

ESCAPADE™

INSTRUCTION MANUAL



Wingspan: 52.5 in [1340mm]
Wing Area: 483 in² [31.2dm²]
Weight: 5.0 – 5.5 lb [2270 – 2495g]
Wing Loading: 24 – 26 oz/ft² [73 – 80g/dm²]
Length: 46 in [1160mm]
Radio: 4-channel, 3 – 5 standard servos
Engine: .40 – .55 cu in [6.5 – 9.0cc] 2-stroke glow,
.52 – .70 cu in [8.5 – 11.5cc] 4-stroke glow,
.46 RimFire™ (42-60-800kV), 14.8V (4S) 3200mAh LiPo,
60A ESC

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 Great Planes *Escapade* ARF. The *Escapade* is a perfect "second airplane" for someone who is ready to move on from their high-wing trainer. The *Escapade* is also a great *Sunday flyer* for pilots who want to enjoy the simplicity and thrill of a "straight-forward" .40-size, low-wing sport model.

The *Escapade* may be powered by either a 2-stroke or 4-stroke glow engine, or electric motor. Installation instructions for each are detailed in this instruction manual. The *Escapade* also features the option of dual, outboard aileron servos or a single aileron servo mounted in the middle of the wing. Dual aileron servos will provide a little more precision and control response because the pushrods work directly on the ailerons. Additionally, response will be quicker. There will be more "power" connected to the ailerons because each one is operated by its own servo. But, if you prefer simplicity and economy, the single aileron servo will fly the *Escapade* well.

For the latest technical updates or manual corrections to the *Escapade* ARF visit the Great Planes web site at www.greatplanes.com. Open the "Airplanes" link, then select the *Escapade* 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 *Escapade* 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 *Escapade*, 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 engine, 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 an engine 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 cowl and wheel pants 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 (wheel pant, cowl) 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 Escapade that may require planning or decision making before starting to build. Order numbers are provided in parentheses.

The most important decision you may be thinking about is whether to go electric or glow. Here are some considerations that may help you:

Almost always, glow power provides the longest flight times (in the Escapade, approximately 12 minutes with a glow engine and approximately 6 – 8 minutes with electric motor). Usually, it is an achievement if one can get the power of an electric motor to equal that of a comparable glow engine.

Of course, with glow motors there is never any waiting for batteries to charge (it takes one hour to charge a LiPo battery). You may purchase multiple batteries and charge them at home the evening before you go flying, but then the number of consecutive flights will be limited by the number of battery packs you own—and battery packs (and all the associated chargers, power supplies, cell balancers, connectors) can be expensive. Finally, with a glow engine, it is usually easier to accurately determine your flight time. Sometimes, with electric motors, flight times can be inconsistent due to the number of variables that can have an effect on a battery's condition, thus causing flights to end sooner than expected.

However, glow engines are messy. With an electric motor, there will never be any oily exhaust residue to clean off the model. Electric motors are easier on the airframe because there is little vibration (and again, no fuel or oily exhaust residue that can leak into the structure). Electric motors are simple to operate—they don't require starting (other than advancing the throttle stick on your transmitter!). Over the long haul, and depending on how much you fly, electric motors can be more economical than glow because you'll never have to buy fuel (although, most LiPo batteries have a life cycle of approximately two years). Finally, electric motors are pure and quiet.

Motor vs. Engine

An engine is a device that converts heat energy (in a fuel) into mechanical energy that can do work. A motor is powered by electricity or a mechanism (such as a spring in a wrist watch).

Motor/Battery/ESC Recommendations

If powering your Escapade with an electric motor, it performs superbly on a RimFire™ .46 motor (GPMG4725) and a single, 4S (four, single cells) 3200mAh 14.8V LiPo battery. If experimenting with different batteries, make certain they are rated for at least a 20C discharge (as is the recommended battery).

A 60A ESC (electronic speed controller) is also required. The Great Planes Silver Series 60A Brushless ESC (GPMM1850) is recommended.

Following are the other suggested items if powering your Escapade with an electric motor:

- Suitable propeller and spare propellers (APC 12" x 6" thin electric propeller – APCQ4130)
- 12V power supply (Hobbico® 12 Volt Power Supply – HCAP0250)
- Adhesive-backed Velcro® (GPMQ4480)
- LiPo battery charger (Great Planes PolyCharge4™ DC LiPo charger – GPMM3015)
- (1) Great Planes ElectriFly Equinox™ LiPo Cell Balancer (GPMM3160) for each battery to be charged simultaneously

- (1) Great Planes ElectriFly Equinox 4S/5S 4S adapter set for each Equinox balancer (GPMM3162)
- 8mm prop reamer (for propellers and included spinner – GPMQ5007)
- Great Planes Pro™ 30-minute epoxy (GPMR6043) (for gluing motor mount to fuselage)

IMPORTANT: The Escapade requires a single, 4S battery pack. But if experimenting with different battery combinations and connecting multiple battery packs with adapter plugs, refer to the **Battery Precautions** on page 20.

Glow Engine Recommendations

The recommended glow engine size range for the Escapade is printed on the cover of this instruction manual. It will fly well with any of the engines within the recommended range. And, the Escapade is a lightweight model, so when flown with engines even at the smaller end of the scale it will still be fast and responsive. So, unless you are an experienced pilot, you may be better off starting out with a smaller engine.

In addition to the engine, following are the additional items required if powering your Escapade with a glow engine:

- Suitable propeller and spare propellers
- Fuel, fueling system (pump, fuel line, fuel can fittings set), 1.5V glow driver, field box, tools
- #36 (or 7/64) [2.6mm] drill
- Optional: 6-32 tap and drill set (GPMR8102), (4) 6-32 x 1" socket-head cap screws (GPMQ3038) for mounting engine with machine screws instead of included sheet-metal screws.

Radio Equipment

4-channels are required to fly the Escapade. However, the number of servos required can be from three to five. Only three channels will be required if flying the Escapade with an electric motor and using the single aileron servo option. If powering the model with a glow engine, a servo will be required for the throttle. And in either case (glow or electric), two servos will be required for the ailerons if using the dual aileron servo option. In all cases, standard-size servos with standard output torque (40 – 50 oz-in torque) are suitable.

Following is the specific radio gear required for the different configurations:

For all versions;

- 4-channel radio system w/4.8V 500-600mAh flat Rx battery back, on/off switch
- 1 ea. standard size/torque elevator and rudder servo

For single aileron servo option:

- (1) standard torque/size aileron servo
- (2) 6" [150mm] servo extension wires (HCAM2000)

For dual aileron servo option:

- (2) standard torque/size aileron servos
- (2) 6" [150mm] servo extension wires (HCAM2000 for Futaba®)
- (1) Dual servo extension (FUTM4130 for Futaba)

ADDITIONAL ITEMS REQUIRED

In addition to common hobby tools (screwdrivers, pliers, wire cutters), following is a list of suggested building supplies:

- 1/2 oz. [15g] Medium Pro™ CA+ (GPMR6007)
- 1/2 oz. [15g] Thin Pro CA (GPMR6001)
- CA applicator tips (HCAR3780)
- #1 Hobby knife (HCAR0105)
- #11 Blades (5-pack, HCAR0211)
- Power drill
- Drill bits; 1/16" [1.6mm], 3/32" [2.4mm], #48 (.076" [1.9mm]) drill or hobby knife
- Great Planes Pro Threadlocker (GPMR6060)
- 21st Century® sealing iron (COVR2700)

Optional Supplies & Tools

Here is a list of optional tools mentioned in the manual that will help you build the Escapade.

- 21st Century iron cover (COVR2702)
- 21st Century trim seal iron (COVR2750)
- Stick-on segmented lead weights (GPMQ4485)
- 2 oz. [57g] Spray CA activator (GPMR6035)
- Dead Center™ Engine Mount Hole Locator (GPMR8130)
- C.G. Machine™ (GPMR2400)
- Precision Magnetic Prop Balancer™ (TOPQ5700)

IMPORTANT BUILDING NOTES

- There are two types of screws used in this kit:
- **Sheet Metal Screws** are designated by a number and a length. For example #6 x 3/4" [19mm].



This is a number six screw that is 3/4" [19mm] long.

- **Machine screws** are designated by a number, threads per inch, and a length. For example 4-40 x 3/4" [19mm]



This is a number 4 screw that is 3/4" [19mm] long with forty threads per inch.

- The Escapade is 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.

- Jet White – TOPQ0204
- Orange – TOPQ0202
- True Red – TOPQ0227

- The stabilizer and wing incidences and engine 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.

ORDERING REPLACEMENT PARTS

Replacement parts for the Great Planes Escapade 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 Hobbico web site at www.hobbico.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 via facsimile 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 e-mail at productsupport@greatplanes.com, or by telephone at (217) 398-8970.

Replacement Parts List

Description	How to Purchase
Missing pieces	Contact Product Support
Instruction manual	Contact Product Support
Full-size plans	Not available

Contact your hobby supplier for the following parts:

GPMA3250	Fuselage
GPMA3251	Wing
GPMA3252	Tail Surface Set
GPMA3253	Landing Gear
GPMA3254	Wheel Pants
GPMA3255	Wing Joiner
GPMA3256	Canopy/Hatch
GPMA3257	Decal
GPMA3258	Out-runner Mount
GPMA3259	OPTIONAL Fiberglass Cowl

METRIC CONVERSIONS

1" = 25.4mm (conversion factor)

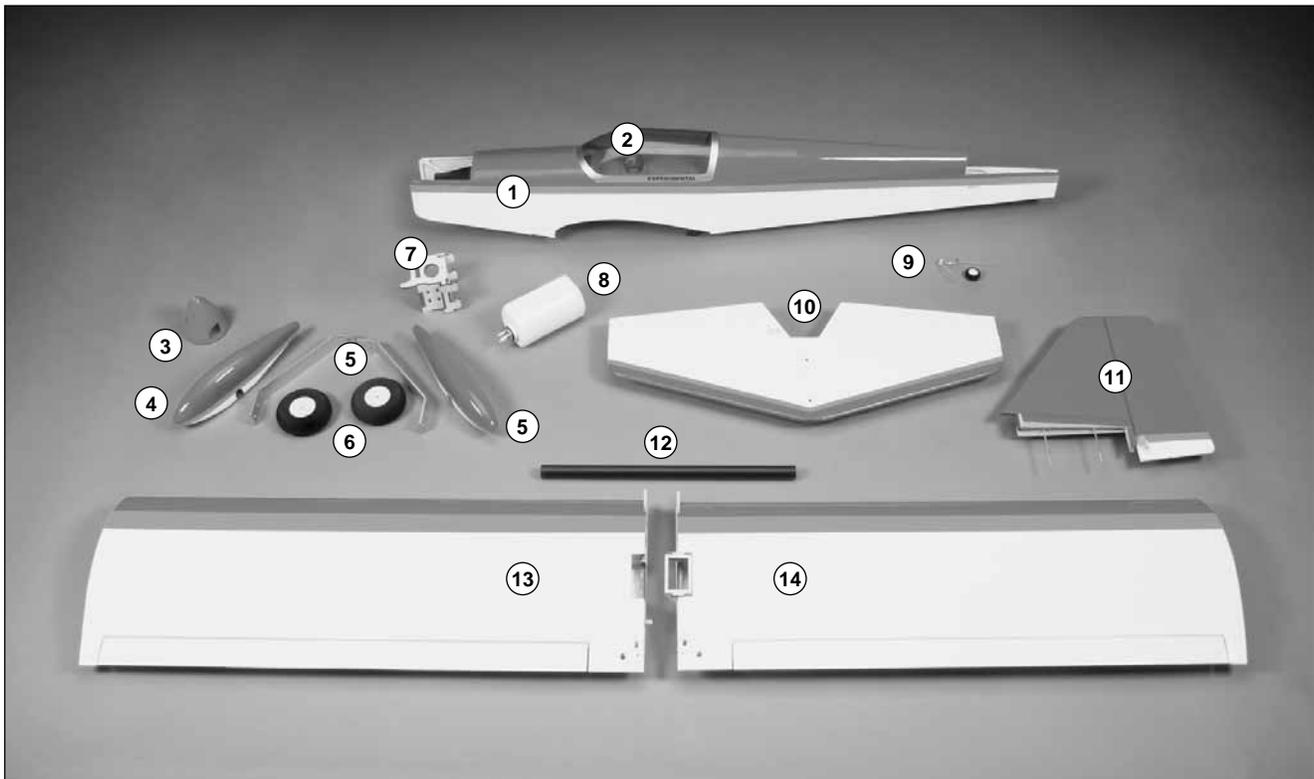
1/64" = .4mm	3/4" = 19.0mm
1/32" = .8mm	1" = 25.4mm
1/16" = 1.6mm	2" = 50.8mm
3/32" = 2.4mm	3" = 76.2mm
1/8" = 3.2mm	6" = 152.4mm
5/32" = 4.0mm	12" = 304.8mm
3/16" = 4.8mm	18" = 457.2mm
1/4" = 6.4mm	21" = 533.4mm
3/8" = 9.5mm	24" = 609.6mm
1/2" = 12.7mm	30" = 762.0mm
5/8" = 15.9mm	36" = 914.4mm

KIT INSPECTION

Before starting to build, take an inventory of this kit to make sure it is complete and 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

KIT CONTENTS

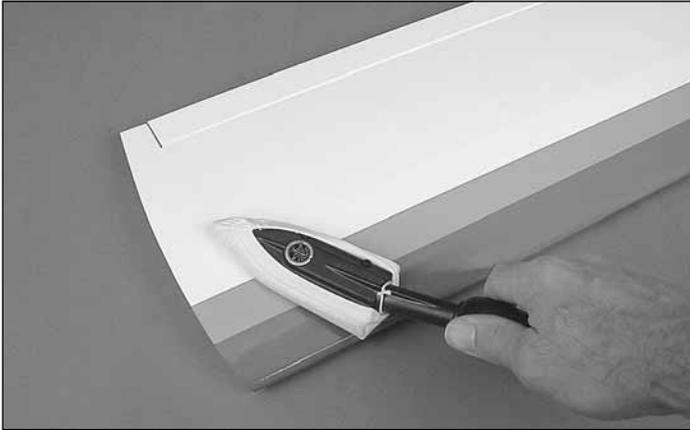


Kit Contents

1	Fuselage	8	Fuel Tank
2	Canopy	9	Tail Gear Assembly
3	Spinner	10	Horizontal Stabilizer & Elevators
4	Wheel Pants (L&R)	11	Vertical Stabilizer (Fin) & Rudder
5	Main Landing Gear (L&R)	12	Aluminum Wing Joiner Tube
6	Main Wheels (2)	13	Left Wing Panel w/Aileron
7	Motor Mount	14	Right Wing Panel w/Aileron

PREPARATIONS

Tighten the Covering

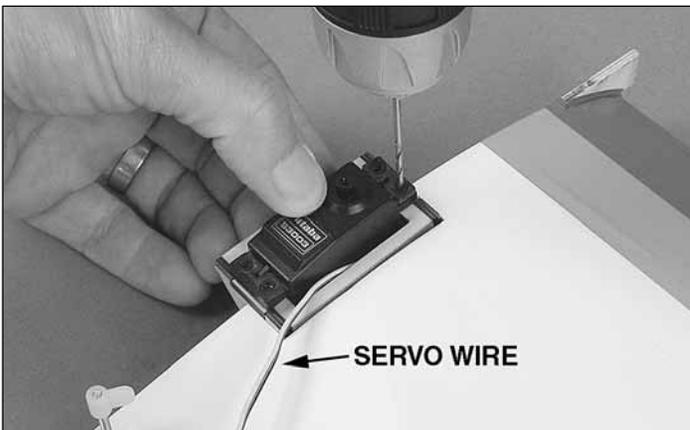


Refer to the separate instruction sheet titled **How To Tighten Covering On ARF Models**. Follow the instructions to tighten the covering. If you prefer to get started on assembly right away, the tightening process could be done later (but it is usually easiest to do while the model is still in separate pieces).

