

The

Blinker

KIT # K-105



Assembly Instructions

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. **DO NOT HAND LAUNCH THIS MODEL!!!**

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.



Alien Aircraft Corp.

403-A Flomich Street
Holly Hill, FL. 32117
(386)676-0074

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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-105-01	.1/16" X 4" X 24" Laser Cut Balsa
1	.LC-105-02	.1/16" X 4" X 24" Laser Cut Balsa
1	.LC-105-03	.1/16" X 4" X 24" Laser Cut Balsa
1	.LC-105-04	.3/32" X 4" X 24" Laser Cut Balsa
1	.LC-105-05	.3/32" X 4" X 24" Laser Cut Balsa
1	.LC-105-06	.1/8" X 4" X 12" Laser Cut Balsa
1	.LC-105-07	.3mm X 3" X 12" Laser Cut POPLAR PLY
4	.Outboard Main Wing Spars	.3/32" X 3/16" X 18" Balsa
1	.Center Main Wing Spars	.3/32" X 3/16" X 6" Balsa
4	.Outboard Wing Trailing Edges	.1/16" X 3/4" X 18" Balsa
1	.Center Wing Trailing Edges	.1/16" X 3/4" X 6" Balsa
2	.Outboard Wing Leading Edges	.1/4" X 1/4" X 18" Balsa
1	.Center Wing Leading Edges	.1/4" X 1/4" X 3" Balsa
1	.Wing Center Section Sheet	.1/16" X 3" X 12" Balsa
18	.Stringer Spars	.3/32" X 3/32" X 18" Balsa
1	.Main Landing Gear Wire	.1/16" X 12" MUSIC WIRE
1	.Nose Landing Gear Wire	.1/16" X 6" MUSIC WIRE

Hardware Bag

Qty.	Name	Description
4	.Blind Nuts	.4-40 Blind Nuts
2	.1/16" Laser Cut Dihedral Brace	.Wing Joiner
4	.1/8" x 3" Birch Dowel	.Wing Dowels & Elevon Joiner
3	.1/16" Wheel Retainer	.Wheel Retainers
2	.Control Horn	.Control Horns
2	.Sig EZ Hinge	.Hinges

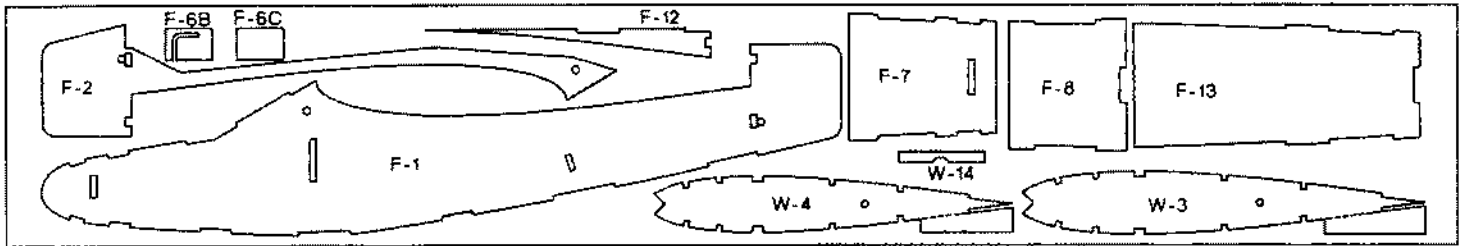
Misc. Loose Parts

Qty.	Name	Description
1	.K-105 PLAN A	
1	.K-105 PLAN B	

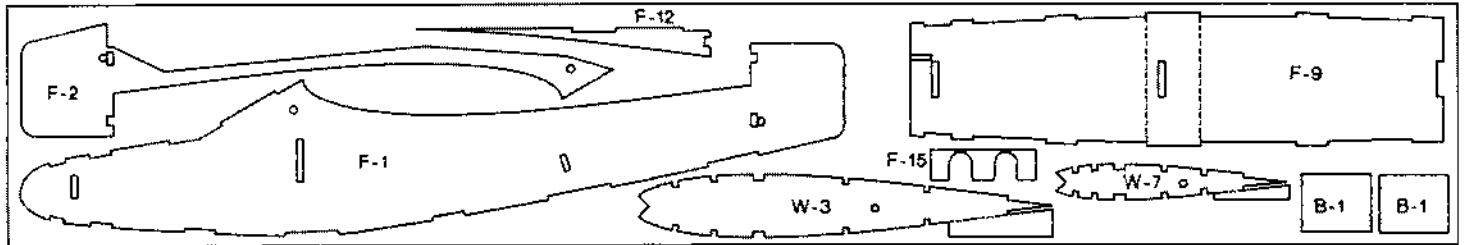
Additional Items Required (Not Included in Kit)

Note: These are parts that we have used and are familiar with. There are many other brands available and you may substitute other items that you are more comfortable with or have on hand.

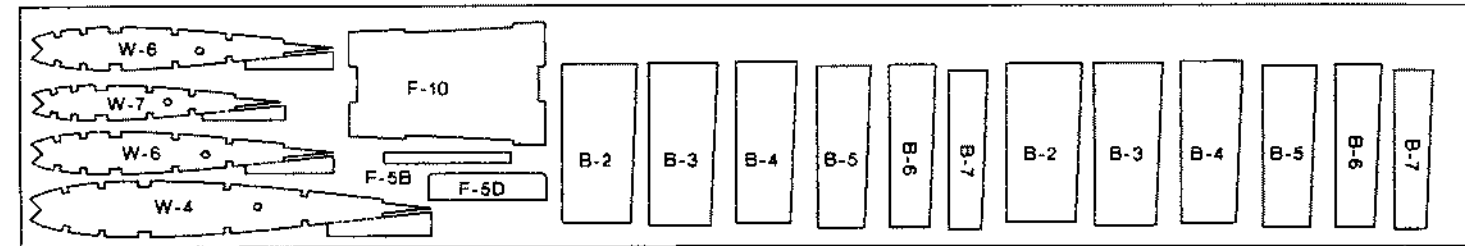
Qty.	Name	Description
1	.Motor	.Himax HC2212-1180 Brushless Motor (Alien Aircraft P/N: AE-003)
1	.Speed Control	.Castle Creation's Thunderbird-9 Electronic Speed Control (Alien Aircraft P/N: AE-004) with connectors matching motor & battery
1	.2 Pushrod Set	.K-105 "2" Pushrod Set (Alien Aircraft P/N: AH-003)
1	.Propeller	.7 x 6 Propeller (Alien Aircraft P/N: AE-008)
3	.Wheels	.Tricycle Aluminum Bushing Wheel Set (Alien Aircraft P/N: AH-010)
3	.Velcro	.6" Velcro (Alien Aircraft P/N: AE-012)
1	.Motor Mount Set	.Complete 2212 Motor Mount Assy.(Alien Aircraft P/N: AE-005)
4	.wing hold down Rubber bands	.#32 rubber bands
1	.Battery	.7 Cell 730- 1200Mah AAA NiMH Battery or 2 or 3 Cell 640- 1200Mah Lipo Battery
1	.Covering Material	.1 Roll Light Weight Covering Material Plus Trim Colors
1	.Radio	.3 or 4 Channel Radio with 2 micro servos & Receiver (Elevon mixing reqd.)



