CHRISTEN EAGLE II

Almost Ready to Fly

Includes:

- Balsa and Ply Fuselage, wings and tail surfaces pre-covered in low temperature Oracover.
- Pre-applied 8 color decal scheme
- CA hinges for all control surfaces
- Painted fiberglass cowl, wheel pants, belly pan and gear boots
- Aluminum cabanes and mounting hardware
- Color matched wing struts and mounting hardware
- 4” Rubber main wheels and mounting hardware
- Tail wheel assembly with 1-1/4” tail wheel
- Instrument panel kit
- Painted canopy, frame and mounting hardware
- Flying wires and mounts
- 3.5” Turned aluminum spinner
- Nylon wing bolts
- Adjustable aluminum engine mount (glow)
- Firewall mounting hardware

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Thank you for purchasing the Christen Eagle II ARF from Skyshark R/C. For the first time, R/C enthusiasts have a choice in scale aircraft designs. Good looks and flying characteristics, and a uniqueness that is sure to turn heads wherever you take your airplane!

Your airplane has many unique features in its design:

CAD Design

CAD design allows strength to be built into the airplane without sacrificing weight. Because of this, the Skyshark Christen Eagle is one of the lightest and best flying biplanes in this size range.

Plastics and Fiberglass

The cowl is accurately reproduced in fiberglass with pre-cut vents in the front. There is room in the cowl to mount almost any engine in the recommended range without having to cut holes. The belly pan and landing gear boots are also made from fiberglass. The wheel pants are produced with 3 layers of heavy fiberglass and are built to stand up to abuse from grass fields. The canopy is accurately reproduced in clear plastic, and is molded in one piece.

Engine Options

Engine choices range from 1.08 - 1.60 2-strokes, or 1.20 to 1.80 4-strokes. You can also use a lightweight 26 - 35cc gas engine, however, you will probably need to add a little tail weight in order for the plane to balance properly. Our prototypes used side-mounted Saito 1.50 and 1.80 engines. Glow igniters were used so no holes would be visible in the cowl. The plane balanced perfectly with this setup.

Cockpit Detail

A fully detailed laser cut and engraved instrument panel is included in the kit. It does require some simple assembly but detailed instructions are provided. The Christen Eagle II seated 2 people - one behind the other. Due to weight concerns, we chose not to add additional detail to the cockpit. You are free to add your own detail.

Repairs and Replacement Parts

Repairs can be made easily using readily available plywood, balsa and any low temperature covering. The decal is made from Mylar which has been printed and fuel proofed. If you would like to purchase replacement parts or decals, please call our customer service line at 1-800-866-6100. We will be happy to assist you with anything that you need.

Scale Accuracy

Our intention with this design is to preserve scale outlines and accuracy as closely as possible. There is both a benefit and cost to this. The benefit is that this ARF is the first and only Christen Eagle ARF that truly represents the full scale airplane. The cost of reproducing true scale, however, means that you have a ARF which will require more attention to detail and in some areas. This does not mean that this is a difficult ARF to assemble but it is not designed for beginning builders.

Information for Scale Competition

If you intend to compete in scale events, this ARF is a viable contender with relatively little additional detailing.

Scale Information:

99.9% accurate scale outlines, color scheme, wing planform, control surface and stabilizer sizes and shapes, scale spinner and fuselage shape and profile.

A few areas of the model do deviate slightly from true scale, such as:

The tail wheel was designed for ease of use and assembly. The scale tail wheel sits back from the fuselage just about even with the trailing edge of the rudder.

The top and bottom ailerons on the full scale plane are joined using tear shaped rods. This can be reproduced by using hardwood dowels with 4-40 pushrods down the center. We do recommend that you use a servo in each control surface if you plan on using engines over 1.20. We provide mounting brackets for servos on all four ailerons.

The fiberglass landing gear boots were designed for easy release from the molds so they do vary a little from the full scale version.

General Building Information

The Christen Eagle should only be built by someone with semi-advanced ARF assembly skills. We recommend the builder to have built at least 3 ARFs before attempting to build the Christen Eagle. Certain areas in the instructions have been abbreviated to insure that less experienced builders will be discouraged from completing and flying the model.

Occasionally hints will be included at certain building steps. These are not required for completion, rather they are tips intended to ease a particular process.

Some hardware is not included in the kit. There are so many choices for quality hardware and set-ups that these choices are left to the individual preferences of the builder, rather than include something in the kit that you'll probably throw away anyway. We do, however, recommend using 4-40 rods and metal clevises on all control surfaces. We also recommend using a pull-pull setup on the rudder.

We have flown this plane on standard 42 oz-in servos on the ailerons with no problems, however, we do recommend the use of high-torque servos (55 oz-in or higher) if you plan on using 2-servo ailerons or an engine in the upper size range. These recommendations will be posted where applicable throughout the manual.

This aircraft is not a toy. It must be flown in a responsible manner according to the rules set forth by the Academy of Model Aeronautics. The builder assumes the responsibility for the proper assembly and operation of this product. Skyshark R/C shall have no liability whatsoever, implied or expressed, arising out of the intentional or unintentional neglect, misuse, abuse, or abnormal usage of this product. Skyshark R/C shall have no liability whatsoever arising from the improper or wrongful assembly of the product nor shall it have any liability due to the improper or wrongful use of the assembled product. Skyshark R/C shall have no liability for any and all additions, alterations, and modifications of this product.

Having said that mouthful, it's time to start building the best airplane on the market!

Items needed to complete your Christen Eagle:

Thin CA glue
Medium CA glue
5 minute epoxy
30 minute epoxy
Epoxy brushes
Red threadlocking compound
RC-56 canopy glue
Masking tape
Fuel tank 16 - 32 oz.
Fuel Tubing
EZ fueler or fueling dots
Rubber Bands
Misc. tools for building including: Screwdrivers, hex wrenches, pliers, scissors, sandpaper, files, etc.
Spinner adapter for selected engine (Available from Tru-Turn or Dave Brown)
Battery

2 Aileron servo version:
(2) High-torque (55 oz-in or higher) servos
(3) 12" Threaded 4-40 pushrods
(8) Clevises
(2) 12" Servo extensions
Y-harness (optional)
(6) Control horns

4 Aileron servo version:
(4) Standard (42 oz-in) servos min.
(2) 12" Threaded 4-40 pushrods
(12) Clevises
(2) 12" servo extensions
(2) 24" servo extensions
(1) Y-harness (2 -optional)
(4) Control horns

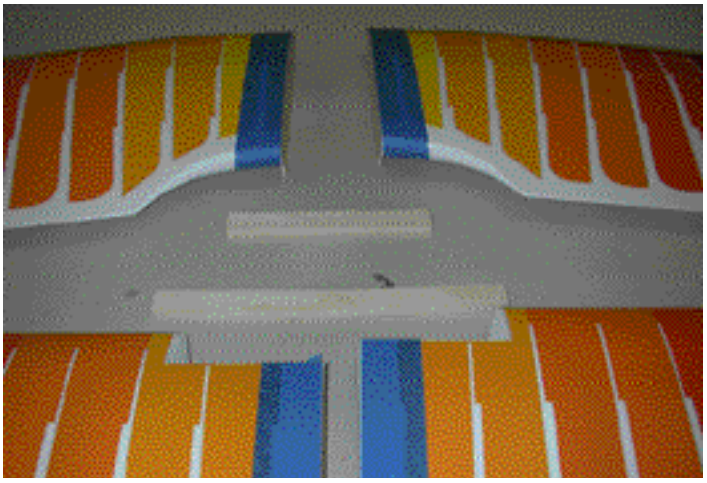
2 Elevator servo version:
(2) Standard (42 oz-in) servos min.
(2) Control horns
(4) Clevises
(1) 12" 4-40 Threaded pushrod (for mounting in tail) or (2) fiberglass or semi-flexible pushrods (for mounting in fuselage)
(2) 24" Extensions (for mounting in tail)

1 Elevator servo version:
(1) High-torque (55 oz-in or higher) servo
(1) Control horn
(2) Clevises
(1) 12" 4-40 Threaded pushrod (for mounting in tail) or (1) fiberglass, or semi-flexible pushrod (for mounting in fuselage)
(1) 24" Extension (for mounting in tail)

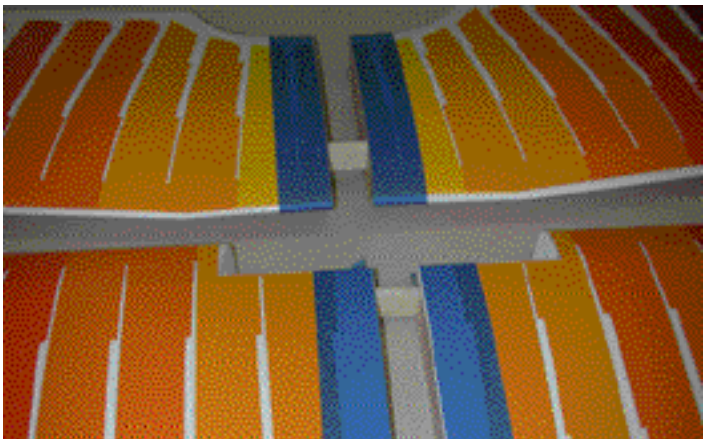
Rudder controls:
(1) High-torque (55 oz-in) servo min.
(1) Double control horn
(1) Pull-pull assembly (Du-bro or Sullivan)

Throttle control:
(1) Standard (42 oz-in) servo
(1) 2-56 pushrod
(1) 2-56 Ball link connector
(1) Du-bro EZ connector (optional)

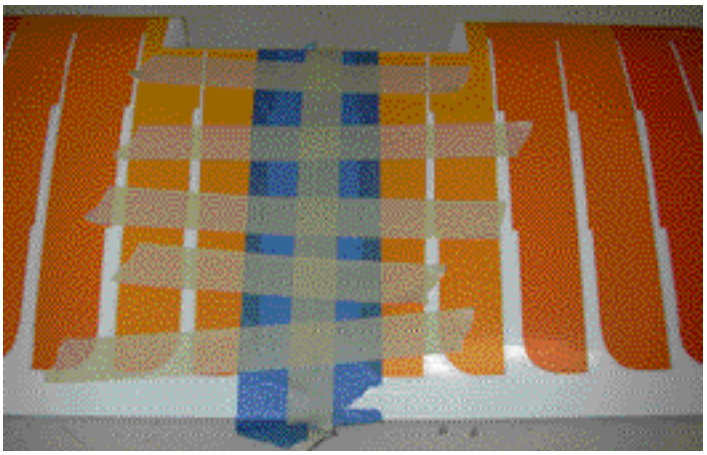
Before beginning assembly: Check all components for shipping damage. Be sure to look inside the fuselage and wings at the servo bay locations for any hidden damage. If you notice any damage, notify us immediately for replacement parts.



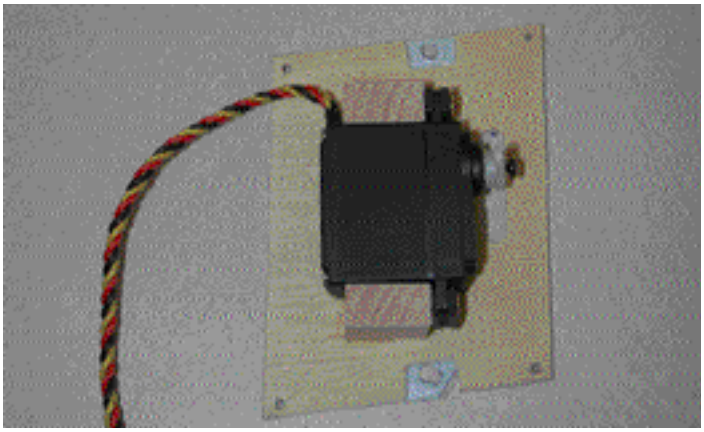
☐ Locate the 4 wing halves and 2 joiner blocks. The short straight joiner will be used to attach the top wing halves. The long, angled joiner will be used to attach the bottom wing halves. Trial fit the wings and sand as necessary for a good fit. Tape the inside edges of the wings so when they are glued together, no epoxy gets on the wing decal.



☐ Using an epoxy brush, spread a thin layer of 30-min epoxy on the top wing half and wing joiner. Also brush epoxy into the wing joiner holes.



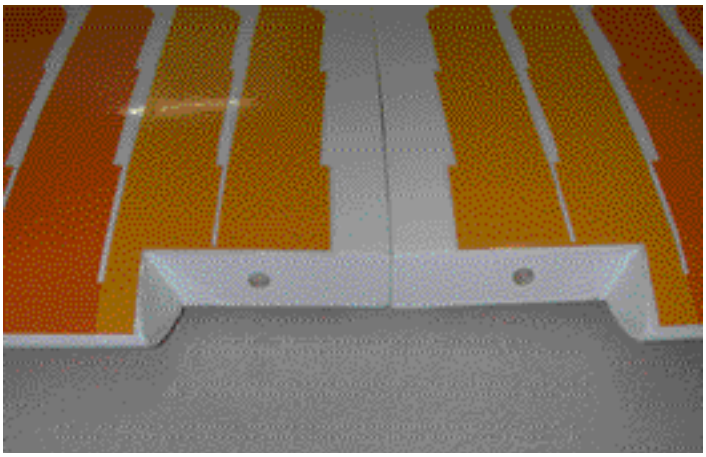
☐ Join the top wing halfs using clamps or masking tape to insure perfect alignment at the leading and trailing edges. Use denatured alcohol to wipe off any excess epoxy. Repeat this process for the bottom wing halves.