ASSEMBLE THE WINGS

Hook Up the Ailerons (Single Servo Option)

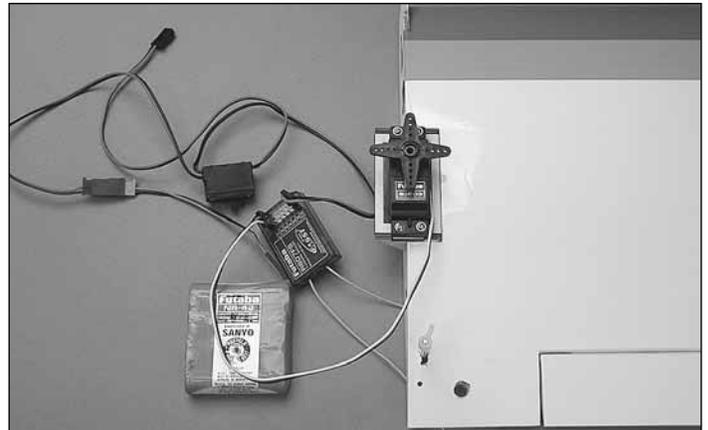
If using dual aileron servos, skip to the next section on page 9.



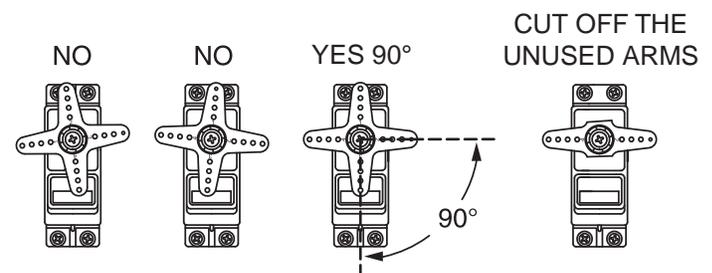
1. Place your aileron servo in the servo mount built into the right wing half (note the servo wire coming out between the right side of the servo and the mount). Drill 1/16" [1.6mm] holes for the servo mounting screws.



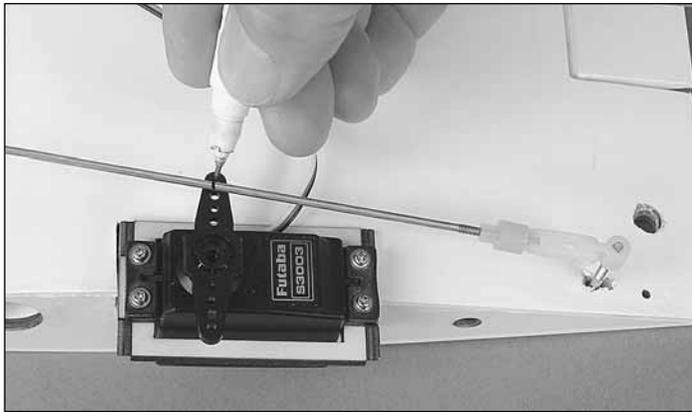
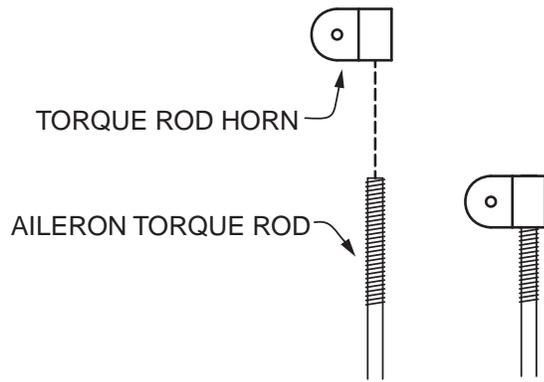
2. Temporarily mount the servo with the screws that came with it. Remove the screws and take out the servo. Add a few drops of thin CA to each screw hole. Wait a minute for the CA to harden and re mount the servo (guiding the wire between the right side of the servo and the servo mount). Don't overtighten the servo mounting screws—just make sure the heads of the screws apply a little pressure to the grommets and that the servo is secure.



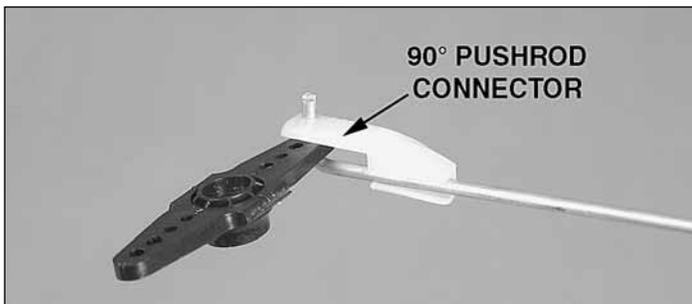
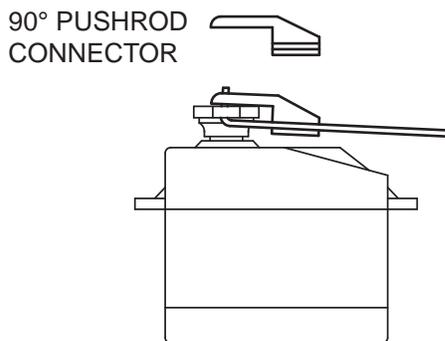
3. Temporarily connect the aileron servo to your receiver with a battery and on/off switch. Turn on the transmitter and receiver and center all the trims on the transmitter.



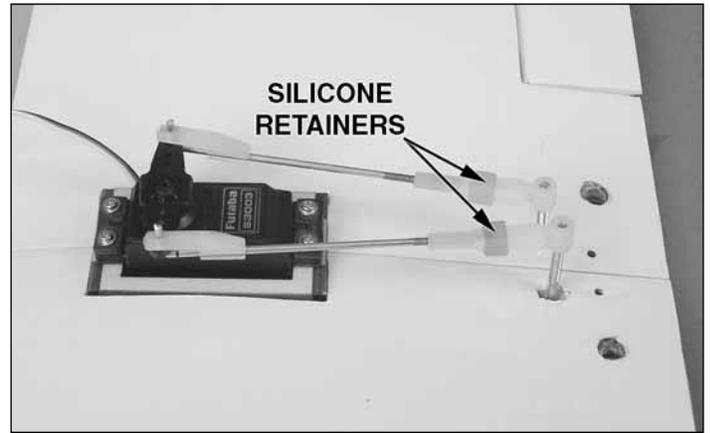
4. With the radio on, position the servo arm on the splined output shaft on the servo so it will be 90-degrees as shown in the sketch. Once you find the orientation that's 90-degrees, cut off the other two unused arms. The radio may now be turned off, disconnected from the aileron servo and set aside.



❑ 5. Screw a torque rod horn onto the right aileron torque rod so that the top of the horn is even with the top of the torque rod. Temporarily fit the clevis on the end of one of the shorter pushrod wires for the ailerons onto the horn. Use a fine-point felt-tip pen to mark the pushrod wire where it crosses the outer hole in the servo arm.



❑ 6. Disconnect the pushrod from the torque rod horn and make a sharp, 90° bend in the wire at the mark. Enlarge the holes in the aileron servo arm with a #48 (.076" [1.9mm]) drill or a hobby knife. Fit the pushrod into the outer hole in the servo arm, then attach a 90° pushrod connector to the assembly. Cut the excess wire 1/16" [2mm] above the connector.



❑ 7. Temporarily join the wings with the aluminum wing joiner tube. Connect the other aileron pushrod the same way you did the first one. Install the servo arm screw and slip the silicone retainers over the pushrod.

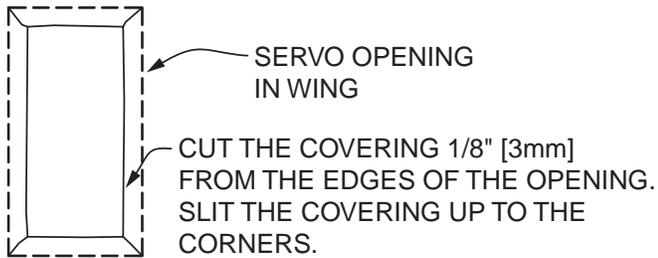
❑ 8. When it's time to join the wings for flying, mount the strap to the wings as shown in step 12 on page 11. When you want to separate the wing halves, simply disconnect the clevis on the left aileron pushrod from the torque rod horn, and then slide the wings apart.

Later, during final radio and control throws set up, the pushrods will be adjusted so the ailerons are centered when the radio is on (or, you could reconnect your aileron servo to the radio and do this now).

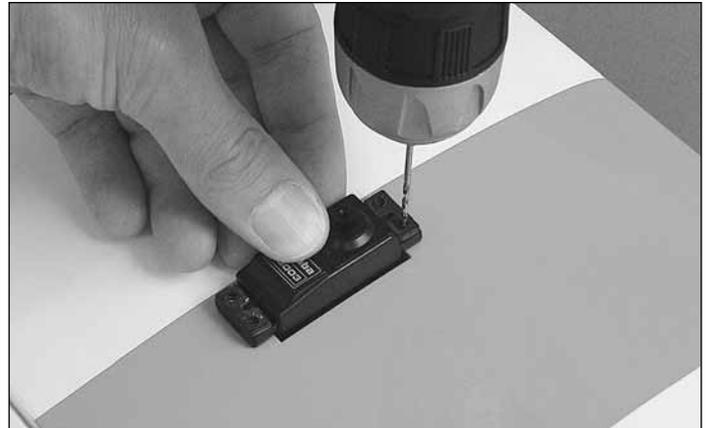
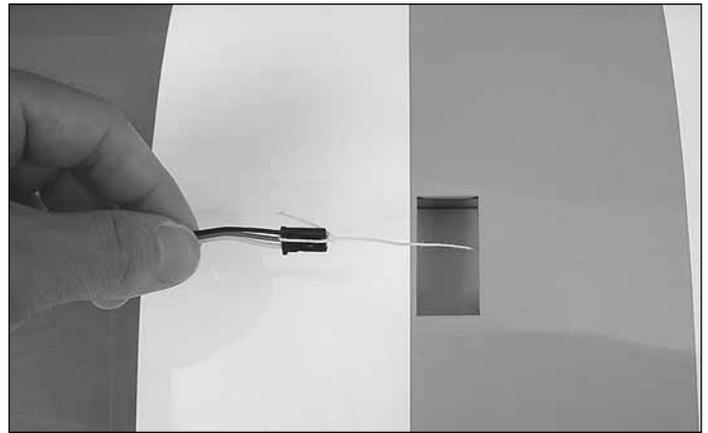
Proceed to Assemble the Fuselage.

Hook Up the Ailerons (Dual Servo Option)

You can do both servos simultaneously, or do them one at a time as described below:



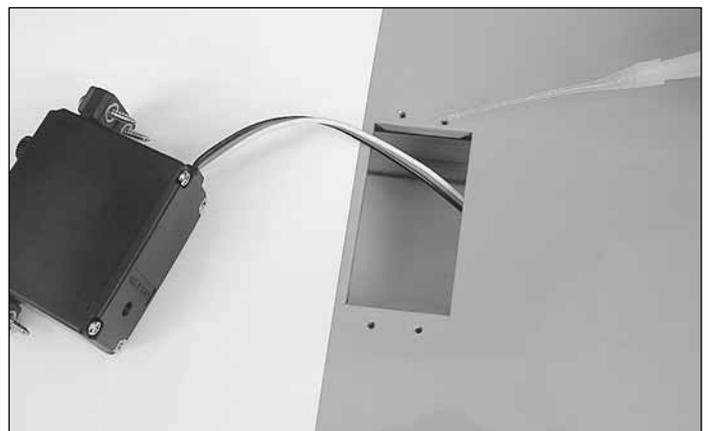
❑ 1. Cut the covering from one (or both) of the aileron servo openings in the bottom of the wings. The “neatest” way is to cut the covering 1/8" [3mm] inside the opening, cut slits up to the corners, and then use a trim iron to seal the edges down inside the openings. Or, just cut the covering up to the edges.



