

Taylorcraft 72

KIT # K-502

Assembly Instructions



Revision:02
12-10-13

WARRANTY

Alien Aircraft Corp. guarantees this kit to be free from defects in both material and workmanship at the date of purchase. This warranty does not cover any component parts damaged by use or modification. In no case shall Alien Aircraft Corp.'s liability exceed the original cost of the purchased kit. Further, Alien Aircraft Corp. reserves the right to change or modify this warranty without notice. The quality and flyability of your finished model depends on how you build it; therefore, we cannot in any way guarantee the performance of your completed model, and no representations are expressed or implied as to the performance or safety of your completed model.

In that Alien Aircraft Corp. has no control over the final assembly or material used for final assembly, no liability shall be assumed nor accepted for any damage resulting from the use by the user of the final user-assembled product. By the act of using the user-assembled product, the user accepts all resulting liability. If the buyer is not prepared to accept the liability associated with the use of this product, the buyer is advised to return this kit immediately in new and unused condition to the place of purchase.

WARNING!!!

Failure to follow these safety precautions may result in severe injury to yourself and others.

Use safety glasses when running the motor. Do not run the motor in an area of loose gravel or sand; the propeller may throw such material in your face or eyes. Keep your face and body as well as all spectators away from the plane of rotation of the propeller as you run the motor. Keep these items away from the prop: loose clothing, shirt sleeves, ties, scarfs, long hair or loose objects such as pencils or screwdrivers that may fall out of shirt or jacket pockets into the prop. Always remove the LiPo battery from the plane before charging. Always use a charger designed to charge LiPo batteries for charging the LiPo flight battery. Never leave the LiPo battery unattended while charging. If the battery becomes more than just warm, discontinue charging.



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Notes about the laser cut parts

- 1...The first thing that you need to do is to identify and mark the part numbers on the laser cut parts using the drawings on the following pages as a guide.
- 2...It is possible that several of the laser cut parts may not be completely cut through. If this is the case you can free the part from the sheet quickly using an X-acto knife.
- 3...The slight discoloration on the edges of the laser cut parts may be removed by lightly sanding the edges with 400 grit sandpaper.

Kit Contents:

Your kit contains the following parts. Please check your kit for any missing or damaged parts before starting construction.

Wood Bag:

Qty.	Name	Description
1	.LC-502-01	.3mm X 7-3/4" X 24" Laser Cut POPLAR PLY
1	.LC-502-02	.3mm X 7-3/4" X 24" Laser Cut POPLAR PLY
1	.LC-502-03	.3mm X 7-3/4" X 24" Laser Cut POPLAR PLY
1	.LC-502-04	.3mm X 7-3/4" X 24" Laser Cut POPLAR PLY
1	.LC-502-05	.3mm X 7-3/4" X 24" Laser Cut POPLAR PLY
1	.LC-502-06	.3mm X 4" X 24" Laser Cut POPLAR PLY
1	.LC-502-07	.3mm X 7-3/4" X 24" Laser Cut POPLAR PLY
1	.LC-502-08	.3mm X 7-3/4" X 24" Laser Cut POPLAR PLY
1	.LC-502-09	.3mm X 4" X 24" Laser Cut POPLAR PLY
1	.LC-502-10	.3/32" X 4" X 24" Laser Cut BALSA
1	.LC-502-11	.3/32" X 4" X 24" Laser Cut BALSA
1	.LC-502-12	.3/32" X 4" X 24" Laser Cut BALSA
1	.LC-502-13	.3/32" X 4" X 24" Laser Cut BALSA
1	.LC-502-14	.3/32" X 4" X 24" Laser Cut BALSA
1	.LC-502-15	.3/32" X 4" X 24" Laser Cut BALSA
1	.LC-502-16	.1/8" X 4" X 24" Laser Cut BALSA
1	.LC-502-17	.1/8" X 4" X 24" Laser Cut BALSA
1	.LC-502-18	.1/8" X 4" X 24" Laser Cut BALSA
1	.LC-502-19	.1/8" X 4" X 24" Laser Cut BALSA
1	.LC-502-20	.1/16" X 4" X 24" Laser Cut Birch Ply
1	.LC-502-21	.1/16" X 4" X 24" Laser Cut Birch Ply
1	.LC-502-22	.1/32" X 1-1/2" X 12" Laser Cut Birch Ply
2	.Fuselage Sheet	.1/8" x 4" x 24" Balsa
6	.Tail Sheet	.1/16" x 4" x 24" Balsa
6	.Wing & Center Section Sheet	.3/32" X 4" X 24" Balsa
4	.Wing Leading Edge Sheet	.3/32" x 3" x 30" Balsa
5	.Wing Trailing Edge Sheet	.3/32" x 1 1/2" x 18" Balsa
4	.Wing Trailing Edge Sheet	.3/32" x 1" x 18" Balsa

Plans Bag:

1	.K-502 PLAN A	
1	.K-502 PLAN B	
1	.K-502 PLAN C	
6	.Fuselage Side & Nose Stringers	.1/8" sq. X 36" Balsa
4	.Outboard Main Wing Spars	.3/8" x 3/8" x 30" Bass
2	.Wing Leading Edge	.3/8" x 3/8" x 30" Balsa
1	.Fuselage Braces	.1/4" Triangle 12" Balsa
8	.Former Braces & Nose Stringers	.1/4" Sq. x 12" Balsa (or 4 pieces 24")
2	.Front Wing Strut	.3/16" x 1/2" x 36" Bass
2	.Rear Wing Strut	.3/16" x 3/8" x 36" Bass

Hardware Bag

Qty.	Name	Description
1	Tailwheel Bracket	Molded Nylon Bracket
12	Landing Gear & Strut Straps	Molded Nylon Straps
4	Motor Mount Blind Nuts	.6-32 Blind Nuts
1	Elevator Joiner Dowel	.1/4" x 4 1/2" Birch Dowel
2	Wing Dowels	.1/4" x 1" Birch Dowel
2	Wing Bolts	1/4-20 x 1" Nylon Screw
4	Control Horn	Aileron and Tail Control Horns
36	1/2" Sheet Metal Screws	# 2 X 1/2" Sheet Metal Screw
4	Tail Control Horn Screws	.2-56 x 1/2" Machine Screw
10	Cowl & Strut Blocks	.3/8" x 3/8" x 3/8" Hardwood
4	Aileron Servo Mounts	.3/8" x 3/8" x 1" Bass
40"	Wing Joint Tape	.2" x 40" Dacron Tape
12"	Strut End Tape	.1" x 12" Dacron Tape
36"	Tail Brace Wires	.1/16" x 36" Nylon Line
1	Tail Wheel Wire	.1/16" x 6" Music Wire
2	Center Main Wing Spars	.3/8" x 3/8" x 7" Bass

Misc. Loose Parts

2	Main Landing	.5/23" x 13.72" Music Wire
1	Windshield Plastic	.020" x 6" x 12" Clear Plastic
1	Window Plastic	.020" x 4" x 6" Clear Plastic
1	K-502 Decal	
1	K-502 Cowl	

Additional Items Required for Glow and Electric Power (Not Included in Kit)

1	Covering Material	2 Rolls Covering Material Plus Trim Colors
1	Cowl Paint	1 Can of Fuel Proof Paint to Match Covering
15	Hinges	C/A or Pin Style Hinges
2	Tail Pushrods	DuBro 30" Laser Rods (1 pair) (Alien Aircraft P/N: AH-013)
2	Aileron Pushrods	12" Aileron 2-56 Pushrods (1 pair) (Alien Aircraft P/N: AH-014)
2	Main L/G Collars	5/32" Wheel Collars (DuBro P/N: 140)
1	Tail L/G Collars	1/16" Wheel Collars (DuBro P/N: 137)
2	Main Wheels	3-1/2" Wheels (DuBro P/N: 350T)
1	Tail Wheel	1" Wheel (DuBro P/N: 100TW)
1	Radio	4 Channel Radio with Receiver
2	Tail Servos	HiTec HS-311 Standard Servos or Equivalent
2	Aileron Servos	HiTec HS-81 Micro Servos or Equivalent
2	Aileron Servo Extensions	.6" Servo Extensions to fit your radio
1	Aileron "Y" Connector	.6" "Y" Connector to fit your radio
1	Aileron Servo Extension	.6" Servo Extensions to fit your radio

Additional Items Required for Glow Power Only (Not Included in Kit)

Qty.	Name	Description
1	Motor	2-stroke .40-.61 4-stroke .50-.90
1	Motor Mount	Dave Brown Motor Mount (to fit your motor)
4	Motor Mount Screws	.6-32 x 3/4" Machine Screws (or size to fit your motor)
4	Motor Screws	.6-32 x 1" Machine Screws (or size to fit your motor)
1	Propeller	.10" x 6" Propeller (or size to fit your motor)
1	Fuel Tank	SS8 Slant Style Fuel Tank (Sullivan # 439)
1	Throttle Pushrod	Flexible Cable Pushrod (Sig SIGSH559)
1	Fuel Line	Medium Fuel Line (DuBro #222)
1	Foam Rubber	1/4" Foam Rubber (DuBro # 513)
1	Optional Spinner	DuBro 2 1/4" Spinner (DuBro # 272)
1	Throttle Servo	HiTec HS-311 Standard Servo or Equivalent
1	Throttle cable to servo	DuBro EZ Connector (DuBro #121)

Additional Items Required for Electric Power Only (Not Included in Kit)

Qty.	Name	Description
1	Motor	Himax HC3528-0800 Brushless Motor (Alien Aircraft P/N: AE-040)
1	Speed Control	Castle Creation Phoenix ICE 50 Electronic Speed Control (Alien Aircraft P/N: AE-041)
1	Battery Connector	Male Deans Ultra Style connector (Alien Aircraft P/N: AE-027)
1	Arming Switch	Arming Switch with 12 awg & Dean's Ultra Style Connectors (Alien Aircraft P/N: AE-048)
4	Motor Mounting Screws	.6-32 x 1" Socket Head Cap Screws (Alien Aircraft P/N: AE-050)
1	Battery	4 Cell 5000Mah Lipo Battery 30C
1	Heat Shrink Tube	.3/16" Heat Shrink Tube (Alien Aircraft P/N: AE-029)
1	Propeller	APC 12 x 6E Propeller (Alien Aircraft P/N: AE-051)
2	Velcro	6" Velcro (Alien Aircraft P/N: AE-012)

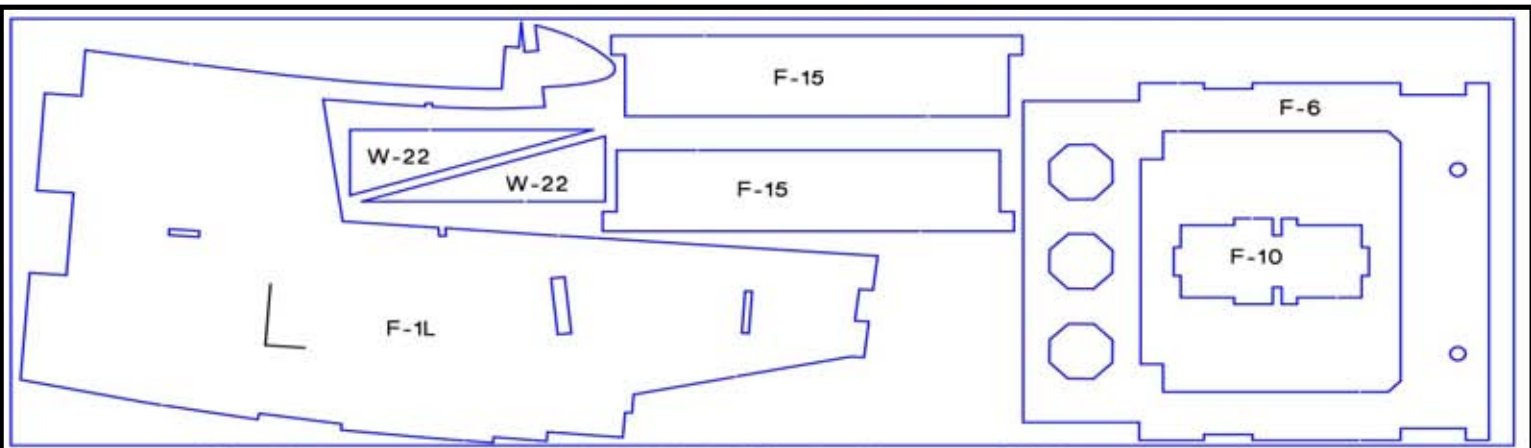
WARNING.....EXTREME DANGER:

Electric motors, propellers and batteries powerful enough to fly this model are extremely dangerous. These motors, propellers and batteries can cause serious property damage, serious bodily injury and death. Maximum safety precautions must be observed at all times when installing, maintaining and operating these items. Maximum safety precautions must be observed at all times when assembling, maintaining and operating this model. You must understand and follow all of the manufactures operating and safety instructions for every piece of equipment and component used with this model.

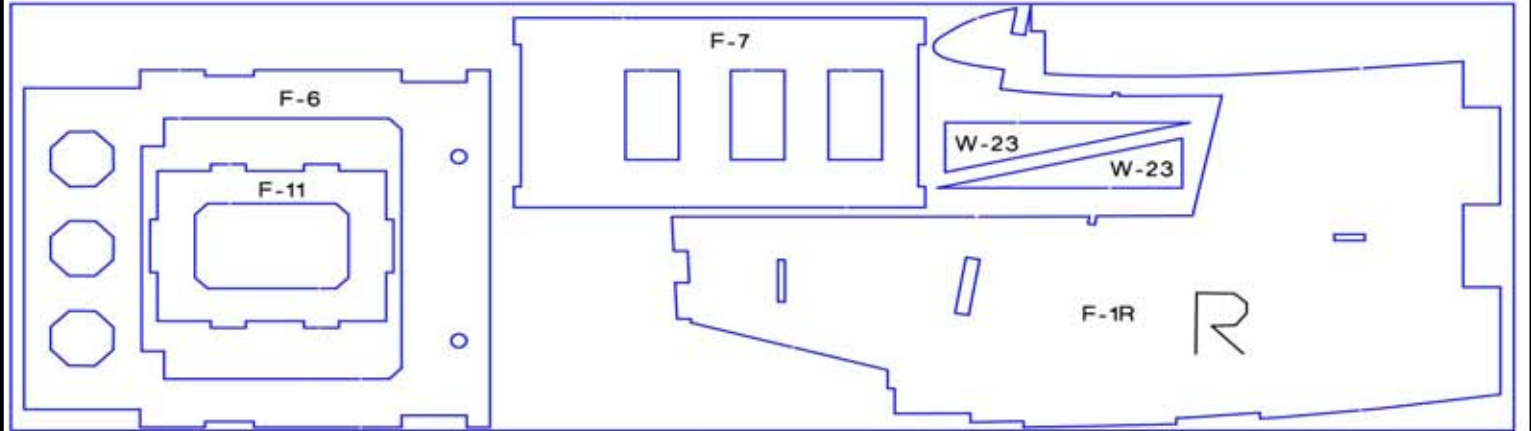
YOU MUST USE AN ARMING SWITCH BETWEEN THE BATTERY AND SPEED CONTROLLER.

If you have any doubt about the proper safety precautions, you must contact the manufactures to obtain the operating and safety instructions for every piece of equipment and component used with this model.

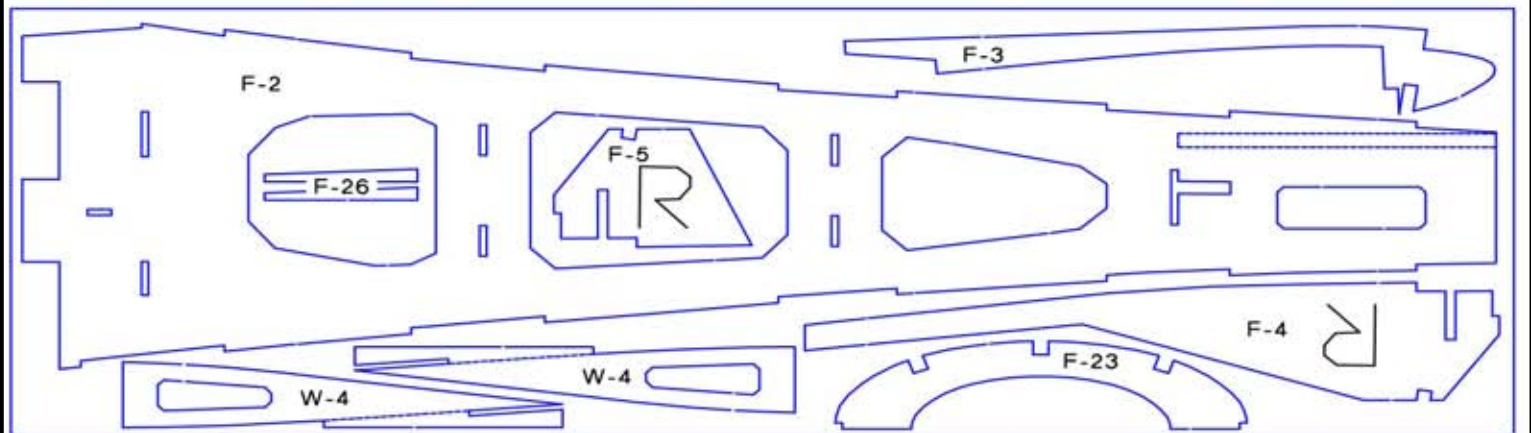
You must read and follow the important notes on the cover and on page 54 of this manual.