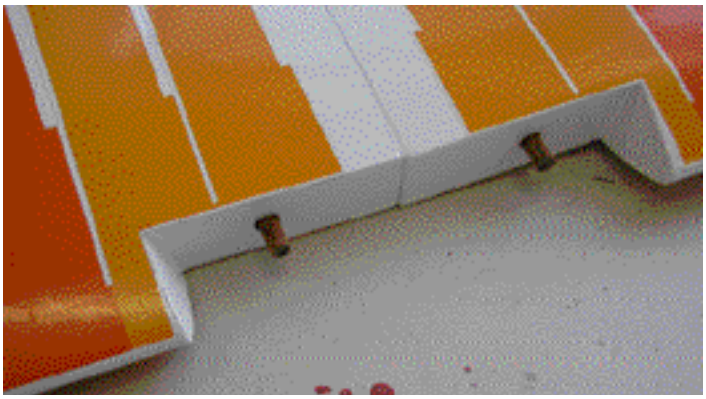
☐ Remove the tape from the servo covers on each wing half. Mount the servo on the inside of each cover using 5 min epoxy and the enclosed maple servo blocks. Ensure that the servo arm is centered in the hole on the servo cover.

Note: To make the hardwood block attach more securely, we drilled 1/16" holes in each block on the side that attaches to the servo door. This allows the epoxy to "grip" the block.

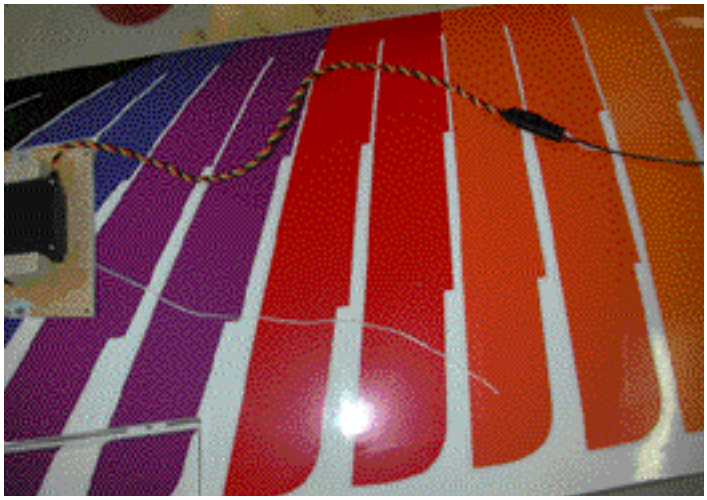
☐ After the epoxy on the wings has dried, remove the masking tape from each wing half.



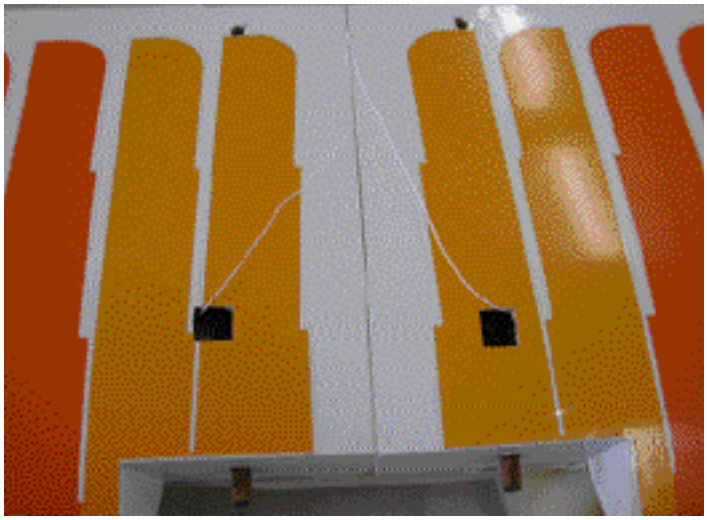
☐ Locate the holes in the center leading edge of the bottom wing and remove the covering from them.



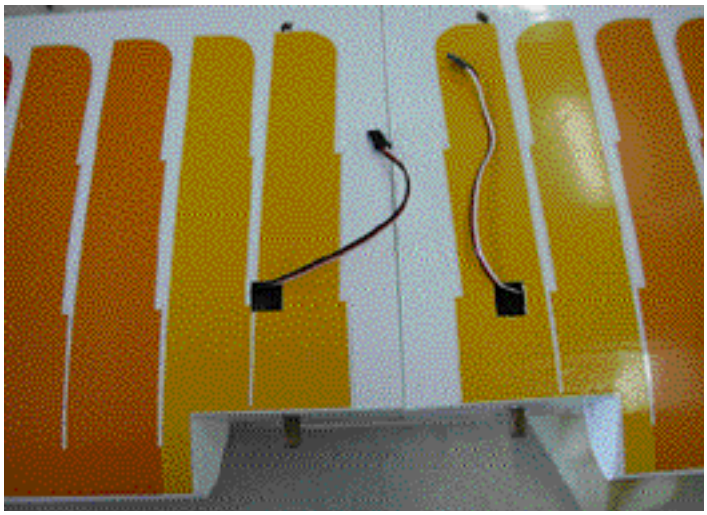
☐ Use 5-min epoxy or medium CA to glue the 1/4" wood dowels in each hole.



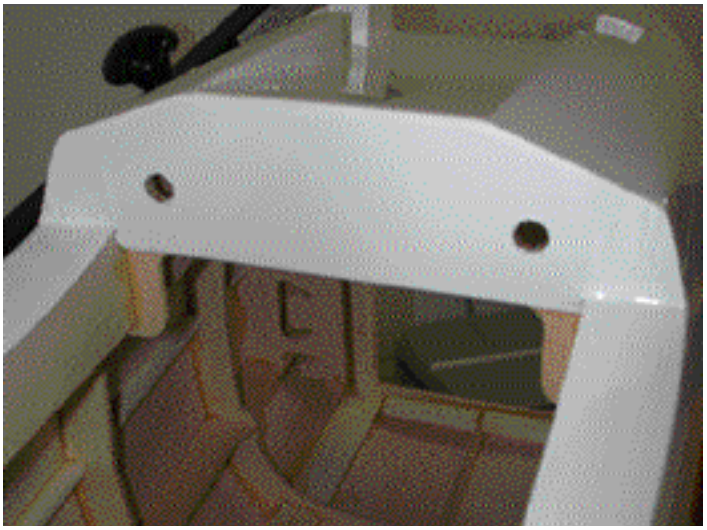
☐ Attach a 12” servo extension to the servos on the bottom wing and a 24” extension to the servos on the top wing (if required).



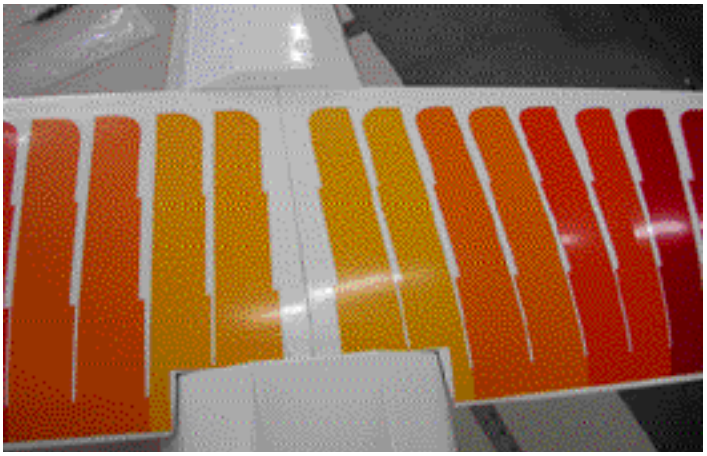
☐ Locate the holes near the unfinished side of each wing half and remove the covering if not already removed. Locate the servo extension string inside each hole.



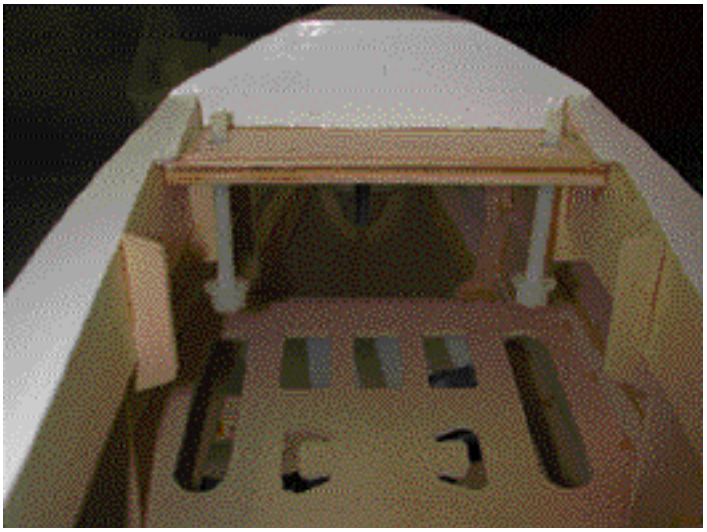
☐ Locate the string inside the servo bay. Tie one end of the extension to the string and route the extension through the wing by pulling the opposite end of the string. Do the same with all wing halves.



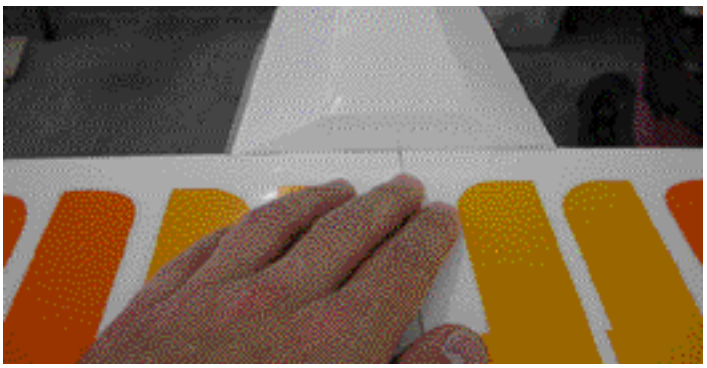
☐ Locate the wing dowel holes on the inside of the fuselage and remove the covering.



☐ Test fit the bottom wing on the fuselage. Sand the trailing edge as necessary to get a good fit. Don’t worry about sanding the covering - this area will be covered with the belly pan later.

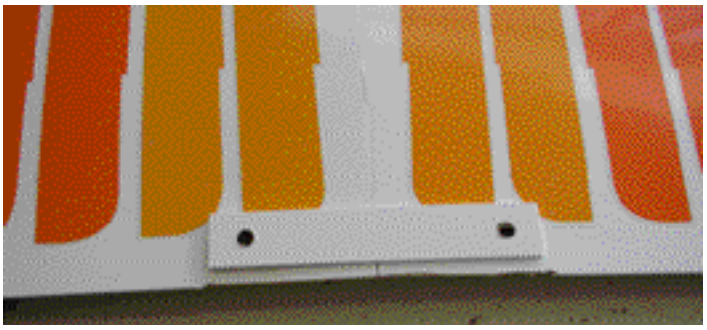


☐ Remove the wing and install the nylon wing bolts upside down in the wing holddown plate so they are sticking up 1/8” above the wing saddle.

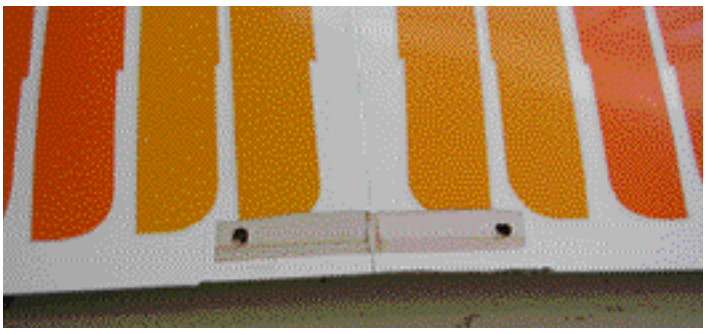


☐ Center the wing on the fuselage. Once the wing is centered, push down on the back of the wing to create marks from the nylon wing bolts. This will give you the location for drilling holddown bolt holes in the wing.