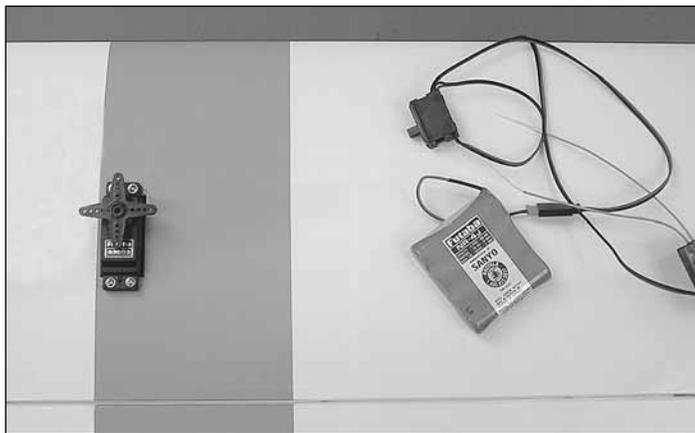
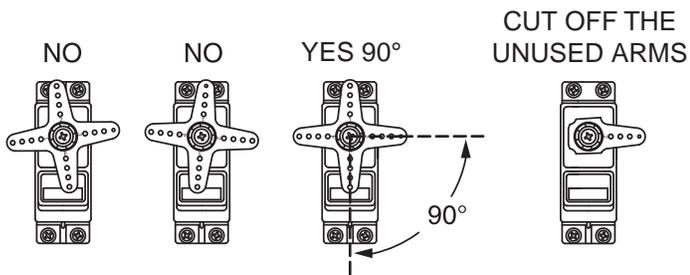
❑ 3. Use the string in the wing to pull the servo extension out the end and place the aileron servo in the wing. Drill 1/16" [1.6mm] holes for the servo mounting screws.



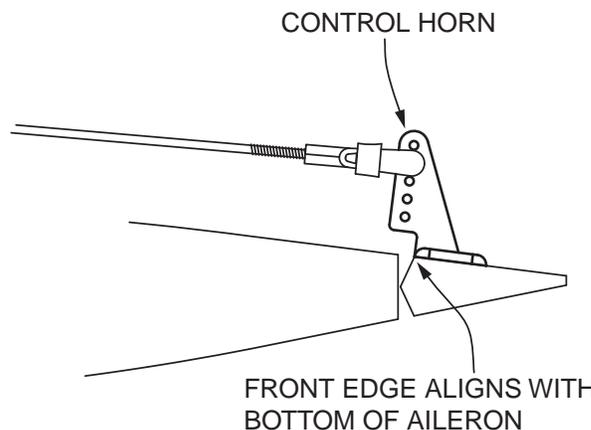
❑ 2. Connect a 6" [150mm] servo extension to the aileron servo and secure the connection with a 1-1/2" [40mm] piece of heat shrink tubing included with this kit—shrink the tubing with a heat gun or a hobby torch—use care not to scorch the wires!



❑ 4. Temporarily mount the servo with the screws that came with it. Remove the screws and take out the servo. Add a few drops of thin CA to each screw hole. Wait a minute for the CA to harden and remount the servo. Don't overtighten the servo mounting screws—just make sure the heads of the screws apply a little pressure to the grommets and that the servo is secure.

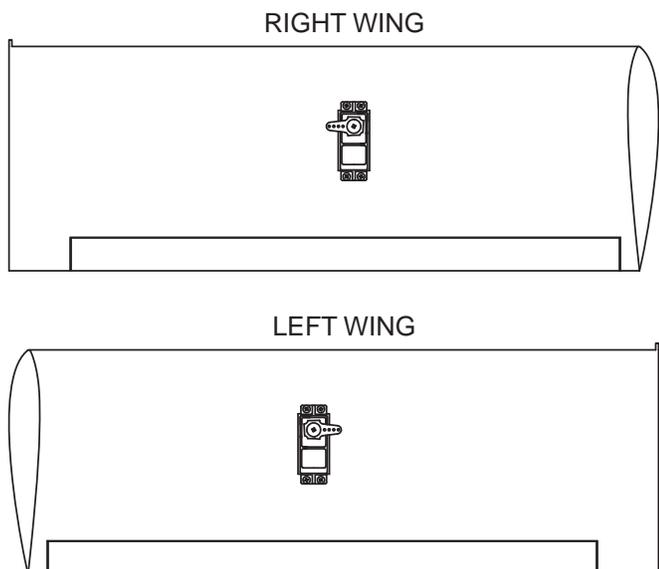


❑ 5. Temporarily connect the servo to the receiver with the battery and switch. Turn on the transmitter and receiver and center all the trims on the transmitter. With the radio on, fit the servo arm onto the splined output shaft so it will be 90-degrees as shown in the sketch.



❑ 7. Temporarily fit the clevis on the end of one of the shorter pushrod wires for the aileron into the second-from-the-outer hole of a control horn. Hold the horn to the aileron so the front edge of the horn will be at the front edge of the bottom of the aileron and the pushrod will align with the outer hole in the aileron servo. Use a ballpoint pen to mark the location of the holes in the horn onto the aileron.

❑ 8. Without drilling through to the top of the aileron, drill 1/16" [1.6mm] holes, 3/8" [9.5mm] deep at the marks. Mount the horn to the aileron with two #2 x 3/8" [9.5mm] Phillips screws. **IMPORTANT:** Remove the screws, add a few drops of thin CA to the holes, allow to harden, and then remount the horns.

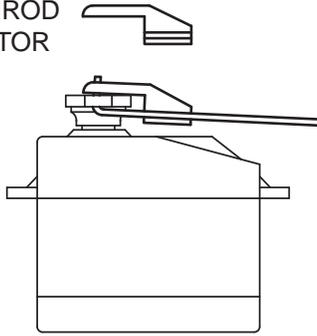


❑ 6. Note the position of the servo arms in the sketch. Cut off the other three unused arms from the aileron servo arm.



❑ 9. Use a fine-point felt-tip pen to mark the pushrod wire where it crosses the outer hole in the servo arm.

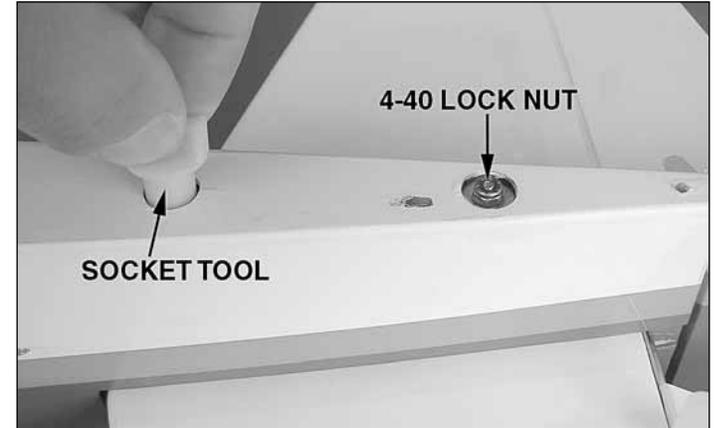
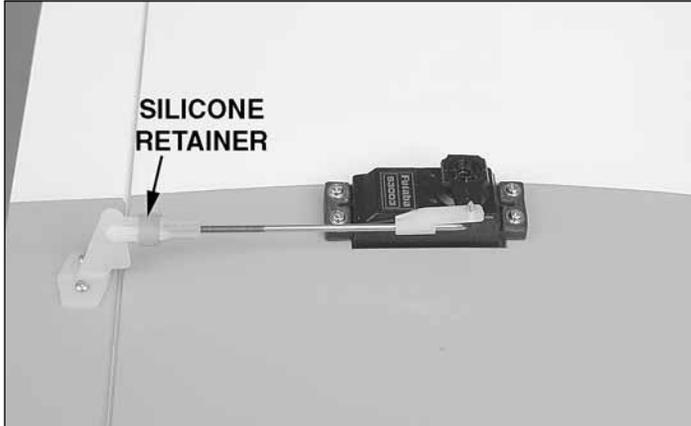
90° PUSHROD
CONNECTOR



ASSEMBLE THE FUSELAGE

Hook Up the Elevator & Rudder

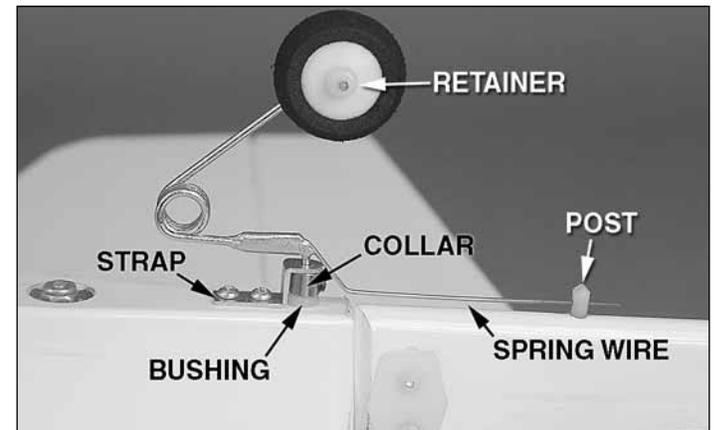
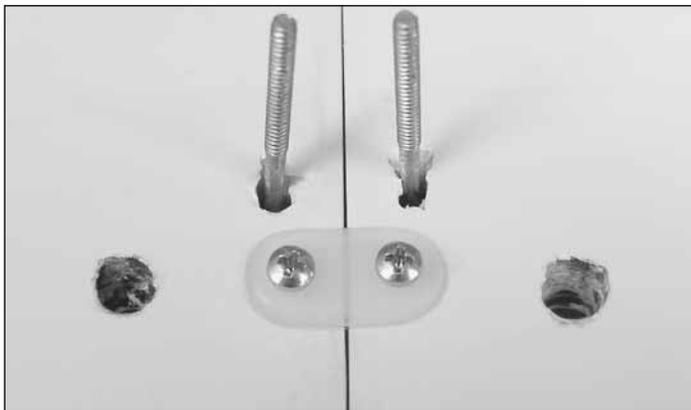
- ❑ 1. Fit the vertical stabilizer (frequently referred to as the "fin") to the vertical stabilizer (stab). Guide the fin rods through the holes in the bottom of the fuselage and make sure the stab is fully seated to the fuselage and that the fin is fully seated onto the stab.



- ❑ 10. Make a 90° bend in the wire at the mark. Enlarge the holes in the aileron servo arm with a #48 (.076" [1.9mm]) drill or a hobby knife. Fit the pushrod into the outer hole in the servo arm, then attach a 90° pushrod connector to the assembly. Cut the excess wire 1/16" [2mm] above the connector. Install the servo arm screw and slip the silicone retainers over the pushrod.

- ❑ 2. Even though the nuts used on the fin rods are locking nuts, a drop of threadlocker on the threads is recommended. Add a drop of threadlocker to the threads of the fin rods. Then, tighten the assembly to the fuselage with a #4 flat washer, a #4 lock washer and a 4-40 lock nut on each rod. The included socket tool may be used to tighten the nuts.

- ❑ 11. If you haven't yet done so, hook up the other aileron the same way.

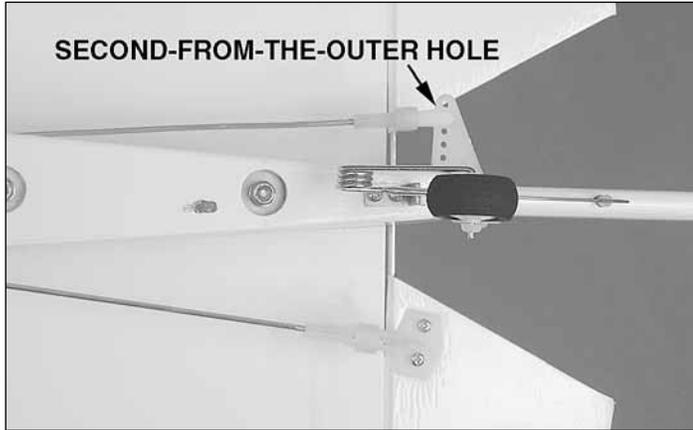


- ❑ 12. Slide the wings together with the wing tube. Temporarily mount the nylon strap to the wings with two #4 x 3/8" [9.5mm] Phillips screws. Same as when installing the servo screws, remove the screws from the strap, harden the holes with a few drops of thin CA and allow to harden before putting the wings together and installing the screws.

- ❑ 3. Mount the tail gear assembly in the following order:
 - ❑ A. Fit the bushing into the hole in the fuselage and glue it into position with a few drops of thin CA. Allow to harden before the next step.
 - ❑ B. Add a small drop of threadlocker to the threads on the 4-40 set screw for the collar. Then, thread the set screw into the collar. Fit the tail gear wire through the hole in the strap, then the collar, but don't tighten the set screw yet.
 - ❑ C. Fit the assembly into the bushing in the fuselage. Then, press the post into the bottom of the fin. Place the spring wire into the notch in the post. Glue the post into position with a few drops of thin CA.

Later, during final radio and control throws set up, the pushrods will be adjusted so the ailerons are centered when the radio is on (or, you could reconnect your aileron servo to the radio and do this now).

- ❑ D. Using the holes in the strap as a guide, drill 1/16" [1.6mm] holes into the bottom of the fuselage. Install, then remove two #2 x 3/8" [9.5mm] Phillips wood screws into the holes, apply a few drops of thin CA to the holes, allow to harden, and remount the strap with the screws.
- ❑ E. Tighten the set screw in the collar.
- ❑ F. Mount the tail wheel with the small, nylon retainer.



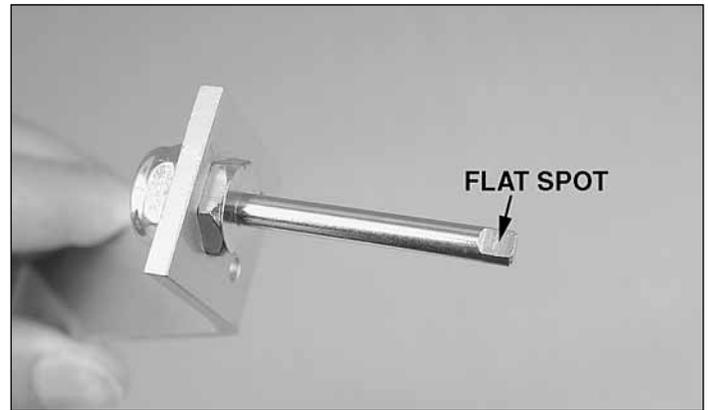
- ❑ 4. Slide the elevator and rudder pushrods into the guide tubes in the fuselage. Connect the clevises to the second-from-the-outer holes of the horns. Slide the silicone retainers over the clevises.

Refer to this photo for the following three steps.

