

**GENERAL DYNAMICS**

**F-16<sup>®</sup>**



**ElectriFly<sup>®</sup>**  
by Great Planes

**LOCKHEED MARTIN**

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## INSTRUCTION MANUAL

### SPECIFICATIONS

<b>Wingspan:</b> 22.5 in [570mm]	<b>Weight Range:</b> 32–34 oz [910–960 g]	<b>Motor, ESC:</b> 24-45-3790kV Ammo™, 35A ESC, HyperFlow™ 56mm fan
<b>Wing Area:</b> 166 in <sup>2</sup> [10.7 dm <sup>2</sup> ]	<b>Radio:</b> 4-channel, 4 micro servos, mini receiver	
<b>Wing Loading:</b> 27.8–29.5 oz/ft <sup>2</sup> [85–90 g/dm <sup>2</sup> ]		
<b>Length:</b> 34.5 in [875mm]		

### WARRANTY

Great Planes Model Manufacturing<sup>®</sup> 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.



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

# TABLE OF CONTENTS

<b>INTRODUCTION</b> . . . . .	2	Finish the Model . . . . .	17
Academy of Model Aeronautics . . . . .	2	Apply the Decals . . . . .	18
<b>SAFETY PRECAUTIONS</b> . . . . .	2	<b>GET THE MODEL READY TO FLY</b> . . . . .	19
<b>DECISIONS YOU MUST MAKE</b> . . . . .	3	Set the Control Throws . . . . .	19
Battery and ESC . . . . .	3	Balance the Model (C.G.) . . . . .	19
Servos, Receiver . . . . .	3	Balance the Model Laterally . . . . .	20
<b>ADDITIONAL ITEMS REQUIRED</b> . . . . .	4	<b>PREFLIGHT</b> . . . . .	20
Battery Chargers . . . . .	4	Identify Your Model . . . . .	20
Adhesives and Building Supplies . . . . .	4	Charge the Batteries . . . . .	20
Optional Supplies and Tools . . . . .	4	Assemble the Bungee Launch . . . . .	20
<b>KIT INSPECTION</b> . . . . .	4	<b>AMA SAFETY CODE (excerpts)</b> . . . . .	21
<b>ORDERING REPLACEMENT PARTS</b> . . . . .	4	General . . . . .	21
<b>KIT CONTENTS</b> . . . . .	5	Radio Control . . . . .	21
<b>ASSEMBLY INSTRUCTIONS</b> . . . . .	6	<b>CHECK LIST</b> . . . . .	21
Assemble the Stand . . . . .	6	<b>FLYING</b> . . . . .	22
Prepare the HyperFlow Fan Unit . . . . .	6	Ground Check and Range Check . . . . .	22
Test Run the Motor/Fan Unit . . . . .	8	Takeoff . . . . .	22
Surface Preparation . . . . .	8	Hand-Launch . . . . .	22
Install the Fan Unit . . . . .	8	Bungee-Launch . . . . .	23
Assemble the Wing . . . . .	10	Flying . . . . .	24
Install the Wing Panels . . . . .	12	Landing . . . . .	24
Install the Tail Section and Servos . . . . .	14		

## INTRODUCTION

Thank you for purchasing the Great Planes F-16 EDF (electric ducted fan) ARF. With average speeds approaching 100mph, your jet will have onlookers' full attention as it cuts across the horizon like a full-scale F-16 on patrol. Execute a Split-S to come in for a low, high-speed pass across the flight line. The EDF's whine at full-throttle will echo off nearby buildings, reminding you to keep your fingers tight on the sticks — this bird is moving fast! Fortunately, the F-16 is a very stable flier and doesn't require expert flying skills to pilot, but it's not a beginner's jet. The recommended battery provides just the right amount of flight time for a plane of this size and speed... and when you do bring it in for a landing, it will slow nicely on approach and simply "settle in" on the grass when it's done flying.

For the latest technical updates or manual corrections to the F-16 visit the Great Planes web site at [www.greatplanes.com](http://www.greatplanes.com).

Open the "Airplanes" link, then select F-16 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.



## Academy of Model Aeronautics

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.

## SAFETY PRECAUTIONS

### Protect Your Model, Yourself & Others... Follow These Important Safety Precautions

1. Your F-16 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 F-16, 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 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 F-16 that may require planning or decision making before starting assembly. Order numbers are provided in parentheses.

### Battery and ESC

The F-16 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).

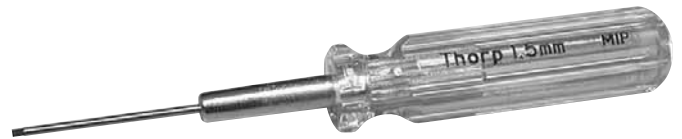
These components drop right in with no modification.

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 an economy 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 Thorp Hex Driver (MIPR9007) is recommended.

## Servos, Receiver

A small receiver and four micro servos in the 20 oz-in torque range are required. Two 6" [152mm] servo extensions are also required. Part numbers are provided below:

Suitable servo choices (in order of preference) for Futaba® servos include:

- S3107 (standard micro – FUTM0025) (shown in manual)
- S3156 (digital, metal gear, high-torque) (FUTM0656)
- S3153MG (digital, metal gear – FUTM0652)
- S3153 (digital – FUTM0653)
- S3117 (high-torque – FUTM0417)
- Hobbico® 6" Extension Futaba J (HCAM2000)

If you install a 4-channel receiver, a Y-harness is needed to join the aileron servos together (FUTM4130). The aileron servos can also be mixed together using a computerized transmitter and 5+ channel receiver such as the Futaba R617FS 7-Channel 2.4GHz FASST™ Receiver (FUTL7627).



## ADDITIONAL ITEMS REQUIRED

### Battery Chargers

- A LiPo-capable battery charger and a power source for the battery charger are required. One recommended charger is the Great Planes *ElectriFly* Triton™ EQ 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 F-16:

- 1/2 oz. [15g] Thin Pro™ CA (GPMP6001)
- 1/2 oz. [15g] Medium Pro CA+ (GPMP6007)
- Pro 30-minute epoxy (GPMP6047)
- Drill bits: #60 .040" [1.07mm], #56 .047" [1.18mm], 1/16" [1.6mm], 3/32" [2.4mm]
- #1 Hobby knife (RMXR6909)
- #11 blades (5-pack, RMXR6930)
- Denatured alcohol (for epoxy clean up)
- Threadlocker thread locking compound (GPMP6060)
- Top Flite® Microballoons Filler 8 oz (TOPR1090)
- 220 grit sandpaper
- Masking tape
- Metal file or rotary tool

### Optional Supplies and Tools

Here is a list of optional supplies and tools that will help you build the F-16 ARF:

- Hobbico® Hobby Syringe 12cc Curved Tip (HCAR3785)
- 1/2 oz. [15g] Thick Pro CA- (GPMP6013)
- 2 oz. [57g] spray CA activator (GPMP6035)
- 4 oz. [113g] aerosol CA activator (GPMP6034)
- CA applicator tips (HCAR3780)
- CA debonder (GPMP6039)

- Great Planes Pro Epoxy 6-Minute Formula 4 oz (GPMP6042)
- Epoxy brushes 6, (GPMP8060)
- Mixing sticks (GPMP8055)
- Mixing cups (GPMP8056)
- Pliers with wire cutter (HCAR0630)
- T.A. Emerald Performance Duster Compressed Air (TAEC1060)
- Hobby Heat™ Micro Torch II (HCAR0755)
- AccuThrow™ Deflection Gauge (GPMP2405)
- CG Machine™ (GPMP2400)
- Hobbico Flexible 18" Ruler Stainless Steel (HCAR0460)
- Top Flite MonoKote® trim seal iron (TOPR2200)
- Top Flite MonoKote heat gun (TOPR2000)
- Hobbico Pin Vise 1/16 Collet w/6 Bits (HCAR0696)
- Great Planes 1/8" x 3/8" [3.2 x 9.5mm] single-sided adhesive foam tape (GPMQ4224)
- Petroleum Jelly

- The wing and horizontal stabilizer of the F-16 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

True Red TOPQ0227

## 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 Ph: (217) 398-8970, ext. 5  
Champaign, IL 61822 Fax: (217) 398-7721

E-mail: [airsupport@greatplanes.com](mailto:airsupport@greatplanes.com)

## ORDERING REPLACEMENT PARTS

Replacement parts for the Great Planes F-16 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](http://www.greatplanes.com).

Select "Where to Buy" in the menu across the top of the page and follow the instructions provided 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.

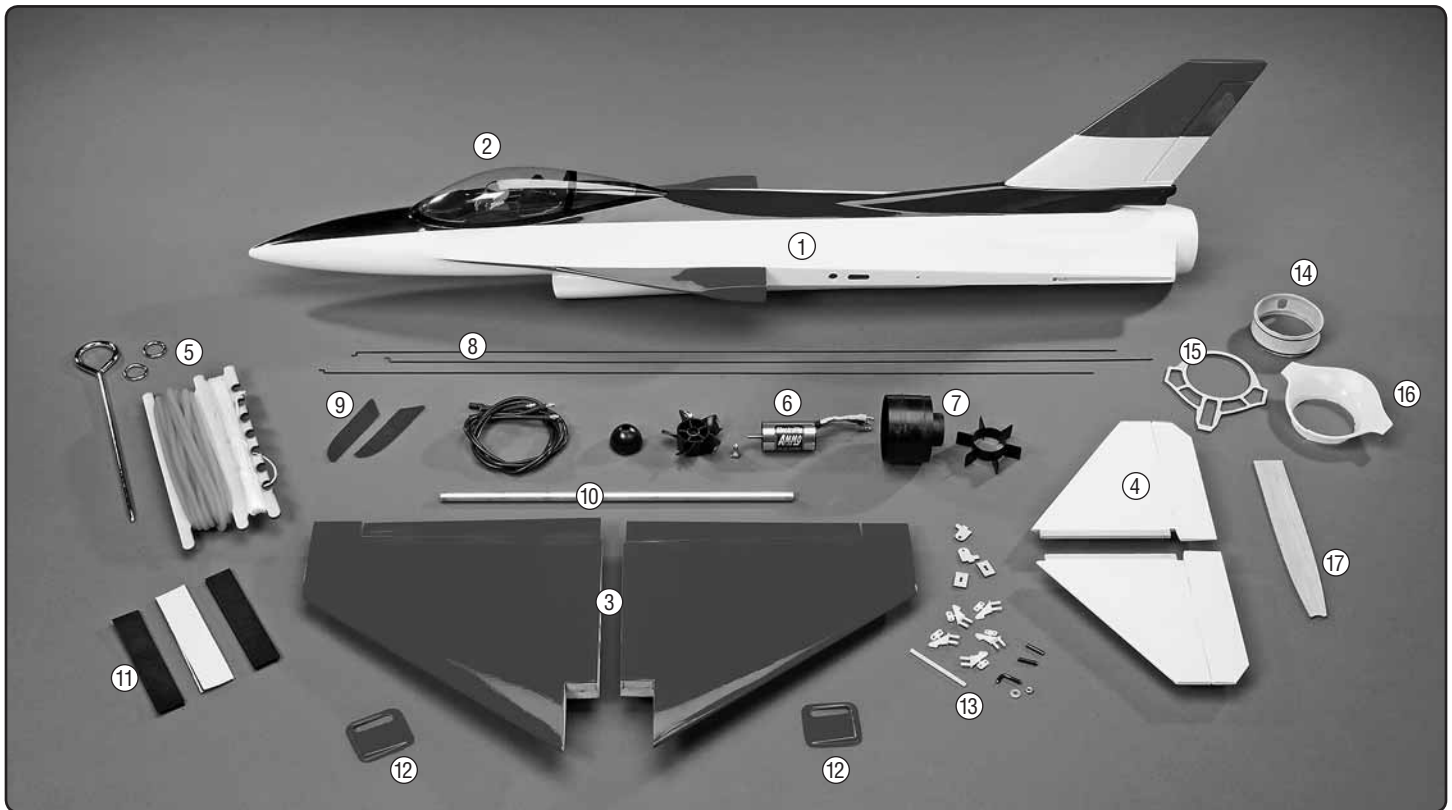
Mail parts orders **Hobby Services**  
and payments by 3002 N Apollo Drive, Suite 1  
personal check to: Champaign IL 61822

