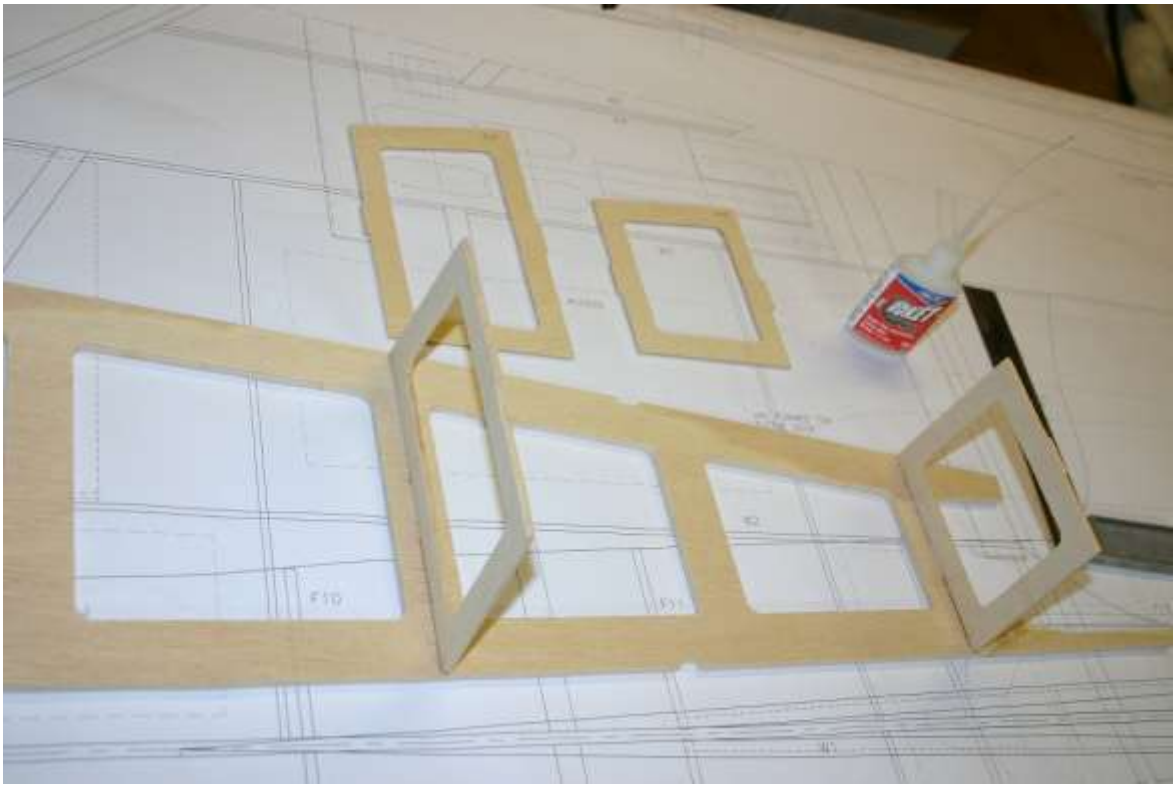
Just some of the useful tools needed plus a quality razor plane

FUSELAGE

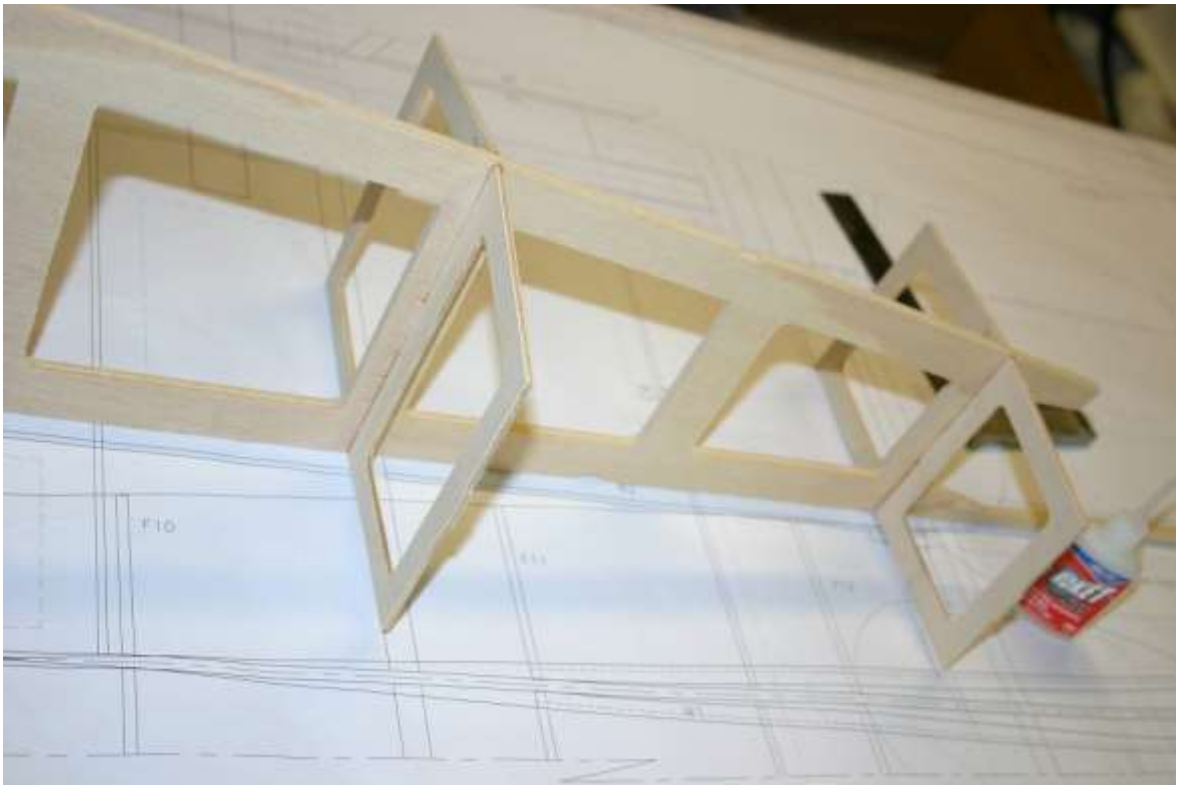
Note: Fitting parts back to front is an easy mistake to make with this build, so mark all part with top/bottom to avoid incorrect fitment