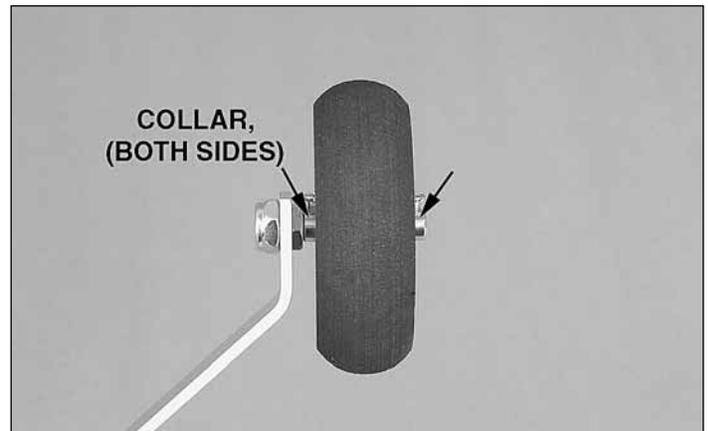


- ❑ 5. Place the elevator and rudder servos in the servo tray in the fuselage. Same as you did with the aileron servo(s), connect the rudder and elevator servos to your receiver and battery and turn on the radio. Center the trims and find the correct orientation for the servo arms that will be 90-degrees. Cut off the unused arms.
- ❑ 6. Mark, cut, bend and connect the pushrods to the servos the same way you did for the ailerons. After you mark the pushrods, it will be easier to bend and cut them if you disconnect the clevises from the horns on the other end.
- ❑ 7. The same way you mounted the aileron servo(s), mount the elevator and rudder servos with the servo screws that came with them—don't forget to harden the screw holes with a few drops of thin CA after installing, then removing the screws.

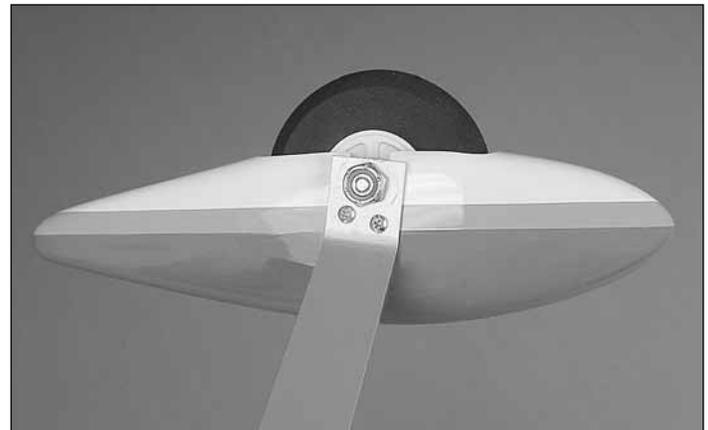
Mount the Main Landing Gear



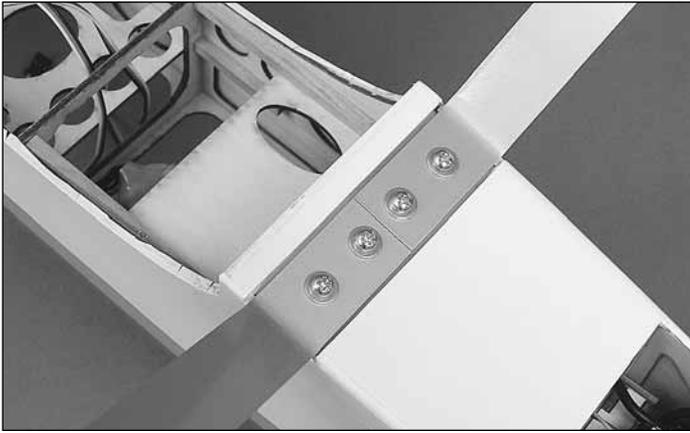
- ❑ 1. Use a 1/2" and 7/16" open-end wrench to mount an axle to each landing gear. Use a metal file to grind a flat spot on the end of both axles.



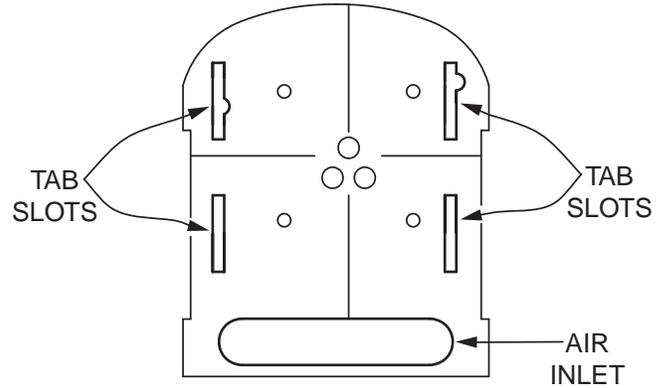
- ❑ 2. Mount the wheels to the axles with a collar on both sides held on with the 3mm screws and threadlocker on the threads.



- ❑ 3. Mount each wheel pant to the landing gear with two 4-40 x 1/2" [13mm] Phillips screws and threadlocker on the threads. Be certain to use threadlocker because there are no lock washers.



❑ 4. Mount the main landing gear to the bottom of the fuselage with four 6-32 x 1/2" [13mm] Phillips screws, #6 lock washers and flat washers. Same as always, be certain to use threadlocker on the threads of the screws before screwing them in.

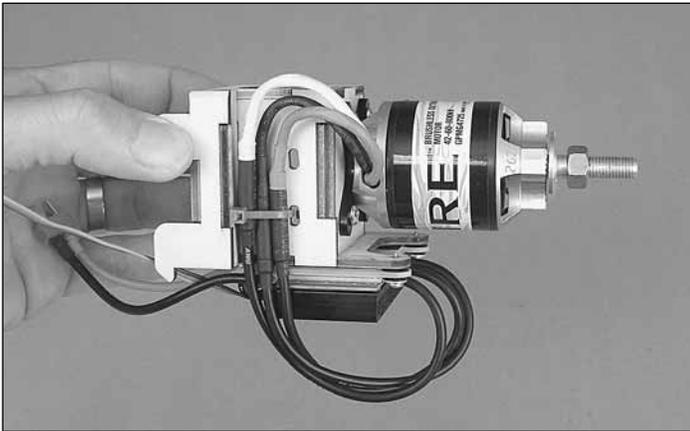


❑ 4. Use a large, flat-blade screwdriver to "knock out" the tab slots and air inlet in the firewall for the electric motor mount installation.

Mount the Electric Motor

If using a glow engine, proceed to Mount the Engine on page 14.

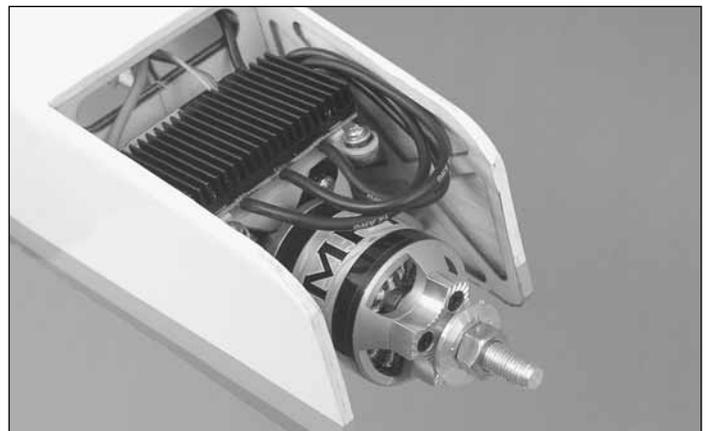
Refer to this photo for the following three steps.



❑ 1. Mount your electric motor to the motor mount with four 6-32 x 1/2" [13mm] Phillips screws and a few drops of threadlocker on the threads of each screw.

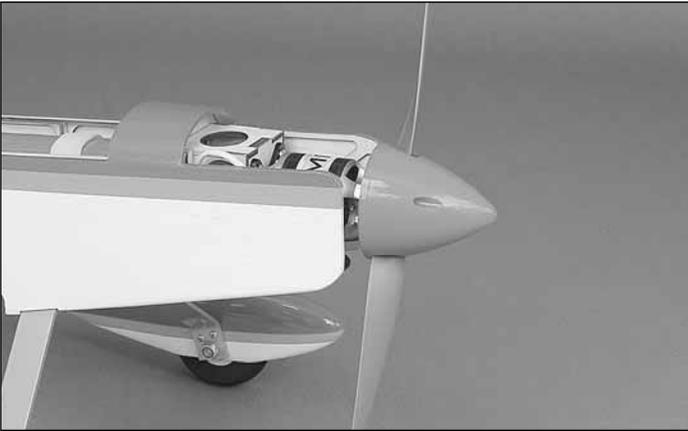
❑ 2. If using a Great Planes ElectriFly 60A ESC, mount it to the ESC mounting plate on the bottom of the motor mount with three #4 x 3/8" [9.5mm] Phillips screws and #4 flat washers. If using a different ESC you will have to figure out your own way to mount the ESC to the plate. Remove the screws, add a few drops of thin CA to the screw holes, allow to harden, and remount the ESC.

❑ 3. Use one of the included nylon tie-wraps to secure the wires to the right side of the mount as shown.

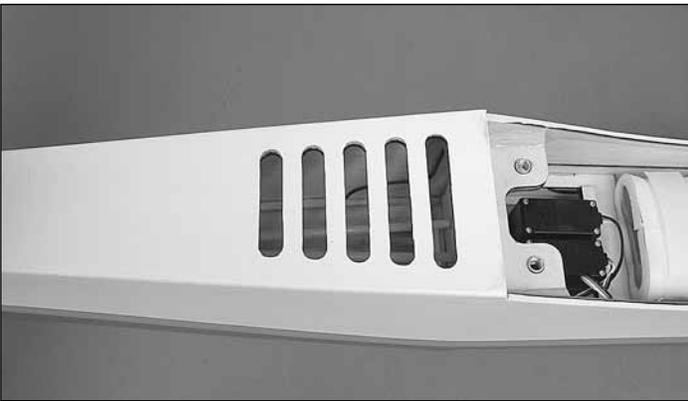


❑ 5. Test fit the tabs of the motor mount into the slots in the firewall. Then, push the mount downward to lock it into position.

❑ 6. Once you have confirmed that the mount snaps securely into position, remove the mount, apply 30-minute epoxy to all joining surfaces (in the slots in the firewall and to the tabs and the edges of the mount that contact the firewall), and fit the mount back onto the firewall. Add more epoxy wherever necessary for a secure bond.



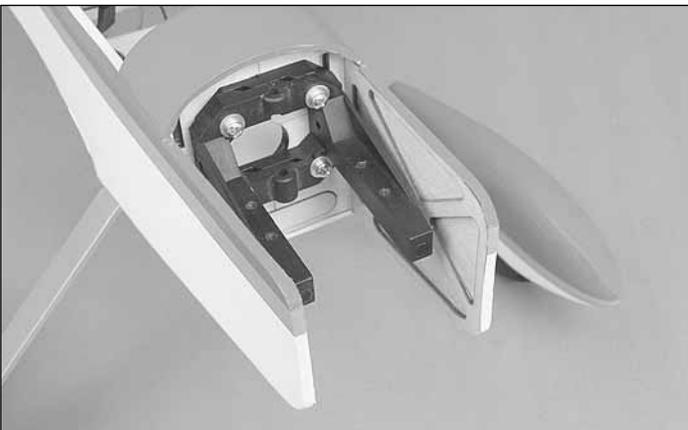
❑ 7. Use a propeller reamer to enlarge the hole in your propeller and in the spinner backplate (this can be made easy by “chucking” the reamer into a power drill). Mount the spinner backplate and a balanced propeller to the motor with the washer and nut included with the motor. Then, mount the spinner cone with the screws that came with the spinner.



❑ 8. Use a hobby knife with a sharp #11 blade to cut the covering from the rounded air exit slots in the bottom of the fuselage behind the wing.

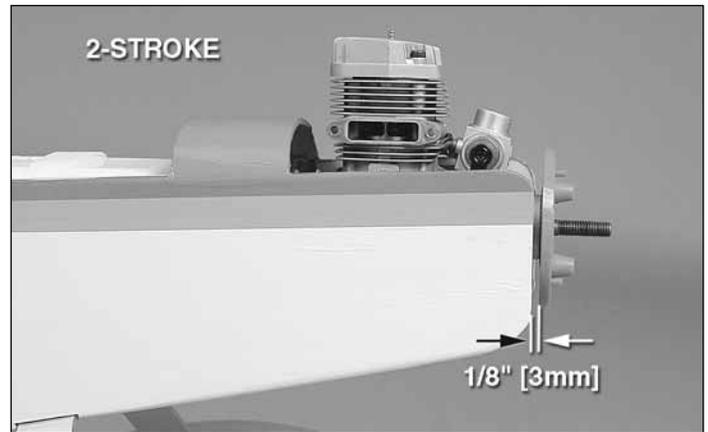
Proceed to *Mount the Fuel Tank (or Motor Battery)*.

Mount the Engine

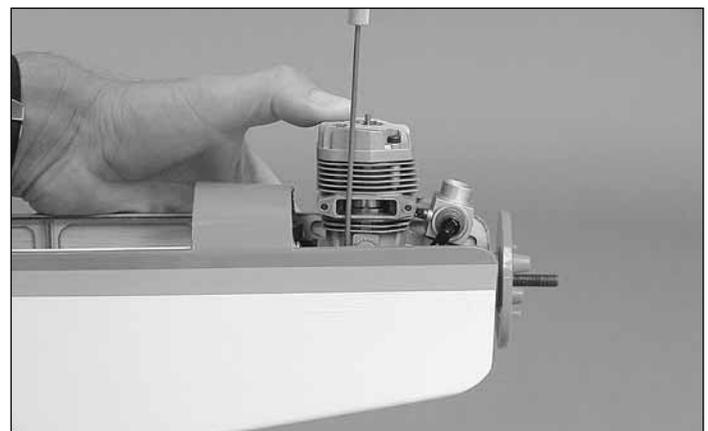


❑ 1. Temporarily mount the two-piece engine mount to the fuselage with four 6-32 x 1" [25mm] Phillips screws, four #6 lock washers and flat washers, but don't tighten the screws all the way yet.

❑ 2. Place your engine on the mount, sliding the mount halves together or apart to fit the engine. Now you may tighten the mount bolts the rest of the way.



❑ 3. Place the backplate of the spinner on the engine and position the engine on the mount so there will be a 1/8" [3mm] space between the backplate of the spinner and the front of the fuselage. **Note:** Most 4-stroke engines will not be able to be positioned far enough aft on the mount to achieve this spacing, so just move the engine as far back as possible.