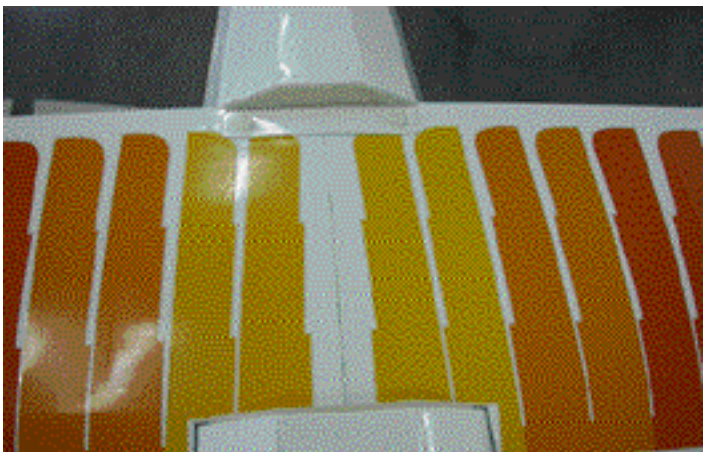
☐ Remove the wing and use a 1/4” drill bit to drill a bolt hole on each mark. Re-mount the wing and check for fit.



☐ Test fit the wing bolt reinforcement plate on the bottom of the wing. Insure the holes on the plate are aligned with the holes you drilled in the wing. Use a pencil to mark the location of the plate.

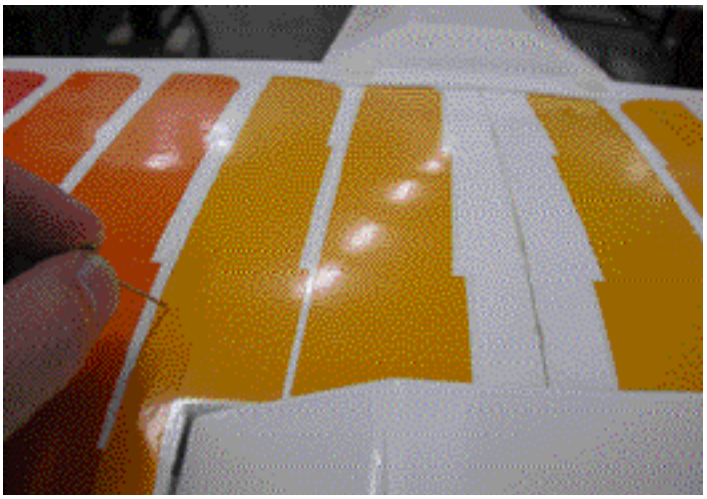


☐ Remove the covering from the marked area and use 5-min epoxy to glue the reinforcing plate into position.

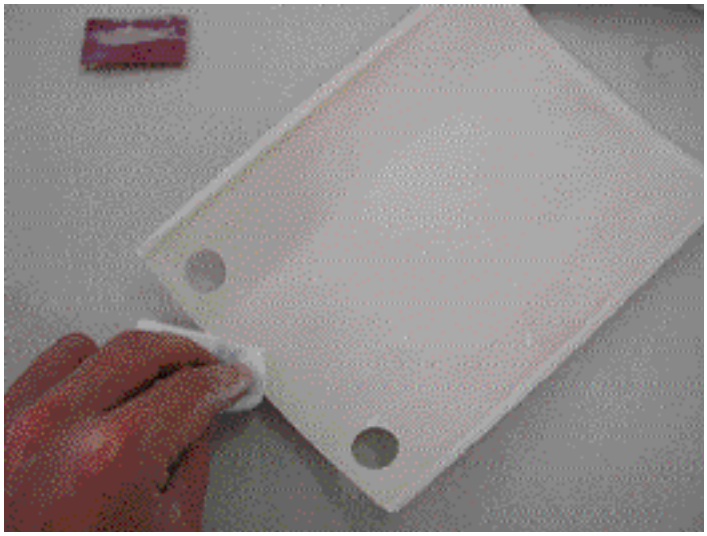


☐ Mount the wing to the fuselage and test fit the balsa front and rear belly pan supports - sand if necessary so the supports are 1/16” below the bottom of the fuselage. Remove the covering on the wing where these pieces will mount and use medium CA to glue the parts in place. You can use tape to temporarily secure them in place. Be careful not to glue the wing to the fuselage.

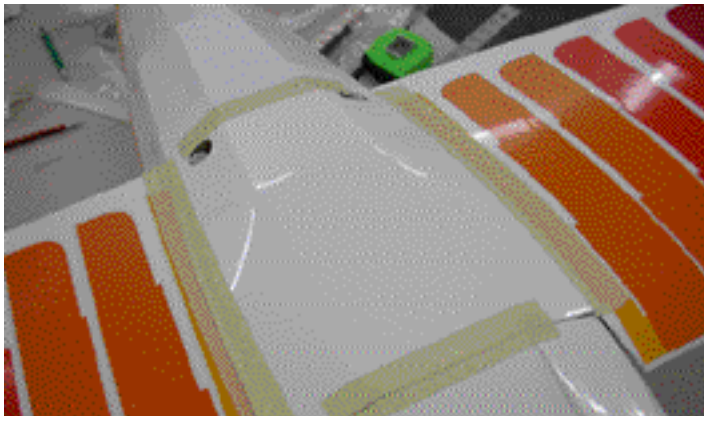
☐ Test fit the fiberglass belly pan to the balsa supports and wing bottom - sand if necessary. Mark with a pencil the location of the belly pan on the bottom of the wing.



☐ Use a pin to poke a series of holes in the covering on the lines marked in the previous step. Be careful not to poke the sheeting. This will allow the epoxy from the belly pan to flow into the balsa sheeting. You can also remove the covering in that area for a more secure attachment.

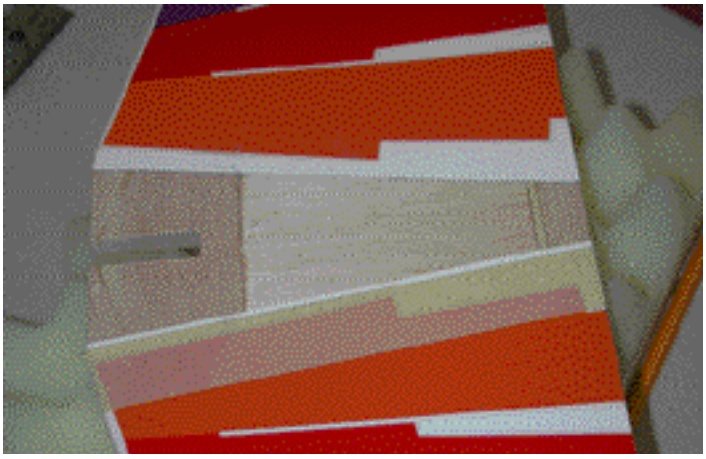


☐ Use sandpaper or denatured alcohol to clean all areas of the belly pan that will be glued. This will remove any excess mold release from the part.



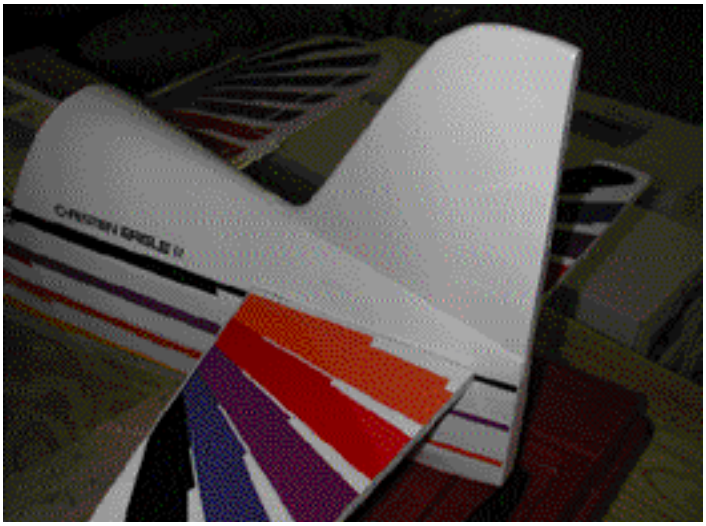
☐ Use 5-min epoxy or medium CA to glue the belly pan in place. Use tape to secure it to the wing and balsa supports. Once dry, you can use the enclosed covering scraps to cover the front and rear balsa supports. This will keep them fuel-proofed. OPTION - you can also paint them with any fuel-proof high-gloss white paint.

☐ Locate and remove the covering from the tail surface holes in the rear of the fuselage.



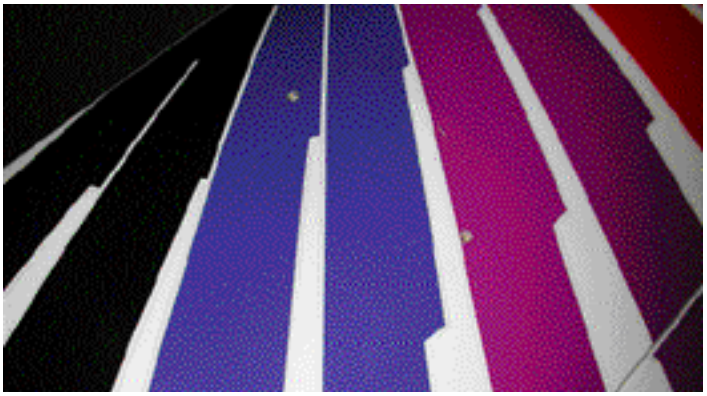
☐ Trial fit the horizontal in the fuselage holes. Measure the stab and center it on the fuselage. Mark a line on both sides (top and bottom) of the stab where it meets the fuselage. With the horizontal stab in place, test fit the vertical fin and mark a line on both sides where the fin meets the fuselage. Remove the tail surfaces and cut the covering from where you marked the lines. Be careful not to cut the wood underneath.

Option: You can place masking tape on each side of the fin where you cut the covering in order to keep the epoxy from bleeding onto the covering when you glue the tail surfaces.

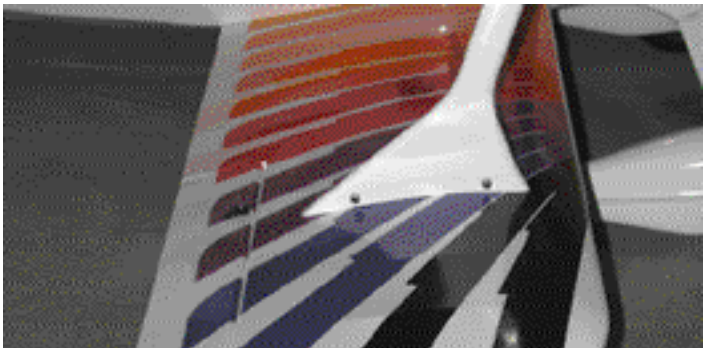


☐ Apply 30 min epoxy to the horizontal stab and slide it into position in the fuselage. Make sure it is aligned with the bottom wing and tape into place until the epoxy has dried. Next apply 30 min epoxy to the vertical fin and insert it into the fuselage. The tab will lock into the horizontal stab. Use denatured alcohol to clean off any excess epoxy.

☐ Bend the enclosed metal tabs at a 90 degree angle and use the enclosed hex head bolts and lock nuts to attach them to the wing struts.

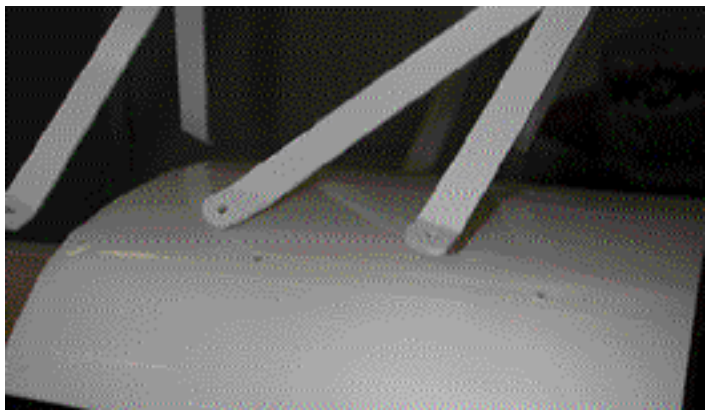


☐ Locate the wing strut holes on the top and bottom wings and remove the covering from over the holes.

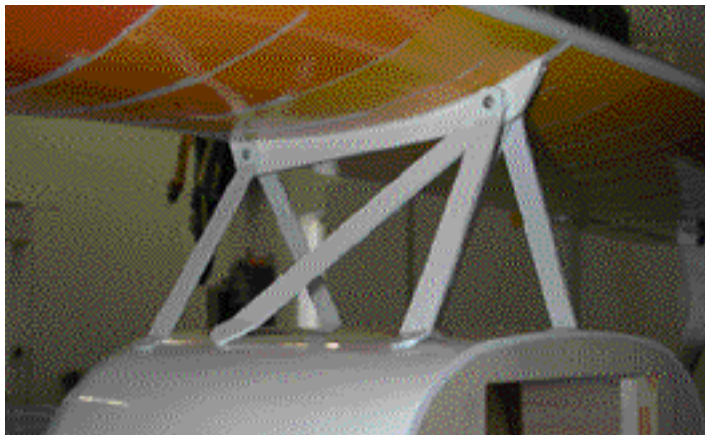


☐ Use the enclosed hex bolts and washers to attach the wing struts to the bottom wing on each side. The hex bolts will thread into pre-installed blind nuts on each hole.