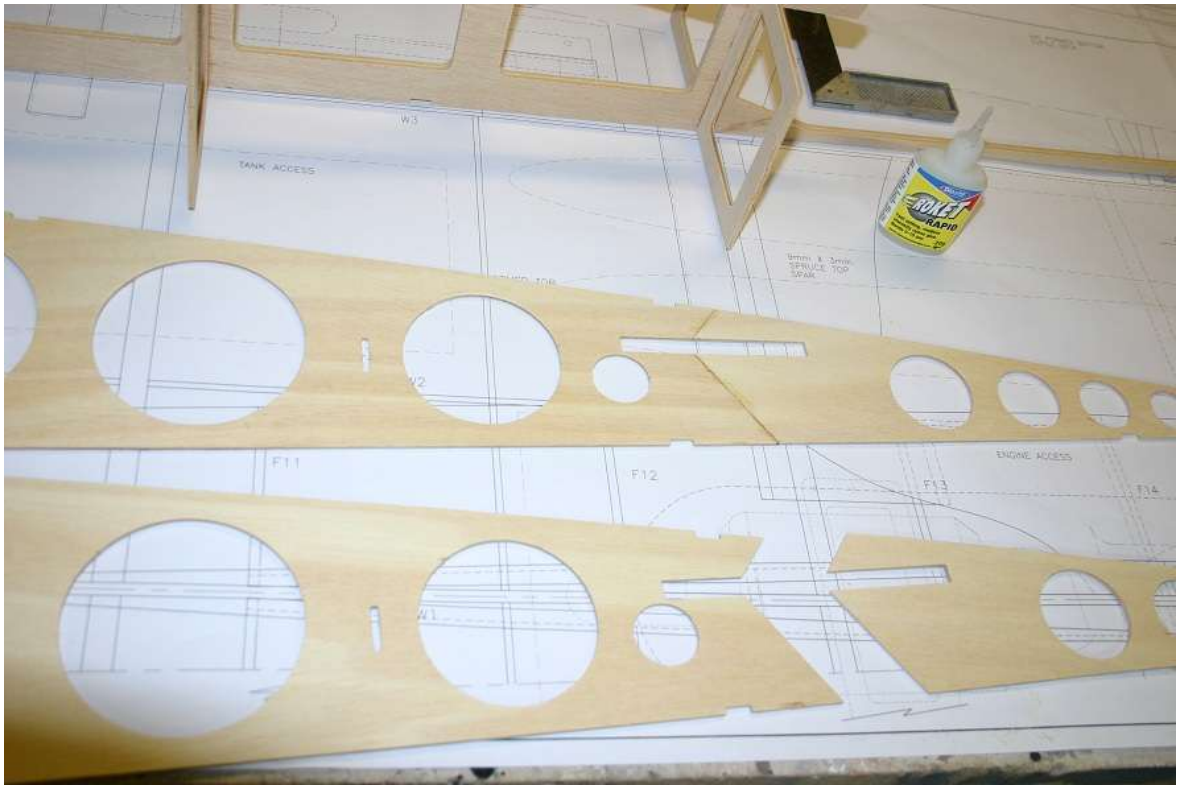


Glues 2-part W1 together

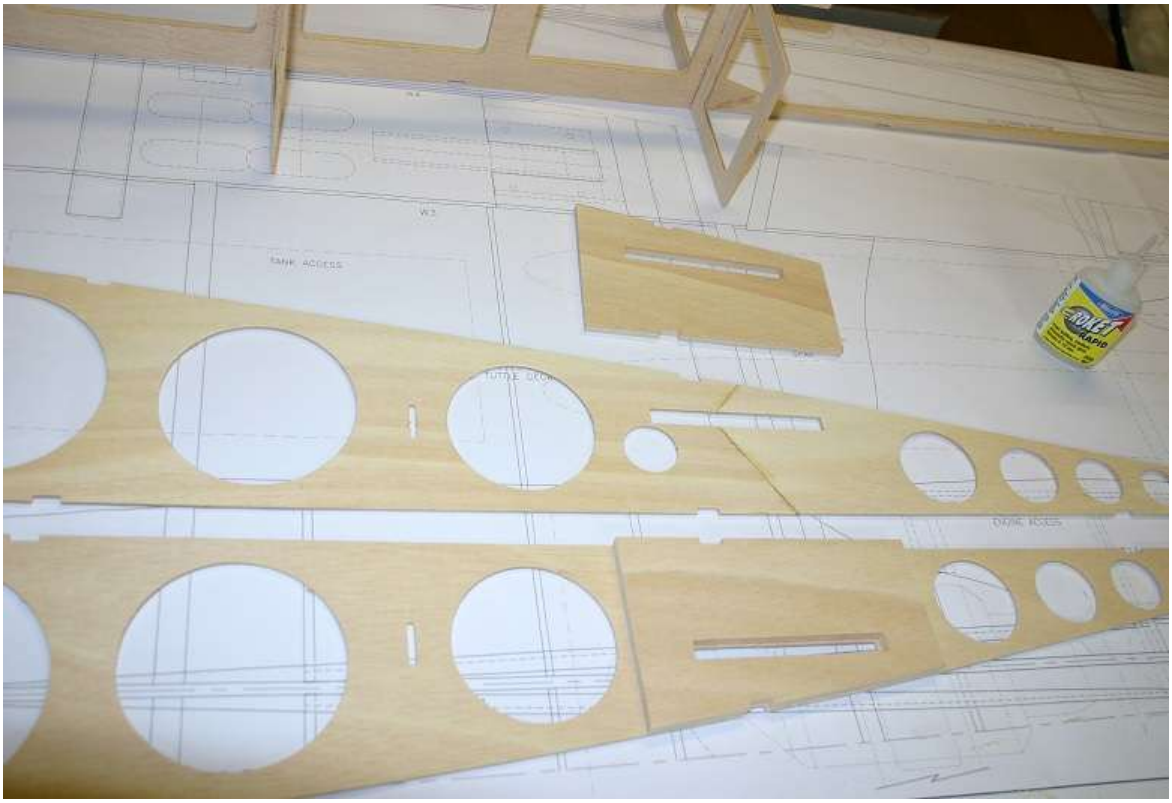


Add FS1 & 2 to W1

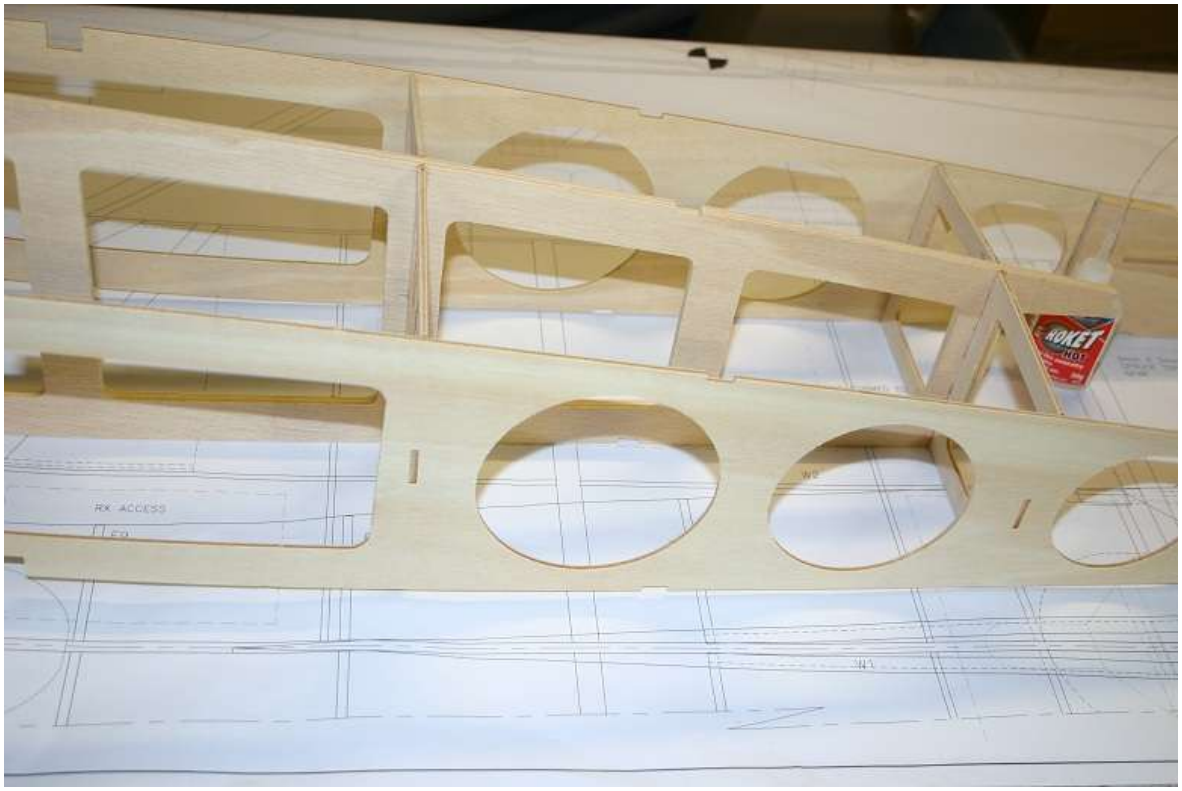




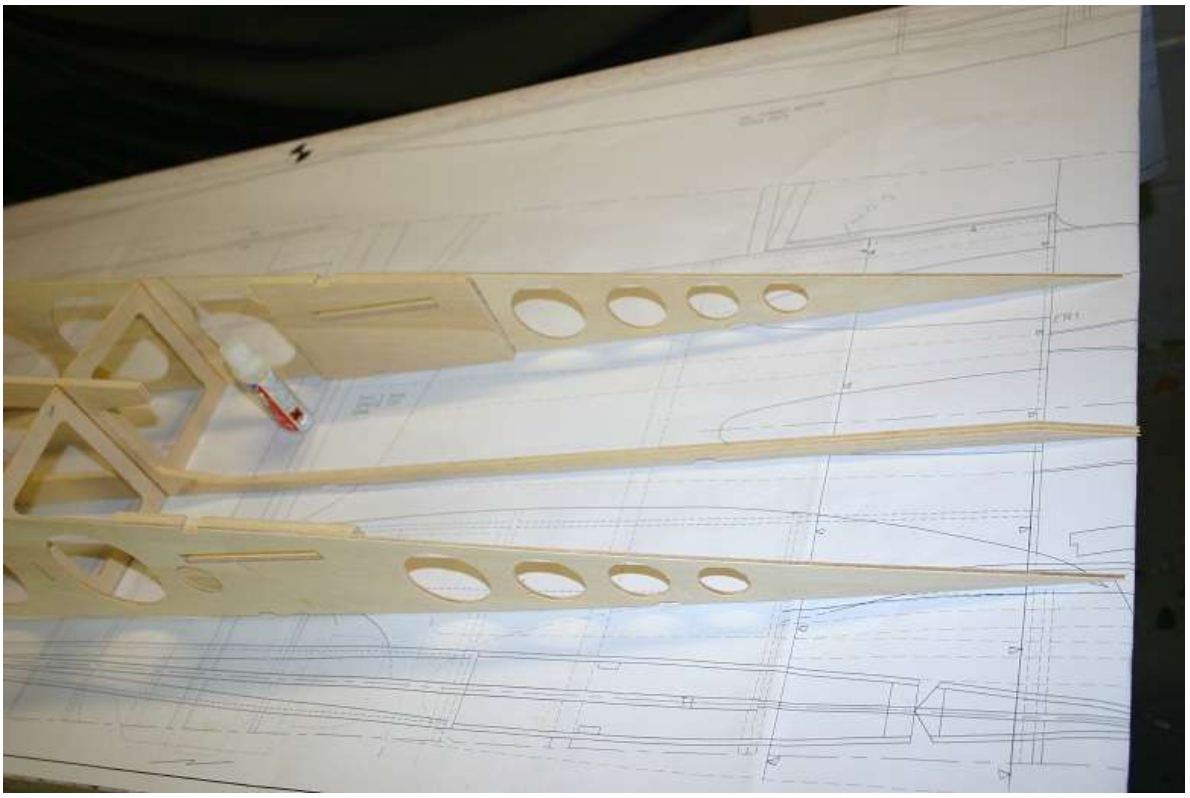
Glue 2-part W2 together

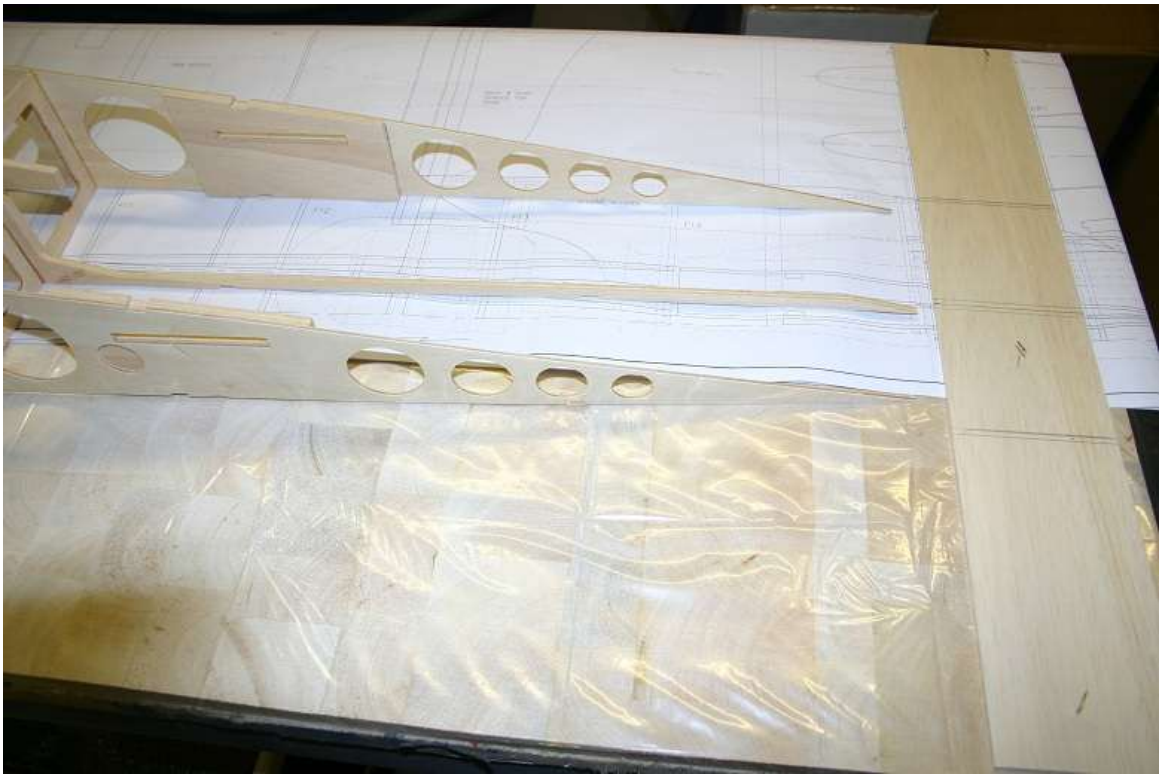


Add EM1

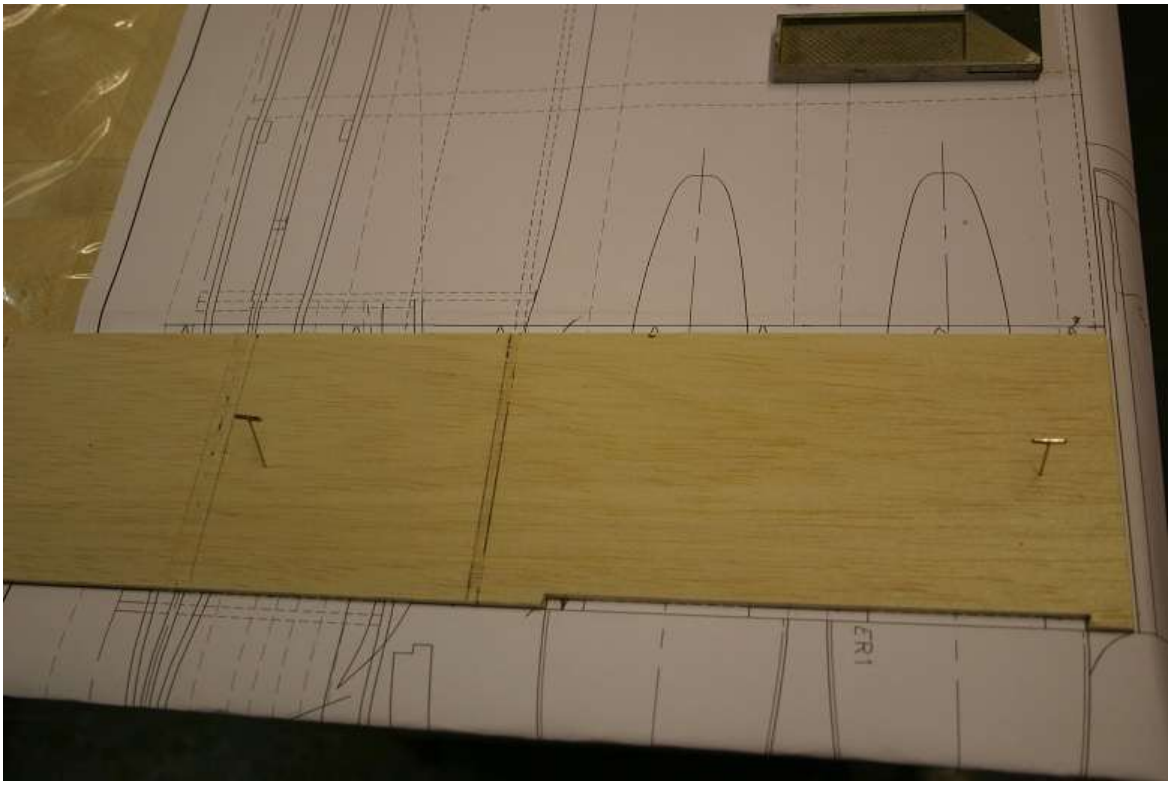


Add Both W2's





Position a piece of 3mm x 100mm x 600mm long sheet cut correctly to size to span between W3's and mark positions of W1, W2 & W3

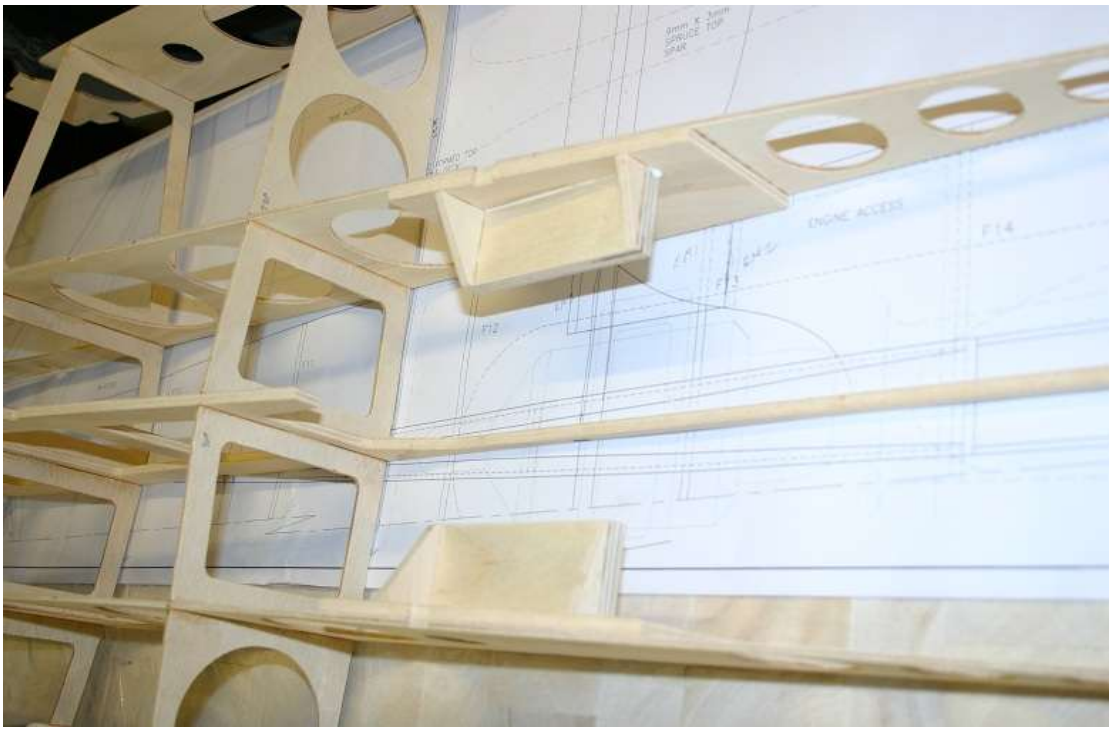


Notch out recess for ER1 and glue ends of W1 & W2 to positions mark

Glue 2-part W3 together

Add FS3, FS4 and W3 and glue to end sheet. Note; use wing spar and clamps to keep W3 straight and true

W1, W2 & W3 all lined up flush with sheet edge



Engine mount support & fillets EM2, EM3 & EM4

Add top obechi spars

Start to top sheet from rear noting scalloped section to allow thrust tube the pass

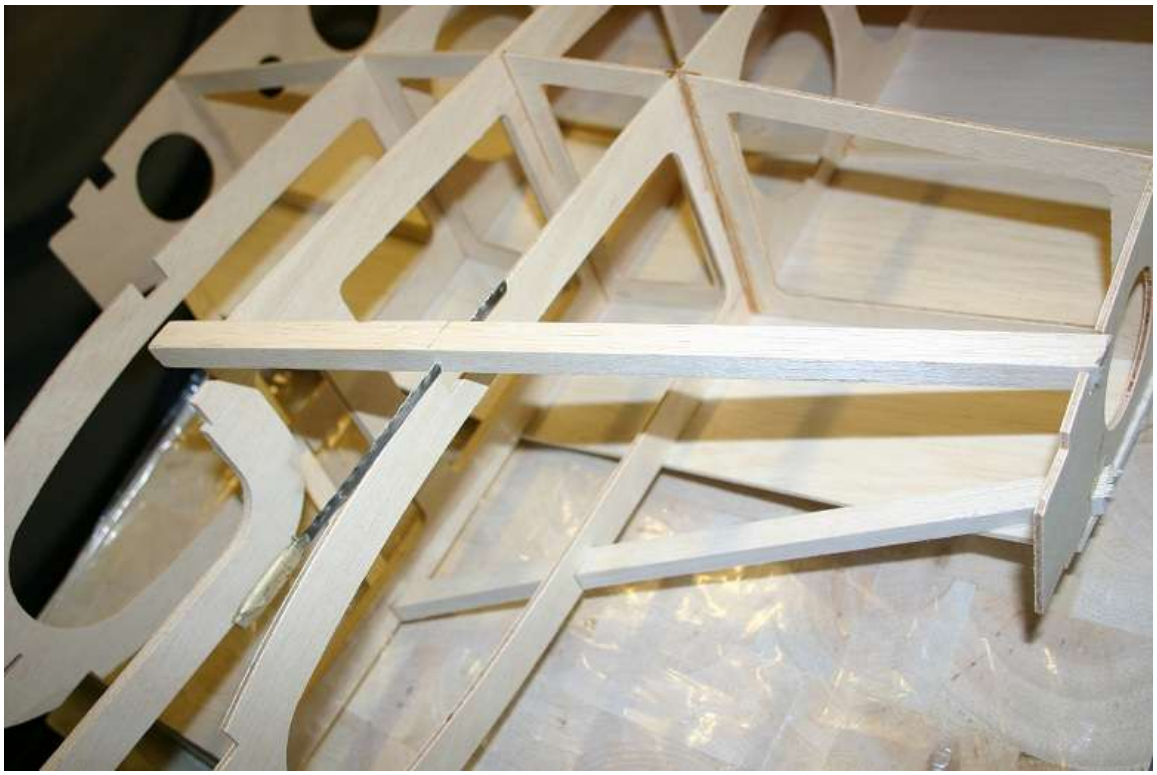
Add top sheeting in sections. Note importance to keep W3 straight