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](mailto:productsupport@greatplanes.com), or by telephone at (217) 398-8970.

REPLACEMENT PARTS LIST	
Order No.	Description
GPMA4250	Fuselage F-16 EDF ARF
GPMA4251	Wing F-16 EDF ARF
GPMA4252	Tail Surfaces F-16 EDF ARF
GPMA4253	Cone Adapter F-16 EDF ARF
GPMA4254	Front Flange F-16 EDF ARF
GPMA4255	Hatch F-16 EDF ARF
GPMA4256	Decals F-16 EDF ARF
GPMA4257	Bungee Hook F-16 EDF ARF
GPMG5185	Ammo 24-45-3790 In-Runner Brushless Motor
GPMG3910	Hyperflow 370 EP Ducted Fan w/o Motor
GPMA2885	Bungee Launcher Set

## KIT CONTENTS

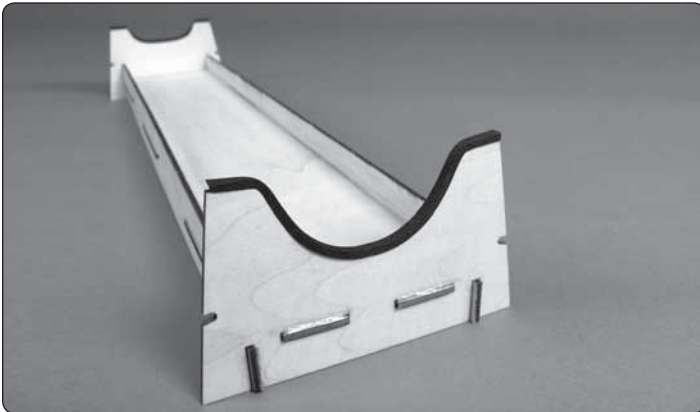
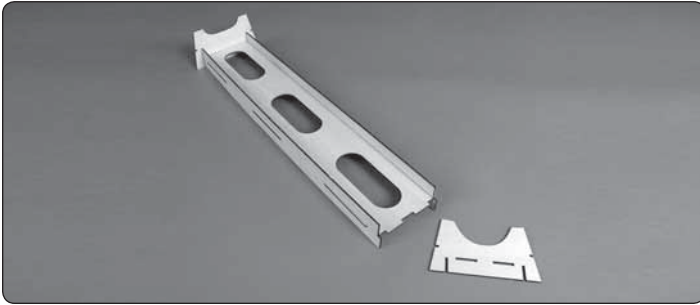


- |                           |                          |                          |
|---------------------------|--------------------------|--------------------------|
| 1. Fuselage               | 7. Hyperflow Fan (EDF)   | 13. Hardware             |
| 2. Canopy Hatch           | 8. Pushrods              | 14. Tail Cone Adapter    |
| 3. Wing Panels            | 9. Grip Tape             | 15. Plywood Former       |
| 4. Horizontal Stabilizers | 10. Wing Tube            | 16. Front Housing Flange |
| 5. Bungee Launch          | 11. Hook & Loop          | 17. Fin Cover            |
| 6. Ammo Motor             | 12. Aileron Servo Covers |                          |

## ASSEMBLY INSTRUCTIONS

### Assemble the Stand

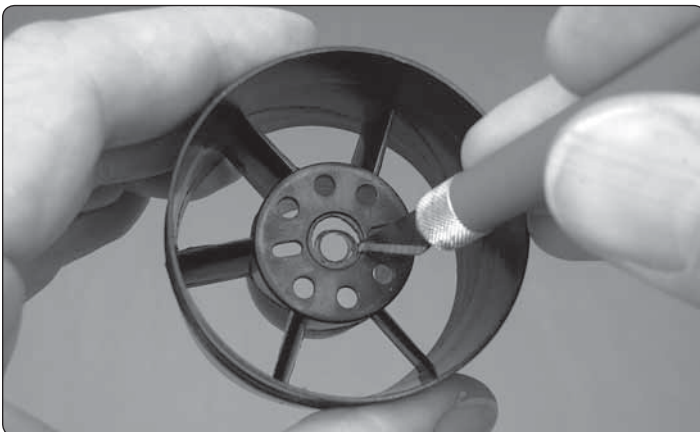
The included plywood stand is used to support your F-16 during assembly and transport.



Test-fit, then glue together the plywood parts of the stand as shown in the photos. The stand may be used as-is, or you could add foam tape cut into 1/8" [3mm] wide strips that can be adhered to the forward and aft saddles. 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

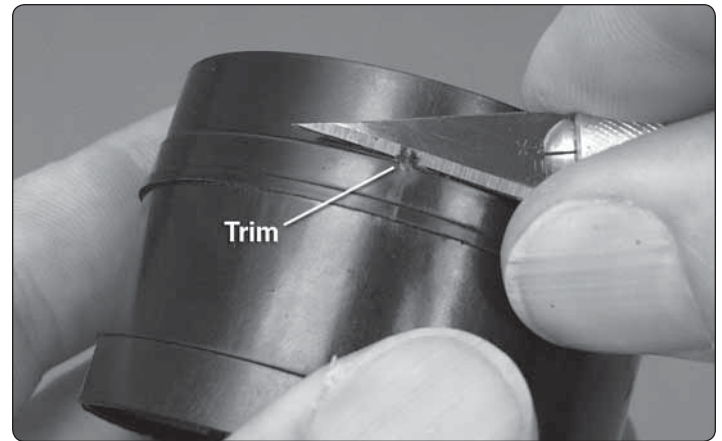
❑ 1. Review steps 1 through 6 for **Installing a Brushless Motor** on pages 6 and 7 of the separate HyperFlow instruction manual, but don't perform any of the steps yet.



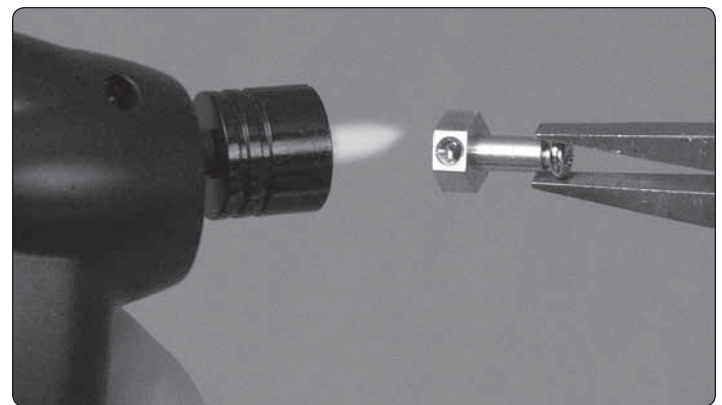
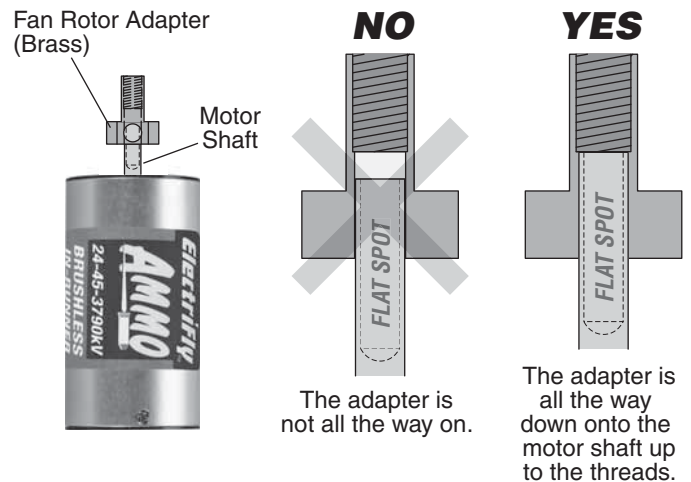
❑ 2. Enlarge the hole in the fan housing as shown. Once the fan unit and motor have been installed in the fuselage, this

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 makes this easier.)



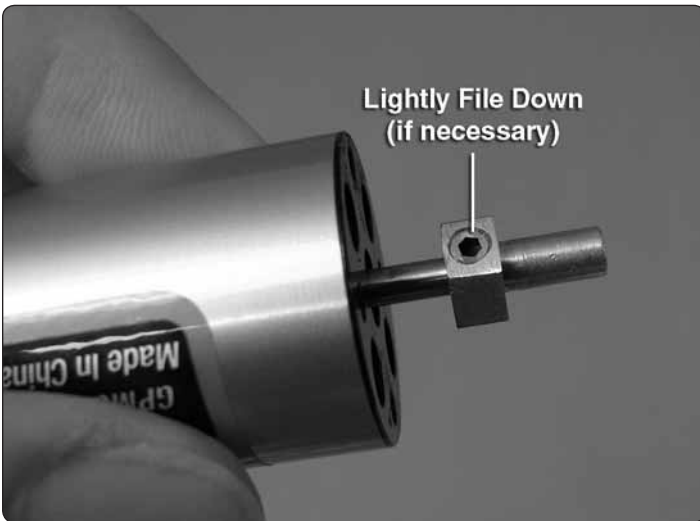
❑ 4. Trim any flashing from around the fan housing so the fiberglass cone adapter will fit well.



