

EVADER™



ElectriFly™
by Great Planes

INSTRUCTION MANUAL

SPECIFICATIONS

Wingspan:	26.5 in [675mm]	Weight:	28–30 oz [790–850 g]
Wing Area:	153 in ² [9.9 dm ²]	Wing Loading:	26.4–28.2 oz/ft ² [81–86 g/dm ²]

Length:	30.5 in [775mm]
Radio:	3-Channel, two micro servos, mini Rx
Motor, ESC	24-45-3790kV Ammo™, 35A ESC, HyperFlow™ 56mm fan

WARRANTY

Great Planes® Model Manufacturing Co. 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 Great Planes' liability exceed the original cost of the purchased kit.** Further, Great Planes reserves the right to change or modify this warranty without notice.

In that Great Planes 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.

To make a warranty claim send the defective part or item to Hobby Services at the address below:

Hobby Services
3002 N. Apollo Dr. Suite 1
Champaign IL 61822 USA

Include a letter stating your name, return shipping address, as much contact information as possible (daytime telephone number, fax number, e-mail address), a detailed description of the problem and a photocopy of the purchase receipt. Upon receipt of the package the problem will be evaluated as quickly as possible.

READ THROUGH THIS MANUAL BEFORE STARTING CONSTRUCTION. IT CONTAINS IMPORTANT INSTRUCTIONS AND WARNINGS CONCERNING THE ASSEMBLY AND USE OF THIS MODEL.



Champaign, Illinois
(217) 398-8970, Ext 5
airsupport@greatplanes.com

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INTRODUCTION

Thank you for purchasing the ElectriFly Evader EDF (electric ducted fan) ARF. Prepare to be thrilled! Before you fly your Evader make sure you're ready; get a good night's sleep and make sure your vision is good. If you don't bring your "A-game," the Evader's small size and extreme speed will cause it to get out of visual range within a few seconds. We've clocked it at average speeds of 105mph [170kph], but

it seems like it's going at least 200mph [320kph]! The Evader does fly predictably and smoothly, so TOC (Tournament of Champions) skills are not required, but you still should be a competent pilot. And even after you get used to your Evader, you'll still breathe a sigh of relief after every landing (but you'll quickly become addicted to the speed and be ready for the next flight as soon as you catch your breath).

For the latest technical updates or manual corrections to the Evader visit the Great Planes web site at www.greatplanes.com. Open the "Airplanes" link, then select "Evader ARF". If there is new technical information or changes to this model a "tech notice" box will appear in the upper left corner of the page.

AMA

If you are not already a member of the AMA, please join! The AMA is the governing body of model aviation and membership provides liability insurance coverage, protects modelers' rights and interests and is required to fly at most R/C sites.

ACADEMY OF MODEL AERONAUTICS



5151 East Memorial Drive
Muncie, IN 47302-9252
Tele. (800) 435-9262
Fax (765) 741-0057

Or via the Internet at:
<http://www.modelaircraft.org>

IMPORTANT!!!

Two of the most important things you can do to preserve the radio controlled aircraft hobby are to avoid flying near full-scale aircraft and avoid flying near or over groups of people.

PROTECT YOUR MODEL, YOURSELF & OTHERS... FOLLOW THESE IMPORTANT SAFETY PRECAUTIONS

1. Your Evader should not be considered a toy, but rather a sophisticated, working model that functions very much like a full-size airplane. Because of its performance capabilities, the Evader, if not assembled and operated correctly, could possibly cause injury to yourself or spectators and damage to property.
2. You must assemble the model **according to the instructions**. Do not alter or modify the model, as doing so may result in an unsafe or unflyable model. In a few cases the instructions may differ slightly from the photos. In those instances the written instructions should be considered as correct.
3. You must take time to **build straight, true and strong**.
4. You must use an R/C radio system that is in good condition, a correctly sized motor, and other components as specified in this instruction manual. All components must be correctly

installed so that the model operates correctly on the ground and in the air. You must check the operation of the model and all components before **every** flight.

5. If you are not an experienced pilot or have not flown this type of model before, we recommend that you get the assistance of an experienced pilot in your R/C club for your first flights. If you're not a member of a club, your local hobby shop has information about clubs in your area whose membership includes experienced pilots.

6. While this kit has been flight tested to exceed normal use, if the plane will be used for extremely high stress flying, such as racing, or if a motor larger than one in the recommended range is used, the modeler is responsible for taking steps to reinforce the high stress points and/or substituting hardware more suitable for the increased stress.

7. **WARNING:** The fuselage and tail cone adapter included in this kit are made of fiberglass, the fibers of which may cause eye, skin and respiratory tract irritation. Never blow into a part to remove fiberglass dust, as the dust will blow back into your eyes. Always wear safety goggles, a particle mask and rubber gloves when grinding, drilling and sanding fiberglass parts. Vacuum the parts and the work area thoroughly after working with fiberglass parts.

We, as the kit manufacturer, provide you with a top quality, thoroughly tested kit and instructions, but ultimately 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.

Remember: Take your time and follow the instructions to end up with a well-built model that is straight and true.

DECISIONS YOU MUST MAKE

This is a partial list of items required to finish the Evader that may require planning or decision making before starting assembly. Order numbers are provided in parentheses.

Battery and ESC

- The Evader was designed for and comes equipped with the Great Planes *ElectriFly* HyperFlow 56mm ducted fan system (GPMG3910) and the Great Planes *ElectriFly* 24-45-3790kV *Ammo* inrunner brushless motor (GPMG5185). These components drop right in with no modification.
- The recommended battery is the Great Planes *ElectriFly* 14.8V (4S) 2200mAh 25C LiPo (GPMP0521). Under "normal" flying conditions (mostly full throttle), this provides average flight times of approximately 4 minutes with approximately one more minute of motor run time for additional landing attempts.
- The Great Planes *ElectriFly* SS-35 35 Amp brushless ESC (GPMM1830) is also recommended.



Note: A precision 1.5mm Allen wrench will be required for tightening the set screws in the brass fan adapter. Do not attempt to use a worn out wrench; you may strip out the wrench or set screws, making it impossible to securely tighten or remove them for replacement. The 1.5mm MIP Thor Hex Driver (MIPR9007) is recommended.

Servos and Receiver

No unusual radio gear is required for the Evader, just a small receiver and one elevator servo and one aileron servo in the 20 oz-in torque range.

- Suitable servo choices (in order of preference) for Futaba® servos include S3156 (digital, metal gear, high-torque–FUTM0656), S3153MG (digital, metal gear–FUTM0652), S3153 (digital–FUTM0653), S3117 (high-torque–FUTM0417) and S3107 (standard micro–FUTM0025).
- Any mini 4-channel aircraft receiver will work. In the prototypes a Futaba 2.4GHz R617FS FASST™ receiver (FUTL7627) was used.

ADDITIONAL ITEMS REQUIRED

Battery Chargers

- A LiPo-capable battery charger and a power source for the battery charger is required. One recommended charger is the Great Planes *ElectriFly* TritonEQ™ AC/DC Charger (GPMM3155). The Triton EQ can be powered either by an AC or DC power source and features a built-in LiPo cell balancer.
- Another suitable LiPo battery charger is the Great Planes PolyCharge4™ DC LiPo charger (GPMM3015). The PolyCharge4 can charge up to four LiPo batteries at the same time, but requires separate LiPo cell balancers, so for each LiPo battery you wish to charge simultaneously (up to 4), one Great Planes Equinox™ LiPo Cell Balancer (GPMM3160) will be required. Additionally, the Equinox comes with 2S and 3S charge adapters, so a 4S charge adapter (GPMM3162) must also be purchased separately. Finally, the PolyCharge4 does not have AC capability, so if wall-charging from home is a priority a separate A/C 12-Volt power source must also be purchased. A suitable power supply then for the PolyCharge4 is the Great Planes 12V 12A DC power supply (GPMP0901).

Adhesives and Building Supplies

Other than common hobby tools this is the list of adhesives and Building Supplies that are required to finish the Evader.

- 1/2 oz. [15g] Thin Pro™ CA (GPMR6001)
- 1/2 oz. [15g] Medium Pro CA+ (GPMR6007)
- CA applicator tips (HCAR3780)
- Pro 30-minute epoxy (GPMR6047)
- 1/16" [1.6mm] drill bit
- #1 Hobby knife (XACR3511)
- #11 blades (5-pack, XACR2911)
- 2 oz. [57g] spray CA activator (GPMR6035)
- CA debonder (GPMR6039)
- Denatured alcohol (for epoxy clean up)
- Threadlocker thread locking cement (GPMR6060)
- Stick-on segmented lead weights (GPMQ4485)
- Great Planes 1/8" x 3/8" [3.2 x 9.5mm] single-sided adhesive foam tape (GPMQ4224) (Optional, for plywood stand)

IMPORTANT BUILDING NOTES

The wing and horizontal stabilizer of the Evader are factory-covered with Top Flite® MonoKote® film. Should repairs ever be required, MonoKote can be patched with additional MonoKote purchased separately. MonoKote is packaged in six-foot rolls, but some hobby shops also sell it by the foot. If only a small piece of MonoKote is needed for a minor patch, perhaps a fellow modeler would give you some. MonoKote is applied with a model airplane covering iron, but in an emergency a regular iron could be used. A roll of MonoKote includes full instructions for application. Following are the colors used on this model and order numbers for six foot rolls.

White (TOPQ0204)
Orange (TOPQ0202)
Black (TOPQ0208)

The stabilizer and wing incidences and motor thrust angles have been factory-built into this model. However, some technically-minded modelers may wish to check these measurements anyway. To view this information visit the web site at www.greatplanes.com and click on "Technical Data." Due to manufacturing tolerances which will have little or no effect on the way your model will fly, please expect slight deviations between your model and the published values.

LITHIUM BATTERY HANDLING & USAGE

WARNING!! Read the entire instruction sheet included with your battery. Failure to follow all instructions could cause permanent damage to the battery and its surroundings, and cause bodily harm!

- **ONLY** use a LiPo approved charger. **NEVER** use a NiCd/NiMH peak charger.
- **NEVER** charge in excess of 4.20V per cell.
- **ONLY** charge through the "charge" lead. **NEVER** charge through the "discharge" lead.
- **NEVER** charge at currents greater than 1C.
- **ALWAYS** set the charger's output volts to match the battery volts.
- **ALWAYS** charge in a fireproof location.
- **NEVER** trickle charge.
- **NEVER** allow the battery temperature to exceed 150° F (65° C).
- **NEVER** disassemble or modify the pack wiring in any way or puncture the cells.
- **NEVER** discharge below 2.5V per cell.
- **NEVER** place the battery or charger on combustible materials or leave it unattended during charge or discharge.
- **ALWAYS** KEEP OUT OF THE REACH OF CHILDREN.
- **NEVER** charge the battery in the plane.
- **ALWAYS** remove the battery from the plane after a crash. Set it aside in a safe location for at least 20 minutes. If the battery is damaged in the crash it could catch fire.

If the battery starts to swell, quickly move the battery to a safe location, preferably outside: Place it in a bucket, covering the battery with sand.

KIT INSPECTION

Before starting to build, inspect the parts to make sure they are of acceptable quality. If any parts are missing or are not of acceptable quality, or if you need assistance with assembly, contact **Product Support**. When reporting defective or missing parts, use the part names exactly as they are written in the Kit Contents list.

Great Planes Product Support
3002 N. Apollo Drive, Suite 1
Champaign, IL 61822
Telephone: (217) 398-8970, ext. 5
Fax: (217) 398-7721
E-mail: airsupport@greatplanes.com

ORDERING REPLACEMENT PARTS

Replacement parts for the Great Planes Evader ARF are available using the order numbers in the **Replacement Parts List** that follows. The fastest, most economical service can be provided by your hobby dealer or mail-order company.

To locate a hobby dealer, visit the Great Planes web site at www.greatplanes.com. Choose "Where to Buy" at the bottom of the menu on the left side of the page. Follow the instructions provided on the page to locate a U.S., Canadian or International dealer.

Parts may also be ordered directly from Hobby Services by calling (217) 398-0007, or fax at (217) 398-7721, but full retail prices and shipping and handling charges will apply. Illinois and Nevada residents will also be charged sales tax. If ordering via fax, include a Visa® or MasterCard® number and expiration date for payment.

Mail parts orders and payments by personal check to:

Hobby Services
3002 N. Apollo Drive, Suite 1
Champaign, IL 61822

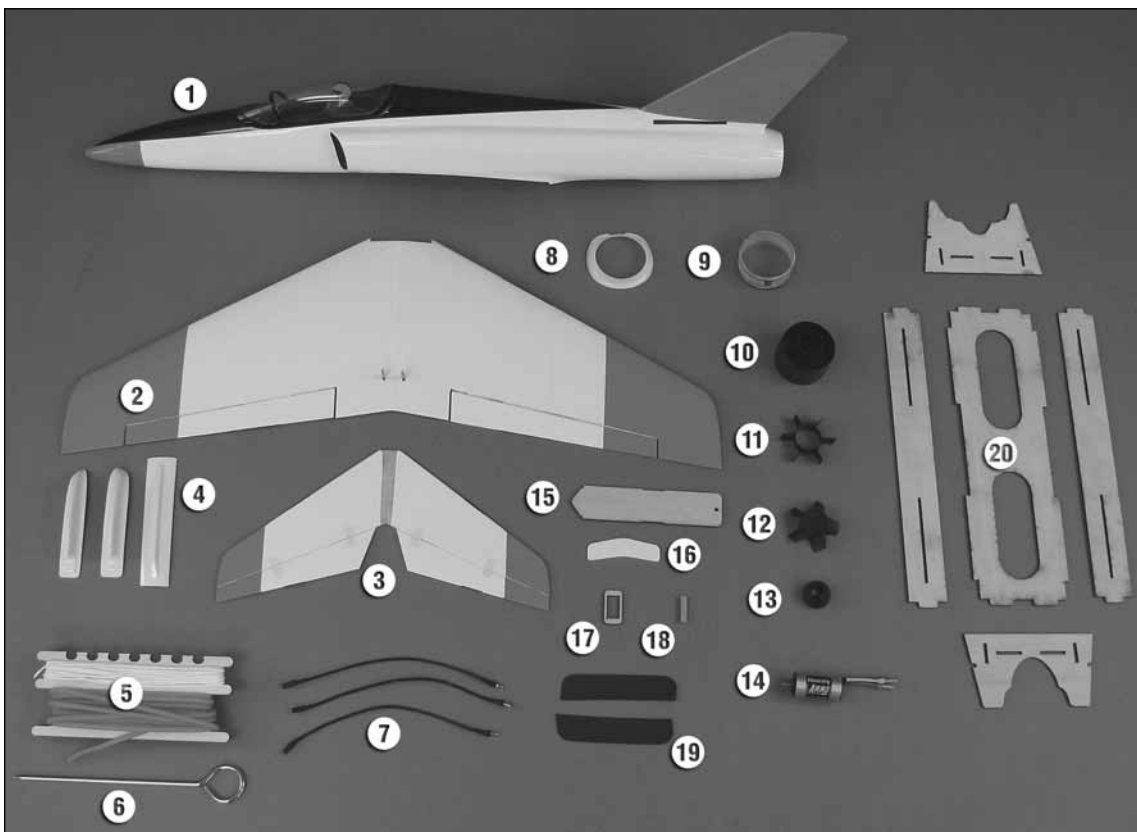
Be certain to specify the order number exactly as listed in the **Replacement Parts List**. Payment by credit card or personal check only; no C.O.D.