Add front spar. Note; spar to be cut notched at W2

Continue Sheeting

Continue Sheeting to this point and stop

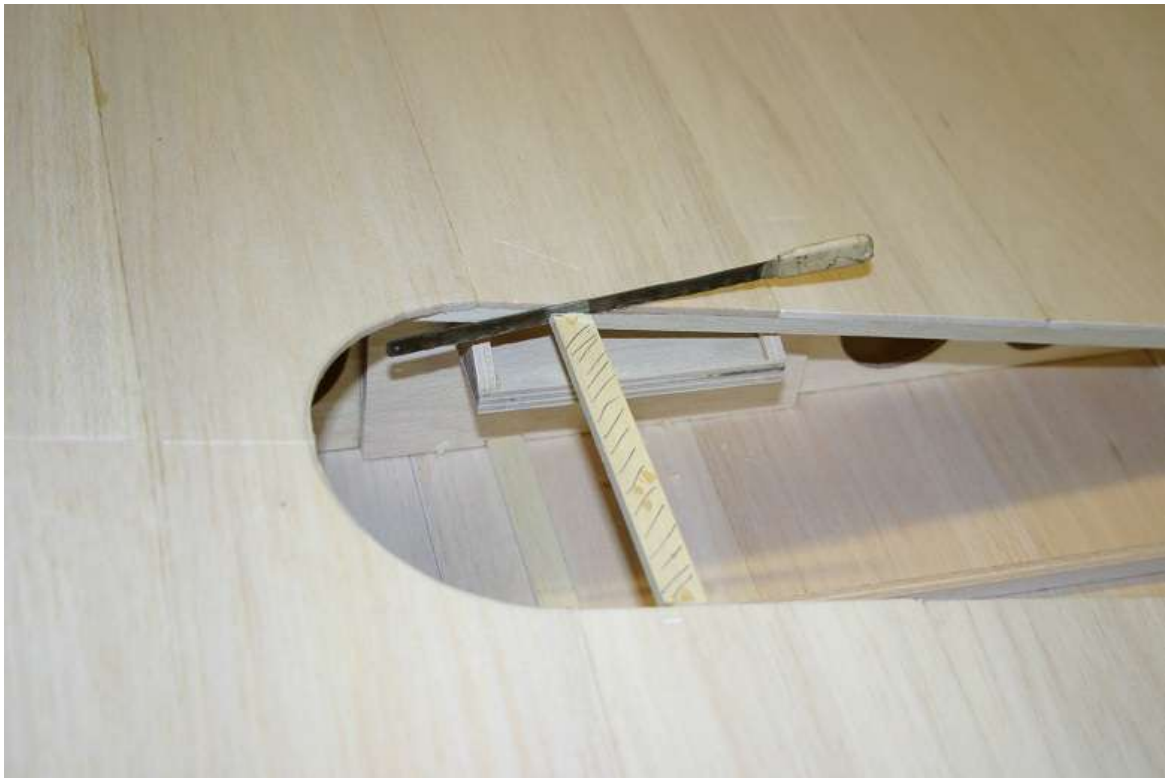
Turnover and sheet underside



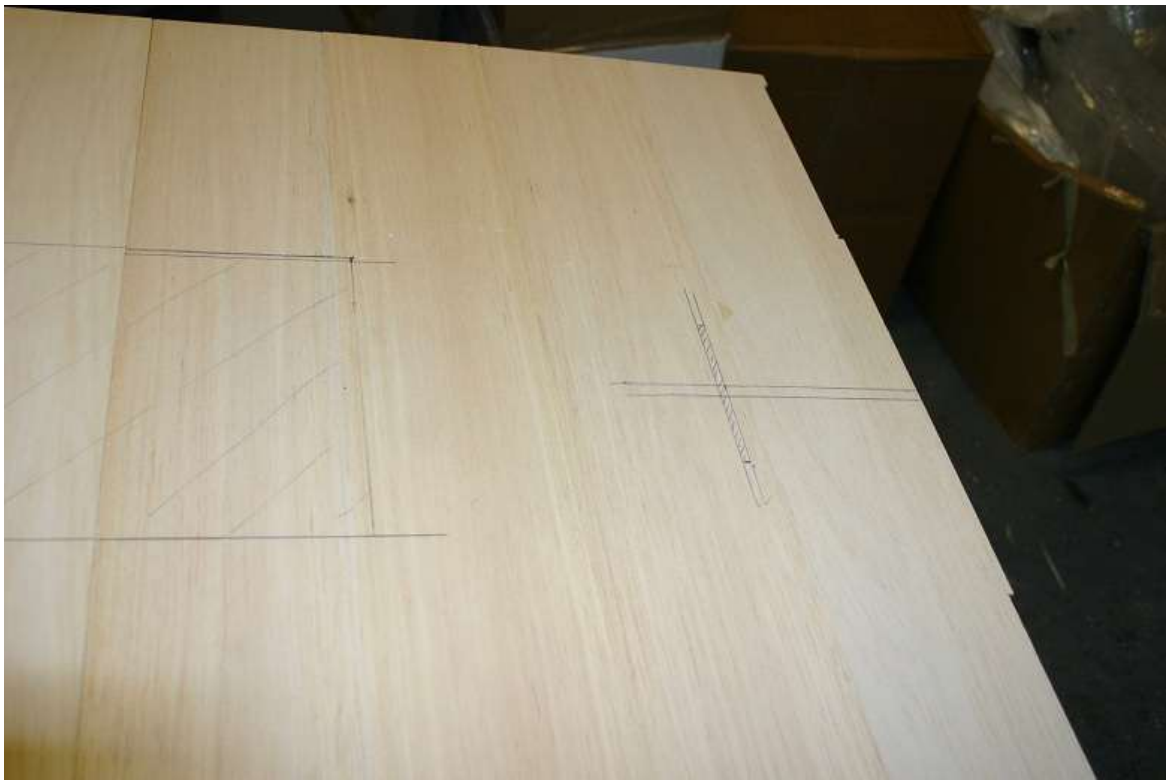
Add forward bottom spar. Note; spar cut notched at W2

Sheet underside to this point and stop

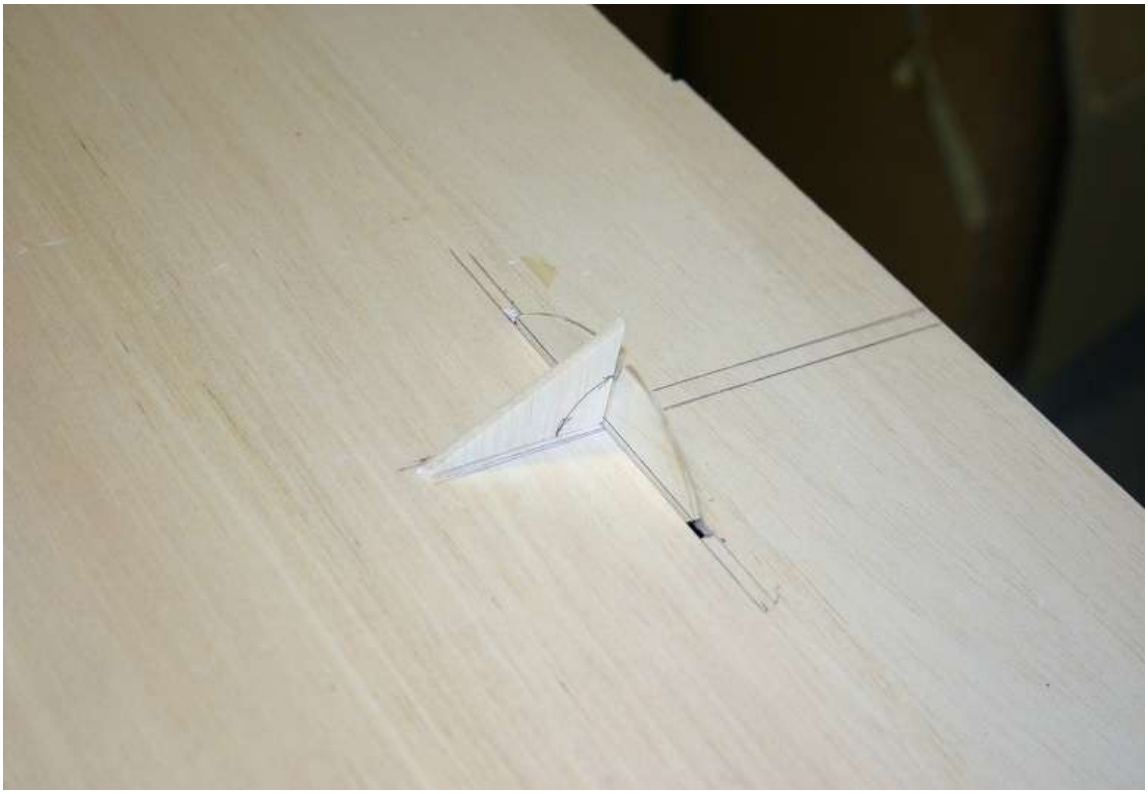
Mark location of Turbine access Hatch



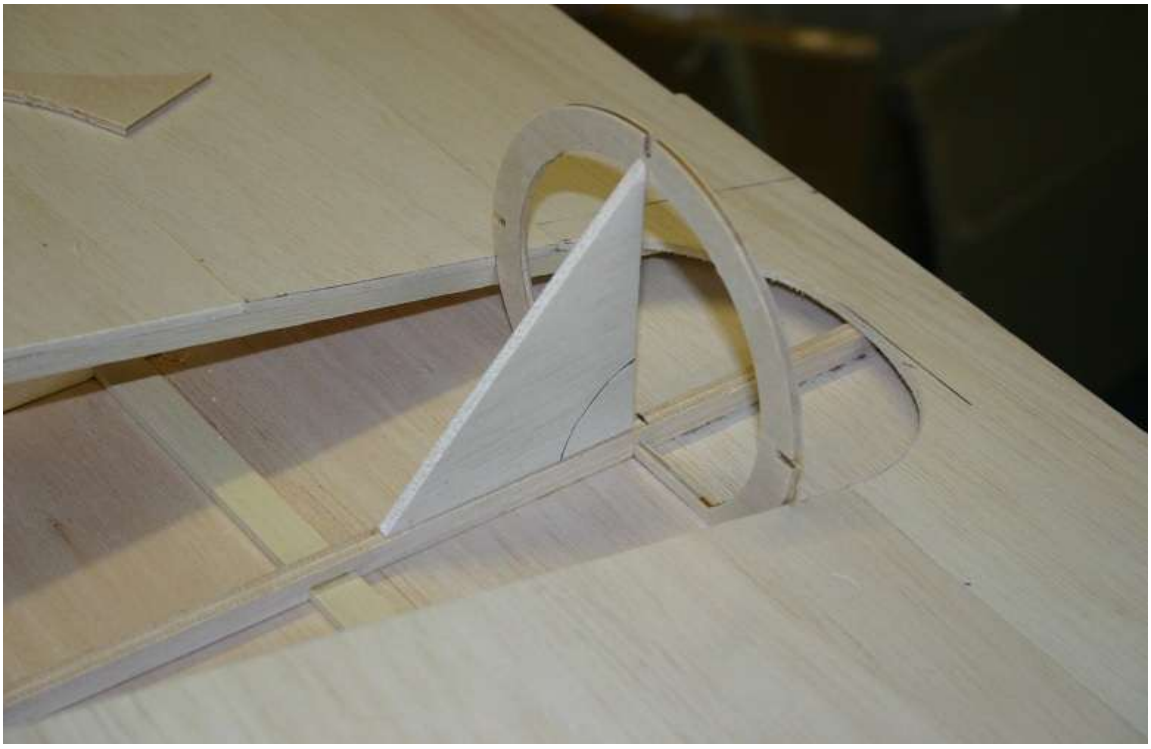
Trim away top spar and line inside edge of opening with 6mmSq balsa cut from sheet



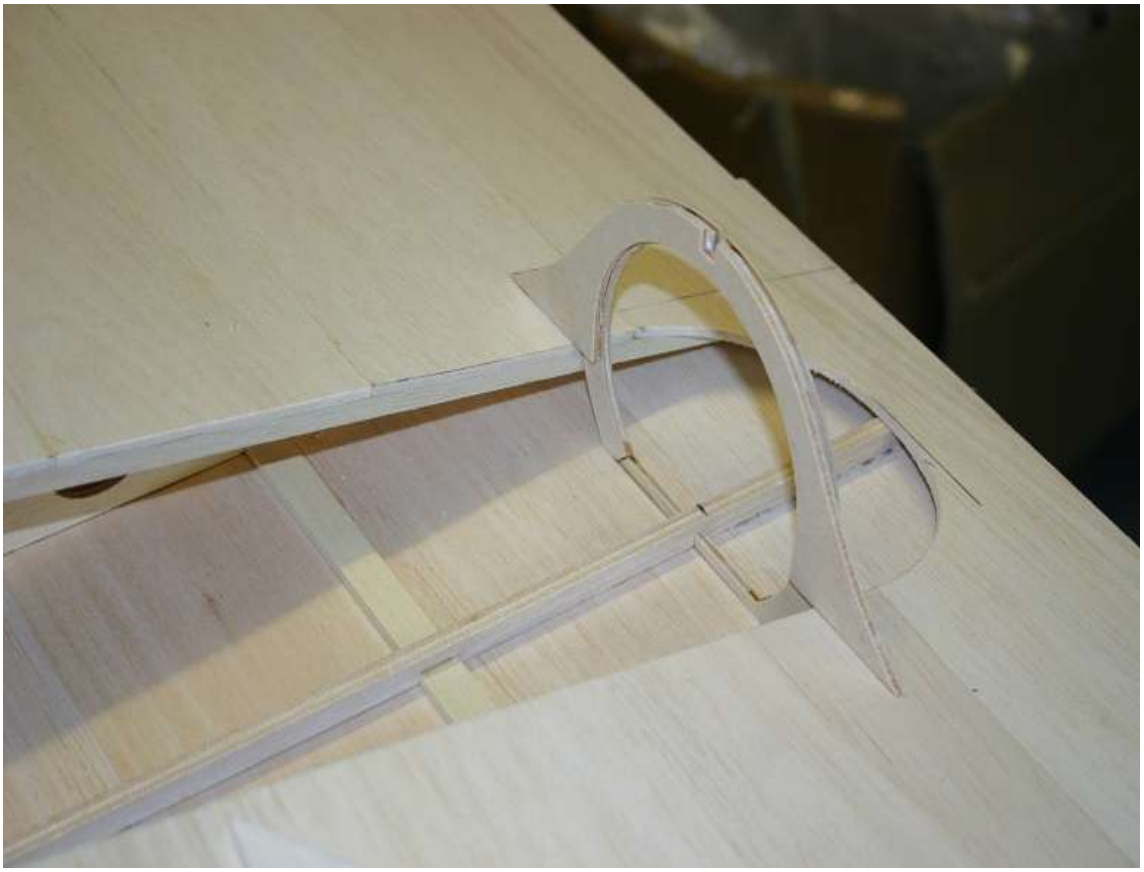
Mark centre line and position of F16



Using Angle template fit lower part of F16 (F16A)