❑ 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.



❑ 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.

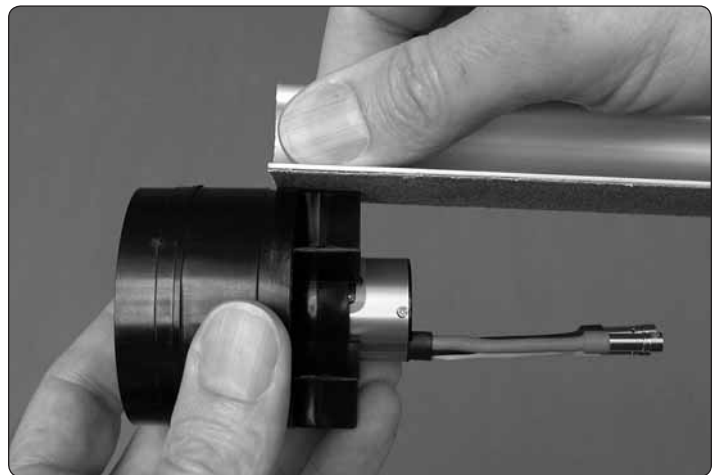
**Hint:** For optimal performance it is desirable for the fan rotor to turn as concentrically (“true”) as possible. Test fit the rotor in different orientations around the adapter, spinning it by hand each time. When you find the orientation that is the truest, use a hobby knife to lightly scratch a 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.

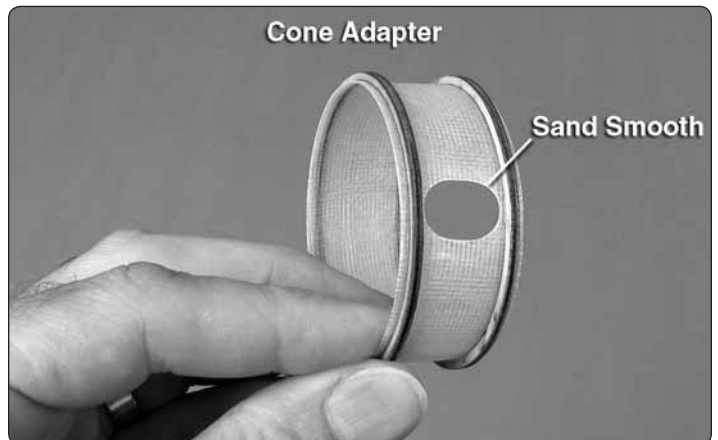


❑ 10. Mount the motor to the fan housing—you can use the 3 x 5mm screws included with the Ammo motor (and a drop of threadlocker on the threads). Any set of holes in the fan housing that align with the holes in the motor may be used, but we used the outer holes in the motor. Use care not to overtighten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



❑ 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.

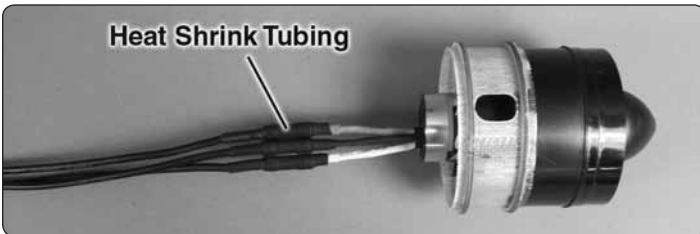


❑ 13. Use medium-grit sandpaper to smooth the rough edges around the motor wire hole in the fiberglass **tail cone adapter** so it won't damage the motor wires.

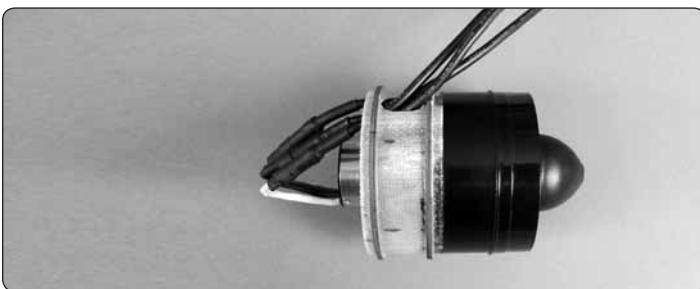


❑ 14. Test fit but do not glue the cone adapter to the rear of the fan housing. Note that the hole in the housing should be 180° from the side of the motor where the wires exit—this will be the **top** of the unit. Once you have the housing and adapter mated correctly, permanently glue the two together 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. 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 thread locking compound on the 3mm screw.



❑ 16. Cut the included heat shrink tubing into three equal lengths. Connect the motor lead extensions to the motor wires. Slide the heat shrink pieces onto the motor lead extensions and use a heat source (heat gun or lighter) to shrink the tubing around the connections in order to prevent them from becoming inadvertently disconnected.



❑ 17. Carefully slide the motor lead wires through the hole in the top of the cone adapter as shown.

### 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.

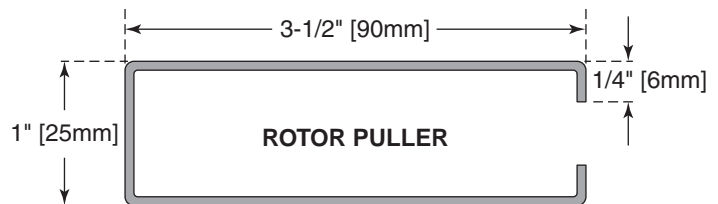
❑ 3. Continue with the rest of the break-in procedure until the system is fully broken-in. Or, if you're satisfied with the way the unit is performing, stop now and mount the unit in the fuselage as described in the next section. Be certain to complete the break-in procedure before flying your F-16 for the first time.

### Surface Preparation

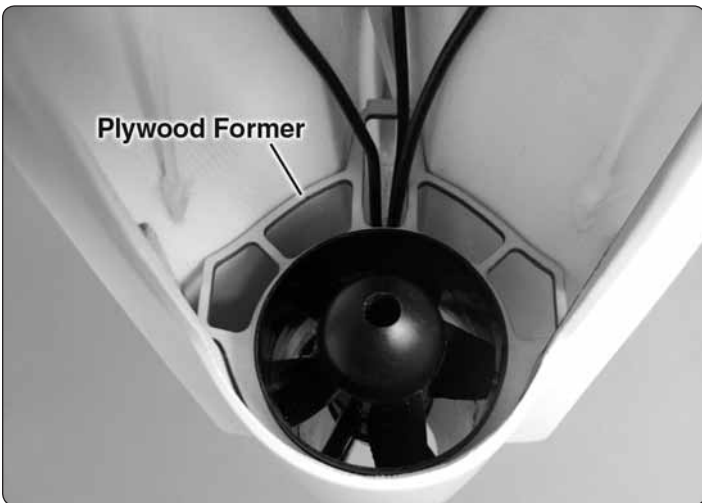
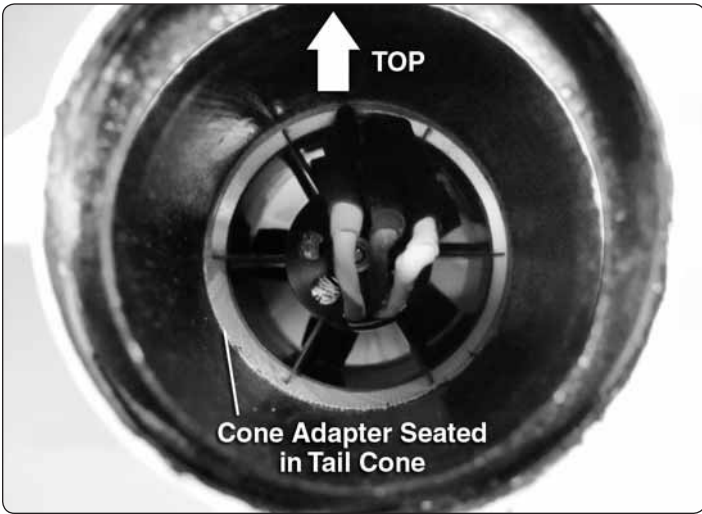
There are several steps in this manual that require you to glue parts to the fiberglass fuselage. Anytime this is done, the fiberglass should first be cleaned with a cloth dampened with denatured alcohol, sanded with 220 grit sandpaper, then cleaned again with denatured alcohol. Doing this will ensure a strong glue bond.

### Install the Fan Unit

**DESIGNER NOTE:** The aft end of the tail cone is not centered within the aft end of the fuselage and this can be seen by looking at the plane from the back side. This is an intentional part of the design to maximize flight performance of the aircraft.



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 out 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. Test fit the fan unit into the fuselage. Guide the fan unit aft until the cone adapter mates up with the tail cone already in the fuselage. The cone adapter should key around the **inside** of the front of the tail cone. Do not proceed until you are comfortable that the fan unit is properly seated into the tail cone. 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. With the fan unit in position, fit the motor lead wires through the opening at the top of the plywood former and fit the former around the fan unit. You must hold the fan unit against the tail cone while doing this to prevent the cone adapter from separating from the tail cone.

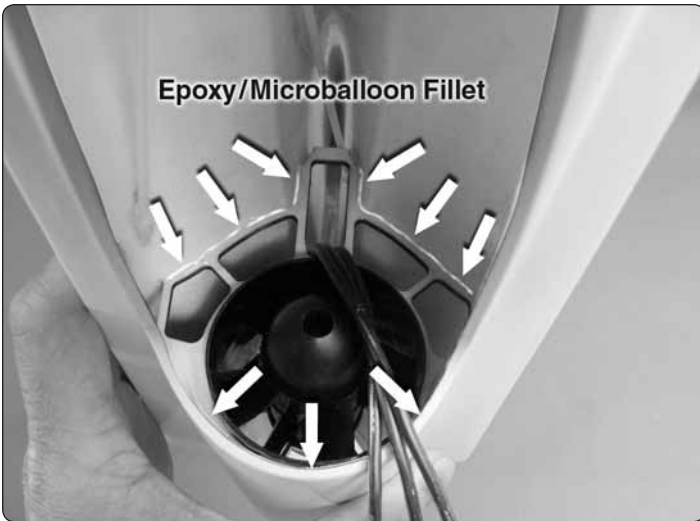


❑ 2. Now that you've confirmed how the fan unit fits, remove it and the plywood former from the fuselage. Apply a bead of 30-minute epoxy mixed with Microballoons filler (4:1 ratio) around the cone adapter and around the outside of the cone in the fuselage. Reinstall the unit into the fuselage, making sure the cone adapter is properly engaged with the front of the cone. Carefully reinstall the plywood former around the fan (without glue), keeping the cone adapter in the tail cone. Wipe away excess epoxy by reaching down in through the back of the tail cone with your finger. Allow the epoxy to harden undisturbed. Hint: 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.