The wing struts should be mounted so the bolt/bracket is on the inside of the wing - closest to the fuselage. Also note which way the struts are facing (see above photo).

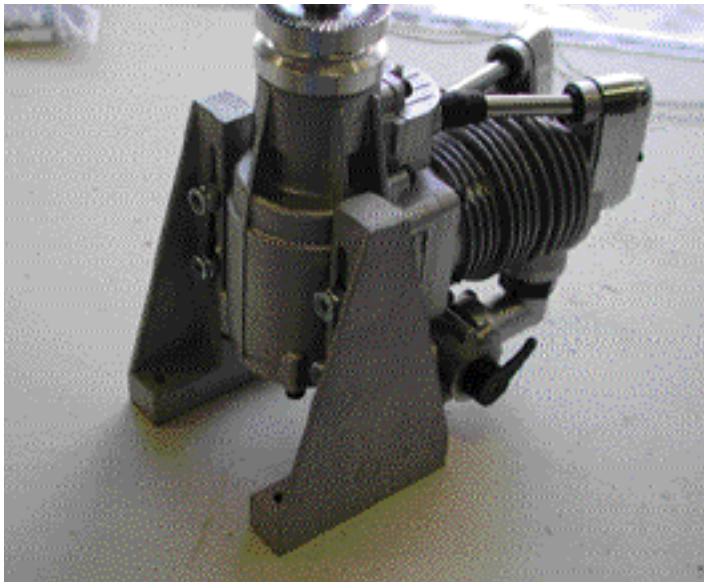


☐ Locate and remove the covering from the cabane holes in the upper fuselage. Use hex bolts to install the metal cabane struts as shown. The bolts will screw into pre-installed blind nuts.

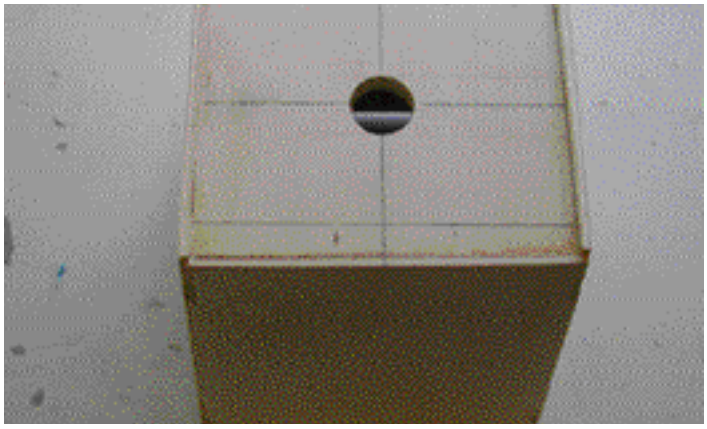


☐ Remove the covering from the holes in the top wing cabane mounting bracket. Attach the top wing to the cabanes by using the enclosed 7/8” Phillips head bolt and lock nut.

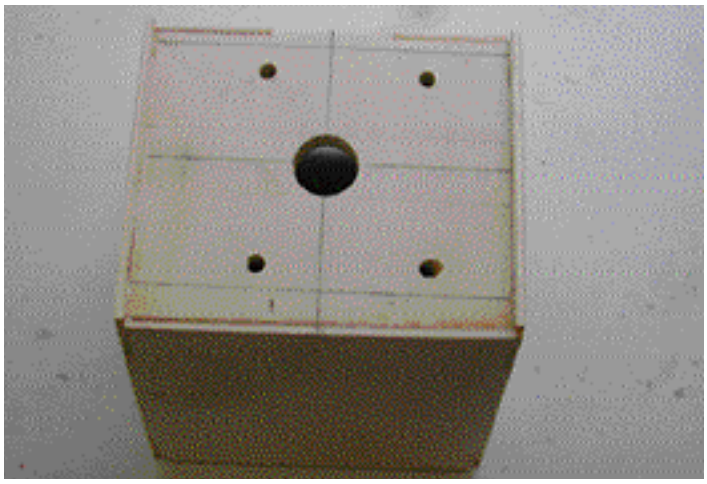
The incidence of the top wing will be pre-set at +1 degree to the bottom wing.



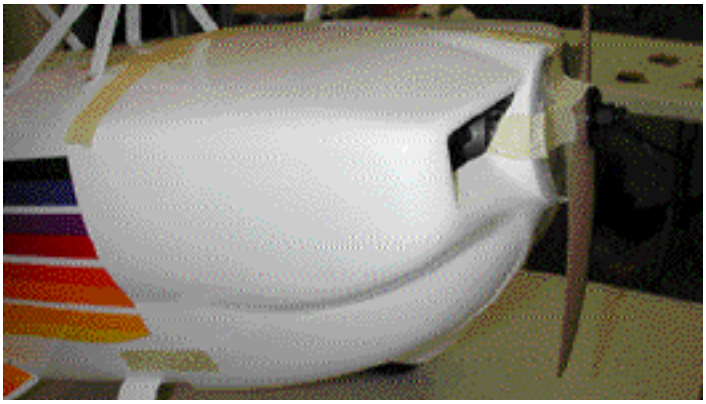
☐ Mount your engine of choice on the included adjustable aluminum mount.



☐ Mark engine mounting lines on the adjustable firewall using the circle as the center point. Note: there is 2 degrees of down thrust built into the firewall. The center circle takes this into account.

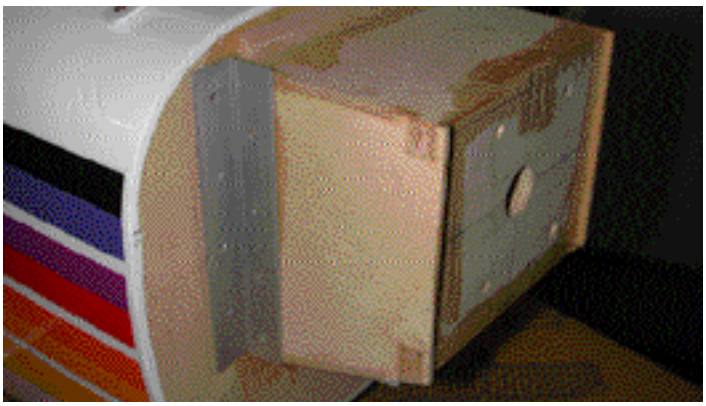


☐ Mark and drill holes for the engine mount and mount the engine to the firewall box.

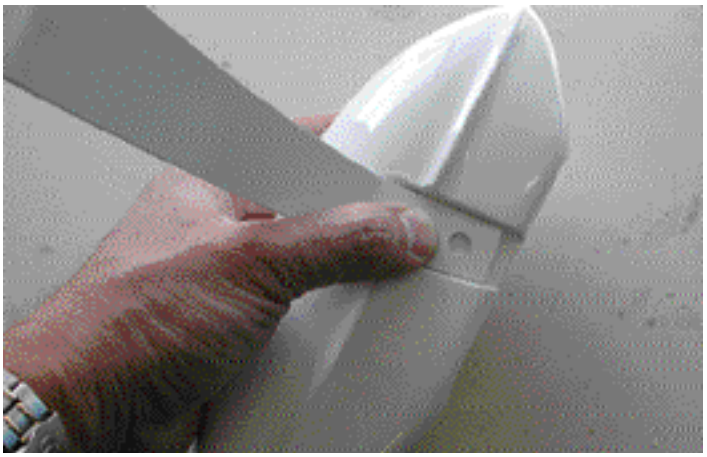


☐ Insert firewall box into the fuselage and use masking tape to temporarily attach the cowl to the fuselage. (the cowl will be mounted to hardwood blocks that are attached to the firewall later. The cowl can be adjusted to best fit the engine, but the back of the cowl should sit at least 1/8" back from the firewall) Mount the spinner backplate on the engine and adjust the sliding firewall so there is 1/8" space between the cowl and the spinner backplate.

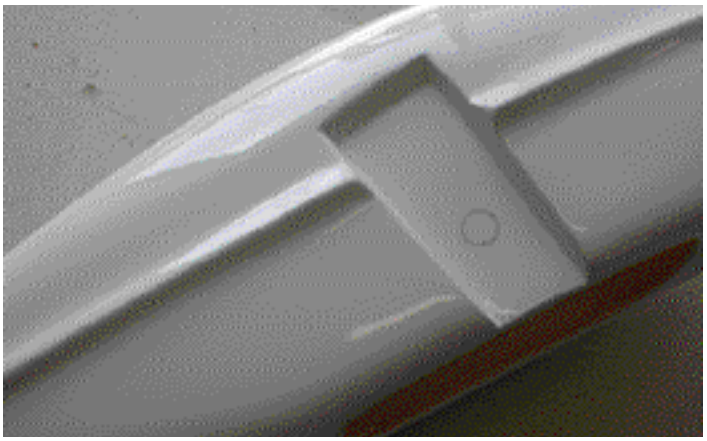
☐ Remove the cowl without moving the engine/firewall box and mark a line where the firewall box meets the firewall. Insure all sides of the fuselage box are even by using a square. Use masking tape to secure firewall box into place. Apply 30 min epoxy to the inside and outside of the firewall box where it attaches to the fuselage. Allow to dry and remove tape.



☐ Reinforce the firewall box by using the aluminum angle brackets. Trial fit brackets and mark holes where indicated on brackets. Use enclosed bolts and lock nuts to secure brackets.

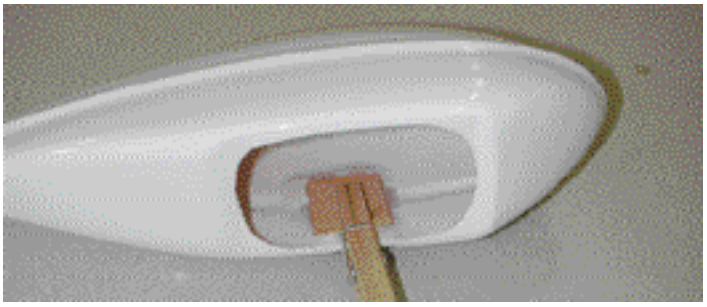


☐ Locate the aluminum landing gear brackets and fiber-glass wheel pants. Fit the brackets into the wheel pants as shown so the bottom of the bracket sits approx 5/16” above the bottom of the wheel pant.

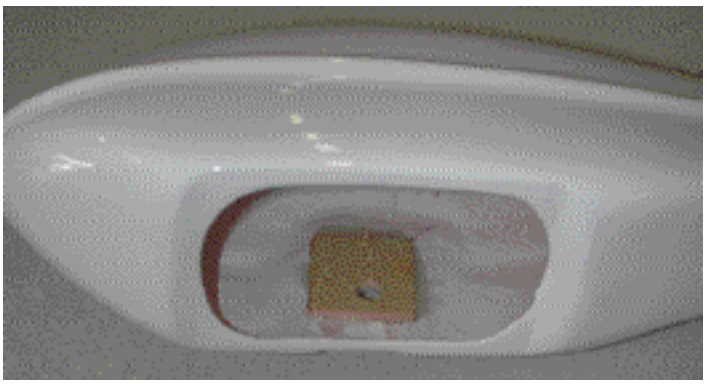


☐ Mark and drill a 5/16” hole for the wheel axle and a 1/8th hole for the securing bolt and T-nut.

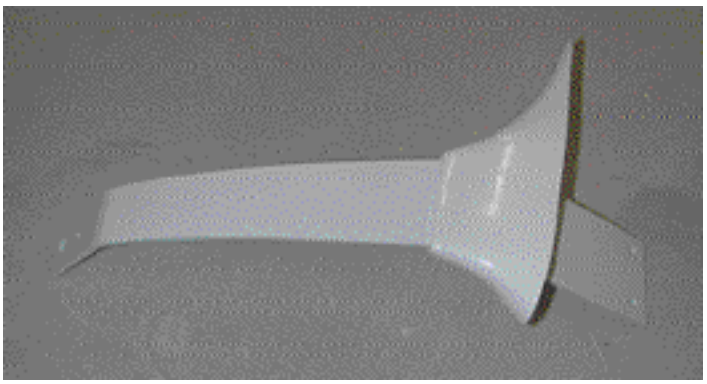
☐ Use 120 grit sandpaper to sand a 1” x 1” section on the inside of the wheel pants where the hole was drilled. Clean area with denatured alcohol and allow to dry.



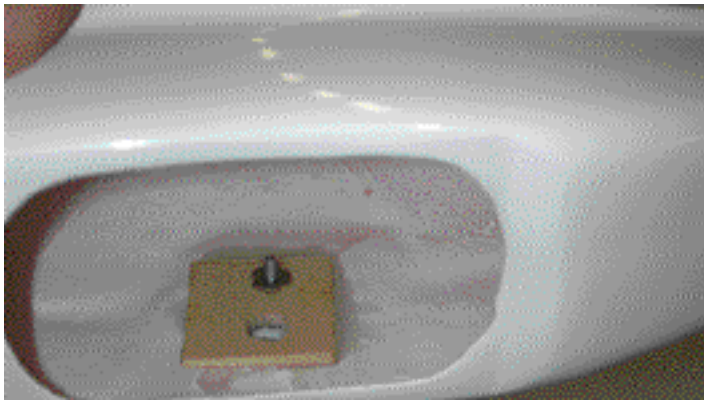
☐ Use 5 min epoxy to attach the 1/8” plywood plate to the inside of the wheel pants centered on the 2 drilled holes.