Using Angle template fit upper part of F16



Fit F15

Make up rear fuselage section

Standard 600mm long thrust tube (from WREN Turbines) trimmed to length

Fit tube then fit rear section

Add some heat protection and use some scrap obechi or ply to secure intake end of tube

Make sure there is a clear air path around the outside of tube

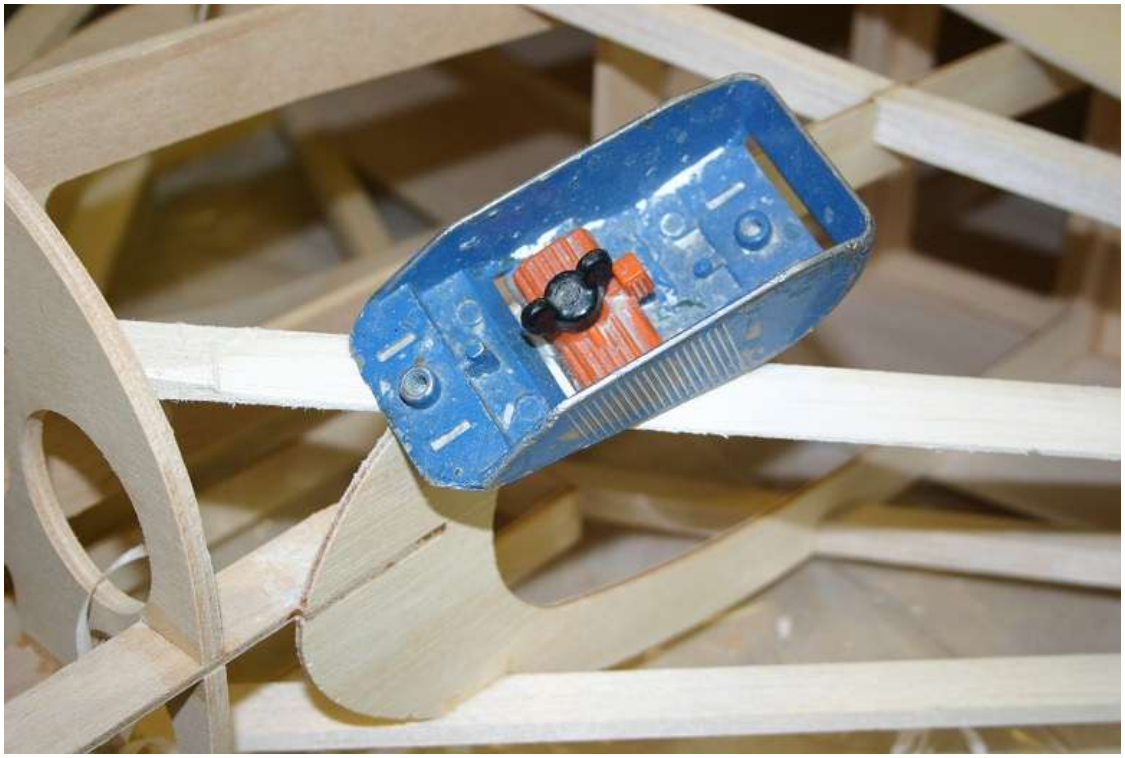
Strip plank rear section

Just in case you are concerned about the proximity of the tube to the internal structure, here is an internal photo after the fin was accidently modification! After 12 flights no sign of scorching.