If additional assistance is required for any reason, contact Product Support by telephone at (217) 398-8970, or by e-mail at productsupport@greatplanes.com.

REPLACEMENT PARTS LIST

Order No.	Description
GPMA2881	Wing Set
GPMA2882	Horizontal Stabilizer Set
GPMA2883	Canopy/Hatch Set
GPMA2884	Fuselage Set
GPMA2885	Bungee Launch Set
GPMA2886	Decal
GPMA2887	Wing and Tail Skids
GPMA2888	Bungee Hook/Nut/Washer
GPMG3910	HyperFlow Fan
GPMG5185	Ammo (24-45-3790 kV) Brushless Motor
NOTE ►	Full-size plans are not available. You can download a copy of this manual at www.greatplanes.com .

KIT CONTENTS

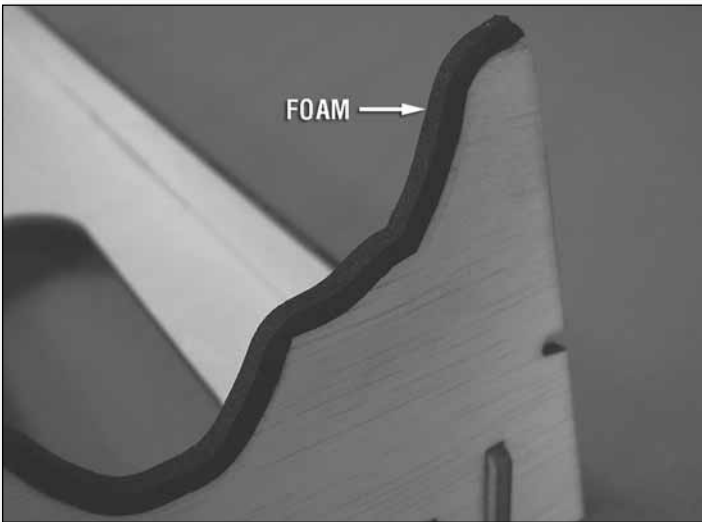
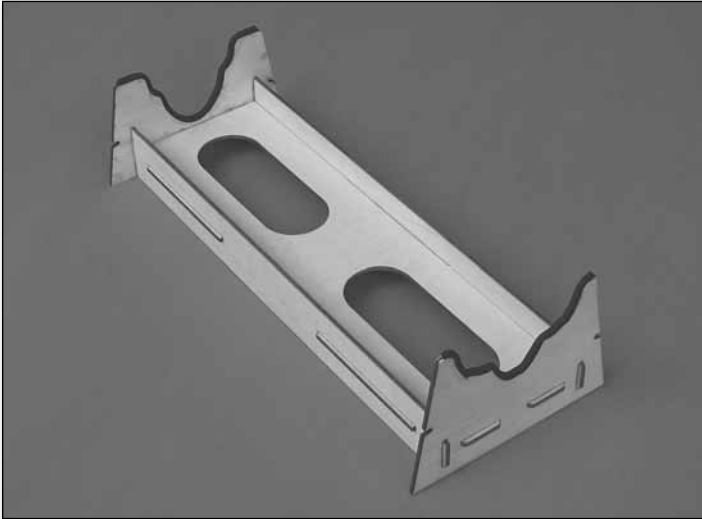


1. Fuselage, canopy hatch
2. Wing
3. Horizontal stabilizer (stab) with elevators
4. Wing skids, tail skid
5. Bungee launch cord, tubing, winder
6. Bungee launch stake
7. ESC motor extension wires
8. Front housing flange
9. Cone adapter
10. Fan housing
11. Stator extension
12. Fan rotor
13. Rotor cone
14. Ammo inrunner motor
15. External battery plate
16. Wing bolt plate
17. Aileron servo mount plate
18. Wing dowel
19. Hand grips
20. Assembly/transport stand

MOTOR & FAN INSTALLATION

Assemble the Stand

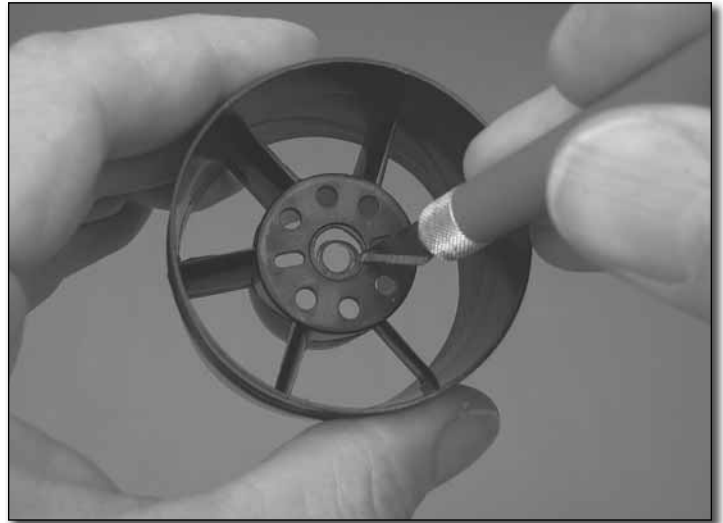
The included assembly/transport stand holds your Evader upside-down or upright.



Test-fit, then glue together the plywood parts of the stand. The stand may be used as-is, or you could add foam tape cut into 1/8" x 9" [3.2 x 230mm] strips. The foam will adhere best if you first sand the edges of the stand, then seal with medium CA before applying the foam.

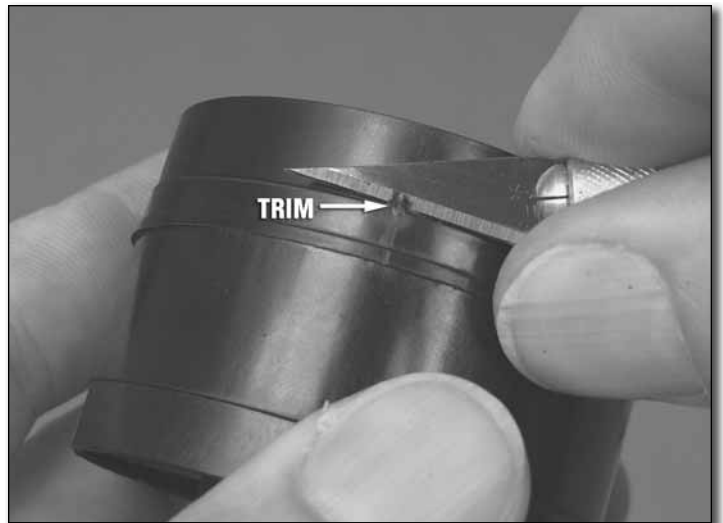
Prepare the HyperFlow Fan Unit

- ❑ 1. Review steps 1 through 6 for *Installing a Brushless Motor* on pages 6 and 7 of the separate HyperFlow instruction manual, but don't perform any of the steps yet.

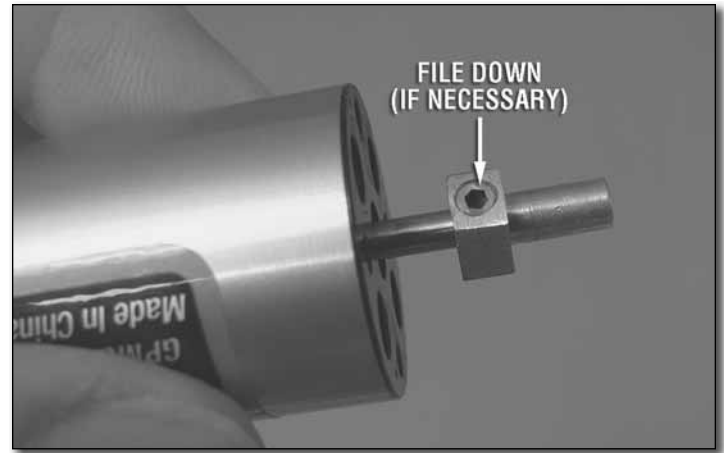
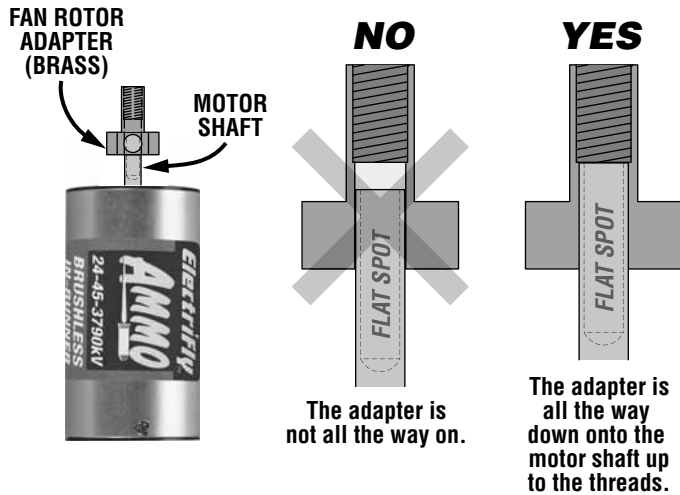


- ❑ 2. Enlarge the hole in the fan housing as shown. Once the fan unit and motor have been installed in the fuselage, this will allow removal of the motor without having to remove the brass fan adapter.

- ❑ 3. As shown in the HyperFlow manual, trim the three *alignment guides* from inside the fan housing. (Also as noted in the HyperFlow manual, a rotary tool with a sanding drum make this easier.)



- ❑ 4. Trim any flashing from around the fan housing so the fiberglass cone adapter will fit well.

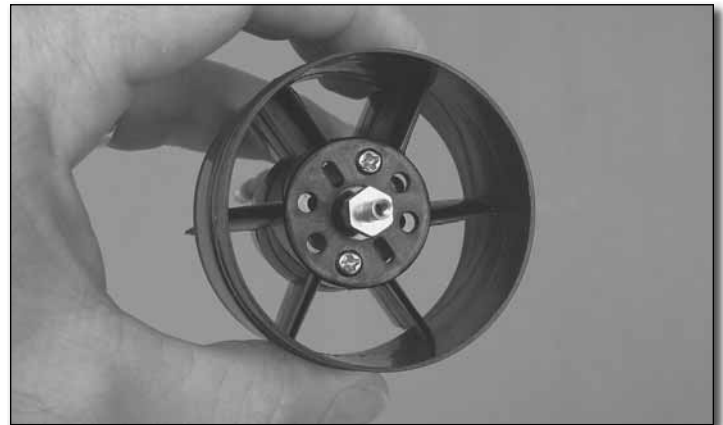


❑ 7. Test fit only the fan rotor to the rotor adapter. If the head of the set screw opposite the flat spot is protruding from the adapter and making it difficult to install the fan rotor, cover the front of the motor with a cloth or paper towel and use a metal file to file down the screw so the fan will fit properly.

❑ 8. Test mount the fan rotor to the adapter with the rotor cone, the 3mm Phillips screw and the 3mm washer that came with the fan unit—the HyperFlow instructions specify using a 3mm x 8mm screw, but the 3 x 5mm screw included with the fan may be used.

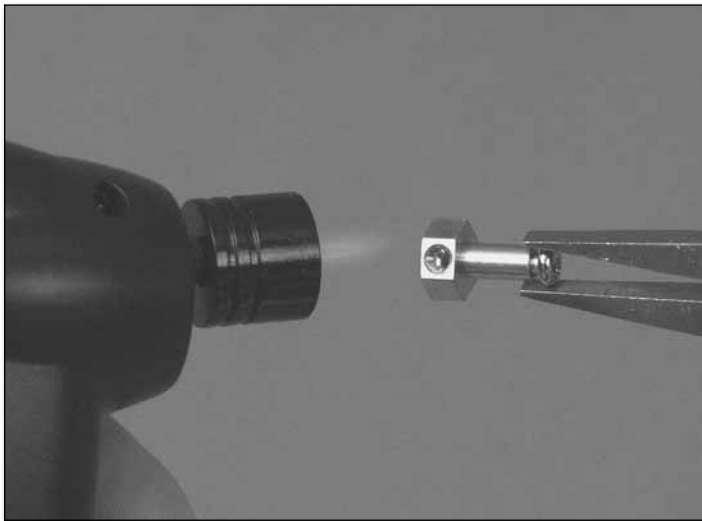
***Hint:** For optimal performance it is desirable for the fan rotor to turn as concentrically (“true”) as possible. Test fit the rotor in different orientations around the adapter spinning it by hand each time. When you find the orientation that is the truest, use a hobby knife to lightly scratch a small “X” at the base of the rotor where it aligns with the flat spot on the motor. When you mount the rotor later, do so in this orientation.*

❑ 9. Remove the cone and rotor and set them aside.



❑ 10. Mount the motor to the fan housing—you can use the 3 x 5mm screws included with the Ammo motor (and a drop of threadlocker on the threads). Any set of holes in the fan housing that align with the holes in the motor may be used, but we used the outer holes in the motor. Use care not to overtighten the screws so much that you damage the plastic.

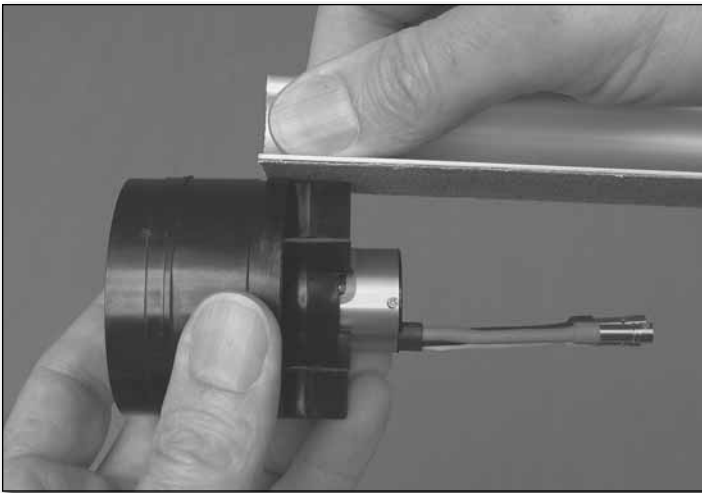
❑ 11. Glue the stator extension to the fan housing as shown in the HyperFlow manual. Make sure the little notches in the stator fit around the housing.