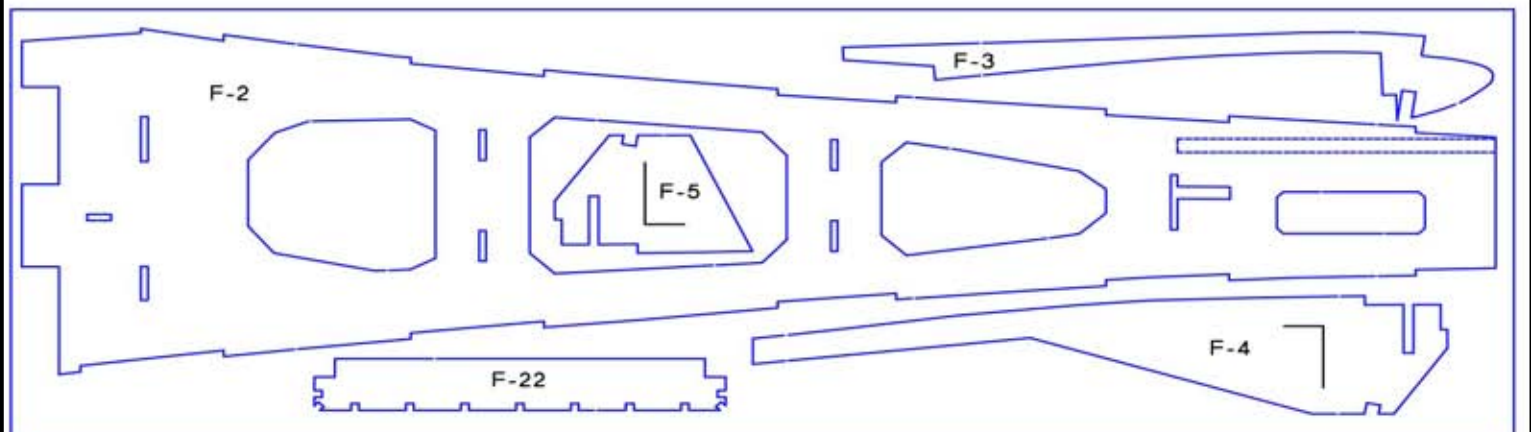
LC-502-01 3mm X 7-3/4" X 24" Poplar Ply 1 REQD.



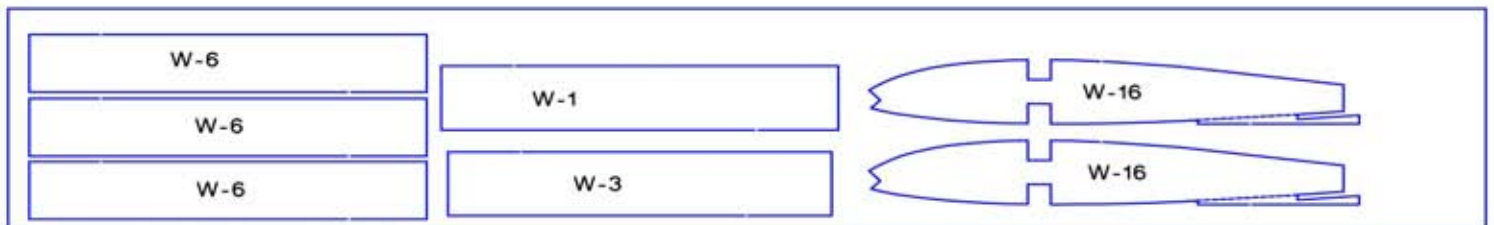
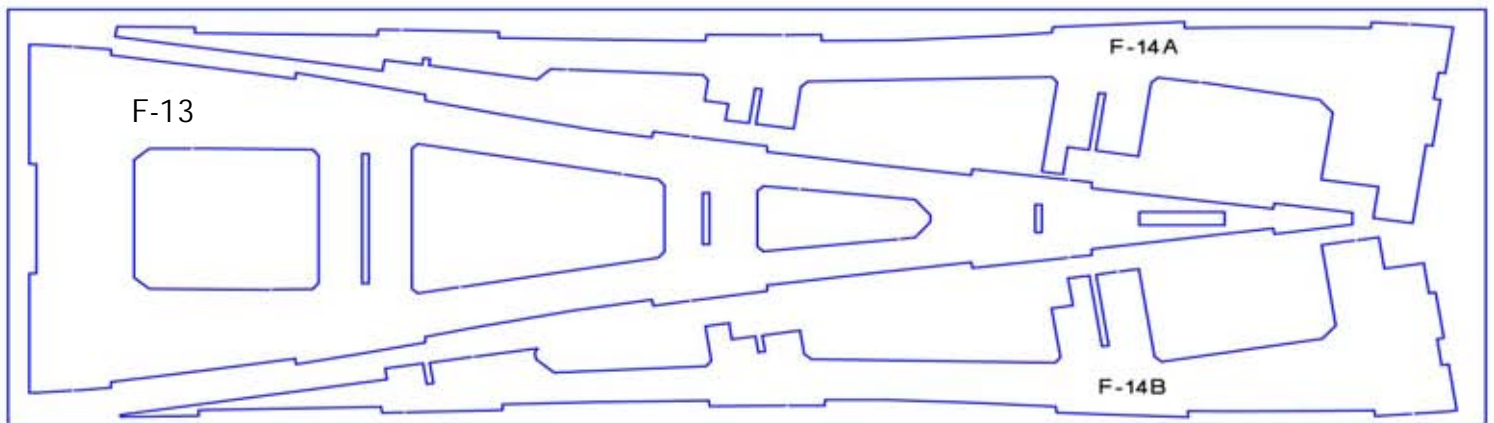
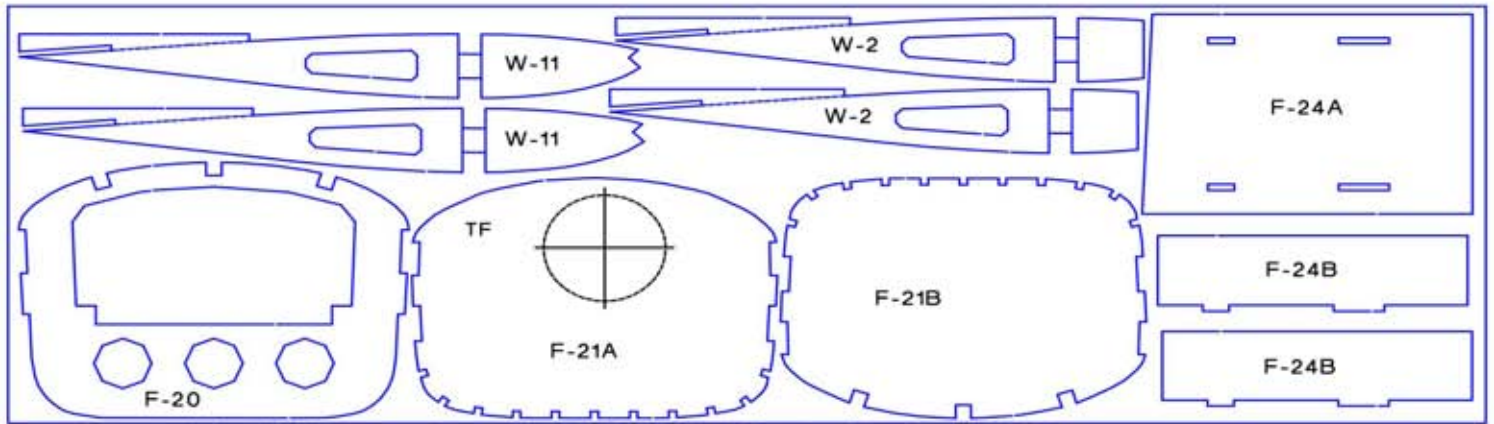
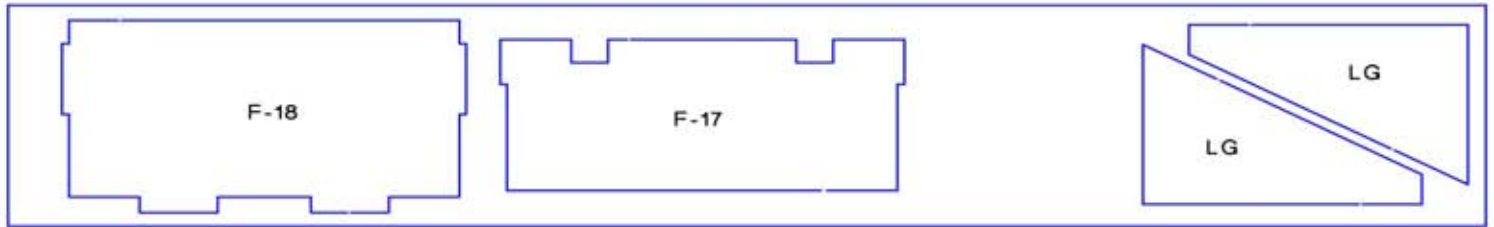
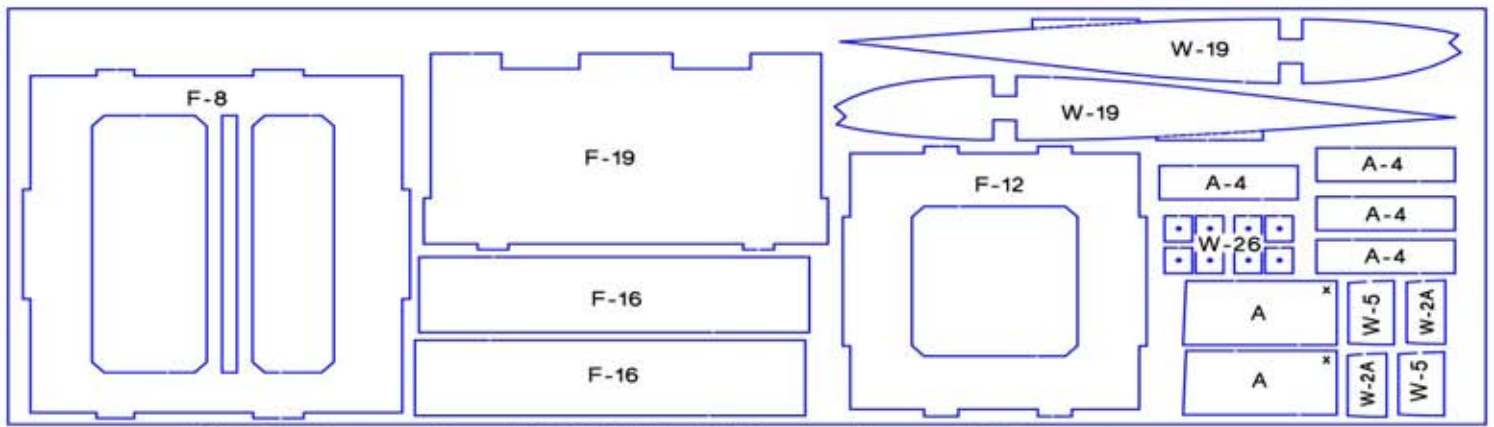
LC-502-02 3mm X 7-3/4" X 24" Poplar Ply 1 REQD.

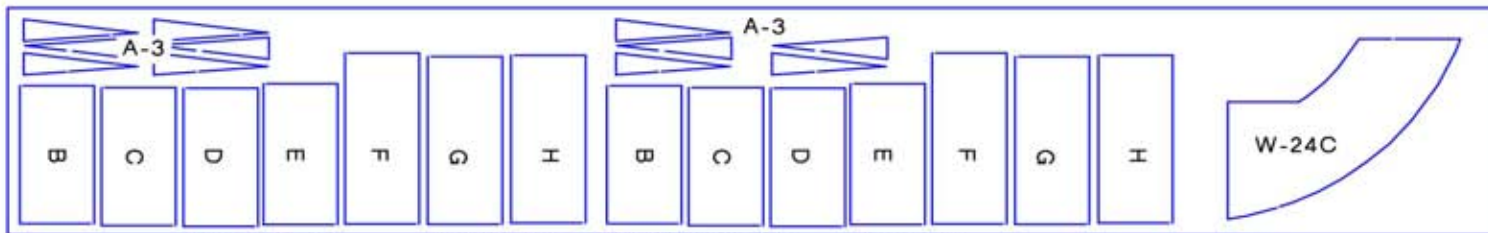


LC-502-03 3mm X 7-3/4" X 24" Poplar Ply 1 REQD.

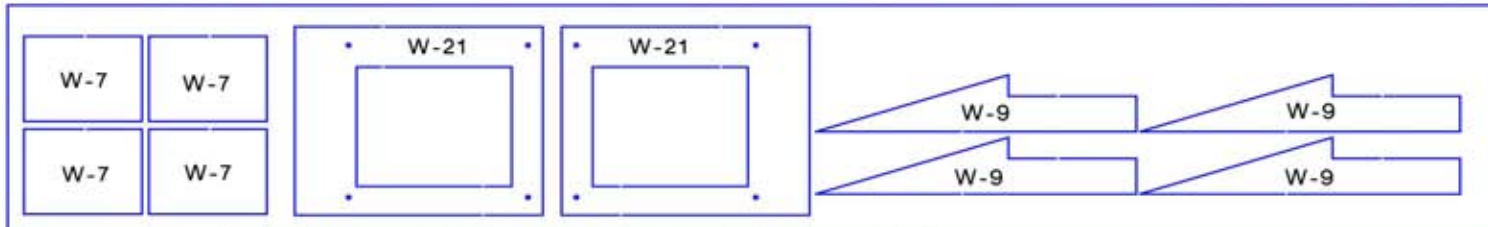


LC-502-04 3mm X 7-3/4" X 24" Poplar Ply 1 REQD.

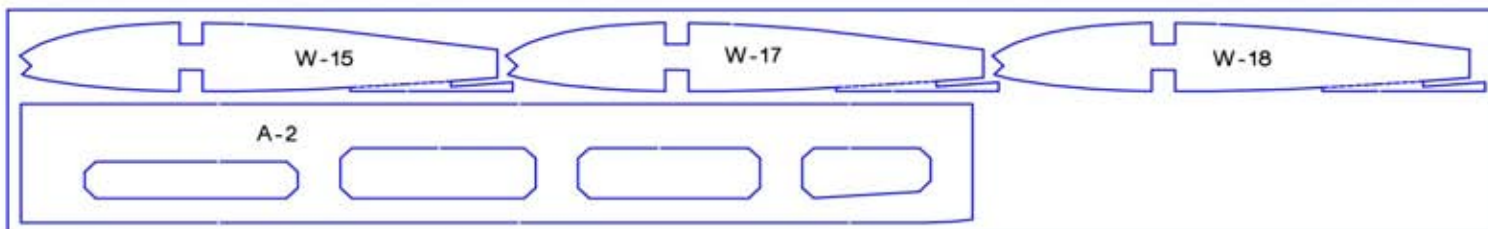




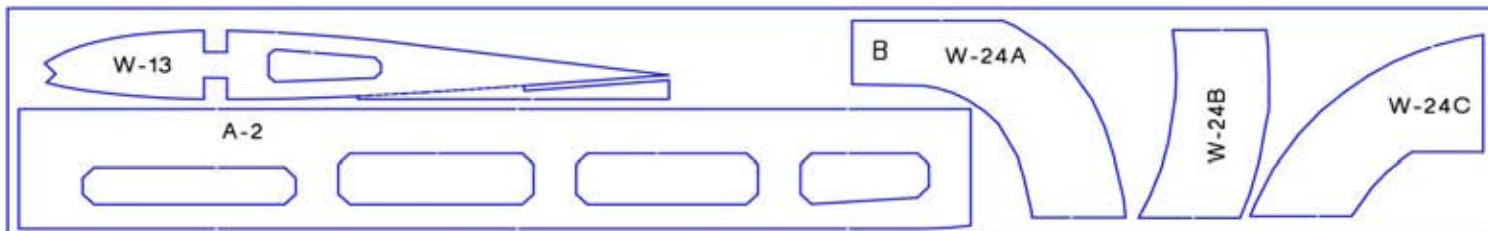
LC-502-10 3/32" X 4" X 24" BALSA 1 REQD.



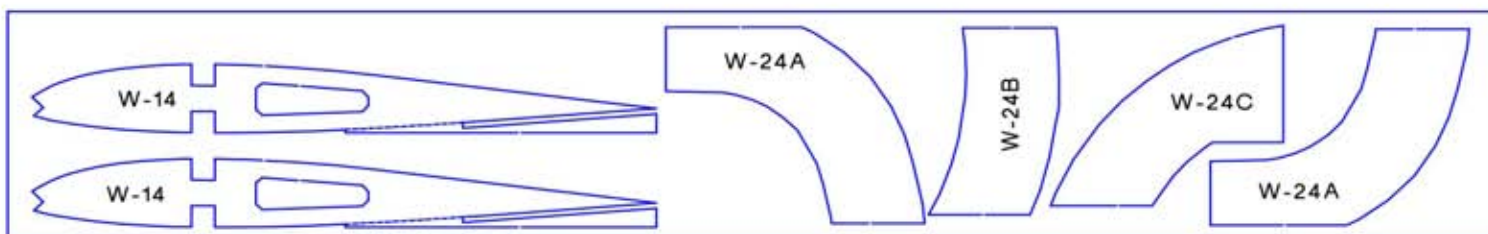
LC-502-11 3/32" X 4" X 24" BALSA 1 REQD.



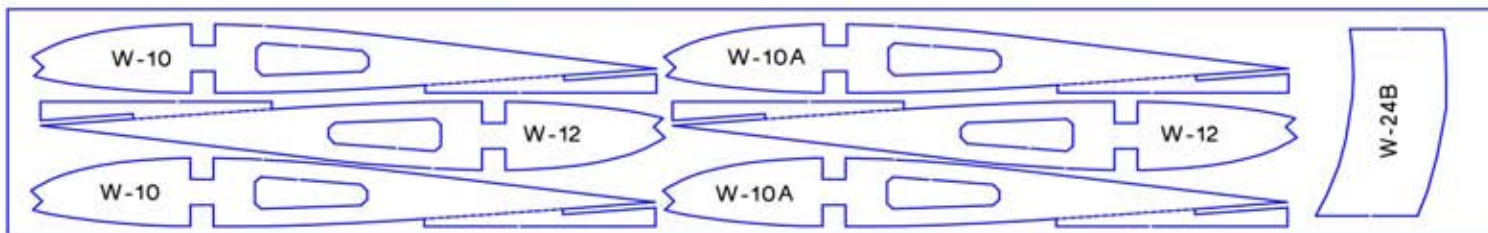
LC-502-12 3/32" X 4" X 24" BALSA 2 REQD.