☐ Re-drill the 5/16” and 1/8th holes through the plywood plate.

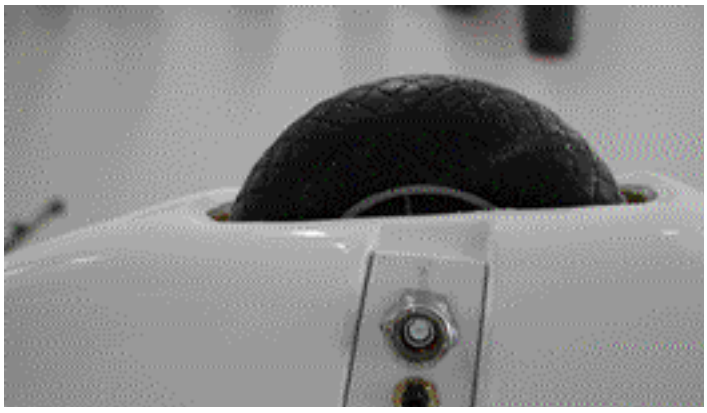


☐ Slide the fiberglass gear boots over the landing gear as shown - do not glue yet.

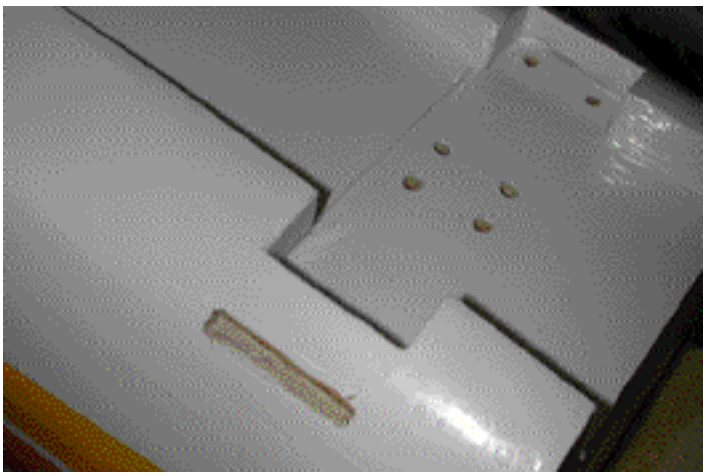


☐ Attach the wheel pants to the aluminum gear using the enclosed bolt/blind nut assembly.

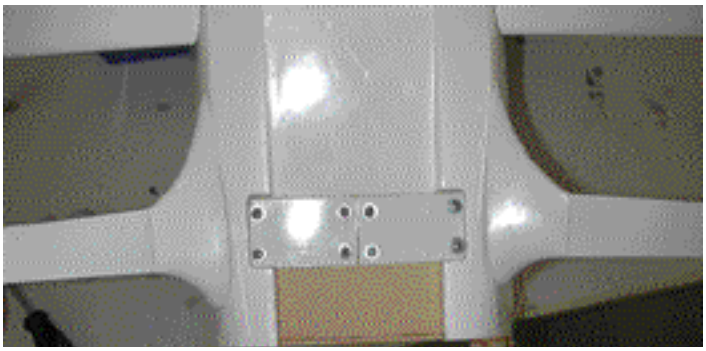
☐ Secure the axle to the wheel using one 4mm wheel collar. You can use thread locking compound on the wheel collar or added security.



☐ Insert the wheel/axle assembly into the wheel pant and secure with the axle lock nut. Note: the wheel pant hole may need to be enlarged to fit the wheel. Use a file or a rotary sanding drum. Repeat for other wheel.



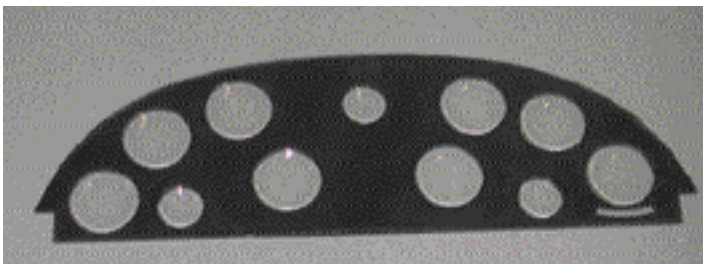
☐ Locate and remove the covering at the bottom of the fuselage for the gear and gear bolts.



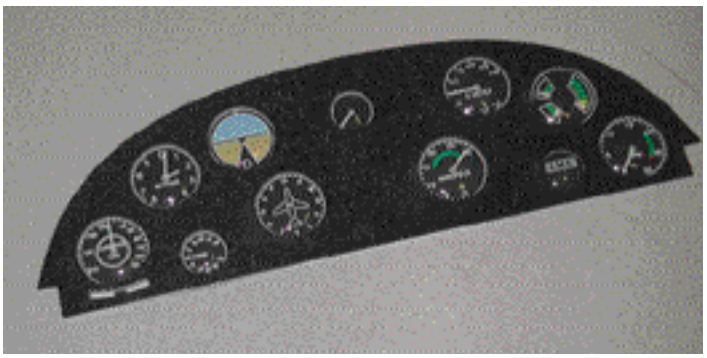
☐ Insert landing gear into slots in the bottom of the fuselage and bolt into place with the include Phillips head bolts and washers.

If using flying wires: Before attaching the landing gear boots, you can drill holes in the fuselage for the flying wire mounts and conceal them in the boot. Drill a 3/32" hole in the location shown at the end of the manual (or under the boot location so the bracket will stick out the top) and epoxy a hardwood block inside the fuselage so the wood screw can be mounted solidly.

Use silicone or other flexible glue to attach the fiberglass boots to the gear legs. Do not glue them to the fuselage sides otherwise they will not have room to flex with the gear.

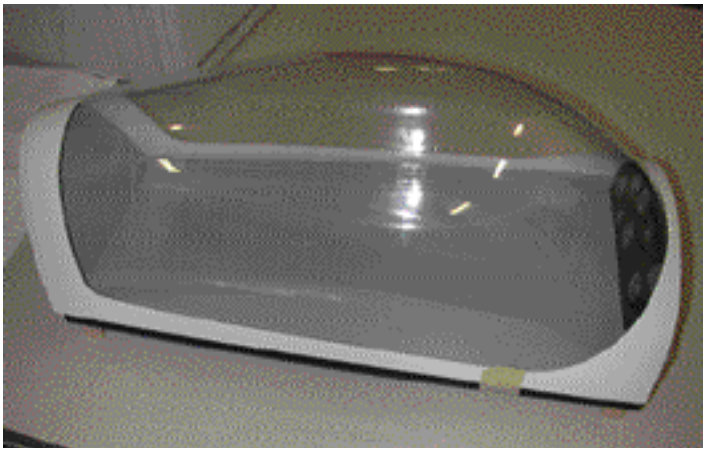


☐ Cut the paper instrument panel along the outer line. Do the same with the clear gauge lens sheet. Use wood/craft glue or epoxy to attach the plastic gauge lens to the back of instrument panel. (The smooth side is the back.) The gauge bubbles should protrude through the holes in the black panel.

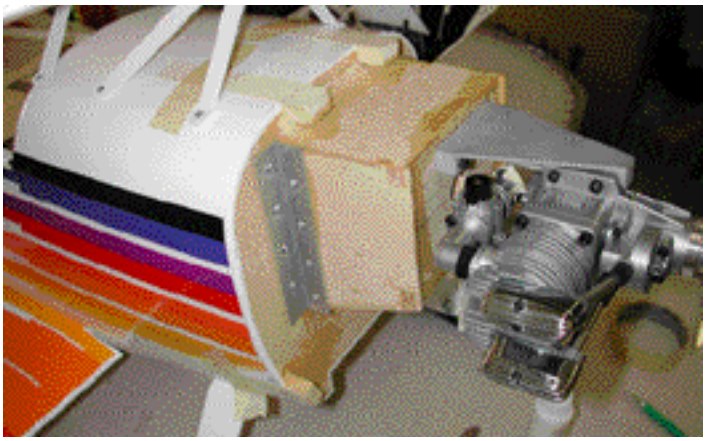


☐ Center the paper panel on the openings so the gauges are aligned and use wood/craft glue to glue paper gauge backing to the back of the plastic gauge lens piece.

Glue finished instrument panel to the front panel in the canopy base. Add pilot or other details at this time.

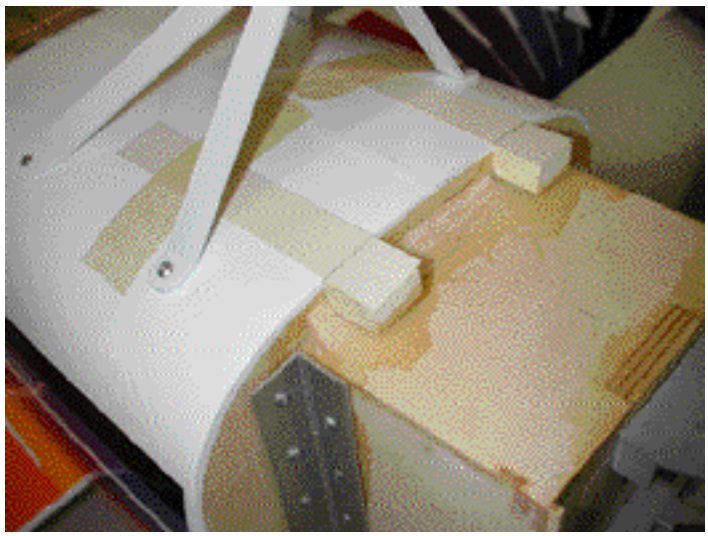


☐ Fit canopy over the canopy base and tape in place. Apply RC56 canopy glue to the edges of the canopy/base and allow to dry. Test fit finished canopy assembly to fuselage and sand for a good fit.

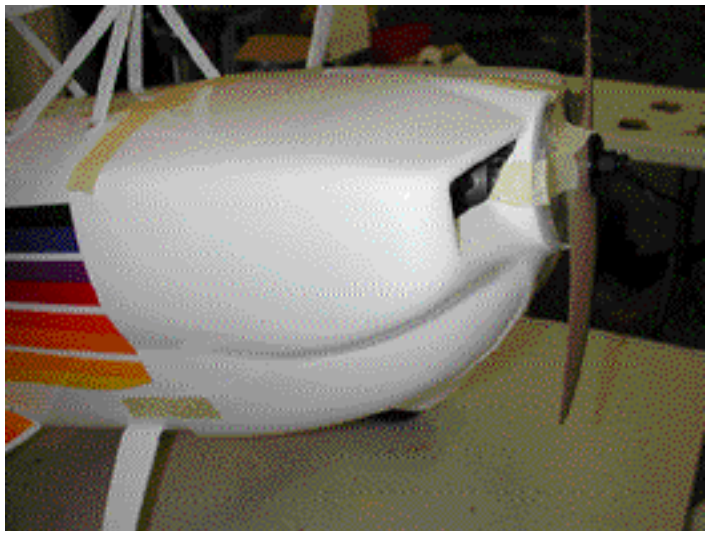


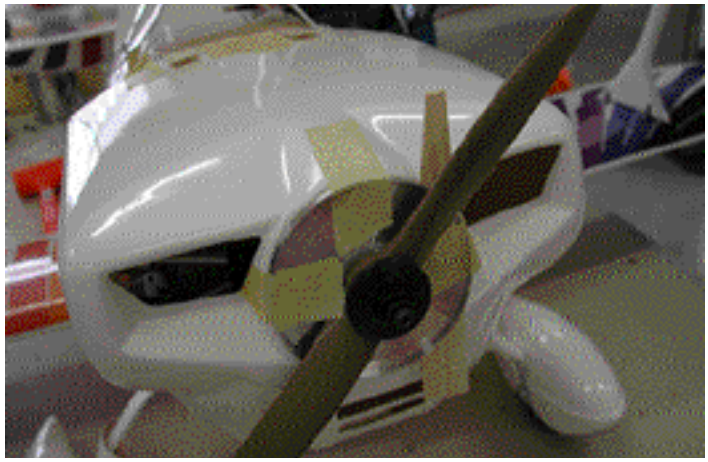
☐ Use 5 min epoxy to attach the hardwood cowl mounting blocks to the firewall in the location of your choice. Allow to dry. Note: We found that adding two blocks to the top and one to each lower side of the cowl was sufficient to keep the cowl from vibrating loose.

Mount the engine to the firewall.



☐ Tape strips of cardboard to the fuselage and mark the location of the cowl mounting blocks.





☐ Fit cowl to the fuselage and attach the spinner backplate to the engine. Tape cowl in place so there is a 1/8” gap between the spinner and the cowl. Insure that the spinner is centered on the cowl.

