RSM DISTRIBUTION

Presents

MOSQUITO

By
Jack Sheeks

Photo _ Jack Sheeks

Semi Scale Twin Stunter

Wing Span:	**58"**
Length:	**37-3/4**
Area:	**579 sq. in.**
Engine:	**Two .35 -.40**

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Thank you for purchasing the **RSM Mosquito** kit. We are grateful for your business and trust you will find this kit to be of the highest quality.

The aim of this building article is to guide you through the construction of the Mosquito kit.

We do understand that many of you are experienced builders and that you may have differing techniques to those show and in these instances, please feel free to follow your own methods.

BEFORE YOU START:

It is recommended that before you start that you prepare a flat, stable building surface to build over. The best surface is a plate glass and should be a minimum size of 4 ft x 2ft to allow the wing to be built in one piece. An alternative to glass is a sheet of dry wall, which has the advantage of being able to accept pins.

Read the plans and build article carefully, we recommend reading the build article thoroughly and reference the plans as you read through. If you have any queries or questions on the construction of any part of the build please contact either RSM Distribution eric@rsmdistribution.com or Wynn Robins wynnrobins@ihug.co.nz

A NOTE ON LASER CUTTING:

Laser cutting is the latest and most accurate method of cutting kits.

The precision of laser means that the parts are cut to exacting dimensions and will have next to perfect fits when assembled.

You will note that throughout the build article we will refer to “cutting tags” off sheet wood parts. These tags are left on by the cutter to stop parts falling loose from the sheets.

You may also notice that in some instances, the laser has not cut through the balsa of plywood parts and you may need to do some additional cutting. This is due to the laser heat, material thickness and density.

Whilst all care is taken in the cutting and production of these kits, there may be instances where the above items occur.

Finally, check the laser cut edges, if they are charred or blackened, you will need to lightly sand these pieces for the glues to work correctly.

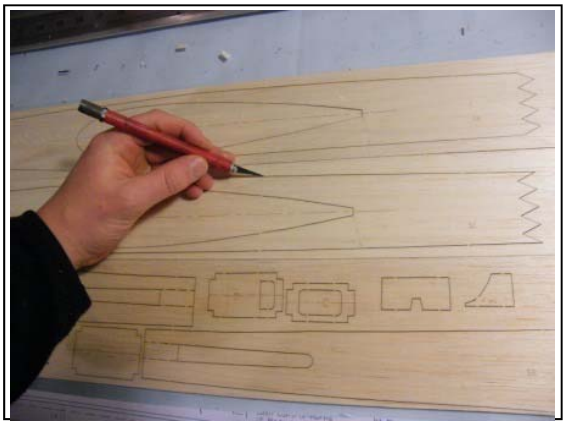
MOSQUITO PARTS LIST

The following parts should be present in your **MOSQUITO** kit. If anything is missing or damaged, please contact RSM Distribution at 23905 Clinton Keith Rd # 114-167. Wildomar, CA 92595 or call 951-678-1406. We will send the missing or damaged parts immediately.

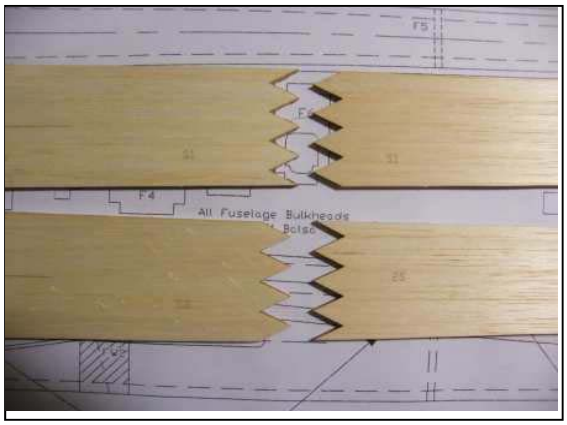
MOSQUITO PARTS LIST

1	Full Sized Plans	3	3/32 X 1/4 X 36 Balsa
4	1/16 X 3 X 36 Balsa	1	1/4 X 3/8 X 36 Balsa
4	1/16 X 4 X 36 Balsa	1	Laser Cut Wing Ribs
1	3/8 X 3 X 36 Balsa	2	Laser Cut Fuselage Front & Back
1	3/4 X 3 X 36 Balsa	2	Laser Cut Nacelles
1	1/2 X 4 X 18 Balsa	1	Laser Cut Plywood Parts 1/32, 1/16 & 1/8
4	1/16 X 1 1/2 X 36 Balsa	2	Laser Cut Flaps
1	1/8 X 3 X 24 Balsa	4	3/8 X 1/2 X 7 Maple Motor Mounts
1	1/2 X 3 X 24 Balsa	1	Laser Cut Stabiliser & Elevator Skins
4	3/8 X 1/2 X 36 Balsa	2	Medium Silkspan Covering
2	1/16 X 3/8 ? 36 Balsa	1	1/8 Music Wire For Landing Gear
4	1/4 X 1/4 X 36 Balsa	1	Tail Wheel Assembly
2	3/8 X 3/8 X 36 Balsa	1	14” Arrow Shaft Pushrod
6	3/16 X 3/16 X 36 Balsa	1	9” Canopy
4	1/16 X 1/4 X 36 Balsa	1	Hardware Package

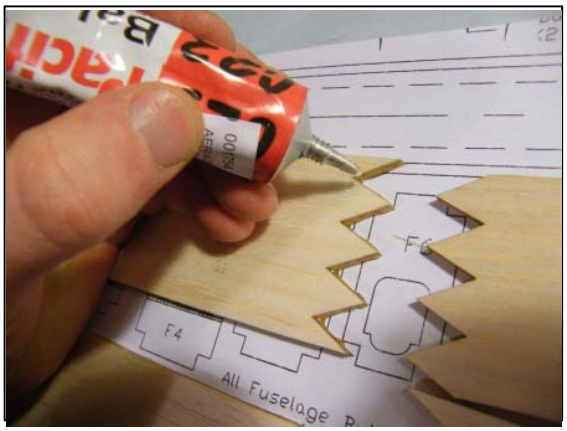
FUSELAGE CONSTRUCTION



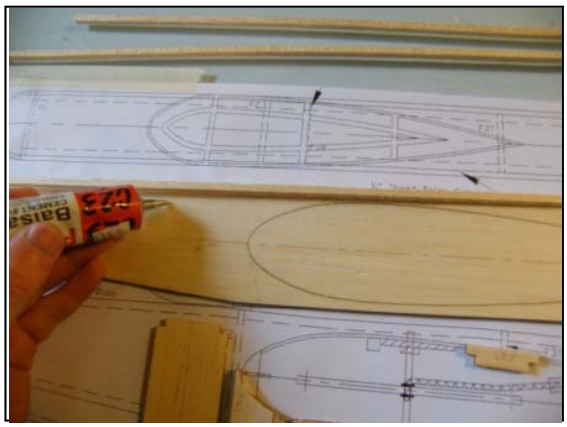
1) Locate the laser cut fuselage sides and cut tags to remove from sheet. Note there are 2 front sections and 2 rear sections that are joined to make one full side.



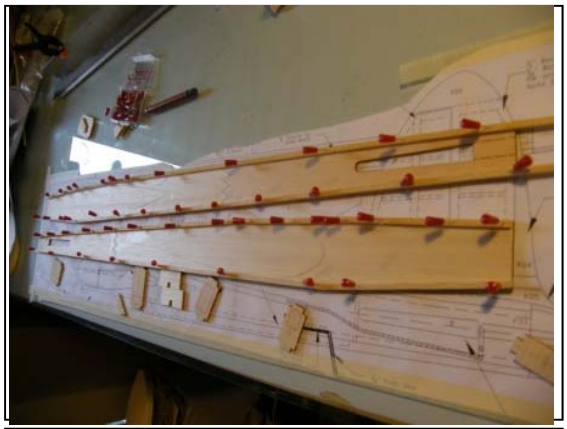
2) Align the correct front and rear sections of the fuselage sides. Note: the laser cutting only allows the correct sides to be joined. Test fit, and trim if necessary to allow good glue joint.



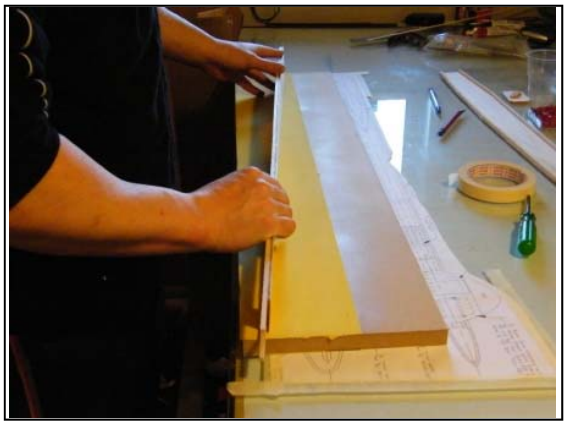
3) Apply glue to the joints and pin sides together. Set aside to let dry.



4) Once the sides are dry, take the 3/16 X 3/16 longerons and glue to the fuselage sides. Pin and set aside to dry.
IMPORTANT NOTE: Make sure you glue the longerons to allow one LEFT and one RIGHT side

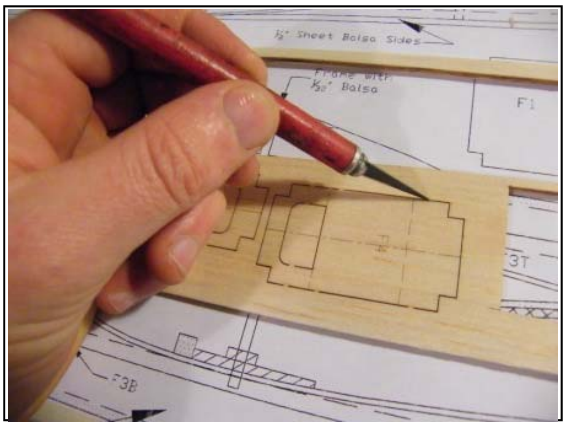


5) Here are the two fuselage sides with longerons installed. Note that these are as mentioned in step 4, one left side, and one right side.



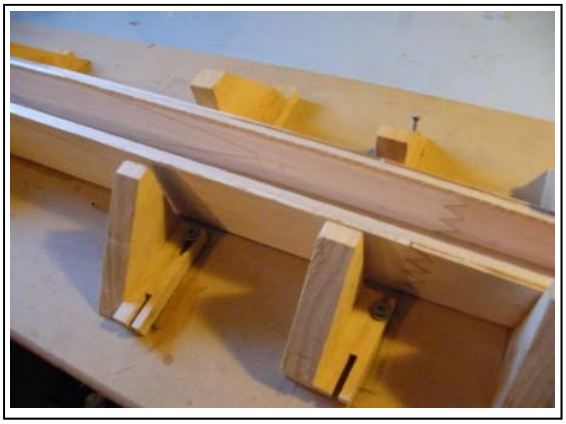
6) Once dry—Sand the top and bottom of each side to square up the edges and remove any glue that may be left over. This will help with installation of the top and bottom blocks

FUSELAGE CONSTRUCTION Cont...

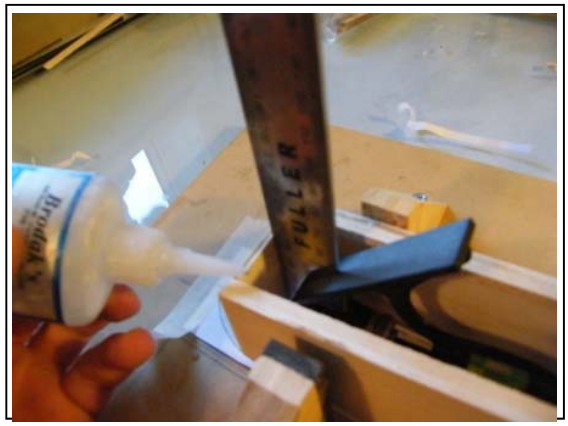


7) Remove the fuselage formers F1—F7 from the laser cut sheets

8) For an accurate fuselage, we recommend using a fuselage jig. Here we have the fuselage plan temporarily glued to the base of the fuselage jig to allow locating the formers.



9) Place the fuselage sides in the jig, making sure the bottom of the fuselage is at the bottom, and that this is sitting flat.

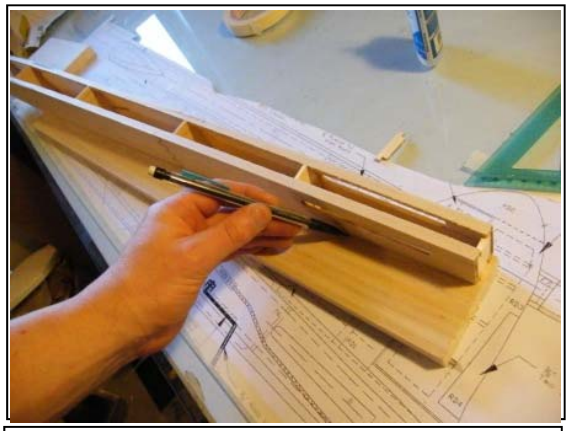


10) Locate F1 over the plan in the correct location, use a square to ensure it is plumb and straight. Glue in place.

11) Repeat step 10 for formers F2—F7
NOTE: F4 must be installed per the plan to allow clearance of the flap pushrod. This means the laser marked number will be upside down when in the correct location

12) When dry, remove the fuselage box from the jig, and sand top and bottom to square up edges to allow top blocks to be installed

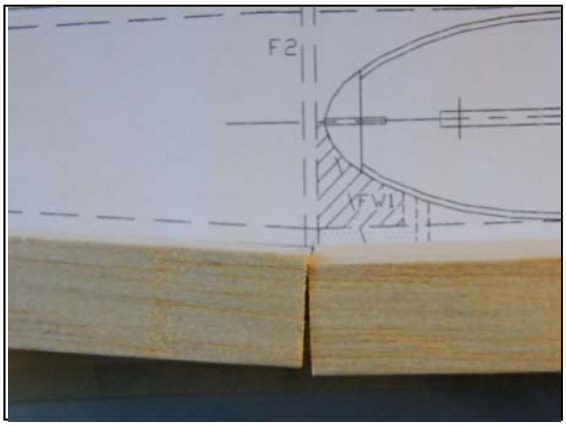
FUSELAGE CONSTRUCTION Cont…



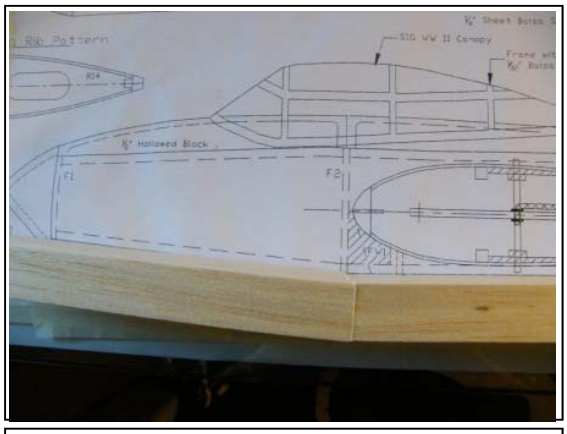
13) Locate the 3/4 X 3 X 36 balsa bottom block. Lay the fuselage over the block and mark the out-line.

14) Cut the block in along the line you just made. NOTE: If you line one fuselage side up with the side of the block, when cut, you will be able to use both halves of the block.

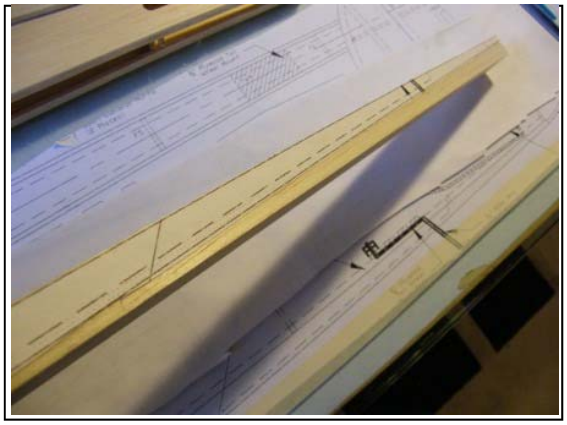
15) The bottom block needs to be cut to allow the change in fuselage shape at the nose. Place the block over the plan and mark to be cut



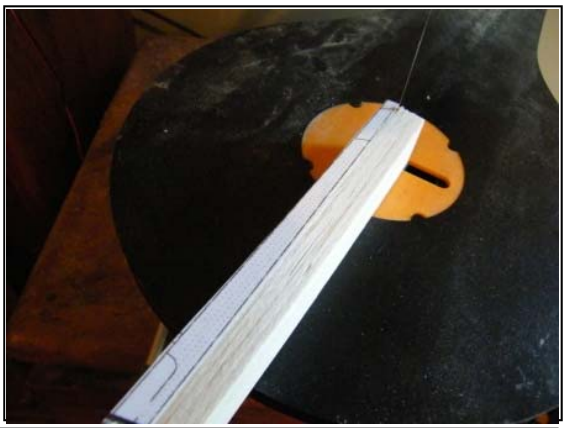
16) Cut the block in the marked location. NOTE: If you cut the block square at the ends, you will have a gap where the two blocks meet as seen above.



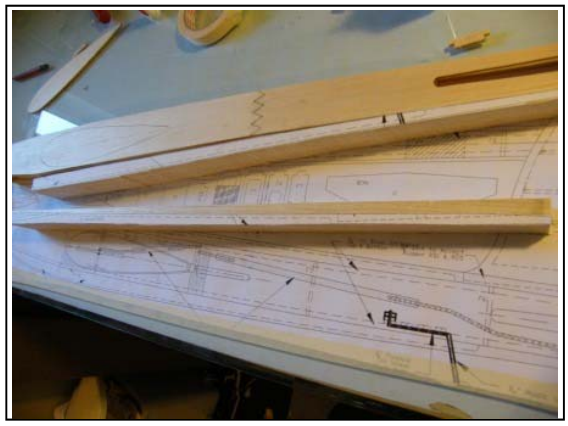
17) Lay the cut block over the plan and mark the angle required to allow the blocks to meet neatly. Sand the ends of the blocks to create a nice neat joint . You can see above how this now matches the plan.



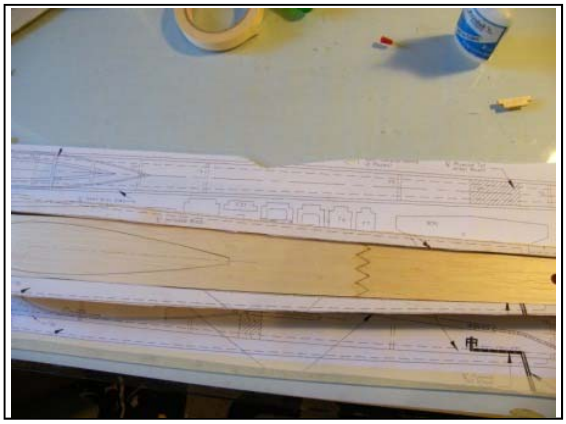
18) Cut the bottom block section from the plan and temporarily glue to the bottom block. This will be used as a cutting guide and will eliminate the need for excessive planing/sanding



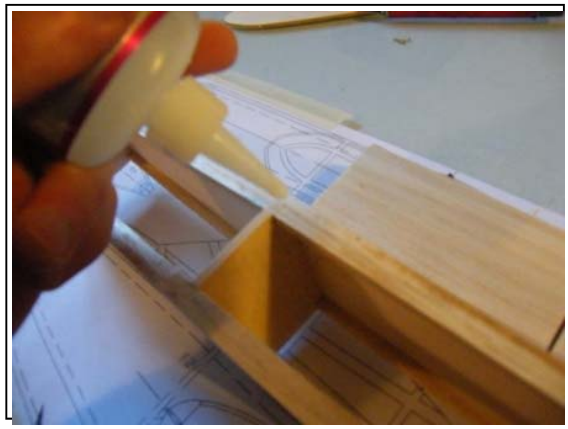
19) Cut the bottom block to rough shape using the plan template as a guide



20) IMPORTANT: In the kit there is a 1/2 X 3 X 18" piece of balsa that is designated for the rear top block. With splitting the 3/4" balsa, we can eliminate its use. This is up to the builder to choose which method suits.

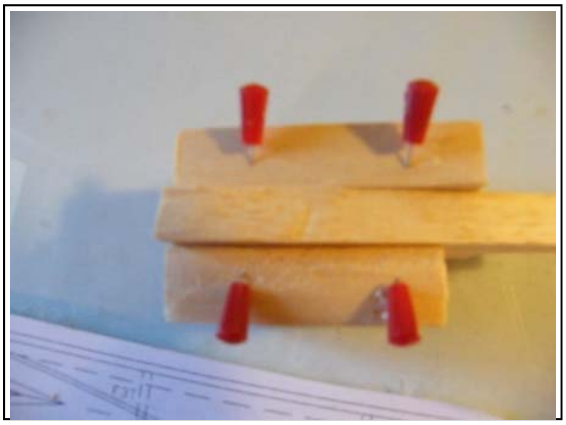


21) The top and bottom blocks rough cut to shape.