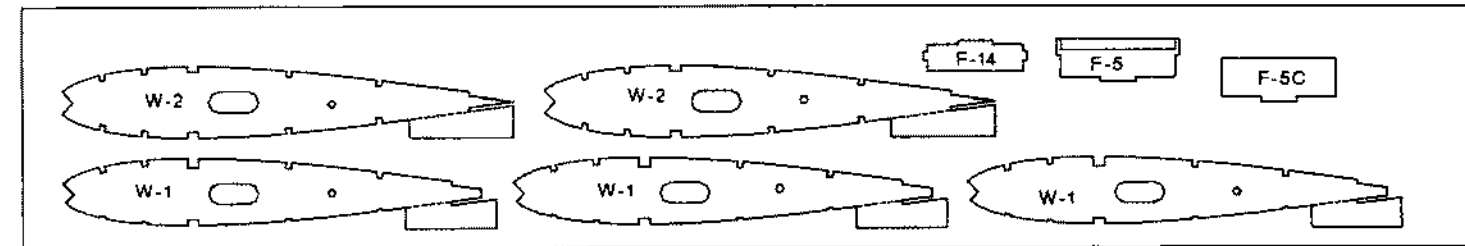
LC-105-01 1/16" X 4" X 24" BALSA 1 REQD.



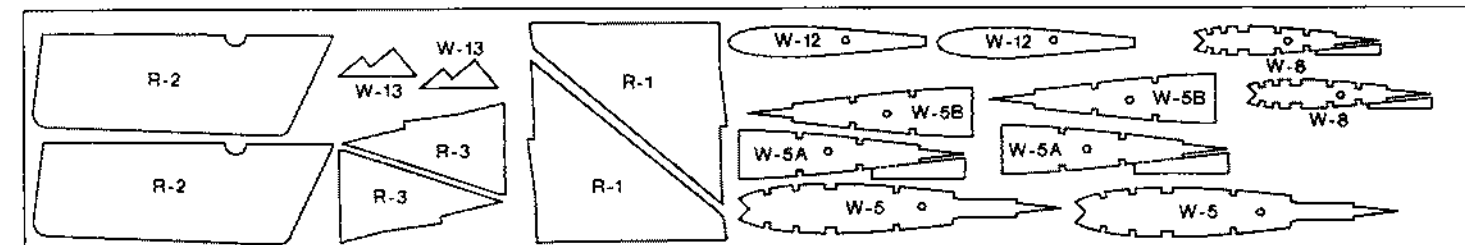
LC-105-02 1/16" X 4" X 24" BALSA 1 REQD.



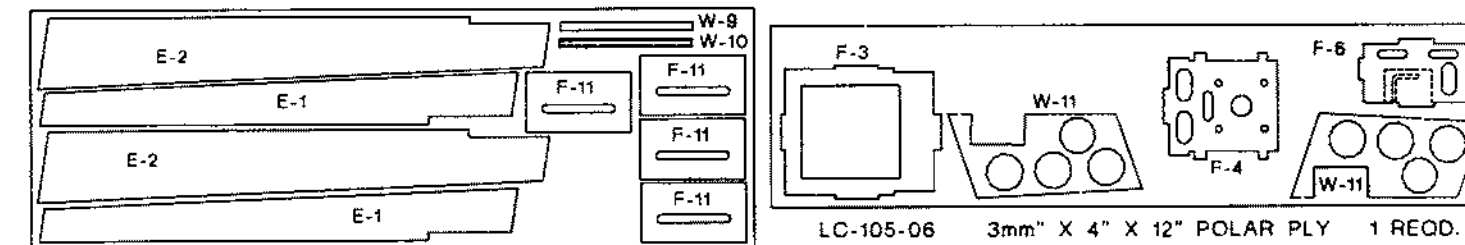
LC-105-03 1/16" X 4" X 24" BALSA 1 REQD.



LC-105-04 3/32" X 4" X 24" BALSA 1 REQD.

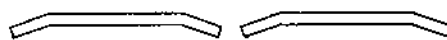


LC-105-05 3/32" X 4" X 24" BALSA 1 REQD.



LC-105-06 3mm" X 4" X 12" POLAR PLY 1 REQD.

LC-105-06 1/8" X 4" X 12" BALSA 1 REQD.



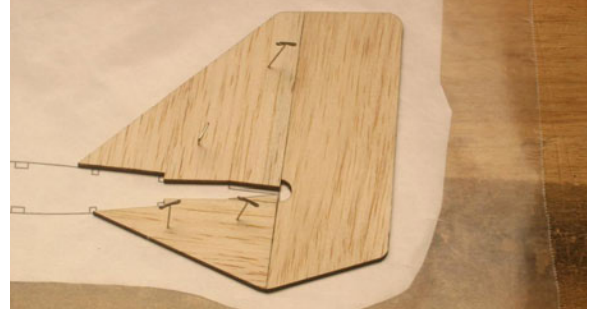
1/16" PLYWOOD WING JOINER 2 REQD.

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...Cover the rudder plan with wax paper. Glue R-1, R-2 and R3 together.

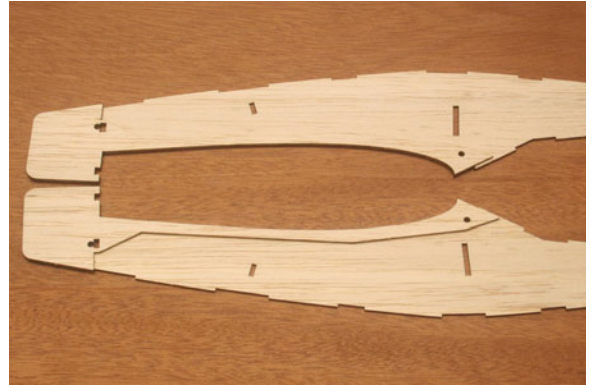


Sand the outside edges round. Leave the edges that will contact the wing square.