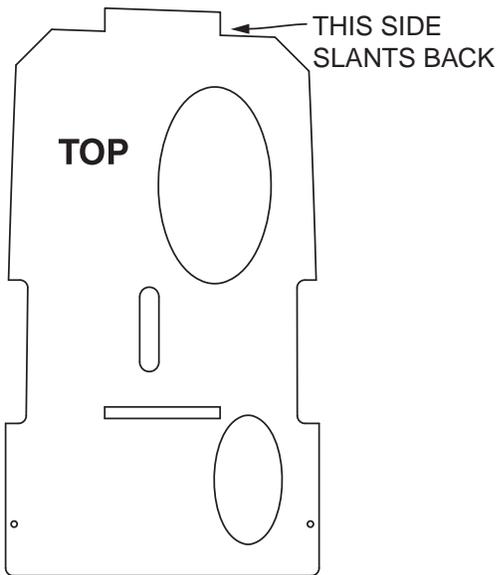


❑ 4. Use a Great Planes Dead-Center Hole Locator (GPMR8130) or a sharpened wire to mark the location of the engine mounting holes onto the mount.

❑ 5. Drill #36 (or 7/64" [2.6mm]) holes through the engine mount at the marks you made for the mounting screws. Mount the engine with four #6 x 3/4" [19mm] Phillips screws and #6 lock washers. **Alternate method:** Some modelers prefer machine-thread screws rather than sheet-metal screws for mounting the engine. But this requires an additional step—tapping threads into the mount. If you prefer to use machine screws instead, use a 6-32 tap to tap threads into the holes after drilling them. Then, use 6-32 x 1" socket-head cap screws (SHCS) and #6 lock washers for mounting the engine. Note: Four-stroke engines may have to be temporarily dismantled later while hooking up the throttle.

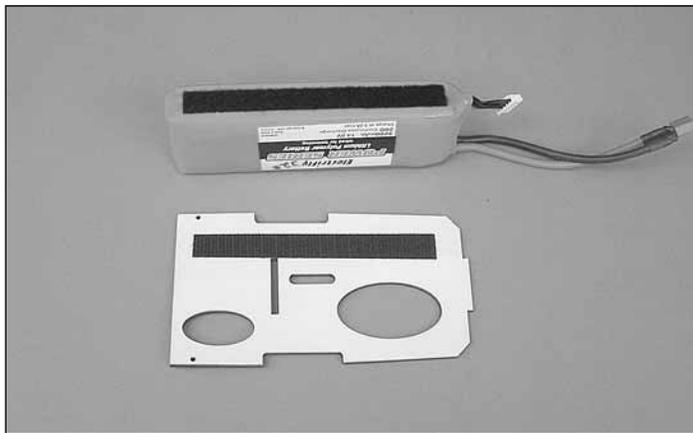
Mount the Fuel Tank (or Motor Battery)

IMPORTANT: If powering your Escapade with an electric motor, before experimenting with different motor battery combinations and connecting multiple battery packs with adapter plugs, refer to the **Battery Precautions** on page 20.

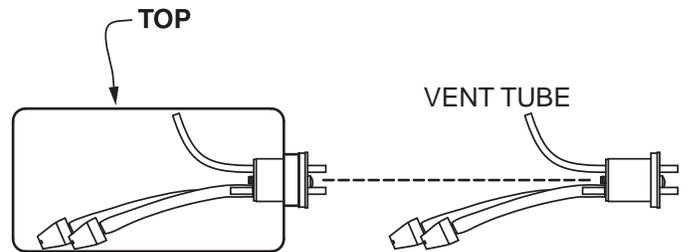


and apply the strip to the upward-facing surface of the plate as shown. Place an equal-sized “fuzzy,” or “loop” side of adhesive-backed hook and loop material to the battery you will be using. If mounting the fuel tank, cut a 2" x 4" [50 x 100mm] sheet from the supplied foam rubber sheet.

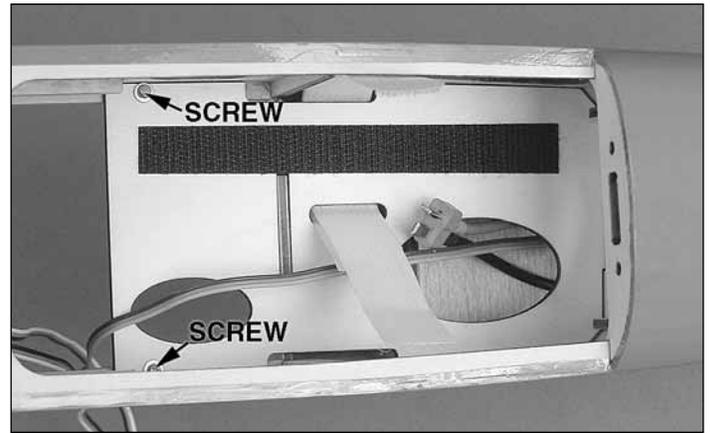
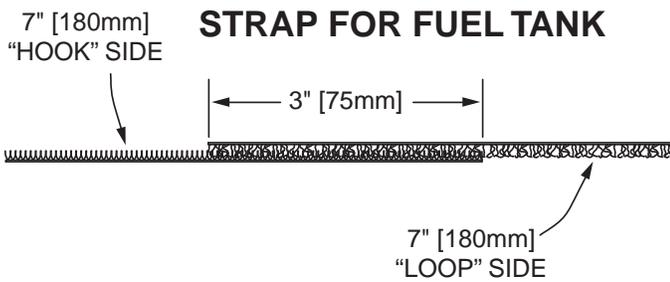
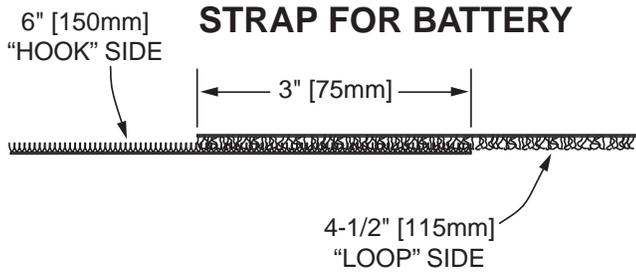
Skip the following step if mounting a battery.



❑ 1. Lay the plywood battery/fuel tank plate on your workbench so the right side of the front edge will be slanted back. If mounting a battery, cut a 1/2" x 5" [13 x 130mm] strip from the rougher, or “hook” side of a strip of Great Planes adhesive-back hook and loop material (not included)



❑ 2. Use a fine-point felt-tip pen to write “TOP” on the same side of the fuel tank that has the molded-in label “270cc” (or, just remember that the surface that has the “270cc” is the top). Loosen the Phillips screw in the stopper assembly a few turns and temporarily remove the stopper assembly from the tank. Be certain the vent tube is toward the top of the tank. Then, reinsert the stopper assembly and tighten the screw to squish the rubber stopper and seal the tank.



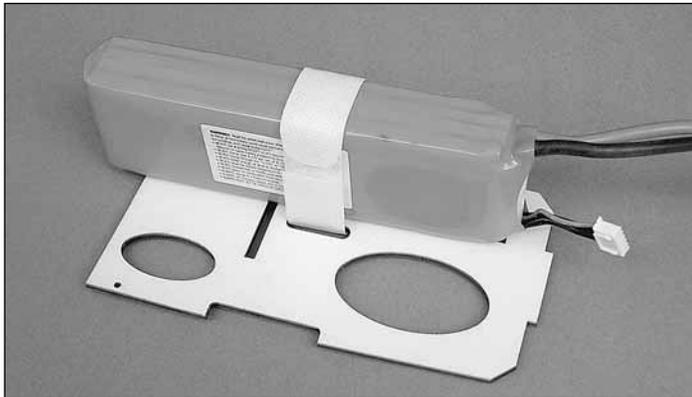
❑ 5. Remove the battery (or fuel tank) from the mounting plate. Test fit the plate into the fuselage and make sure the front end keys into the slot in the firewall. If building the electric version, guide the wires coming from the ESC through the hole in the battery plate. Also, temporarily screw the battery plate into position with a #2 x 3/8" [9.5mm] wood screw and #2 washer on both sides of the tray near the back end.

❑ 6. Remove the mounting plate, then reinstall, only this time securely and permanently gluing it into position with epoxy or medium CA.

If you've assembled your Escapade as an electric version, proceed to *Final Assembly* on page 19.



❑ 7. If using a glow engine, mount the fuel tank with the strap and foam rubber sheet. The fuel lines will be connected later.

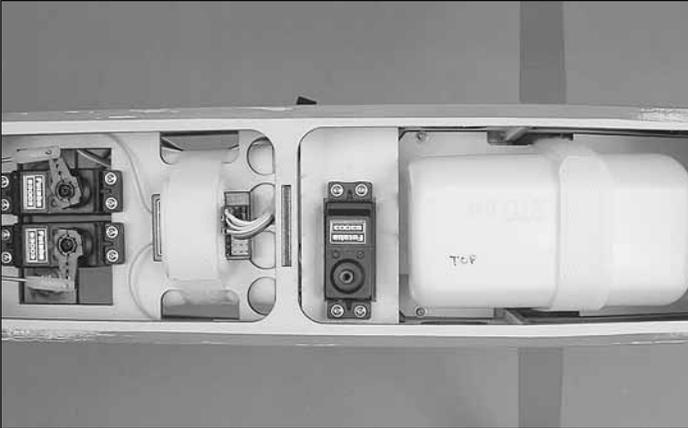


❑ 3. If mounting a battery, make a battery strap from the included hook-and-loop material by cutting a 4-1/2" [115mm] strip from the softer loop side and a 6" [150mm] strip from the rougher hook side. If mounting the fuel tank, make a fuel tank strap cutting a 7" [180mm] strip from the softer loop side and a 7" [180mm] strip from the rougher hook side. For either version, join the straps together with a 3" [75mm] overlap. Test mount the battery (or fuel tank with the sheet of R/C foam rubber you cut) to the battery plate with the strap.

❑ 4. While the battery or fuel tank is still mounted with the strap, use medium CA to glue the strap to the bottom of the plate. This will make it easier to remount the battery (or fuel tank) later.

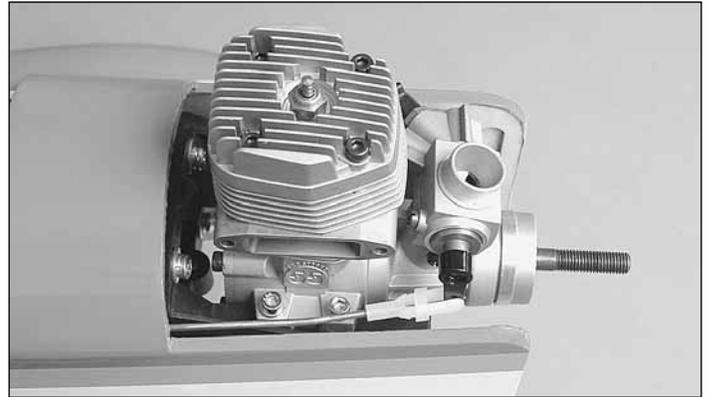
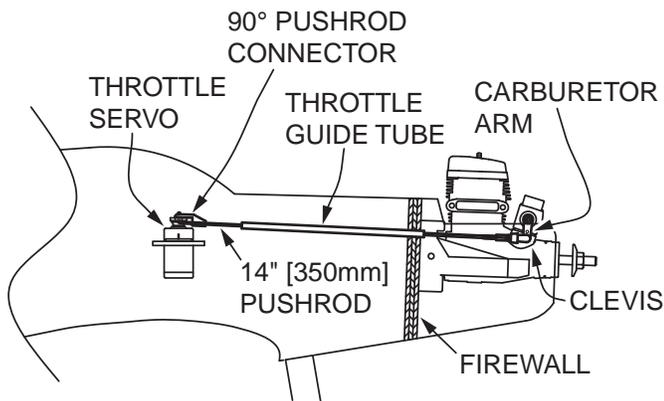
Hook Up the Throttle

Note: The installed receiver and receiver battery appear in a few of the following photos. However, those components will not be mounted until later when you get to **Final Assembly**.



1. Glue the plywood throttle servo tray to the rails in the fuselage just behind the fuel tank, so that, when the servo is in the tray, the servo arm will be on the same side of the fuselage as the throttle arm on the carburetor. Mount your throttle servo to the tray.

Two-Stroke Hookup

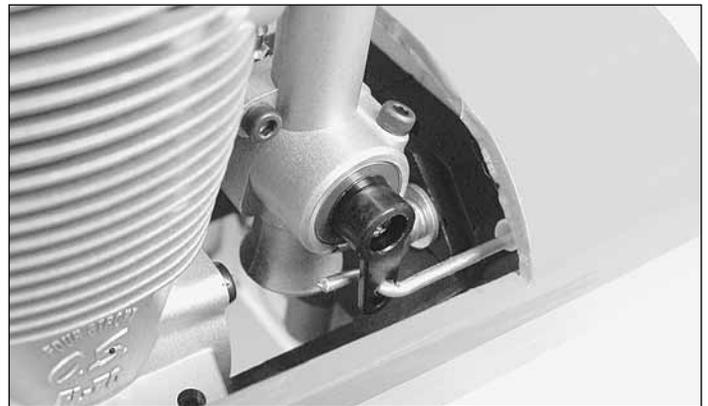


1. Hook up the throttle using the 14" [350mm] pushrod, a 90° pushrod connector on the servo and a nylon clevis on the carburetor arm. If using an O.S. Max AX series engine, the hole for the pushrod guide tube is already cut in the firewall. If using a different engine, you may need to cut a new hole in the firewall for the guide tube that aligns with your carburetor arm. If you do, mark the location of the new hole, remove the engine if necessary, and then use an extended 3/16" [4.8mm] drill (available at hardware or home improvement stores) or a 3/16" [4.8mm] brass tube sharpened on the end to cut a new hole in the firewall.