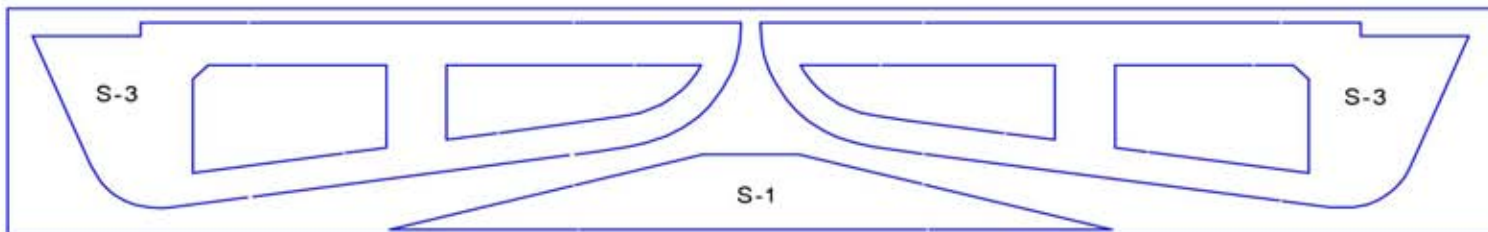
LC-502-13 3/32" X 4" X 24" BALSA 2 REQD.



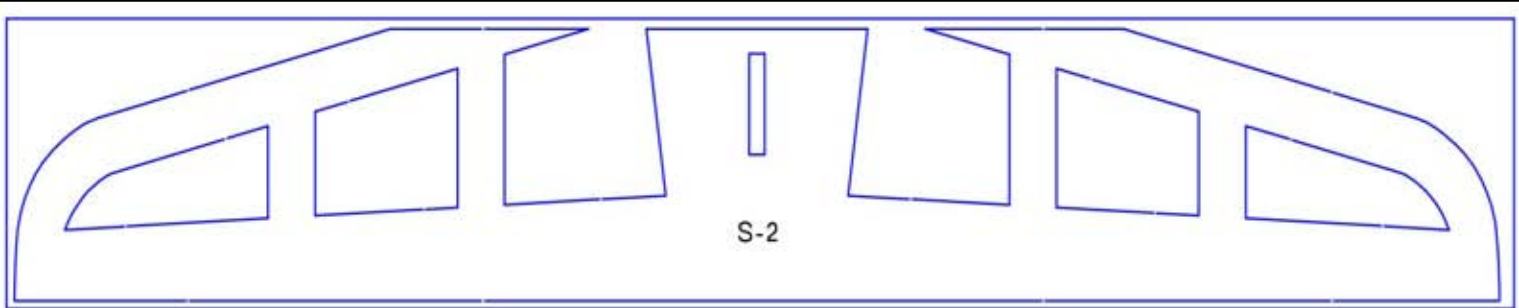
LC-502-14 3/32" X 4" X 24" BALSA 1 REQD.



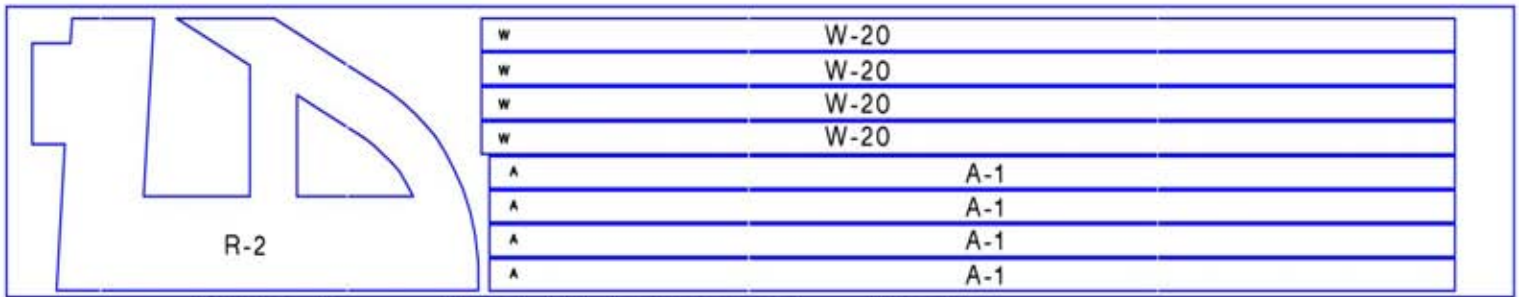
LC-502-15 3/32" X 4" X 24" BALSA 1 REQD.



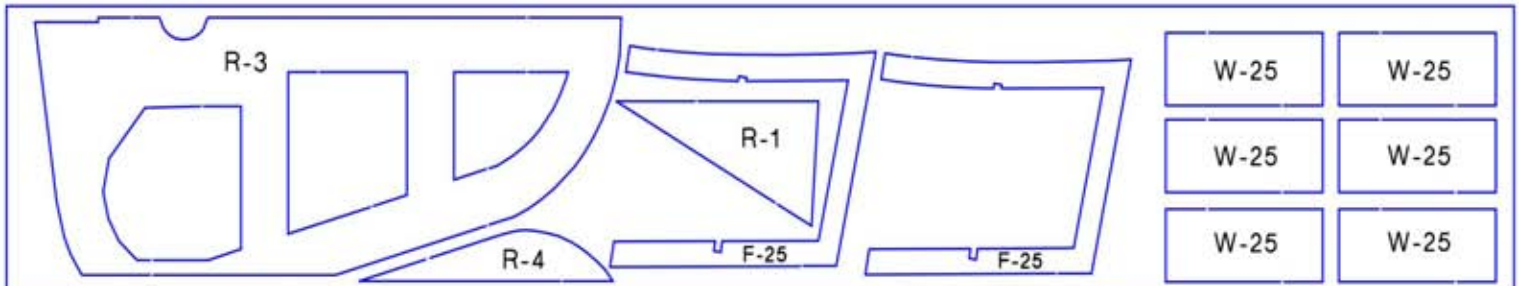
LC-502-16 1/8" X 4" X 24" BALSA 1 REQD.



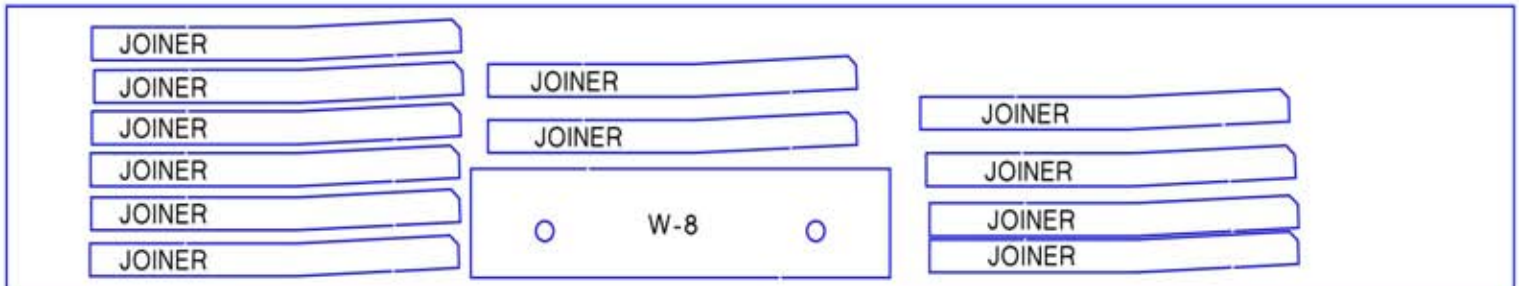
LC-502-17 1/8" X 4" X 24" BALSA 1 REQD.



LC-502-18 1/8" X 4" X 24" BALSA 1 REQD.



LC-502-19 1/8" X 4" X 24" BALSA 1 REQD.



LC-502-20 1/16" X 4" X 24" Birch Ply 1 REQD.



LC-502-21 1/16" X 4" X 24" Birch Ply 1 REQD.



LC-502-22 1/32" x 1-1/2" x 12" Birch Ply 1 REQD.

Building Instructions:

General Note: Cover the plans with wax paper before assembling your model to prevent the parts from sticking to the plan.

Building the Tail Surfaces:

1... Glue S-1 and S-2 together as shown.



2...Glue together two pieces of 1/16" x 4" x 24" balsa sheet as shown to make the stabilizer skin.



3...Glue this sheet to one side of the stabilizer. Trim the sheet flush with S-1 / S-2. Now sheet and trim the opposite side as you did the first. Be sure to cut out the rudder slot.



4...Use 1/16" balsa to sheet both sides of the elevators (S-3). Join the elevators (S-3) using the 1/4" x 4-1/2" dowel. Use the stabilizer as a guide to establish the proper spacing. Trim the dowel to achieve the proper length.



5...Bevel the front edge of the S-3's as shown on the plan, and sand the other edges round. Sand the front and ends of the stabilizer round. Leave the back edge square.

Mark the hinge locations and cut the hinge slots. Temporarily install the hinges without glue.



6...Glue R-1 and R-2 together. Glue R-3 and R-4 together.



7...Use 1/16" x 4" x 24" balsa to sheet both sides of R-1/R-2, and R-3/R-4.



8...Bevel the front edge of R-3 as shown on the plan, and sand the other edges round.

Mark the hinge locations and cut the hinge slots. Temporarily install the hinges without glue. Sand the outside edges round. Leave the other edges square.

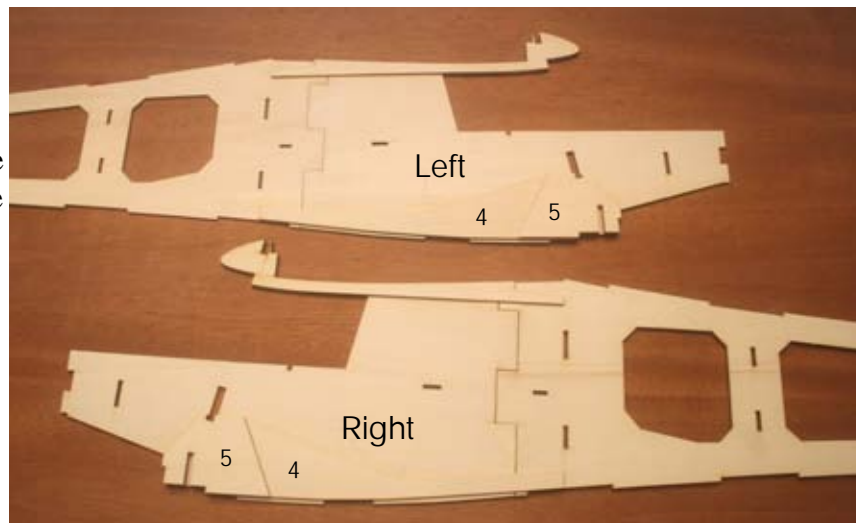


Building the Fuselage:

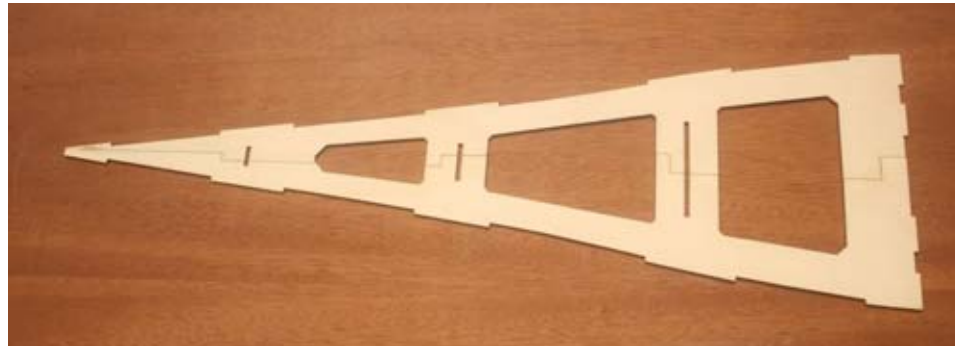
9...Assemble the **RIGHT** fuselage side using parts F-1R and F-2 . Assemble the **LEFT** fuselage side using parts F-1L and F-2. **Be sure to make a right hand and a left hand side.**



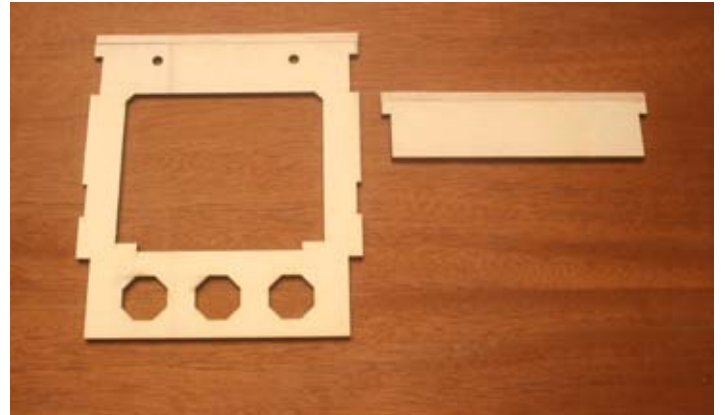
10...Glue the F-3, F-4R and F-5R doublers to the **inside** of the **RIGHT** fuselage side. Glue the F-3, F-4L and F-5L doublers to the **inside** of the **LEFT** fuselage side. **Be sure to make a right hand and a left hand side.** Use the drawing on the plan to properly locate the doublers on the fuselage sides. NOTE: The F-4 doublers go on the fuselage side. The F-5 doublers go on top of the F-4's.



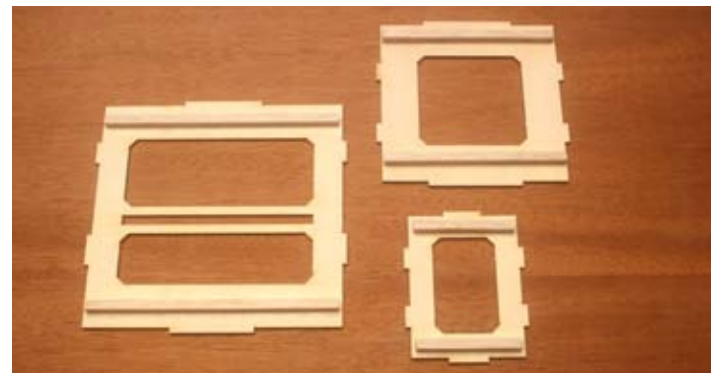
11...Glue F-14A and F-14B together.



12...Glue the two F-6's together. Glue the two F-15's together. Glue a 1/4" sq. balsa strip to the top of F-6 and F-15 as shown. When the glue is dry, sand the 1/4" balsa flush with the ends, front and back of the formers.



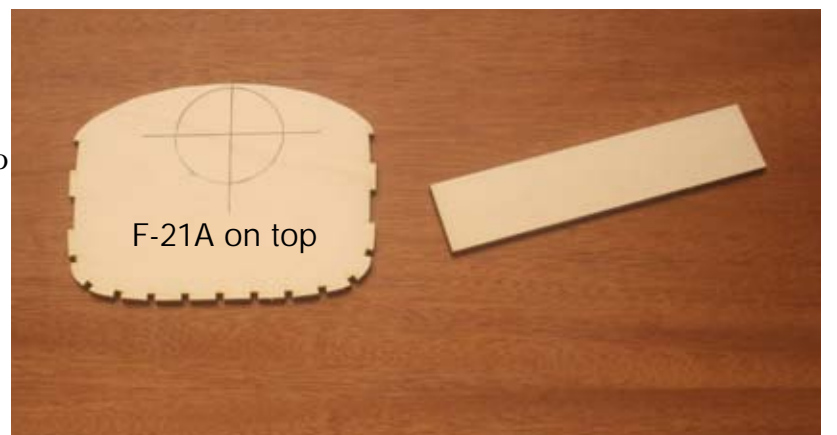
13...Glue 1/4" sq. balsa strips onto formers F-8, F-11 and F-12 as shown.



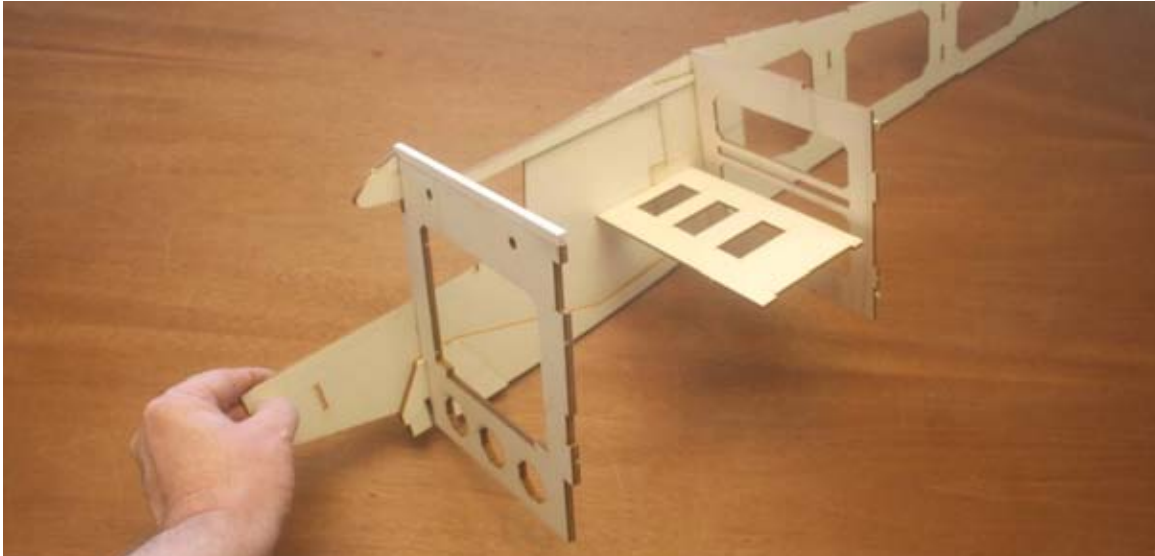
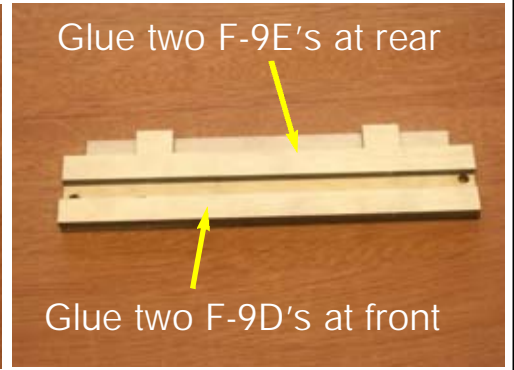
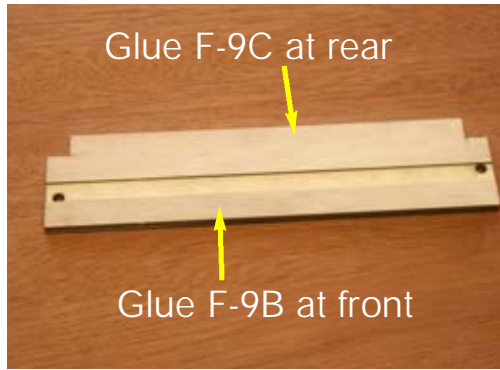
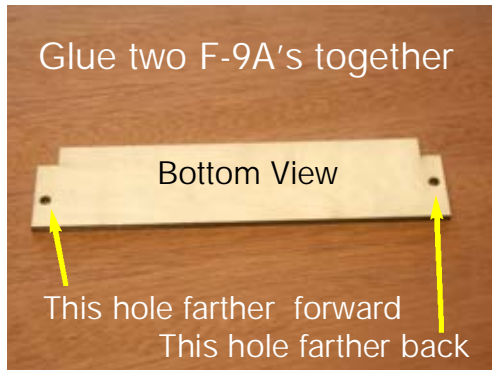
14...Glue F-24B and F-24C to F-24A as shown to make the fuel tank tray. The front of F-24A should angle back on the right side as shown.