Build up nose section

Glue front section to main body and add F20 to F22

Add top and bottom air intake leading edge

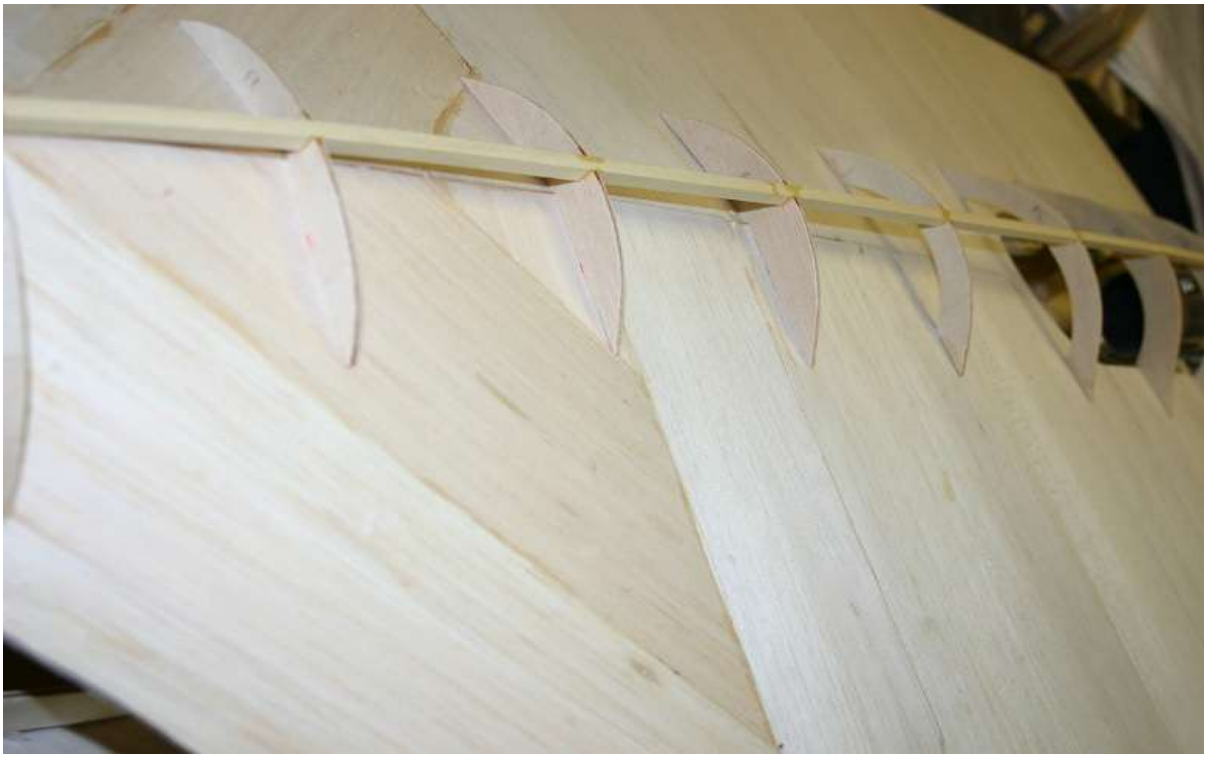


Chamfer intake leading edge

Continue to sheet top of fuselage noting grain direction

Continue to sheet bottom of fuselage, noting grain direction

Add F7 through to F14 noting correct angle of F14



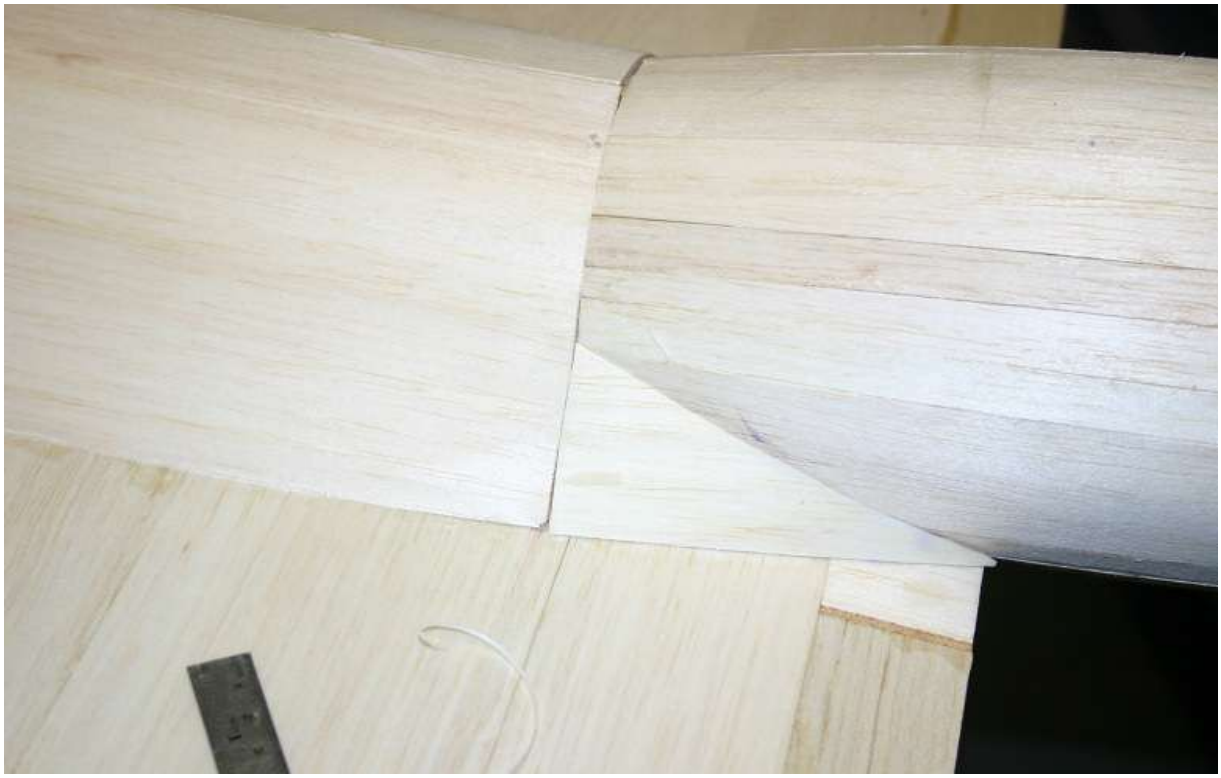
Add 6mmSq obechi top stringer

Roll sheet the nose section between F4 & F7

Detailed fairing pieces

Strip plank nose section between F1 & F4

Top sheet turtle decking in 4 pieces

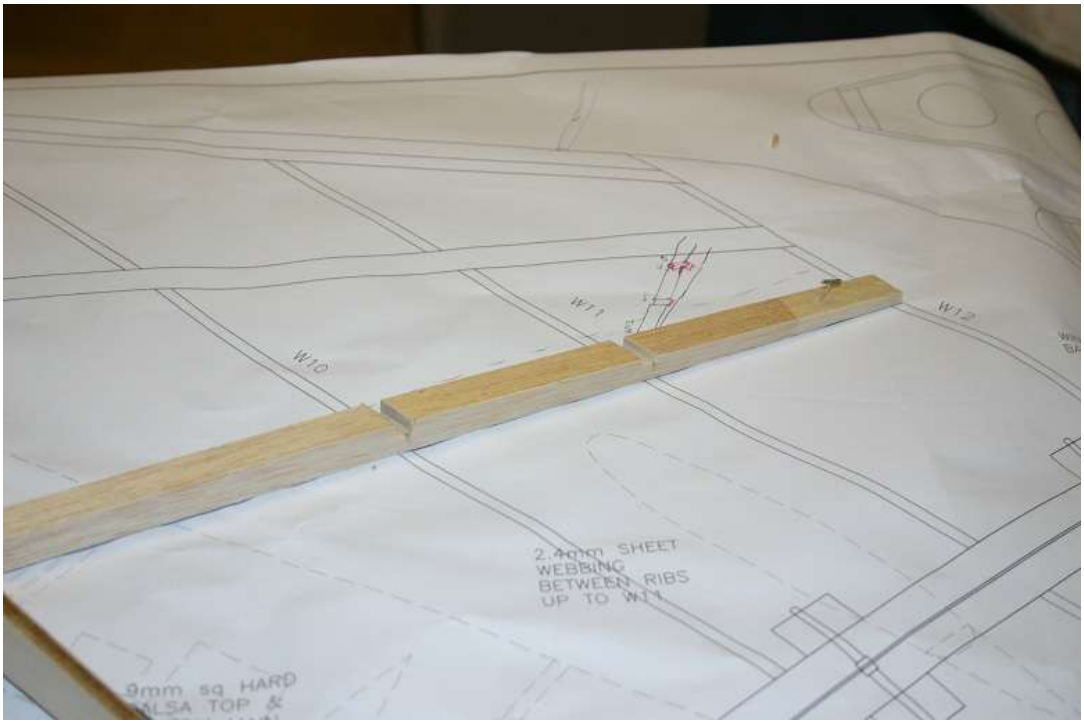


Sheet fillet

Under fairing from solid balsa

WINGS

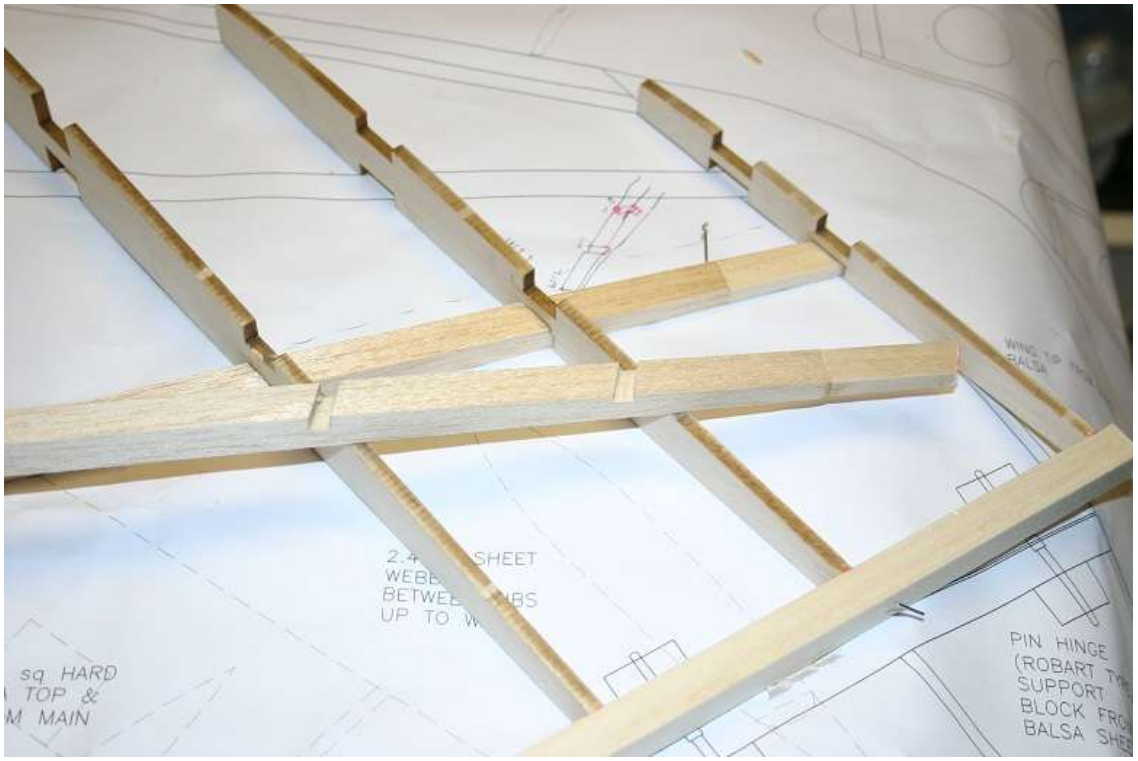
Right Hand Wing Panel



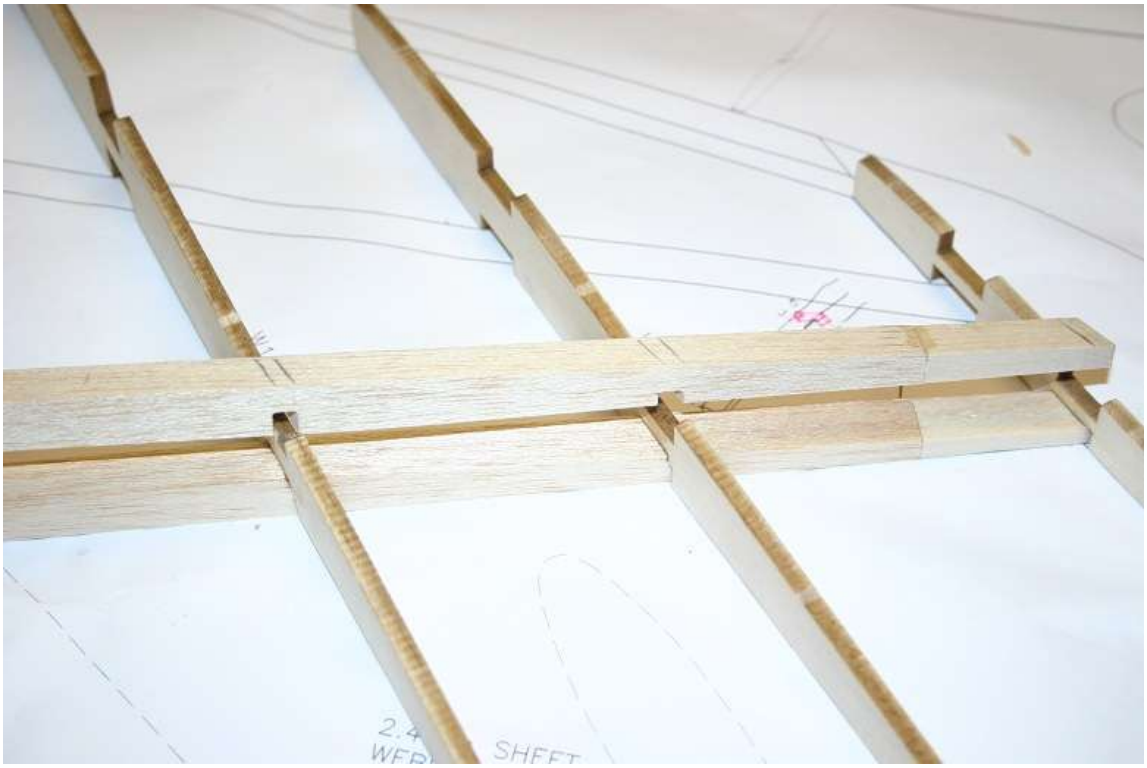
Graft additional piece 12mmSq to end of spar to make correct length. Notch and chamfer as shown

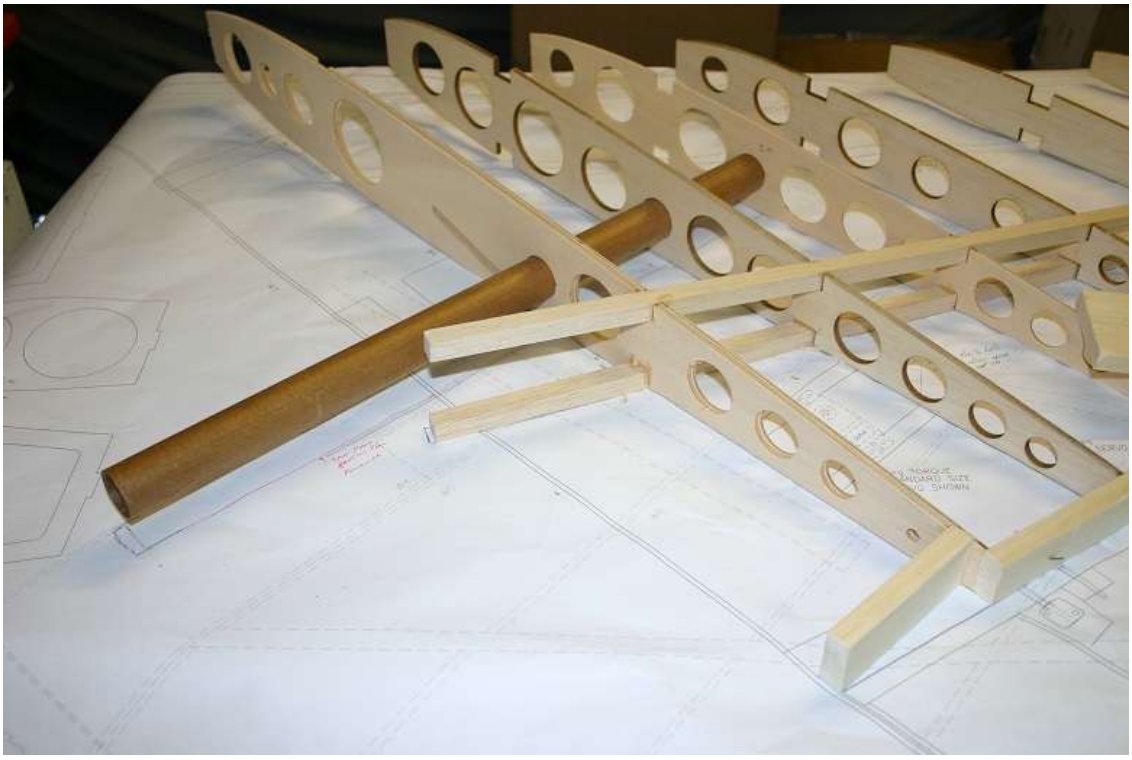
Pin rear spar to building board, add wing ribs and then add trailing edge. Important note: Trailing edge must be securely pinned 'FLAT' to the building board for the duration of the wing build.

Note: leave a 1mm gap between W4 & W5 to allow a saw blade to pass through

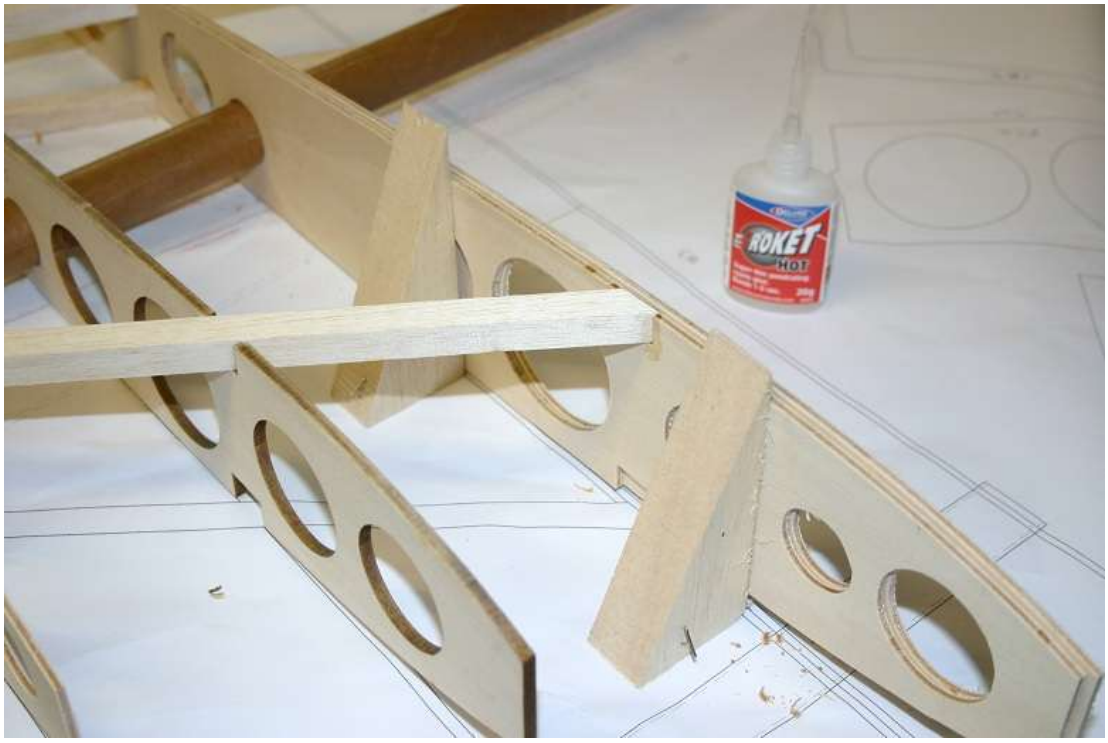


Chamfer and notch top rear spar similar to bottom

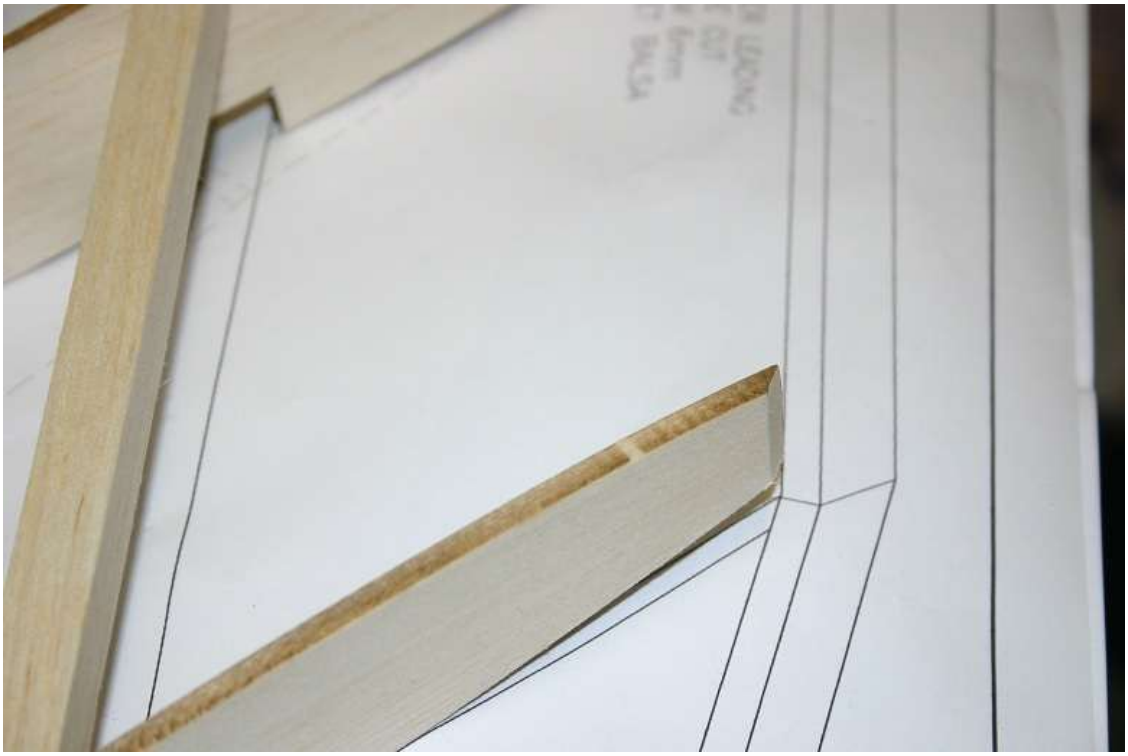




Fit top rear spar



Use right-angle blocks to keep W4 & W5 square

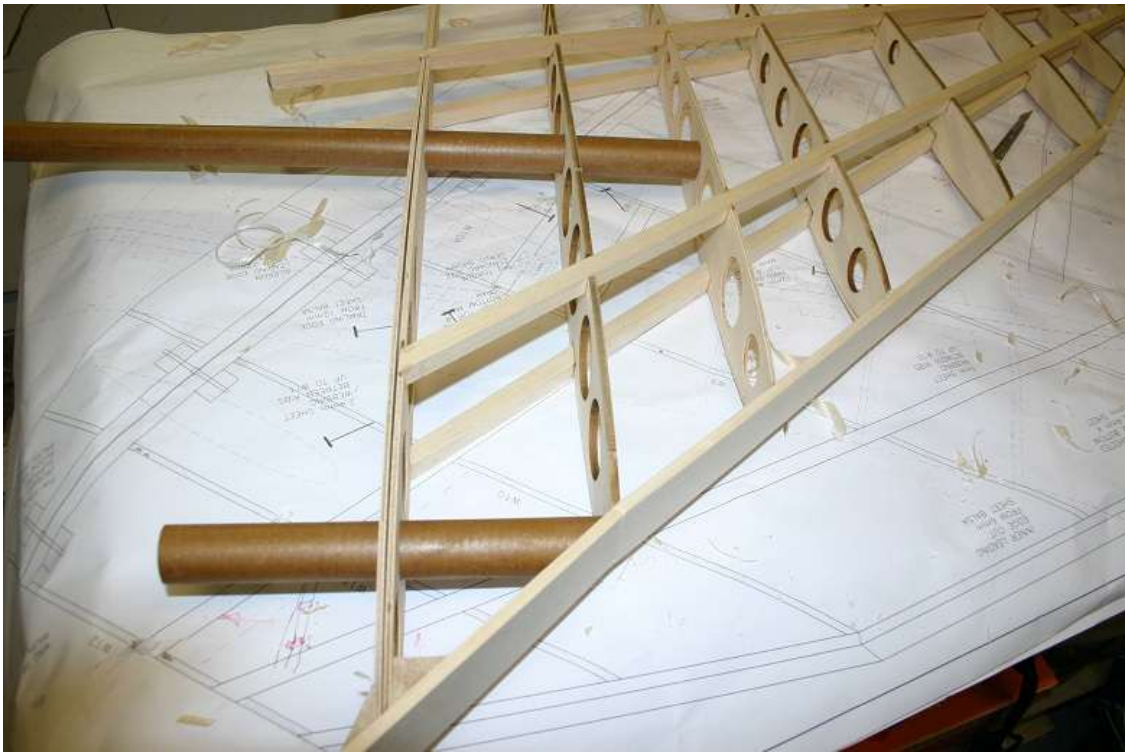


Chamfer nose edge of ribs to accept leading

Fit ‘middle’ part of inner leading edge ‘FIRST’