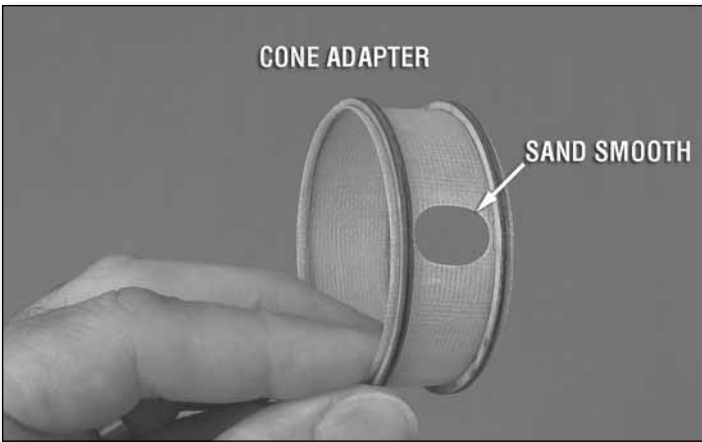
❑ 5. Press the brass **fan rotor adapter** onto the motor shaft—make sure one of the set screw holes in the adapter is aligned with the flat spot on the shaft and make certain the adapter goes on all the way up to the threads. If you can’t get the adapter to go all the way, use a hobby torch to heat the adapter first. Then, slide it into the shaft.



❑ 6. Add a small drop of threadlocker to the threads on the set screws for the adapter. Then, use a **quality** 1.5mm Allen wrench to tighten set screws.



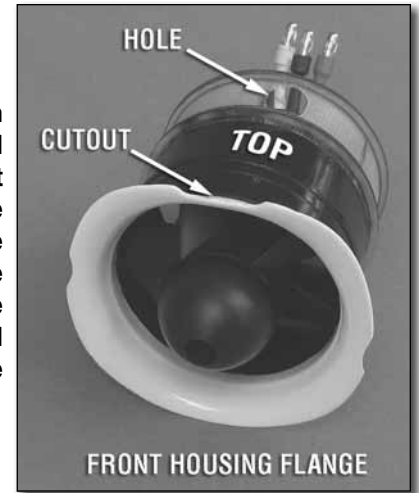
❑ 12. Lightly sand the edge of each blade on the stator extension to remove any flashing and to make sure they are even with the fan housing.



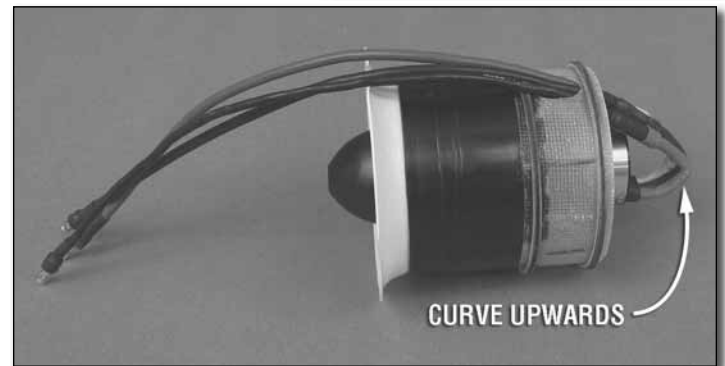
❑ 13. Use medium-grit sandpaper to smooth the rough edges around the motor wire hole in the fiberglass **tail cone adapter** so it won't damage the motor wires.



❑ 14. Test fit but do not glue the cone adapter to the rear of the fan housing. Note that the hole in the housing should be 180° from the side of the motor where the wires exit—this will be the **top** of the unit. Once you have the housing and adapter mated correctly, permanently glue the two together by adding a few drops of thin CA to the seam around the **outside**. Also apply a few drops of medium CA to each stator blade where it contacts the inside of the adapter. **Note:** Apply the CA **sparingly and with care**. Otherwise it will run all over the place.



❑ 15. Fit, then use thin CA to glue the included vacuum-formed **front housing flange** into the front of the fan unit. Make sure the cutout for the motor wires is also on the **top** of the unit (aligned with the wire hole in the cone adapter).



❑ 16. Curve the motor wires upward toward the hole in the top of the cone adapter. Then guide the included motor wire extensions through the hole and connect them to the motor.

❑ 17. Install the fan rotor onto the motor noting the orientation you marked earlier (for minimal run out)—be certain to use a small drop of threadlocker on the 3mm screw.

Test Run the Motor/Fan Unit

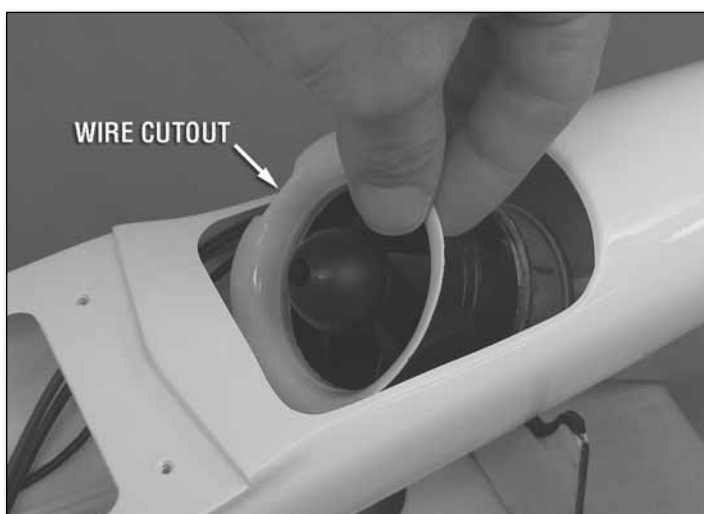
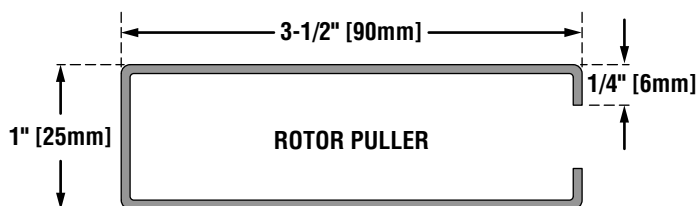
❑ 1. You may perform either a brief test-run of the motor/fan unit, or do the complete break-in procedure as described on the back cover of the HyperFlow instruction manual. In either case prepare to run the motor by connecting the ESC to your receiver and to the motor wires coming from the motor. Reverse the throttle channel in your transmitter and turn on the transmitter. Connect your motor battery to the ESC.

❑ 2. Follow all the precautions and run the motor at no more than 1/4 throttle as described by the "PREPARE TO RUN THE FAN" instructions on the back cover of the HyperFlow fan instructions. (If the motor is turning backwards switch any two of the motor wires with each other.) Check for vibration and/or unusual noises and do not proceed until resolving any problems.

❑ 3. Continue with the rest of the break-in procedure until the system is fully broken-in, or if you're satisfied with the way the unit is performing stop now and mount the unit in the fuselage as described in the next section. Be certain to complete the break-in procedure before flying your Evader for the first time.

Install the Fan Unit

The fan unit is easy to install, but it takes a little finagling to get it through the intake hole. It's a good idea to test fit the fan without glue so you can make sure it fits properly. Once permanently installed, the fan unit will not be possible to remove. However, the motor may be removed by taking off the fan rotor, unscrewing the motor mounting screws and taking the motor out the back through the tail cone. Once the motor is out of the tail cone, the motor wires can be disconnected. If you can't get a good enough grip with your fingers to pull the fan rotor off the adapter, make a **rotor puller** from an 8-1/2" [215mm] piece of 2-56 pushrod wire by bending it as shown. Insert the short hooks on the ends of the puller under the fan hub and pull.



❑ 1. With the fan unit on its side (so the wire cutout in the housing flange will straddle the edge of the fuselage opening), drop the rear, then the front of the unit down into the fuselage.



❑ 2. Rotate the fan unit until the motor wire cutout is centered in the top of the fuselage just under the fin. The motor wires should also be in the top of the fuselage as shown.



❑ 3. Guide the fan unit aft until the cone adapter mates with the tail cone already in the fuselage and the front housing flange is just aft of the opening. Note that the cone adapter should key around the **inside** of the front of the tail cone.



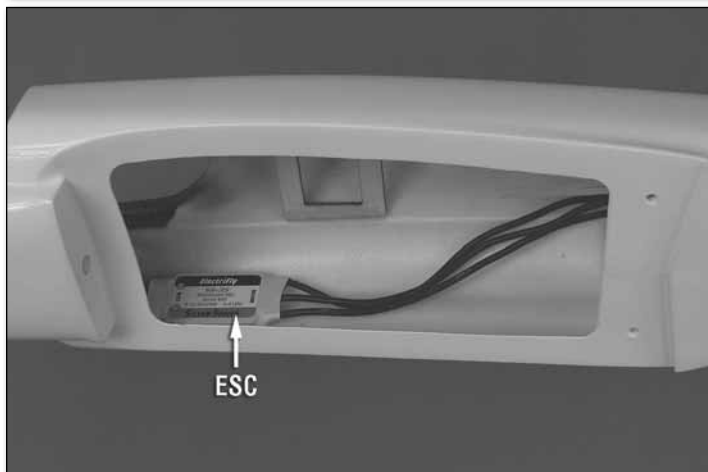
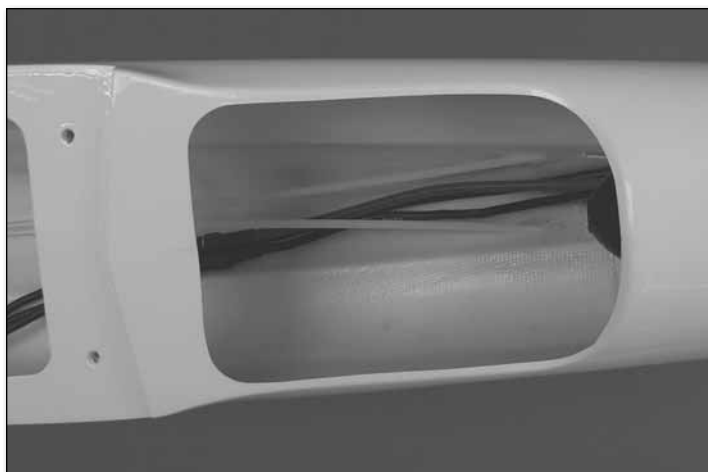
❑ 4. Now that you've confirmed how the fan unit fits, remove it from the fuselage. Apply a bead of 30-minute epoxy mixed with microballoons filler (or just 30-minute epoxy) around

the cone adapter and around the outside of the cone in the fuselage. Reinstall the unit into the fuselage, making sure the cone adapter is properly engaged with the front of the cone. Wipe away excess epoxy by reaching down in through the back of the tail cone with your finger. Allow to harden. Hint: If you're a messy builder, you could add a thin film of petroleum jelly to the motor extension wires at the aft end of the cone adapter to keep excess epoxy from sticking to the wires.

❑ 5. Glue the front housing flange to the inside of the fuselage with medium CA.

Let's install the ESC now, but first make sure the wires are connected properly so the motor turns the correct direction...

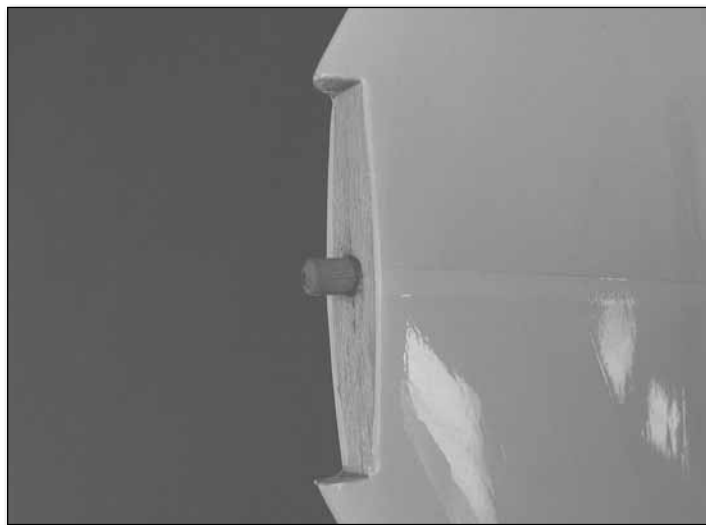
❑ 6. Temporarily connect the ESC to the motor and connect the ESC to your receiver, but don't mount the ESC in the fuselage yet. Turn on the transmitter and connect your motor battery. Make sure the motor turns and in the correct direction (by blowing air out the back of the fuselage) when you advance the throttle. If the motor is turning backwards, switch any two of the three wires between the motor and the ESC.



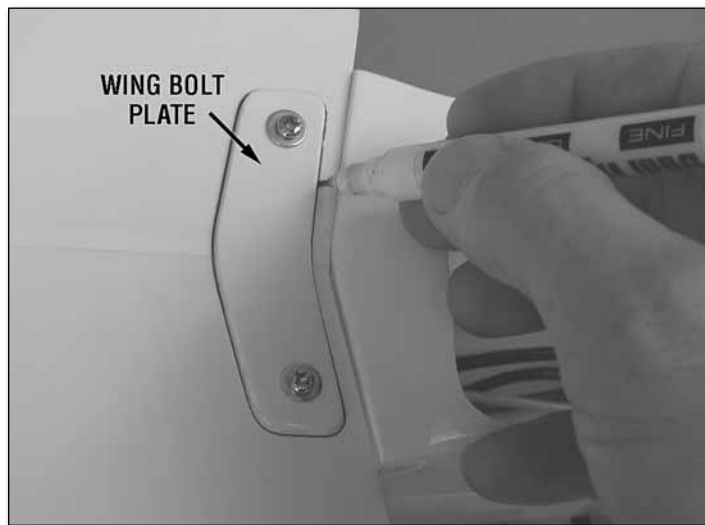
❑ 7. Now that you have the ESC connected and set up correctly, mount it to the inside of the fuselage with the included double-sided adhesive foam tape or RTV silicone. Note in the top photo that the motor wires are routed above the elevator pushrod guide tubes in the top of the fuselage, keeping them neatly out of the way.

ASSEMBLE THE WING

Mount the Wing



❑ 1. Test fit, then use epoxy or medium CA to glue the hardwood **wing dowel** into position with approximately 1/4" [6.4mm] protruding from the wing.