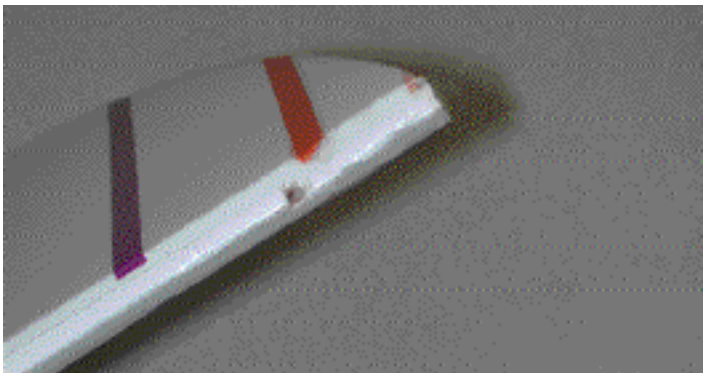
Drill a 1/16” hole through the cowl and each hardwood block at the locations marked with the cardboard strips. Insert the enclosed wood screws to secure the cowl after each hole is drilled.

☐ Remove the tape from the cowl and locate the Eagle cowl decal. Fill a spray bottle with warm water and add a few drops or dishwashing soap. Spray one side of the cowl with this solution and apply the decal making sure it is aligned with the fuselage decal. The soap/water solution will allow you to slide the decal into place. Once the decal is in place, use a soft cloth to gently rub the decal from the center outward until all air bubbles have disappeared. Repeat for the other side and allow 24 hrs for the decals to dry.

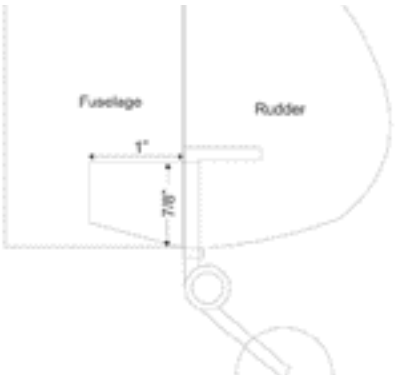
☐ Fit the canopy onto the fuselage and mark the black stripe area with a pencil. Remove the canopy and apply a piece of the enclosed black vinyl to each side of the canopy on the marked lines. Trim to fit.

☐ Place the canopy on the fuselage sides so the tabs hang down on one side of the fuselage. Mark the location of the tabs and repeat for the other side. Mount the canopy in place on the fuselage and drill a 3/32” hole at each marked location. Attach canopy to the fuselage with the enclosed wood screws.

☐ Place the plastic tailwheel holder on the tailwheel wire and bend the wire 3/4” from the top as shown in the above photo.

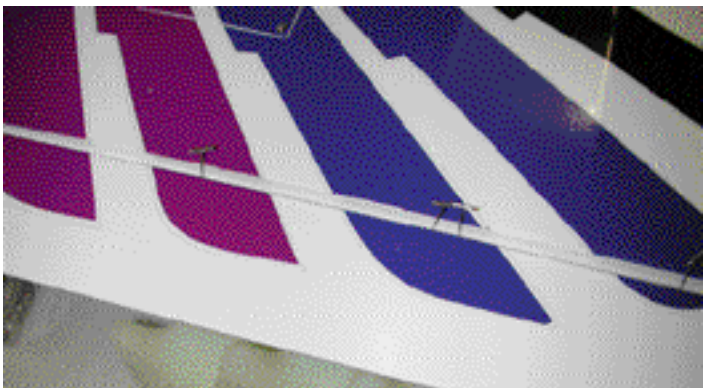


☐ Drill a 7/64” hole 1-1/8” up from the bottom of the rudder centered on the hinge line. Use a few drops of thin CA to reinforce the hole and test fit the tailwheel assembly in the rudder.



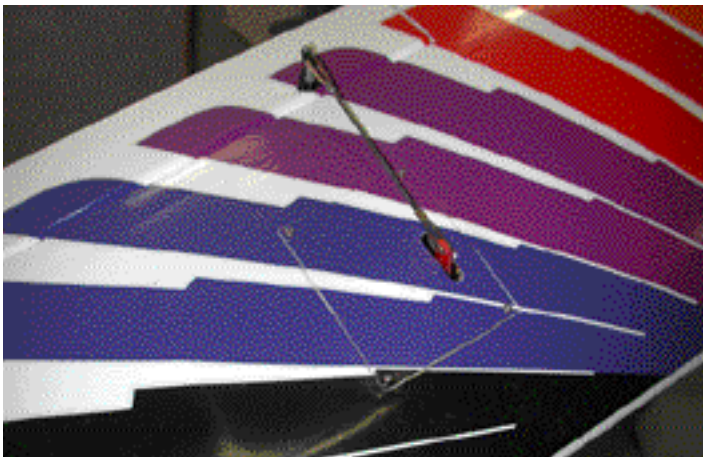
☐ Using a hobby knife, cut a 1” deep slot in the end of the fuselage, along the center hinge line. Make the slot 7/8” high to accommodate the plastic brace. Insert the plastic tailwheel wire brace in this slot and temporarily attach the rudder. Cut or sand the bottom of the rudder as necessary so the rudder fits tightly to the fuselage as shown in the above drawing. The lip on the bottom of the plastic piece should set below the fuselage/rudder.

Use 30 min epoxy to glue the tailwheel assembly into both the rudder and the fuselage. At the same time, insert the CA hinges and use thin CA to glue them into place. T-pins can be used to center the hinges as described in the next step.

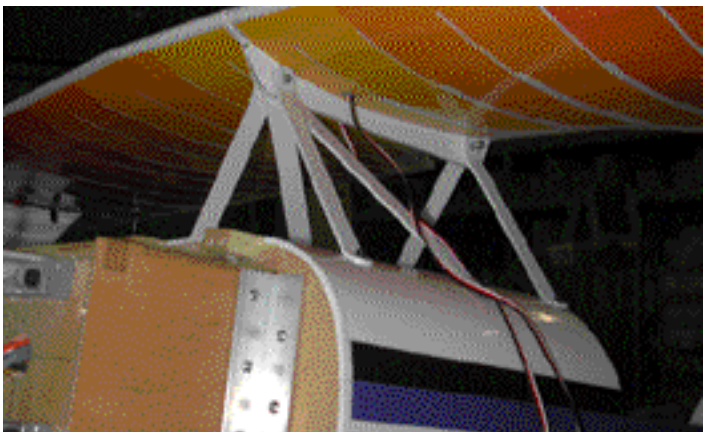


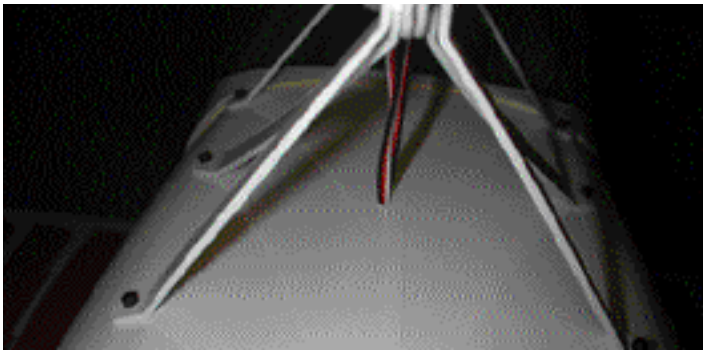
☐ Before hinging the elevator, you need to decide if you are going to use 1 servo or 2.
Note: If using 1 elevator servo, slide the elevator joiner wire into the gap behind the horizontal stab and use 30 min epoxy to attach the wire to each elevator half on the pre-drilled holes.

Use thin CA to hinge all control surfaces. Use 4-5 drops in each hinge. To keep the hinges centered, insert T-pins into the center of each hinge, then insert the hinges into the control surfaces. Once the control surface is set in place, remove the pins and glue the hinge.



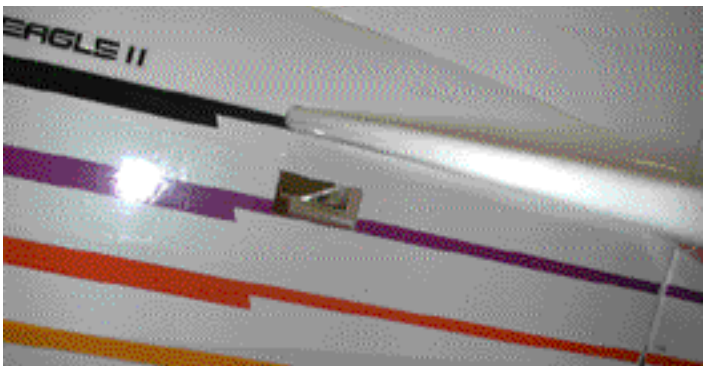
☐ Mount your choice of control horns on each aileron in line with the servo arm. Use 4-40 rods and clevises to connect the control horns to the servo arm.



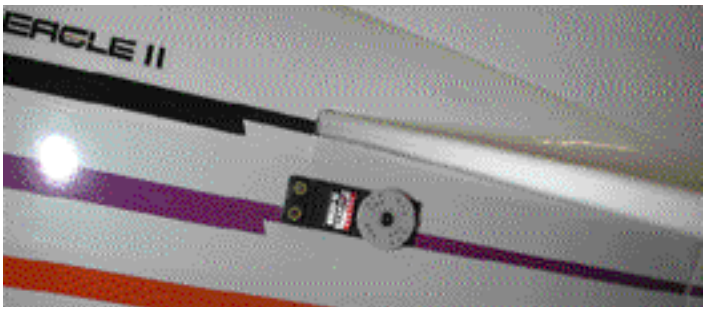


☐ Use a hobby knife to cut a hole in the top center of the fuselage for the top wing servo extensions. Route the extensions into the hole and along the inside of the fuselage.

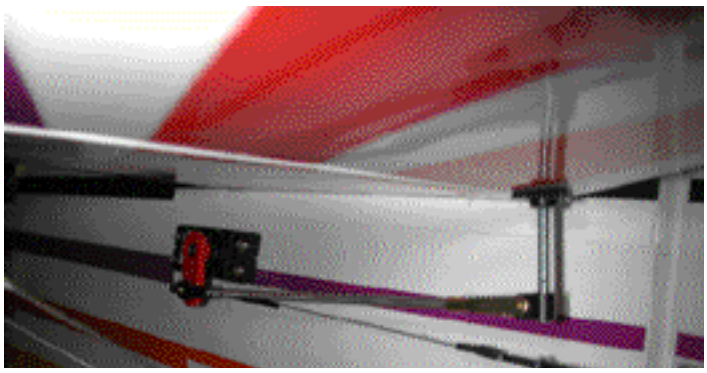
Dual Elevator Servos - R. Fuse Mounted



☐ Remove covering from the servo hole on each side of the fuselage.



☐ Install servos (both facing the same direction) per manufacturers instructions. If connecting servos with a Y-Harness, use a reversed servo on one side of the fuselage otherwise use your computer radio to reverse the servo on one side if they are plugged into 2 different channels.



☐ Install the servo arms so they are facing the same direction on each side. Install the control horns on each elevator side inline with the servo arm. Install 4-40 pushrods and clevises. Adjust the clevises until both elevator halves are parallel with each other.

Dual Elevator Servos - Ctr. Fuse Mounted

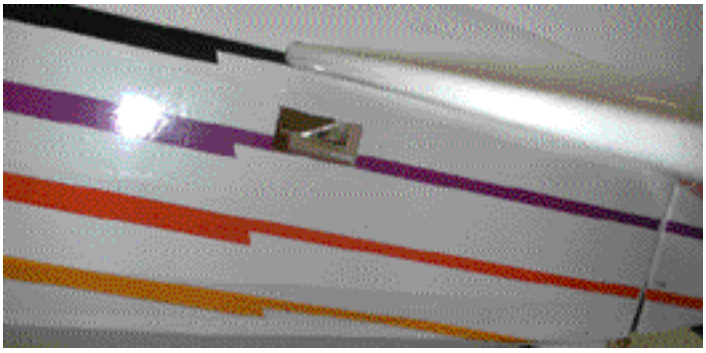
☐ Install servos in the fuselage tray (one on each side, both facing the same direction) per manufacturer's instructions. If connecting servos with a Y-Harness, use a reversed servo on one side of the fuselage otherwise use your computer radio to reverse the servo on one side.

Remove the covering from the upper slots in the rear fuselage (they are located to the right of the rear servo cutouts)

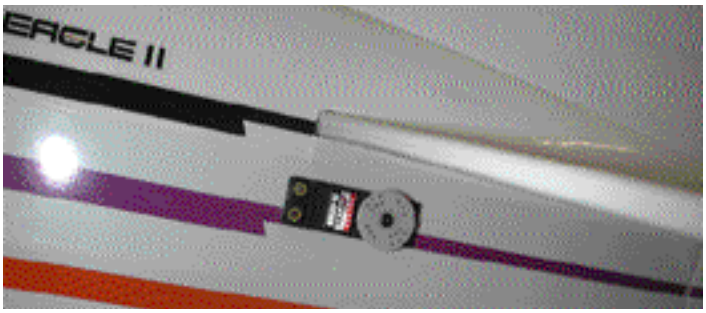
Install control horns onto the elevator halves. Use your choice of control rods to connect the servo arms to the elevator. Measure the control rods and servo arms and adjust so they are the same length on each side. This will insure the same amount of elevator travel in each elevator half. Route the control rods out the upper slots in the rear of the fuselage.