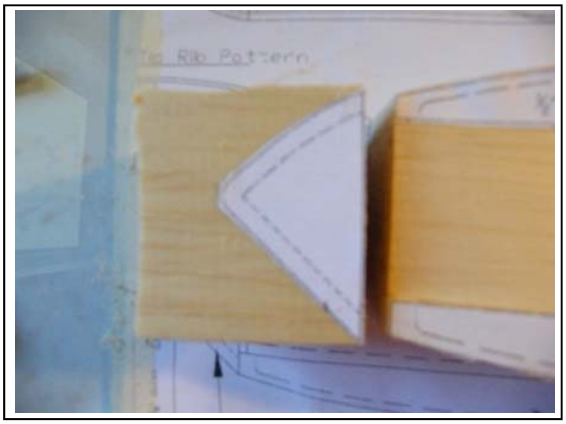


22) Tack glue the top and bottom blocks onto the fuselage box. Tack the blocks in locations that will be easy to remove later, for when the blocks are hollowed

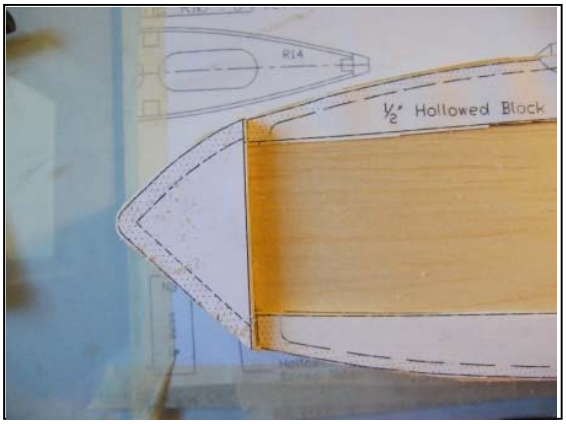
23) Tack glue the front part of the bottom block in place.



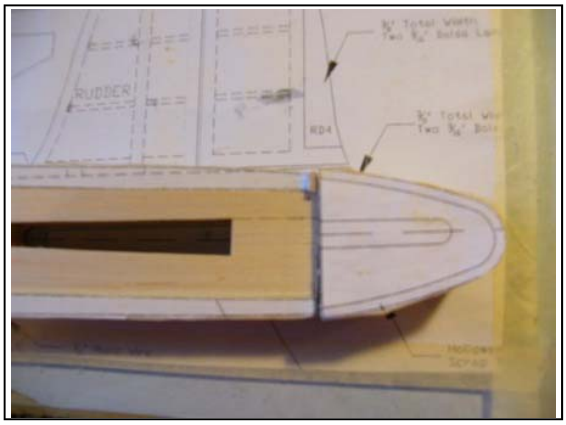
24) Laminate off cuts/scrap block together to form two blocks. One for the nose block, and one for the tail block. Set aside to dry.



25) Once dry, cut the template for the nose block from the plans and temporarily glue to the nose block. Do the same for the tail block

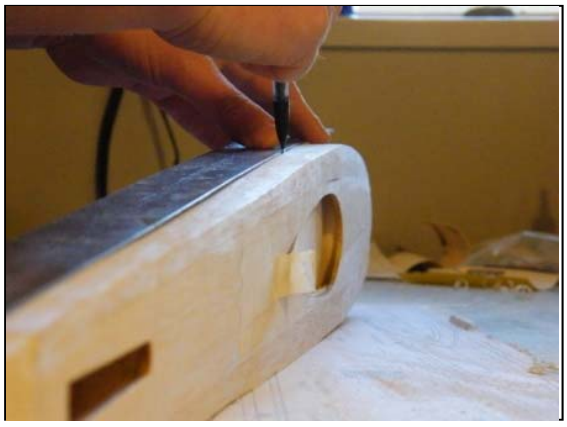


26) Cut the block to shape and tack glue to the fuselage box



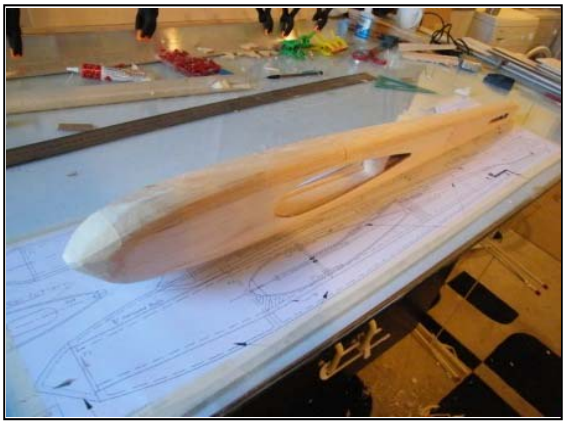
27) Repeat the process for the tail block

28) Once all blocks are glued in place sand top and bottom blocks so they are flat.

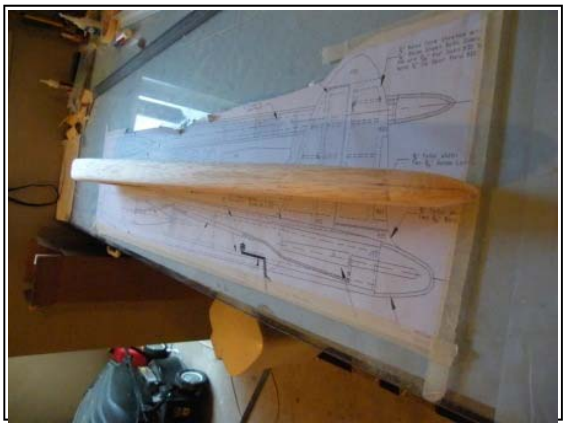


29) Draw a centre line down the top and bottom blocks the full length of the fuselage. This will be used as a reference point for shaping the blocks

30) Use a razor plane to start shaping to top and bottom blocks. Use the centre line as a reference for the curves on each side

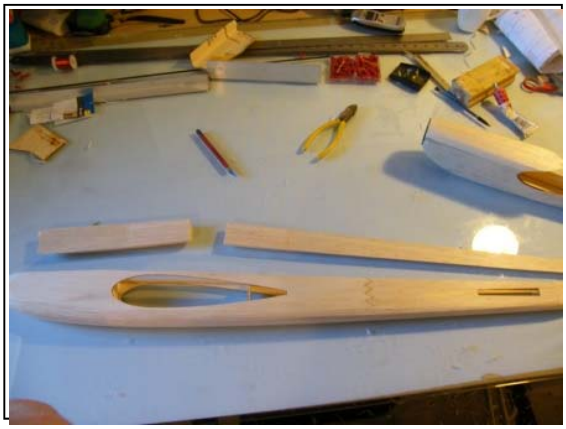


31) Keep shaping the blocks to form the required fuselage shape. Here we can see the side view



32) The shaped fuselage from the rear

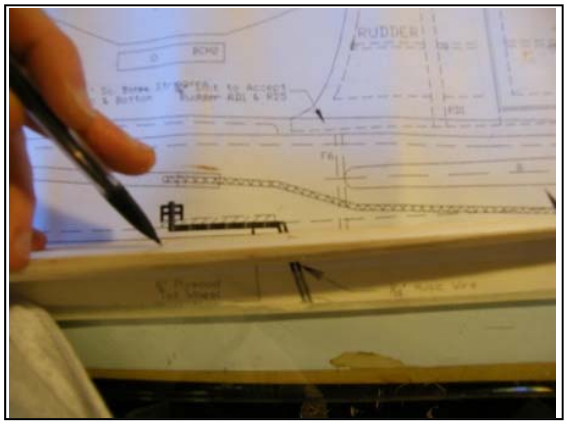
33) Sand the fuselage lightly to smooth out the rough edges from the planing—at this stage we are not finish sanding—this will come later



34) Remove the tack glue from the top and bottom blocks. Here the top blocks have been removed.

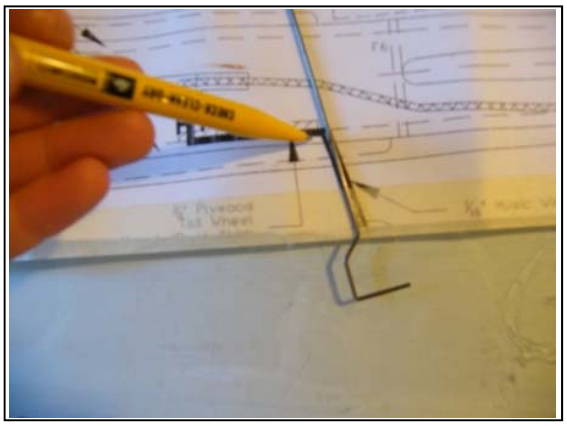
35) Use a routing tool to hollow the top block. The top block should be hollowed to approximately 1/8" . This thickness will allow further sanding to the blocks once glued permanently in place

36) Repeat for the bottom block. Do not hollow in the location of the tail wheel mount—this area will need to be stronger to hold the tail wheel gear

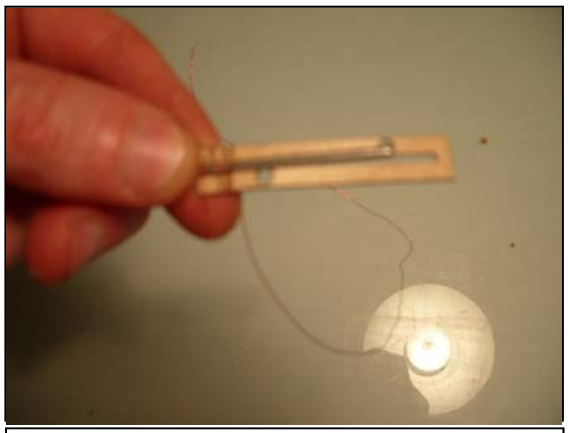


37) Mark the location of the tail wheel on the bottom block. NOTE: we have left this area solid to add additional strength to the area

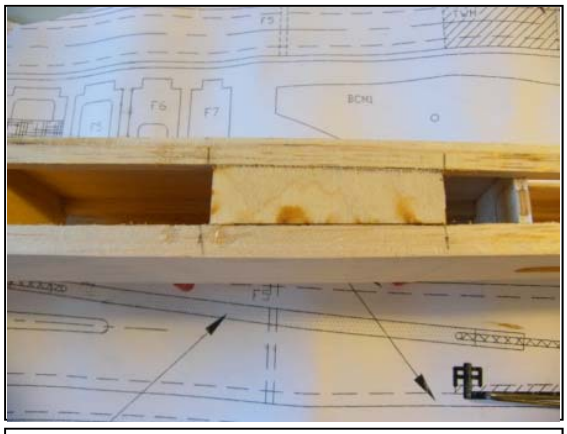
38) Locate and remove the laser cut tail wheel plywood parts and glue together.



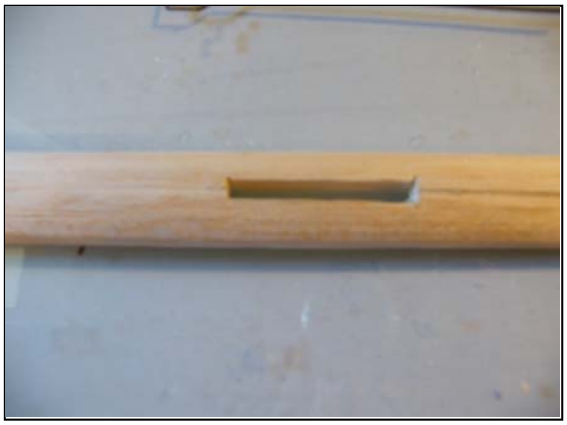
39) Locate the 1/16 music wire for the tail wheel and mark and bend per the plan



40) If you choose the mount the tail wheel solidly to the plywood, drill 1/16 holes around the wire location and “sew” the wire on with copper wire. Epoxy the entire unit to keep rigid

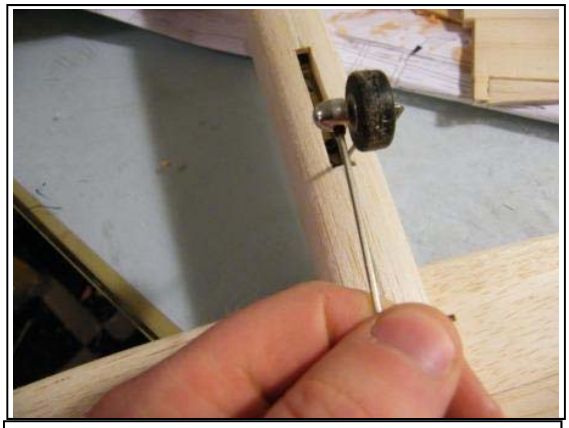


41) Glue the plywood tail wheel mount into the fuselage.

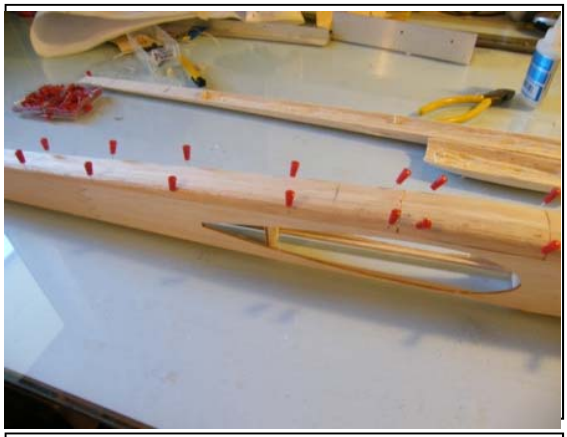


42) Cut a slot in the bottom block to allow the tail wheel wire to pass through. NOTE: It is a good idea to cut a slot that will allow the tail wheel wire to flex without touching the balsa.

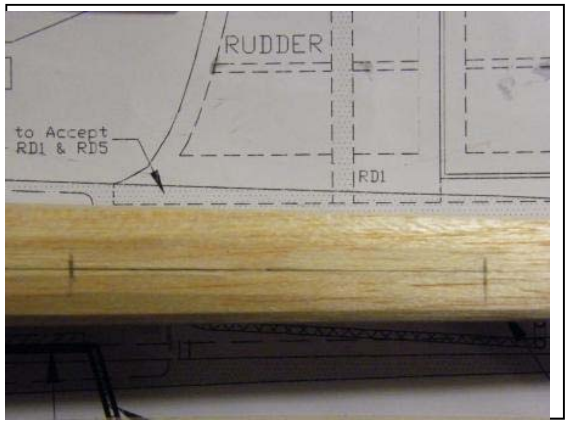
43) Install the Tail Wheel Wire. NOTE: If you installed the fixed tail wheel version—ignore this step



44) Install the Tail wheel—use a wheel collar to retain the wheel—or solder a washer onto the wire



45) Glue the top block in place, pin and leave to dry

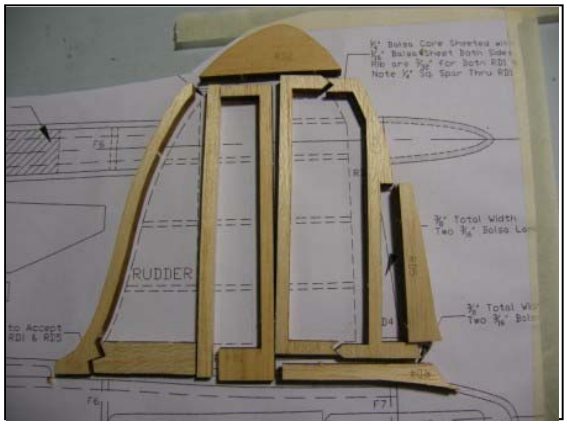


46) Mark the location of the fin on the top block

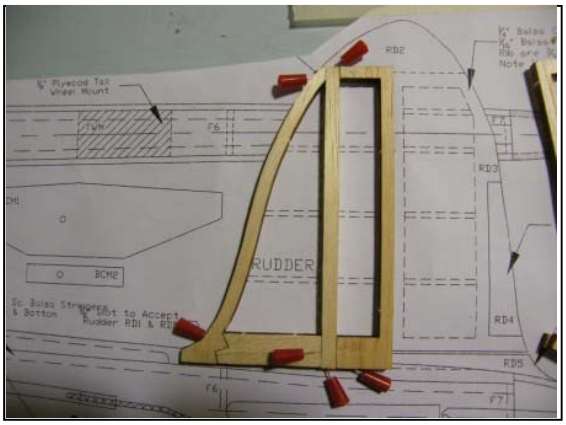
47)Remove balsa to allow the fin to sit in the correct location

48) Glue laser cut parts RD5 in place as per plan

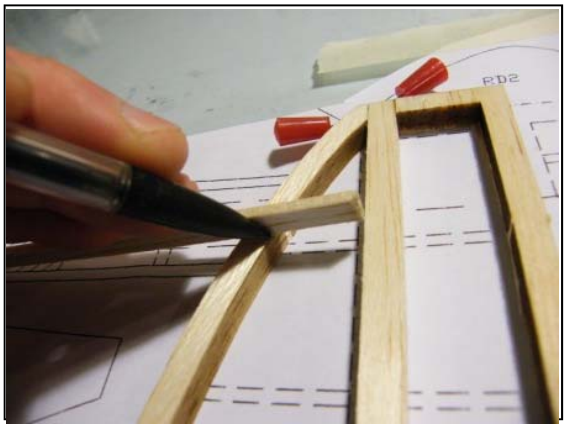
FIN/RUDDER CONSTRUCTION



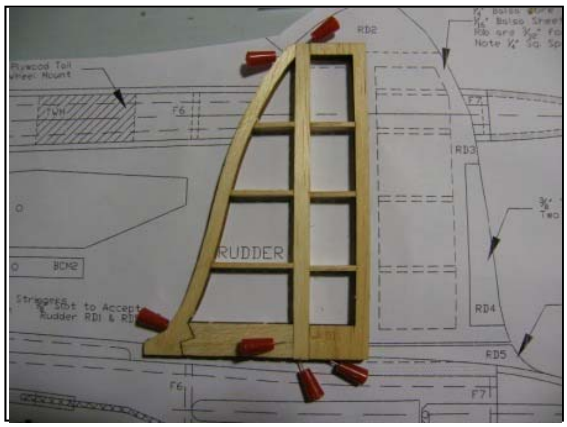
49) Locate the laser cut rudder parts—RD1-RD5 and cut tags to remove from sheet wood . Cut a length of 1/4 X 1/4 stock for the rudder centre post as shown on the plans.



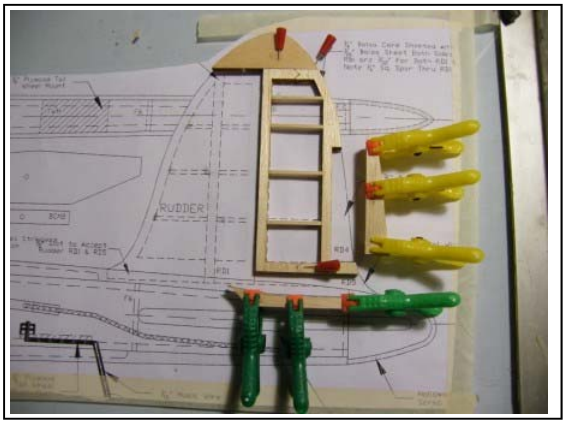
50) Glue and pin RD 1, RD2 and the 1/4 X 1/4 post together over the plans. Set aside to dry



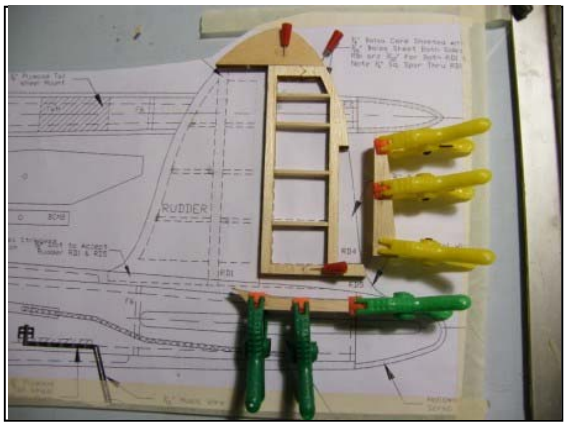
51) Locate the 3/32 X 1/4 Stock and mark the fin bracing per the plans.



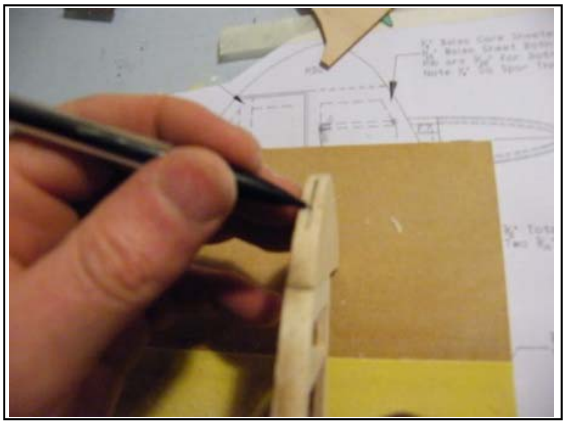
52) Glue the bracing in place and leave to dry .