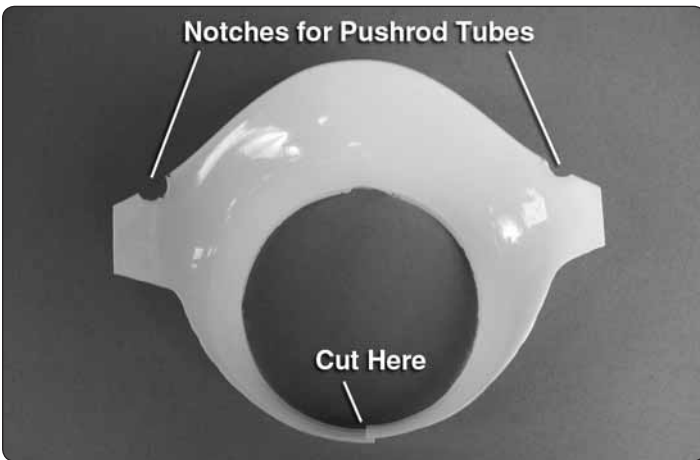


The next three steps require you to apply a mixture of epoxy and Microballoons to create fillets around the plywood former, front housing flange, and fin cover. The fillets can be applied with an epoxy stick or something similar. However, a hobby syringe (HCAR3785) is recommended. Using a syringe will apply the mixture only where you want it and is easier to use when having to reach into the duct channel. In addition, the smooth fillets created using the syringe will be less likely to disrupt incoming air which could slightly reduce fan performance.

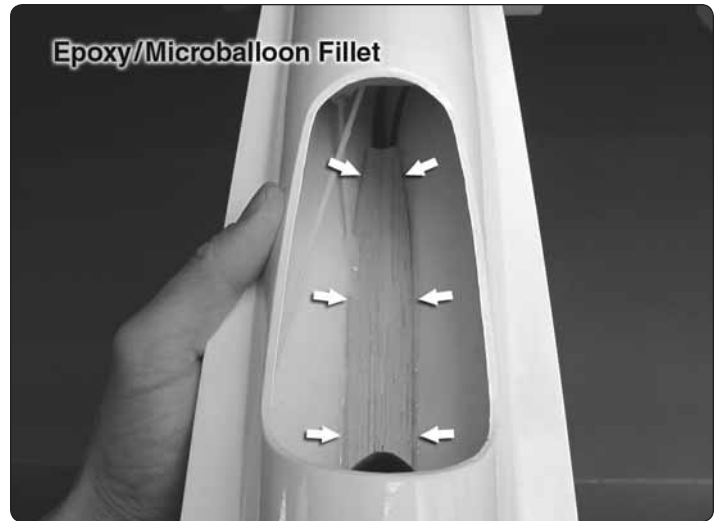
If you choose to use a syringe to complete the following steps, read through them first and prepare the parts before you make your epoxy and Microballoons mixture by dry fitting them in place. When satisfied with the parts fit, make enough epoxy/Microballoons mixture to fill the syringe. Enlarge the opening in the syringe by cutting off a portion of the tip. Complete the next three steps in order. Be aware that excess epoxy will have a tendency to sag. Increasing the ratio of Microballoons to epoxy will make the mixture thicker and less likely to sag, but more difficult to apply and may weaken the bond.



❑ 3. When the epoxy from the previous step has completely cured, mix up another small batch of epoxy and Microballoons (6-minute epoxy is fine) and apply a fillet around the perimeter of the plywood former gluing it to the fuselage.

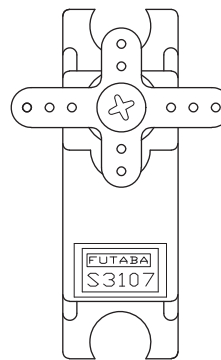
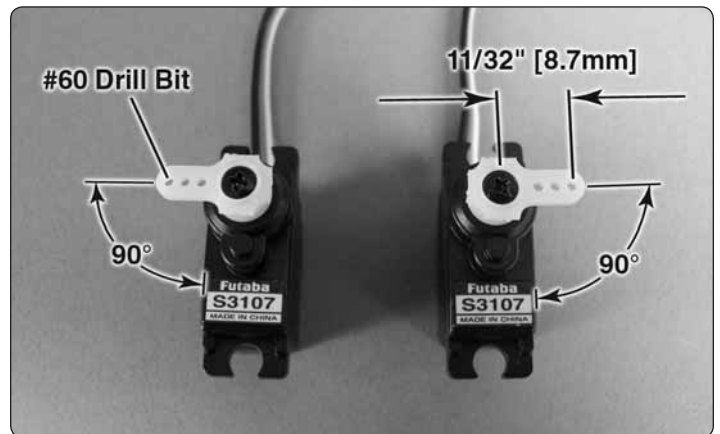


❑ 4. The front housing flange will need to be trimmed to fit inside the fuselage and around the outside of the duct housing. Begin by cutting the bottom of the flange so it can be spread open. Test fit the piece and trim as necessary around the bottom of the flange as well as notches for the pushrod tubes. Work slowly until the flange fits snugly. When satisfied, apply a fillet of epoxy and Microballoons around the perimeter of the flange, gluing it to the fuselage.

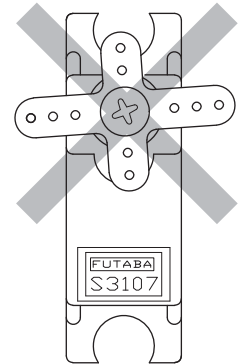


❑ 5. Test fit the fin cover in place. Mark the fin cover where the pushrod tube exits from the vertical fin hollow and cut a notch for it in the fin cover. Be sure that the motor leads are exiting directly out in front of the fin cover with the wires arranged in the scalloped cutout at the tip of the fin cover. Use medium or thick CA glue to tack the piece in place. Apply a fillet of epoxy and Microballoons around the fin cover.

### Assemble the Wing



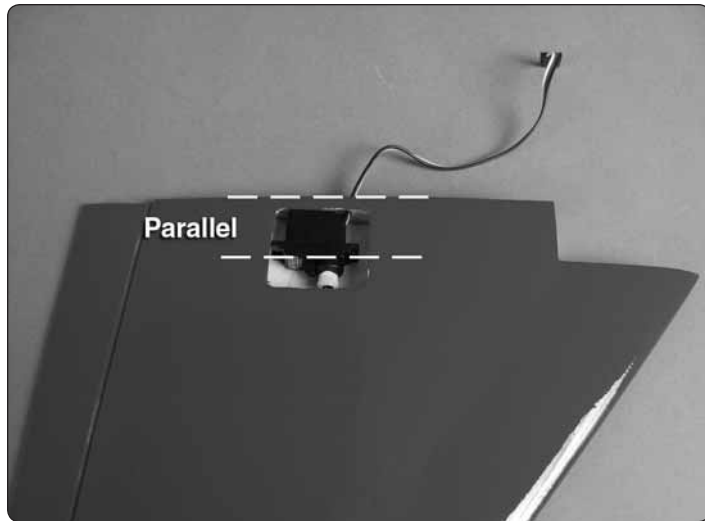
**CORRECT**



**INCORRECT**

❑ 1. Use your radio system to electronically center the aileron servos. Choose the best orientation of the arms on the servo output shafts so they are parallel with the servo cases. Trim off the unused arms leaving one arm that has a hole approximately

11/32" [8.7mm] from the center of the servo. Enlarge the holes that are 11/32" [8.7mm] from the servo centers using a #60 drill bit. If you do not have this size drill bit, you can use a hobby knife to enlarge the holes but work slowly while test fitting the aileron pushrod wires into the holes until you have a snug fit. Be sure to prepare a left and right servo. Reinstall the servo arm screws.

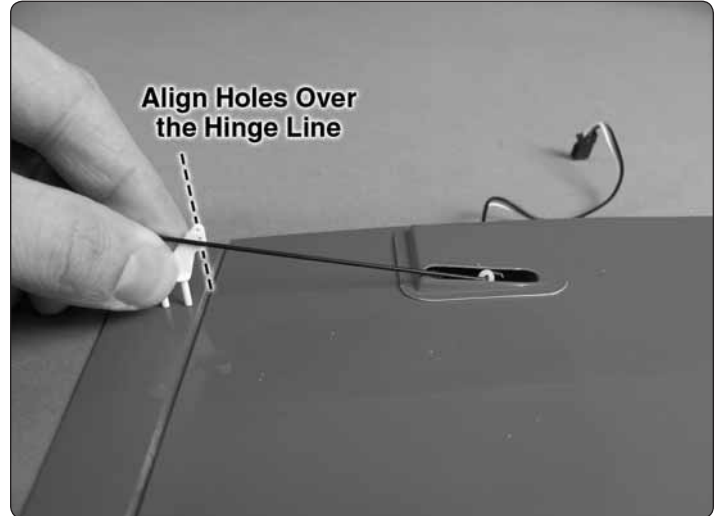
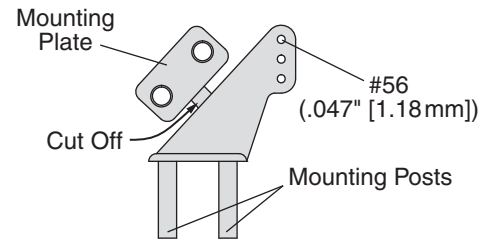


□ 2. Lightly sand the sides of the servos that will be glued to the wings. Clean the servo cases with alcohol. Use medium or thick CA to glue the aileron servos into the servo bays in the wings as shown. Route the aileron servo leads through the holes in the wing roots as you set the servos in place. Be sure the aileron servos are glued square to the root ribs and are positioned as far toward the trailing edge and root rib as possible. Note: when gluing the servos in place, use several dots of glue. Do not saturate the servo with glue as you may need to remove it for repair or replacement. **Also, take care not to get glue in the joint between the top and bottom servo case halves.** Doing so can allow glue to seep into the servo and into the servo gears.