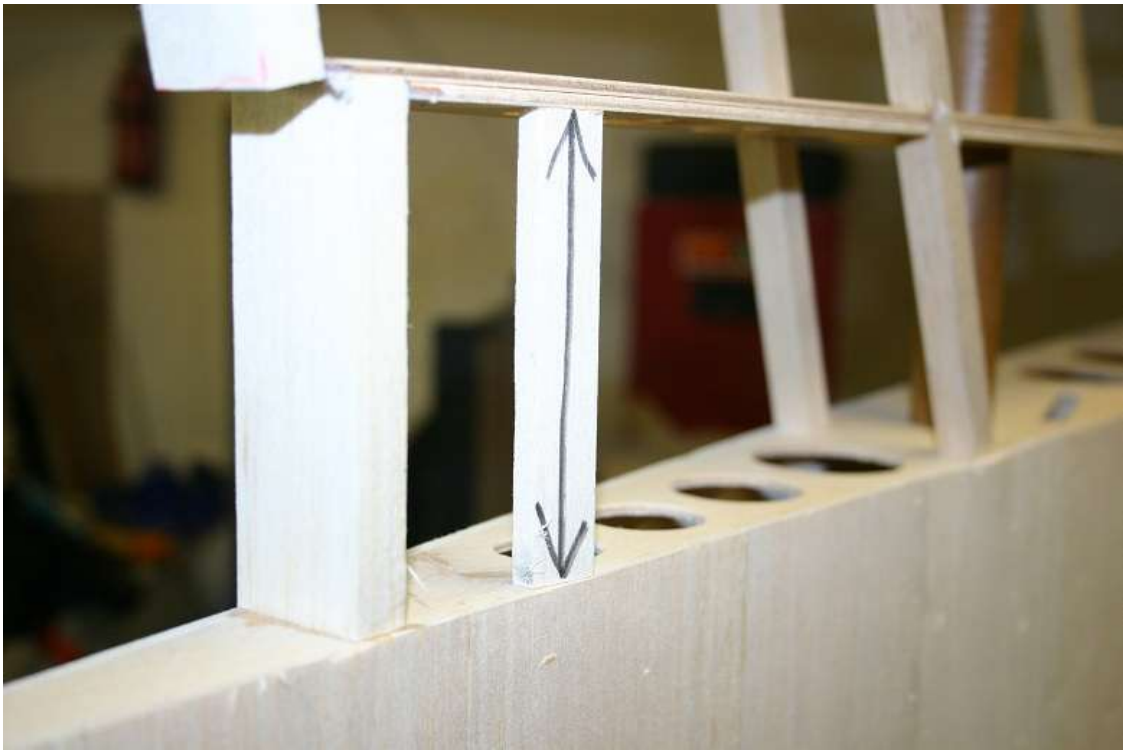
Fit ‘outer’ part of inner leading edge ‘SECOND’

Fit ‘inner’ part of inner leading edge ‘THIRD’

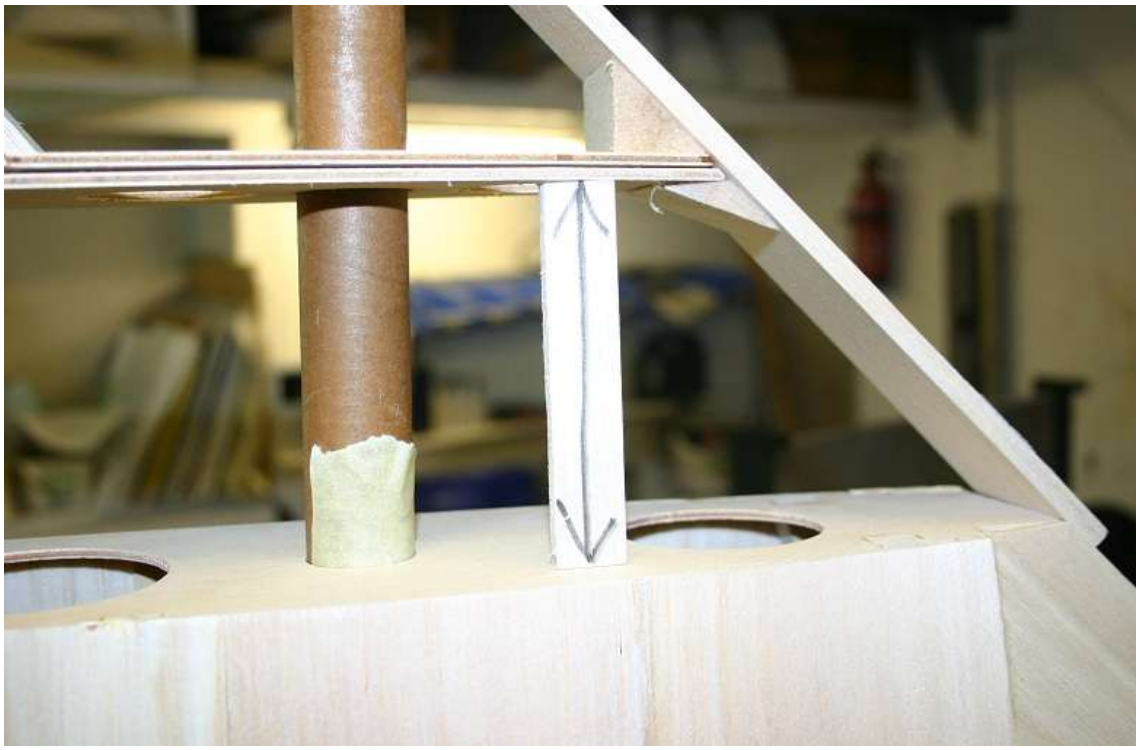


Wing can now be removed from plan. Trim outer phenolic tubes to the correct lengths BUT don't glue into wing. Note: the sheer webbing can be added now along with the servo mounts (not show in Photo)

Test fit the wing on to the fuselage. The main cent wing tube should pushed through W3 & W2 as shown on the plan. This will lock the correct dihedral into the wing



Use a width template to make sure W4 is parallel with W3 (rear)

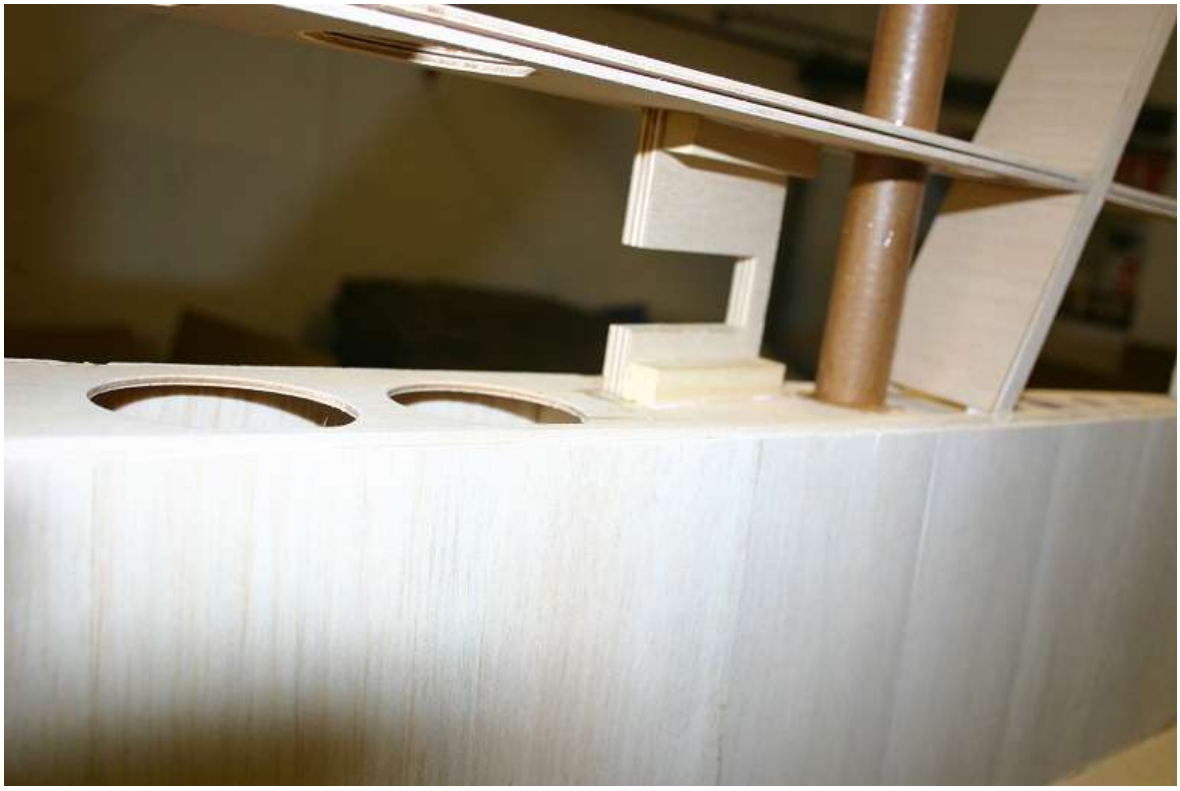


Use a width template to make sure W4 is parallel with W3 (front)

Glue the leading & trailing edges to W3

Now glue the outer tube to the wing ribs using epoxy

Add the Undercarriage mounting plate



Add U/C plate additional supports

Chamfer leading and trailing edges flush with wing ribs. Make a small cut in the leading edge between W4 & W5 as a location point to part the wings from

Add the 3mm x 4.5mm edging strip to W3 before sheeting. This strip supports the wing sheeting