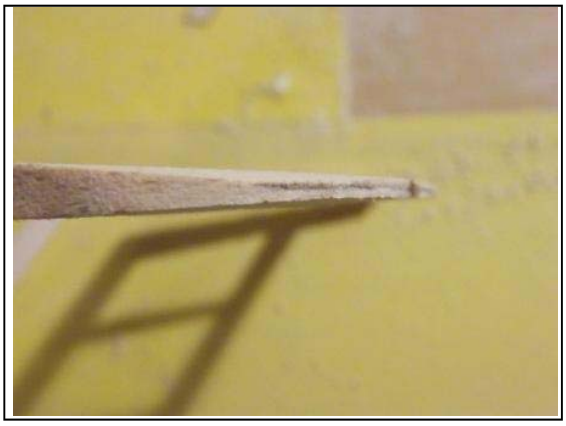
53) Glue and pin parts R2 and R3 together and set aside to dry. Also laminate together the 2no RD4 and RD5 parts to form the correct thickness (these are shown in clamps above)



54) Mark and cut the 3/32 X 1/4 bracing per and glue in place as shown on the plans

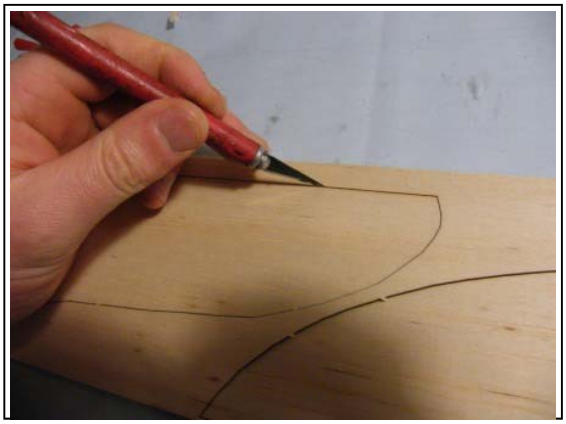


55) When dry, mark a centre line down the trailing edge of the rudder.



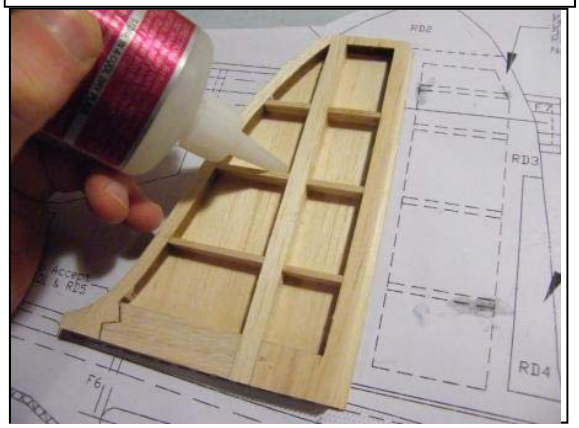
56) Sand the rudder to shape. Using the centre line as a guide, sand both sides equally to create a smooth transition

57) Sand the fin to ensure both surfaces are flat. There is no need to shape the Fin at this stage



58) Locate the 1/16 laser cut fin and rudder skins. Cut tags to remove from sheeting. NOTE: The skins have been cut for the fin and rudder to be built as one unit. We have shown and alternative method here, for more “scale” like assembly

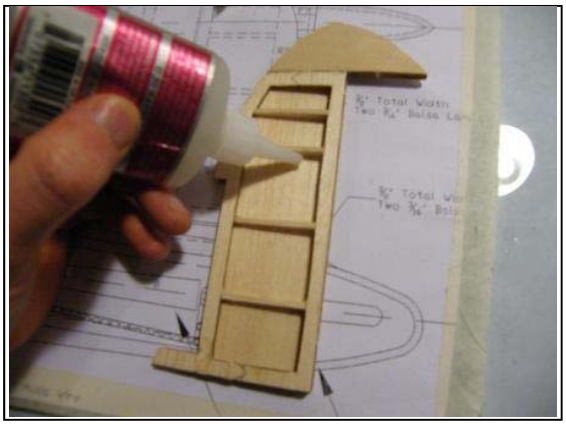
59) If you are making the fin and rudder as one unit, glue and pin the two sections together. Skin with the laser cut parts. For separate units, lay the fin over the skin, mark and cut



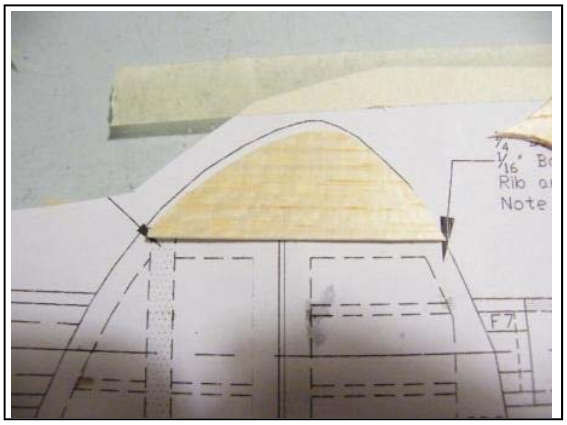
60) Glue and pin the 1/16th sheeting to the fin assembly. This can be done to both sides

FIN/RUDDER CONSTRUCTION Cont…

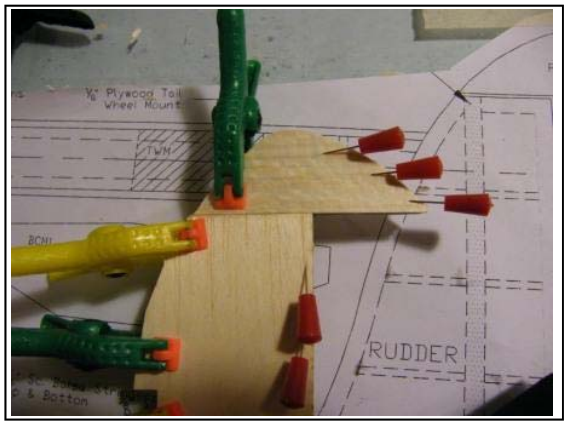
61) Mark and cut the 1/16 sheeting for the rudder in the same manner



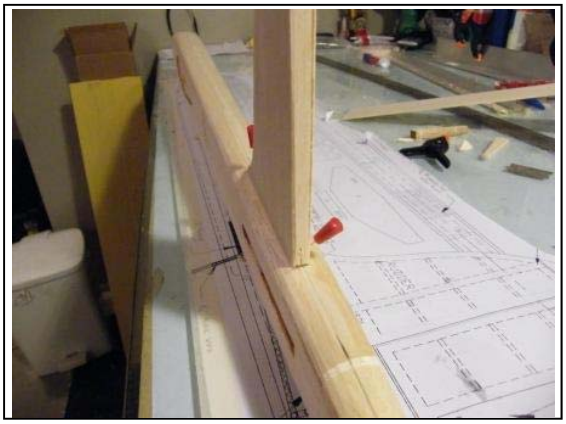
62) Glue and pin the sheeting to the rudder. Do both sides and leave to dry



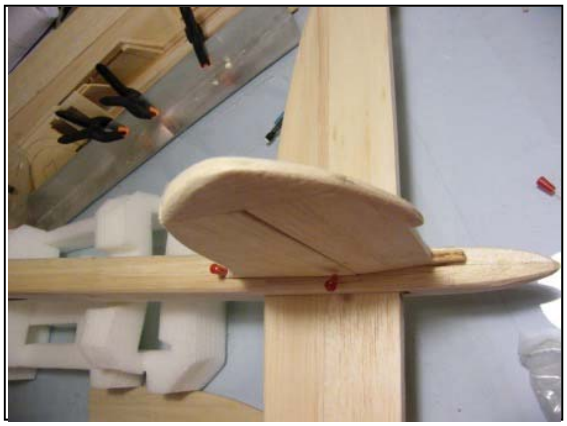
63) Using the template on the plans, cut a 1/16 sheeting for the top section of the rudder—make sure the grain runs horizontally to allow easier sanding



64) Glue the last pieces of sheeting in place, pin and let dry



65) Lightly sand the rudder to shape. Round the front of the rudder to a nice smooth curve

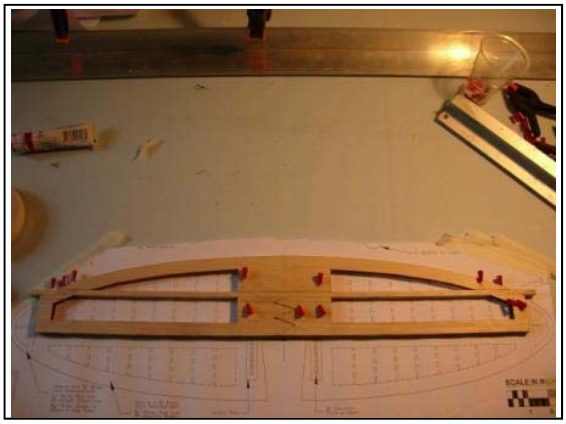


66) Sand the fin. Make all edges smooth and tidy then set aside. Sand part RD4 to shape.

STABILISER/ELEVATOR CONSTRUCTION

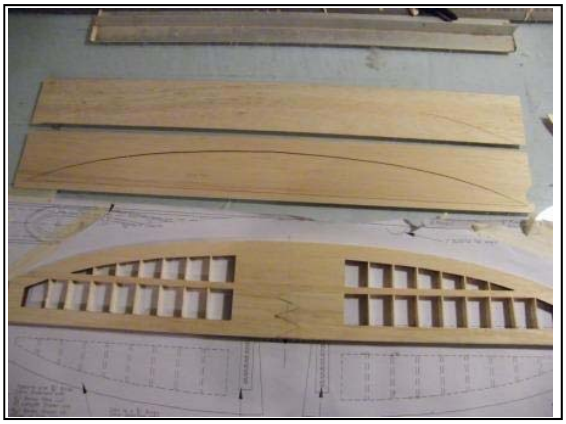
67) Locate the laser cut stabiliser and elevator parts, cut tags and remove from sheet.

68) Cut the 3/8 X 1/4 stock to length. Above are the parts required for this assembly.



69) Glue and pin the stabiliser parts together— set aside to dry. NOTE: It is a good idea to have this assembly weighted down or clamped to a flat surface to ensure it dries straight and true

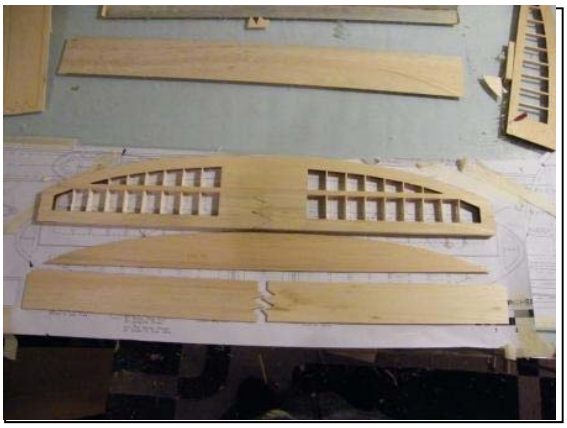
70) Locate, mark and cut the 3/32 X 1/4 bracing for the stabiliser. Glue and pin in place in locations shown on the plans



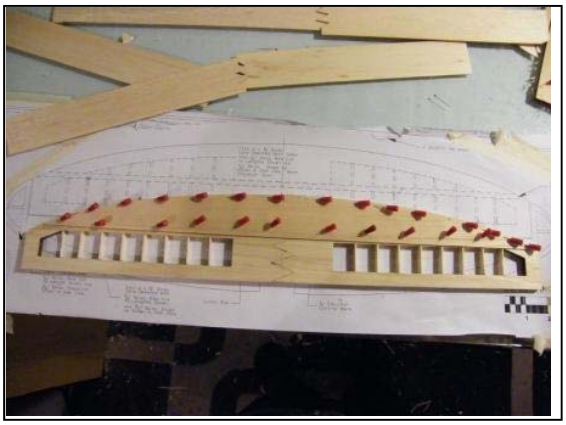
71) The elevator assembly should now look as per above

72) Refer to the side view of the plans and sand the stabiliser to shape. Take your time here to make sure the angles you sand are correct and match the plan

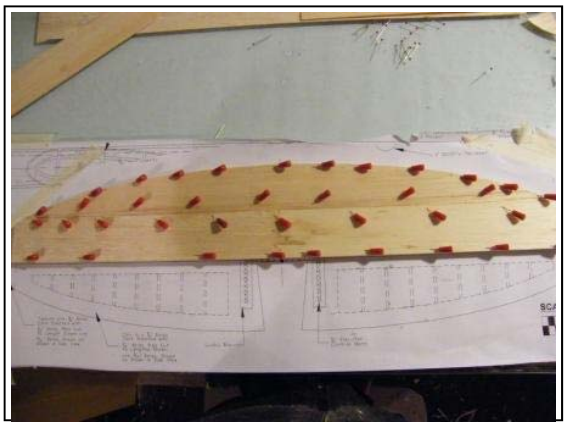
STABILISER/ELEVATOR CONSTRUCTION Cont...



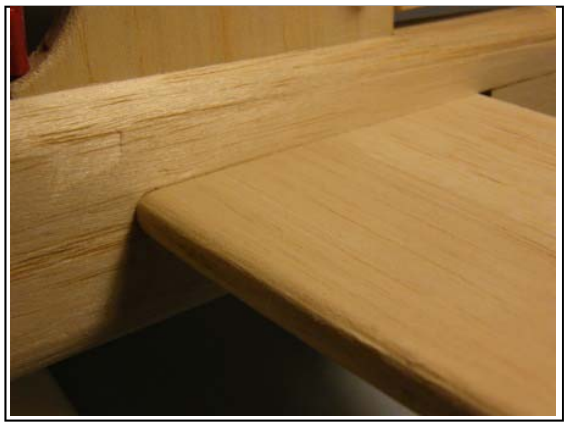
73) Locate the 1/16 laser cut skins for the stabiliser, there are 3 parts per side (as shown above). Cut tags and remove from sheeting



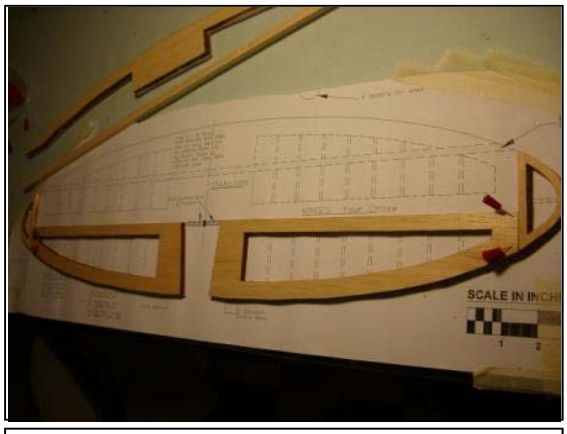
74) Glue and pin the 1/16 sheeting to the front of the stabiliser assembly.



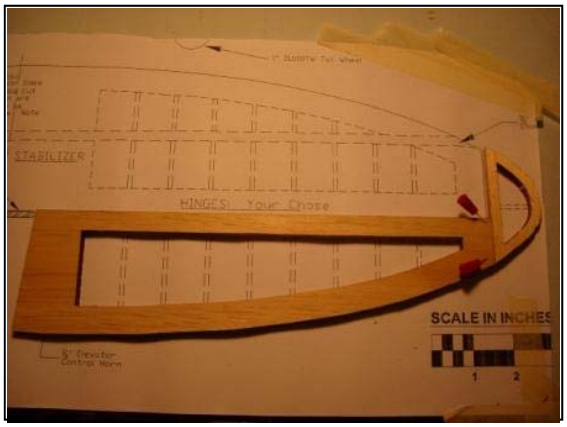
75) Glue and pin the 1/16 rear sheeting to the stabiliser - make sure you have a good glue joint between sheets where they meet. Repeat on the other side, Leave to dry.



76) Once dry, sand the stabiliser to final shape ready for installation later. NOTE: Careful sanding will create near perfect fits between parts as can be seen above.



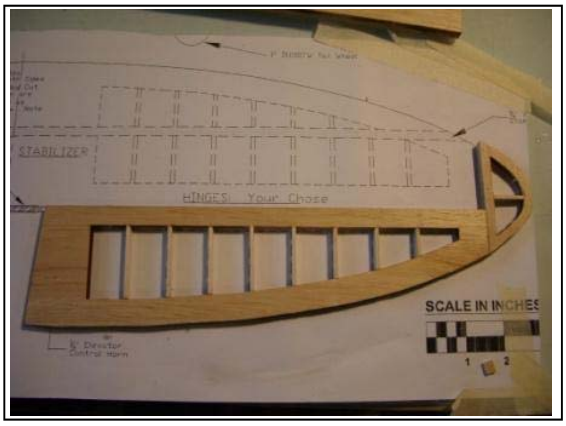
77) Locate the laser cut elevator parts and cut tags to remove from sheet.



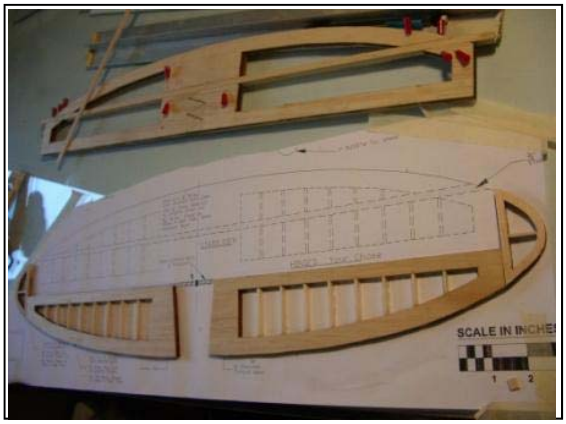
78) Glue and pin the elevator parts together - make sure these are flat also. Set aside to dry.

STABILISER/ELEVATOR CONSTRUCTION Cont…

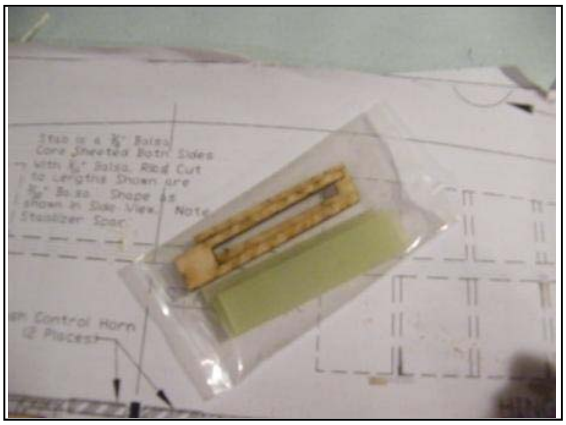
79) Mark and cut the 3/32 X 1/4 bracing to the elevators



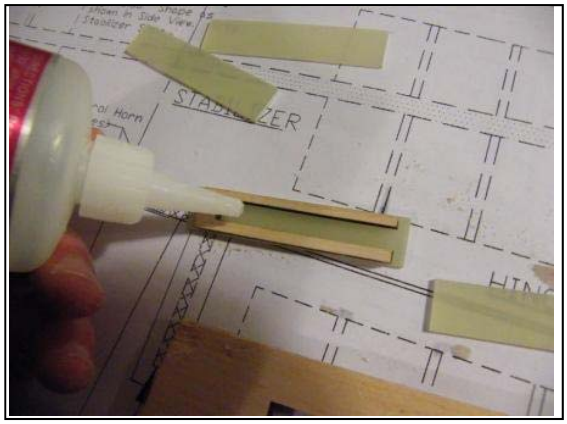
80) Glue bracing in positions as shown on plans—set aside to dry



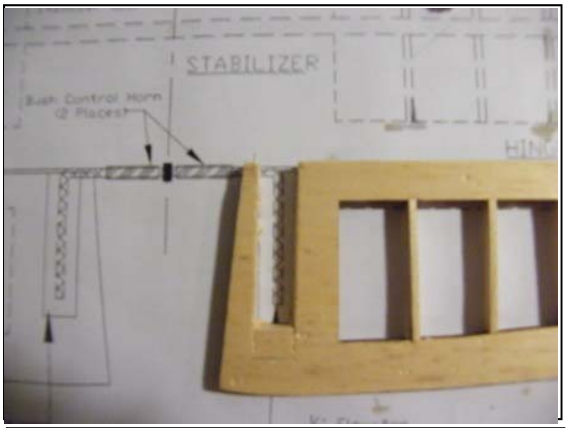
81) Repeat on the other elevator



82) Locate the lucky box packets from the hard-ware package

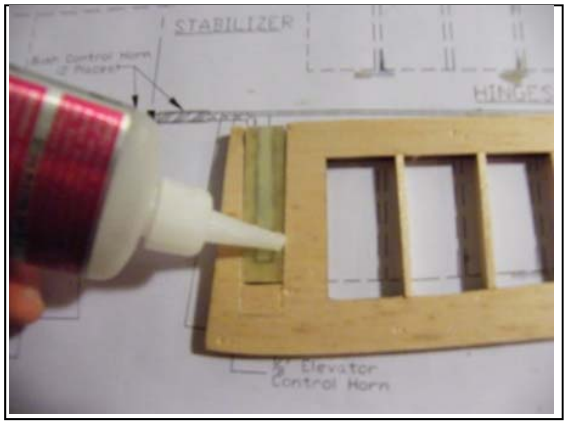


83) Glue 2 lucky boxes together for the elevators



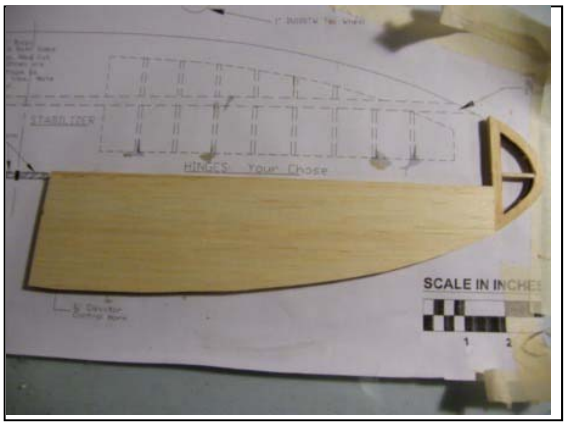
84) Mark the locations of the lucky boxes on the elevators as shown on the plans and remove balsa

STABILISER/ELEVATOR CONSTRUCTION Cont...