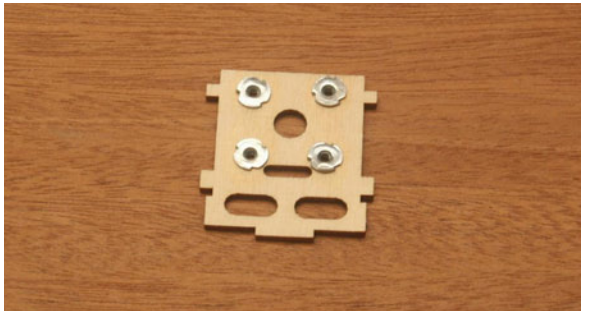


Building the Fuselage:

2...Glue the F-2 doubler to the inside of the F-1 fuselage sides. Be sure to make a right hand and a left hand side.



3...Press the four 4-40 blind nuts into the back of the firewall (F-4). Use a small drop of thin C/A to secure them in place.



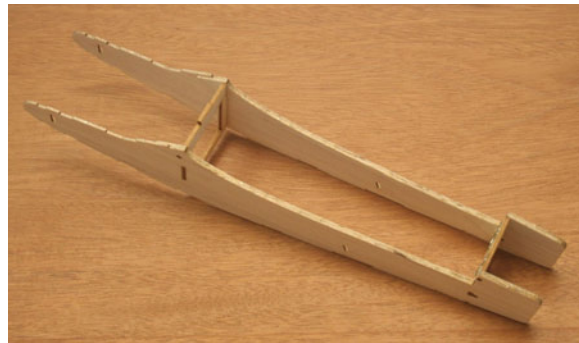
4...Glue F-5B and F-5C to the back of former F-5 as shown on the plan.



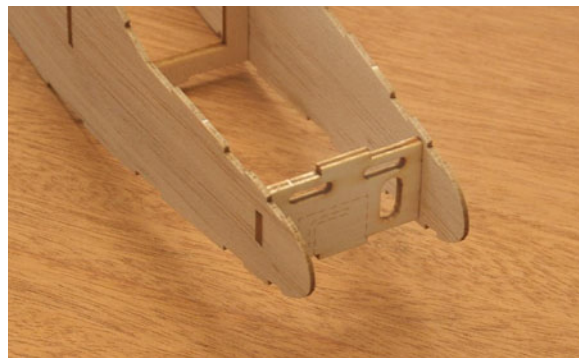
5...Lightly tack glue formers F-3 and F-4 into position on the right fuselage side. Use a small square to position these parts 90 degrees to the fuselage side.



6...Place the left fuselage side into position and square up the fuselage. Glue the left fuselage to the formers.



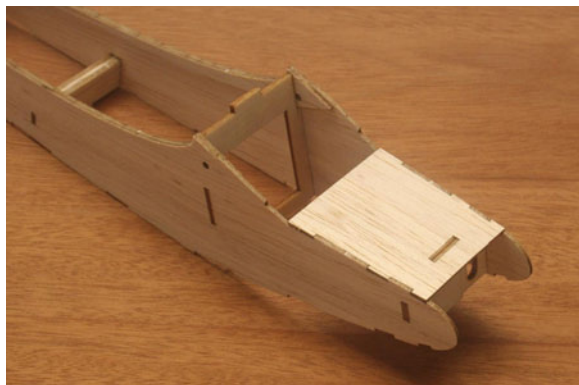
7...Tack glue the former F-6 into position making sure the front of the fuselage is not twisted.



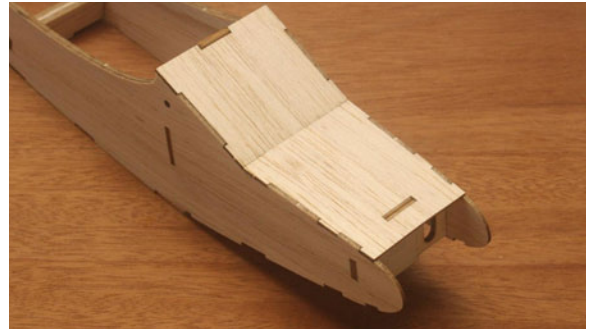
8...Gently spread the fuselage sides and place former F-5 into position as shown on the plan. When properly located, glue the former in place.



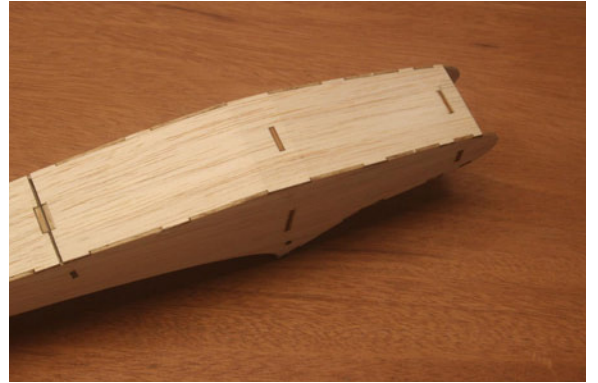
9...Glue F-7 into position on the top front of the fuselage.



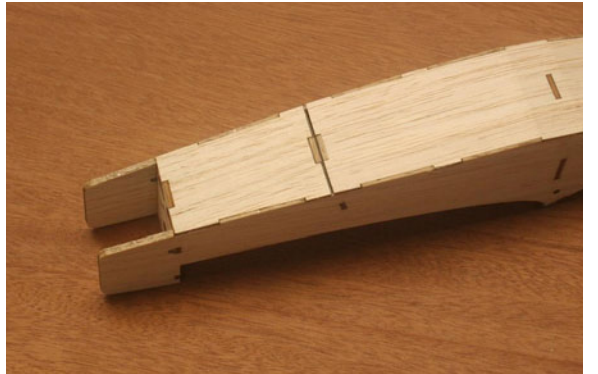
10...Glue F-8 into position on the top front of the fuselage.



11...Glue F-9 into position on the bottom front of the fuselage. The dashed lines on the front of F-9 should be on the right side and align with the nose gear mark on F-6. Cut part way through the dashed lines across the middle of F-9. After positioning F-9, glue the center to F-3 and the fuselage sides. Then work fore and aft to complete the installation of F-9.



12...Glue F-10 into position on the bottom rear of the fuselage.

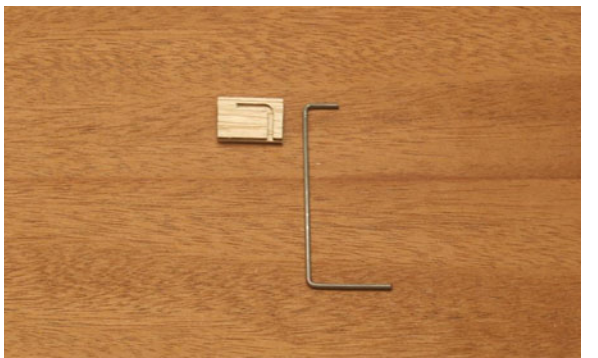


13...Cut out the dashed lines on the front of F-9 for installation of the nose gear.



14...Bend the nose gear wire to shape using the pattern on the plan. Leave the axle long until the installation of the nose wheel.