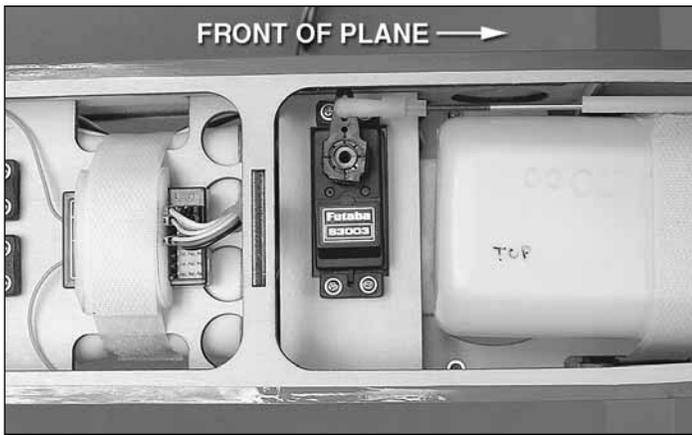
Proceed to steps 6 and 7 on page 19.

Four-Stroke Hookup

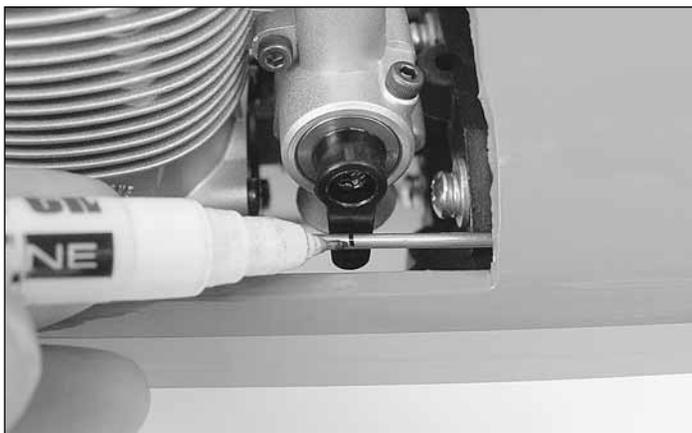
1. If using an O.S. Max FL .70, guide the 3/16" x 4-3/4" [4 x 120mm] plastic throttle pushrod guide tube through the hole in the firewall that aligns with the carburetor arm. If using a different engine and the hole in the firewall for the guide tube does not align with the carburetor arm, you may need to cut a new hole in the firewall for the guide tube that aligns with the carburetor arm. If you do, mark the location of the new hole, remove the engine if necessary, and then use an extended 3/16" [4.8mm] drill (available at hardware or home improvement stores) or a 3/16" [4.8mm] brass tube sharpened on the end to cut a new hole in the firewall.



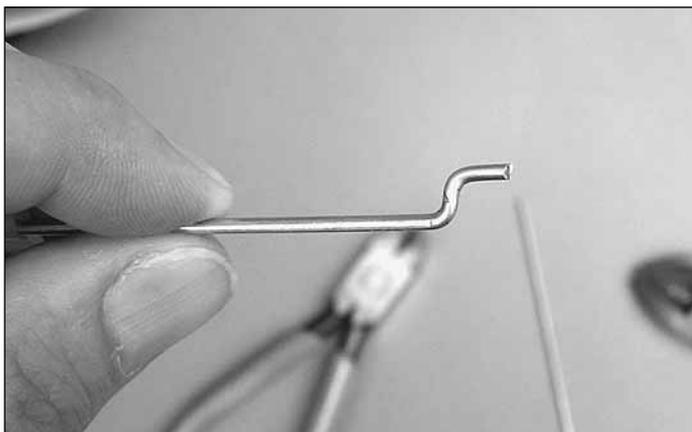
2. Remove the engine from the mount. Enlarge the hole in the carburetor arm to fit the 7-1/2" [190mm] 4-stroke throttle pushrod wire that has a Z-bend on one end. Fit the Z-bend into the carb arm. Then, remount the engine sliding the pushrod up through the guide tube.



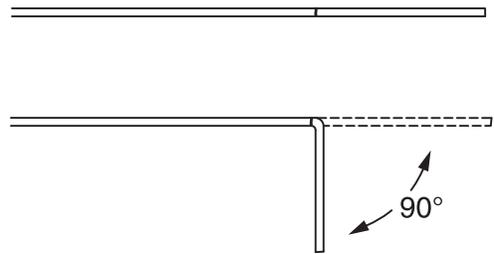
❑ 3. Connect the threaded end of the pushrod to the throttle servo with a clevis as shown. If the pushrod is **not** the correct length, make a new pushrod from the 14" [350mm] pushrod as shown:



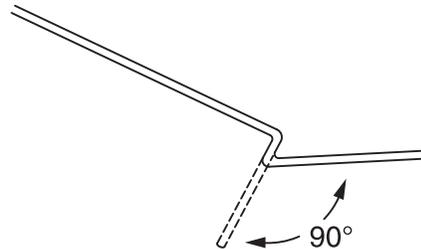
❑ A. With the servo arm and the carburetor arm centered, use a fine-point felt-tip pen to mark the pushrod wire where it crosses the holes in the carburetor arm.



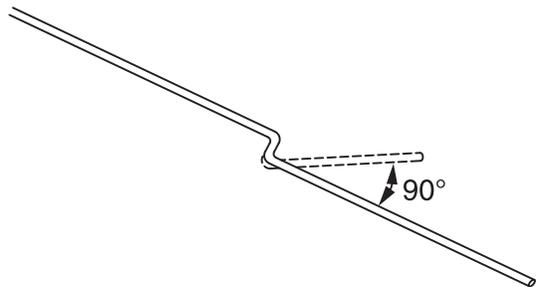
❑ B. Disconnect the pushrod from the servo. Make a "Z-bend" in the pushrod at the mark described as follows;



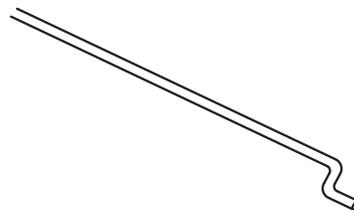
❑ I. Make a 90° bend at the mark.



❑ II. Make a second 90° bend 3/32" [2mm] ahead of and perpendicular to the first.



❑ III. Now twist the wire so the Z-bend is in one plane.

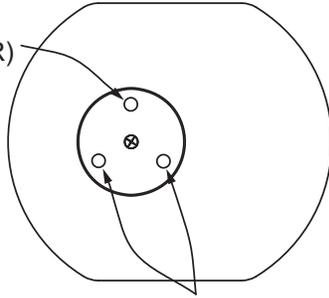


❑ IV. Cut off the excess wire.

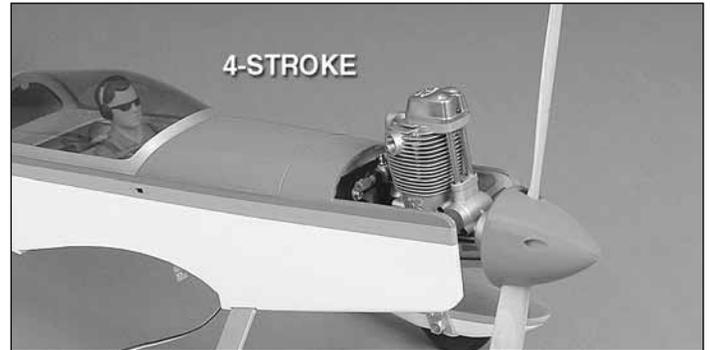
❑ 4. Thread the clevis in or out on the threaded end of the pushrod so that when the servo arm is centered, the carburetor arm will be too.

❑ 5. Use medium CA to glue the throttle guide tube into the firewall.

VENT/OVERFLOW
(CONNECT TO
FITTING ON MUFFLER)



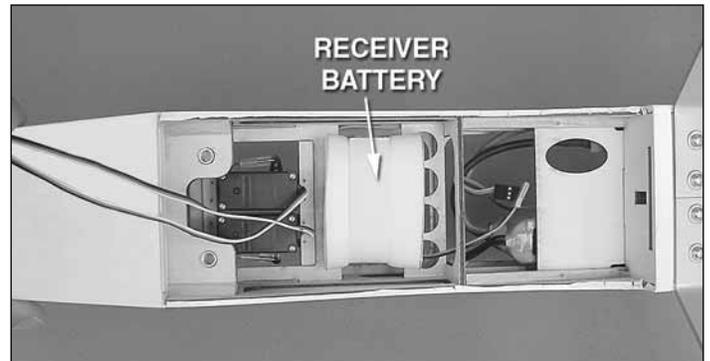
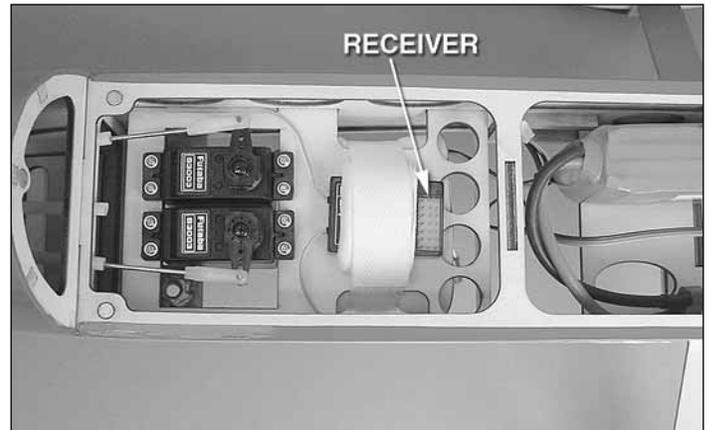
ONE LINE IS FOR FUELING/DEFUELING AND THE OTHER LINE GOES TO THE CARBURETOR (IT DOESN'T MATTER WHICH LINE GOES WHERE BECAUSE THEY ARE BOTH THE SAME INSIDE THE FUEL TANK).



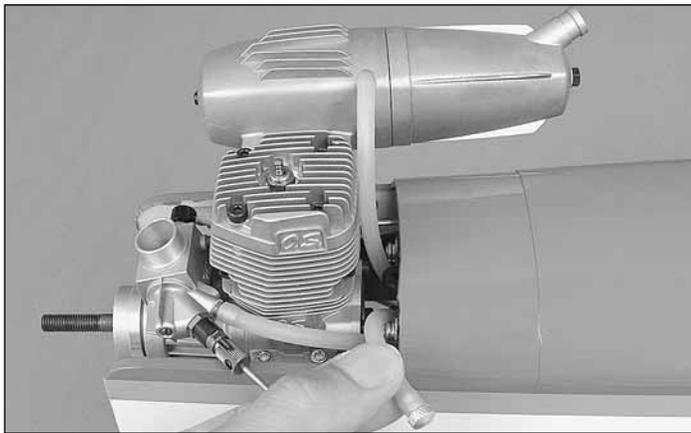
❑ 7. Mount a balanced propeller and the spinner included with this kit.

FINAL ASSEMBLY

Final Radio Installation

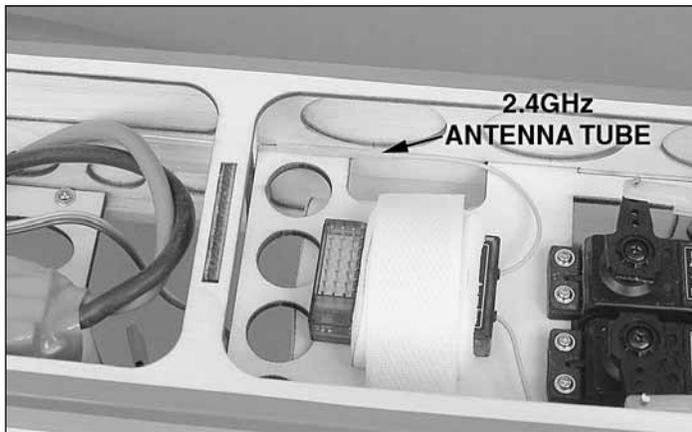
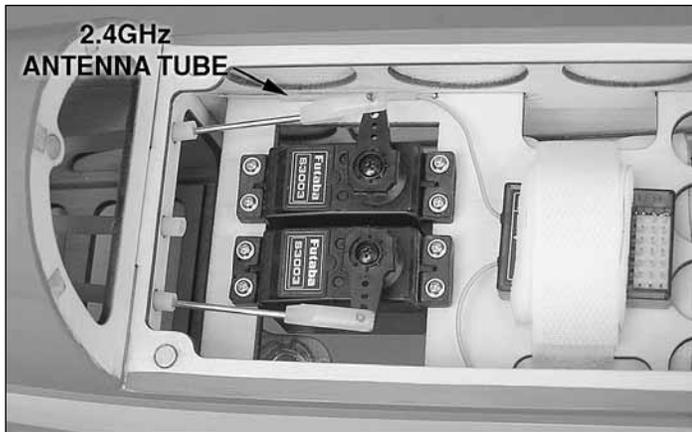


❑ 1. Wrap both the Rx battery and the receiver in 1/4" [6mm] R/C foam rubber using tape to hold the halves together.

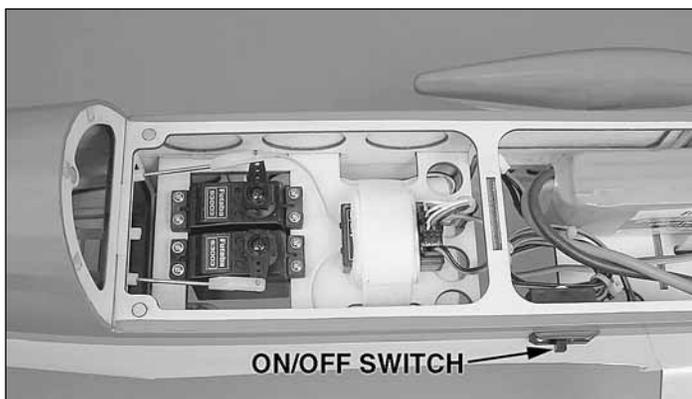


❑ 6. Mount the muffler to your engine and connect the fuel lines to the fuel tank as shown in the diagram. Note that the O.S.[®] FL .70 has two fuel fittings on the muffler. The fitting with the larger hole goes to the vent line on the fuel tank and the other fitting with the smaller hole goes to the crankcase vent in the backplate of the engine. The line with the fuel line plug goes to either of the "clunk" lines on the fuel tank that will be used for fueling and defueling the tank.

Make another strap from more of the included hook-and-loop material to mount the battery to the bottom of the servo tray and mount the receiver to the top of the receiver tray.