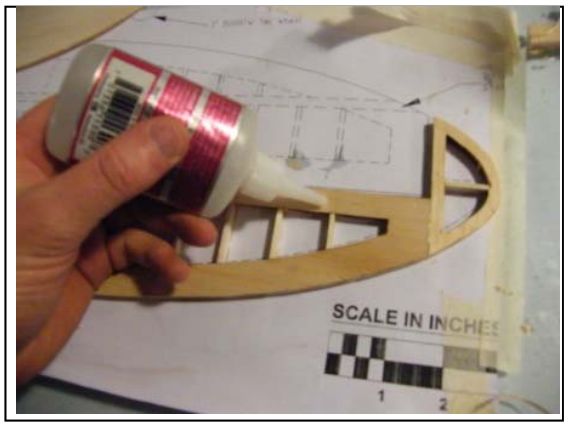


85) Glue the Lucky boxes into the elevator s where the balsa was removed in the previous step.

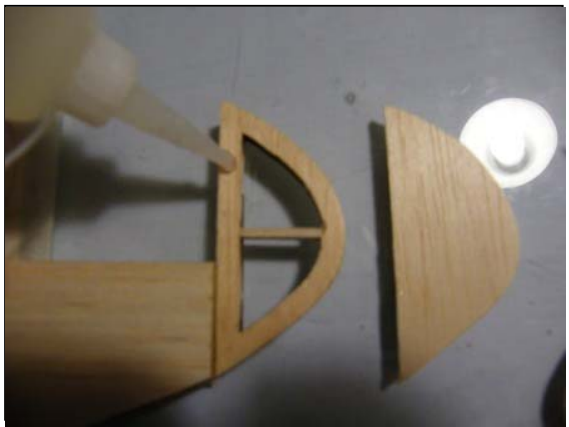
86) Lightly sand the elevators to ensure all surfaces are flat and true ready to be skinned.



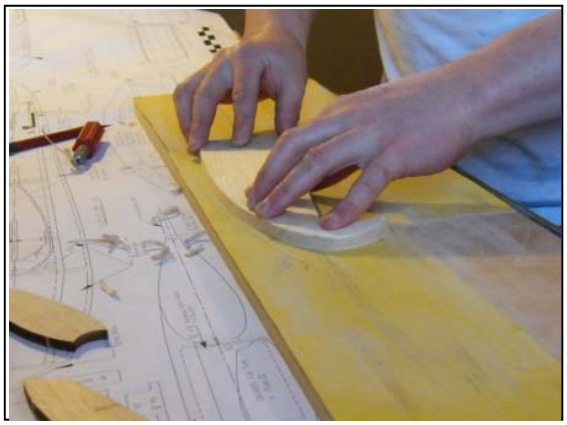
87) Locate the laser cut 1/16 elevator skins, cut tags and remove from sheeting.



88) Glue and pin sheeting to the elevators—set aside to dry



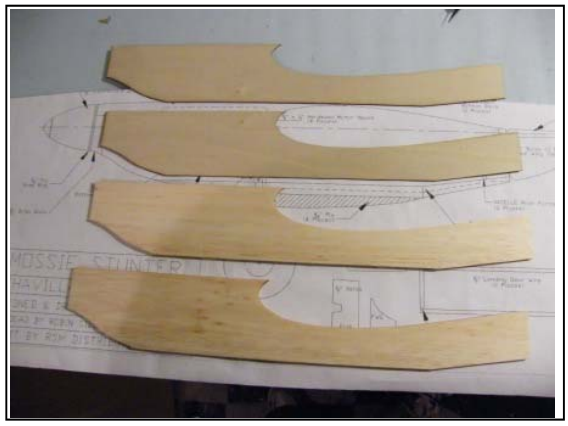
89) As there is no laser cut sheeting for the tips of the elevator, cut from 1/16 sheet and install. NOTE: The grain should run parallel with the tip to allow smooth sanding



90) Sand the elevators to shape as per the side view of the plans

NACELLE CONSTRUCTION

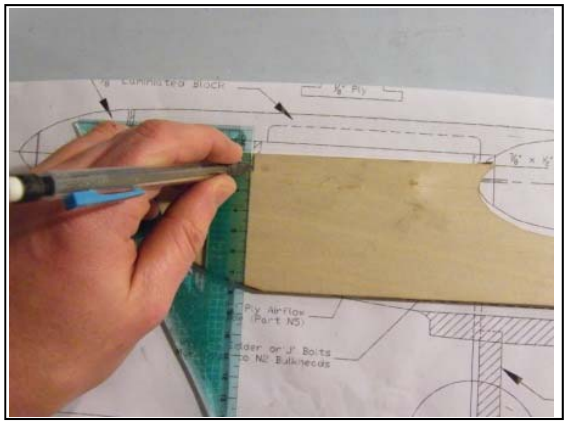
91) Locate the necessary parts for the nacelle construction, this includes the balsa sides, plywood parts and engine bearers



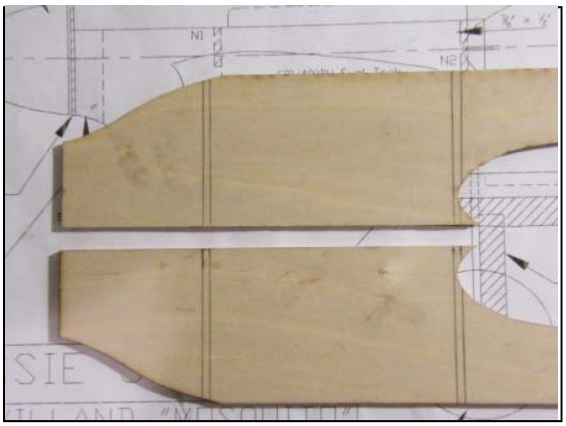
92) Cut the tags from the 1/8 balsa sides and also the 1/64 plywood doublers.

93) Epoxy the plywood doublers to the balsa sides, weight down and leave to dry

94) IMPORTANT: Make sure you glue the doublers to opposite sides of the balsa sides to make sure you have 2 left, and 2 right sides.

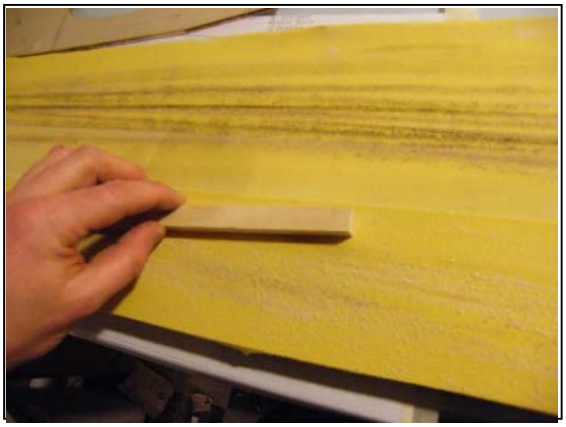


95) Take one set of sides and mark the location of the plywood formers onto the plywood doubler

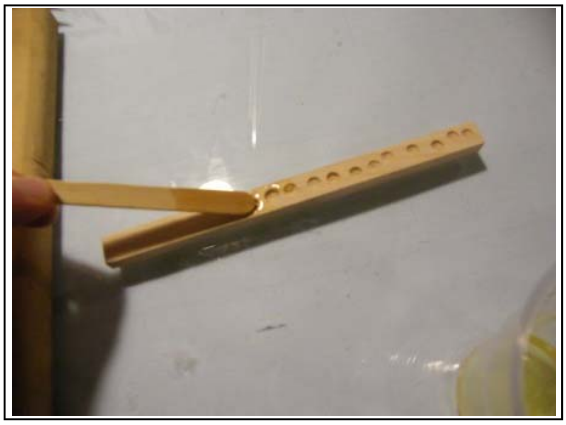


96) Transfer the marks to the opposite side as well to ensure they line up

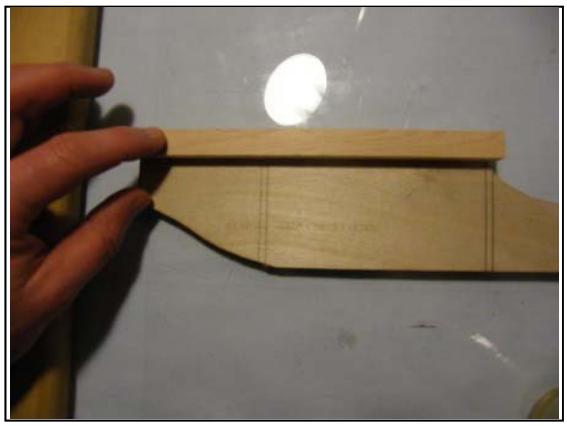
97) Take the 3/8 X 1/2 engine bearers and drill 1/8 holes partially through the bearers to act as a key for epoxy. DO NOT drill these holes forward of N1 where the engine will be mounted



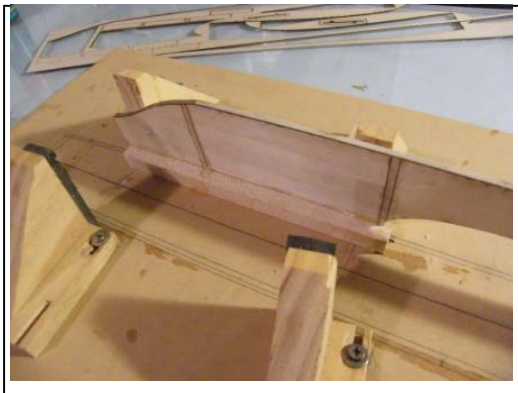
98) Sand the side of the bearers that will be against the ply with 60 grit paper to create a roughened surface for gluing



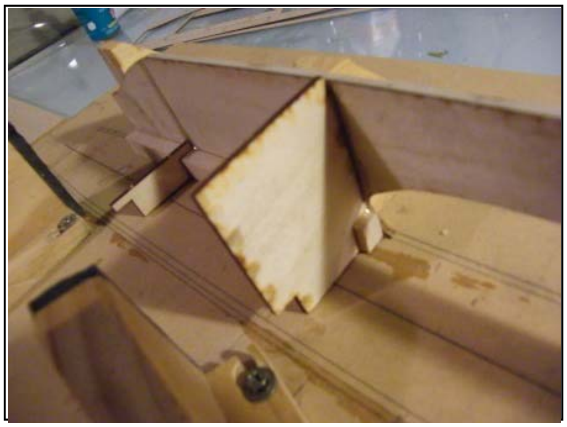
99) Apply epoxy to the bearers.



100) Attach the bearer to the nacelle side, make sure it is lined up with the top of the nacelle side

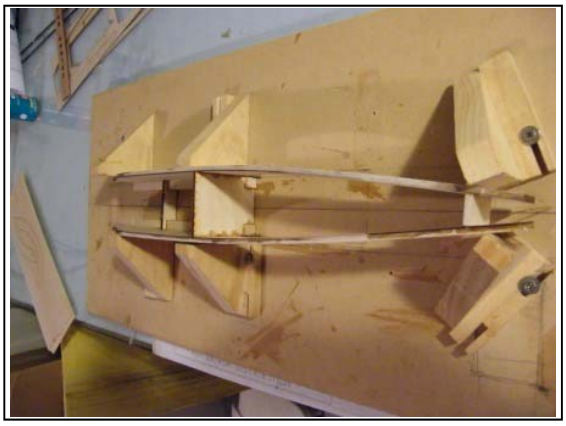


101) Put the nacelle side with the bearer attached into the fuselage jig

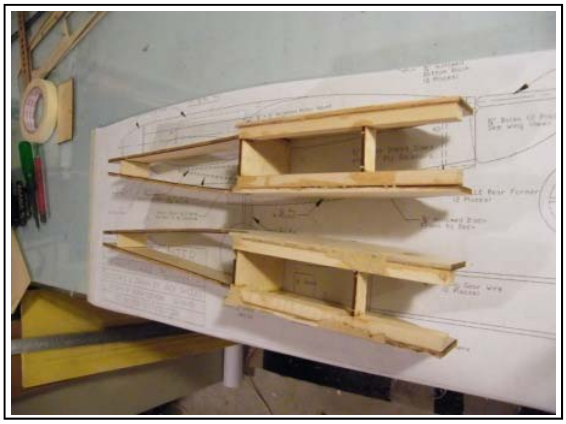


102) Install ply former N1 & N2. Epoxy to the plywood doubler

103) Epoxy the other nacelle side with bearer in place, make sure the formers are square and straight

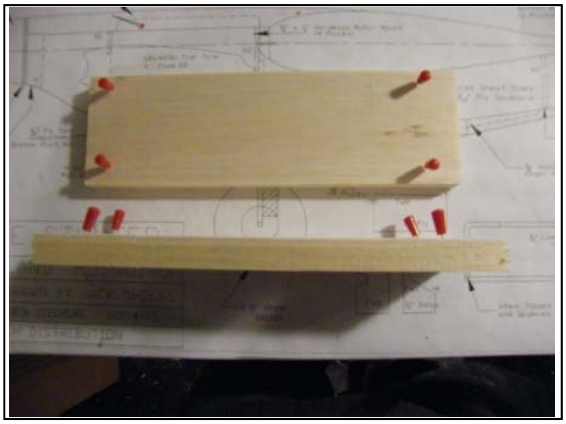


104) Install balsa former N3 and clamp everything together. Repeat the same steps to construct the other nacelle

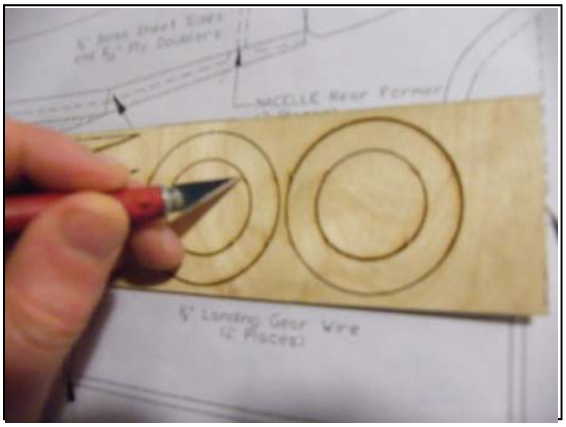


105) The nacelles dry and out of the jig

106) Sand the tops of both nacelles so they are square and flat

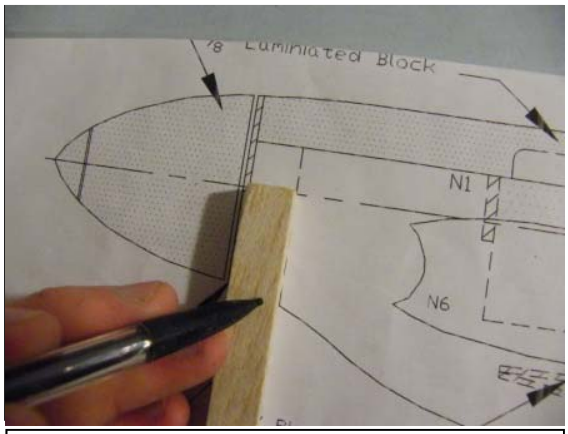


107) Laminate together 1/2 and 1/8 sheets together to form the 5/8 top blocks for the nacelles—cut to length per plans

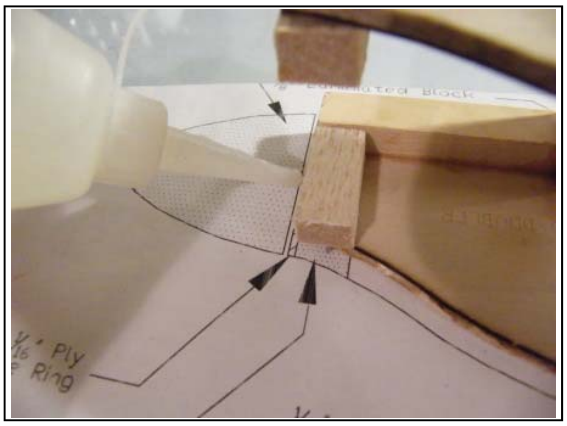


108) Remove the laser cut 1/8 plywood nose rings

109) Put the nose ring on the engine you intend to use. Also install the spinner you intend to use to the motor.

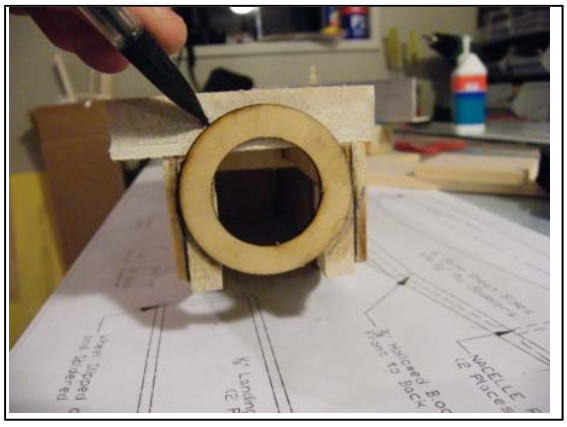


110) Mark and cut the 1/2 square nose block filler

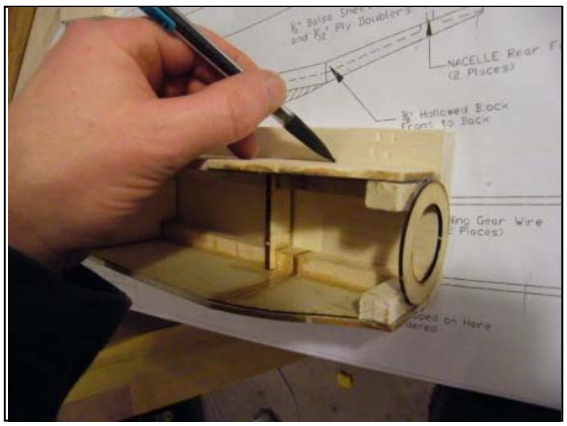


111) Glue the nose filler block in place

112) Place the motor onto the motor mounts and set the gap between the nose ring and spinner back plate to be 1/16. Tack glue the nose ring to the filler blocks in the correct location

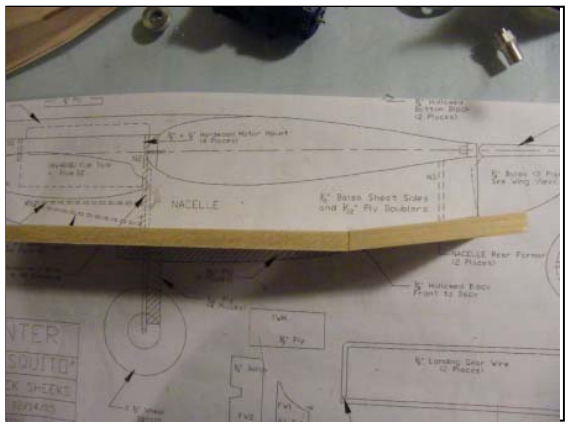


113) Mark the position of the nose ring on the top block

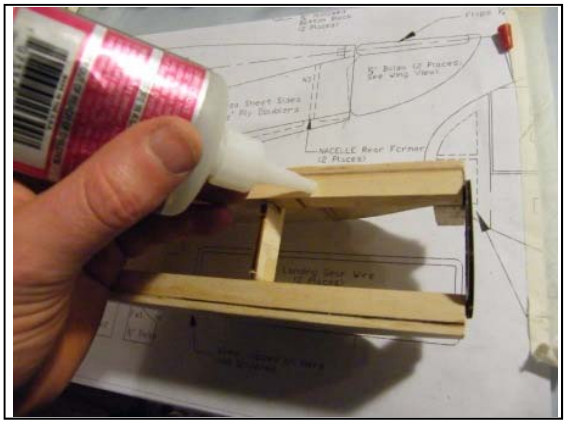


114) Mark the top block width

115) Mark the bottom block width on the 3/8 bottom block stock



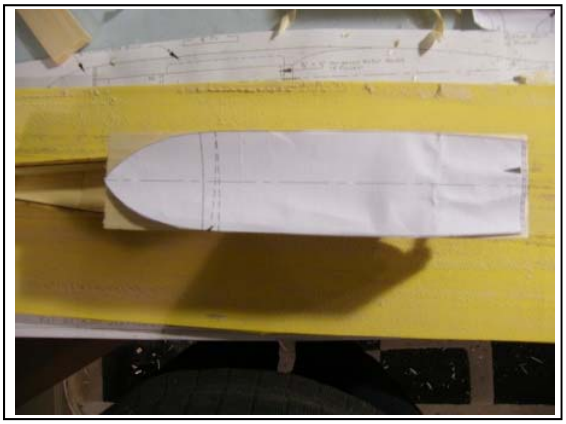
116) Cut the bottom block to size and sand the correct angle at the joint of the two blocks—glue together.