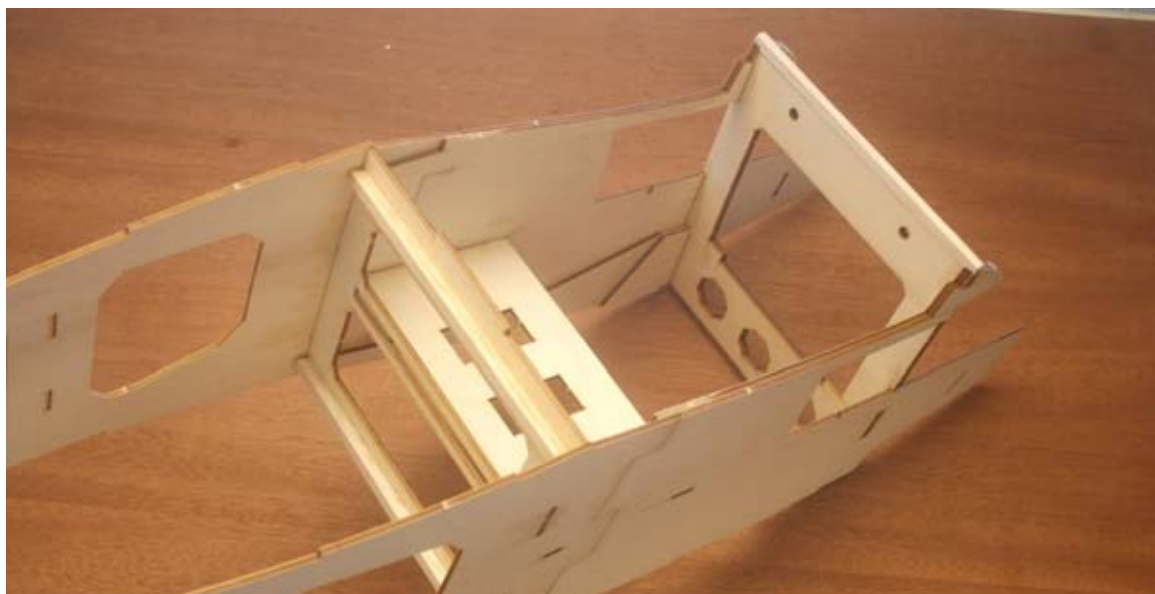
15...Glue F-21A to the front of F-21B. Glue the two F-16's together.



16...Glue the F-9 pieces together as shown.

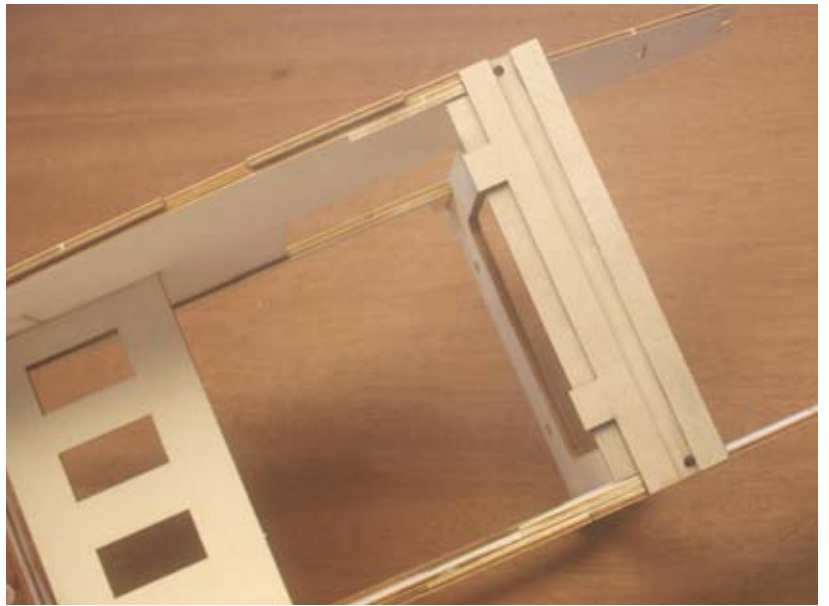


17...Place formers F-6, F-7 and F-8 into position on the right fuselage side. They should be completely seated against the side and be 90 degrees to the fuselage side. When properly positioned, glue the formers securely to the fuselage side. The 1/4" braces on F-8 should be on the back side.



18...Position the left fuselage side into position on the formers. They should be completely seated against the side and be 90 degrees to the fuselage side. When properly positioned, glue the formers securely to the fuselage side.

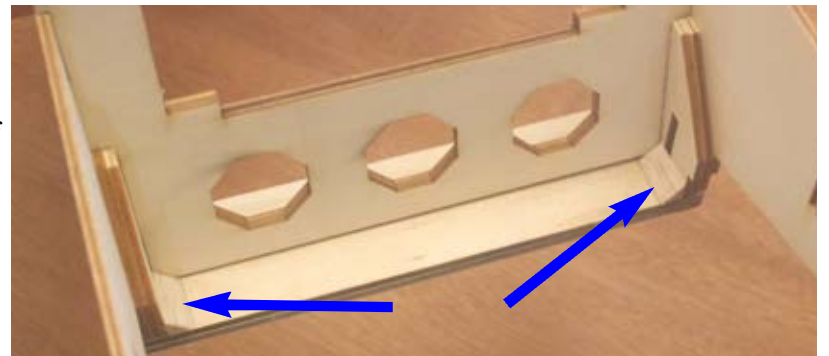
19...Glue the F-9 assembly into position on the bottom of the fuselage as shown. The holes in F-9 should align with the slots in the fuselage doublers.



20...Cut a piece of 1/4" triangle to make a brace that fits across the bottom of F-6. This brace is on the backside of F-6 and down, tight against F-9. When properly positioned, glue the brace securely into place.



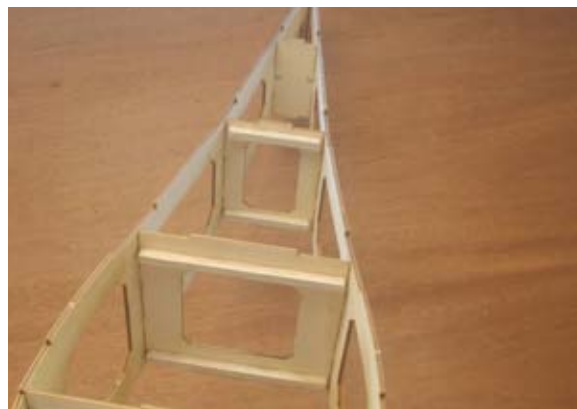
21...Cut two 1/4" triangles and glue onto the ends of F-9 and against the F-5 doublers as shown.



22...Place former F-10 into position and pull the rear of the fuselage sides together. Adjust the back end until the fuselage is straight and square. Glue the fuselage sides together and glue the former in place.



23...Place former F-11 into position and glue in place. The 1/4" balsa braces should be on the front side. Place former F-12 into position and glue in place. The 1/4" balsa braces should be on the front side.



24...Glue F-13 into position on the top rear of the fuselage. Spread and squeeze the sides as required to get F-13 to fit in the proper position.



25...Glue F-14 into position on the bottom rear of the fuselage. Spread and squeeze the sides as required to get F-14 to fit in the proper position.



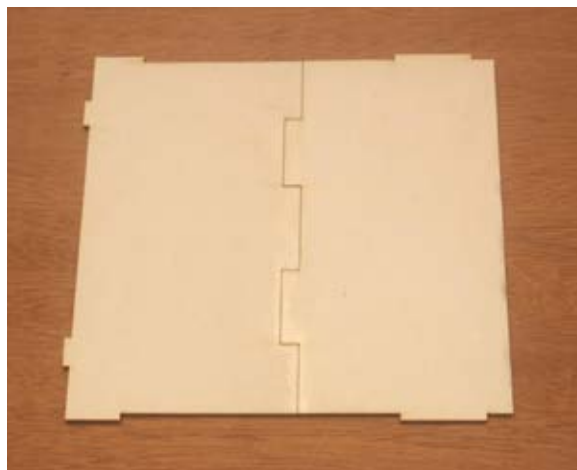
26...Securely glue former F-15 into position on the top of the fuselage at the front of the wing saddle area. It should be glued to the fuselage sides and F-6.



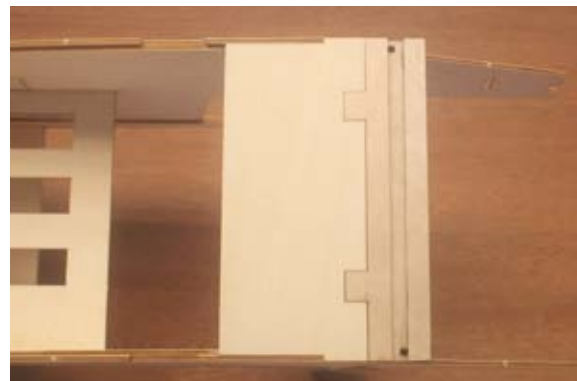
27...Securely glue the F-16 assembly into place in the notches in the back of the F-3 doublers. Glue to the fuselage sides and F-8. Glue a 1/4" triangle between F-3 and F-16. When the glue is dry, trim the tops of the triangles to match the contour of the wing saddle.



28...Glue F-18 and F-19 together as shown.



29...Glue F-17 into position on the bottom of the fuselage as shown. Securely glue to F-9 and the fuselage sides.



30...Glue F-18 and F-19 into position on the bottom of the fuselage. Trim the front edge of F-18 if required to achieve the proper fit.



31...Moisten the outside of the forward fuselage sides with an ammonia based window cleaner such as Windex.

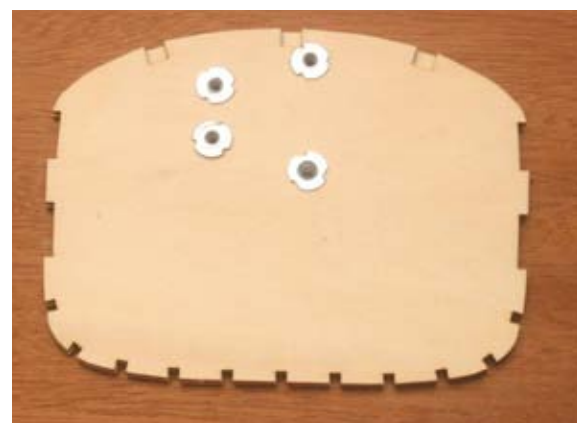
Position former F-20 between the fuselage sides and squeeze the sides together to make tight contact and glue the former in place.



32...Carefully position the motor mount on the front of the firewall (F-21). Mark and drill the locations for the motor mount screws in the firewall.



33...Flip the firewall over and press the 6-32 blind nuts into place as shown. Secure the nuts with a small amount of thin C/A glue.



34...Moisten the outside of the forward fuselage sides with an ammonia based window cleaner such as Windex.

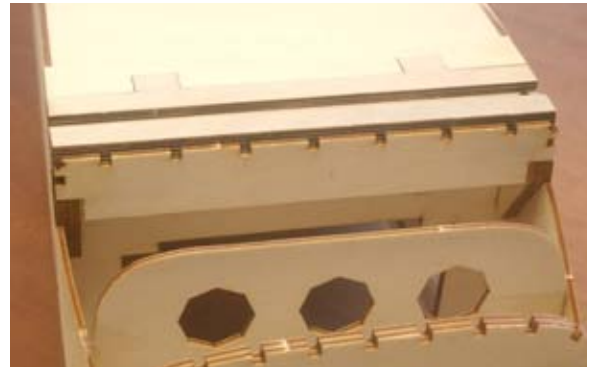
Position the firewall between the fuselage sides and squeeze the sides together to make tight contact and glue the former in place.



35...Cut two 1/4" triangle braces to length and securely glue them into position against the back of the firewall and the fuselage sides.



36...Glue former F-22 in position on the fuselage as shown.



37...Place former F-23 into position on the top of the fuselage, immediately in front of F-6. Angle the top of the former forward as shown on the plan. When the former is in the proper position, glue the former in place.

Cut and glue three 1/4" sq. balsa strips into place in the notches in fuselage formers F-21B, F-20 and F-23. The back ends should be trimmed flush with the back of F-23.



38...Glue the fuel tank tray (F-24) into position on the formers as shown. The front edge should be tight against F-21.

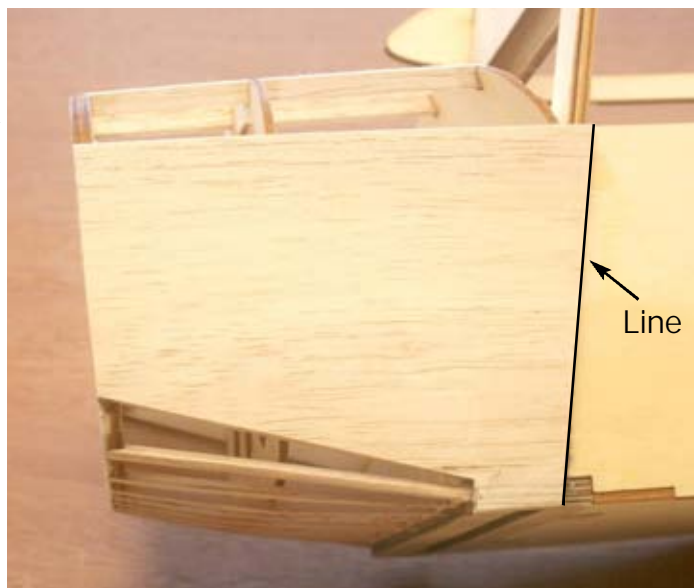


39...Cut and glue The 1/8"sq. balsa strips into place in the notches in the bottom of the fuselage between formers F-21 and F-22.



40...Use a straight edge to draw on the fuselage side as shown. The line should match the angle of F-6 and be aligned with the back edge of F-6. See the detail on the plan for the proper position.

41...Cut a 6" x 4" piece from one of the 1/8" x 4" x 24" balsa sheets. Trim an angle on the back end to match the angle of F-6. Glue this piece on the fuselage side. The back edge should be on the marked line. The top edge should be flush with the fuselage side. When the glue is dry, trim the excess sheet flush with the bottom of the fuselage side, the front of F-22 and flush with the front of the firewall.



42...Use two pieces of 1/8" x 4" balsa to sheet the bottom of the fuselage as shown. The two pieces should meet on the center of the middle stringer. Trim the front flush with the front of the firewall. Trim the sides flush with the last 1/8" sq. stringer as shown.

To make the wood bend easier, moisten the outside of the sheet with an ammonia based window cleaner such as Windex.



43...Use two pieces of 1/8" x 4" balsa to sheet the remaining corners on the bottom of the fuselage as shown. Trim the front flush with the front of the firewall.

To make the wood bend easier, moisten the outside of the sheet with an ammonia based window cleaner such as Windex.



44...Use two pieces of 1/8" x 4" balsa to sheet the top of the fuselage as shown. Glue the bottom edge of the sheet to the fuselage side.



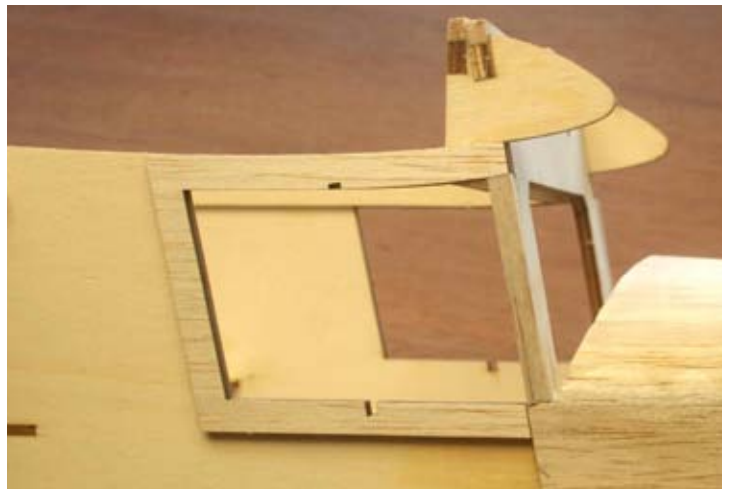
45...Moisten the outside of the sheet with an ammonia based window cleaner such as Windex. Roll the sheet around the formers and stringers. Each piece should end at the center-line of the middle 1/4" sq. stringer. Glue the sheet into place. When the glue is dry, trim the front flush with the firewall and trim the back flush with F-23.



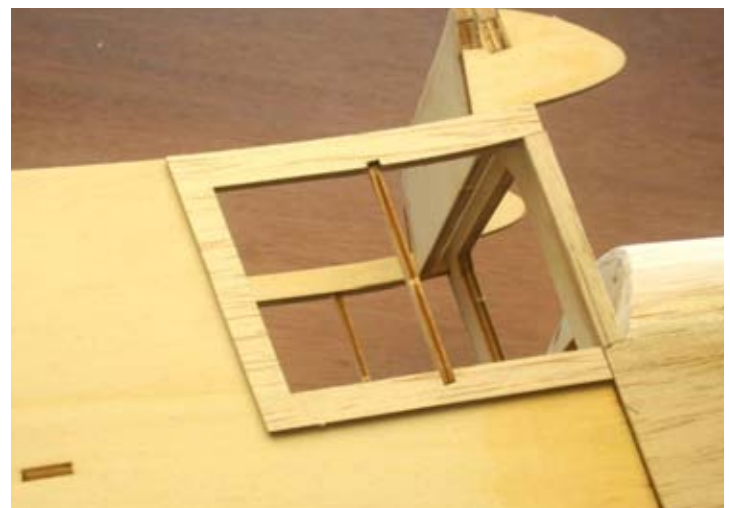
46...Glue the F-25 window frames to the fuselage sides as shown.