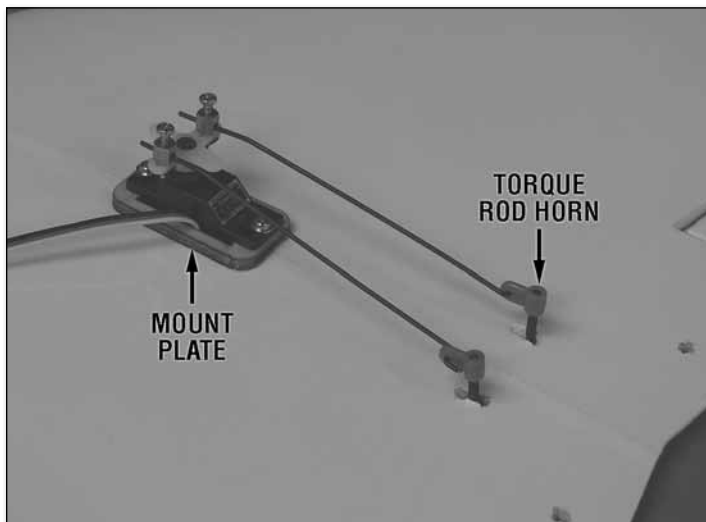


❑ 2. Cut the covering from the top and bottom of the wing over the mounting bolt holes near the trailing edge. Temporarily mount the wing to the fuselage with the 3 x 15mm Phillips screws, 3mm flat washers and the plywood **wing bolt plate**. Use a fine-point felt-tip pen to mark the perimeter of the wing bolt plate onto the wing.

❑ 3. Remove the wing bolt plate and cut the covering from the wing 1/16" [1.6mm] **inside** the lines. Wipe away the ink with a paper towel dampened with denatured alcohol.

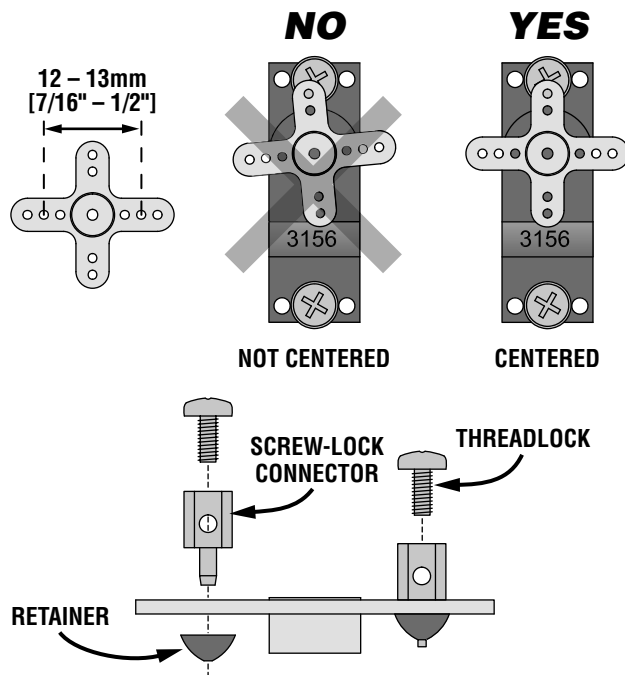
❑ 4. Re-mount the wing, this time gluing on the wing bolt plate—use care not to get any glue in the threads of the screws.

Hook Up the Ailerons



Refer to this photo while hooking up the ailerons.

- ❑ 1. Same as was done for the plywood wing bolt plate, cut the covering from the top of the wing for the **aileron servo mount plate**. Then securely glue the plate to the wing.
- ❑ 2. Drill appropriate-size holes in the servo mount plate for your servo mounting screws—for most Futaba screws and the screws that came with the S3156 servos shown a 1/16" [1.6mm] drill is suitable.
- ❑ 3. Temporarily mount the aileron servo with the servo mounting screws that came with it. Remove the screws and servo, add a drop or two of thin CA to each screw hole, allow to harden, and then mount the aileron servo.
- ❑ 4. Thread both plastic torque rod horns onto the aileron torque rods about ten full turns each.
- ❑ 5. Turn on the transmitter and center the aileron trim. Temporarily connect the ESC, receiver, aileron servo and battery to center the servo. Make sure the aileron servo is rotating the correct direction according to your transmitter inputs.



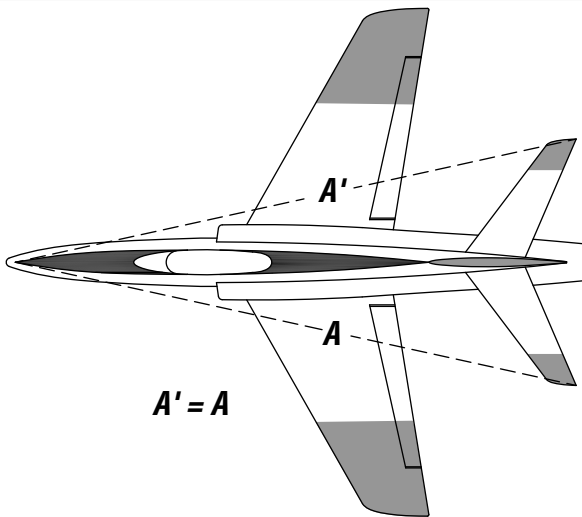
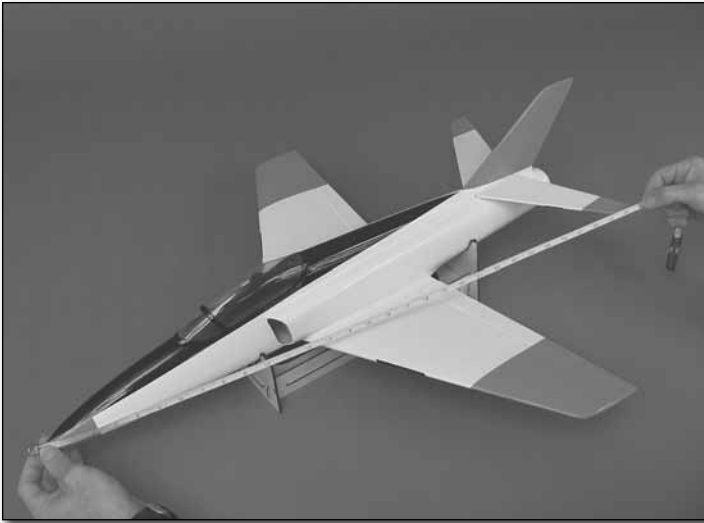
- ❑ 6. Use a servo arm that will have mounting holes 12mm – 13mm [7/16" – 1/2"] apart and connect the pushrods using the hardware shown—make sure the ailerons are centered when you tighten down the screw-lock connectors and use a drop of threadlocker on the threads (and on the servo arm screw if it goes into a metal output shaft).

- ❑ 7. Since you're working on your ailerons and have them operating now, this would be a good time to set the aileron throw as noted on page 18 (or, you could wait to set the throws when you get to that part of the manual later).

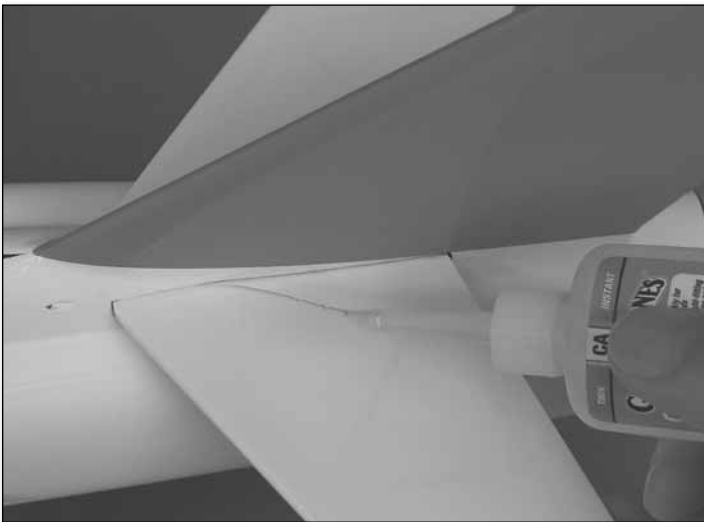
Mount the Horizontal Stabilizer (Stab)



- ❑ 1. Test fit the horizontal stabilizer (stab) into the fuselage centering it so the exposed balsa in the middle is centered. View the model from behind to see if the stab is parallel with the wing. If the stab is not parallel with the wing, place a small amount of weight (1 – 2 oz. [30 – 60 grams]) on the high side of the stab. If that doesn't bring it into alignment, remove the stab and lightly sand the slot in the fuselage where necessary to get the stab level.



- ❑ 2. Use a measuring tape to measure the distance from the tip of the black, anti-glare panel at the front of the fuselage back to the tip of both sides of the stab. Adjust the stab until the measurements on both sides are equal and the stab is centered.

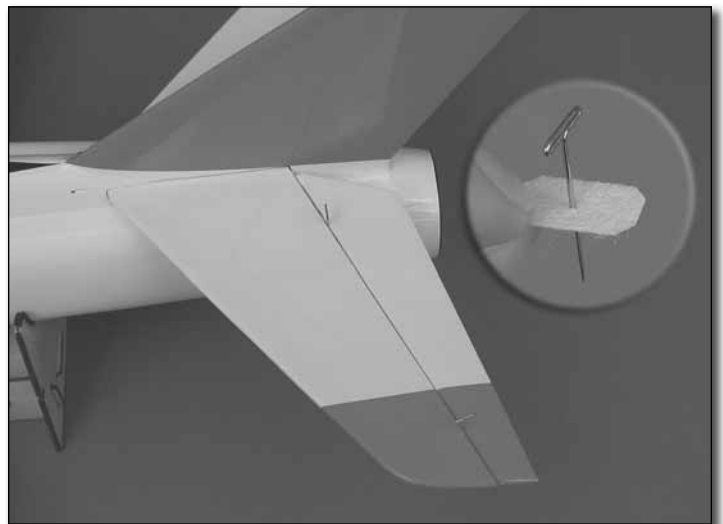


- ❑ 3. Double- and triple-check the stab alignment to make sure it is parallel with the wing and square with the fuselage. Carefully glue the top of the stab to the fuselage with thin CA—**apply only enough CA to do the job**. Otherwise, excess CA

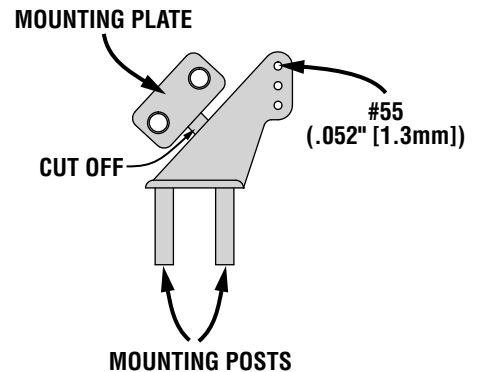
may not harden and could run out onto the fuselage when you turn it over. Allow the CA to fully harden—if you want to use CA accelerator apply only a fine mist from about 8" [200mm] away.

- ❑ 4. Turn the fuselage over and glue in the bottom of the stab with thin CA—again, **don't use too much!**
- ❑ 5. After the thin CA has hardened, follow with a **very thin** fillet of medium CA all the way around both sides.

Install the Elevators

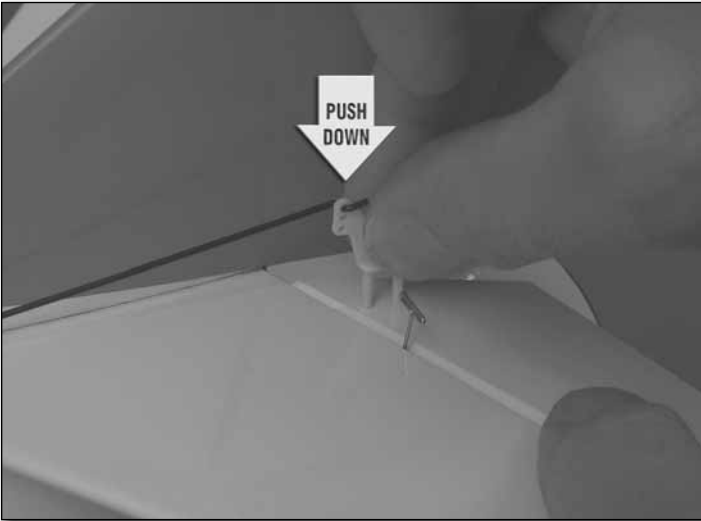
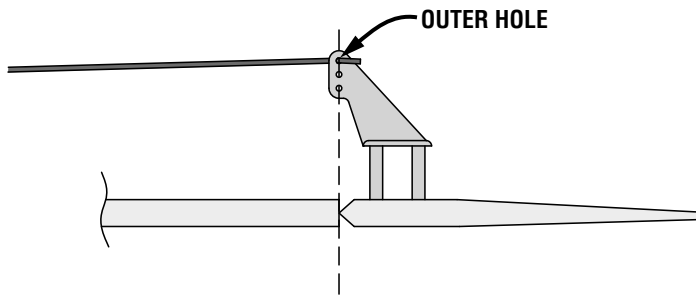


- ❑ 1. Insert a pin through the middle of each of the four elevator hinges. Temporarily join the elevators to the stab with the hinges, but do not glue.

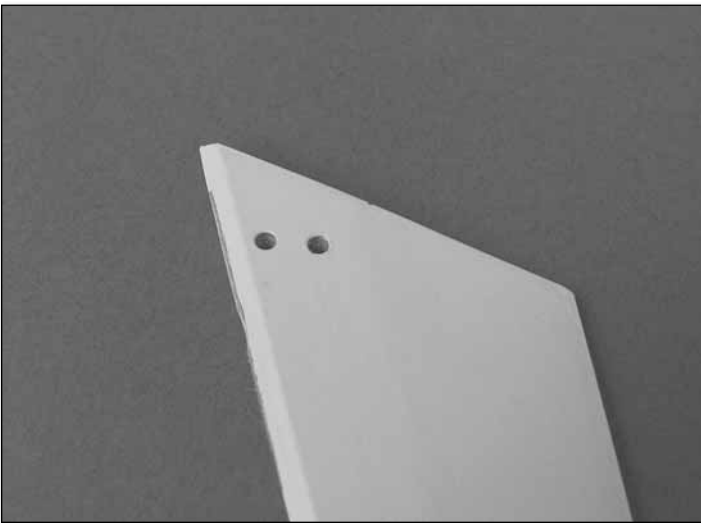


ELEVATOR CONTROL HORNS

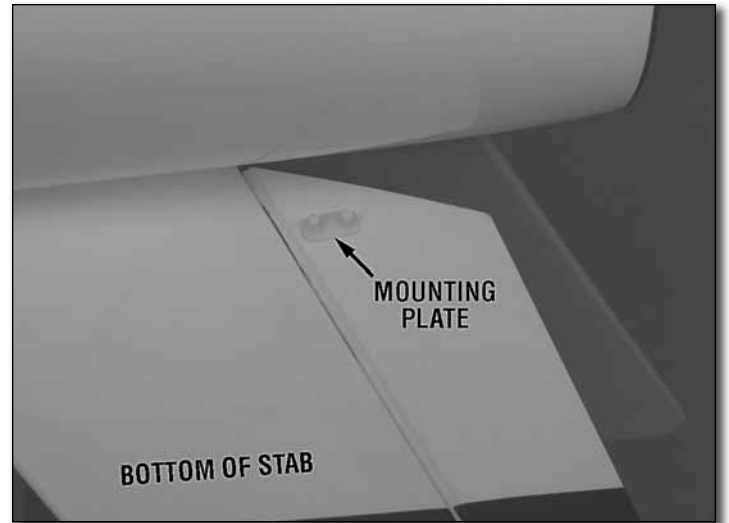
- ❑ 2. Cut the **mounting plate** off both **elevator control horns**, then enlarge the outer pushrod hole in the horns with a #55 (.052" [1.3mm]) drill or a hobby knife. If you use a hobby knife, test fit the pushrod into the holes as you proceed so you don't over enlarge them—otherwise there will be free play.