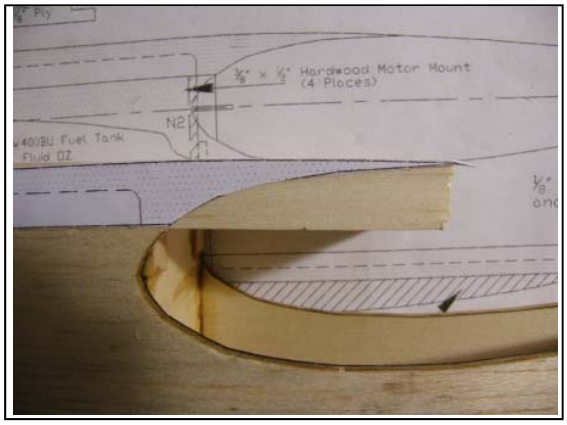
117) Tack glue the top and bottom blocks to the nacelles

118) Sand the top and bottom blocks so they are square and true with the sides of the nacelles

119) Mark a centre line down the middle of the top block on both nacelles



120) Using the template for the top block, mark and cut the top block to shape



121) Mark and cut the cut out in the top block for the wing position

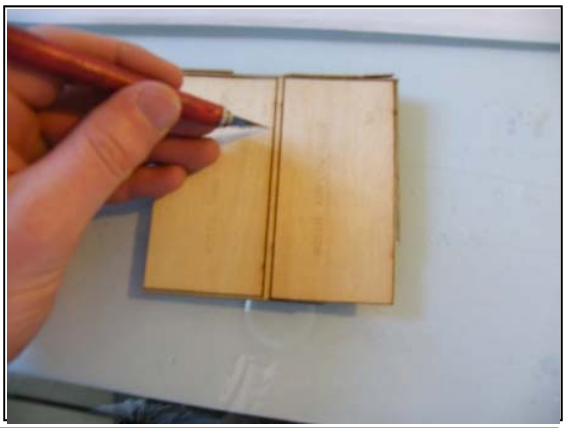
122) Nacelles ready for shaping

123) Shape the nacelle top blocks to shape using the centre line as a guide to create uniform curves. NOTE: leave the centre line visible—we will use this later

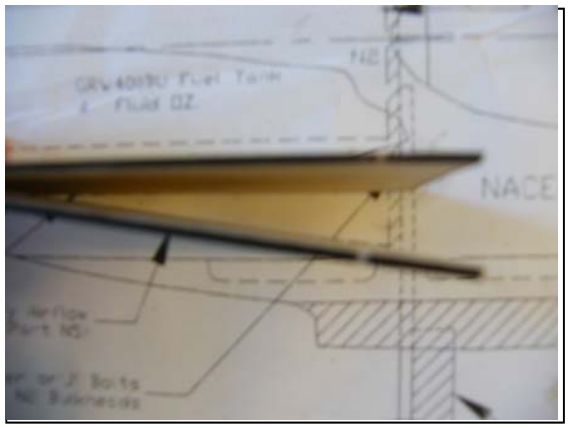
124) Shape the bottom blocks on both nacelles

125) The nacelles shaped and sanded.

126) Mark the location of N2 on the bottom block for the cut out for the landing gear wire. Remove the top and bottom blocks



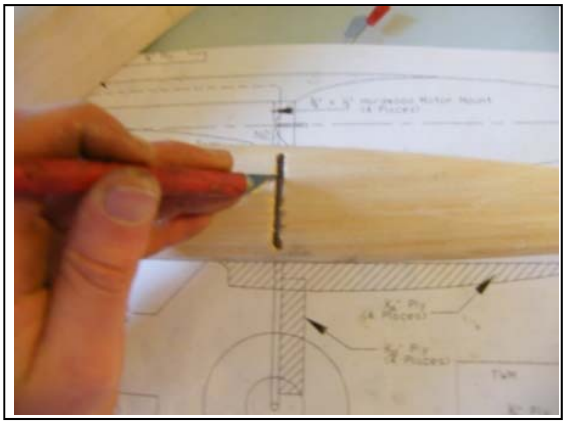
127) Locate and remove the 1/8 laser cut ply tank floor and airflow guide



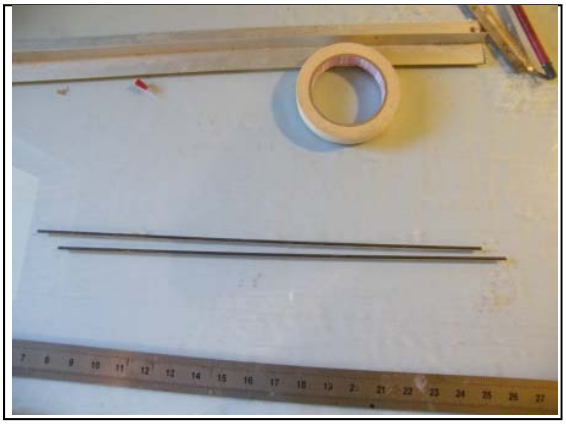
128) Glue the tank floor and airflow guide together at the angle shown on the plans

129) Epoxy the tank floor and airflow guide into the nacelle in the location shown on the plan

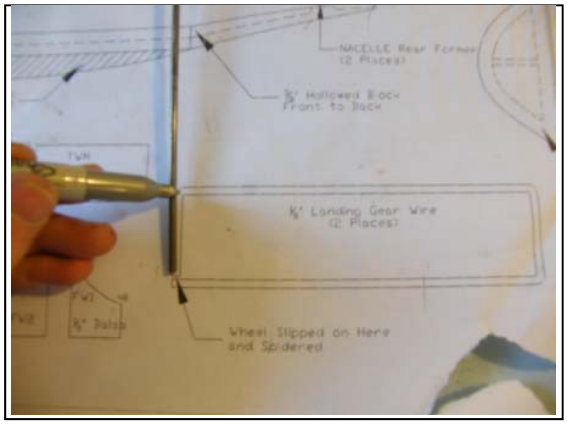
130) Coat the entire inside of the nacelle with epoxy to fuel proof this area



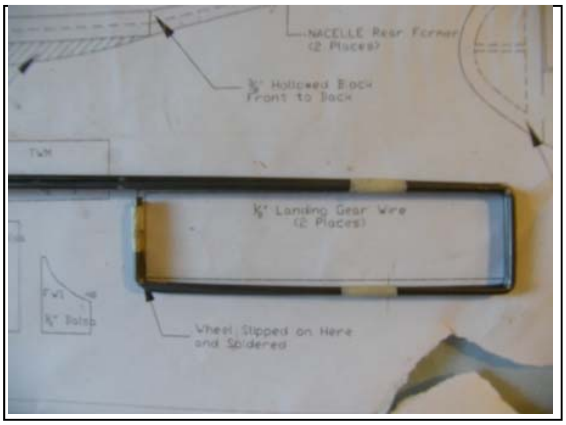
131) Cut a slot in the bottom block at the location marked earlier in step 126.



132) Cut the 1/8 music wire in half for the landing gear

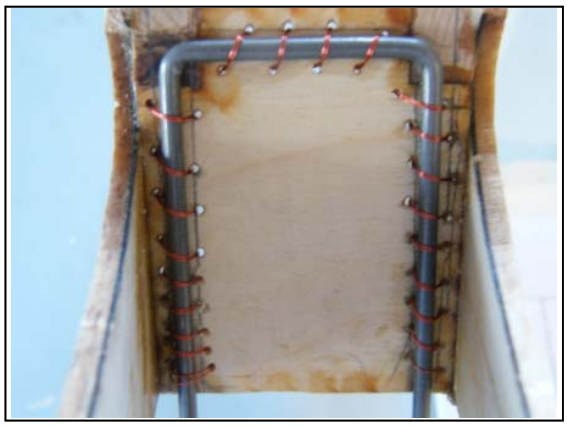


133) Using the template on the plans, mark and bend the landing gear wires to shape

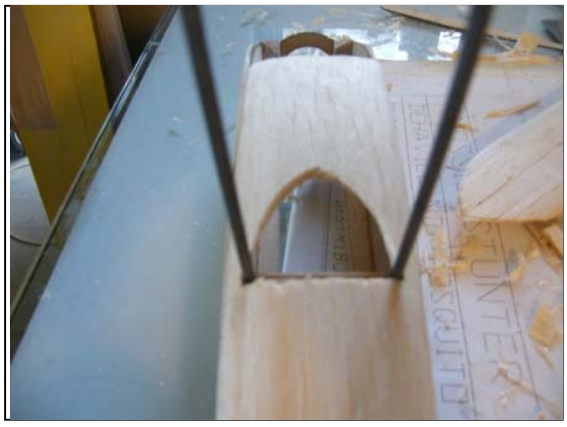


134) Here the landing gear wires are taped and bent together to ensure they are both the same.

135) Mark the location of the landing gear wire on the rear of N2 and drill 1/32 holes around the mark you made to allow copper wire to pass through



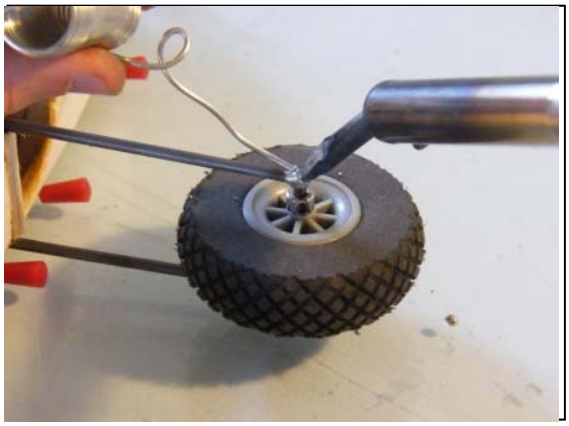
136) Use copper wire to "sew" the landing gear wire to the bulkhead. Once completed, epoxy in place. NOTE: You can use U-bolts to hold the wire in place if preferred



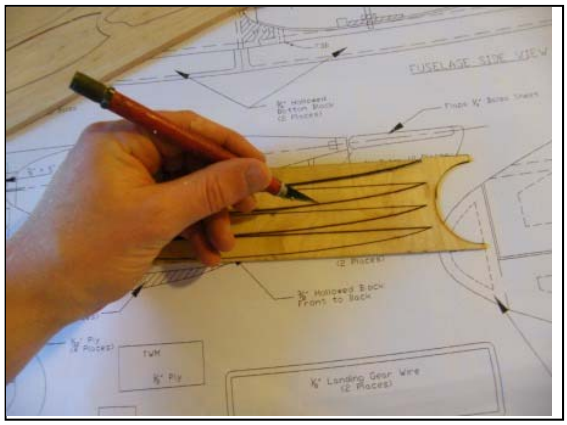
137) Glue the bottom block in place NOTE: We-have cut a hole in front of N2 for airflow—this can be of any shape.

138) **EXTRA!!!** Not shown on the plans, but beneficial is to install 1/2 balsa **cross** grain between the bearers. This helps with vibration dampening

139) Prep the landing gear wire and solder washer to hold wheel in correct location. Solder washers on both sides of the wheel.

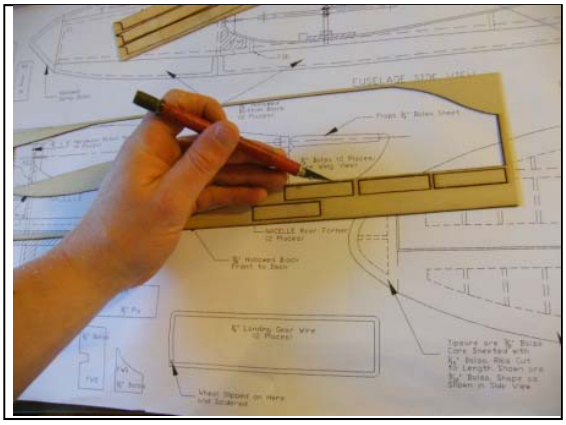


140) Solder the landing gear wire together.



141) Locate and remove the laser cut 1/16 ply landing gear doors

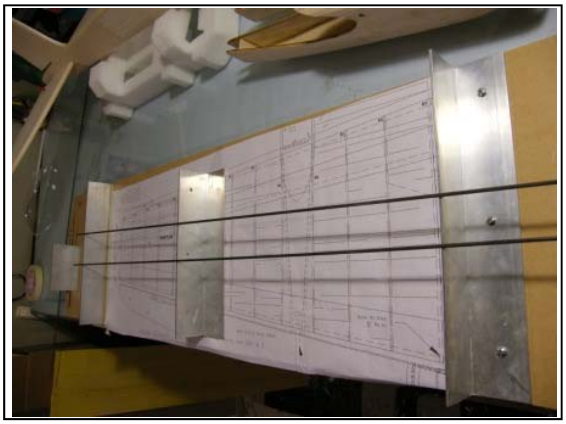
142) Glue the landing gear doors in place as per the plan



143) Locate and remove the laser cut 1/32 landing gear fairings

144) Epoxy the landing gear fairings to the landing gear wire. For additional strength a small piece of fibreglass tape can be epoxied around the wire and over the ply.

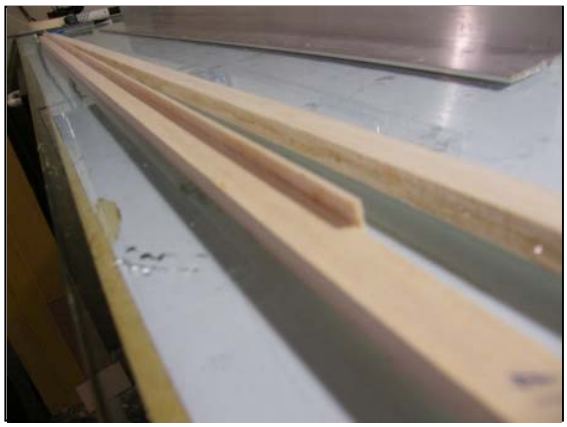
WING CONSTRUCTION



145) To build the wing, we are using a wire rod wing jig that is designed to use the laser cut holes in the ribs for alignment. If you have a different preferred method to build wings, please use it.

146) Strip some 1/16 balsa to be 5/8" wide for the middle section of the leading edge

147) Locate the 1/2 X 3/8 leading edge stock and glue the 1/16 strip to the 1/2 X 3/8 stock per the plan

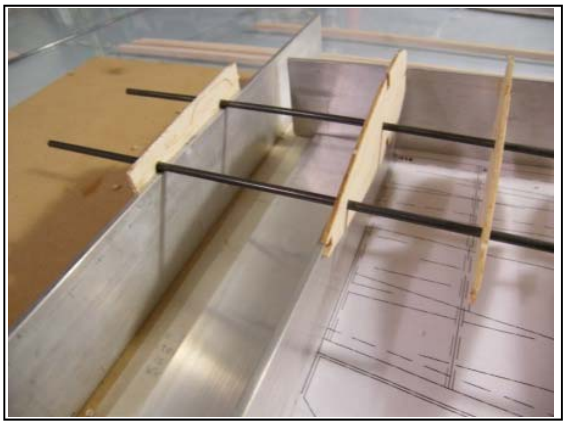


148) Glue the other 1/2 X 3/8 stock to the other side to create the full leading edge. This should look like a T.

149) Pin together to keep straight and set aside to dry. Repeat the process to form the other leading edge

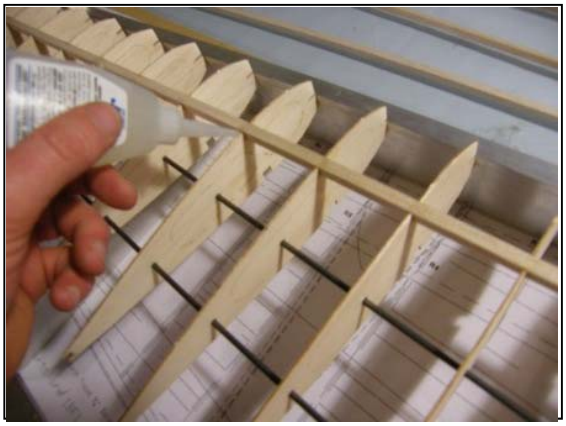
150) Locate and remove the 1/16 balsa wing ribs numbered R1-R14. Make sure you have two equal sets. NOTE: the laser cutting of some parts means that there are additional R10 & R12 ribs. These can be discarded

151) Slide the wing ribs in order onto the wing jig and align with the rib locations show on the plans

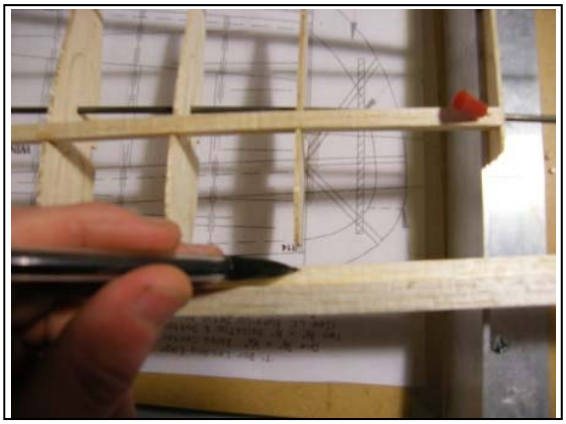


152) Use a triangle or similar the make sure the ribs are in line with the plan location and square.

153) Locate and install the 1/4sq spar . Start at the wing tip R14 and lay down to R1.



154) Glue the spar in place to all ribs.

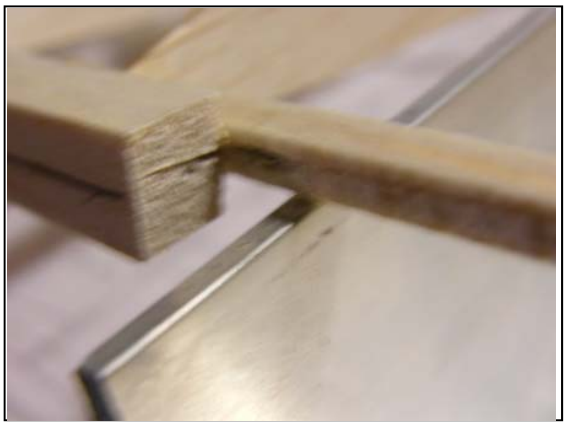


155) Take the leading edge that you assembled previously and mark and cut to length

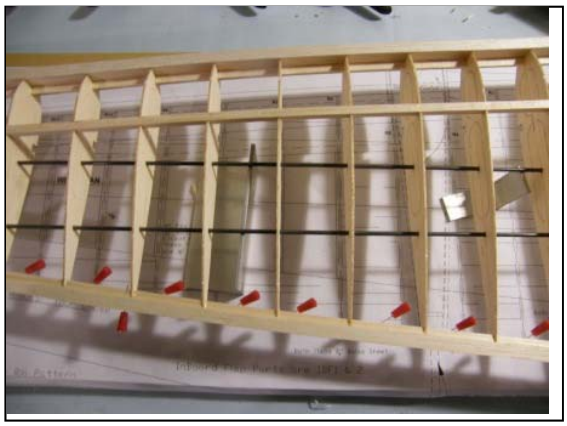
156) Make sure the 1/16 “tongue” sits in the rib slots and that the leading edge ins square and touching the ribs in all locaations

157) Glue the leading edge to the ribs.

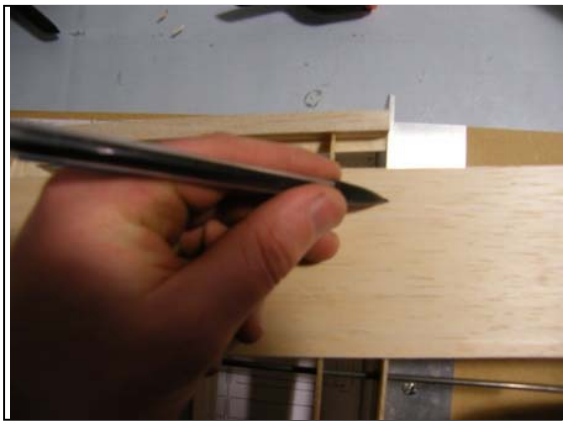
158) Locate the 3/16 sq trailing edge support and glue in place.



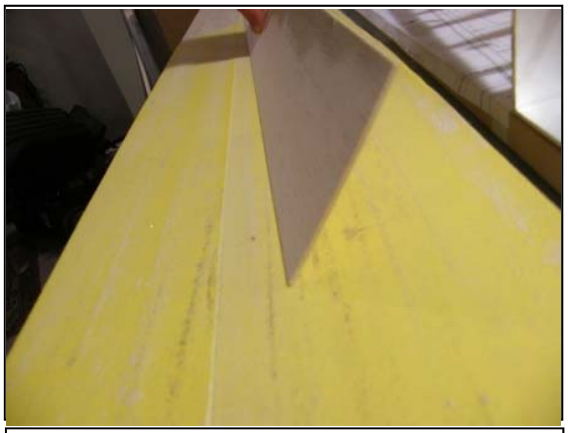
159) Locate and install the 1/4 X 3/8 trailing edge . Make sure this is centred and has 1/16 protruding above AND below the level of the ribs



160) Glue and pins the trailing edge in place and leave t dry.

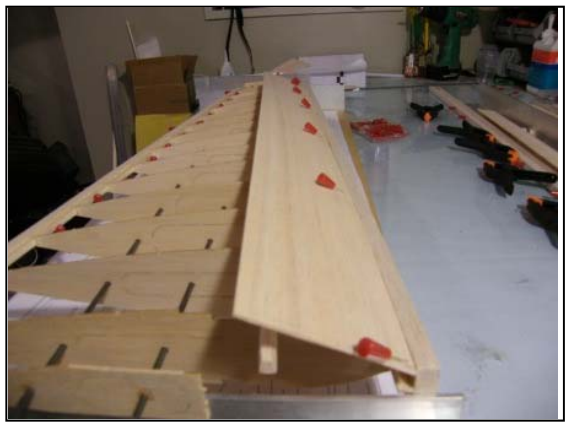


161) Locate the 1/16 X 3 x 36 leading edge sheeting. Mark and cut to length

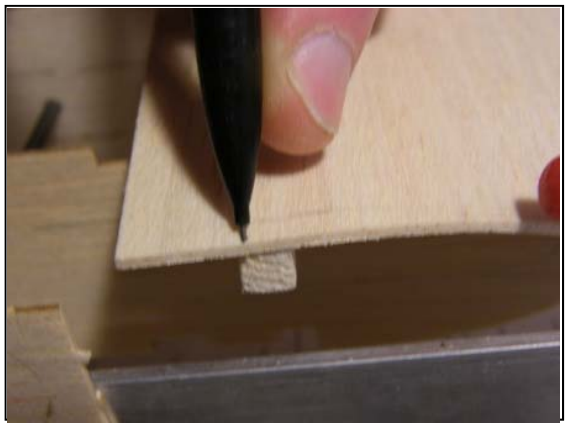


162) Sand on edge to a bevel that will allow full contact with the leading edge (see following photo) This will create a much stronger bond

163) Here you can see the bevelled front sheeting fitting tightly against the leading edge.