Glue parts F-6B and F-6C together as shown.



15...Glue the nose gear wire into the F-6B/C assembly and then glue onto the front of F-6 at the marked location. The nose gear wire should extend through the slot in F-9.



16...Glue the four F-11's together to make the nose block. Carefully position in the nose of the model and glue into position.



17...Carve and sand the nose block to match the fuselage sides. Use a sanding block to sand all of the fuselage surfaces smooth and flat. Now lightly sand the edges of the fuselage round except the wing mount area.

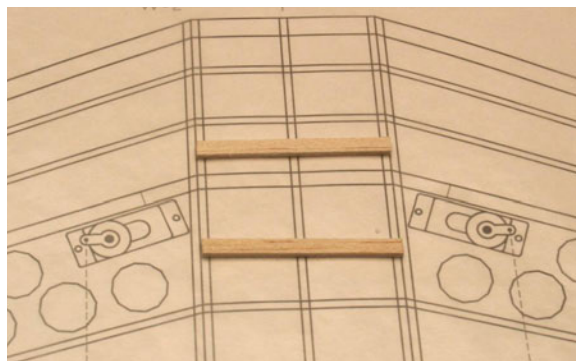


Building the Wing: Center Section

Note: The wing is built upside down over the plan in three sections

18...Cover the center section wing plan with wax paper to prevent the parts from sticking to the plan.

19...Cut two center section main spars from the 6" piece of 3/32" x 3/16" balsa. These spars are approximately 2 3/16" long but you should use the actual dimension measured from your plan. The spars should extend to the outside edges of the two outboard W-1 ribs.

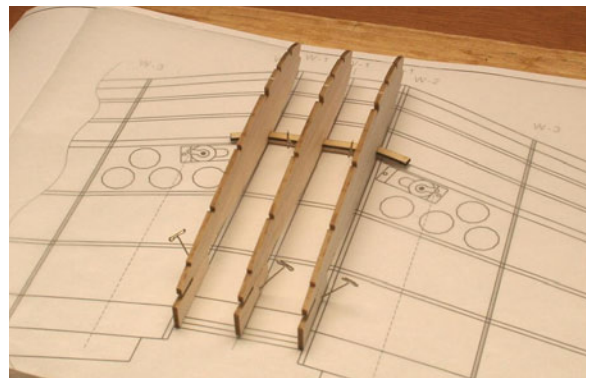


20...Center the balsa spars on the plywood wing joiners and glue into position.

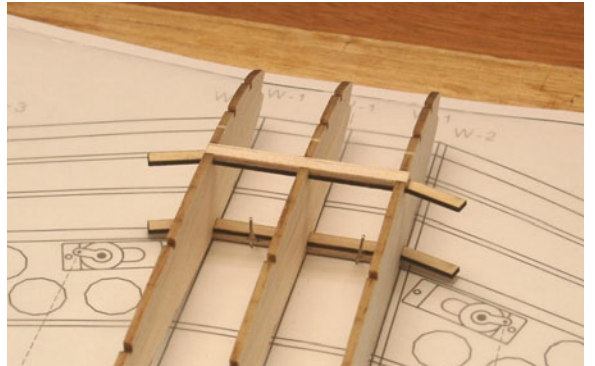


21...Pin one of the lower spar / plywood wing joiner into position on the plan. The balsa spar should be on the bottom side with the ends flush with the outside face of the outboard W-1 ribs.

Glue the three W-1 ribs into position on the spar and pin the rear support tabs to the building board. The ribs should be 90 degrees to the building board.



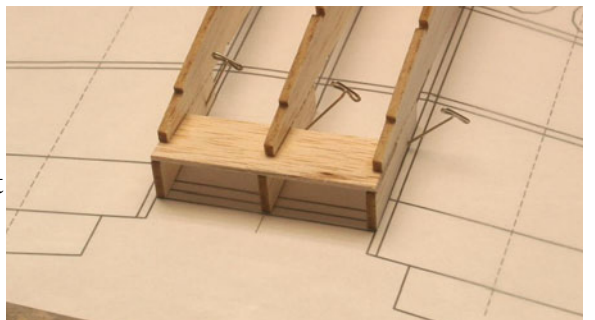
22...Glue the upper spar / plywood wing joiner into position on the W-1 ribs.



23...Cut two trailing edge pieces from the 1/16" x 3/4" x 6" strip. Cut the 1/4" sq. center leading edge piece to length from the 3" strip.



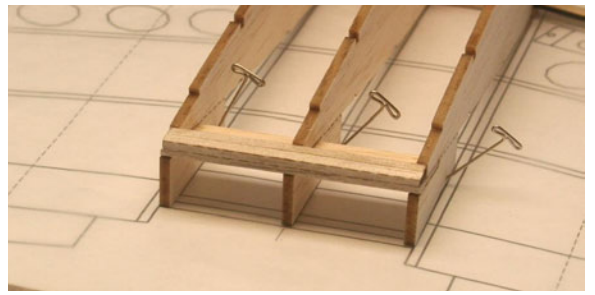
24...Slide the lower trailing edge into position in the slot between the wing rib and the support tabs. Make sure that it is fully inserted and that the ends are flush with the outside of the W-1 ribs and glue to the ribs. Try not to get any glue between the trailing edge and the support tab.



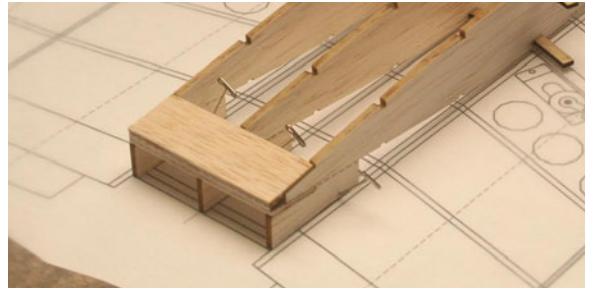
25...Glue W-10 to W-9. Make sure that the dashed lines on W-10 are visible on top. Sand a taper on the top and bottom of these parts from full thickness at the back end to the dashed lines on the front end. The taper should match the drawing on the side view on the plan.



26...Center the W-9 / 10 assembly on top of the trailing edge sheet. Glue to the back of the ribs and the trailing edge sheet.



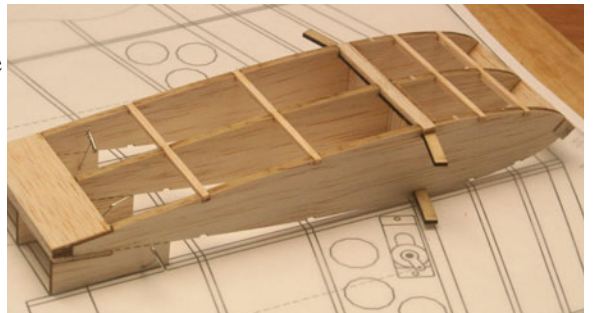
27...Glue the top trailing into position.