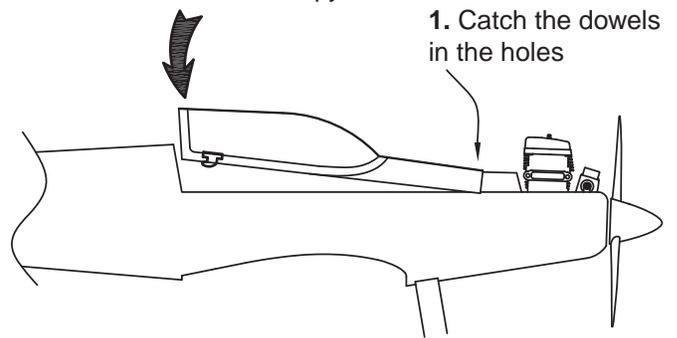


❑ 2. If using a 2.4GHz receiver, cut two 1" [25mm] antenna guide tubes from the included 4" [100mm] guide tube. Glue the tubes into position so the antennas protrude through the holes in the formers as shown. If using a 72mHz receiver, guide the antenna down through the antenna tube already built into the fuselage.

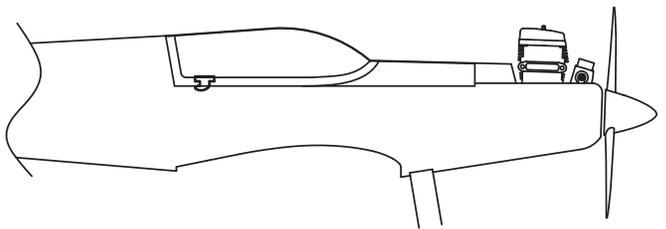


❑ 3. Of the four switch mounting locations pre-cut into the fuselage sides, determine which one you will use for mounting the on/off switch for the receiver (or, if none of these are suitable, use the switch mounting plate that came with your switch as a template for cutting new holes). **Note:** For glow engines the switch should be mounted on the side of the fuselage **opposite** the muffler. Cut the covering from the switch mount holes and mount the on/off switch. Then connect the switch to the radio and battery.

2. Lower the canopy



3. Pull back to lock



❑ 4. Install the canopy hatch to the fuselage and pull it backwards into position, making sure the tabs lock it down and the magnets catch.

Apply the Decals

1. Use scissors or a sharp hobby knife to cut the decals from the sheet.

2. Be certain the model is clean and free from oily fingerprints and dust. Prepare a dishpan or small bucket with a mixture of liquid dish soap and warm water—about one teaspoon of soap per gallon of water. Submerge the decal in the soap and water and peel off the paper backing. **Note:** Even though the decals have a “sticky-back” and are not the water transfer type, submersing them in soap and water allows accurate positioning and reduces air bubbles underneath.

3. Position decal on the model where desired. Holding the decal down, use a paper towel to wipe most of the water away.

4. Use a piece of soft balsa or something similar to squeegee remaining water from under the decal. Apply the rest of the decals the same way.

GET THE MODEL READY TO FLY

Battery Precautions

Note: This section is provided for those modelers who will be powering their Escapade with an electric motor.

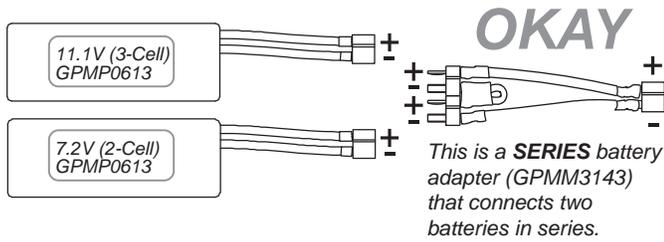
Although a single, 4S (4-cells connected in series) battery is recommended for powering the Escapade, some modelers may come up with different battery configurations and end up connecting two 2S (2-cell) batteries to achieve the required

Voltage. Although the following information does not apply to modelers using a single battery as recommended, it is still educational. But modelers using more than one battery to fly their Escapade should read and know the following battery precautions.

There are two ways to connect multiple battery packs: In **Series** and in **Parallel**.

❑ 1. Connecting batteries in “**Series**” means to connect the +’s to the -’s and the -’s to the +’s. This combines the battery’s Voltages, but the capacity remains the same.

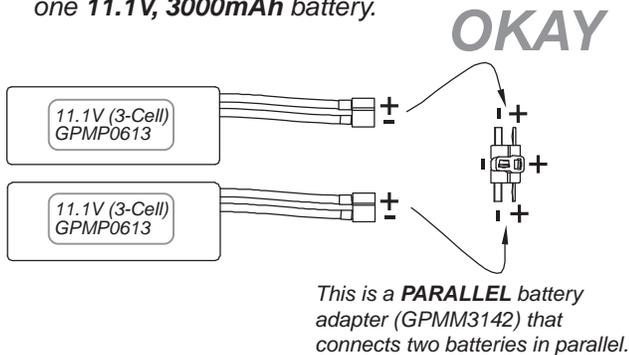
*These are two 3200mAh batteries (one 11.1V and the other 7.4V). When joined in **SERIES**, the result will be an 18.5V, 3200 mAh battery.*



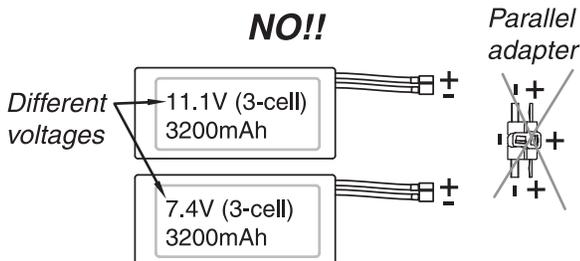
It’s okay to connect batteries with different voltages in series to achieve the new, desired voltage.

❑ 2. Connecting batteries in “**Parallel**” means to connect the +’s to the +’s and the -’s to the -’s. This combines the battery’s capacities, but the Voltage remains the same.

*These two 1500mAh batteries (both 11.1V) are being joined in **PARALLEL**. The result will be one 11.1V, 3000mAh battery.*

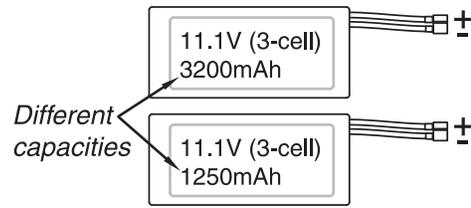


NEVER connect battery packs with different Voltages in **Parallel**—only combine in **Series**. Otherwise, the batteries will try to “equalize” with the larger one trying to “charge” the smaller one, thus causing heat and likely a fire.



Also **NEVER** connect battery packs with different capacities in Series or in Parallel.

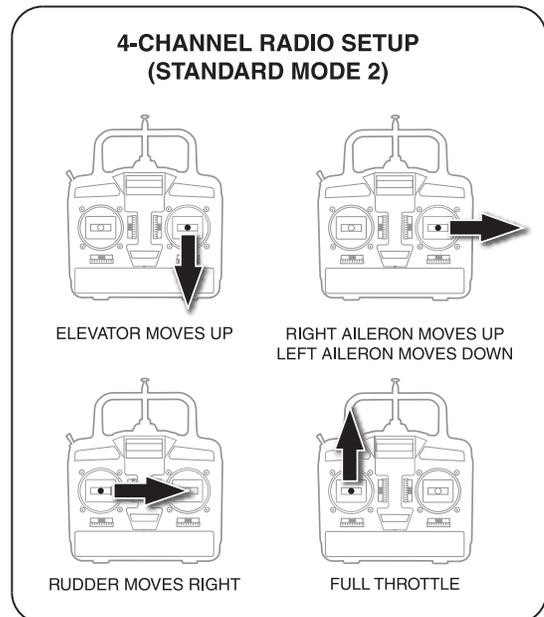
NO!!



Check the Control Directions

❑ 1. The servos were already centered during assembly, but now is a good time to do a final check. Turn on the transmitter and receiver and center the trims. If necessary, remove the servo arms from the servos and reposition them so they are centered. Reinstall the screws that hold on the servo arms.

❑ 2. With the transmitter and receiver still on, check all the control surfaces to see if they are centered. If necessary, adjust the clevises on the pushrods to center the control surfaces.



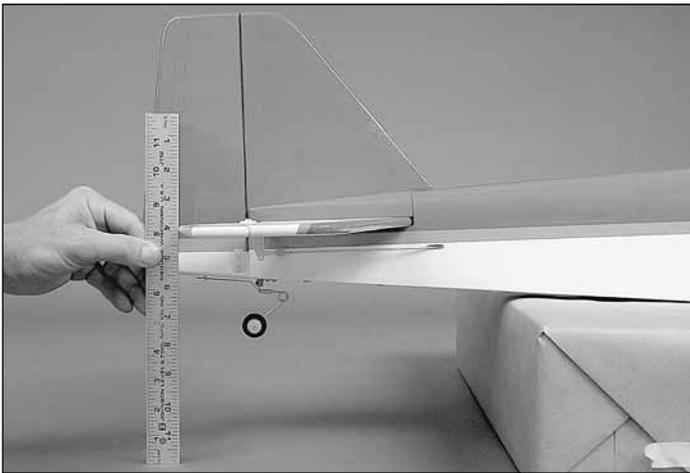
❑ 3. Make certain that the control surfaces and the carburetor respond in the correct direction as shown in the diagram. If any of the controls respond in the wrong direction, use the servo reversing in the transmitter to reverse the servos connected to those controls. Be certain the control surfaces have remained centered. Adjust if necessary.

Set the Control Throws

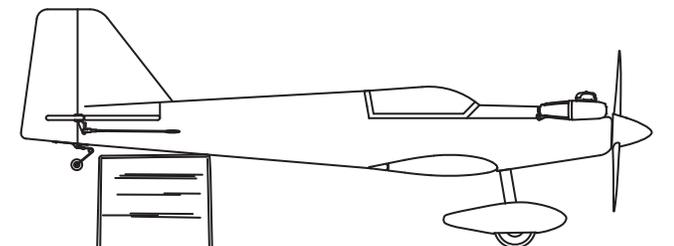
To ensure a successful first flight, fly your Escapade set up according to the C.G. and control surface throws specified in this manual. The throws and C.G. are not arbitrary, but have been determined through extensive testing and accurate record-keeping. They will provide you with the best chance for success and an enjoyable first flight that should be surprise-free. Additionally, the throws and C.G. shown are true, real data which will allow the model to perform in the manner in which it was intended when flown by a pilot of the skill level for which it was designed. **DO NOT OVERLOOK THESE IMPORTANT PROCEDURES.** A model that is not properly set up may be unstable and possibly unflyable.

The throws are also provided in degrees should you have an instrument capable of measuring the throws in that way.

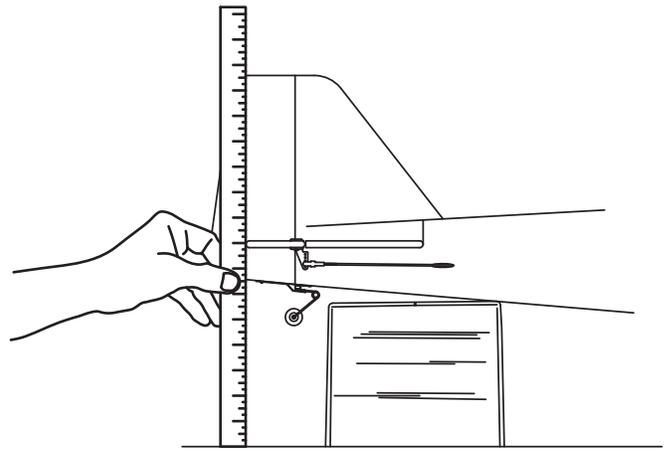
Note: The throws are measured at the **widest part** of the elevators and rudder.



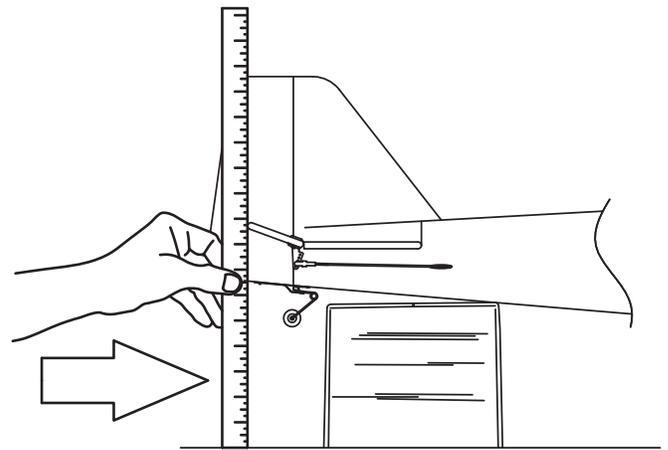
Using the method for measuring the throws illustrated as follows, adjust the locations of the pushrods in the control horns and/or in the servo arms (or use the programming in your radio) to set the control throws according to the measurements provided in the **Control Throws Chart**.



- A. Use a small box or something similar to prop up the fuselage until the wings and horizontal stab are level.



- B. Take the reading of the surface you are measuring at the widest part of the control surface at the trailing edge.



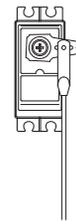
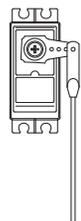
(MOVE THE RULER FORWARD)

- C. Move the control surface and move your ruler forward. Read the measurement to get the throw.

SERVO

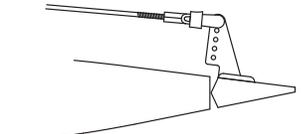
PUSHROD
FARTHER OUT;
MORE THROW

PUSHROD
CLOSER IN;
LESS THROW

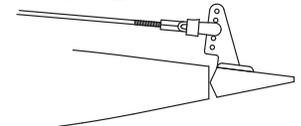


CONTROL SURFACE

PUSHROD FARTHER OUT;
LESS THROW



PUSHROD CLOSER IN;
MORE THROW



Note the effect pushrod location has on the throws. If using programming in your transmitter to adjust the throws, note that the pushrods should be connected so that with the ATVs (or endpoints) at or near 100%, you can get the throws specified. In other words, with the ATVs at 100%, **FIRST** change the pushrod location to get the correct throws as close as possible, **THEN** use the programming for fine-tuning.