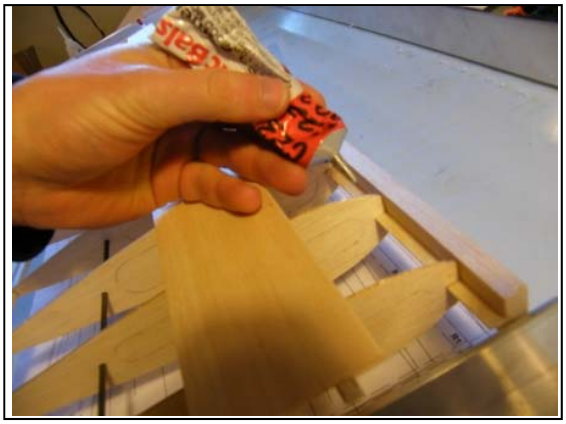


164) Pin the sheeting to the leading edge (do not glue at this stage)



165) Mark the location of the1/4sq spar at on both ends of the sheeting

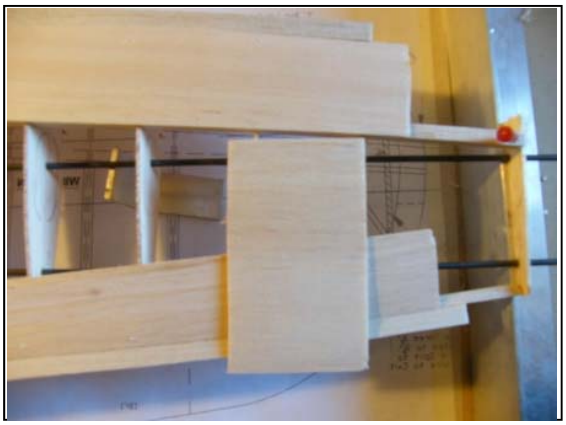
166) Cut the sheeting to the correct shape.



167) Glue the sheeting to the leading edge, ribs and spar

168) Pin the sheeting in place and leave to dry.

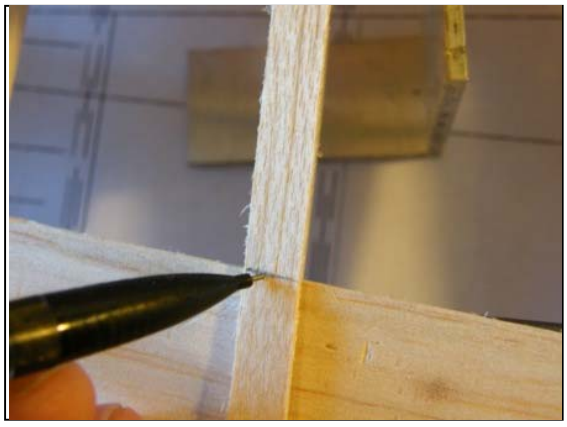
169) Locate the 1/16 X 1 1/2 X 36 trailing edge sheeting , Sand one edge the same as the leading edge sheeting and glue in place



170) Find an offcut of the 1/16 sheeting and use this as the tip sheeting. Mark and cut to shape

171) Glue the tip sheeting in place

172) Use a pencil to lightly mark the centre of each rib on the leading and trailing edge sheeting to allow the cap strips to be installed in the correct location .

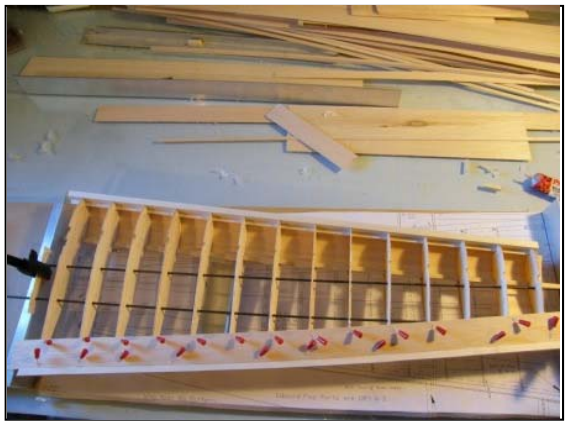


173) Locate the 1/16 X 1/4 cap strip material and mark and cut cap strips to neatly fit between the leading and trailing edge sheeting

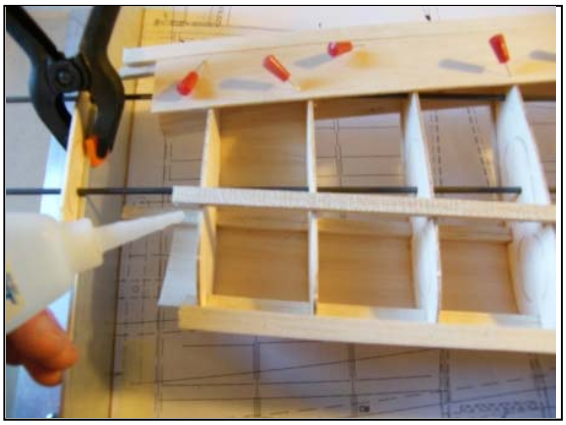
174) Using the mark on the sheeting as a guide, centre the cap strips and glue in place

175) Pin the cap strips in place and leave to dry. NOTE: Cap strips are only on ribs R12—R6. The remainder are covered by the tip sheeting and the centre sheeting

176) When dry, flip the wing over in the jig.

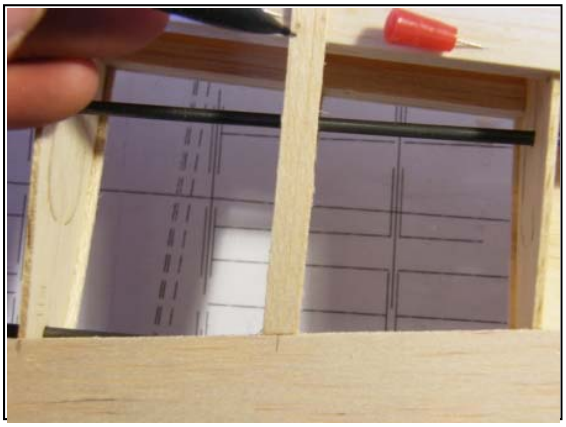


177) Install the trailing edge sheeting



178) Install the 1/4sq spar

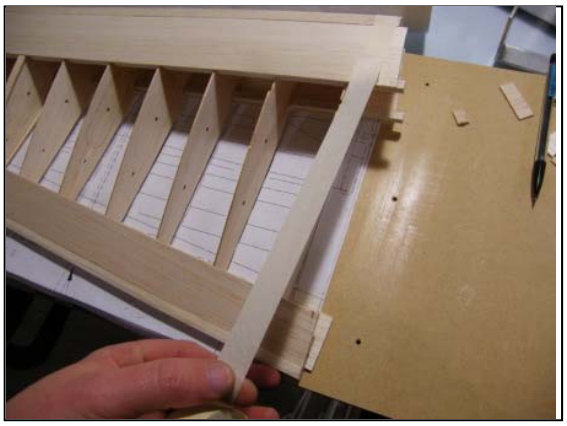
179) Install the leading edge sheeting



180) Install the tip sheeting and cap strips.

181) Once dry,. Remove the wing panel from the jig . Repeat the steps to construct the other wing panel

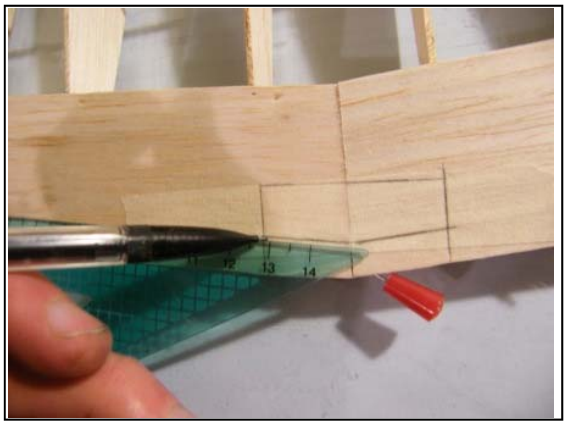
182) Here we have the two wing panels ready to be joined.



183) Using the plans as a guide, mark the centre line on both wind panels and sand to create a flat uniform joint/ NOTE: We used masking tape here as guide for sanding to keep everything straight

184) Take the wing jig rods and install halfway into each wing panel.

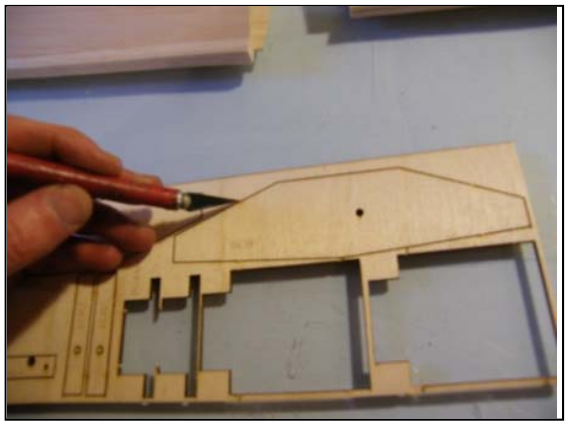
185) Slide the two panels together. The wing jig rods should make the panels align perfectly. Pin the wings together.



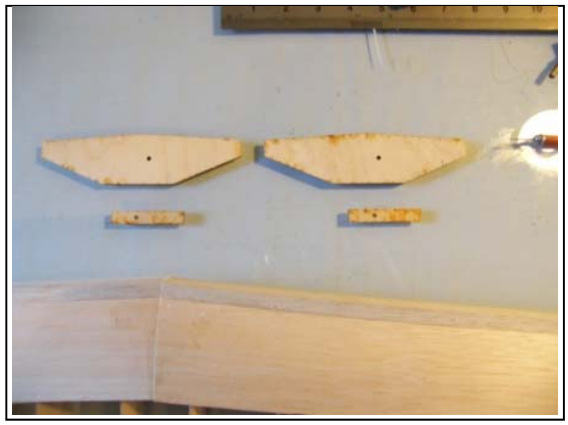
186) Apply masking tape over the joint of the wing at the trailing edge. Mark on the tape the shape of the trailing edge to make the ply stiffeners

187) Peel the tape off and stick to scrap ply. Cut two joiners to shape

188) Glue the plywood joiners to ONE side of the wing, top and bottom. Repeat this for the leading edge joiner also. Glue the wing halves together . Pin and leave to dry



189) Locate and remove the laser cut bellcrank mounts BC1 & BC2



190) Above are the parts for mounting the bell-crank

191) Glue BC1 in place to the BOTTOM of the wing

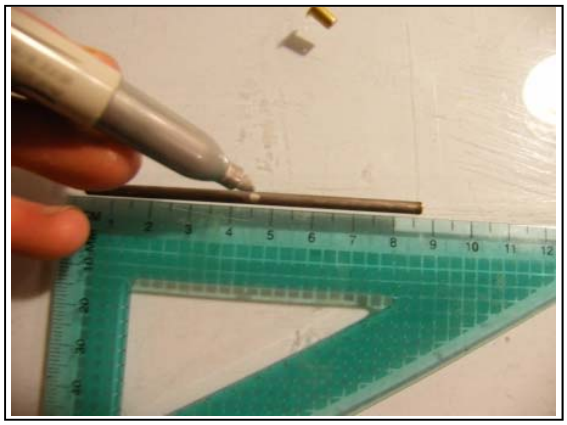
192) Glue BC2 in place over BC1 on the bottom of the wings. NOTE: The wire is used to align the holes perfectly while the glue dries

193) Locate the 1/16 X 4 X 36 centre sheeting and cut to length

194) Cut he sheet to fit tightly against the trailing edge sheeting and glue in place

195) Cut the sheeting to fit tightly against the leading edge sheeting, join the sheeting together. Glue in place and leave to dry.

196) Locate the bellcrank assembly package and remove contents.



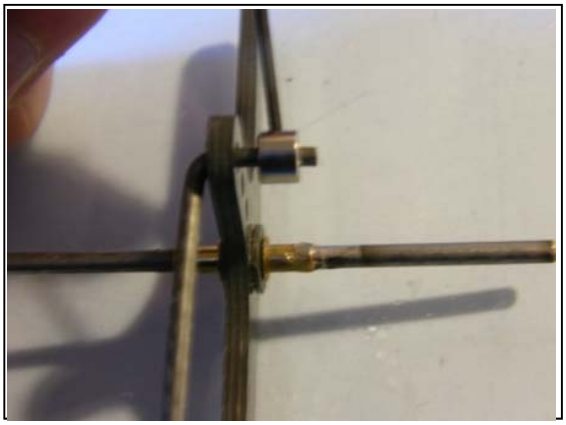
197) Sand the 1/8 wire centre post. and mark the centre.

198) Slide the brass bellcrank retainer in to place on the wire

199) Solder the brass retainer in place. Repeat on the other side to create the complete assembly

200) Above is the complete bellcrank assembly

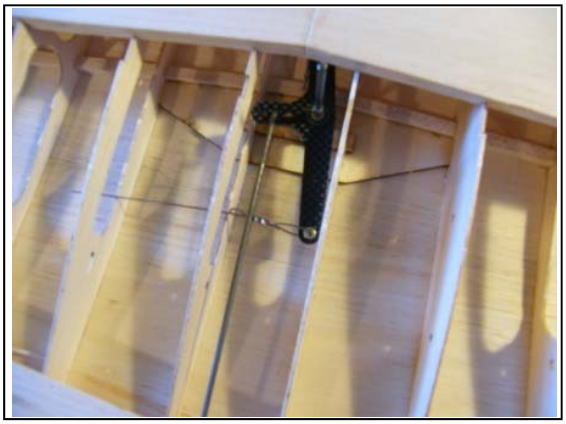
201) Locate the 3/32 X 6” music wire pushrod stock and bend a 1/2” 90 degree bend in one end.



202) Install the pushrod into the bellcrank. Retain the wire with either a wheel collar, or soldered washer. Make sure this is free from binding

203) Locate the lead out wire and cut in half lengthways to make 2 equal length wires. TIP: if you put a small drop of thin CA glue on the wire where you are going to cut it, it will eliminate the wire from fraying

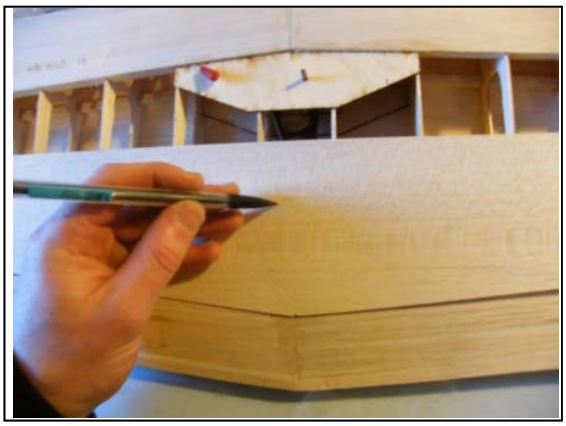
204) Slide the wire through the bellcrank holes and though the brass crimp. Return the wire back through the crimp and squeeze together. NOTE: You can wrap the leadouts with copper wire instead of crimping if this is what you prefer.



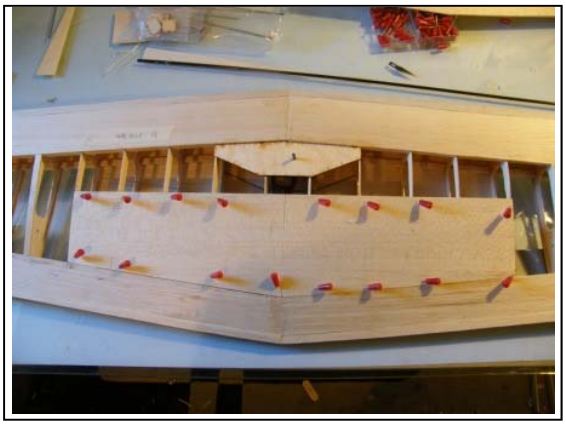
205) Install the completed bellcrank assembly into the wing. Use the BC1 & BC2 mounting holes to align the centre post

206) Glue BC1 in place to the TOP of the bell-crank assembly

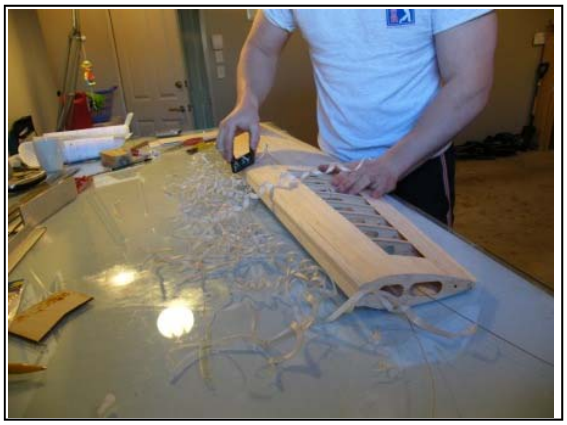
207) Glue BC2 in place to the TOP of the bell-crank assembly



208) Install the 1/16 centre sheeting to the top of the wing as previous. Mark the location of the pushrod for the pushrod cutout

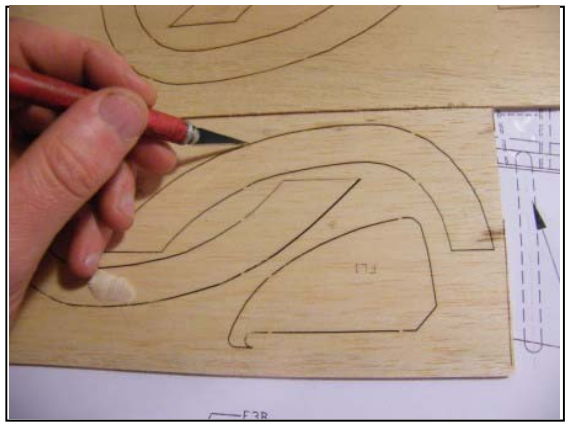


209) Install the top sheeting., glue and pin in place and leave to dry.

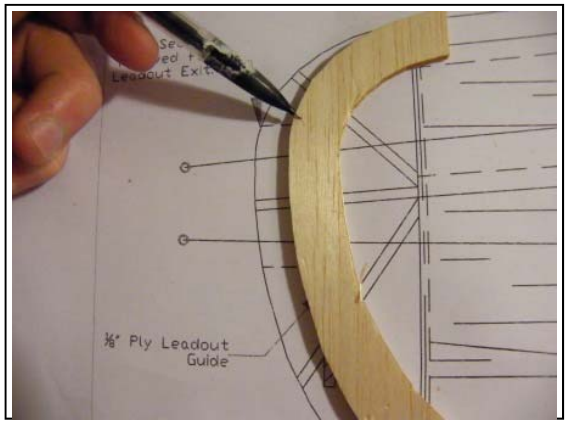


210) Once dry, shape the leading edge to the correct shape. Refer to the plans.

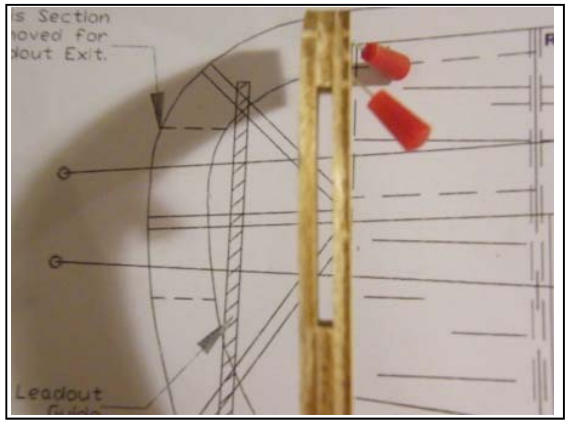
211) Sand the entire wing structure.