□ 3. Use a few dots of medium or thick CA glue to attach the aileron servo covers over the servo bays. The raised portion of the servo covers should be toward the trailing edge of the wing.

## ELEVATOR CONTROL HORNS



□ 4. Trim the mounting plate from a control horn. Enlarge the outer hole of the control horn with a #56 drill bit (if you do not have a #56 bit, use a hobby knife to carefully enlarge the hole to fit the screw lock pushrod connector shown in step 7). Fit the Z-bend of a 3-15/16" [100mm] into the enlarged hole of an aileron servo arm. Using the pushrod as a guide (keeping it parallel with the wing root rib), position a control horn onto the aileron so that the holes in the control horn are positioned directly over the aileron hinge line. Push the control horn against the aileron with adequate force so the mounting posts make indentations in the aileron. Repeat this step for the other aileron.



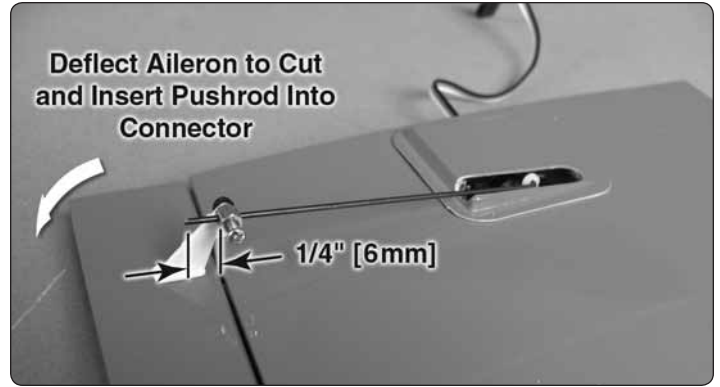
□ 5. Drill 3/32" [2.4mm] holes through the ailerons at the indentations made by the control horn mounting posts.



❑ 6. Apply some medium or thick CA glue to the underside of a control horn base. Insert the control horn into the two holes of one of the ailerons. Apply some glue to the posts as well as the underside of a mounting plate. Press the plate onto the mounting posts. Repeat this step for the other aileron.

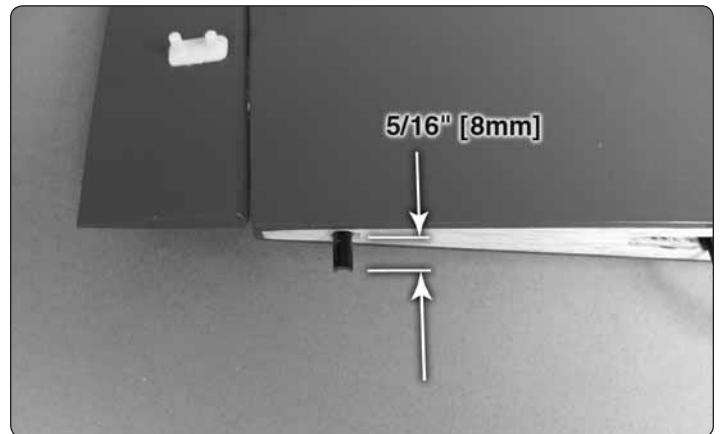


❑ 7. Fit a screw lock pushrod connector into the outer hole of each aileron control horn. Secure them using nylon retainers. Three spare nylon retainers have been included in the kit. If a nylon retainer does not secure tightly onto the screw lock connector, discard it and use a new retainer.

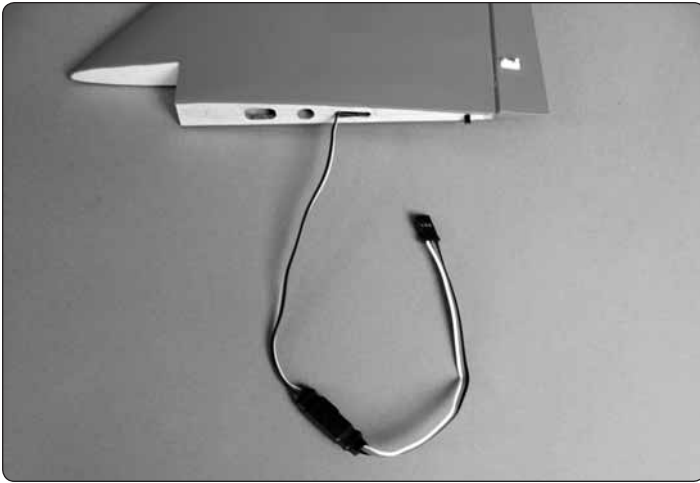


❑ 8. Deflect the ailerons as far away from the servos as possible to determine how much pushrod must be cut off to fit the pushrods through the holes of the screw lock pushrod connectors. If necessary, trim the slots in the aileron covers as shown to allow clearance for the pushrods. When this is done, insert the pushrods through the holes in the connectors, ensure that the servos are electronically centered (using your radio system), center the ailerons, then secure the pushrods into the connectors using 2x5mm machine screws and threadlocking compound. Trim the excess pushrod that extends beyond 1/4" [6mm] aft of the connector.

### Install the Wing Panels



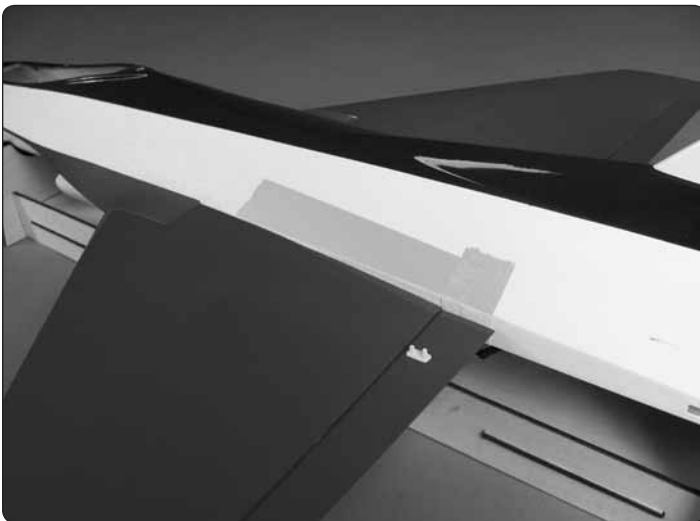
❑ 1. Use medium or thick CA to glue the carbon anti-rotation pins into the wing panels so that 5/16" [8mm] protrudes outside the root ribs. Take care to glue the pins so that they are square to the ribs.



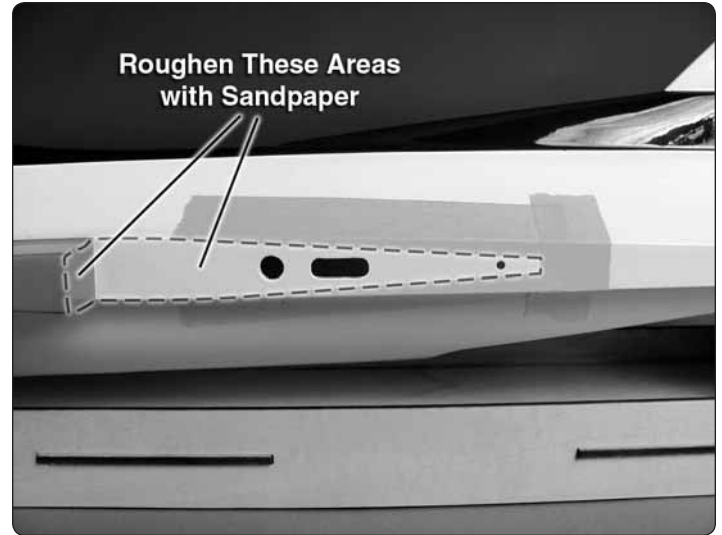
❑ 2. Attach a 6" [152mm] servo extension to each aileron servo. Secure the connections using tape, heat shrink tubing (not included) or special clips designed for that purpose.



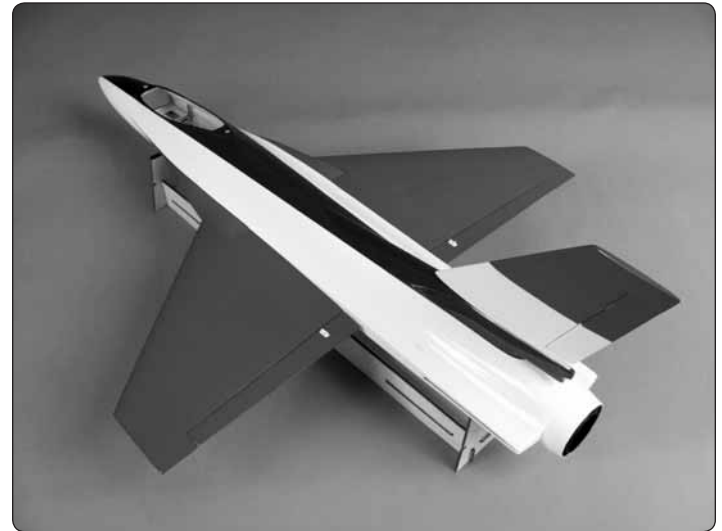
❑ 3. Insert the aluminum wing tube through the holes in the fuselage and center it left and right. Test fit the wing panels onto the tube. Feed the servo leads through the holes in the fuselage just behind the wing tube.



❑ 4. With the wing panels fully seated, use pieces of masking tape to outline the wing profile onto the fuse sides as shown.