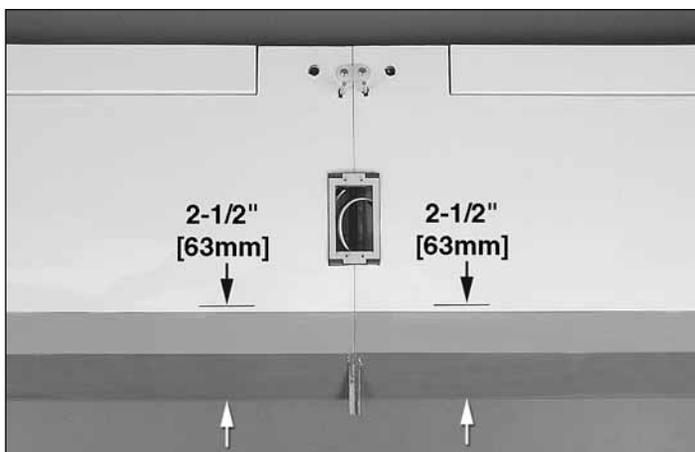
These are the recommended control surface throws:

HIGH RATE	
ELEVATOR:	1-1/4" [32mm], 25° up 1-1/4" [32mm], 25° down
RUDDER:	2" [51mm], 26° up 2" [51mm], 26° down
AILERONS:	1/2" [13mm], 22° up 1/2" [13mm], 22° down
LOW RATE	
ELEVATOR:	3/4" [19mm], 15° up 3/4" [19mm], 15° down
RUDDER:	1-1/4" [32mm], 17° up 1-1/4" [32mm], 17° down
AILERONS:	1/4" [6mm], 11° up 1/4" [6mm], 11° down

Balance the Model (C.G.)

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

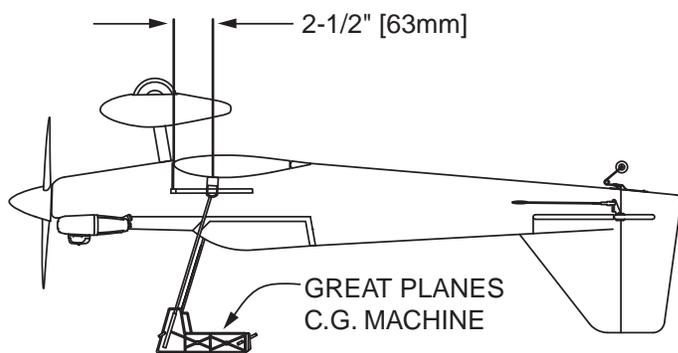
At this stage the model should be in ready-to-fly condition with all of the systems in place including the complete radio system, engine, muffler, propeller, spinner and landing gear. If you've built the electric version, install the motor battery. If you've built the glow version, the fuel tank should be empty.



1. If using a Great Planes C.G. Machine to balance the model, set the rulers to 2-1/2" [63mm]. If not using a C.G. Machine, join the wings and use a fine-point felt tip pen to mark a line on the top of wings on both sides of the fuselage 2-1/2" [63mm] back from the leading edge.

This is where your Escapade should balance for first flights. Later though, you may wish to experiment by shifting the C.G. up to 1/2" [12mm] forward or 1/2" [12mm] back to change the flying characteristics. Moving the C.G. forward will improve the smoothness and stability, but the Escapade will then be less aerobatic (which is fine for less-experienced pilots). Moving the C.G. aft makes the Escapade more maneuverable and aerobatic for experienced pilots. In any case, **start at the recommended balance point** and do not at any time balance the model outside the specified range.

2. Cut 1/2" [13mm] from both nylon wing bolts (this will keep them from interfering with the elevator and rudder servos inside the fuselage). Bolt the wing to the fuselage. Place the model upside-down on the C.G. Machine or lift it by your fingers at the marks you made.



3. With the wing attached to the fuselage, all parts of the model installed (ready to fly as previously described), place the model upside-down on a Great Planes C.G. Machine, or lift it upside-down at the balance point you marked.

4. If the tail drops, the model is "tail heavy" and weight must be added to the **nose** to balance. If the nose drops, the model is "nose heavy" and weight must be added to the **tail** to balance. If additional weight is required, nose weight may be easily added by using a "spinner weight" (GPMQ4645 for the 1 oz. [28g] weight, or GPMQ4646 for the 2 oz. [57g] weight). If spinner weight is not practical or is not enough, use Great Planes (GPMQ4485) "stick-on" lead. A good place to add stick-on nose weight is to the front or back of the firewall (don't attach weight to the fuselage sides forward of the firewall—it is not intended to support weight). Begin by placing incrementally increasing amounts of weight on the bottom of the fuselage over the firewall until the model balances. Once you have determined the amount of weight required, it can be permanently attached. If required, tail weight may be added by removing the stab and fin and permanently gluing it to the bottom of the stab between the fuselage sides.

Note: Do not rely upon the adhesive on the back of the lead weight to permanently hold it in place. Over time, fuel and exhaust residue may soften the adhesive and cause the weight to fall off. Use #2 sheet metal screws, RTV silicone or epoxy to permanently hold the weight in place.

5. **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 by the engine propeller shaft and the bottom of the fuselage under the trailing edge of the fin. Do this several times.
- ❑ 2. If one wing always drops when you lift the model, it means that side is heavy. Balance the airplane by adding weight to the other wing tip. **An airplane that has been laterally balanced will track better in loops and other maneuvers.**

PREFLIGHT

Identify Your Model

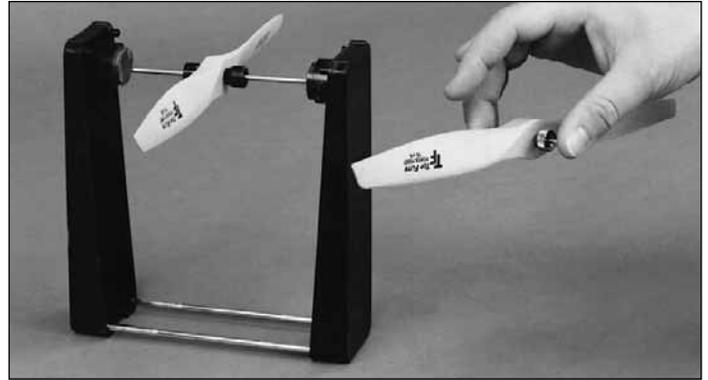
No matter if you fly at an AMA sanctioned R/C club site or if you fly somewhere on your own, you should always have your name, address, telephone number and AMA number on or inside your model. It is **required** at all AMA R/C club flying sites and AMA sanctioned flying events. Fill out the identification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

Balance Propellers



Carefully balance your propeller and spare propellers before you fly. An unbalanced prop can be the single most significant cause of vibration that can damage your model. Not only will engine mounting screws and bolts loosen, possibly with disastrous effect, but vibration may also damage your radio receiver and battery. Vibration can also cause your fuel to foam, which will, in turn, cause your engine to run hot or quit.

We use a Top Flite Precision Magnetic Prop Balancer (TOPQ5700) in the workshop and keep a Great Planes Fingertip Prop Balancer (GPMQ5000) in our flight box.

Ground Check & Range Check

If using a glow engine, run the engine for a few minutes to make sure it idles reliably, transitions smoothly and maintains full power indefinitely. If using an electric motor, make sure the motor runs smooth at all RPMs including full-throttle. Afterward, inspect the model closely, making sure all fasteners, pushrods and connections have remained tight and the hinges are secure. Always ground check the operational range 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 engine off and once with the engine (or 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, poor solder joints in your battery pack or a defective cell, or a damaged receiver crystal from a previous crash.

ENGINE SAFETY PRECAUTIONS

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

Keep all engine fuel in a safe place, away from high heat, sparks or flames, as fuel is very flammable. Do not smoke near the engine or fuel; and remember that engine exhaust gives off a great deal of deadly carbon monoxide. Therefore, **do not run the engine in a closed room or garage.**

Get help from an experienced pilot when learning to operate engines.

Use safety glasses when starting or running engines.

Do not run the engine in an area of loose gravel or sand; the propeller may throw such material in your face or eyes.

Keep your face and body as well as all spectators away from the plane of rotation of the propeller as you start and run the engine.

Keep these items away from the prop: loose clothing, shirt sleeves, ties, scarfs, long hair or loose objects such as pencils or screwdrivers that may fall out of shirt or jacket pockets into the prop.

Use a "chicken stick" or electric starter to start the engine. Do not use your fingers to flip the propeller. Make certain the glow plug clip or connector is secure so that it will not pop off or otherwise get into the running propeller.

Make all engine adjustments from behind the rotating propeller.

The engine gets hot! Do not touch it during or right after operation. Make sure fuel lines are in good condition so fuel will not leak onto a hot engine, causing a fire.

To stop a glow engine, cut off the fuel supply by closing off the fuel line or following the engine manufacturer's recommendations. Do not use hands, fingers or any other body part to try to stop the engine. To stop a gasoline powered engine an on/off switch should be connected to the engine coil. Do not throw anything into the propeller of a running engine.

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. Be certain you have checked and set the C.G. according to the measurements provided in the manual.
- 2. Be certain the battery and receiver are securely mounted. Simply stuffing them into place with foam rubber is not sufficient.
- 3. If using a radio on 72MHz, extend the receiver antenna down through the antenna tube inside the fuselage. If using a radio on 2.4GHz, make sure the antenna(s) are mounted and oriented as suggested in the instructions that came with the radio system.
- 4. Make sure the model has been balanced *laterally* as explained in the instructions.
- 5. Use threadlocking compound to secure critical fasteners such as the screws that hold the wheel collars to the axles, screws that hold the carburetor arm (if applicable), motor/engine mount bolts, etc.
- 6. Add a drop of oil to the axles so the wheels will turn freely.
- 7. Make sure all hinges are **securely** glued in place by tugging on the control surfaces.
- 8. Reinforce holes for wood screws with thin CA where appropriate (servo mounting screws, aileron control horns).
- 9. Confirm that all controls operate in the correct direction and the throws are set up according to the manual.
- 10. Make sure there are silicone retainers on all the clevises and that all servo arms are secured to the servos with the screws included with your radio.
- 11. Secure connections between servo wires and Y-connectors or servo extensions, and the connection between your battery pack and the on/off switch with vinyl tape, heat shrink tubing or special clips suitable for that purpose.
- 12. Make sure any servo extension cords you may have used do not interfere with other systems (servo arms, pushrods, etc.).
- 13. Make sure the fuel lines are connected and are not kinked.
- 14. Balance your propeller (and spare propellers).
- 15. Tighten the propeller nut and spinner.
- 16. Place your name, address, AMA number and telephone number on or inside your model.
- 17. Make sure your receiver battery pack is fully charged.
- 18. If you wish to photograph your model, do so before your first flight.
- 19. Range check your radio when you get to the flying field.

FLYING

The Escapade is a great-flying model that flies smoothly and predictably. The Escapade does not, however, possess the same self-recovery characteristics of a primary R/C trainer and should be flown only by pilots who have at least been checked out on a high-wing trainer.

CAUTION (THIS APPLIES TO ALL R/C AIRPLANES): If, while flying, you notice an alarming or unusual sound such as a low-pitched "buzz," this may indicate control surface *flutter*. Flutter occurs when a control surface (such as an aileron or elevator) or a flying surface (such as a wing or stab) rapidly vibrates up and down (thus causing the noise). In extreme cases, if not detected immediately, flutter can actually cause the control surface to detach or the flying surface to fail, thus causing loss of control followed by an impending crash. The best thing to do when flutter is detected is to slow the model **immediately** by reducing power, then land as soon as safely possible. Identify which surface fluttered (so the problem may be resolved) by checking all the servo grommets for deterioration or signs of vibration. Make certain all pushrod linkages are secure and free of play. If it fluttered once, under similar circumstances it will probably flutter again unless the problem is fixed. Some things which can cause flutter are; Excessive hinge gap; Not mounting control horns solidly; Poor fit of clevis pin in horn; Side-play of wire pushrods caused by large bends; Excessive free play in servo gears; Insecure servo mounting; and one of the most prevalent causes of flutter; Flying an over-powered model at excessive speeds.

Takeoff

The Escapade is an ordinary low-wing trainer/sport model, so there is nothing particular you will have to be "on guard" for. But if you're a relatively new R/C pilot here are a few suggestions for getting your Escapade "up" and "down" without any mishaps;

Make a few practice runs up and down the runway to see if the tail wheel is centered so the model will track straight on the ground—this is a little more important on paved runways where the steering is more sensitive than on grass. A slight amount of "veer" is okay because that can be controlled by the rudder, but if the model veers too far you should use pliers to bend the tail gear wire as necessary.

Remember to take off into the wind. Advance the throttle moderately, but smoothly. When the model reaches an acceptable flying speed (which it will do in a matter of seconds) gently apply "up" elevator lifting the model into the air. During the takeoff run and initial climbout, the model may require a slight amount of right rudder to counter engine torque.

Allow the model to establish a safe, gentle climb—don't "jerk" the model into the air and don't make a steep climbout until you know how the model will react. Now is the time to be smooth and in control.

Flight

For reassurance and to keep an eye on other traffic, it is a good idea to have an assistant on the flight line with you. Tell him to remind you to throttle back once the plane gets to a comfortable altitude. While full throttle may be desirable for takeoff, most models fly more smoothly at reduced speeds.

If you're a less-experienced modeler, your first priority will be to throttle back to reach a comfortable flying speed where the model will react somewhat slower than it would at full-throttle. The next priority will be to adjust the trims to get the model to fly straight-and-level.

Once the model has been trimmed, continue to fly around for a few minutes getting used to how the model performs. Test the model's response to the high and low rate settings. After flying around for a while (and while still at a safe altitude with plenty of fuel) practice slow flight and execute practice landing approaches by reducing the throttle to see how the model handles at slower speeds. Add power to see how the model climbs as well. Continue to fly around, executing various maneuvers and making mental notes (or having your assistant write them down) of what trim or C.G. changes may be required to fine tune the model so it flies the way you like. Mind your fuel level, but use this first flight to become familiar with your model before landing.

Landing

When you're ready to land, lower the throttle while on the downwind leg. Allow the nose to pitch downward gradually bleeding off altitude but maintaining air speed. Make a 180° turn into the wind and line up with the runway keeping the nose down all the while maintaining airspeed and control. Level the attitude when the model reaches the runway adding power as necessary to maintain your glide path and airspeed. If you are going to overshoot, smoothly advance the throttle and climb out to make another attempt. When you're ready to make your landing flare and the model is a foot or so off the deck, smoothly increase up elevator until it gently touches down. Once the model is on the runway and has lost flying speed, hold up elevator to place the tail on the ground, regaining tail wheel control.

One final note about flying your Escapade. 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!