❑ 3. Connect one of the elevator pushrods to the **outer** hole in one of the horns. Note that the horn should be on the **outside** of the main part of the wire. Slide the pushrod into the fuselage and position the horn over the elevator so the holes in the horn align with the pivot point/leading edge of the elevator. Push the horn down onto the elevator so the mounting posts will make indentations in the elevator marking their location.



❑ 4. Remove the elevator. Drill 3/32" [2.4mm] holes at the marks (or use a 3/32" [2.4mm] brass tube sharpened on the end to cut perfectly sharp holes).



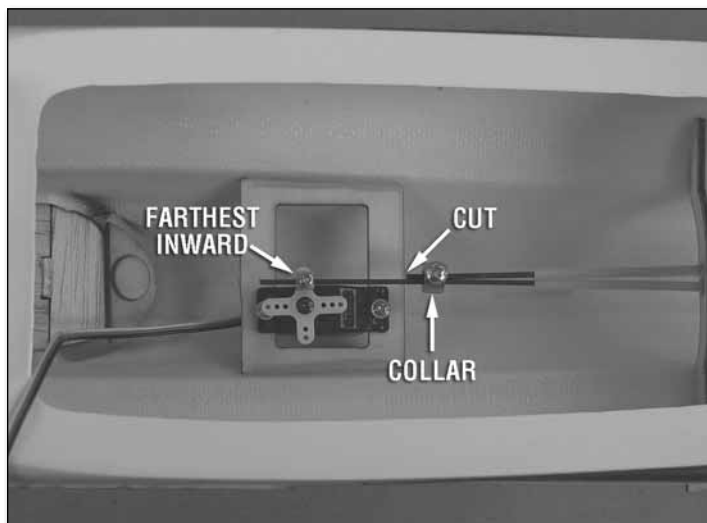
❑ 5. Reattach the elevator to the stab and remove the pins from the hinges. With the pushrod connected to the horn, mount the horn to the top of the elevator by pushing the mounting plate tightly to the mounting posts up from the bottom.

❑ 6. Securely glue in the hinges with at least eight to ten drops of thin CA on both sides of each hinge, or until the hinges stop absorbing CA (make sure the CA isn't running into the hinge gap). Also add a few drops of thin CA around the base of the control horn, around the mounting plate and around the mounting posts to make certain the horn is permanent and secure.

❑ 7. Mount the horn and hinge the other elevator to the other side of the stab the same way.

Hook Up the Elevators

1. Now that the elevators have been hinged, free them up by moving them up and down several times.



Refer to this photo while hooking up the elevators.

2. Shorten one of the elevator pushrods by cutting it with pliers over the aft edge of the elevator servo tray. Making sure the elevators are even with each other, join the two pushrods by tightening them together with the wheel collar and the 3mm Phillips screw and a drop of threadlocker on the threads.
3. The same way you mounted the aileron servo, mount the elevator servo to the servo tray and center the elevator servo with your radio. Mount a screw-lock connector to the farthest-inward hole in your servo arm and attach the arm to the servo. Make sure the elevators are centered when you tighten down the pushrod and use threadlocker on the screw. Also make sure the elevators respond in the correct direction according to your control inputs.
4. Check and set the elevator control throw according to the instructions on page 18, or wait until later when you get to that part of the manual.

This model belongs to:

Name

Address

City, State, Zip

Phone Number

AMA Number

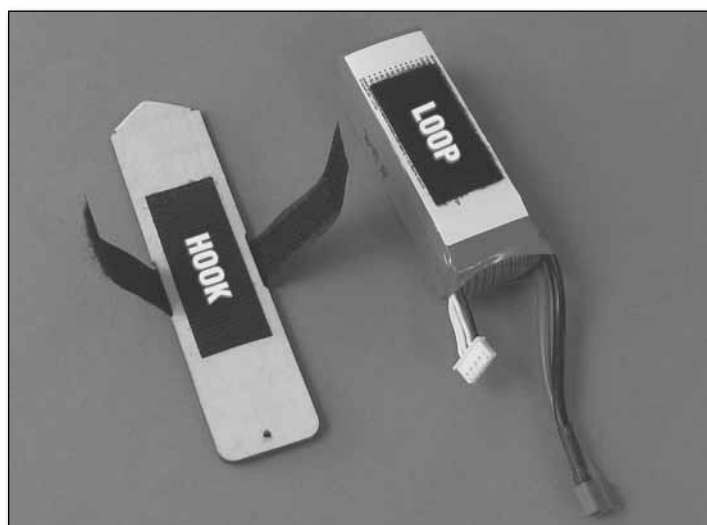
FINAL ASSEMBLY

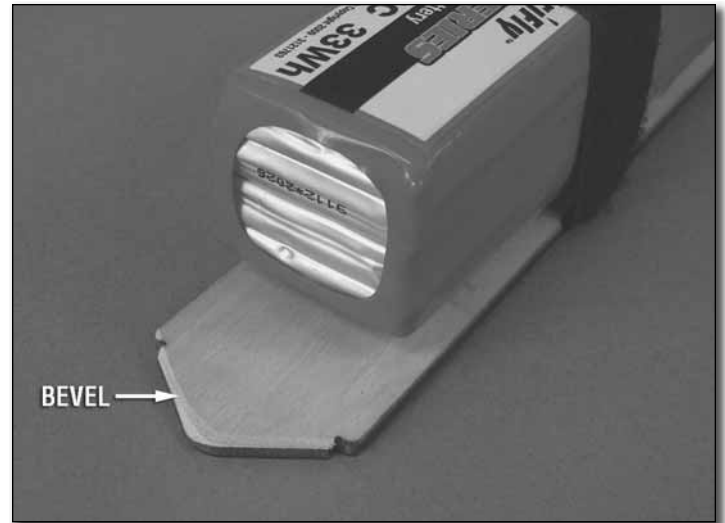
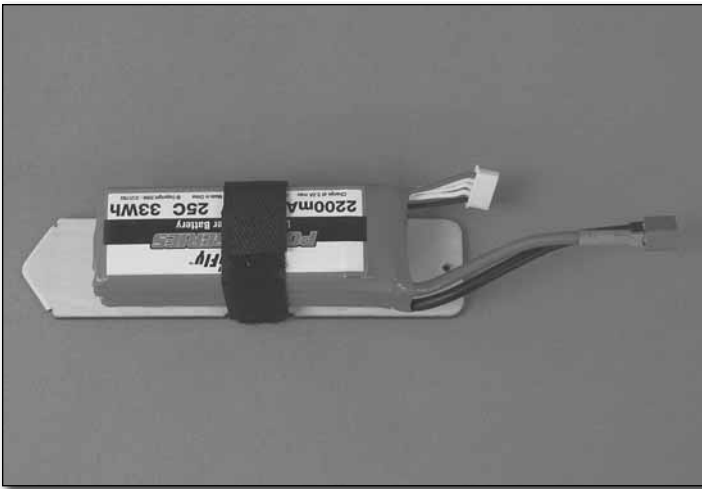
Mount the Receiver and Battery



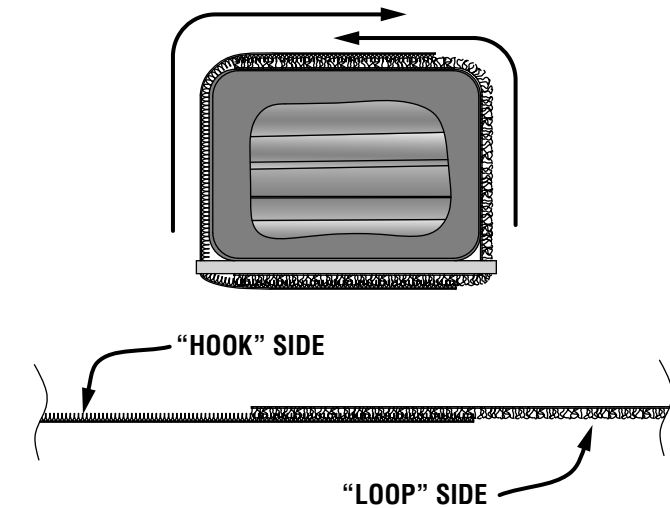
1. Mount the receiver to the bottom of the fuselage just ahead of the wing with the included Velcro strip or double-sided adhesive foam tape.
2. If using a 2.4GHz receiver, cut the included 2" [50mm] plastic antenna tube in half and glue the pieces in the fuselage to position the antennas. If using a 72MHz radio that has a long, wire antenna, use the tubing to guide the antenna down through the fuselage and out a small hole you drill in the side just ahead of the horizontal stab. Tape any remaining antenna to the side of the fuselage so it won't get stepped on or caught up with up in any other part of the plane.

If you prefer mounting your battery by securing it with a Velcro strap, perform steps 3 through 7. If not strapping the battery down, skip to step 8. Testing proved that a strap wasn't necessary, but some modelers may prefer to use one anyway.

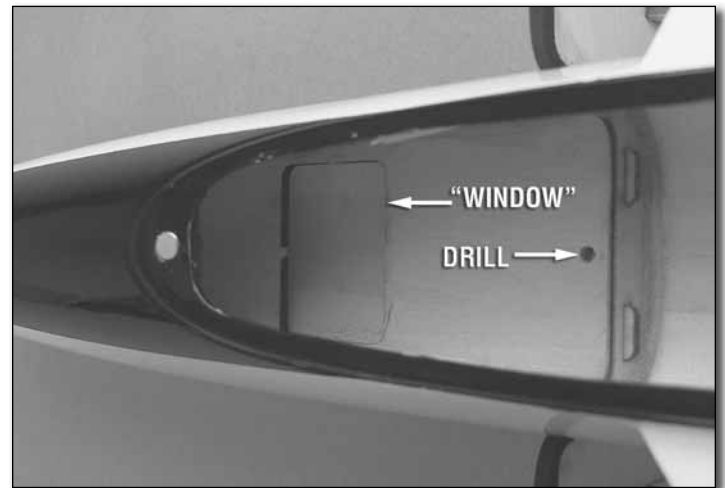




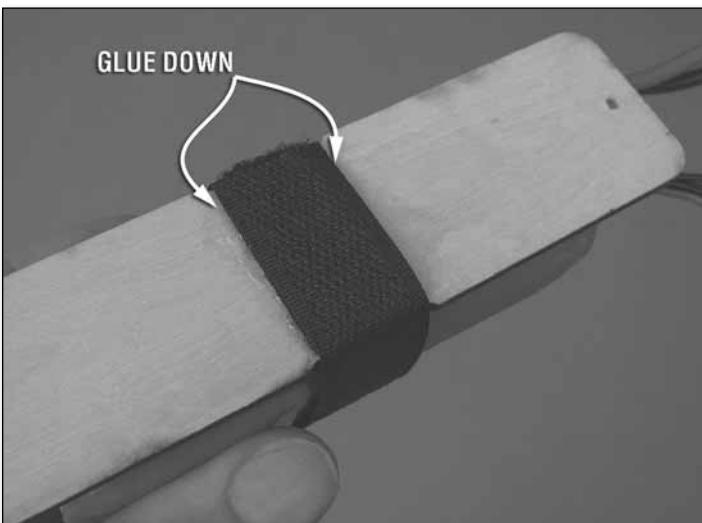
□ 5. Sand a small bevel to the front of the top of the external battery plate.



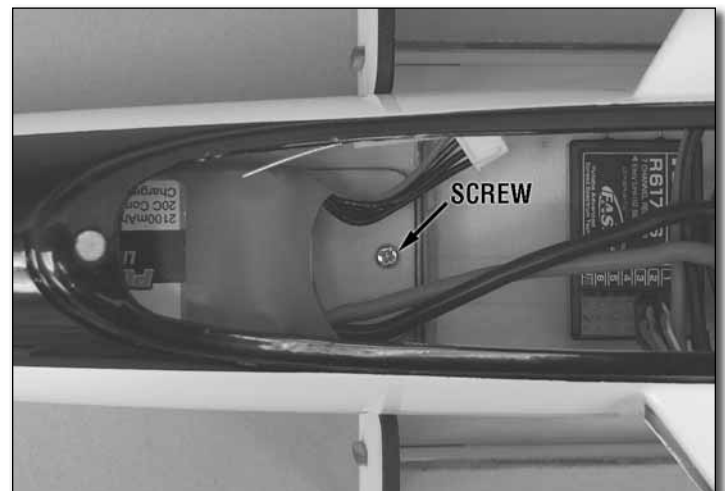
□ 3. To mount your battery with a strap, first apply the rougher, “hook” side of the included adhesive-backed Velcro material to the plywood **external battery plate** and the softer, “loop” side to your battery. Mount your battery to the plate. Then make a strap from the included non-adhesive Velcro strips.



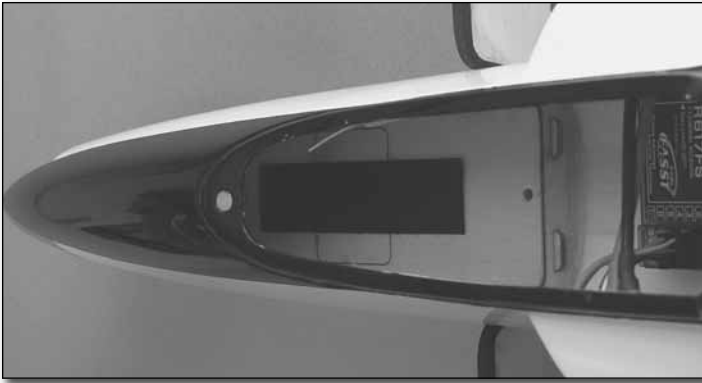
□ 6. Using care not to drill down through the bottom of the fuselage, enlarge the hole in the battery plate in the fuselage with a 3/32" [2.4mm] drill. Cut the “window” from the battery plate to accommodate the Velcro strap.



□ 4. Glue the strap across the bottom of the battery plate with CA.



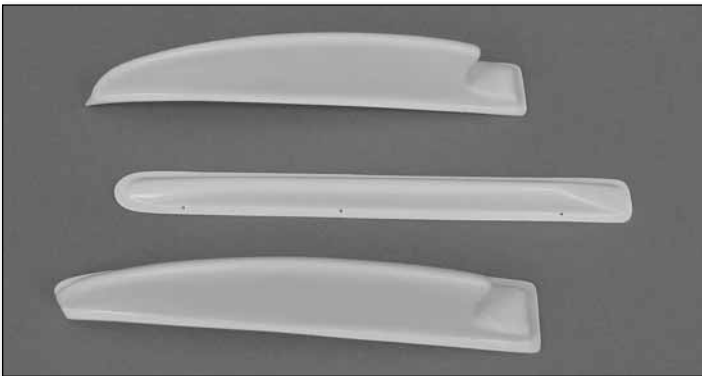
□ 7. Insert the battery plate with the battery into the fuselage making sure the tab in the front locks into the notch in the former. Secure the battery plate with the included 3mm Phillips wood screw.