47...Cut a piece of 1/8" balsa sheet to two strips 1/4" wide. Fit and glue these strips to the outside edge of former F-6 between the top of F-25 and the forward top nose sheet on each side of the fuselage as shown.



48...Glue the two F-26 window dividers into position as shown. The wider end is on the bottom.



49...Glue the 1/8" sq. balsa stringers to the fuselage sides. Use the drawing on the plan to determine the proper position.



50...Glue pieces of 1/8" sq. balsa to make the door framework and glue it to the fuselage sides as show.

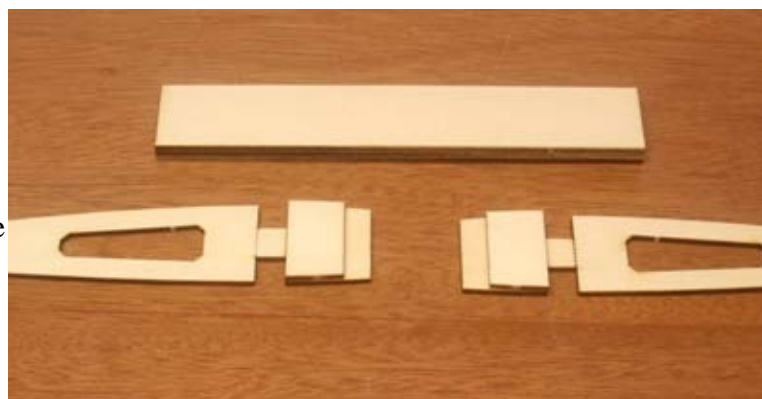
Sand the fuselage smooth all over. The wood in the door area should be tapered top to bottom as shown on the detail on the plan. DO NOT SAND the 1/4" balsa on top of formers F-6 and F-15.



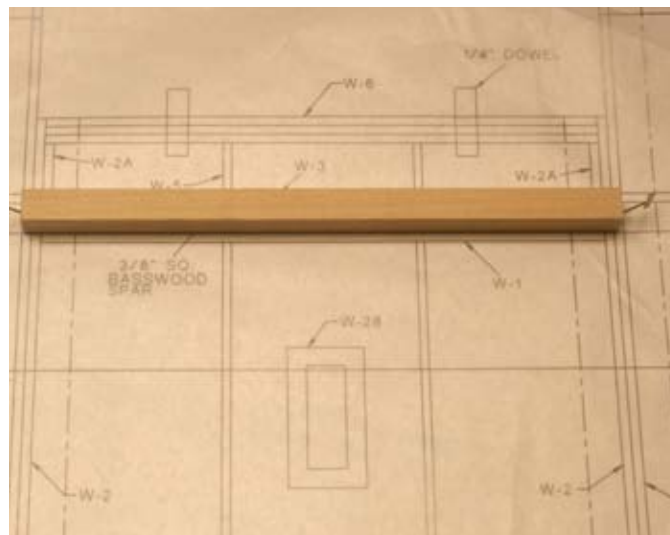
Building the Wing Center Section:

51...Glue the three W-6's together.

Glue the W-2A doublers to the front of the W-2 ribs. Be sure to make a left and right as shown.

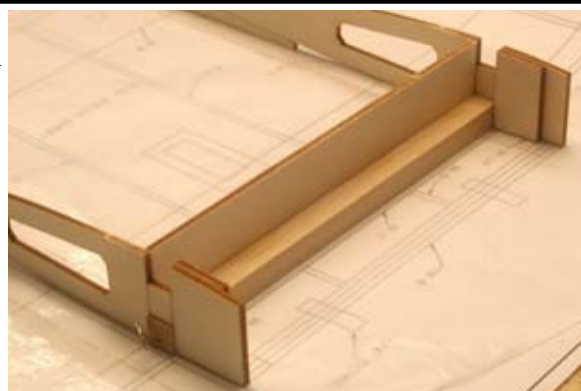


52...Pin the lower 3/8" x 3/8" x 7" bass lower main spar to the plan. The ends will extend slightly past the W-2 ribs.

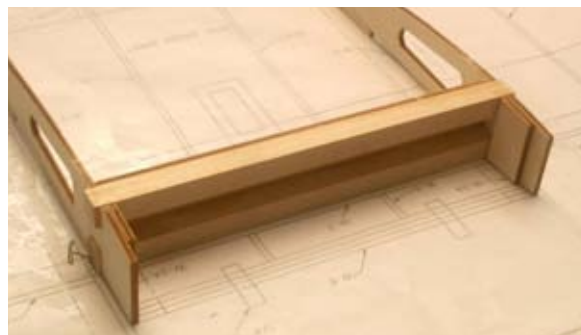


53...Glue the W-2 ribs into position on the lower main spar. The W-2A doublers should face inboard. The ribs should be 90 degrees to the building board.

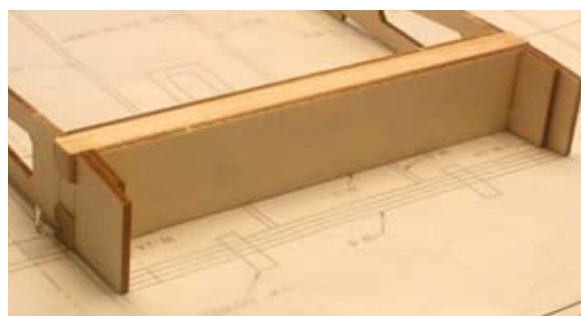
Glue the W-1 shear web into position on the rear of the spar between the W-2 ribs. It should be tight against the ribs and spar and aligned with the spar slot in the top of the rib.



54...Put the 3/8" x 3/8" x 7" bass top main spar into place. The ends will extend slightly past the W-2 ribs. Glue it to the ribs and shear web.



55...Glue the W-3 shear web into position on the front of the spar between the W-2 ribs. It should be tight against the ribs and spar.



56...Place the W-6 assembly into place between the W-2 ribs. It should be aligned up and down with the front corners of the W-2 ribs, and back against the W-2A doublers. When in the proper position, glue in place.



57...Cut one of the 3/32" x 1-1/2" x 18" balsa trailing edge sheets into two 9" pieces. Slide it into the slots in the rear of the W-2 ribs. Center it and make sure that it is fully seated in the slots and glue in place.



58...Slide the W-4 ribs into position. The top front edge should flush with the top edge of W-1. When in the proper position, glue the W-4 ribs to W-1 and the trailing edge sheet.



59...Glue the W-5 ribs into position between the W-6 assembly and W-3.



60...Glue the remaining 3/32" x 1-1/2" x 9" trailing edge sheet on top of the rear of the center section.



61...Glue two of the W-7's together on top of each other. Glue the second set of W-7's together.

Use sandpaper to taper the two W-7 assemblies so they fit into the gap between the two trailing edge sheets. They should fit tight and be positioned as far back as possible. Glue the W-7's in place.



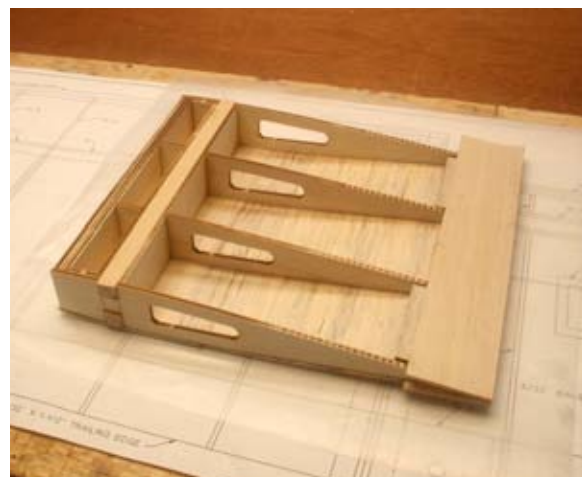
62...Use the 3/32" x 4" x 24" balsa to sheet the top rear of the wing center section. The grain should run left to right. Leave the edges slightly long



63...Use the 3/32" x 4" x 24" balsa to sheet the remainder of the top of the wing center section. The grain should run left to right. Leave the edges slightly long



64...Remove the center section from the plan. Cut the support tabs from the bottom of the ribs.



65...Use the 3/32" x 4" x 24" balsa to sheet the bottom of the wing center section. The grain should run left to right. Leave the edges slightly long



66...When the glue is dry, trim the spars and sheet flush with the W-2 ribs and the front of W-6. Sand the top and bottom of the center section smooth.



67...Sand a bevel around the edges of W-8.



68...Glue W-8 on the top of the center section, centered left and right. It should be flush with the back of the trailing edge.



69...Test fit the wing center section onto the fuselage. Sand the back end if required to fit tightly down into the step in the fuselage. The front must be tight against and in full contact with F-15.



70...Center the center section left and right on the fuselage. **Hold it tightly in position**, and using a 3/16" drill bit, drill the bolt holes in parts F-16 in the fuselage. The drill bit must be centered in the 1/4" holes in the center section and be 90 degrees to the top surface of the center section so the bolt heads will sit flat.



71...**Remove the wing from the fuselage.** Using a 1/4" drill bit, drill out the wing bolt holes in the center section.

72...Use a 1/4-20 tap to cut threads in the holes drilled in F-16. Apply some thin C/A to harden these threads and when the glue is dry, re-tap to clean up the threads.

Use the two 1" nylon bolts to attach the center section onto the fuselage.

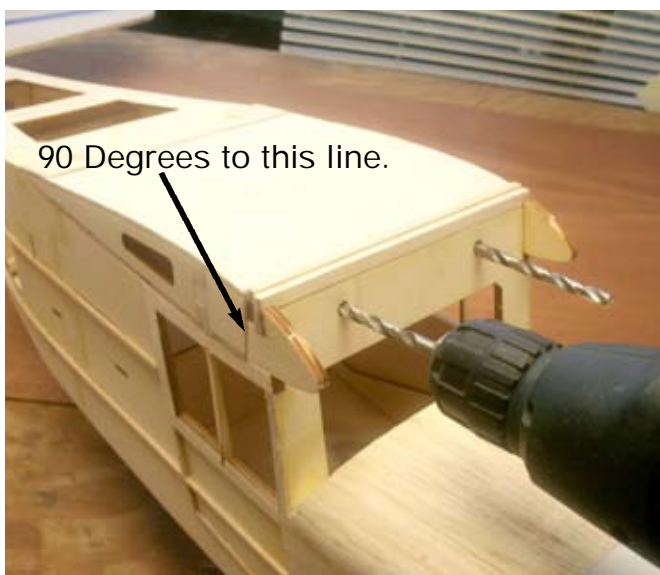


73...**Hold the center section tightly against the fuselage.** Use a 1/4" drill bit to drill holes through F-6 into W-6 for the wing dowels.

WARNING!!!

The dowel holes must be 90 degrees to F-15 and W-6. This means that you will be drilling through F-6 at an angle.

Sight from the side to make sure that the drill is 90 degrees to F-15 and W-6 before you drill the holes.



74...Remove the center section from the fuselage. Insert the 1/4" dowels into the holes in W-6. They should stick out 3/8". Securely glue the dowels into position. When the glue is dry, check the fit on the fuselage again.



75...With the center section bolted to the fuselage, sand the 1/4" balsa on the top of formers F-6 and F-15 flush with the sheet on the top of the center section.



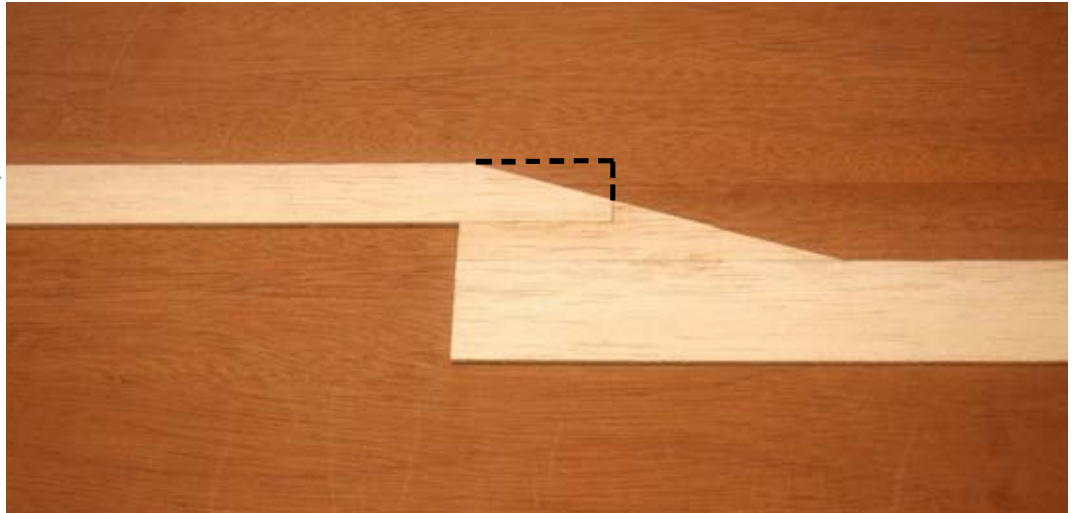
Building the Left Wing:

76...Cover the right wing plan with wax paper to prevent the parts from sticking to the plan.

77...Make one trailing edge by placing W-9 against one of the $\frac{3}{32}$ " x 1-1/2" x 18" balsa sheets. The end of W-9 should be flush with the end of the 1-1/2" balsa. When properly positioned, glue the two pieces together.

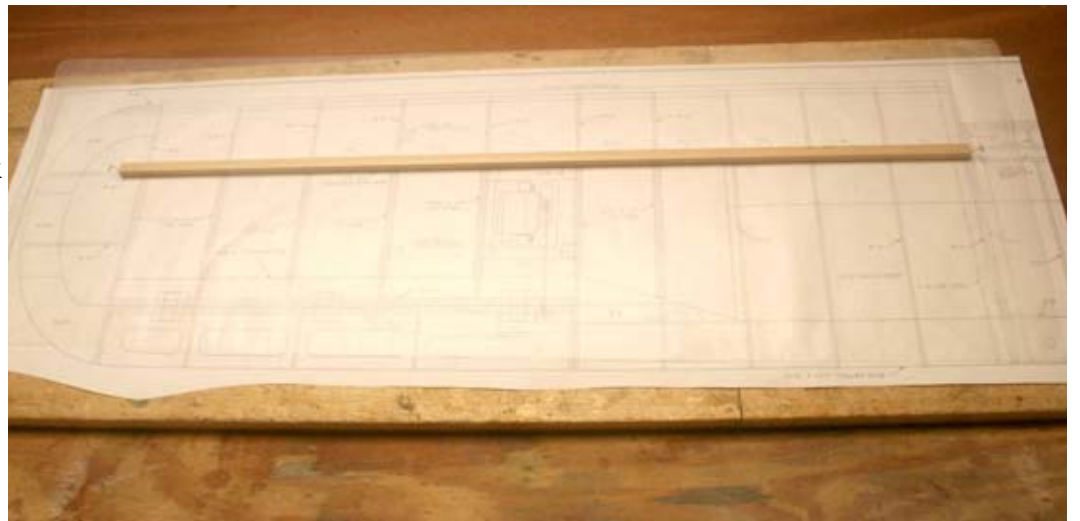


78...Place one of the $\frac{3}{32}$ " x 1" x 18" balsa sheets against W-9. The end of the 1" balsa should be positioned as shown. When properly positioned, glue the two pieces together.



79...Trim the end of the $\frac{3}{32}$ " x 1" balsa sheet to match the angle on W-9 as shown. Now repeat the previous steps to make a second trailing edge.

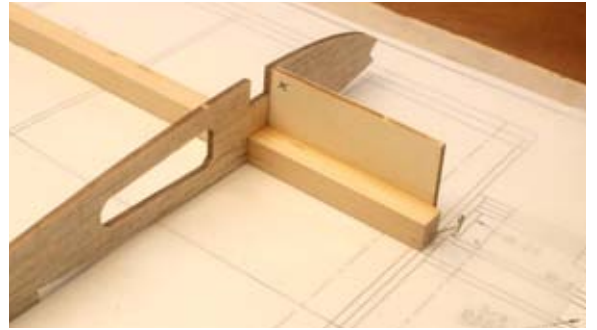
80...Cut two $\frac{3}{8}$ " sq x 36" bass spars to 30". Pin the lower $\frac{3}{8}$ " x $\frac{3}{8}$ " x 30" lower main spar to the plan. The inboard end should be flush with the inboard face of the W-11 rib. Let the outboard end extend past the W-19 rib and the wing tip



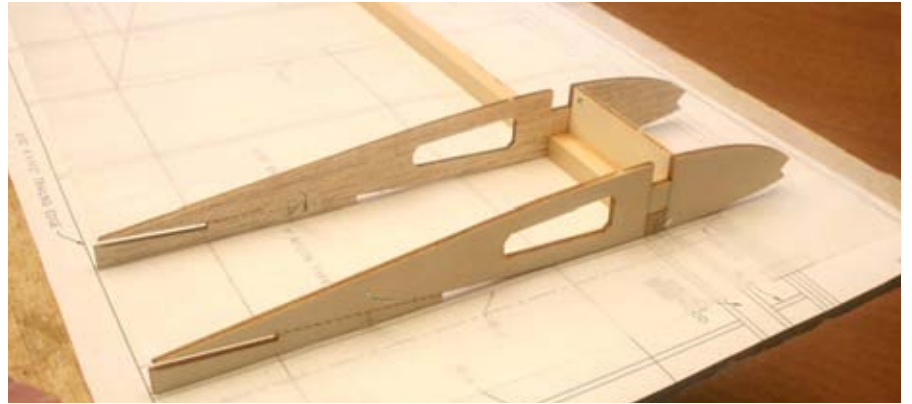
81...Pin and glue rib W-10 into position on the bottom spar. It should be 90 degrees to the building board.



82...Glue shear web "A" into position against the front face of the lower spar and rib W-10 as shown on the plan.
The small "X" on the shear web marks the top outboard corners of the shear webs.



83...Pin and glue rib W-11 into position. The top of the rib should angle slightly toward the wing tip and be in full contact with the shear web.