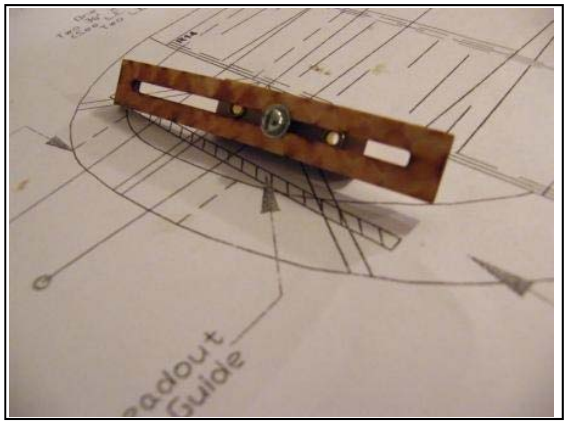
212) Locate and remove the 3/32 laser cut wing-tips



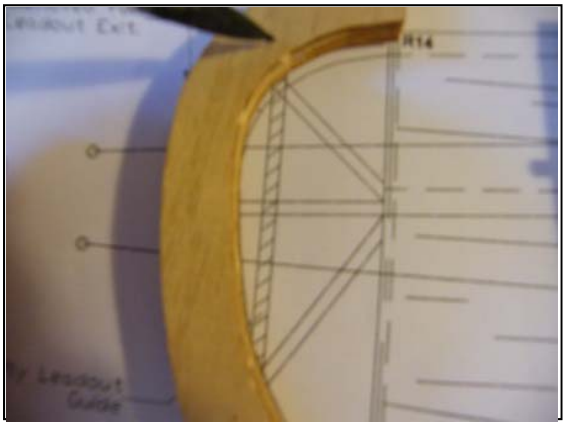
213) Mark and cut out the clearance slot for the leadouts on ONE only of the wingtip pieces



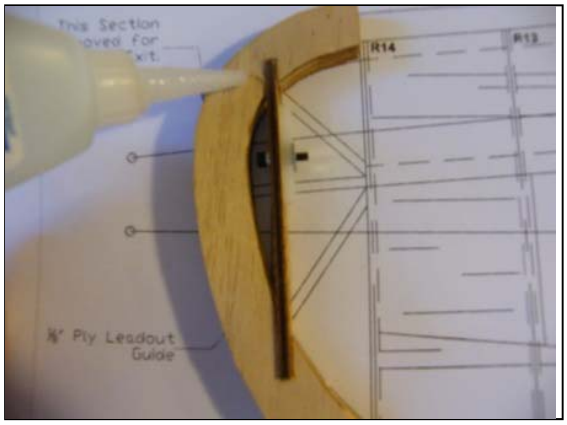
214) Glue and pin the wingtip pieces together and set aside to dry



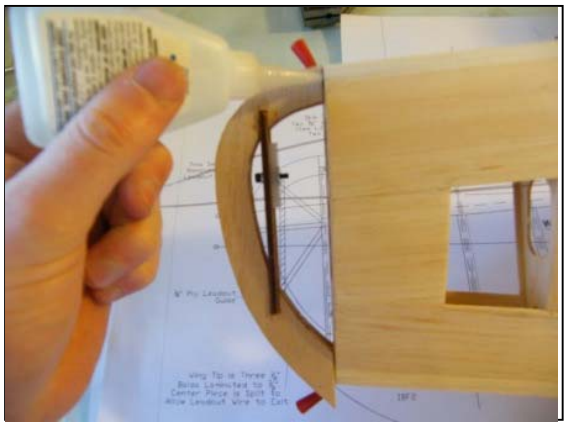
215) Locate the adjustable leadout guide package and assembly the guide as shown above



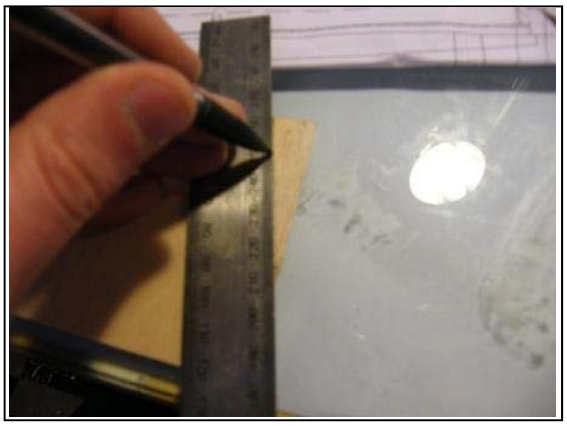
216) Mark the location of the leadout guide on the wingtip assembly that has the clearance slot in it.



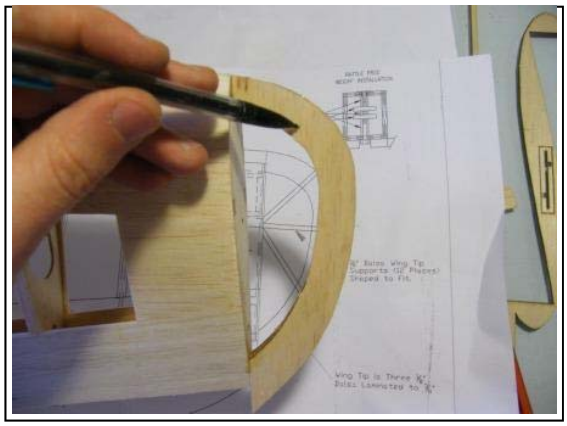
217) Cut the wingtip to install the guide and glue the guide in place



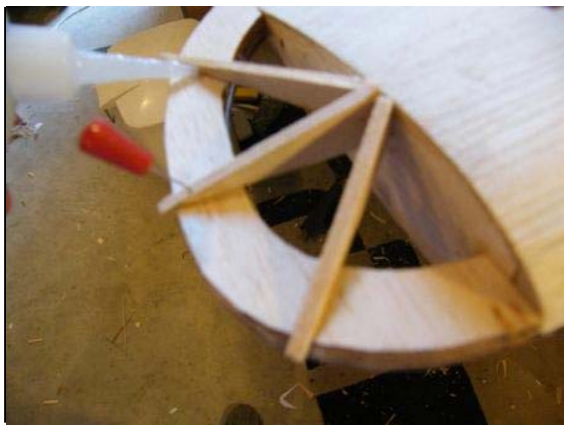
218) Once dry, put the leadout wires through the holes in the leadout guide and glue the wingtip assembly to the INBOARD wing. Pin and let dry. Glue and pin the other wingtip to the outboard wing.



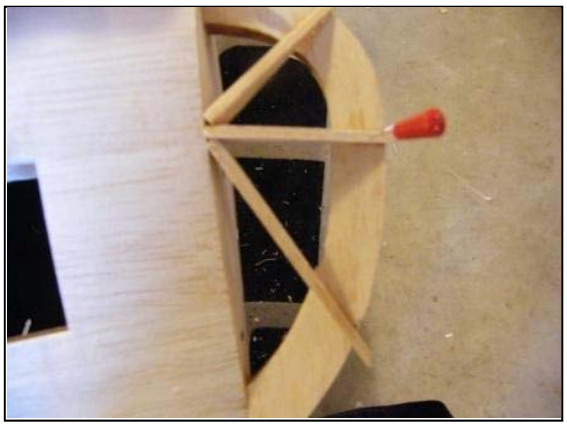
219) From scrap, cut 12 triangle pieces for wingtip supports



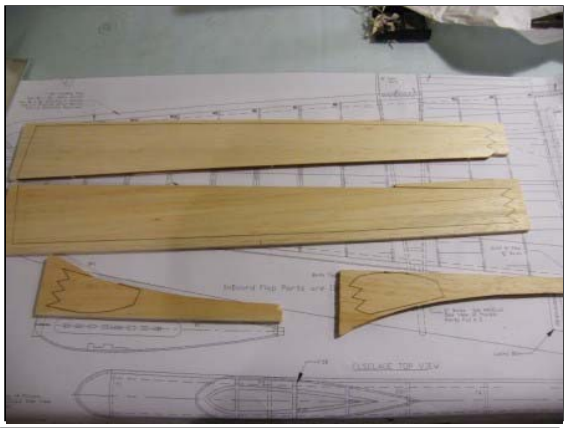
220) Mark the location of the supports on the wingtips per the plans



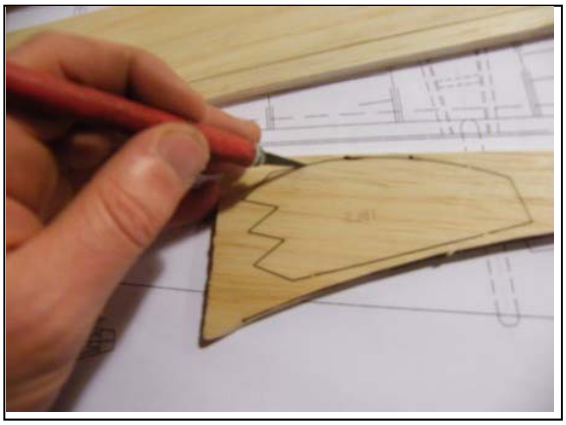
221) Glue the wingtip supports in place.
NOTE: On the inboard wing—you will need to notch the supports to clear the leadout guide



222) Repeat this process on the bottom of both wingtips. Pin and leave to dry

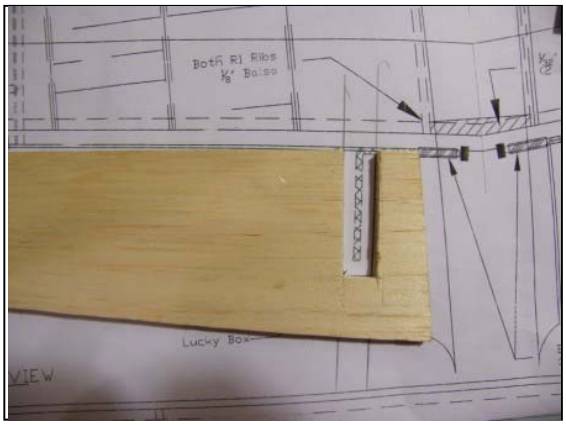


223) Locate the laser cut 1/4 flap pieces IBF1, IBF2, OBF1 and OBF2. NOTE: IBF stands for Inboard flap—OBF for outboard flap

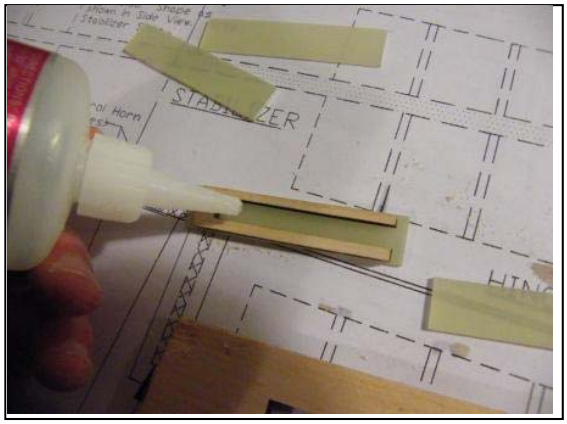


224) Cut tags and remove laser cut parts form sheets

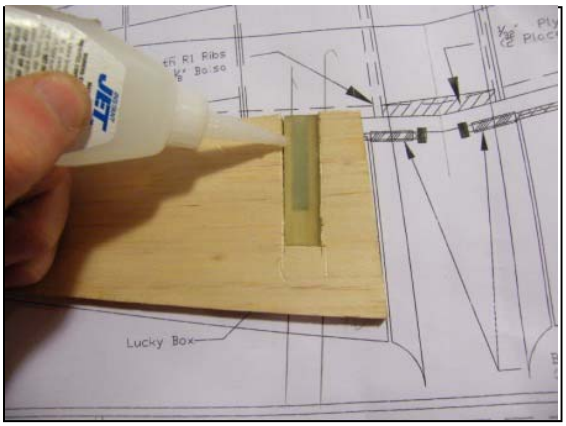
225) Glue the flap parts together as shown on the plans to create 2 full span flaps



226) Mark the location of the lucky boxes on the flaps and remove balsa.



227) Assemble the lucky boxes as you did for the elevators

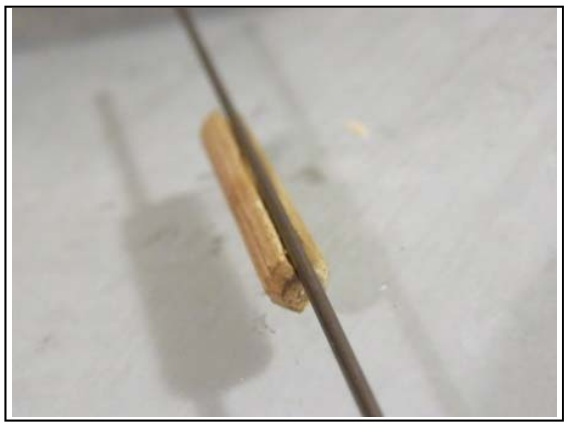


228) Glue the lucky boxes into the flaps.

229) Mark and cut a slot in the wing sheeting as shown on the plans to allow the flap pushrod to come through the wing

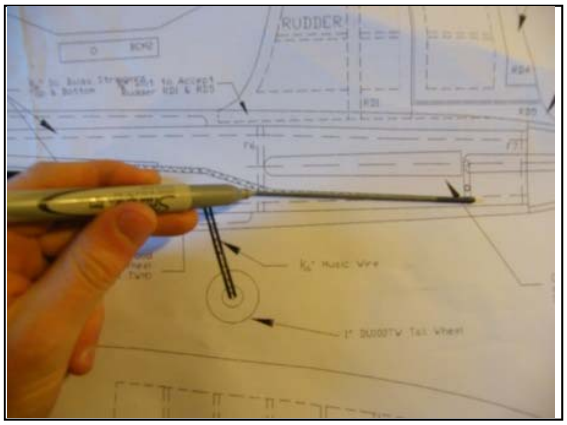
230) Cut the carbon pushrod to length as shown on the plans.

231) Use the wooden dowel as shown as a “filler” to install the pushrod wires—see following

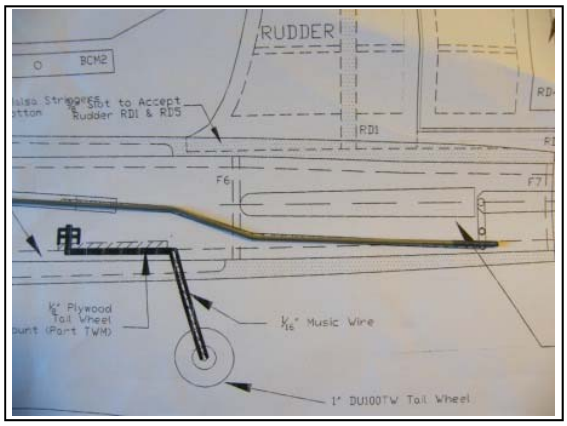


232) Cut a groove in the wooden dowel to allow the pushrod wire to sit flush with the top of the dowel

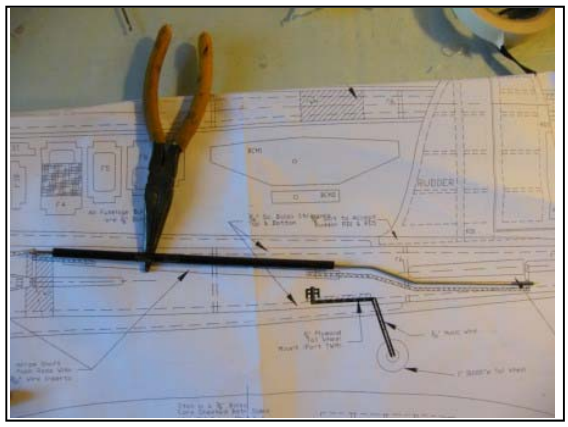
233) Epoxy the assembly into the carbon fibre tube. Use this process for ALL the pushrod installations



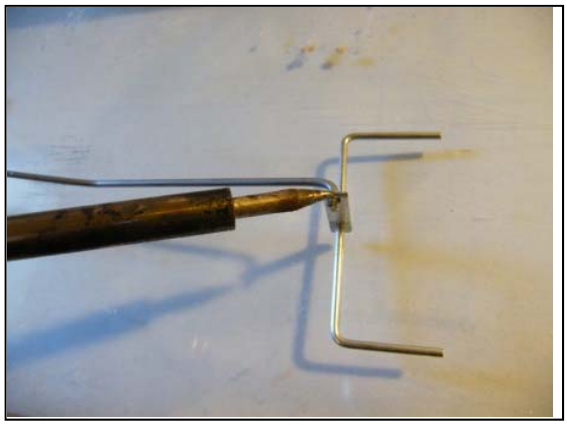
234) Mark the pushrod wire for the elevator pushrod per the view on the plans



235) Bend the wire to shape

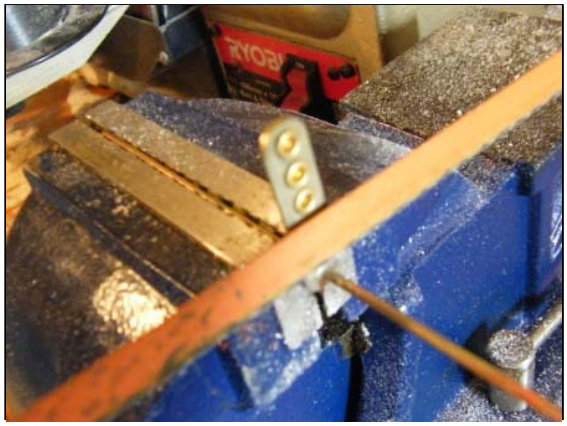


236) Install the wire into the elevator pushrod tube per previous method.

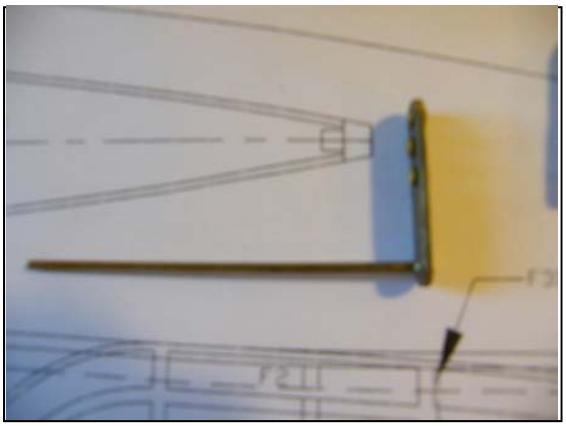


237) Locate and bend the elevator horn to shape per the plans. Solder a washer retainer onto the pushrod end of the elevator horn

238) Slide the assembly into the fuselage through the stabiliser cut out NOTE: You will need to twist the control horn to get it into the fuse—but this is an easy process/

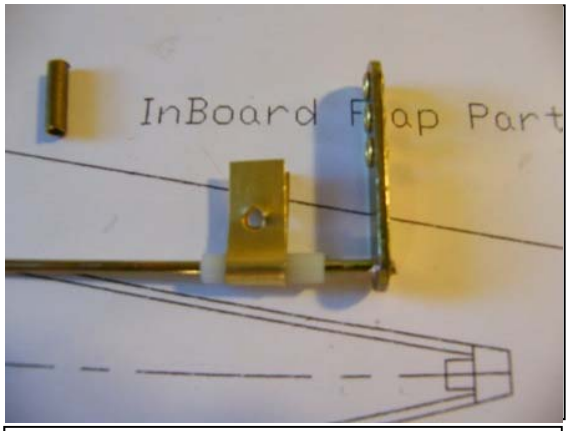


239) Locate the 2 Flap control horns and remove the wire from one side of the horn

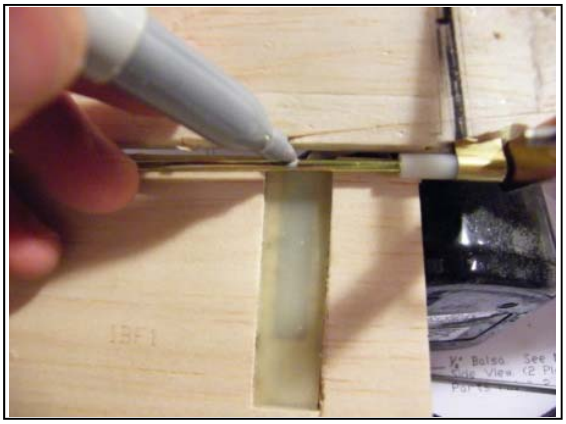


240) Above is one of the horns with the wire cut to suit

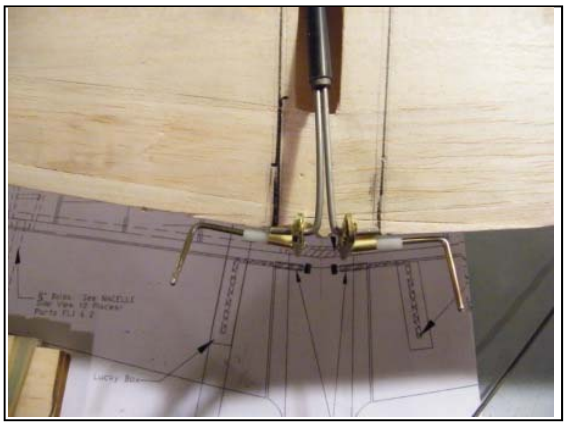
CONTROL SYSTEM INSTALLATION
Cont…



241) Slide the delrin bushing over the control horn wire NOTE: The brass retaining plate shown is not part of this kit—however, these are easily made from thin stock



242) Mark the location of the lucky boxes on the flap horn and bend to fit

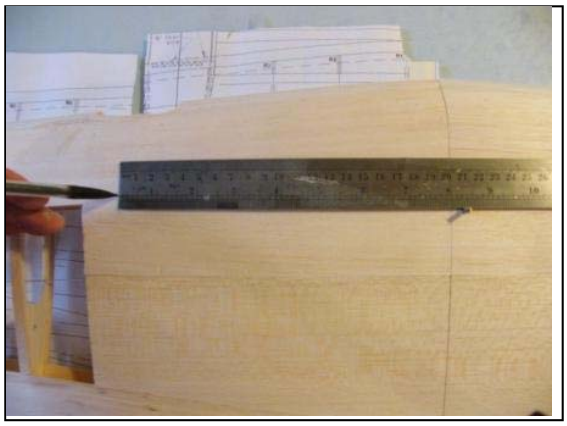


243) Epoxy the delrin bushing to the trailing edge at the location shown on the plans—be careful not to get epoxy inside the bushing where the wire is

244) Slide the flap pushrod wire into the correct hole on the flap horn and solder a retaining washer to the wire to hold the wire in place

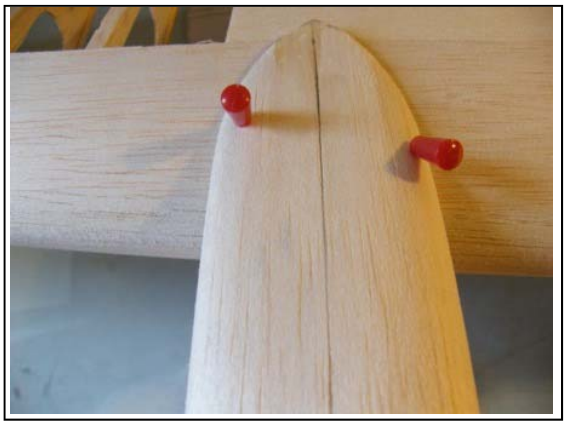
245) Carefully slide the ELEVATOR pushrod wire forward in the fuselage, put the wire in the correct hole and solder retaining washer in place to secure wire.