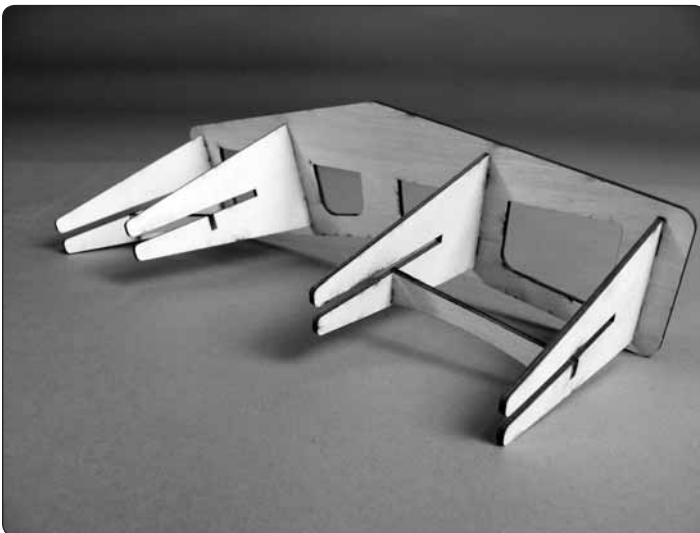
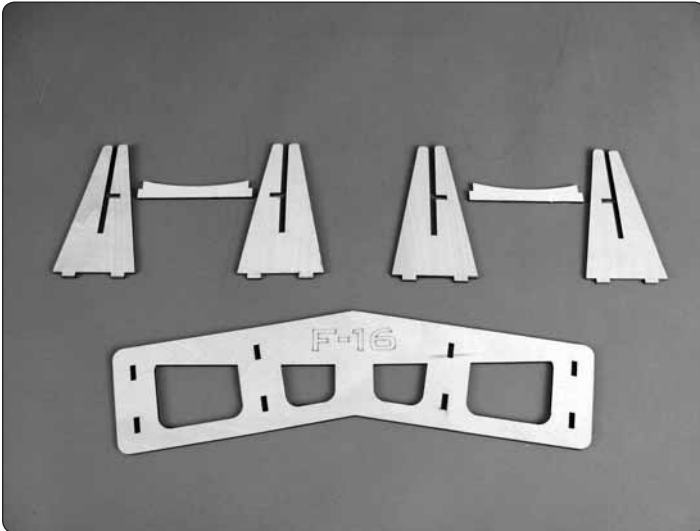


❑ 5. Remove the wings and wing tube from the fuselage. Use a piece of 220 grit sandpaper to roughen the fuselage where the wing panels will be glued. Do the same to the aluminum wing tube. Use a paper towel dampened with denatured alcohol to clean all the areas where you used sandpaper.

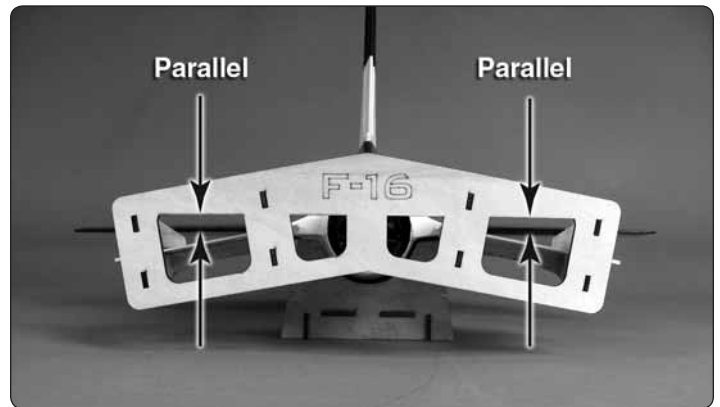
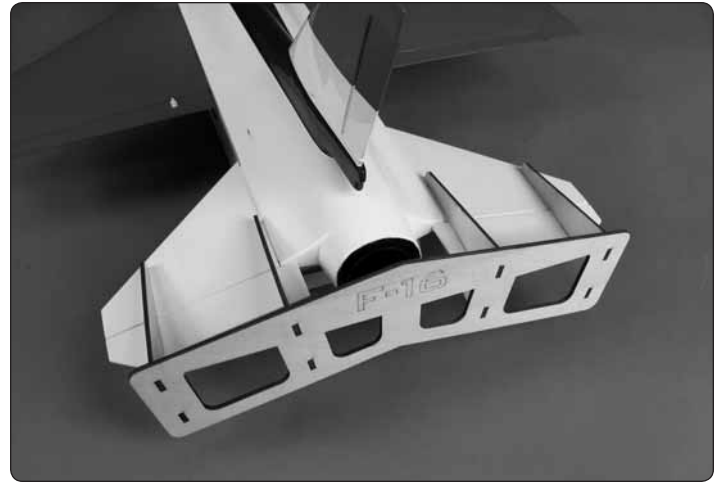


❑ 6. Reinstall the wing tube into the fuselage centering it left and right. Mix up approximately 1/4 oz [7.5cc] of 30-minute epoxy and apply a light coating to the exposed surface of the wing tube as well as the areas on the fuselage within the tape lines. Apply a coating of epoxy to the root ribs of the wings and anti-rotation pins. Install the wings onto the wing tube. Wipe away any excess epoxy with a paper towel dampened with denatured alcohol. Carefully peel off the masking tape and make one more thorough pass with alcohol around the wings. Let the epoxy cure undisturbed (work on step 1 in the next section while you wait).

## Install the Tail Section and Servos



❑ 1. A tail alignment fixture is provided for gluing the stabilizer halves into the fuselage at the correct angle. Glue the fixture together as shown.

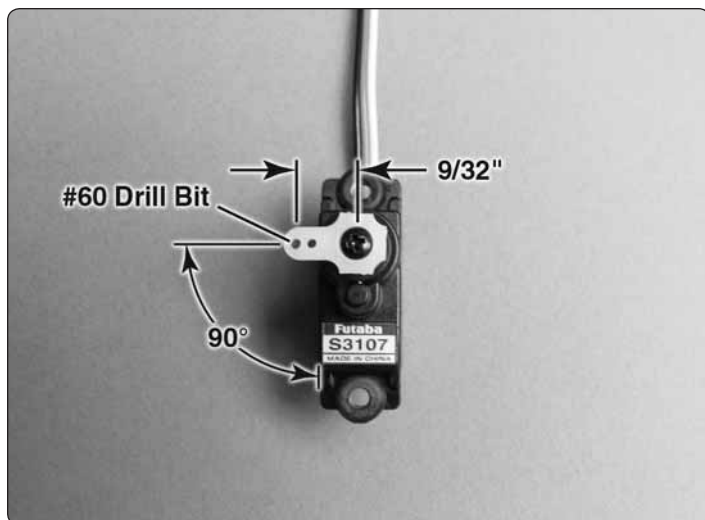


❑ 2. Test fit the stabilizer halves into the slots in the fuselage (without glue). Fit the tail alignment fixture onto the stab halves. Confirm that the stabs are fully seated in the fuse. Stand back several feet and look through the cutouts in the fixture. Confirm that the straight reference line which is made up of the top edges of each cutout is parallel with the wings. If it is not, you will need to add weight to the high side or use masking tape to draw the fixture parallel as described.



❑ 3. When satisfied with the positioning of the stab halves, remove the fixture and the stab halves from the fuselage. Mix up a small batch of 30-minute epoxy (enough to coat the insides of the stab pockets in the fuse and the exposed wood on the stab halves) and use a mixing stick or something similar to

apply a coating of epoxy to the inside of the stab pockets in the fuse. Wipe away any excess epoxy that gathered on the outside of the fuse. Apply a coating of epoxy to the exposed wood on the stab halves. Insert the stab halves into the fuse and clean up any epoxy that squeezes out with alcohol. Carefully fit the alignment fixture onto the stab halves. If you have to make adjustments to bring the fixture parallel with the wing, do so now. Double check everything and make sure all the excess epoxy is cleaned off the stabs and fuse. When satisfied, let the epoxy **fully** cure undisturbed.



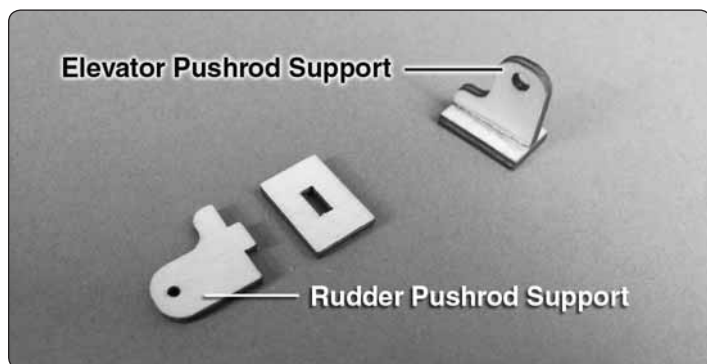
❑ 4. Prepare your elevator servo by electronically centering it and choosing the best orientation of the servo arm on the output spline. Cut off the unused arms. Enlarge the outer hole of the remaining servo arm that is approximately  $9/32$ " [7.1mm] from the servo arm center using a #60 drill bit.

❑ 6. Cut the backplates from two control horns and enlarge the outer holes in the control horns with a #60 bit. Fit the control horns onto the Z-bends of two  $25-1/4$ " [641mm] pushrods. Insert the pushrods into the elevator outer pushrod tubes. As you did with the ailerons, align the holes of the control horns over the hinge line and press the mounting posts against the elevators leaving indentations. Drill  $3/32$ " [2.4mm] holes at the indentations.



❑ 5. Install the elevator servo into the servo tray as shown. The servo can be glued down. However, we chose to mount it with screws included in the servo hardware bag in case it needs to be repaired or replaced in the future. If you choose to install the servo using screws, pre-drill the mounting holes using a  $1/16$ " [1.6mm] drill bit. Thread a mounting screw into each hole and back it out. Apply a drop of thin CA to each hole to harden the wood. When the CA is dry, install the servo.

❑ 7. Glue the control horns and backplates to the elevators using medium or thick CA glue.



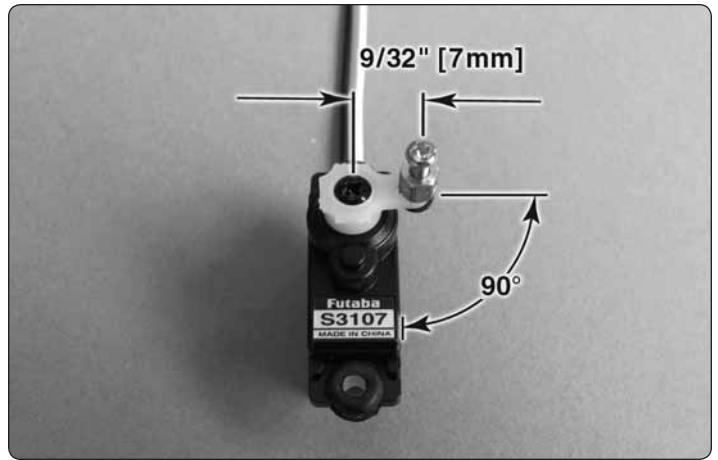
❑ 8. Glue the plywood pushrod support pieces together as shown. The support that has the larger hole in it should be used for the elevator pushrods.



❑ 9. Loosely install a 3x6mm SHCS into two 2.5mm wheel collars. Slide one of the wheel collars around both elevator pushrods followed by the elevator pushrod support. Do not tighten the wheel collar screw yet.