84...Pin and glue ribs W-10A through W-19 into position on the spar. They should be 90 degrees to the building board.



85...Glue the 3/8" x 3/8" x 30" bass top spar into position.



86...Working from the tip to the center, slide the trailing edge under W-19 and then into the slots in the remaining ribs. Line up the aileron cutout with the out-board edge of W-14. Make sure that the trailing edge is fully forward in the slots and glue in place.



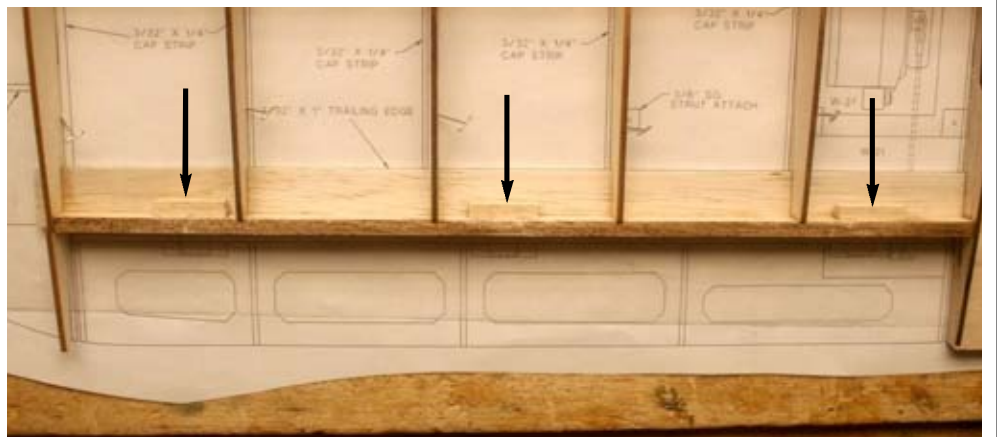
87...Glue the 3/8" sq. balsa leading edge into position. You can let the extra extend past the end ribs.



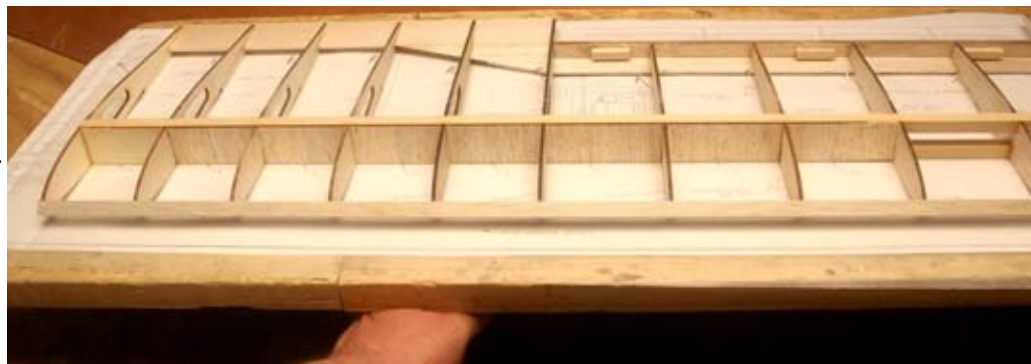
88...Glue two W-20's together. Put into position and glue to the ribs and bottom trailing edge sheet between ribs W-14 and W-19.



89...Cut and glue three 1/4" sq. balsa fillers to the back of W-20 in the locations of the aileron hinges.



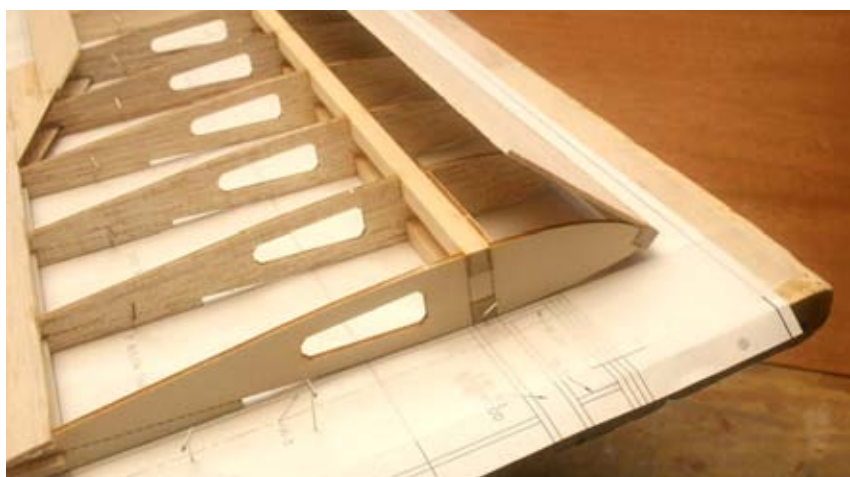
90...Glue the remaining shear webs B, C, D, E, F, G and H into position. Trim the ends to get the proper fit if needed.



91...Place the top trailing edge sheet into position and glue into place.



92...Position the 3/32" x 3" x 30" leading edge sheet against the leading edge as shown. When positioned properly, glue the sheet to the leading edge only.

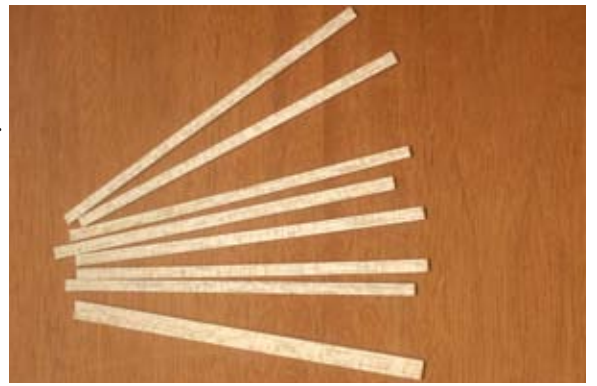


93...Moisten the outside of the leading edge sheet with an ammonia based glass cleaner such as Windex. Allow it to soak in for several minutes. Roll the sheet back and glue thoroughly to the ribs and main spar.

94...Cut two pieces 8" long from one of the 3/32" x 4" x 24" balsa sheet. Save the 8" left over piece for use in the next step. Use the 8" pieces to sheet the inboard end of the wing from W-11 to just slightly past W-12, and between the leading edge sheet and trailing edge.



95...Cut 1/4" x 8" strips from the left over sheet from the previous step.



96...Use these 1/4" wide strips as cap strips and glue into position on top of the W-13 thru W-19 ribs. The cap strips should be centered on the ribs except for W-19. The W-19 cap strip should be flush with the outboard face of the rib and extend inboard.



97...Remove the wing from the plan. Trim the supports from the trailing edge of the wing ribs.



98...Using 3/32" x 3" x 30" balsa, sheet the lower leading edge as you did the top. Be sure that the wing is held straight so you do not induce a twist while applying this sheet.



99...Sheet the inboard end of the wing as you did the top.

100...Test fit W-21 on ribs W-14 and W-15 as shown. The wide edge on W-21 is the inboard end. Trim the back edge to fit tight against the trailing edge. When the proper fit has been achieved, glue W-21 into place.



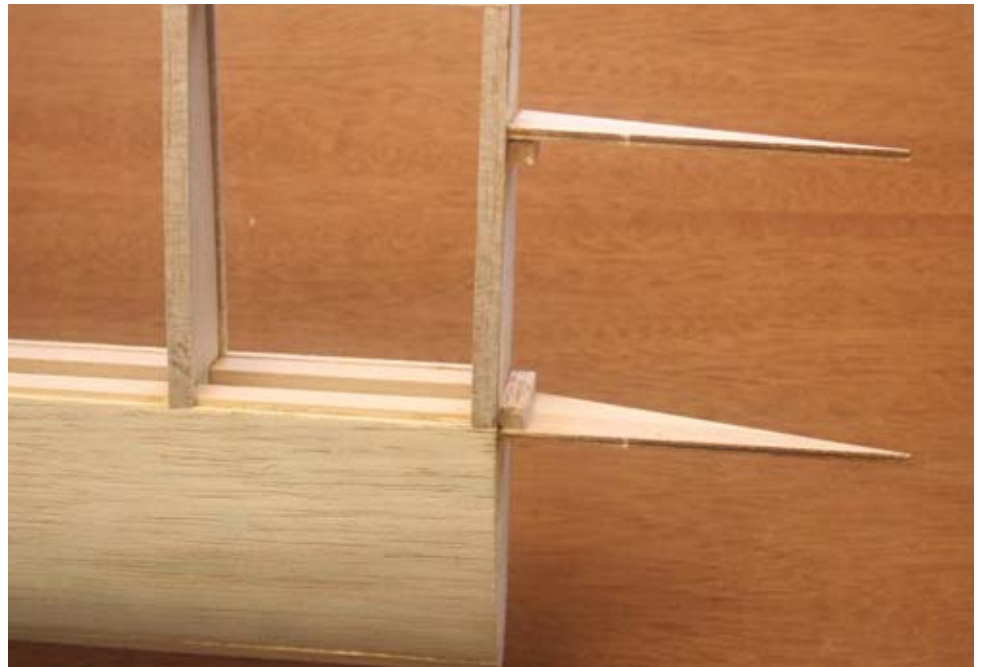
101...Fit and glue 1/4" wide cap strips to the remaining ribs as you did the opposite side.



102...Trim the excess spars and sheet flush with the ribs on both ends of the wing.

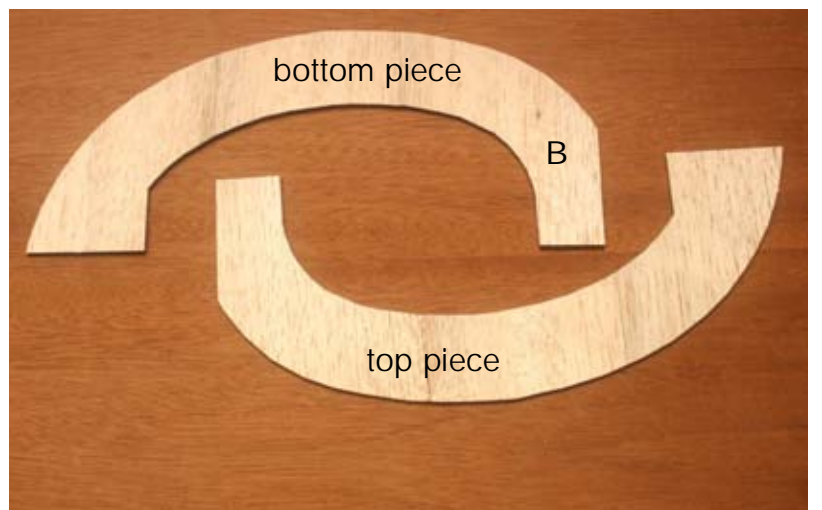


103...Glue W-22 to W-23 to rib W-19 as shown. They should be centered top and bottom and positioned 90 degrees to the rib. Cut small 1/4" sq. balsa reinforcements and glue into position as shown.



Note: The straight edge is on the top. The angle edge is on the bottom.

104...Glue W-24A, W-24B and W-24C together to make the top wing tip. Glue W-24A(B), W-24B and W-24C together to make the bottom wing tip.



105...Place the top wing tip piece into position. The rear edge should rest on top of, and be flush with the inboard edge of the rib. The front should overlap the leading edge sheet by about 1/8". The middle should rest on the W-22 and W-23 supports. When in the proper position, glue the wing tip to the back of the rib and to W-22 and W-23. **DO NOT GLUE TO THE LEADING EDGE AT THIS TIME.**



106...Press the front of the wing tip down and mark where it overlaps the leading edge sheet. Carefully trim away the leading edge sheet in this area so that the wing tip sits down flush with the leading edge sheet.



107...Press the front of the wing tip into position and glue in place.



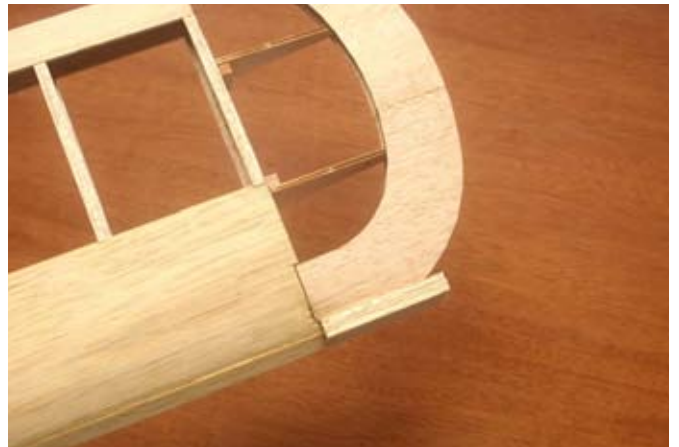
108...Position and glue the bottom wing tip piece in place.



109...Glue the outside of the wing tip pieces together as shown.



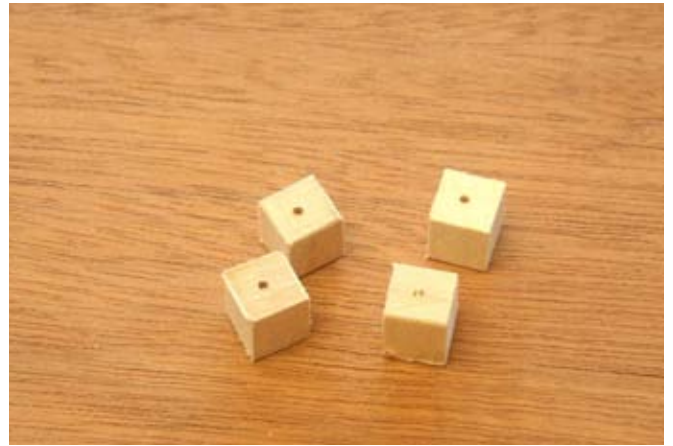
110...Glue three W-25's to the front of the wing tip as shown.



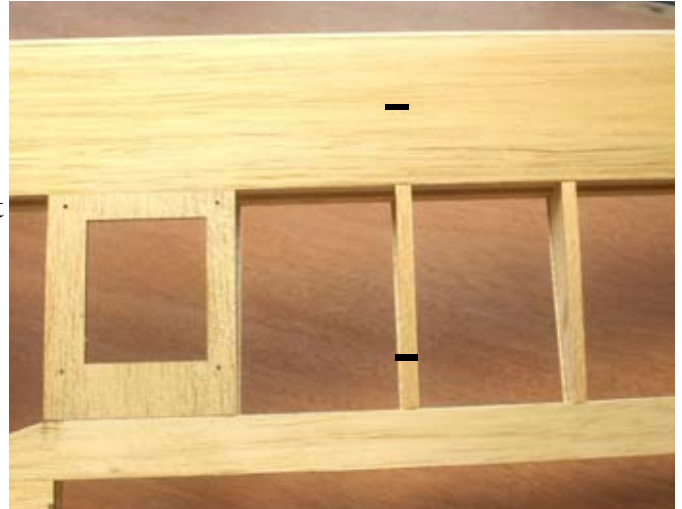
111...Sand the leading edge of the wing round to match the profile shown on the plan. Sand the trailing edge and the edges of the wing tip round. Leave the edges of the aileron cutout square. Now sand the wing smooth all over.



112...Drill a 3/64" hole through four 3/8" x 3/8" x 3/8" bass cubes as shown.



113...Mark the wing strut locations on the bottom of the wing at rib W-16. Measure from the plan to get the proper locations.



114...Trim away the inboard edge of the cap strip from the bottom of the wing and position the rear strut block flush with the bottom of the wing. When the block is in the proper position, glue it in place.



115...Mark the location of the front strut block in the bottom of the wing. The outboard edge of the block should be against rib W-16.



116...Cut away the bottom sheet and glue the block into position, flush with the bottom of the wing.



117...Cut a brace from one of the 3/16" x 1/2" x 36" bass struts and glue into position as shown. It should be up against the inside of the cap strip and tight against the ribs and the rear strut block.



Repeat steps 76 thru 117 to build the right wing.

Building the ailerons:

Build the right aileron.

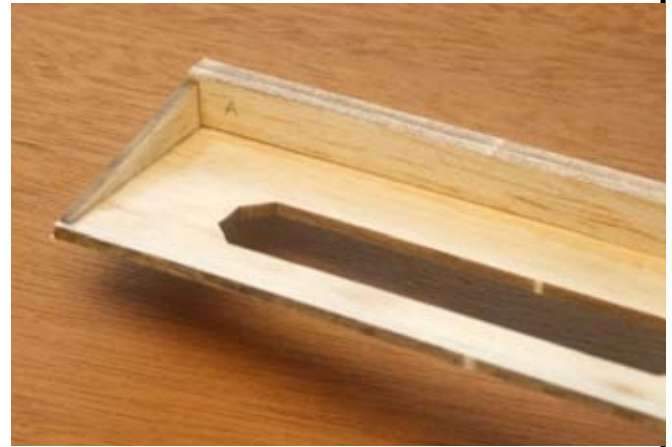
118...Glue two A-1's together. Trim an slight angle on the bottom edge of the A-1's



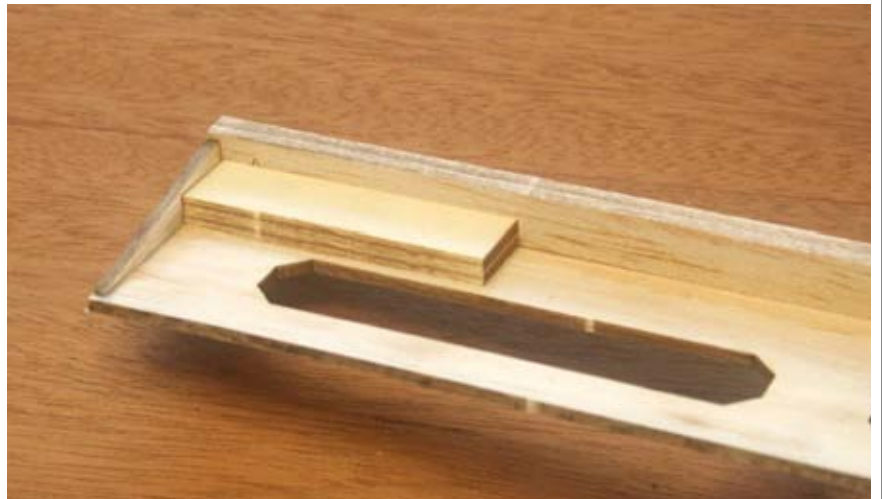
119...Glue the A-1 onto and flush with the front of A-2. Place it with the angle down so it leans slightly toward the trailing edge.