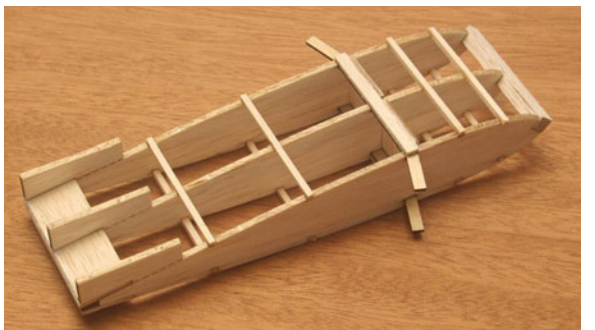
28...Glue the two shear webs (B-1) into position on the front face of the main spars.



29...Cut the four pieces of 3/32" sq. from one of the 18" strips to make the stringer spars and glue into position. Glue the 1/4" sq. leading edge into position. Glue the two W-13's into position and glue W-14 into position. (W-13's & W-14 not shown in photo)



30...Remove the center section from the plan. Cut the four remaining stringer spars from the previous 18" stick and glue into position.

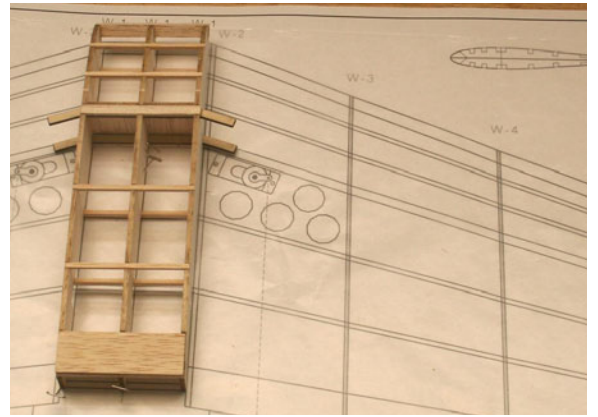


31...Sand the leading edge, trailing edge and stringer spars flush with the outside faces of the outboard ribs.

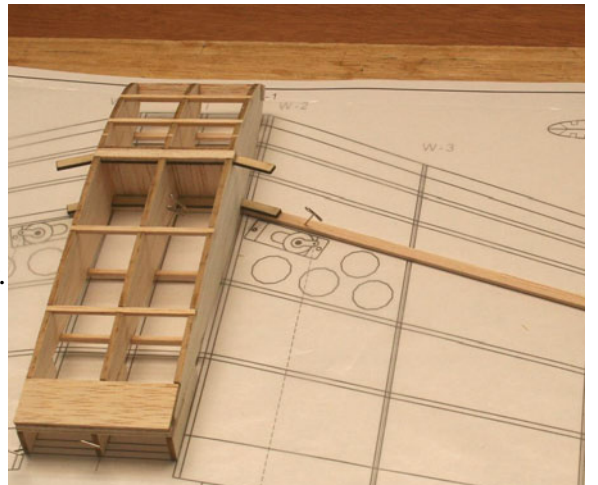


Building the Wing: Right Wing

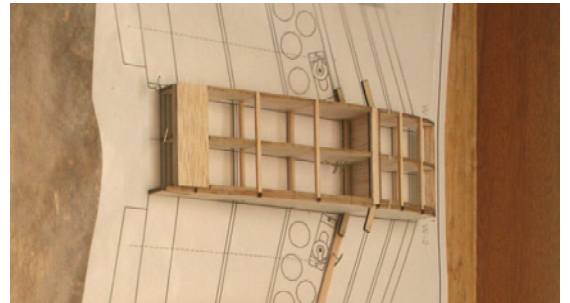
32...Cover the right wing plan with wax paper. Pin the center section into the proper position on the plan.



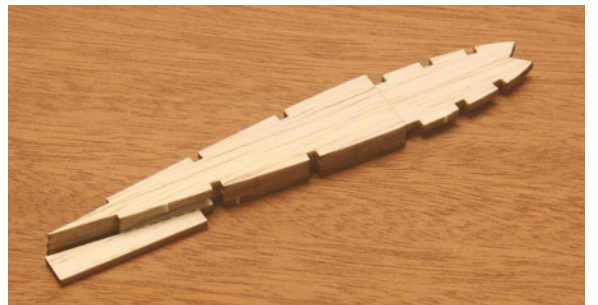
33...Trim the proper angle on one end of one of the 3/32" x 3/16" x 18" main spars. Slide under the plywood joiner and into contact with the center section. Pin in place on the plan and glue to the wing joiner.



34...Slide rib W-2 over the plywood joiners so that it is in full contact with the W-1 rib and glue into position.

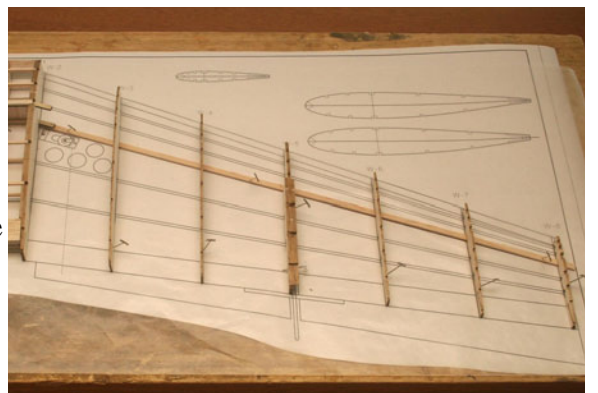


35...Glue ribs W-5A and W-5B to each side of the W-5 ribs.

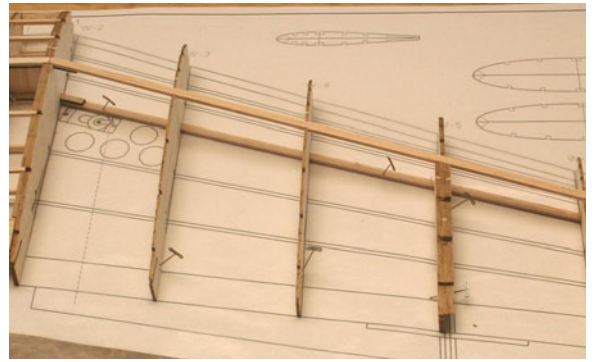


36...Glue ribs W-3 thru W-8 into position on the main spar.