246) Slide the stabiliser into the fuselage and centre it. Epoxy the delrin horn retainers to the trailing edge of the stabiliser as you did on the main wing.

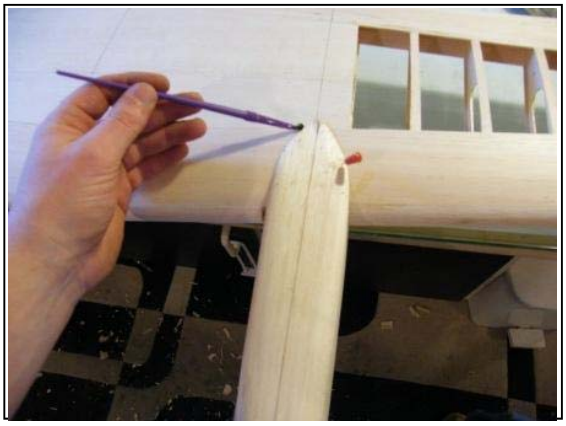


247) Mark the centre line of the wing on the top sheeting then measure out 8” each side for the centre of the nacelles NOTE: This was done prior to the installation of the pushrods

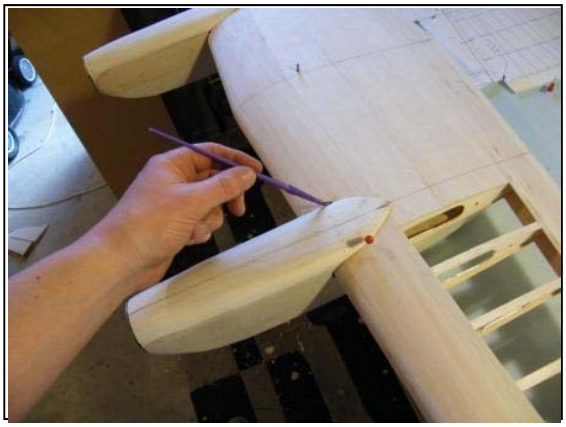
248) Above shows the centre line and the centre line for the right nacelle. Check your measurement to ensue they are the same distance at the front and rear



249) Using the centre line on the nacelle and the line on the wings, pin the nacelles in place. Check VERY carefully that the nacelles are centre and square to each other and the wing

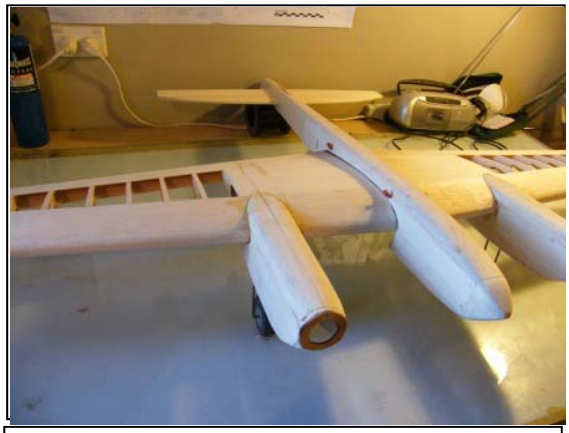


250) When you are happy that everything is aligned correctly, epoxy the nacelles to the wing.

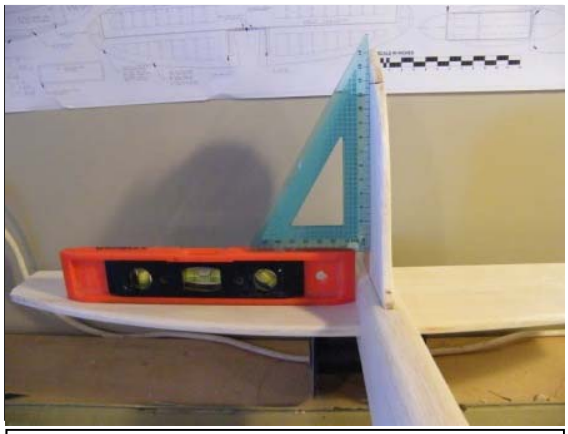


251) The nacelles installed. NOTE: You can install the fuselage FIRST if you wish. Then install the nacelles using the fuselage as a reference point. This is up to you

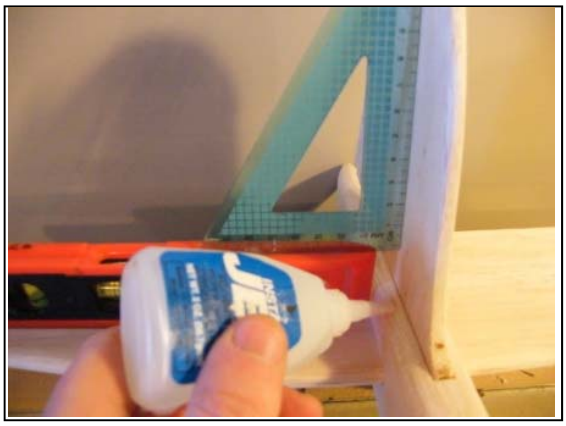
252) Glue the “flame suppressors” to the side of the nacelles per the location shown on the plan



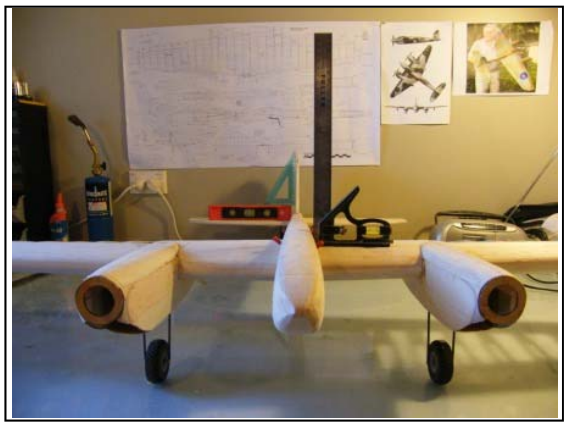
253) Install the main wing into the fuselage and pin in place. Shim the entire airframe to be level with your building surface (this is this builders method)



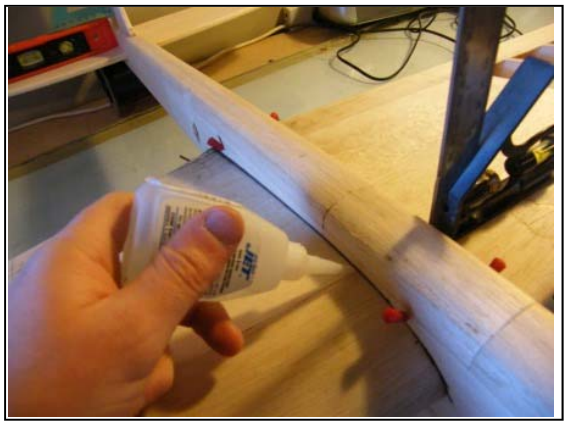
254) Make sure the stabiliser is level and in the correct location, use a square to align the fin



255) Glue the fin and stabiliser in place. Leave to dry. Once dry, check alignment once more to ensure nothing has moved



256) Using your favoured method, make sure the wings are level and square with the fuselage and that all measurements are the same between all surfaces

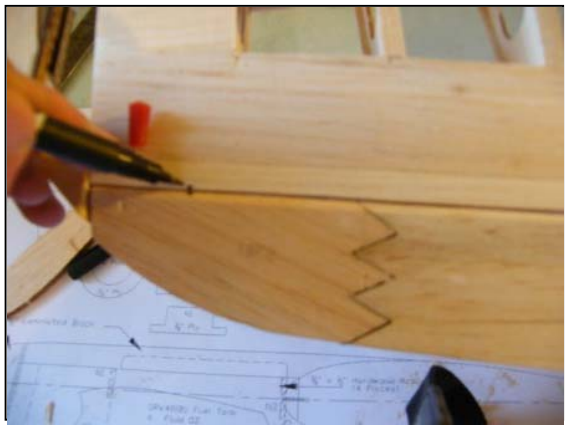


257) Glue the wing in place. Leave to dry—again, once dry, check everything is still aligned.

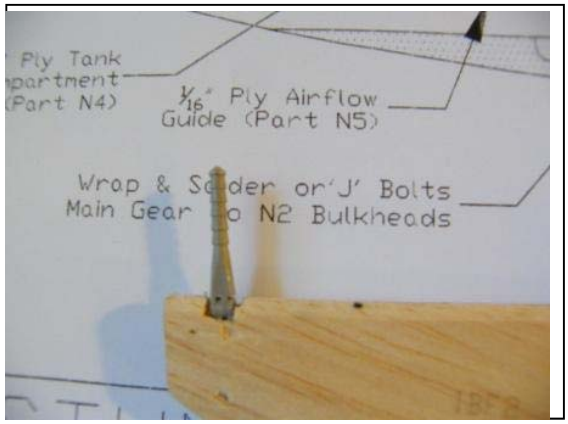
258) When dry and you are happy with the alignment– flip the fuselage over and glue in the laser cut braces FW1 & FW2 to the inside of the fuselage

259) Glue the bottom of the fuselage in place and leave to dry.

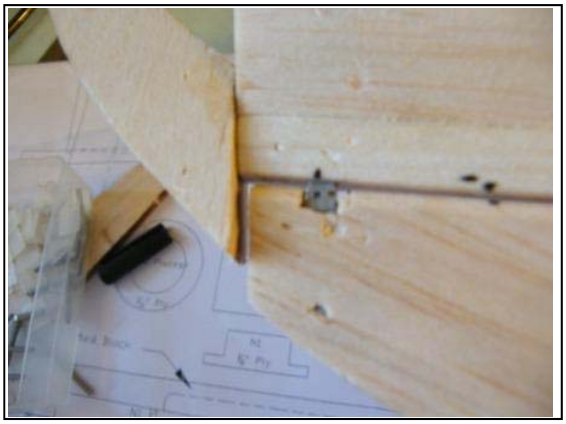
260) Sand the flaps to shape per the plans - make sure the leading edge is either rounded, or to a point to allow flap movement along the leading edge



261)) Pin the flaps in their correct location and mark the location of the hinges on the flap and trailing edge. NOTE: We recommend 4-6 hinges per flap

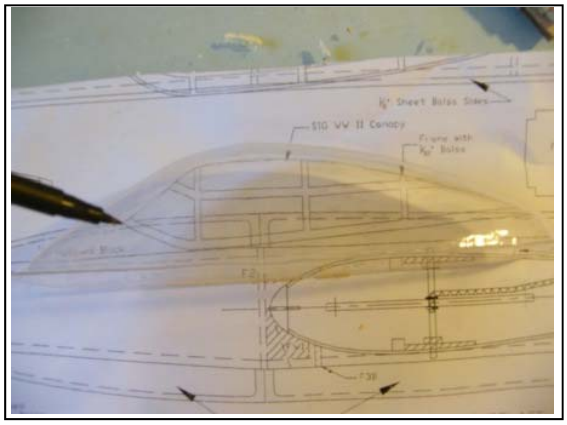


262) Install the hinges into the flap and make sure they are flush with the leading edge of the flap

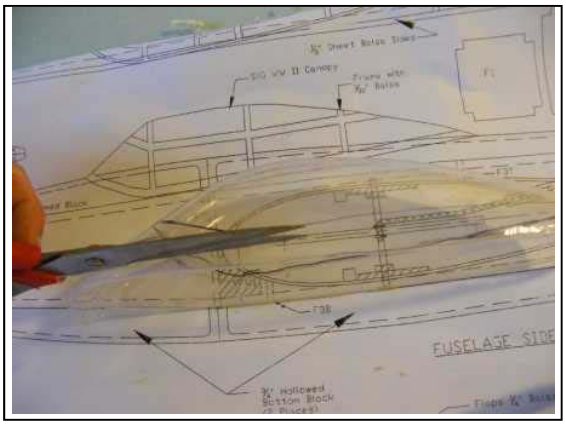


263) Glue flaps to the wing. NOTE: **DO NOT** glue the flap horns into the lucky boxes as these need to move when the flaps are moved. Repeat the hinge installation to the elevators.

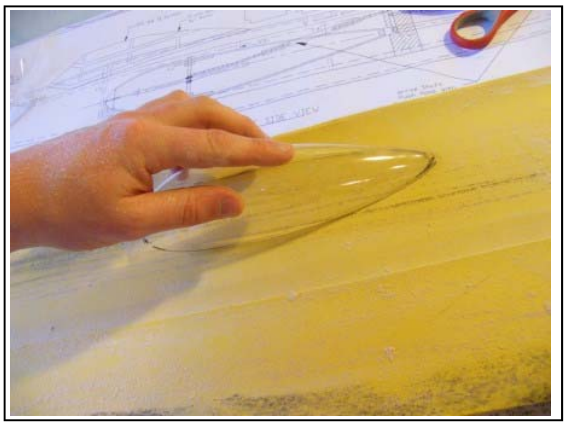
264) Locate and remove the laser cut nacelle part FL1 & FL2 and glue to the flaps in the location shown on the plans



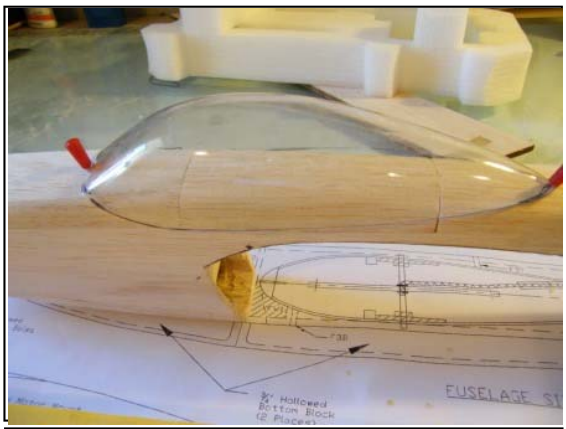
265) Lay the canopy over the plans and mark to shape. NOTE: We are installing the canopy last to eliminate it being scratched or damaged through the building process—it can be installed earlier if preferred



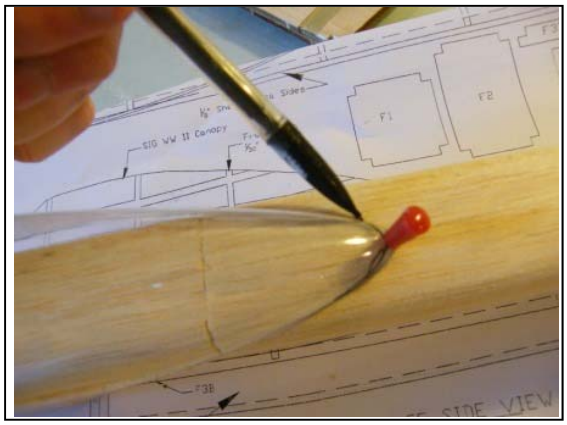
266) Using sharp scissors—cut the canopy to shape



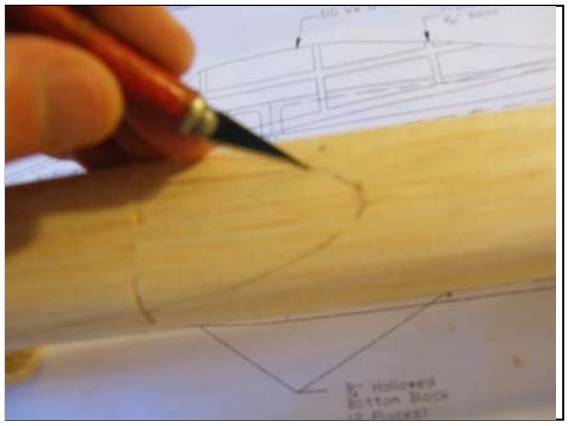
267) Sand the canopy base flat to ensure a good fit



268) Pin the canopy in place on the top block

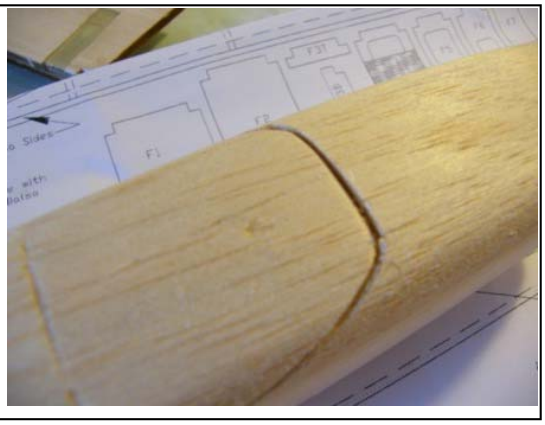


269) Mark the location of the canopy on the top block and then remove

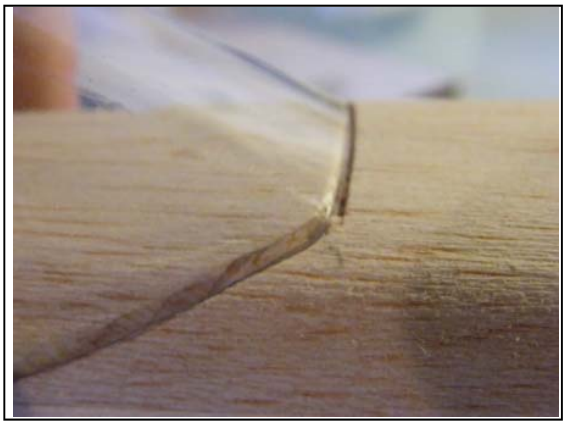


270) Using a sharp blade—cut a 1/16 deep slot along the canopy outline on the top block for the canopy to sit on

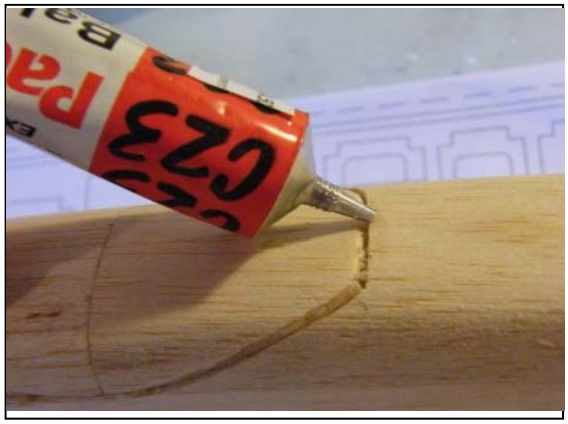
CANOPY INSTALLATION Cont...



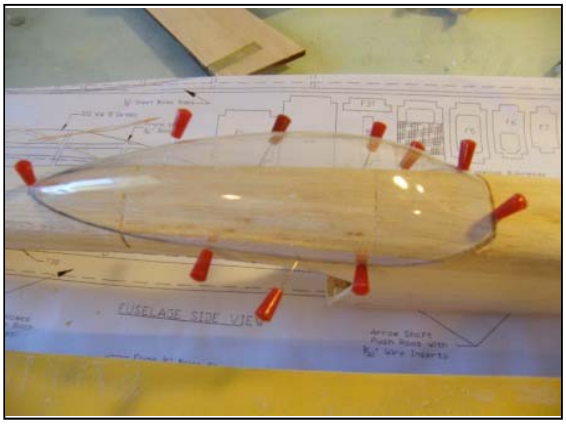
271) Here you can see the slot in the block



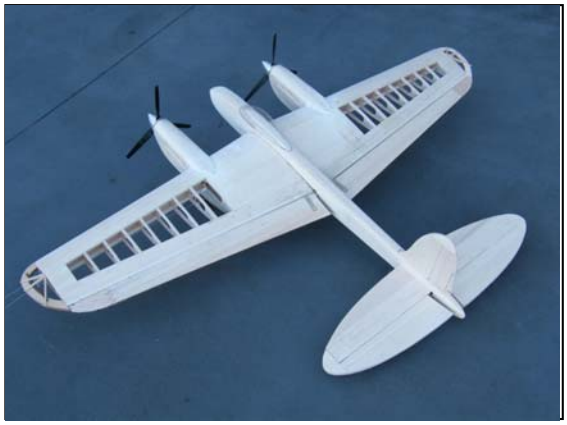
272) The canopy now sits nicely in the groove and will not move.



273) Apply glue to the slot you cut and to the canopy. NOTE: DO NOT use CA/Superglue for this as it will fog the canopy and adhere to your fingerprints on the plastic



274) Pin the canopy in place and leave to dry.



275) Here is the completed model ready for final sanding and covering

276) Final photo.