120...Glue the first A-3 rib into position. It should be flush with the end and 90 degrees to A-2.



121...Position two A-4's into position against A-1 and A-3 and glue into place.



122...Glue the remaining A-3's into place.

Cut and glue three 1/4" sq. balsa fillers to the back of A-1 in the locations of the aileron hinges.

These fillers are shown on the plan but not in the photo.



123...Trim an angle on the top of the A-1's to match the angle on the top of the A-3's.

124...Glue A-2 onto the top of the aileron. Sand the ends, front, top and rear of the aileron flush.

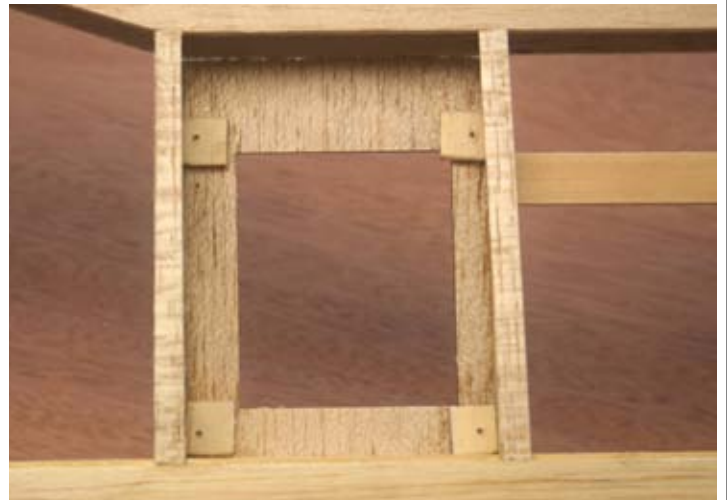


125...Draw a line centered on the front of the aileron. Draw a line 1/8" back from the leading edge on the top and bottom of the aileron.

126...Use these lines as a guide to trim or sand the proper angles on the front of the aileron as shown on the plan.



127...Glue the four W-26's in position on the inside of W-21. Line up the holes in the W-26's with the holes in W-21 and glue in place.



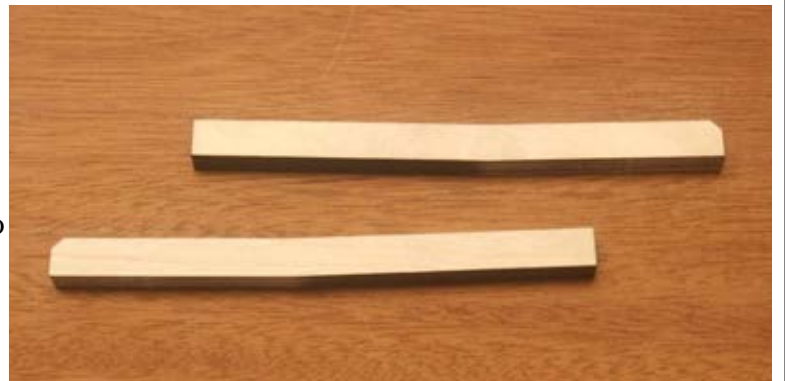
128...Mark a line centered on the back of the aileron spar (W-20). Mark the hinge locations and cut slots for the hinges. Temporarily install the hinges and check the aileron for proper fit on the wing. Do not glue the hinges at this time.



128...Repeat steps 118 thru 128 to build the left aileron.

Joining The Wing:

129...Glue six of the 1/16" plywood wing joiner pieces to make one joiner. Glue the remaining six 1/16" plywood wing joiner pieces to make the other joiner.



130...Glue W-28 to the bottom of the center section in the position shown on the plan. Cut out the opening in the bottom sheet for the aileron servo wires as shown.



131...Cut open the 3/8" wide slots in the W-2 ribs between the dashed lines for the wing joiners.



132...Mark the two wing joiners as shown on the plan.



133...Test fit the joiners into the slots in the W-2 ribs. The outboard ends of the joiners should angle up. The top outboard corner of the joiners is cut off at a 45 degree angle. Securely glue the joiners in place.

134...Cut slots in both W-11 ribs at the dashed lines to accept the wing joiner.

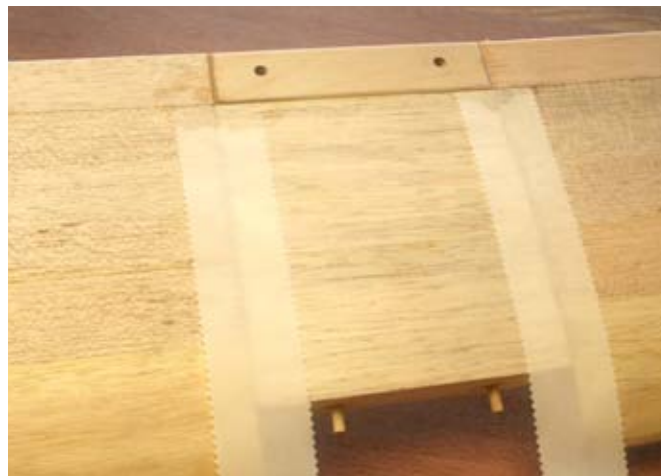
135...Slide the wing joiner on the center section into position in the right wing. Glue the right wing to the center section. Glue the joiner to the shear web and the top and bottom spars and glue the rib to the center section.



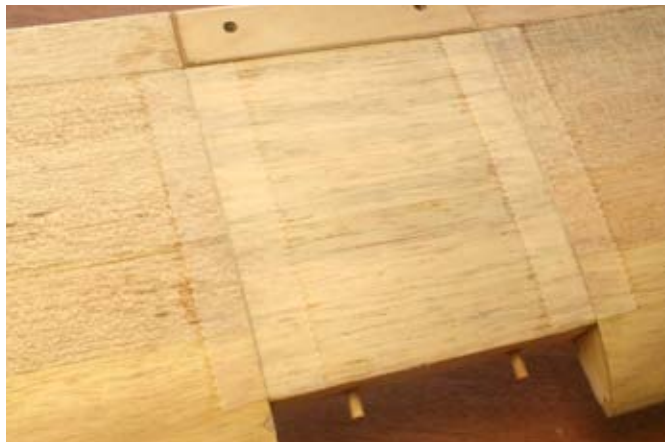
136...Slide the wing joiner on the center section into position in the left wing. Position it tightly between the spars and forward against the shear web and glue the left wing to the center section.

137...Sand the joint between the wings and the center section. Test fit the wing onto the fuselage and sand the wing as required to produce a good fit if needed.

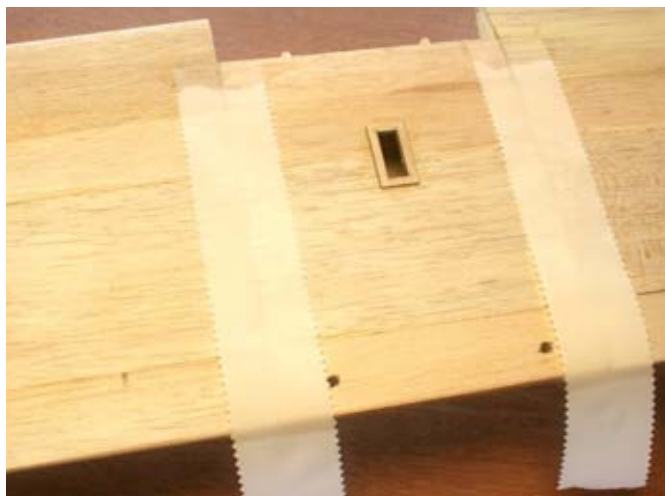
138...Cut the 2" dacron tape into four 10" pieces. Glue the tape on the top of the wing. Start at back end. Tack the end down, centered on the joint.



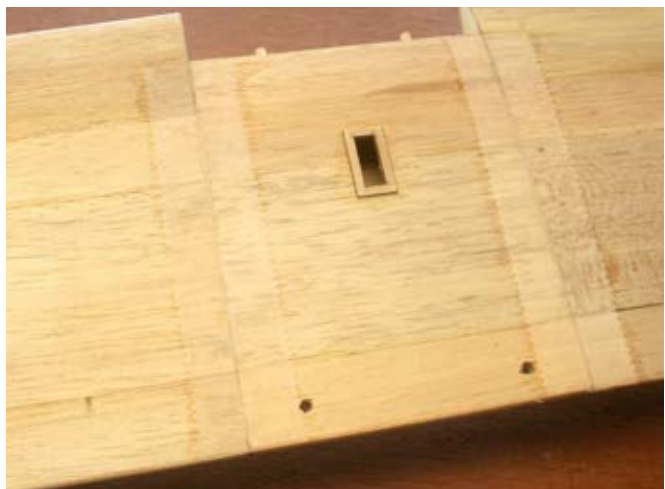
Now pull the tape tight and tack at the front. Now use thin C/A glue to attach the tape to the wing. **Use adequate ventilation.**



When the glue is dry, trim the tape at the front of W-6.



Repeat the previous steps to apply the tape to the bottom wing joints.

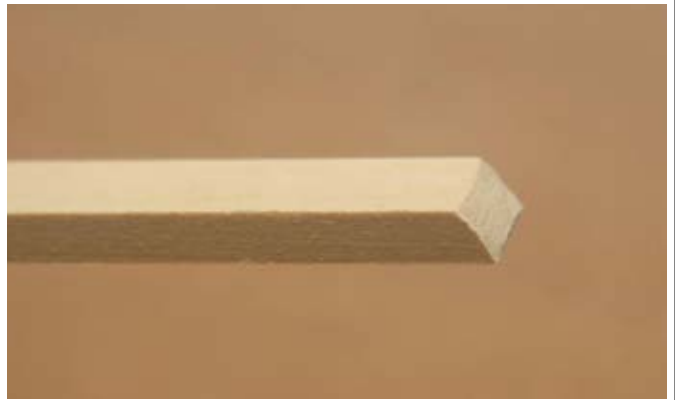


Now sand the wing smooth all over.

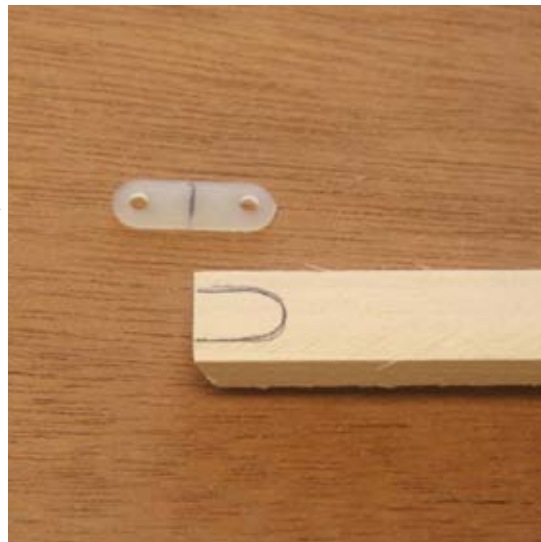


Building the wing struts:

139...Cut an angle on one end of one of the 3/16" x 1/2" x 36" bass front struts. Use the detail on the plan as a guide.



140...Place one of the nylon fittings on the strut with the center of the fitting flush with the edge of the strut. Mark the fitting location on the strut.



141...Cut a pocket for the fitting to fit into. The fitting should be recessed deep enough so the top of the fitting is flush with the strut.



142...Bend an angle in the middle of the fitting as shown.



143...Sand the strut edges round.

Use thick C/A glue to attach the fitting to the end of the strut.
Use enough glue to cover the top of the fitting and fill the hole.



144...Wrap the end of the strut with a piece of the 1" nylon tape and secure with thin C/A. When the glue is dry, sand the tape smooth.



145...**Check the wing for warps. Make sure that it is straight and true.** Attach the wing on the fuselage.

NOTE: If there are any twists in the wings, remove them now. You may also wait to make the struts after the model is covered. The covering may be used to remove any twists in the wing. The wing MUST be absolutely straight before making the struts.

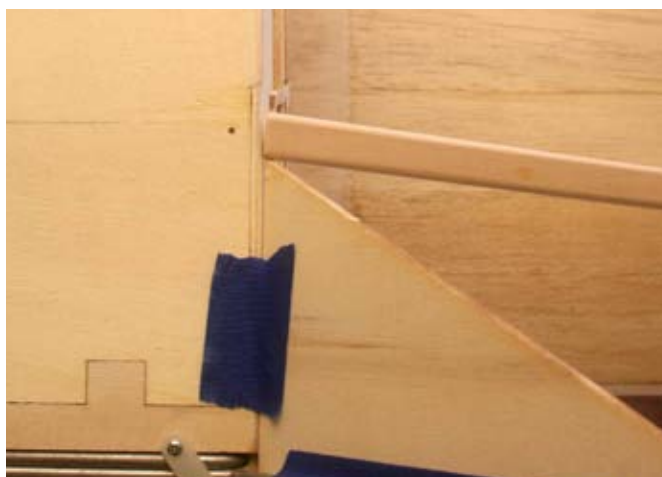


146...Temporarily mount the landing gear wires to the fuselage. Temporarily attach parts LG in position and hold with masking tape.

Screw the wing strut fitting to the front strut block on the wing. Hold the strut against the fuselage just behind the landing gear fairing. Mark the strut as shown.



147...Cut the strut to length. Install a fitting to this end of the strut. Do not wrap with nylon tape at this time. Drill a hole through the fitting into the fuselage and screw the lower end of the strut to the fuselage.



148...Attach a fitting to one end of one of the 3/16" x 3/8" x 36" bass rear strut as you did the front. Attach the rear strut to the wing. Place the rear strut on the lower strut at the fuselage as shown.



149...Mark the rear strut as shown. Now cut the rear strut on the marked line.



150...**Make sure that there are no warps or twists in the wing or that there is any pressure on the wing that might twist it.**

Glue the rear strut to the front strut. When the glue is dry, wrap the lower end of the struts with the nylon tape as you did the top.

Now make and install the strut to the opposite side of the model.



151...Glue 3/8" bass blocks inside the fuselage centered on the strut screw hole as shown.

Remove the struts and wing from the fuselage.



152...Glue the four 3/8" Bass blocks to the front of the firewall at the locations shown on the plan. When the glue is dry, sand the outside of the blocks flush and to match the angle of the fuselage sides.



153...Temporarily mount the the motor mount to the firewall.



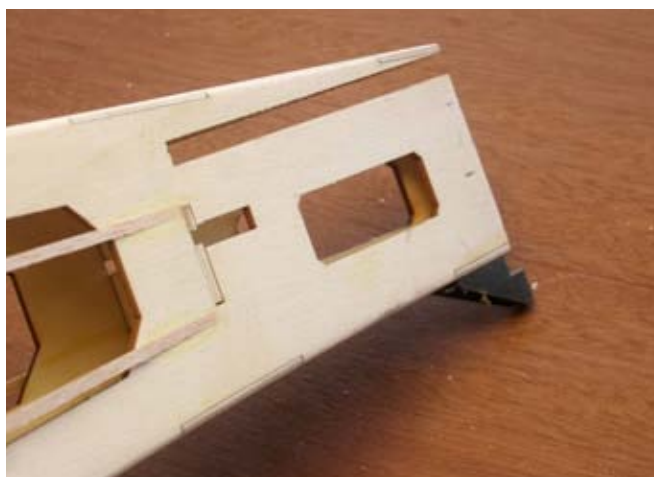
154...Temporarily mount the the motor on the mount.



155...Temporarily mount the muffler on the motor to make sure it fits and the exhaust clears the firewall.



156...Cut on the dashed lines to remove the wood from the stabilizer slots on the fuselage sides. Temporarily mount the tailwheel bracket to the bottom of the fuselage. It should be positioned so that the 1/16" axle is just at the back of the fuselage as shown on the plan.



157...Test fit the tail surfaces on the fuselage. Sand or trim if required to obtain the proper fit.



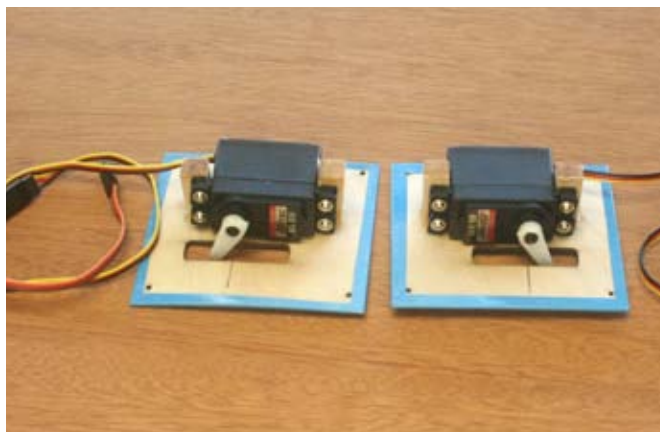
Covering:

158...Sand all parts smooth with 400 grit sandpaper. Feed strings from the aileron servo mounts to the center section. You will use these strings to pull the servo wires thru the wing after the model is covered. Cover the model with a plastic iron on covering material. Overlap all seams approximately 1/8" .

Note: After the model is covered you must check the tail surfaces and wings for warps or twists. If there are any they can be removed by twisting the parts straight and heating the covering.

Final Assembly:

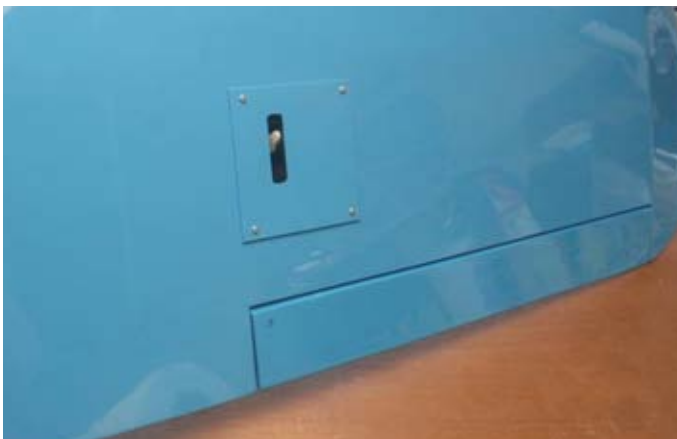
159...Glue the 3/8" sq. x 1" bass servo mounts to the W-27 mount plates. Mount the servos into position on the mounts. The servo arms should be angled 30 degrees forward to the plate when the servo is in neutral. Be sure to make a left and a right hand assembly.