❑ 10. Slide the other wheel collar onto the 4-5/8" [118mm] pushrod. Fit the Z-bend of this pushrod into the enlarged hole in the elevator servo arm. Fit the other end of the pushrod through the pushrod support and through the wheel collar you installed in the previous step. Position the forward wheel collar so that all three pushrod wires are inside it. With the elevator servo still centered, position the elevators in the neutral position and tighten the screws in the wheel collars, use thread locking compound. Use medium or thick CA to glue the pushrod support to the side of the fuselage. Use your radio system to test the operation of the elevators and make any adjustments necessary.



❑ 11. Prepare the rudder servo as you did the elevator servo. Install a screw lock connector into the hole that is approximately 9/32" [7mm] from the servo arm center. Loosely thread a 2x5mm Phillips head screw into the screw lock connector.



❑ 12. Install the rudder servo into the remaining space on the servo tray in the orientation shown.



❑ 13. Use a #60 drill bit to enlarge the **inner** hole of the remaining control horn. Connect the remaining pushrod to the hole you enlarged and install the control horn onto the rudder as shown.

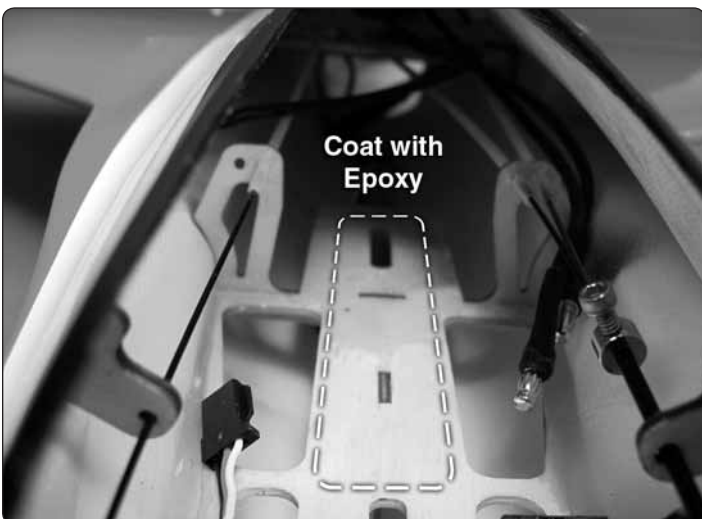


- ❑ 14. Slide the rudder pushrod support onto the rudder pushrod and insert the forward end of the pushrod through the screw lock connector on the rudder servo. With the rudder in the neutral position and the rudder servo electronically centered, tighten the screw in the screw lock connector with thread locking compound. Use medium or thick CA to glue the pushrod support to the fuselage side.

### Finish the Model

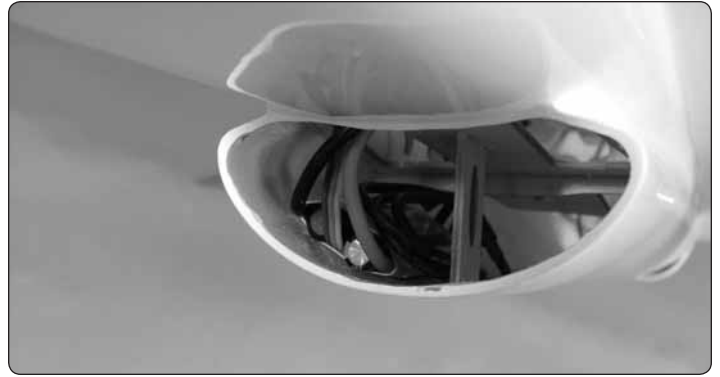


- ❑ 1. The ESC must be installed inline with cool, incoming air. Prepare the inside of the air inlet by sanding it with 220 grit sandpaper and cleaning it with a paper towel dampened with denatured alcohol.



- ❑ 2. Mix up approximately 3/16 oz [5cc] of epoxy and apply a thin coating onto the inside of the air inlet where the ESC will

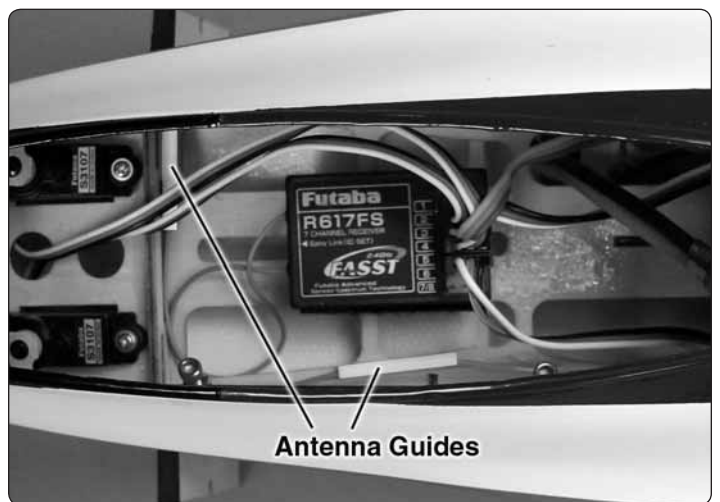
be installed. Before the epoxy sets, also apply a thin coating to the top of the battery tray.



- ❑ 3. Connect your ESC to the motor leads. Use your radio system to test the operation of the EDF. If the motor rotates backwards, simply disconnect any two of the three motor leads and swap their positions. Use a piece of the included double-sided foam tape to adhere the ESC to the inside of the inlet. **CAUTION:** Until performing the break in procedure as described on the last page of the HyperFlow manual, run the motor only at **minimum**, idle rpm.



- ❑ 4. Connect the servos and ESC to the receiver and adhere the receiver to the tray in the location shown using a piece of the included double-sided foam tape.



- ❑ 5. If you are using a 2.4GHz system, a 2" [51mm] length of outer pushrod tube is provided to use as antenna guides. Cut the tube in half and glue the halves to the radio tray in an

orientation described in your radio manual. Fit the antenna wires into the tubes. If you are using an FM system, route your antenna through the fuselage and out of the air inlet that is just in front of the EDF unit. Tape the antenna to the fuselage side being sure to keep it clear of the EDF.



❑ 6. Use the included self-adhesive hook and loop material to attach your flight battery to the battery tray (the “soft” side of the material should be adhered to the battery). When you balance the plane, the exact position of the battery on the tray will be determined and this location should be marked on the tray for easy reference.



❑ 7. If you plan to use the included bungee to launch the F-16 (details of the bungee launch are provided toward the back of this manual), install the bungee hook onto the underside of the fuselage pointing toward the aft end of the plane. Thread a 3mm nut all the way onto the hook followed by a 3mm washer and then a drop of thread locking compound. Thread the hook into the blind nut on the underside of the plane and use the 3mm nut as a jam nut to lock the hook in place.



❑ 8. If you plan to hand launch the F-16 (details of the hand launch are provided toward the back of this manual), two pieces of grip tape are provided and should be adhered to the fuselage sides in the location shown.



❑ 9. This completes the assembly of the F-16 EDF ARF!

### ***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 F-16 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 F-16 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."



Use a Great Planes AccuThrow (or a ruler) to accurately measure and set the control throw of each control surface as indicated in the chart that follows. If your radio does not have dual rates, we recommend setting the throws at the **low** rate setting.

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

These are the recommended control surface throws:

	LOW RATE	HIGH RATE
ELEVATOR	<u>Up &amp; Down</u> 3/16" [5mm] 9°	<u>Up &amp; Down</u> 5/16" [8mm] 14°
	<u>Right &amp; Left</u> 1/4" [6mm] 14°	<u>Right &amp; Left</u> 11/32" [9mm] 20°
AILERONS	<u>Up &amp; Down</u> 1/8" [3mm] 7°	<u>Up &amp; Down</u> 3/16" [5mm] 10°

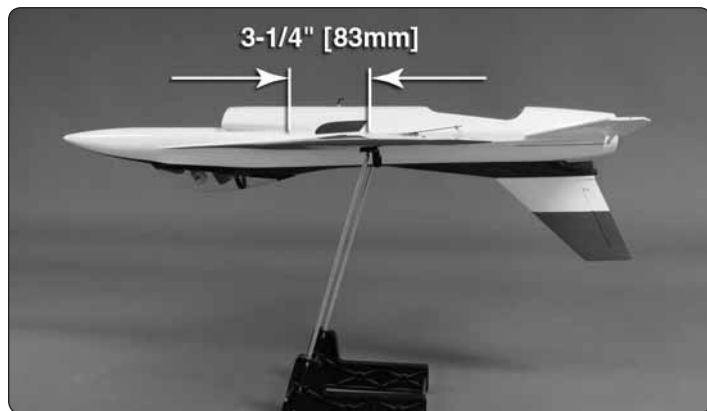
## Balance the Model (C.G.)

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 battery, receiver, and canopy hatch.

❑ 1. Use a felt-tip pen or 1/8" [3mm]-wide tape to accurately mark the C.G. on the top of the wing on both sides of the fuselage. The C.G. is located 3-1/4" [83mm] back from the leading edge of the wing where it meets the fuselage.

This is where your model should balance for the first flights. Later, you may wish to experiment by shifting the C.G. up to 1/4" [6mm] forward or 3/8" [9.5mm] back to change the flying characteristics. Moving the C.G. forward may improve the smoothness and stability, but the model may then be more difficult to slow for landing requiring a longer approach. Moving the C.G. aft allows for slower landing speeds but could also cause it to become too difficult to control. In any case, **start at the recommended balance point** and do not at any time balance the model outside the specified range.



❑ 2. With all parts of the model installed (ready to fly) including the hatch and battery, place the model upside down on a Great Planes CG Machine, or lift it at the balance point you marked.

❑ 3. If the tail drops, the model is "tail heavy" and the battery pack and/or receiver must be shifted forward. If the nose drops, the model is "nose heavy" and the battery pack and/or receiver must be shifted aft. If possible, relocate the battery pack and receiver to minimize or eliminate any additional ballast required. Our test samples balanced within the specified C.G. range using the recommended battery and servos without additional ballast. If additional weight is required, however, nose weight may be easily added by using Great Planes (GPMQ4485) "stick-on" lead. A good place to add stick-on nose weight is inside the nose cone or underneath the gap between the aft end of the tail fin and the fuselage.

**Note:** Do not rely upon the adhesive on the back of the lead weight to permanently hold it in place. Over time the adhesive may fail, causing the weight to come loose. Use RTV silicone or epoxy to permanently hold the weight in place.

❑ 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 22 and place it on or inside your model.