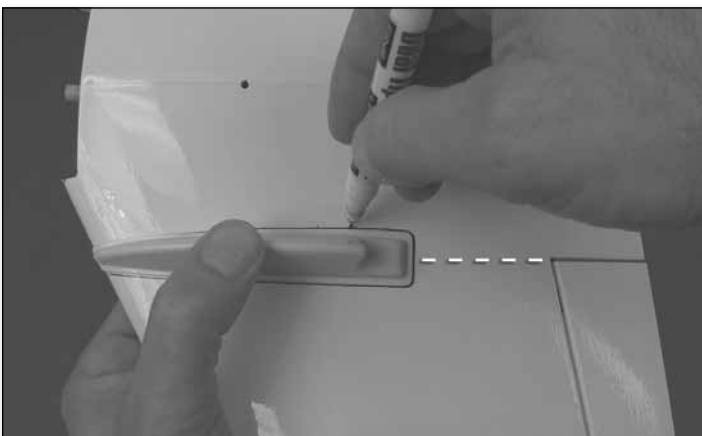
❑ 8. If **not** mounting your battery with a strap, simply apply the rougher, “hook” side of the included adhesive-backed Velcro material to the plywood **battery plate** in the fuselage and the softer, “loop” side to your battery. Install your battery in the fuselage.

Attach the Landing Skids

Don't fly your Evader without the landing skids. In addition to protecting the underside, the landing skids perform the important function of causing the plane to maintain a straight-ahead trajectory on landing. Otherwise the Evader may spin and pirouette, allowing the nose or wing tip to dig into the ground and possibly causing damage.

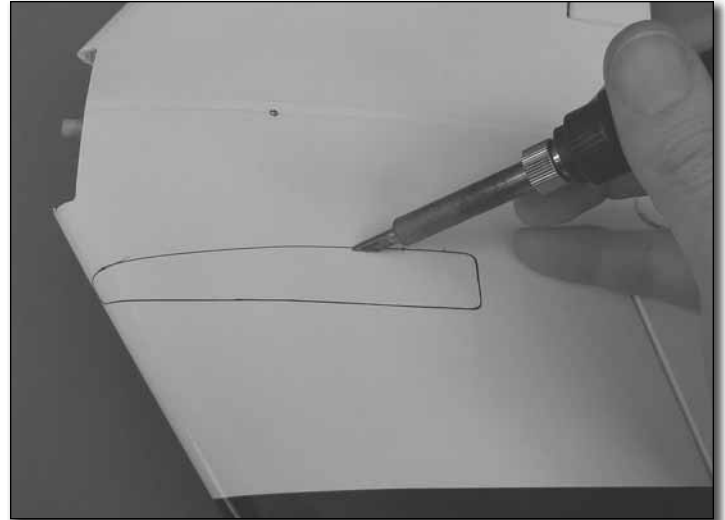


❑ 1. Cut out the skids and trim the edges so there will be an approximately 3/32" [2.4mm] rim all the way around.



❑ 2. Hold one of the skids to the wing aligned with the gap between the root end of the aileron and the wing. Make sure

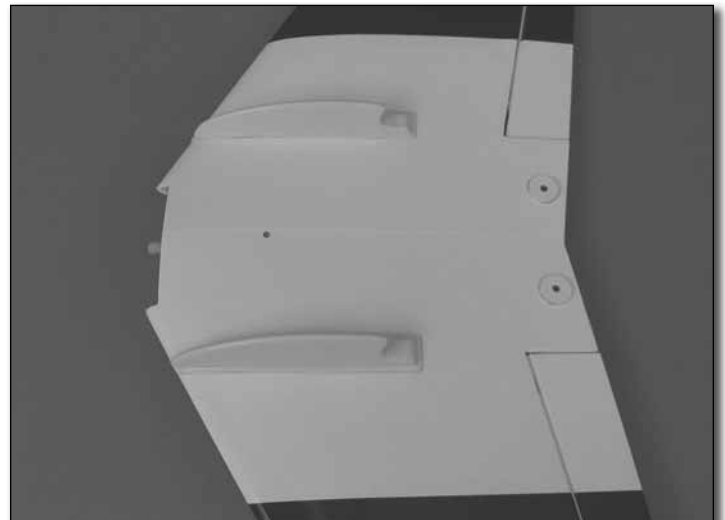
the skid is parallel with the center of the wing. Then, use a fine-point felt-tip pen to mark the outline of the skid onto the wing.



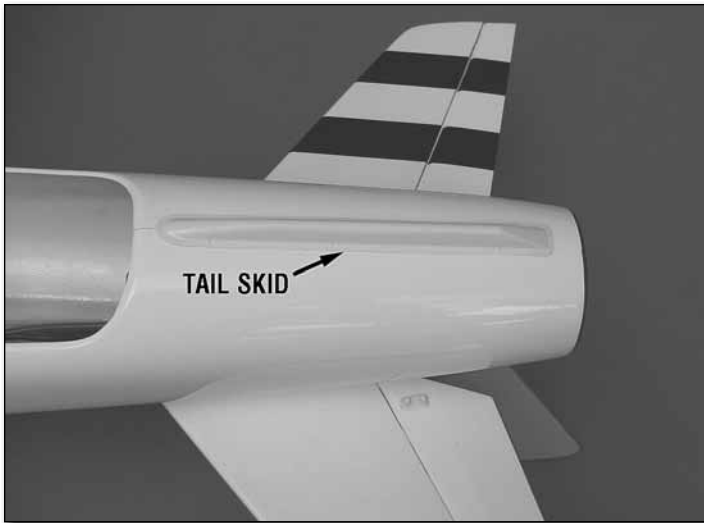
❑ 3. Cut the covering from the wing 1/32" [.8mm] around the inside of the line you marked. **Use extreme care not to cut into the balsa sheeting under the covering.** **Hint:** Use a soldering iron with a fine tip to melt the covering, thus assuring that you won't be cutting into the balsa. Move the tip at a rate just fast enough to melt through the covering.

❑ 4. Wipe away the ink with a paper towel lightly dampened with denature alcohol. Peel off the covering.

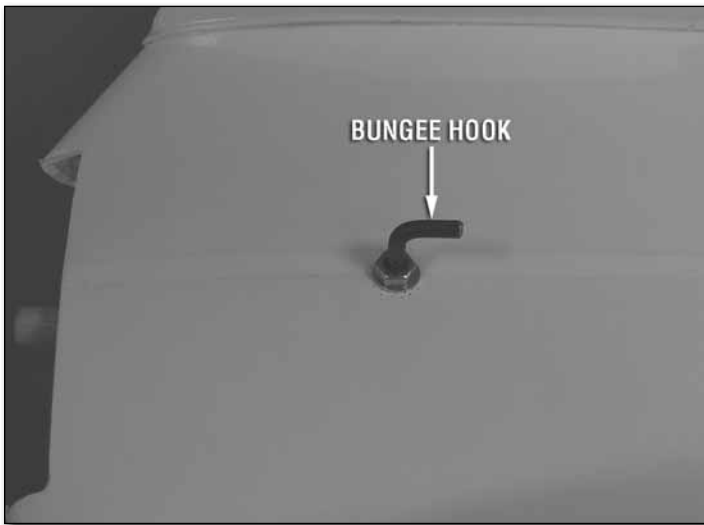
❑ 5. Position the skid on the wing and securely glue it into position with thin CA.



❑ 6. Fit, then glue on the other wing skid the same way.



- ❑ 7. Trim, then glue the **tail skid** to the center of the bottom of the fuselage.

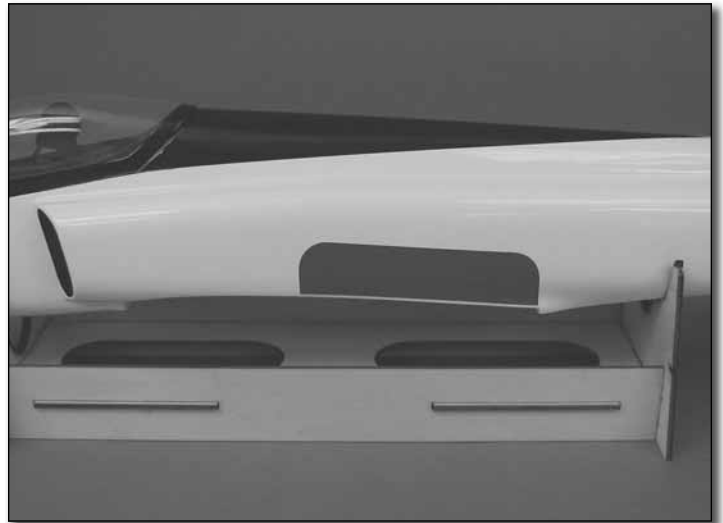


Refer to this photo while mounting the bungee hook.

- ❑ 8. While you're working on the bottom of the wing, cut the covering from the hole for the bungee hook. Use a pin to perforate the covering around the hole, Then harden the balsa under the covering by saturating with thin CA—use care not to get any CA into the blind nut under the sheeting.
- ❑ 9. Add a drop of threadlocker to the threads on the bungee hook. Then thread a 3mm nut all the way onto the bungee hook. Install a washer, then screw the hook into the hole.

Apply the Hand Grips

The no-slip hand grips may seem unnecessary, but they really do assist when gripping the fuselage for bungee launching. The last thing you want is for the plane to slip out of your hands before you're ready!



Remove the protective backing from the included no-slip hand grips, then adhere them to both sides of the fuselage where shown.

Apply the Decals

The decals are applied “wet,” with window cleaner. This allows for precise positioning and after you squeegee out the window cleaner from under the decal there will be no air bubbles (as there usually are when you apply them dry).

1. Use scissors or a sharp hobby knife to cut each decal from the sheet.
2. Be certain the model is clean and free from oily fingerprints and dust. Peel the first decal you wish to apply from its protective backing. Then spray the back of the decal with window cleaner.
3. Position the decal where desired and adjust for perfection. Use a piece of soft balsa or something similar to squeegee the window cleaner from under the decal. Apply the rest of the decals the same way.

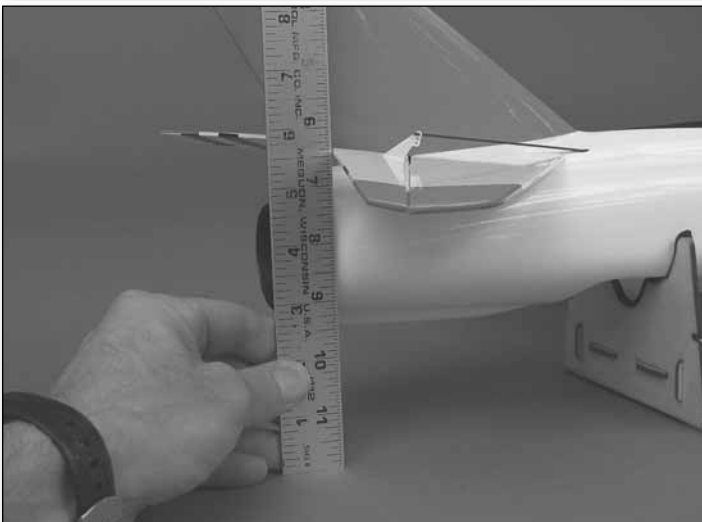
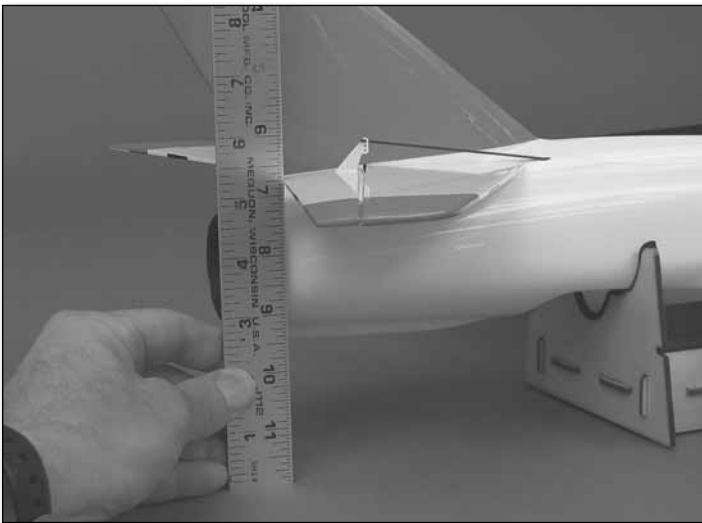
GET THE MODEL READY TO FLY

Set the Control Throws

To ensure a successful first flight it is **critical** that the Evader is set up according to the control throws specified in this manual. The throws have been determined through actual flight testing and accurate record-keeping allowing the model to perform in the manner in which it was intended. If, after you have become accustomed to the way the Evader flies, you would like to change the throws to suit your taste, that is fine. However, too much control throw could make the model too responsive and difficult to control, so remember, "more is not always better."

Measure the **high rate** elevator throw first...

1. Place the model upright in the stand. Turn on the transmitter and connect the motor battery.



2. Holding a ruler vertically on your workbench against the trailing edge of the root end of one of the elevators, measure and compare the up and down throw to the specified throw in the chart. If necessary, adjust the elevator throw by changing the ATVs in your transmitter or by moving the pushrods on the servo arm.

These are the recommended control surface throws:

	HIGH RATE		LOW RATE	
	Up	Down	Up	Down
ELEVATOR	1/4"	1/4"	3/16"	3/16"
	[6.4mm]	[6.4mm]	[4.8mm]	[4.8mm]
	10°	10°	7°	7°
AILERONS	3/8"	3/8"	1/4"	1/4"
	[9.5mm]	[9.5mm]	[6.4mm]	[6.4mm]
	17°	17°	11°	11°

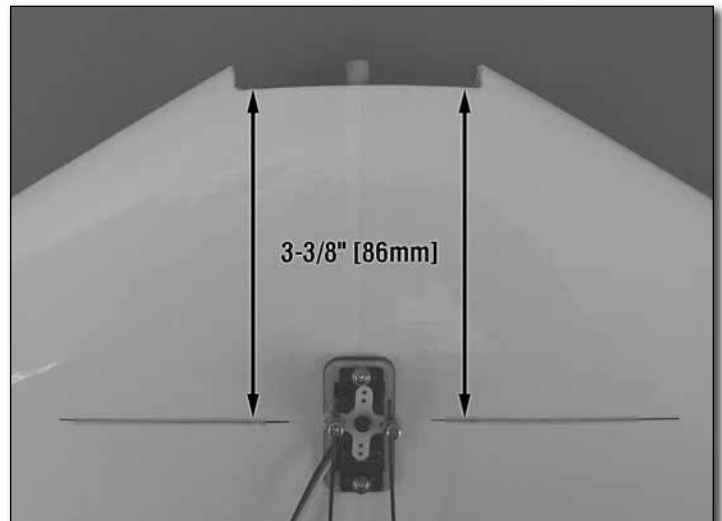
NOTE: The throws are measured at the **widest part** of the elevators and ailerons.