160...Attach the ailerons to the wing with the hinges and glue in place. Cut the covering away from the aileron servo openings.



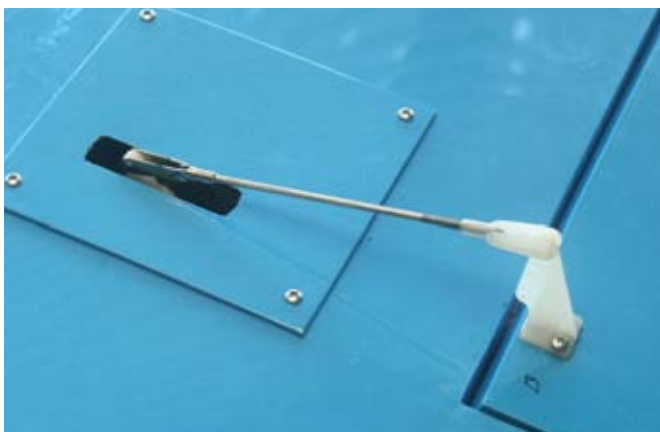
161...Screw the servo mount plates to the wing. The servo arms should be forward and inboard as shown. Use the strings in the wing to feed the servo wires through the wing and out the center section.



162...Screw the aileron control horns to the bottom of the ailerons in the position shown on the plan. **Use #2 sheet metal screws. Use epoxy on the screws to secure them in place.**



163...Assemble the aileron pushrods as shown on the plan. Install the pushrods making sure the ailerons are in neutral when the servos are in neutral.



164...Cut the covering away from the stabilizer, fin and pushrod slots in the fuselage.



165... Cut the covering away from the stabilizer in the area that makes contact with the fuselage.



Place the stabilizer into position in the fuselage. Make sure that it is straight and square and then glue it into position.

166...Carefully cut the covering away from areas on the fin that will make contact with the fuselage. Carefully cut the covering away from areas on the fuselage that will make contact with the fin. Place the fin into position and make sure that it is straight and square. Glue the fin into position.



167...Attach the elevators with the hinges and glue in place.



168...Attach the tail wheel bracket to the bottom of the fuselage. Glue the screws in place.



169...Make the bottom two bends in the tail wheel wire as shown. Use the drawing on the plan as a guide.



170...Install the wire into the bracket. Using the plans and the rudder as a guide, make the top bend in the music wire.



171...Drill a 1/16" hole in the front of the rudder for the tail wheel wire. Attach the rudder with the hinges and glue in place. Use epoxy on the tail wheel wire.



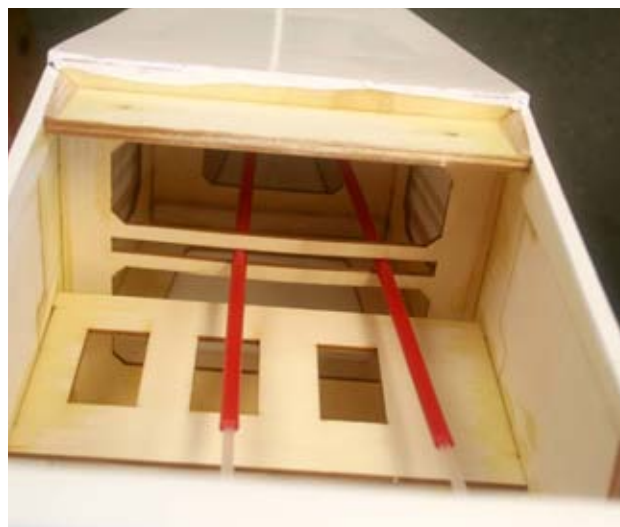
172...Attach the tail wheel with a 1/16" wheel collar.



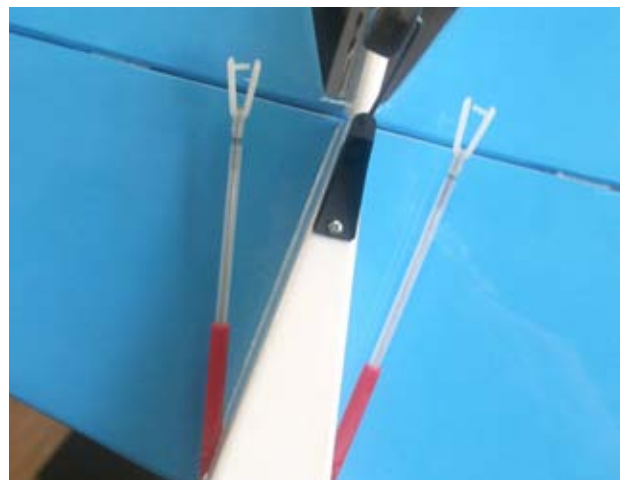
173...Insert the pushrod housings into the exit slots in the back of the fuselage. They should stop 3" forward of the hinge lines. Glue the housings to the rear exits.



The front ends of the pushrod housings should pass thru the slot in former F-8. Do not glue the front ends to the former at this time.



174...Assemble the back end of the pushrods using short pieces of threaded rod and large clevises.



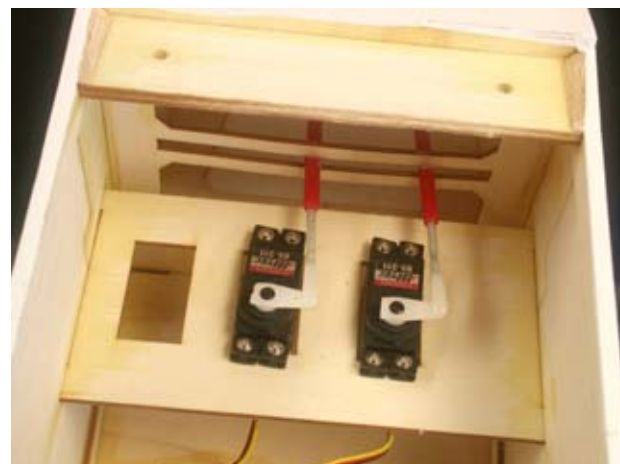
175...Attach the control horns to the elevator and rudder with **2-56 machine screws** and back plates. Slide the pushrods into the housings and connect the clevises to the horns.



176...Screw the servos to the servo tray.

177...Assemble the front ends of the pushrods and connect them to the servo arms. The control surfaces should be in neutral when the servos are centered.

Glue the pushrod housings to former F-8.



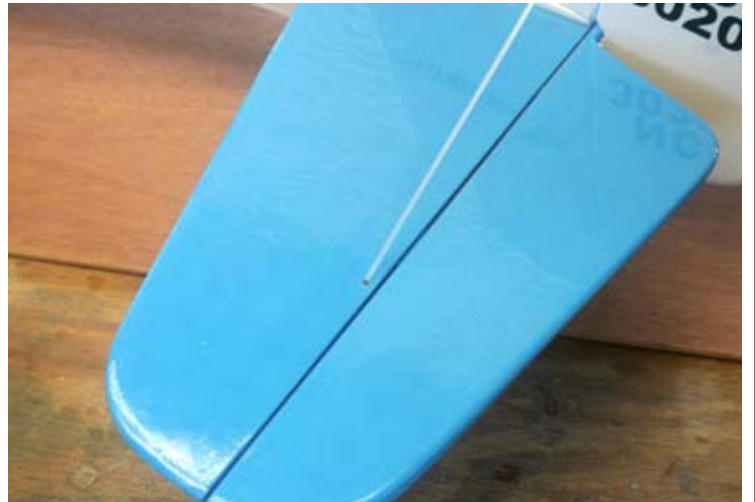
178...Fold the plastic tail brace in half and make a sharp bend in the middle.



179...Drill 1/16" holes in the fin and stabilizer in the locations shown on the plan. Feed the brace wire through the fin and center the bend on the fin.



180...Thread the brace wire through the holes in the stabilizer on each side.



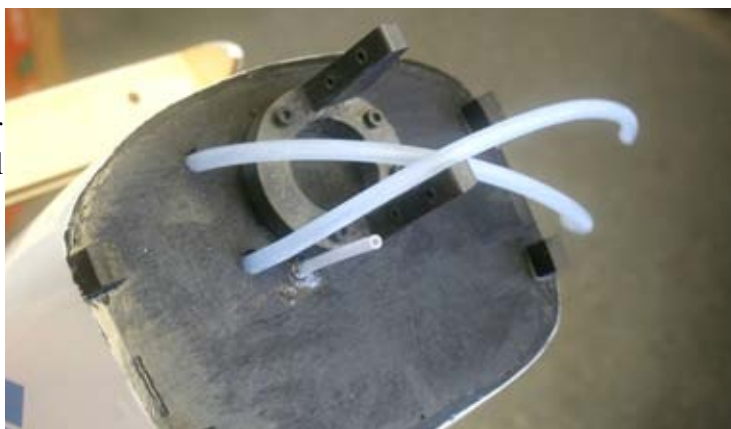
Mark the brace and make sharp bends where it passes through the stabilizer.

181...Drill a 1/16" hole in each side of the fuselage in the location shown in the photo. Insert the ends of the brace into the holes. Pull the wire tight and glue to the fuselage with thin C/A glue.



NOTE: Make sure that the braces are tight with no slack. However, do not pull them so tight that they pull the tail surfaces out of position.

182...Seal the firewall with dope or epoxy. Attach the motor mount. Use a thread locker on the screws. Drill the firewall for the throttle cable and fuel and vent line.



Glue the throttle housing into the firewall.

Assemble the fuel tank. Wrap with 1/4" foam rubber and slide into the tank mount tray while pulling the fuel and vent line through the firewall.



183...Mount the motor and muffler. Attach the fuel line to the motor. Attach the vent line to the muffler.

Make up the front end of the throttle cable and use a nylon clevis.

Pass the throttle cable through the housing and attach the clevis to the throttle arm.



184...Mount the throttle servo to the tray. Attach the throttle cable to the servo with an EZ Connector.

Secure the back end of the housing to the fuselage side using a scrap piece of wood as needed for alignment.



185...Cut the windshield to the pattern on the plan. Tape it down at the top of F-15 / F-6. Wrap it around and tape the lower rear corners to the fuselage sides. Mark and trim as required.

186...Mark where the windshield makes contact with the top of the nose of the fuselage. Cut away the covering from this area. Finish the bare wood as desired.

187...Now glue the top of the windshield to the top of the formers. Start at the top. When this is dry work your way slowly around the rest of the windshield.

NOTE: By sanding the covering material lightly with 400 grit sandpaper you can use thin C/A glue to attach the windows to the covering material and achieve a good bond. You may also cut the covering material away and glue the windows to the wood.

Warning...If you use C/A glue for the windshield, care must be used sparingly to prevent fogging of the plastic.

Warning...Do Not use accelerator as it will cause the plastic to craze.

188...Cut the side windows from the plastic sheet. They should be about 1/16" oversize. Glue them into position on the outside of the model.

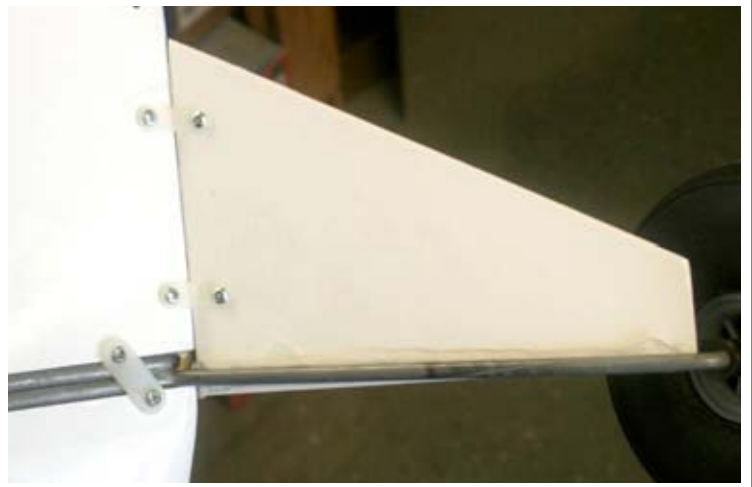
189...Attach the main landing gear wire to the fuselage with the nylon straps and #2 sheet metal screws. Apply epoxy on the vertical legs and into the holes in the fuselage during assembly. Angle the straps so that the screws are against the landing gear wires.



190...Attach the parts LG to the fuselage with #2 sheet metal screws and plastic brackets. Pre-bend the brackets as you did for the wing struts. Bond parts LG to the landing gear wires with silicone rubber. The fairings should be on top of the wires and flush with the front of the wires.

Scuff up the covering material and wire with 220 grit sand paper to assure proper adhesion.

Trim the screws with the outer surface of the LG's. Secure the screws with C/A glue.



191...Put the wheels on the model and secure with 5/32" wheel collars on each side of the wheels.



192...Draw a line on the cowl approximately 5 -1/2" back from the front of the cowl as shown. Measure your engine installation. The cowl should be long enough to overlap the front of the fuselage at least 1/2". Adjust the location of this line accordingly to fit your engine.

The base of the cowl as formed is at an angle and all measurements should be made from the front. Tape a marker on a block of wood or other spacer that gives the required distance. Hold the front of the cowl tightly on a flat surface and gently go around it to mark the trim line.

Note: It is always better to leave the cowl a little long. The final trim of the back edge can be accomplished after the cowl is fitted to the fuselage.



193...Trim the back of the cowl on the line marked in the previous step.

Cut the pattern from the plan and use it to mark the locations of the openings on the front of the cowl.

Trim the openings in the front of the cowl. Trim the opening for the exhaust as required.



194...Drill a 1/16" hole in the center of each cowl block. Tape paper strips to each side of the fuselage. These strips should extend forward over the cowl blocks. Mark the cowl block hole position on the paper strips.



195...Slide the cowl into position. Center the prop shaft in the hole in the cowl and slide the cowl back to provide the proper propeller and spinner clearance.



Squeeze the sides of the cowl into contact with the mounting blocks. Be sure to keep the propeller shaft centered in the cowl. Drill holes in the cowl using the paper strips as a guide. Install the screws in the sides of the cowl.

196...Locate and cut the holes in the cowl for the needle valve, cylinder head and carburetor access. Remove and paint the cowl with a fuel proof paint as required. Then mount back on the model.



196...Wrap the receiver and battery pack with foam rubber. You will probably need some nose weight in the model so place the battery as far forward, under the fuel tank, as possible. Secure the receiver and run the antenna in accordance with the radio's instructions.

197...Check the servos for proper operation and direction. Adjust the control throws to the values shown on the plan. Attach the propeller. Attach the wing onto the fuselage.

198...Check the balance of the model. It should balance at the position shown on the plan. Move the battery forward or aft to achieve the proper balance. Note: If moving the battery will not achieve the proper balance (it probably won't), you will have to add weight to the nose or tail. Glue or bolt any weight securely to the model.

199...Your model is now ready to fly. Fully charge the transmitter and airborne battery before attempting to fly the model. Always range check and do a thorough pre-flight of the model before every flight. Always follow established safety guidelines while operating the motor, radio and flying your model.

NOTES ABOUT THE ARMING SWITCH:

***For electric powered models...**

***YOU MUST USE THE ARMING SWITCH. THIS IS AN IMPORTANT SAFETY ITEM.**

***THE PLUG SHOULD ONLY BE INSERTED IN THE ARMING SWITCH IMMEDIATELY PRIOR TO FLIGHT.**

***ALWAYS REMOVE THE PLUG FROM THE ARMING SWITCH IMMEDIATELY AFTER EVERY FLIGHT.**

***THE PLUG SHOULD NEVER BE INSERTED IN THE ARMING SWITCH WHILE CHANGING OR INSTALLING THE BATTERY IN THE MODEL.**

***BE ABSOLUTELY SURE THAT THERE ARE NO OBJECTS, CLOTHING, BODY PARTS, ETC. ANYWHERE NEAR THE PROPELLER AND THAT THE MODEL IS SECURELY RESTRAINED BEFORE INSTALLING THE PLUG IN THE ARMING SWITCH.**

LIPO BATTERY SAFETY ALERT

Lithium Battery Fires

Lithium batteries are becoming very popular for powering the control and power systems in our models. This is true because of their very high energy density (amp-hrs/wt. ratio) compared to NiCd's or other batteries. With high energy comes increased risk in their use. The principal risk is FIRE which can result from improper charging, crash damage, or shorting the batteries. All vendors of these batteries warn their customers of this danger and recommend extreme caution in their use. In spite of this, many fires have occurred as a result of the use of Lithium Polymer batteries resulting in loss of models, automobiles, and other property. Homes and garages and workshops have also burned. A lithium battery fire is very hot (several thousand degrees) and is an excellent initiator for ancillary (resulting) fires. Fire occurs due to contact between Lithium and oxygen in the air. It does not need any other source of ignition, or fuel to start, and burns almost explosively. These batteries must be used in a manner that precludes ancillary fire. The following is recommended:

1. Store, and charge, in a fireproof container; never in your model.
2. Charge in a protected area devoid of combustibles. Always stand watch over the charging process. Never leave the charging process unattended
3. In the event of damage from crashes, etc, carefully remove to a safe place for at least a half hour to observe. Physically damaged cells could erupt into flame and after sufficient time to ensure safety, should be discarded in accordance with the instructions which came with the batteries. Never attempt to charge a cell with physical damage, regardless of how slight.
4. Always use chargers designed for the specific purpose, preferably having a fixed setting for your particular pack. Many fires occur in using selectable/adjustable chargers improperly set. Never attempt to charge Lithium cells with a charger which is not specifically designed for charging Lithium cells. Never use chargers designed for Nickel Cadmium batteries.
5. Only use charging systems that monitor and control the charge state of each cell in the pack. Unbalanced cells can lead to disaster if it permits overcharge of a single cell in the pack. If the batteries show any sign of swelling, discontinue charging and remove them to a safe place outside as they could erupt into flames.
6. Most important: NEVER PLUG IN A BATTERY AND LEAVE IT TO CHARGE UNATTENDED OVERNIGHT. Serious fires have resulted from this practice.
7. Do not attempt to make your own battery packs from individual cells.

These batteries CANNOT be handled and charged casually such as has been the practice for years with other types of batteries. The consequence of this practice can be very serious resulting in major property damage and/or personal harm.