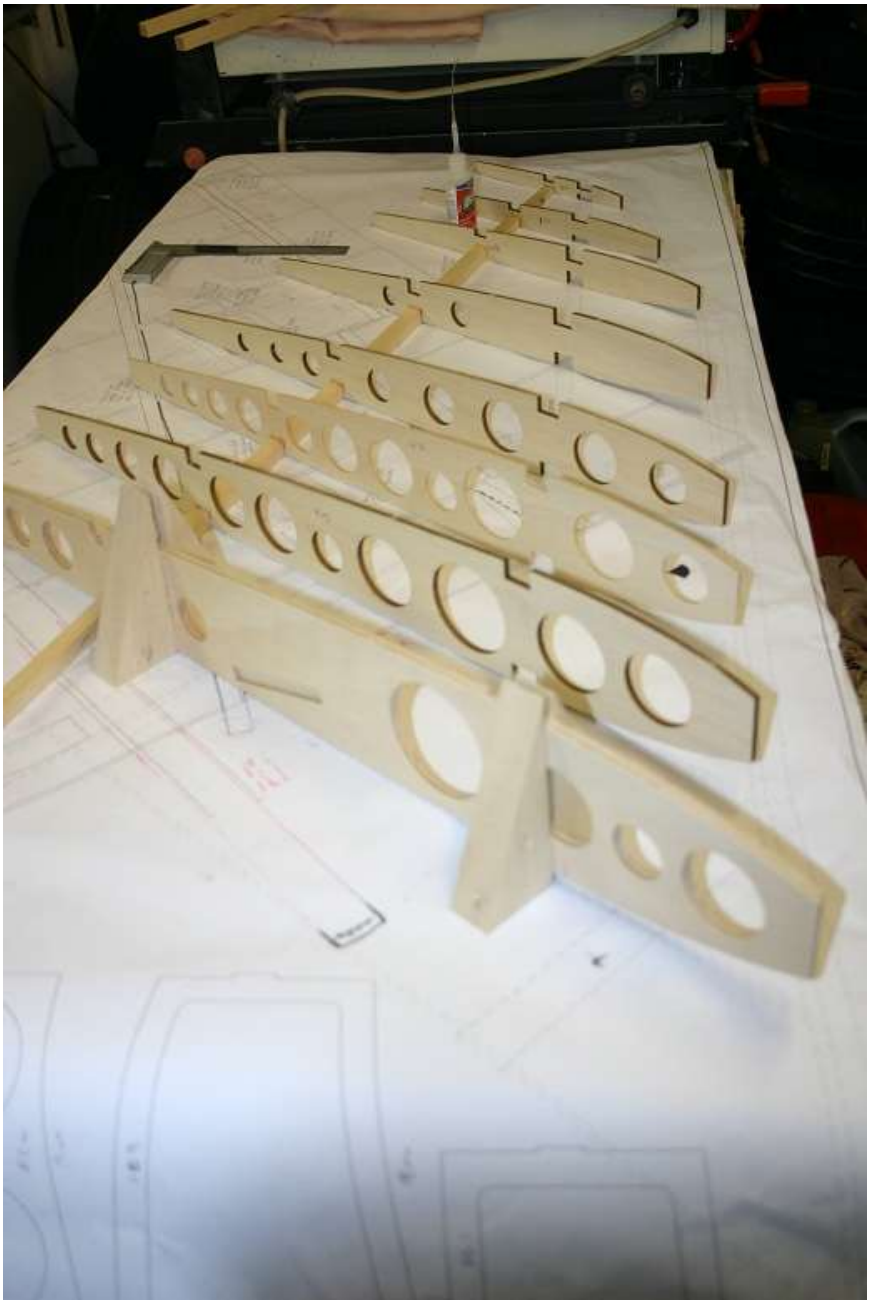
Servo mounting points

Sheet underside

Part the wing from the fuselage by cutting between W4 & W5 with a hand saw

Test fit the Aluminium tubes

Left Hand Wing Panel



Construct as RH panel

Construction as RH panel

Add wing tips

Add outer leading edges to both wings

Re-joint wings and add outer leading edge

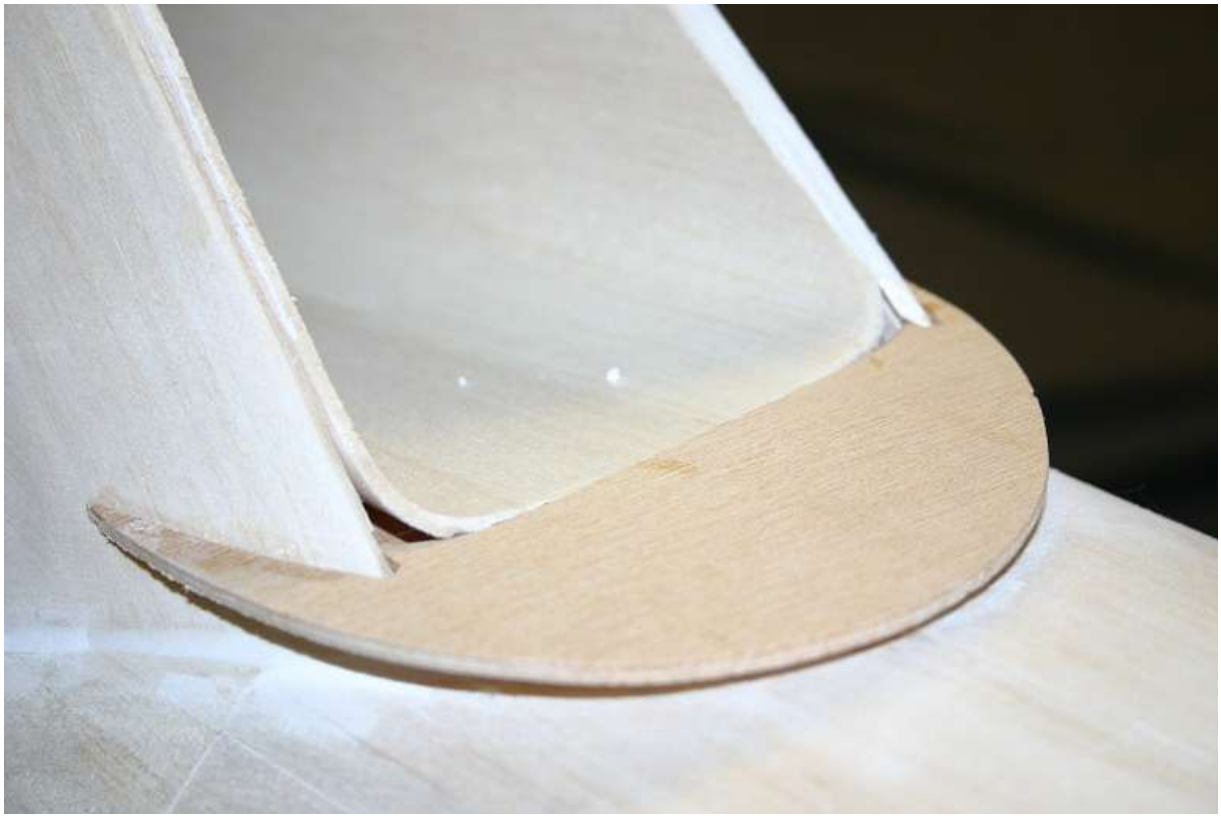
Shape leading edge

Air Intakes

Join sheets of soft 1.5mm balsa sheeting together and form a tube

Wet the outside of the tube then ‘squash’ in to place.

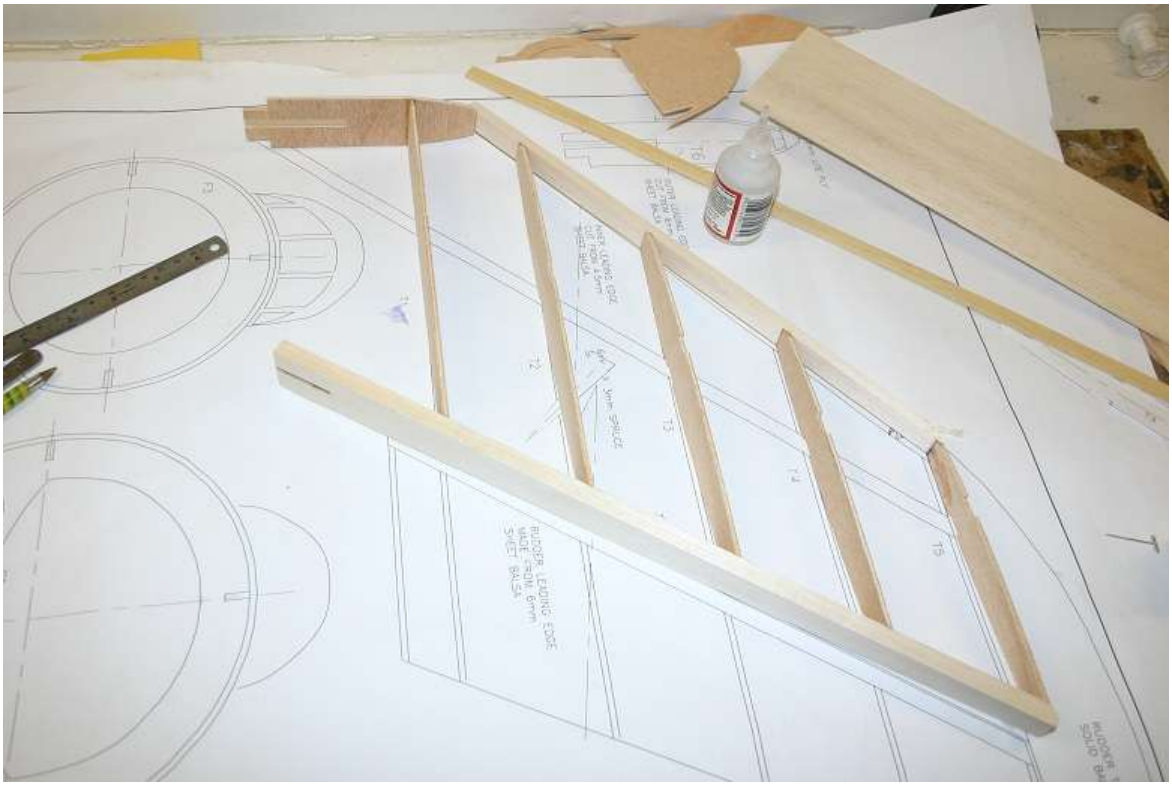
Cut diagonally in half and use the off cut for the opposite air intake