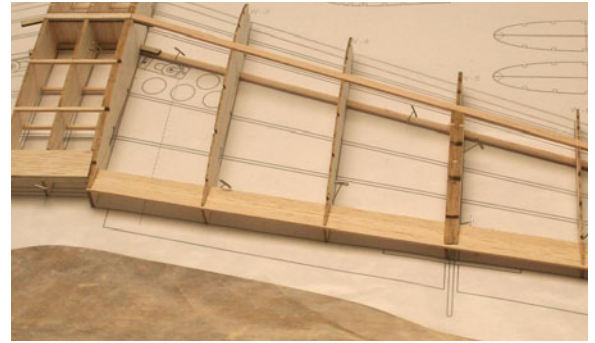
Note:Because of the thickness of the W-5 rib, you will have to trim the proper angle on the spar slots. The ribs should be 90 degrees to the building board



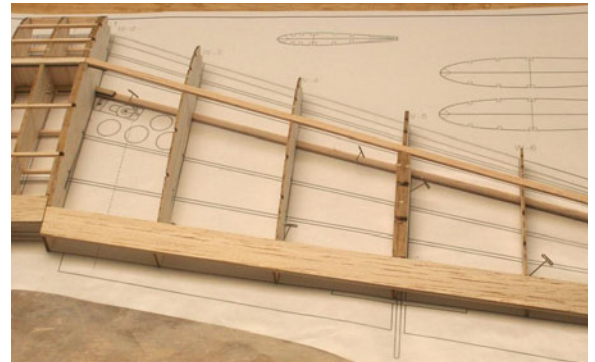
37...Angle the end of the top main spar and glue into position.



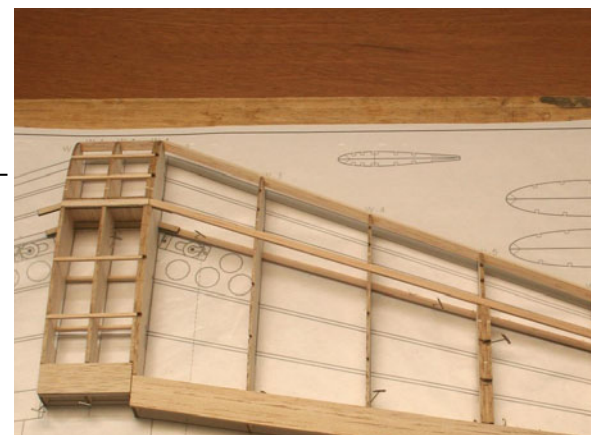
38...Angle the end of one of the 1/16" x 3/4" x 18" trailing edge and glue into position. Try not to get any glue between the trailing edge and the rib support tabs.



39...Angle and glue the top trailing edge into position.



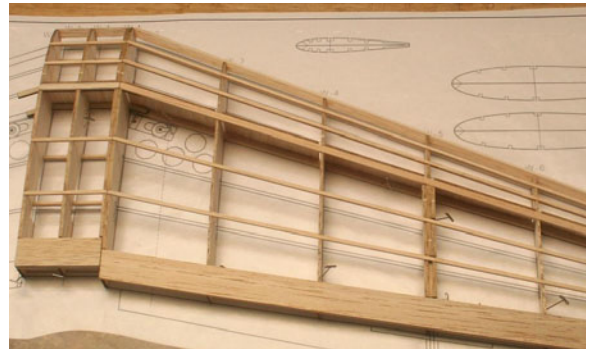
40...Glue the 1/4" sq. x 18" leading edge into position. DO NOT angle the inboard end. There will be an angled gap between this leading edge and the leading edge on the center section. This gap will be filled later.



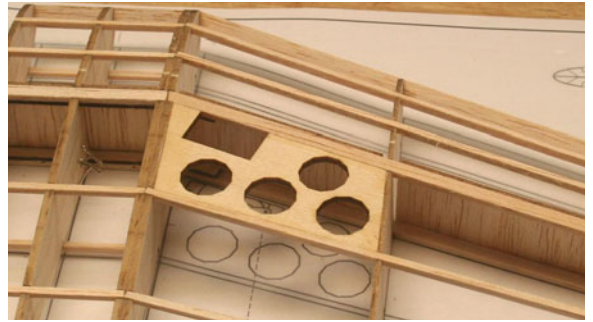
41...Glue the shear webs B-2 thru B-7 to the front face of the main spars. The angle on the shear webs should match the taper of the wing.



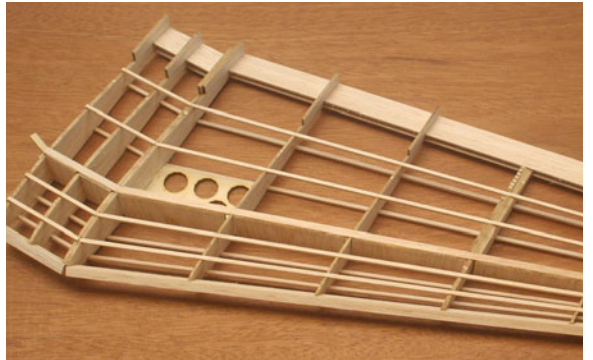
42...Glue the four 3/32" sq. stringer spars into position.



43...Glue the plywood servo mount into the position shown on the plan. The edges should be flush with the wing structure.



44...Remove the wing from the plan and glue the stringer spars to the opposite side.

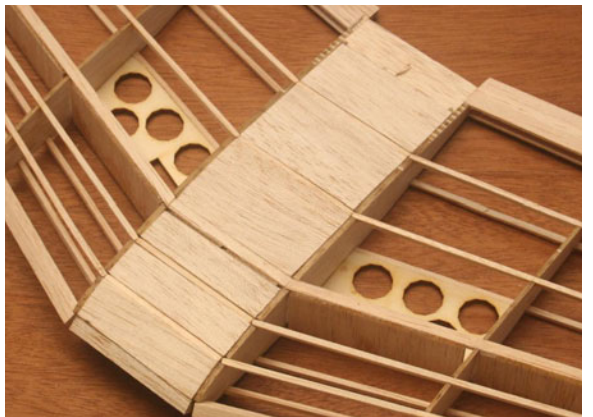


Building the Wing: Left Wing

45...Pin the center section into position on the left wing plan. Now repeat steps 32 thru 44 to build the left wing.



46...Remove the rib support tabs from the bottom of the wing by snapping or cutting on the dashed lines.

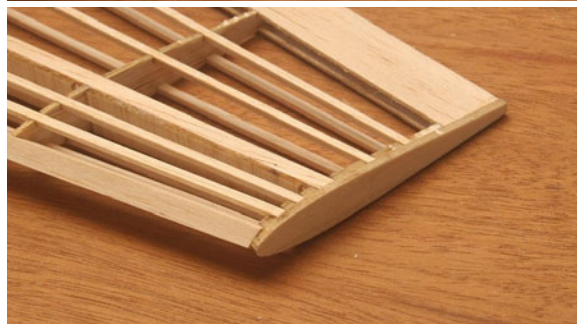


47...Use the 1/16" x 3" x 12" balsa sheet to sheet the top of the wing center section. The top of the wing is the side opposite of the servo mounts. Pieces of the sheet should be cut to fit between the ends of the W-1 ribs. The sheet should be flush with the spars and the edges of the W-2 ribs..