If your radio does not have dual rates, we recommend setting the throws at the high rate settings.

3. Measure and set the low-rate elevator throw and the high and low-rate aileron throw.

Balance the Model (C.G.)

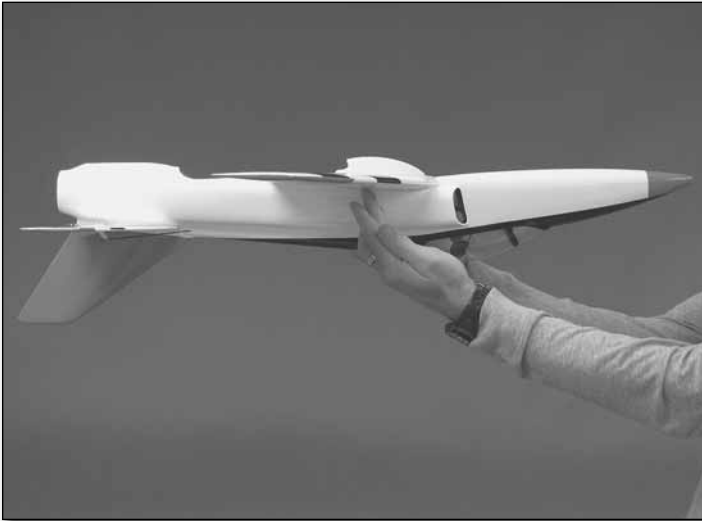
More than any other factor, the C.G. (center of gravity/balance point) can have the greatest effect on how a model flies and could determine whether or not your first flight will be successful. If you value your model and wish to enjoy it for many flights, **DO NOT OVERLOOK THIS IMPORTANT PROCEDURE**. A model that is not properly balanced may be unstable and possibly unflyable.



1. Use a fine-point felt tip pen to mark the balance point on the top of wing 3-3/8" [86mm] back from the cutout in the leading edge. Apply narrow (1/16" [2mm]) strips of tape over the lines so you will be able to feel them when lifting the model with your fingers.

This is where the Evader should balance for the first flights. Later, you may experiment by shifting the C.G. 1/4" [6.4mm] forward or 1/4" [6.4mm] back to change the flying characteristics. Moving the C.G. forward will improve stability, but the model will then not slow as much for landing requiring a longer approach. Moving the C.G. aft will allow for slightly slower landing speeds, but the model will then be more responsive. In any case, **start at the recommended balance point** and do not at any time balance the model outside the specified range.

At this stage the Evader should be in ready-to-fly condition with **all** of the components in place including the complete radio system, fan unit, motor and the motor battery.



- 2. With the wing attached to the fuselage, and all parts of the model installed (ready to fly), lift the Evader upside-down with one finger of each hand on the balance lines you marked.
- 3. If the tail drops, the model is "tail heavy" and ballast will be required in the nose. If the nose drops the model is "nose heavy" and ballast will be required in the tail. If any ballast is required it will probably be only 1/4–1/2 oz. [7–14g] which is not enough to adversely affect the Evader's flight performance. To find out how much weight will be required lay segments of Great Planes Stick-On Lead (GPMQ4485) on the nose over the location where it will be placed inside or on the tail until you can get the model to balance. A good place to add nose weight is to the battery tray all the way in the front of the fuselage and a good place to add tail weight is to the bottom of the stab next to the fuselage. Once you have determined the amount of weight required it can be permanently attached.
- 4. **IMPORTANT:** If you found it necessary to add any weight, recheck the C.G. after the weight has been installed.

Balance the Model Laterally

- 1. With the wing level, lift the model under the nose and tail of the fuselage. Do this several times.
- 2. If one wing always drops, it means that side is heavy. Add stick-on weight to the bottom of the wing under the light wing tip. **An airplane that has been laterally balanced will track better in loops and other maneuvers.**

PREFLIGHT

Identify Your Model

No matter if you fly at an AMA sanctioned R/C club site or if you fly somewhere on your own, you should always have your name, address, telephone number and AMA number on or inside your model. It is **required** at all AMA R/C club flying sites and AMA sanctioned flying events. Fill out the identification tag on page 14 and place it on or inside your model.

Charge the Batteries

Follow the battery charging instructions that came with your radio control system to charge the batteries. You should always charge your transmitter and receiver batteries the night before you go flying, and at other times as recommended by the radio manufacturer.

CAUTION: Unless the instructions that came with your radio system state differently, the **initial** charge on **new** transmitter and receiver batteries should be done for 15 hours **using the slow-charger that came with the radio system**. This will "condition" the batteries so that the next charge may be done using the fast-charger of your choice. If the initial charge is done with a fast-charger the batteries may not reach their full capacity and you may be flying with batteries that are only partially charged.

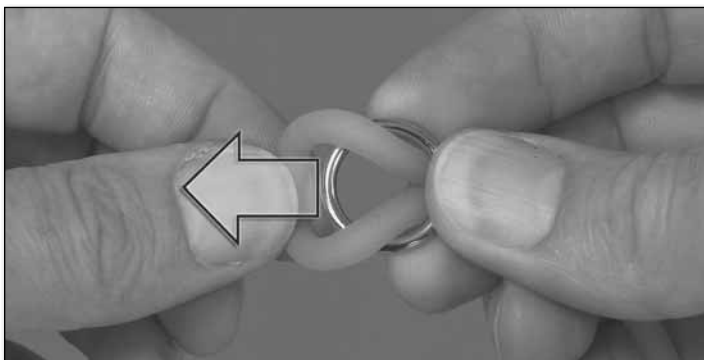
Run the Motor

If you haven't yet done so, complete the fan unit break-in procedure and test-run the system at full throttle. If for some reason you suspect that the system is not making full power, usually the first component to suspect is the battery. To check the battery, operate the system at full rpm with an Amp meter (such as an R/C Electronics brand *Watt's Up* watt meter – RELP0100) connected between the battery and the ESC. Note the current draw. The battery should be providing a current of approximately 33 Amps. If the motor is drawing much less it is possible the battery is faulty.

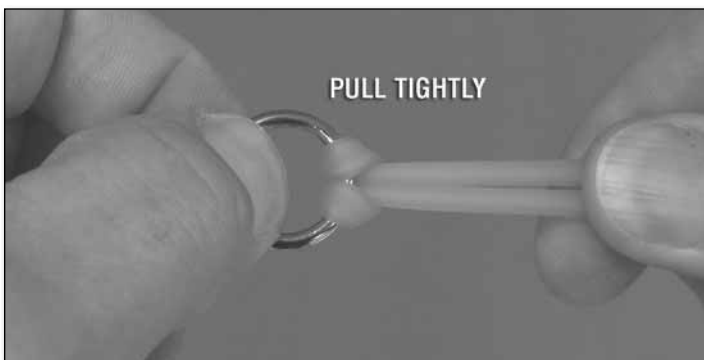
Assemble the Bungee Launch



- ❑ 1. Loop one end of the rubber tubing and insert it through one of the metal rings.

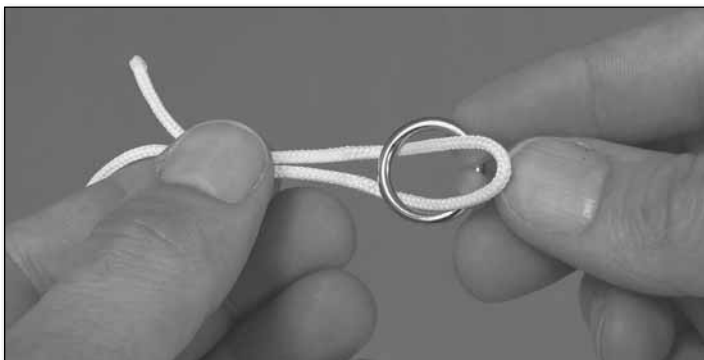


- ❑ 2. Bend the loop down around the ring. Then pull the ring the rest of the way through the loop.

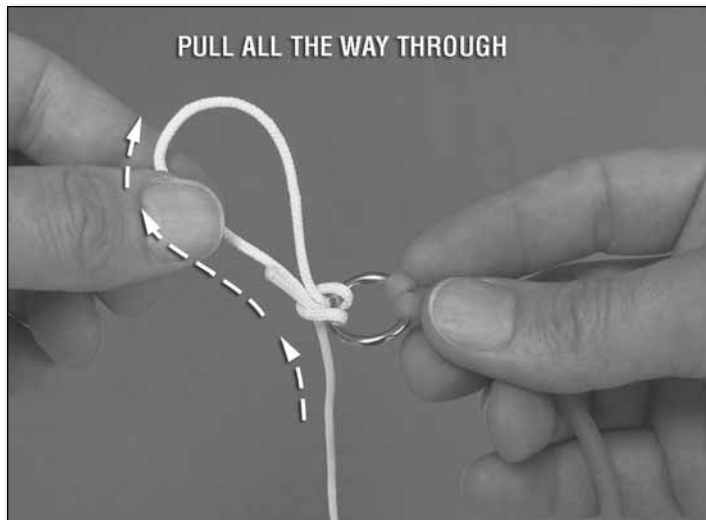


- ❑ 3. Pull the tubing to tighten the knot and make sure it is secure.

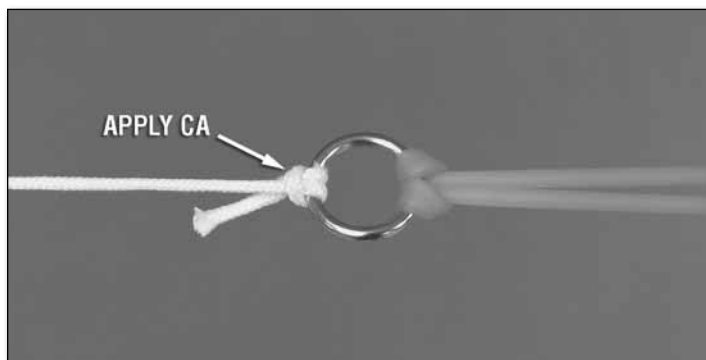
Now attach the cord...



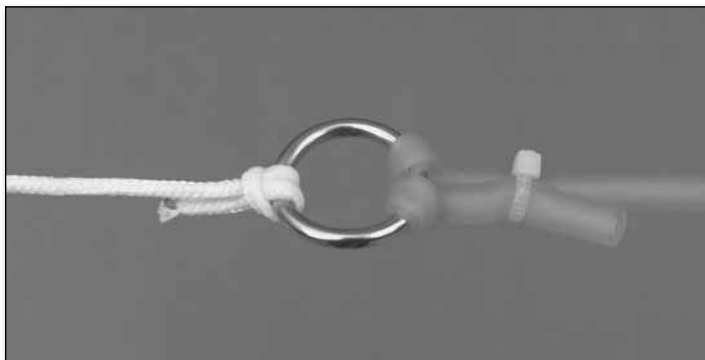
- ❑ 4. Loop one end of the cord through the ring.



- ❑ 5. Bring the loop in back over itself and the ring. You'll have to pull the rest of the cord up all the way through the loop before tightening it around the ring.



- ❑ 6. Pull tightly on the tubing and the cord to make sure it is secure. Add a drop of thin or medium CA to the knot in the cord over the ring.



- ❑ 7. Secure the end of the tubing to the ring with one of the included small nylon ties.

- ❑ 8. Attach the other end of the tubing to the stake and the other end of the cord to the other ring. Add another nylon tie to the end of the tubing at the stake as well.

- ❑ 9. Now the bungee is ready to use. Wind it back up onto the plywood holder.

AMA SAFETY CODE (EXCERPTS)

Read and abide by the following excerpts from the Academy of Model Aeronautics Safety Code. For the complete Safety Code refer to *Model Aviation* magazine, the AMA web site or the Code that came with your AMA license.

General

- 1) I will not fly my model aircraft in sanctioned events, air shows, or model flying demonstrations until it has been proven to be airworthy by having been previously, successfully flight tested.
- 2) I will not fly my model aircraft higher than approximately 400 feet within 3 miles of an airport without notifying the airport operator. I will give right-of-way and avoid flying in the proximity of full-scale aircraft. Where necessary, an observer shall be utilized to supervise flying to avoid having models fly in the proximity of full-scale aircraft.
- 3) Where established, I will abide by the safety rules for the flying site I use, and I will not willfully and deliberately fly my models in a careless, reckless and/or dangerous manner.
- 5) I will not fly my model unless it is identified with my name and address or AMA number, on or in the model. Note: This does not apply to models while being flown indoors.
- 7) I will not operate models with pyrotechnics (any device that explodes, burns, or propels a projectile of any kind).

Radio Control

- 1) I will have completed a successful radio equipment ground check before the first flight of a new or repaired model.
- 2) I will not fly my model aircraft in the presence of spectators until I become a qualified flier, unless assisted by an experienced helper.
- 3) At all flying sites a straight or curved line(s) must be established in front of which all flying takes place with the other side for spectators. Only personnel involved with flying the aircraft are allowed at or in the front of the flight line. Intentional flying behind the flight line is prohibited.
- 4) I will operate my model using only radio control frequencies currently allowed by the Federal Communications Commission.
- 5) **I will not knowingly operate my model within three miles of any pre-existing flying site except in accordance with the frequency sharing agreement listed [in the complete AMA Safety Code].**
- 9) Under no circumstances may a pilot or other person touch a powered model in flight; **nor should any part of the model other than the landing gear, intentionally touch the ground, except while landing.**

CHECK LIST

During the last few moments of preparation your mind may be elsewhere anticipating the excitement of the first flight. Because of this, you may be more likely to overlook certain checks and procedures that should be performed before the model is flown. To help avoid this, a check list is provided to make sure these important areas are not overlooked. Many are covered in the instruction manual, so where appropriate, refer to the manual for complete instructions. Be sure to check the items off as they are completed.

- 1. Make certain you've set the **C.G.** and the **control throws** according to the measurements provided in the manual.
- 2. Confirm that all controls operate in the correct direction.
- 3. Make sure the servo arms are secured with the screws that came with them.
- 4. Make sure the receiver antenna is secured.
- 5. Use threadlocking compound on metal-to-metal screws.
- 6. Tug on the elevators and ailerons to make sure all the hinges are **securely** glued in place.
- 7. As explained in the manual, make sure holes for wood screws have been hardened with thin CA.
- 8. Place your name, address, AMA number and telephone number on or inside your model.
- 9. Range check your radio when you get to the flying field.