Note: On our prototype, we used Sullivan Heavy Duty S517 Gold-N-Rods and attached them to the fuselage formers all the way back to the tail with ply scraps and epoxy. This stopped the control rods from flexing when the elevator surface was operated.

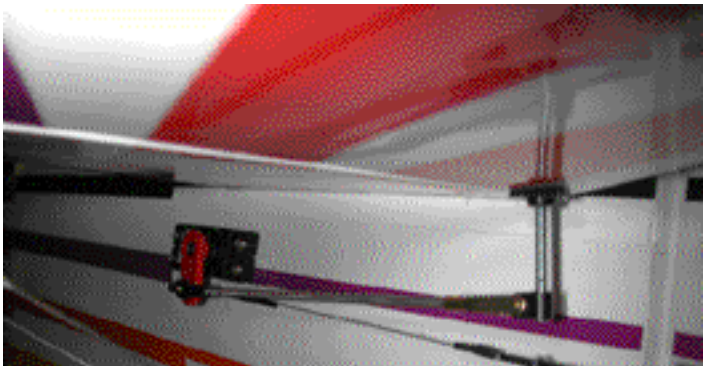
Single Elevator Servo - R. Fuse Mounted



☐ *Before beginning this step, make sure you have the elevator joiner wire installed in the elevator halves.* Remove covering from the servo hole on ONE side of the fuselage only.



☐ Install servo per manufacturer's instructions.



☐ Install the servo arm and one control horns on the same elevator side inline with the servo arm. Install 4-40 pushrod and clevises.

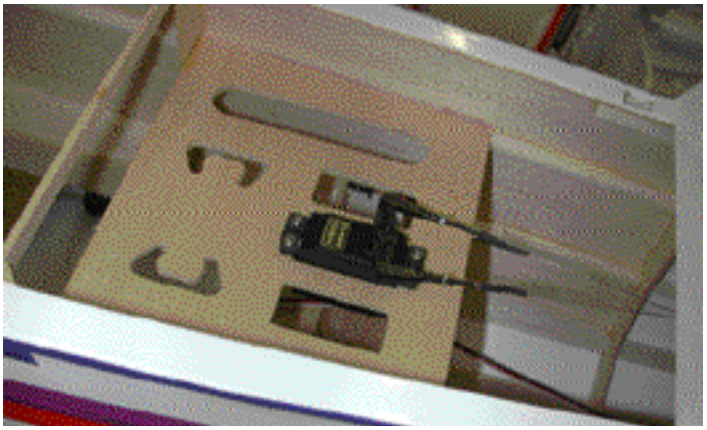
Single Elevator Servo - Ctr. Fuse Mounted

Before beginning this step, make sure you have the elevator joiner wire installed in the elevator halves.

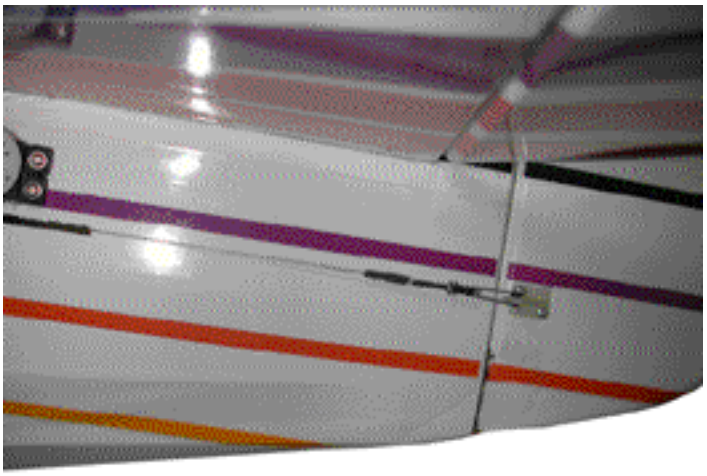
Install servo in either side of the fuselage tray per manufacturer's instructions.

Remove covering from the upper slot in the rear fuselage on the opposite side as the servo.

Install the control horn in the same elevator side as the cutout. Install the control rod of your choice to connect the servo to the elevator control horn routing it through the slot that was cut in the previous step.



☐ Install the rudder servo in the center tray of the middle fuselage.



☐ Locate and remove the covering on the lower slot in the rear of the fuselage (below the servo cutout). Install a dual control horn on the rudder inline with the cutout.

Assemble and install a pull-pull rudder control system of your choice. Refer to that manufactuer's instructions for correct installation and adjustment.

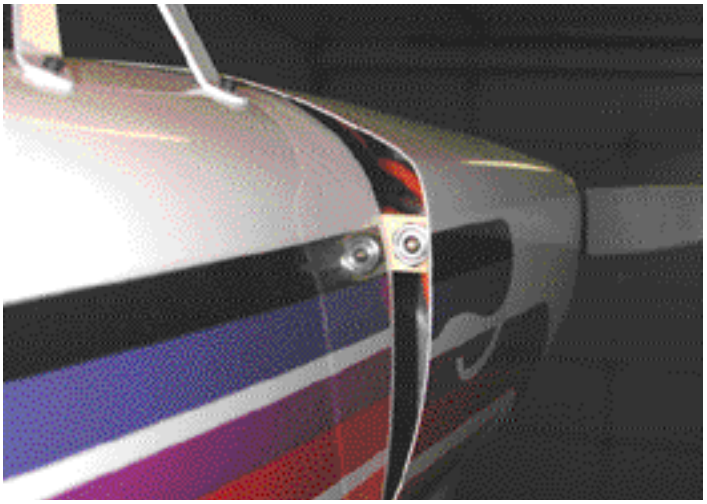
Note: We used the Du-Bro #518 Pull-Pull system on the prototype.

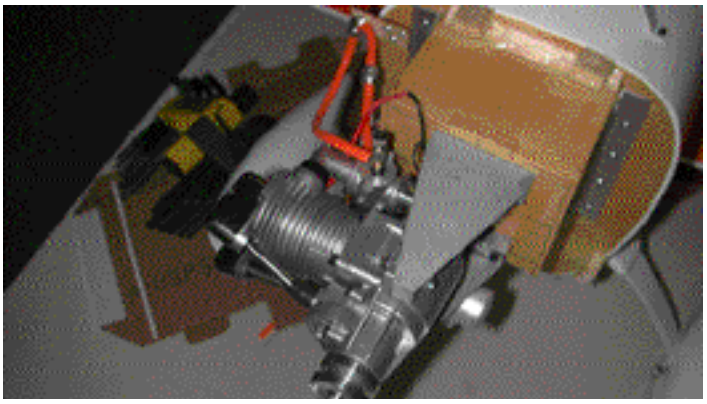
Finishing and Final Assembly

Wrap a fuel tank of choice with foam padding and install in the front of the fuselage using rubber bands to hold the fuel tank in place.
Note: There are plywood rubber band fasteners located towards the front of the fuselage.

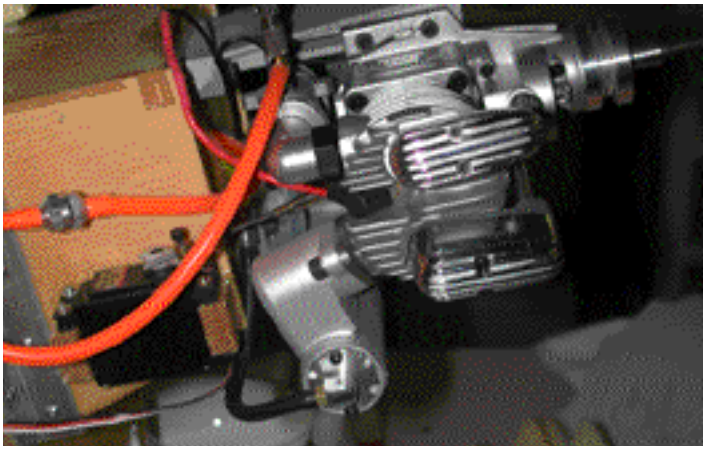
Route the fuel lines out the hole in the front of the firewall box and seal the hole with silicone to prevent fuel from entering the fuselage.

Thin 30 min epoxy with denatured alcohol (50/50 mixture) and paint the firewall area and all other uncovered areas that may come in contact with fuel.





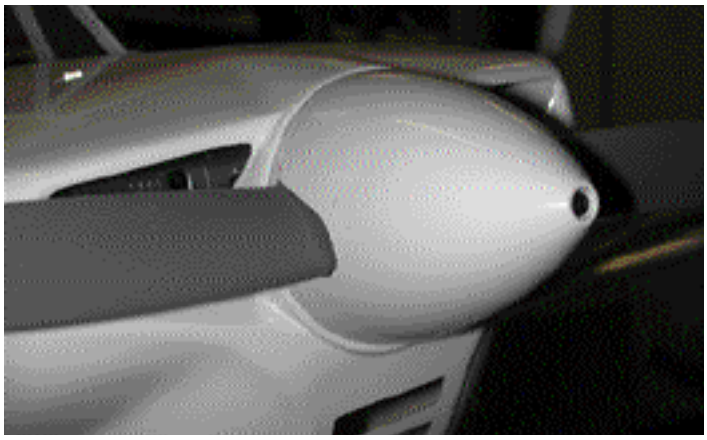
☐ We installed a fueling valve on the side of the fuselage where the cowl bulges out from the fuselage. A plywood plate was cut to the correct size and mounted with wood screws.



☐ The throttle servo can be installed inside the fuselage or on the firewall box. We used 2 hardwood blocks and epoxied them to the firewall box. A standard servo was mounted to the blocks and a 2-56 control rod was used to operate the servo. We connected the control rod to the servo arm using a Du-Bro #121 E/Z connector.

☐ We installed a Du-Bro Remote Glow Ignitor (#793) so that we would not need to cut holes in the cowl to access the glow plug.

At this time, you can also install any required switches, charging adapters, smoke systems, etc.



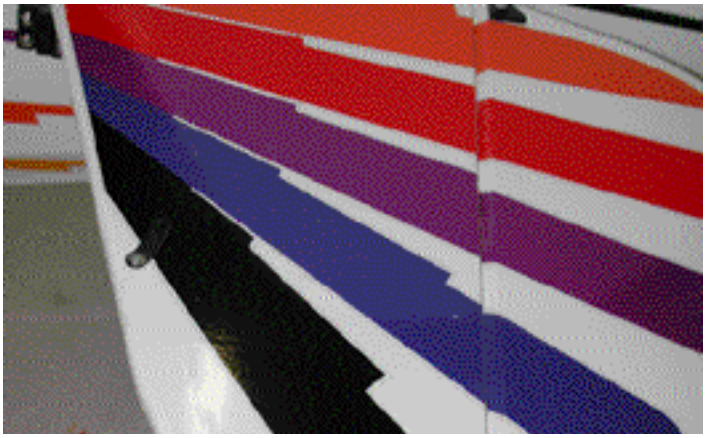
☐ Paint (if desired) and install the prop and aluminum spinner using the included 10-32 hex head bolt and the appropriate spinner adapter (not included but available from Tru-turn or Dave Brown Products)

Note: We used 280 grit sandpaper to roughen up the spinner before painting with epoxy primer and Rustoleum High-Gloss White paint.

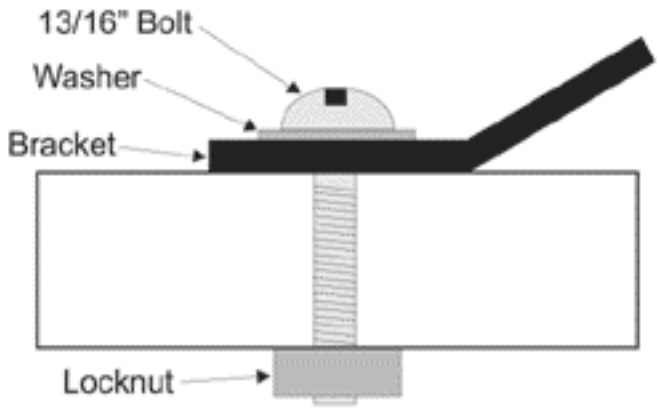
Optional Flying Wires

The flying wires on this model are optional and not required for strength. Due to the additional weight, we recommend not installing the flying wires.

If you do decide to install them, you should have some knowledge of soldering with silver solder before proceeding with this section. If you do not have any soldering experience but still want to add flying wires, you can use the Du-Bro #517 Pull-Pull assembly wires and crimping assemblies in place of our flying wire kit.