48...Cut two small squares from the scrap from laser cut sheet 06. Trim a bevel on them and use them to fill the gaps in the 1/4" sq. leading edges at the center section. Glue in place and then trim flush.



49...Trim the leading edges, trailing edges and spars flush with the ends of the wing and glue tip ribs W-12 into position.



50...Carve and sand the leading edges to the profile shown on the plan. Sand the wing smooth all over. Test fit to the fuselage for the proper fit.



51...Assemble the top fuselage from the parts F-12, F-13, F-14 and F-15.

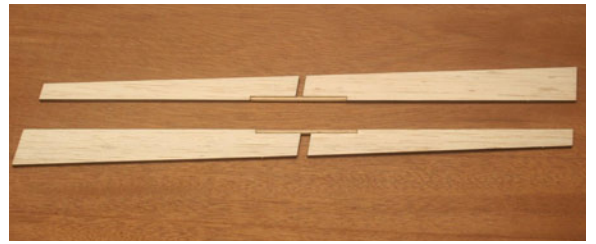


52...Place the wing on the proper position and test fit the top fuselage. Carefully align the fuselage, wing and fuselage top so they are all in the correct position. Now glue the fuselage top to the wing.

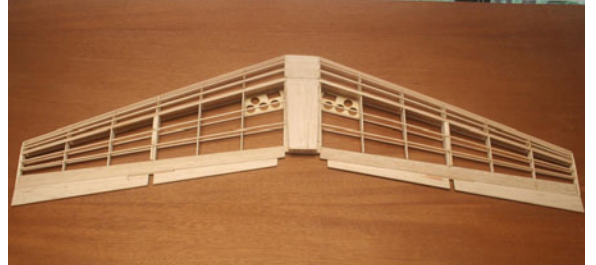
Now sand the fuselage top front to blend in with the wing and the back smooth with the fuselage.



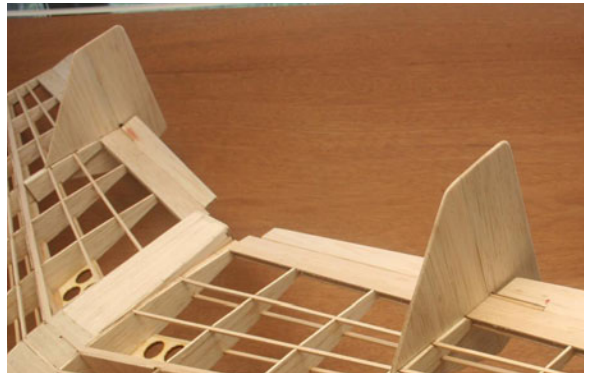
53...Assemble the two elevons over the plan using parts E-1, E-2 and the 1/8" dowels.



54...Sand the back edges and the ends of the elevons round. Taper the front edge of the elevons to the shape shown on the plan.



Mark and cut the hinge slots in the elevons and the wing. Install the hinges without glue and test fit the elevons to the wing.



55...Test fit the fins to the wing by sliding them into position from the rear.

Covering:

56...Sand all parts smooth with 400 grit sandpaper. Cover the model with a light weight iron on covering material. Cover the wing tips first. Then cover the bottom of the wing. Now pass a piece of thread through the hole in F-14 and pass through the holes in the ribs and exit out through the hole in the wing tip. This will be used to feed the antenna thru the wing and out thru the wing tip during final assembly. Cut the windows from covering material using the patterns on the plan and apply to your model.

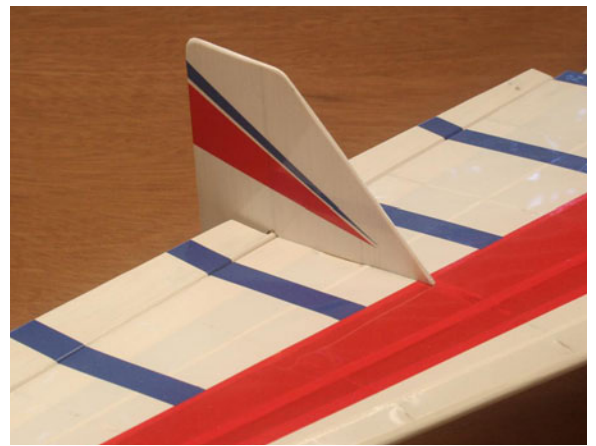
Note: After the model is covered you must check the fins and wing for warps or twists. If there are any they can be removed by twisting the parts straight and heating the covering.

Final Assembly:

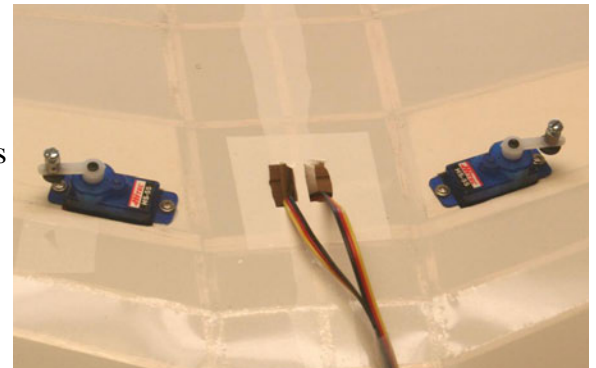
57...Attach the elevons to the wing with the hinges and glue into position.



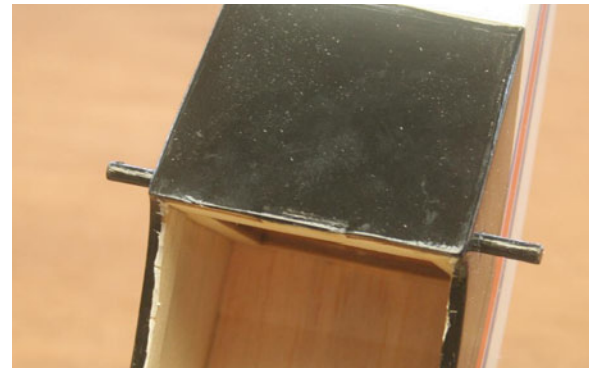
58...Carefully cut the covering away from areas on the wing that will make contact with the fins. Place the fin into position and make sure that they are straight and square. Glue the fins into position.