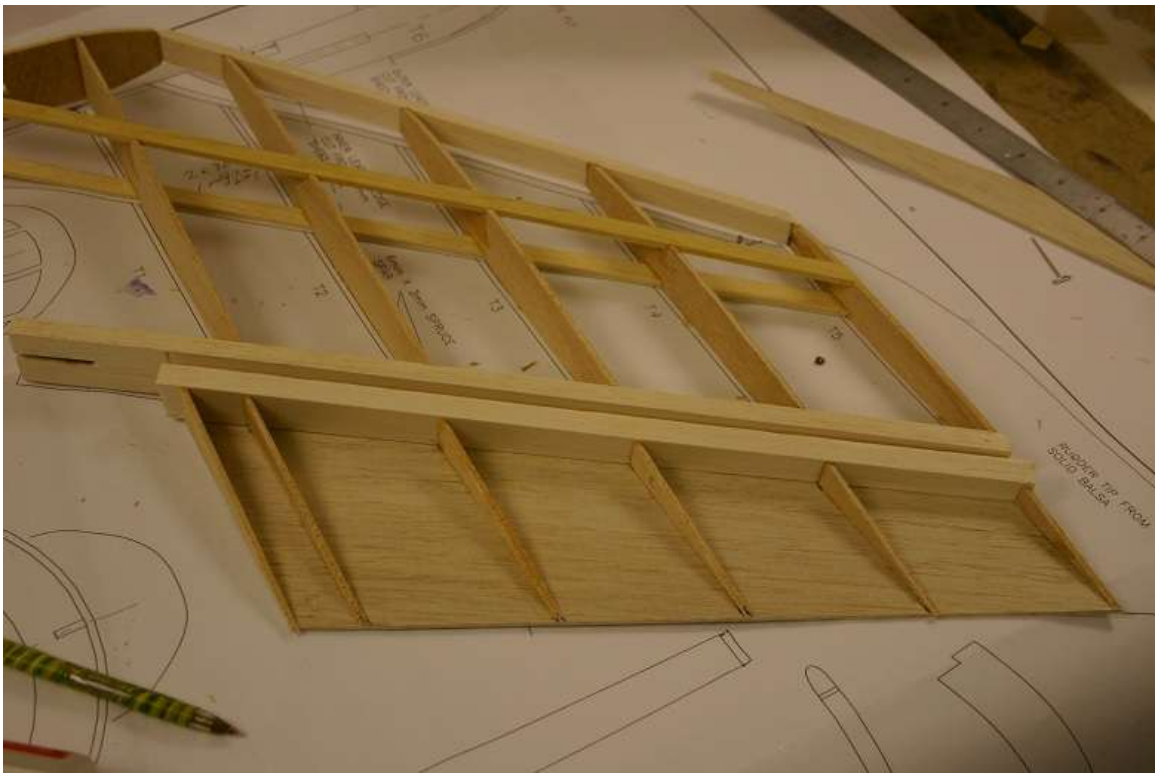


Fit intake fairing

Blend with filler

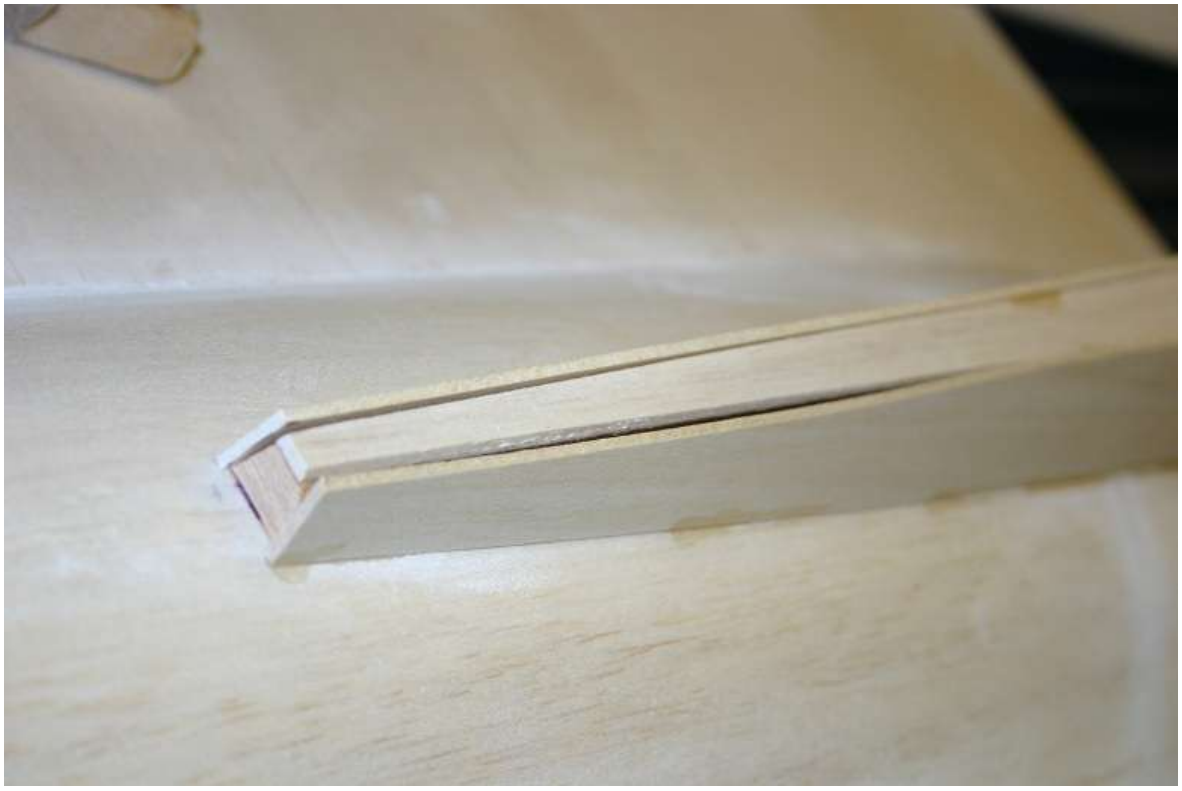
Fin & Rudder



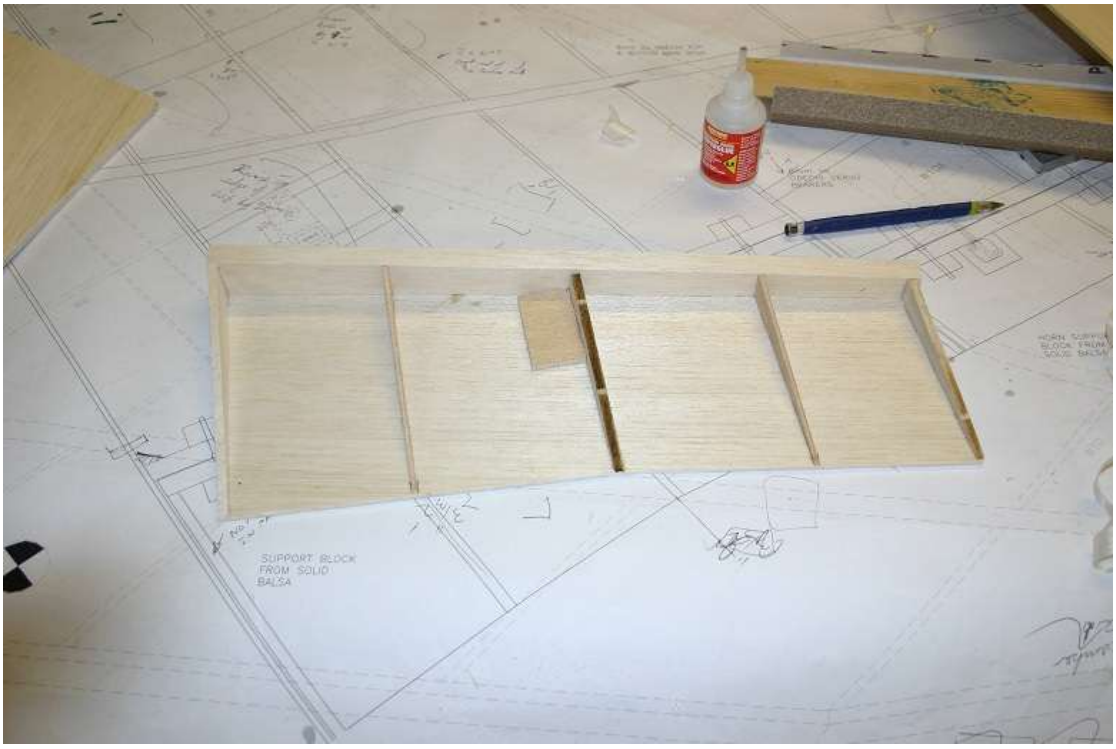


Cut opening in turtle deck against F14 but don’t cut through 6mm sq longeron

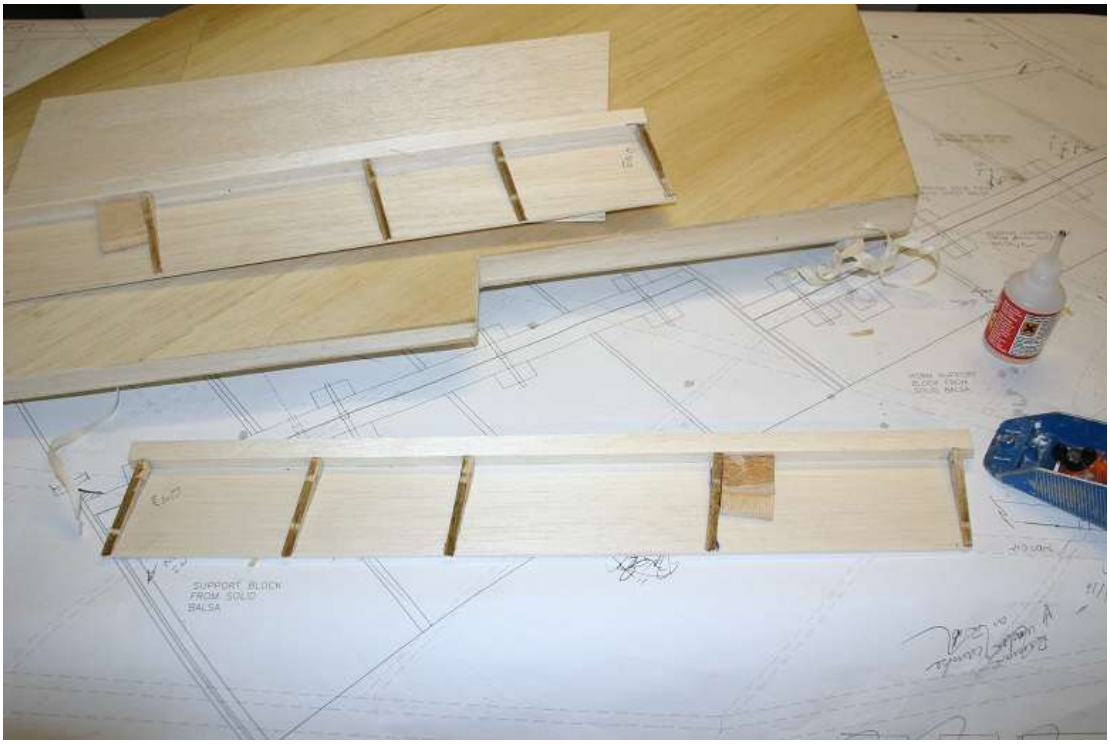
Mark and glue into position T7 & T8



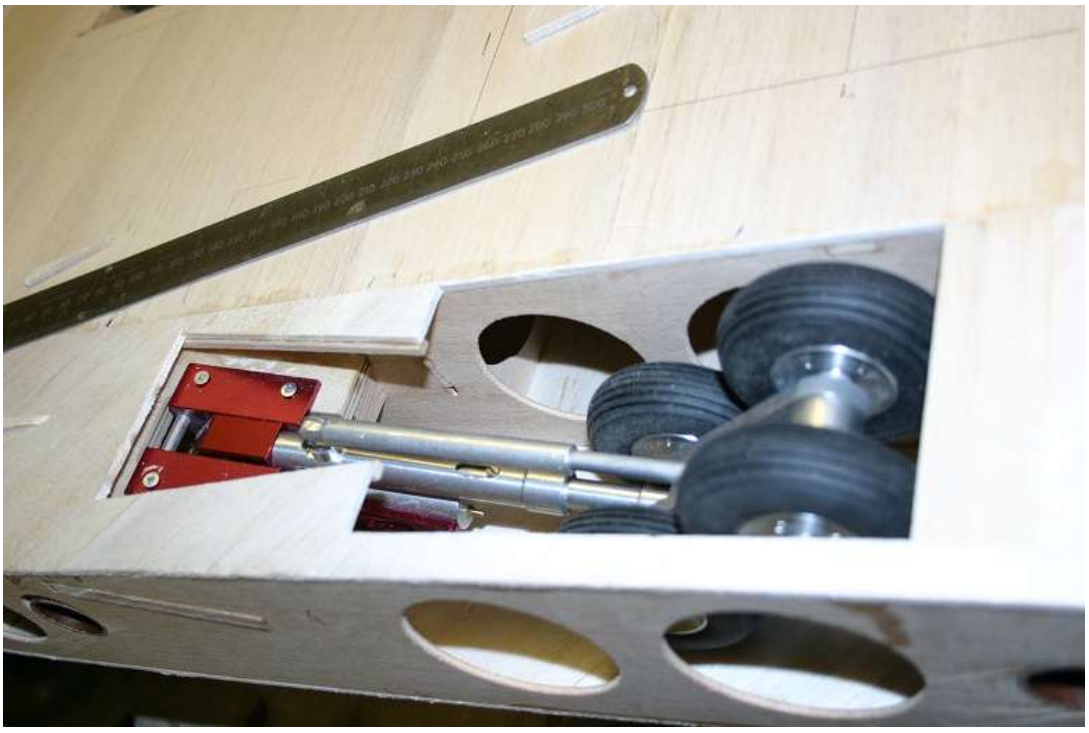
Elevator and Elevon



Inner Elevator



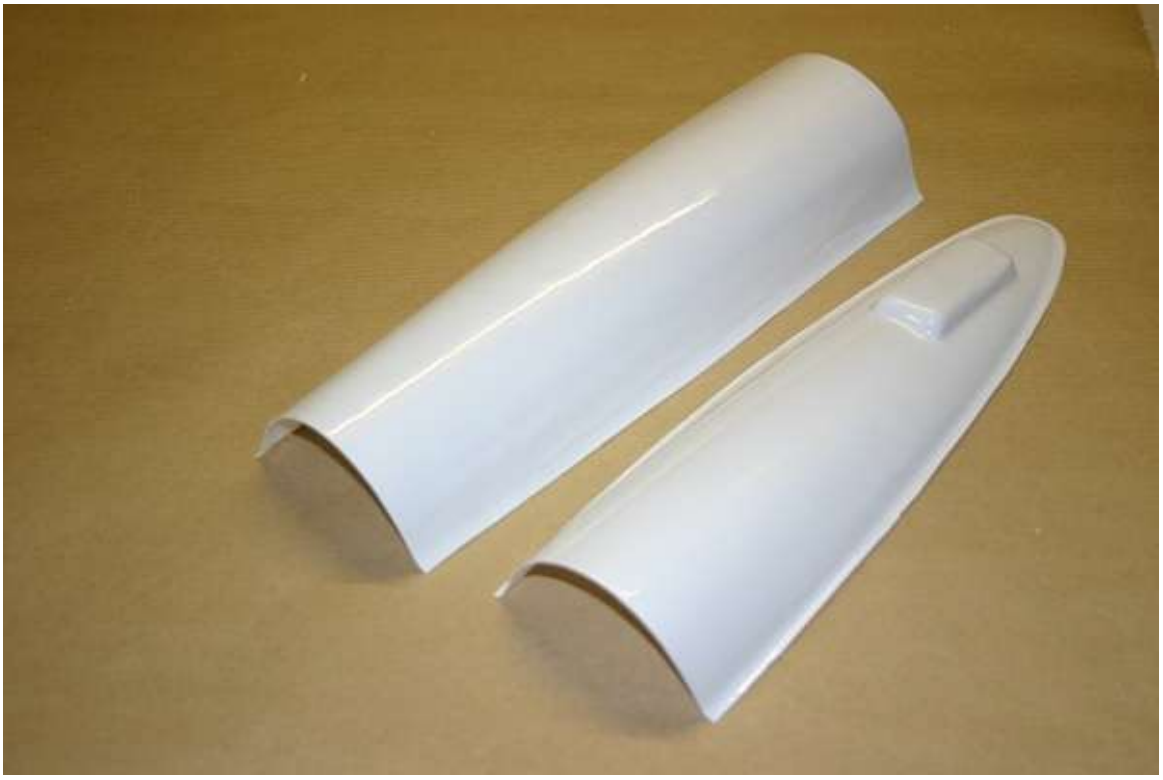
Outer Elevons



Finished access to main retract units

Indication of hatches required in the underside. Model is finished in glass cloth epoxy

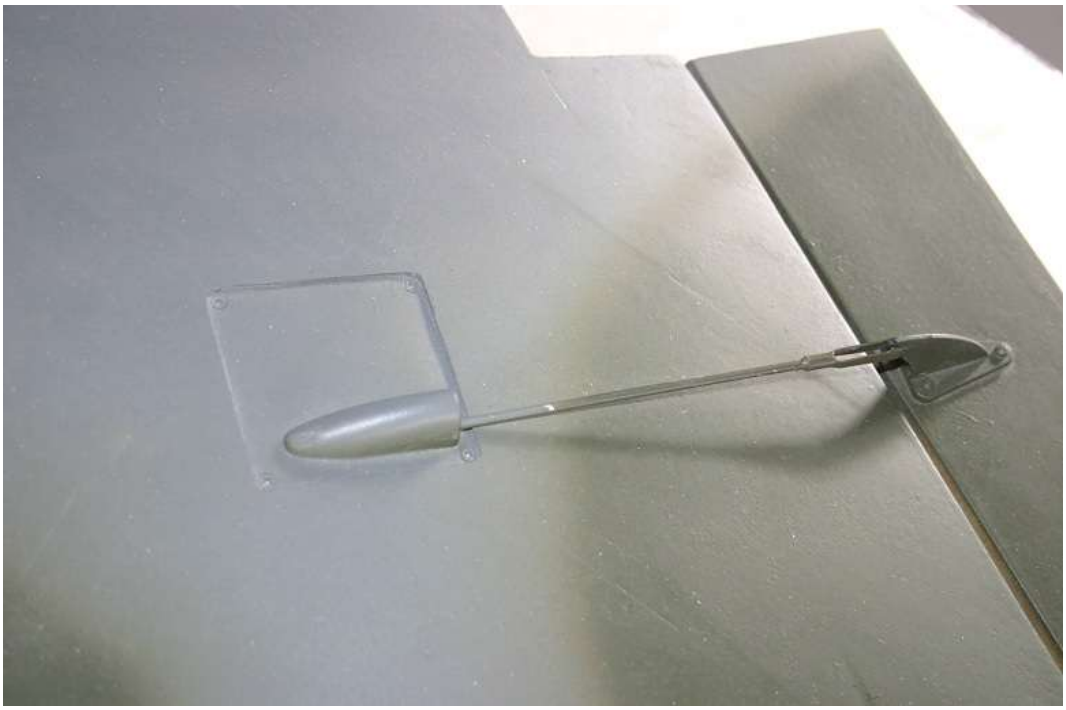
The VAC form set



The two piece dummy engine fairings

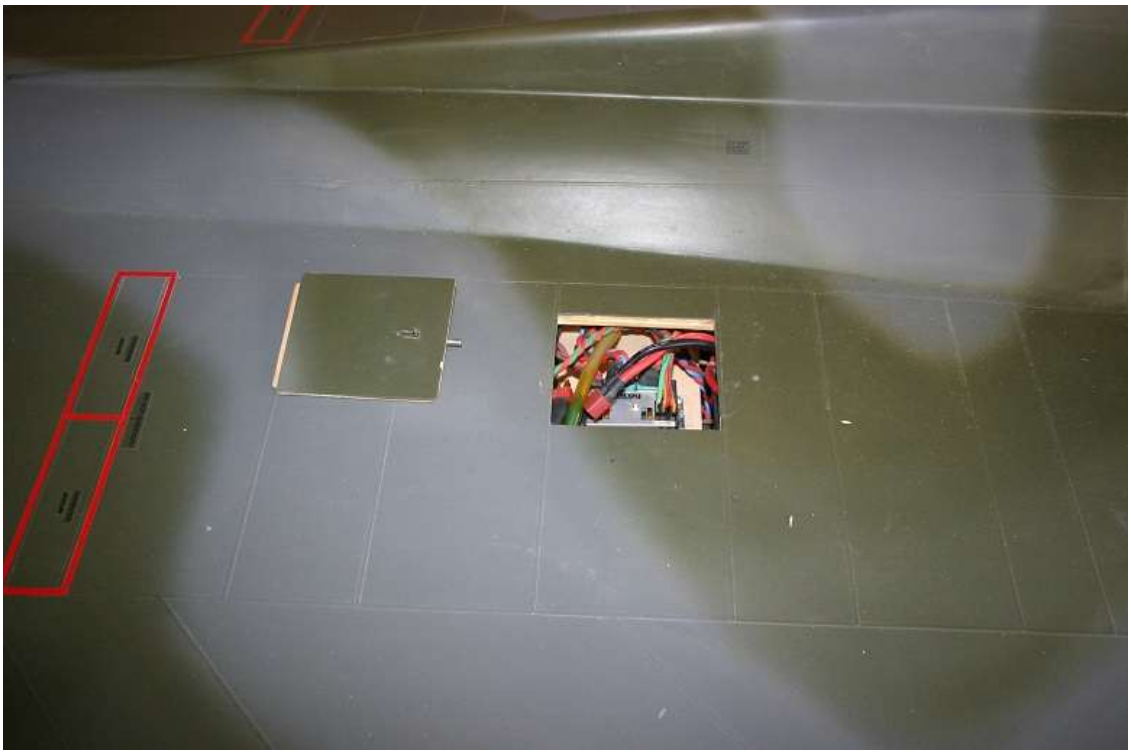
Trimmed and ready to be fitted

Finished Photos



10 watt Halogen landing light

Out servo operates in elevon mode and inner servo as elevator only



Small hatch in top of wing for switches

Divisional plate in air duct

A pair of large Dubro tanks used

Optional UC doors

Rudder servo

Tail pipe crown designed to give ‘dome’ appearance from a side view

Red 35mm halogen lights to give non scale after burner appearance

Decals available from Pyramid Models

The Model at Biggin Hill Air Fair 2014