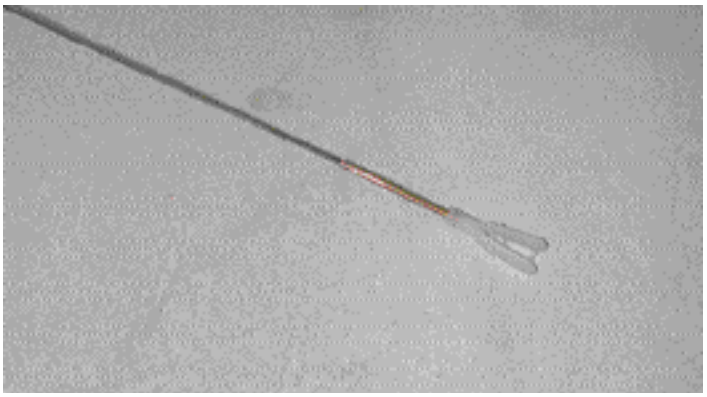


☐ Locate the drilled hardwood points on the vertical and horizontal tail and remove the covering from the pre-drilled holes.

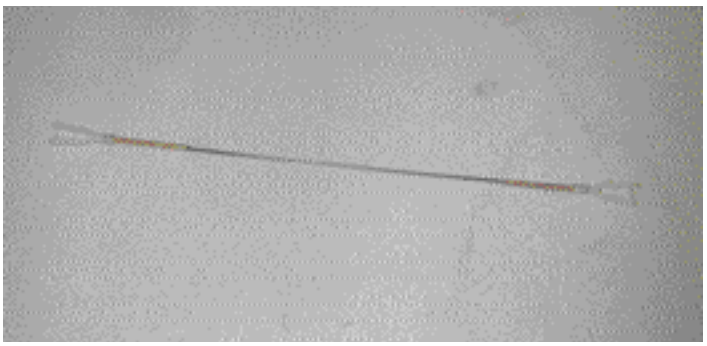


☐ Install the angled brackets on the horizontal stab by using the supplied wood screws/washer combination. Install the angled brackets on both sides of the vertical fin by using the 13/16" long bolt and lock nut/washer combination.

☐ Add brackets to the top of the other vertical fin half as described in the previous step.



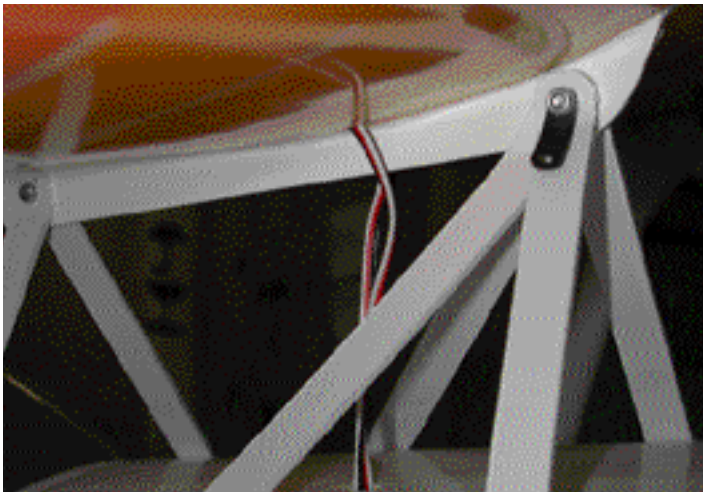
☐ Silver solder the brass threaded piece to one side of the include wire. Once cool, thread a plastic clevis to the brass piece.



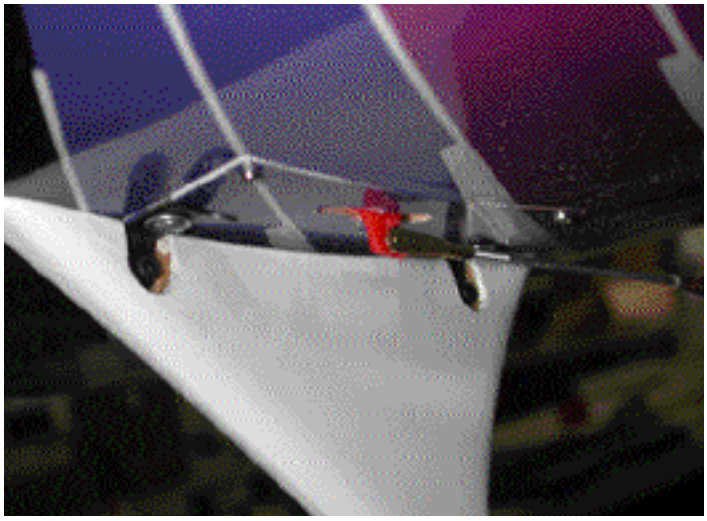
☐ Measure the length from the bracket on the front part of the vertical fin to the bracket on the front part of the horizontal stab. Cut the other end of the wire to the appropriate length and solder a threaded brass piece on that end of the wire. Thread a clevis on that end of the wire.

☐ Attach the wire to the brackets. Adjust the clevises as required for a tight fit. ***Be careful not to affect the alignment of the tail surfaces.***

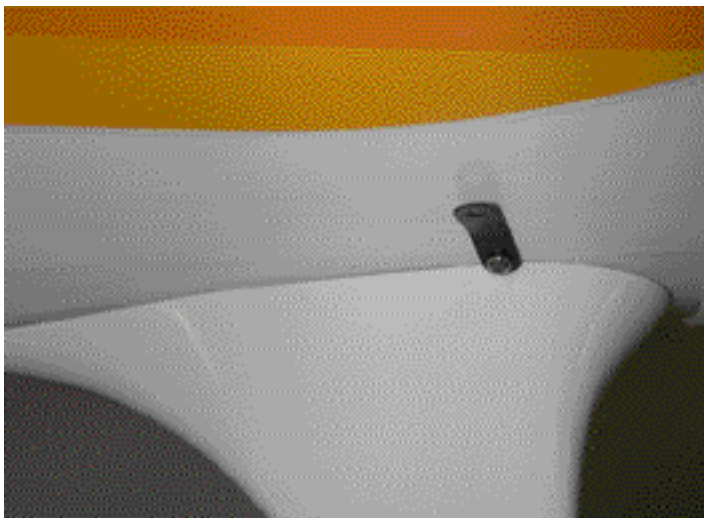
☐ Repeat the above steps for the other 3 mounting bracket sets. Secure all clevises with CA glue or pieces of fuel tubing.



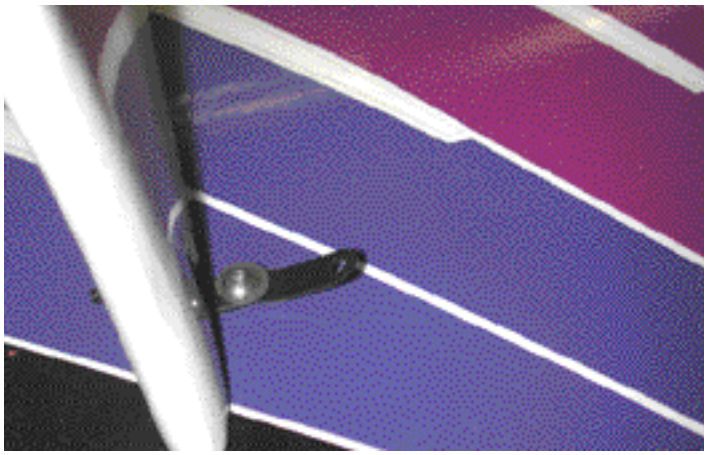
☐ Install and angled bracket on each side of the bolt that holds the front cabanes to the top wing.



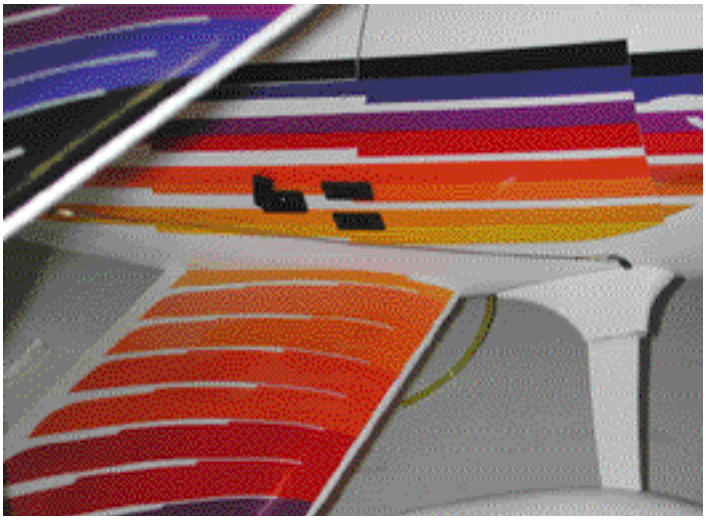
☐ Install an angled bracket on both top front wing strut mounting screws.



☐ Locate the hole drilled previously on top of the landing gear boot on each side and install an angled bracket (if not already installed) with the included wood screw/washer combination.



☐ Install and angled bracket on both bottom front wing strut mounting bolts.

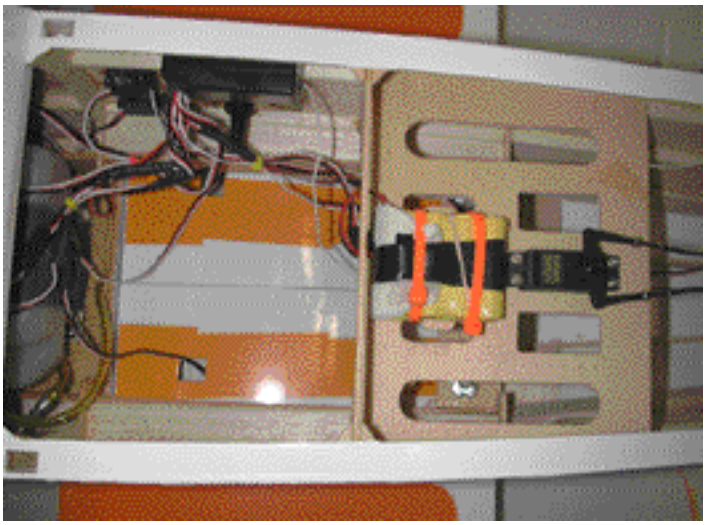


☐ Using the steps described in the tail wire section, measure and solder the wing flying wires. They should be installed as follows:

1 wire on each side from the top wing strut bracket to the gear boot bracket.

1 wire on each side from the bottom wing strut bracket to the top front cabane bracket.

C.G. Location, Receiver and Battery Installation



☐ **The balance point on the Christen Eagle** is 7” behind the leading edge of the top wing measured at the center point of the wing.

Balance the model by marking the CG location and lifting the plane on that location with your fingers. Mount the receiver and battery as needed for proper balance.

You can also laterally balance the model by setting the propeller shaft on a stand or table and lifting the plane under the tail section close to the rudder. Add weight as necessary to either wingtip so the plane does not fall to one side or the other.

Control Throws

Notes:

Low Rate Control Throws:

Ailerons: 5/8” up, 5/8” down
Elevator: 1-1/4” up, 1” down
Rudder: 1-3/8” left, 1-3/8” right

High Rate Control Throws:

Ailerons: 1” up, 1” down
Elevator: 1-3/4” up, 1-5/8” down
Rudder: 2” left, 2” right

Flying:

None of the prototypes weighed over 12.5 pounds, though the weight range specified allows for more individual variations. I do recommend using dual rates on the ailerons, rudder and elevators. Taking off will require slow even throttle management. Advance the throttle slowly while using the rudder to keep the plane tracking straight. If you advance the throttle too quickly, it will be very difficult to maintain a straight heading. If the plane starts fish-tailing on the ground, immediately cut the power to regain control. Be carefull when taking off to insure that you have enough speed for a gradual climb. If you try to “horse” the plane off the ground otherwise you could damage the plane by hitting the horizontal stab on the runway as the front of the plane is lifting off (don’t ask how I know this!!) Once you are airborne, you will need very little or no rudder imput to negotiate turns. Be careful with the rudder because just a small amount of imput can send the plane into a dive. Landings are very gentle with no tip stalls. For a smooth landing, set the throttle a couple clicks above idle until you are over the runway and a couple feet off the ground. Then lower the throttle to idle and fly the plane to the ground touching the front wheels and letting the tail settle. This will require very little input on the controls. The plane will settle once it starts to lose lift. Just be carefull, if you are too high and too slow the plane may bounce down the runway and possibly flip over. The first few landings may require a few passes in order to understand the planes unusual tendency to “float” past the landing point. Try not to land the plane unless it is slowed down properly. Landing as excessive speed will only result in control difficulty once the plane has touched the runway.

Be careful of flutter when doing high speed dives. We recommend that you cut the throttle when going into a dive especially if you are only using 2 servo ailerons. If you hear any flutter (characterized by a buzz sound) immediately slow the plane and land as soon as possible. Check all control surfaces, servo connections etc until you have discovered the cause.

The plane can be flown in windy conditions although substantial rudder will be required on takeoff and landing. The plane tends to “weathervane” when landing in windy conditions - just be prepared for it!