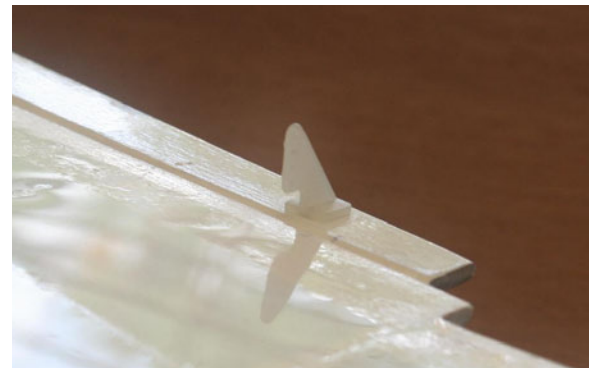
59...Screw the servos into position on the bottom of the wing. Cut the covering away from the holes in the two W-13s to feed the servo wires through.



60...Glue the wing hold down dowels into place on the fuselage.



61...Glue the elevon control horns into position. Drill 1/16" holes for the pins to pass thru. When the glue is dry, cut off the excess pins flush.



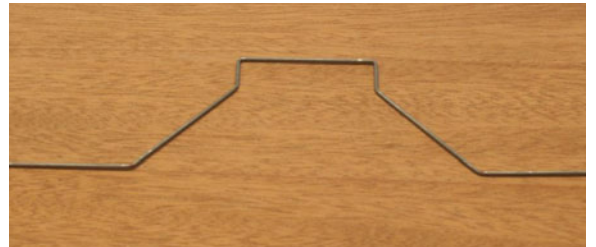
62...Install the pushrods. Slide the 1/32" id. aluminum tube stiffeners onto the pushrod. Attach the rear of the pushrods to the horns with Mini E/Z Links.



63...The front ends are attached to the servos with Mini E/Z Connectors. When the servos are in neutral the servo arm should be 90 degrees to the pushrod. Now center the aluminum tubes on the pushrods. Place a drop of thin C/A glue to each end of the tubes to secure it onto the pushrods.



64...Bend the main landing gear wire to shape using the pattern on the plan. Leave the axles long until you mount the wheels.



65...Insert the landing gear wire into the slot in the fuselage. Make sure it is completely seated. Squirt two drops of thin C/A into the slot and let dry completely.



Insert F-5D into the slot and glue into position. Trim off any excess from F-5D flush with the bottom of the fuselage. Iron on a 1/4" strip of covering material to cover the bare balsa.

66...Put the wheels on the model and press the wheel retainers into position. With the retainers in place, cut off the excess wire axle flush with the retainer.



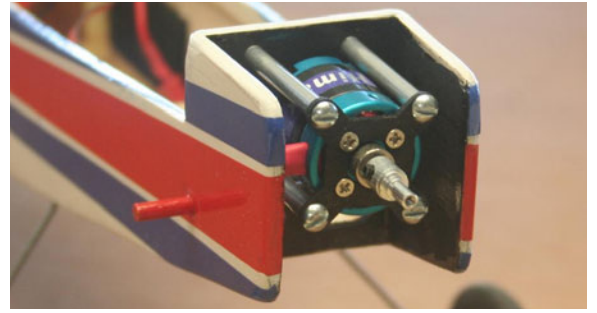
67...For use in a pusher configuration, place the small white nylon thrust washer and the thrust collar on the prop shaft.



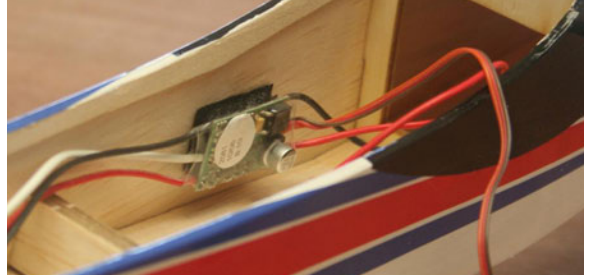
Press the collar tightly against the motor and secure the set screw. Then install the propeller adapter.



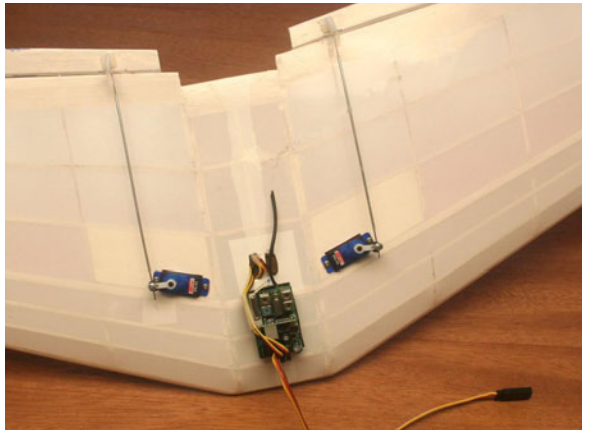
68...Secure the motor mount to the front of the motor with the four flat head screws. Now bolt the motor to the firewall with 4-40 screws, washers and aluminum tube spacers.



69...Secure the speed controller to the fuselage with velcro. Attach the wires from the speed controller to the motor.

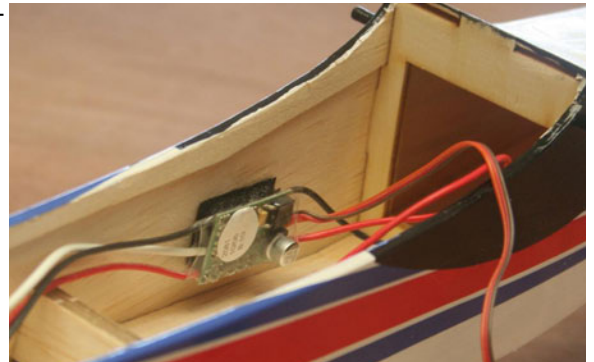


70...Plug the speed control and servos into the receiver and attach the receiver to the bottom of the wing with velcro. Use a 6" servo extension between the speed controller and the receiver to allow easier battery installation. Use the thread installed during covering to feed the antenna through the wing and out the wing tip. Balance the wing left to right. Glue some weight to the light tip to balance (antenna side will probably be heavier) Small screws glued into the wing tip work well.



71...WITH THE PROPELLER REMOVED...Turn the transmitter on. Place the throttle stick in the low position. Plug the battery into the speed controller. Check the motor for proper operation and direction of rotation. Follow the instructions with the speed controller to make any adjustments.

72...Check the servos for proper operation and direction. The plan shows the proper elevon position when the servos are in the neutral position. Adjust the control throws to the values shown on the plan. Now disconnect the battery and then turn off the transmitter.



73...Place the battery in the nose of the model. Attach the propeller. Attach the wing onto the fuselage.

74...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. Use velcro to secure the battery in the model in this position. Note: If moving the battery will not achieve the proper balance, you will have to add weight to the nose or tail. Glue any weight securely to the model.

75...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.

DO NOT HAND LAUNCH THIS MODEL!!!

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. 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.