FLYING

Caution: The Evader is a great-flying model that flies smoothly and predictably, but it is not a plane that should be flown by beginners or pilots with little experience. The Evader possesses no self-correcting tendencies what-so-ever and therefore, must be flown only by experienced pilots who are able to decisively provide the correct control inputs.

The Evader looks like a lot of fun sitting there at rest. You may even think it looks kind of cute. But rest assured when you get it into the air the Evader's combination of small size and extreme speed cause it to get "real small" "real fast," so you must have good eyesight and piloting skills. Although the Evader is stable and flies "on a rail," even at reduced speeds it can still cover a lot of "sky" in a hurry. For these reasons please follow these pieces of advice—especially for your very first flight.

1. Do not fly the Evader on a cloudy day. Poor lighting and a gray background make it even more difficult to see. No matter what colors or markings are on the Evader, in a gray sky it just becomes a black dot with no orientation cues.
2. Do not fly when facing the sun. Wait for ideal light conditions when the sun is at your back.
3. Do not try to fly the Evader in tight flying fields. While it is always possible (but not advisable) to fly above obstructions, the Evader requires at least two or three times the approach and landing space of regular sport models.
4. Do not fly the Evader if for some reason, any of your senses may have been compromised (from lack of sleep, hunger, dehydration, etc.). Your vision and the ability to concentrate and think clearly must be optimum.

Mount the Wing

Mount the wing with the two 3 x 15mm Phillips screws and flat washers. With the canopy off, don't forget to connect the aileron servo to the receiver through the cockpit.

Ground Check and Range Check

Always perform an operational ground check of your radio before the first flight of the day following the manufacturer's instructions that came with your radio. This should be done once with the motor off and once with the motor running at various speeds. If the control surfaces do not respond correctly, **do not fly!** Find and correct the problem first. Look for loose servo connections or broken wires, corroded wires on old servo connectors, or poor receiver antenna routing.

Takeoff

First, it's a good idea to use a flight timer to alert you when it's time to land—you always want reserve battery power because—especially on the first flight—more than one landing attempt may be necessary. Throughout testing we set our timer to four minutes (of motor run time). This should provide an additional minute of run time for landing approaches. For your first flight it might even be a good idea to set your timer to three minutes.

In order of preference (with the bungee-launch being the most preferable), the Evader may be bungee-launched with the included bungee system, hand-launched by an assistant or hand-launched by the pilot. It is acceptable to hand-launch the Evader, but it must be thrown just about as hard as possible to acquire sufficient velocity. However, sometimes the harder a person throws an object the less control they may have possibly causing a bad launch. This is amplified by the fact that there is no perfect way to grab the Evader. Additionally, while it is possible for the pilot to hand-launch the Evader, for obvious reasons it is preferable to have an assistant launch it for you (this way, your hands will already be on the transmitter). We have performed several hand-launches, so if this is your preference here's the best way:

Hand Launch

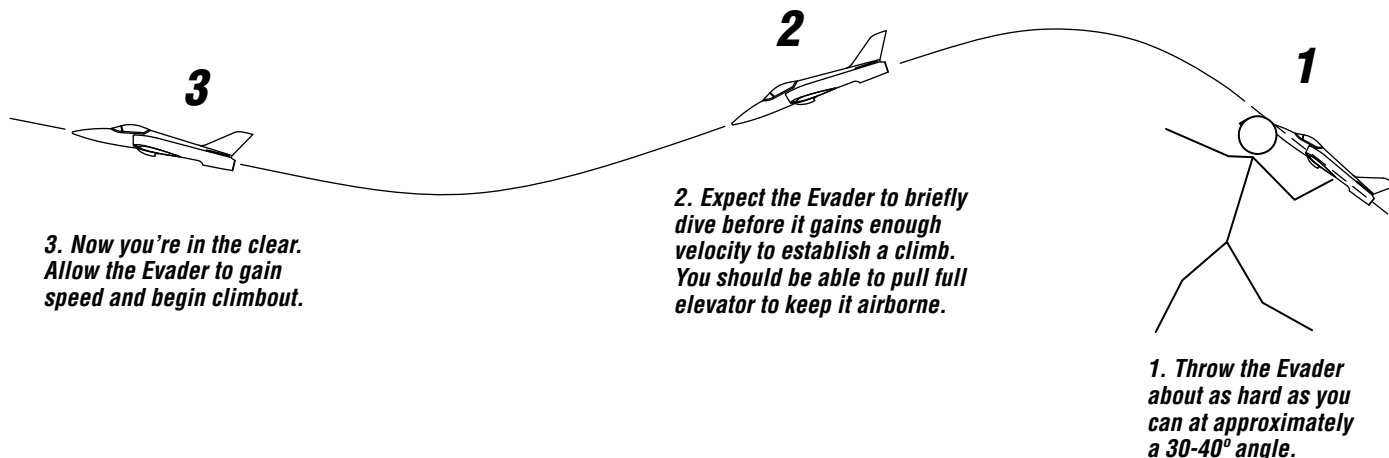


Have your assistant (or yourself) hold the model by the bottom of the fuselage just behind the wing. Use your pinky finger and the finger next to it to steady the plane and level the wing.

As you always should before every flight, **double-check that the controls are responding properly and in the correct direction**, then arm the motor and run it up for a second to make sure it is making full power. Make sure your launch is directly into any prevailing wind. Inform your assistant of your intentions and make sure he acknowledges, then apply full throttle. **Under control**, your assistant should run for several steps, then throw the plane into the air at about a 40° angle doing his best **not** to release it into a roll.

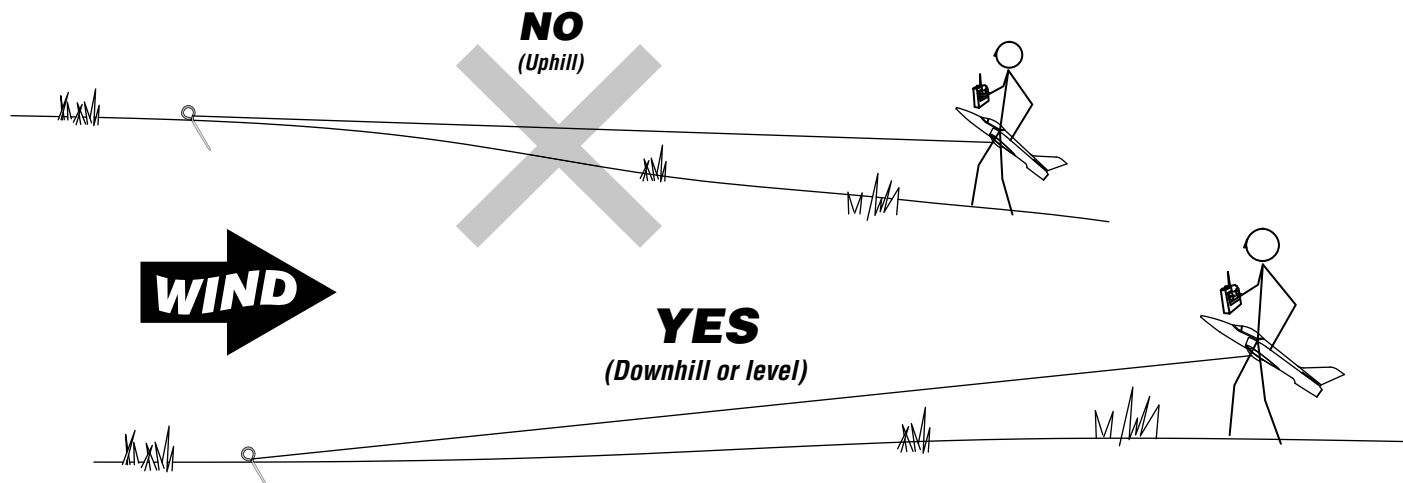
Expect the Evader to briefly lose altitude before it gains enough airspeed to establish a climb. At this point you should be able to pull full, high-rate elevator to get the nose up. Always be ready on the ailerons to correct any unwanted roll and keep the wing level—this all will happen within a few seconds.

At this point you're in the clear and the model will climb as it rapidly continues to gain speed.

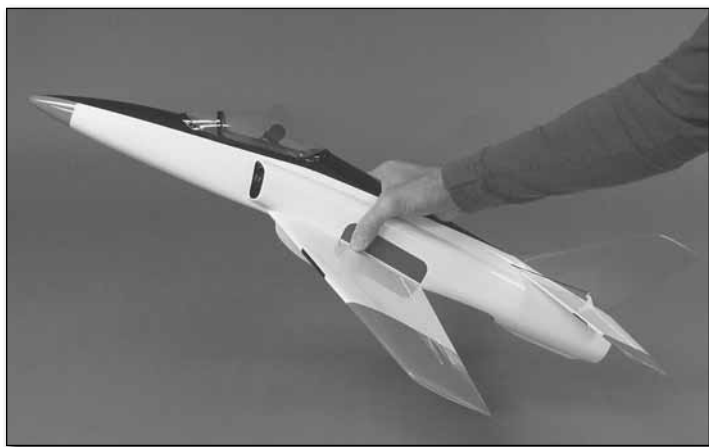


Bungee Launch

The great thing about the bungee launch is its consistency—you should be able to get a perfect bungee-launch every time. Also, bungee-launching the Evader by your self is much easier than hand-launching it by your self, but for the first one or two, it's still a good idea to have an assistant launch it for you so your hands will be ready on the transmitter.

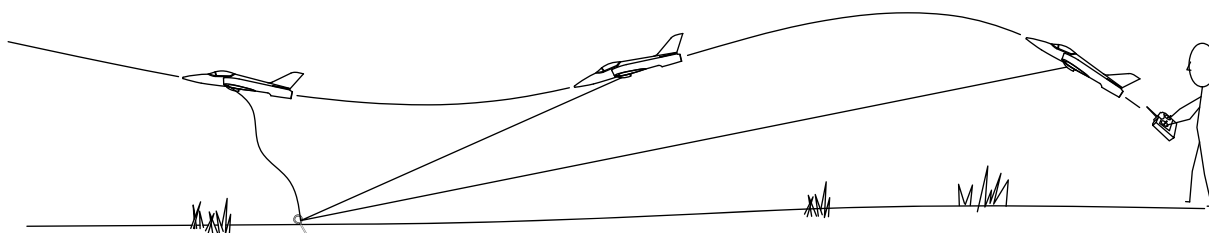


Find a suitable location to string out the bungee that is flat or has a downhill grade—try not to launch uphill. And be sure the ground will hold the stake securely. Push the stake into the ground at about a 45° angle away from the launch, then unwind the bungee so the launch will be directly into the wind. As you unwind, inspect the tubing and cord to make sure there are no cuts, cracks, tears, knots or other defects and make sure the line and cord are **securely** connected to the rings and stake.



When ready, turn on the transmitter and connect the battery. As you should always do before every flight, **double-check that the controls are responding properly and in the correct direction**, then arm the motor and run it up for a second to make sure it is making full power.

Pick up the tow ring (do not connect it to the model yet) and stretch out the bungee by walking approximately twenty-five steps (approximately 70' [21m]). Holding the model securely, connect the bungee to the tow hook under the wing. For launching, the model should be held by the fuselage over the wing as shown in the photo.



Hold the model waist-high away from your side so the plane won't catch your leg. If using an assistant, inform him of your intentions, make sure he acknowledges, and then apply full throttle. Holding the Evader at approximately a 30° to 40° angle, don't just let go, but **give it a good push into the air**—this is key. All within a second or two, the Evader will initially climb, level off, then possibly angle slightly downward before the elevator takes over and the Evader over-flies the bungee. From the moment the plane is released from your (or your assistant's) hand you should initially be holding some up elevator working the stick as necessary to keep the plane level or slightly climbing. Also be ready on the ailerons to keep the wing level so the Evader doesn't veer off to the side (though the trim would have to be pretty far off for this to happen).

Once the bungee releases "keep the pedal to the metal" and begin a shallow climb out, but be ready to make your first turn quickly because it's going to get far away quickly.

Flight

Once the Evader begins climbing, simply fly straight out, maintaining a good climb rate and keeping the wings level. When ready, bank into your flight pattern. If you feel the need, throttle back to about 1/2 throttle to slow it down some.

Usually, the first priority is to trim a plane for straight-and-level flight. But because the Evader can get so far away so quickly, your other “first” priority will be simply flying the Evader to keep it within visual range. You won’t have much time to let go of the sticks for trim changes, so you’ll have to do some multi-tasking! Again, you can always throttle back, but the Evader still covers a lot of ground!

Once you have the model trimmed you should be able to fly full throttle for extended periods, but it’s wise to throttle back in turns so it doesn’t get too far away. Fly “large” keeping turns wide and smooth. One suitable turn-around maneuver is to climb vertically, half roll, throttle back, then pull a 3/4 loop to upright level.

While at a high altitude with plenty of battery power, simulate a landing approach by cutting the throttle and watch the Evader glide. This will give you an indication of how the Evader will land.

Landing

The landing procedure for the Evader is the same as any other model, with the exception that it doesn’t slow as much and requires a longer approach. When ready to land, cut the throttle all the way while on the downwind leg. The Evader will establish a gradual descent but will not slow very much unless there is a headwind. Perform a large, banked turn allowing it to continue its descent. When the Evader reaches an altitude of just a foot or so off the ground, keep the wings level, continually applying more and more up elevator to hold it off as long as you can until the Evader finally touches

down. It will still be going fast so make sure your landing is over smooth ground so it doesn’t catch the nose or a wing tip. The Evader never really flares like a regular plane—it just loses flying speed before touching down and skidding across the grass.

If, at any point during your landing setup, you realize you are coming in too fast, simply throttle up, go around and try again. And if you’re coming in too short simply apply throttle to stretch the landing. **NOTE:** Sometimes, if you throttle up suddenly when the Evader is flying slowly and nearly stalled, the nose may pitch down. In this situation, throttle up more gradually.

After each landing inspect the intake, fan and exhaust tube and remove any grass or debris.

After a few flights you’ll have your Evader all trimmed out for level flight and be executing flawless, anxiety-free bungee launches, adrenaline-pumping flights and smooth, routine landings right at your feet!

One final note about flying your model. Have a goal or flight plan in mind for **every** flight. This can be learning a new maneuver(s), improving a maneuver(s) you already know, or learning how the model behaves in certain conditions (such as on high or low rates). This is not necessarily to improve your skills (*though it is never a bad idea!*), but more importantly so you do not surprise yourself by impulsively attempting a maneuver and suddenly finding that you’ve run out of time, altitude or airspeed. Every maneuver should be deliberate, not impulsive. For example, if you’re going to do a loop, check your altitude, mind the wind direction (anticipating rudder corrections that will be required to maintain heading), remember to throttle back at the top, and make certain you are on the desired rates (high/low rates). A flight plan greatly reduces the chances of crashing your model just because of poor planning and impulsive moves. **Remember to think.**

Have a ball!

But always stay in control and fly in a safe manner.

GOOD LUCK AND GREAT FLYING!