### ***Charge the Batteries***

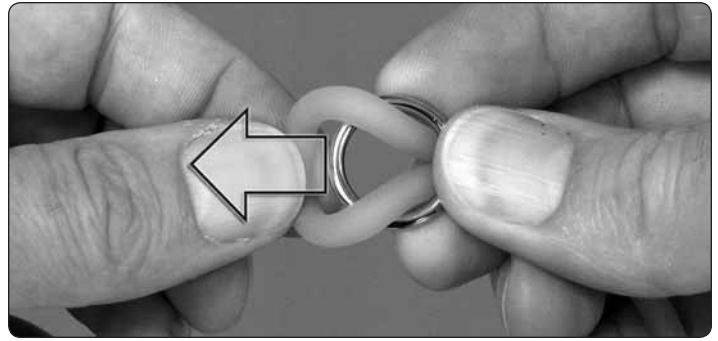
Follow the battery charging instructions that came with your radio control system to charge the batteries. You should always charge your transmitter battery the night before you go flying, and at other times as recommended by the radio manufacturer.

**CAUTION:** Unless the instructions that came with your radio system state differently, the **initial** charge on **new** transmitter 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.

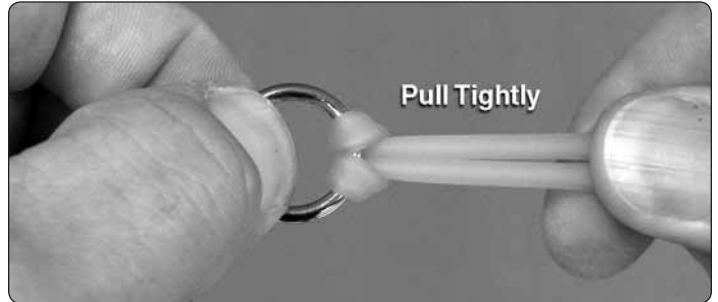
### ***Assemble the Bungee Launch***



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

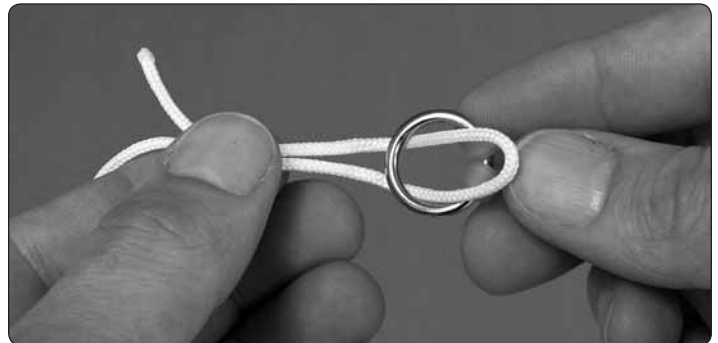


❑ 2. Bend the loop down around the ring. Then pull the ring the rest of the way through the loop.

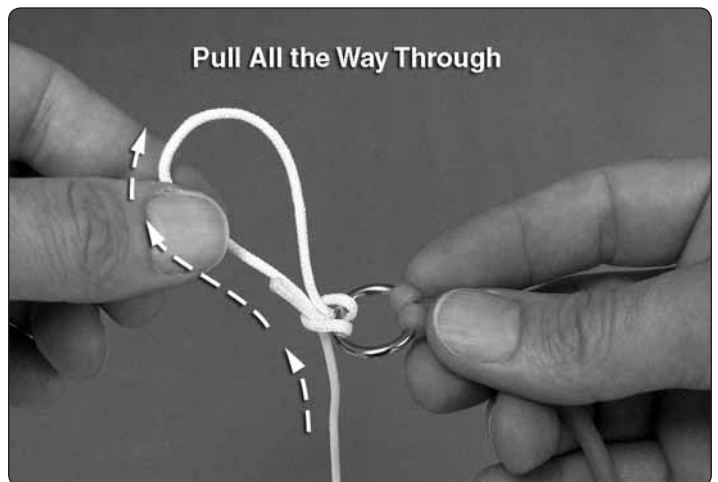


❑ 3. Pull the tubing to tighten the knot and make sure it is secure.

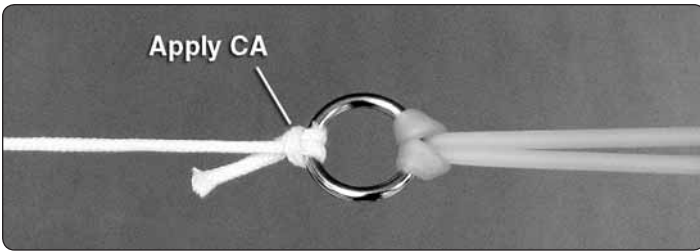
Now attach the cord...



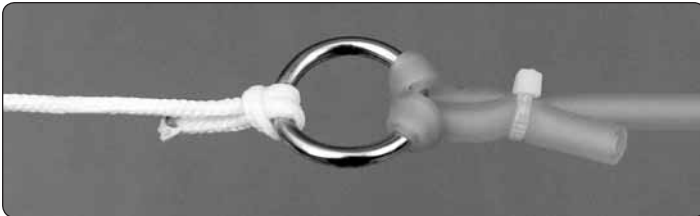
❑ 4. Loop one end of the cord through the ring.



❑ 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 (that's why it's called a *check list!*).

- 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(s) is/are secured.
- 5. Use threadlocking compound on metal-to-metal screws.
- 6. Tug on the elevators, rudder 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 F-16 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 F-16 possesses no self-correcting tendencies whatsoever, and therefore must be flown only by experienced pilots who are able to decisively provide the correct control inputs.

The F-16 is a fast flying jet and can cover a lot of sky in a very short amount of time. The F-16 will become very “small” in the sky as it covers distance quickly and you must be prepared for this. Good eyesight, adequate flying skills, and 100% of your attention are required when flying this model. Please heed the following suggestions to increase your chance of success, especially with your first few flights.

1. Do not fly the F-16 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 F-16 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 F-16 in tight flying fields. While it is always possible (but not advisable) to fly above obstructions, the F-16 requires at least two or three times the approach and landing space of regular sport models.
4. Do not fly the F-16 if, for some reason, any of your senses may have been compromised (from lack of sleep, hunger, dehydration, alcohol, etc.). Your vision and the ability to concentrate and think clearly must be sharp.

## 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 F-16 may be bungee-launched with the included bungee system, hand-launched by an assistant or

hand-launched by the pilot. It is perfectly acceptable to hand-launch the F-16, but it must be thrown just about as hard as possible to acquire sufficient velocity. However, sometimes the harder one throws an object, the less control they may have, possibly causing a bad launch. This is amplified by the fact that although the grip tape improves handling of the plane during hand-launch, the plane will still feel somewhat awkward when tossing. Additionally, while it is possible for the pilot to hand-launch the F-16, 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 your self) hold the model by the bottom of the fuselage just behind the leading edge of the wing at the grip tape. 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. 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 forty degree angle, wings level with the horizon, doing his best **not** to release it into a roll.

Expect the F-16 to briefly dive before it gains enough airspeed to establish a climb. At this point you should be able to add 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.

This model belongs to:

Name

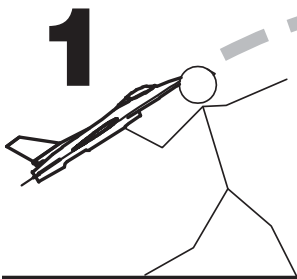
Address

City, State, Zip

Phone Number

AMA Number

Throw the F-16 about as hard as you can at approximately a 30 to 40-degree angle.



**2**

Expect the F-16 to briefly dive before it gains enough velocity to establish a climb. You should be able to pull full elevator to keep it airborne.



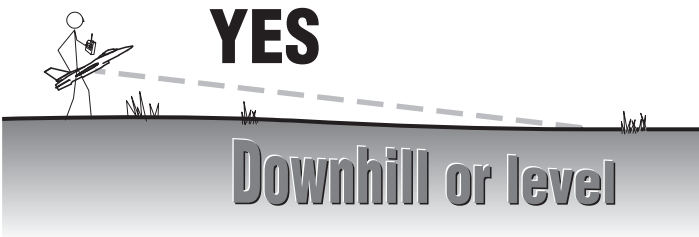
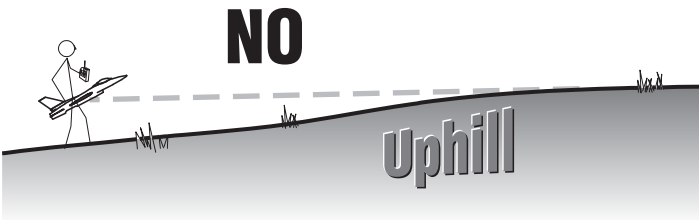
**3**

Now you're in the clear. Allow the F-16 to gain speed and begin climbout.

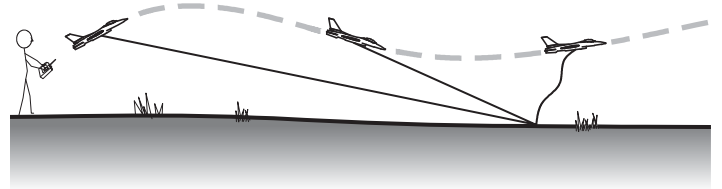


## Bungee-Launch

The great thing about the bungee launch is it's pretty much "automatic." The results are much more consistent than hand-launching and you should be able to get a perfect bungee-launch every time. Also, bungee-launching the F-16 by yourself is much easier than hand-launching it by yourself, 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.



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]). Connect the bungee to the tow hook on the underside of the fuse. For launching, the model should be held by the fuselage just in front of the vertical fin as shown.



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 firmly into the ground at about a 45 degree 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 chord to make sure there are no cuts, cracks, tears or other defects and make sure the line and chord 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.

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, then apply full throttle. Holding the F-16 at approximately a 30 to 40 degree angle, don't just let go, but give it a good push into the air, wings level. All within a matter a few seconds, the F-16 will initially climb, level off, then possibly angle slightly downward before the elevator takes over and the F-16 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 F-16 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 pretty far away, fast.

## Flying

Once the F-16 begins climbing simply fly 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 F-16 can get so far away so quickly, your other “first” priority will be simply flying the plane 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 F-16 still covers much ground!

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

While at a high altitude with plenty of battery power, simulate a landing approach by cutting the throttle and watch the F-16 glide. This will give you an indication of how it will land.

## Landing

The landing procedure for the F-16 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 F-16 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 F-16 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 F-16 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 F-16 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.

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

After a few flights you’ll have your F-16 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!**

