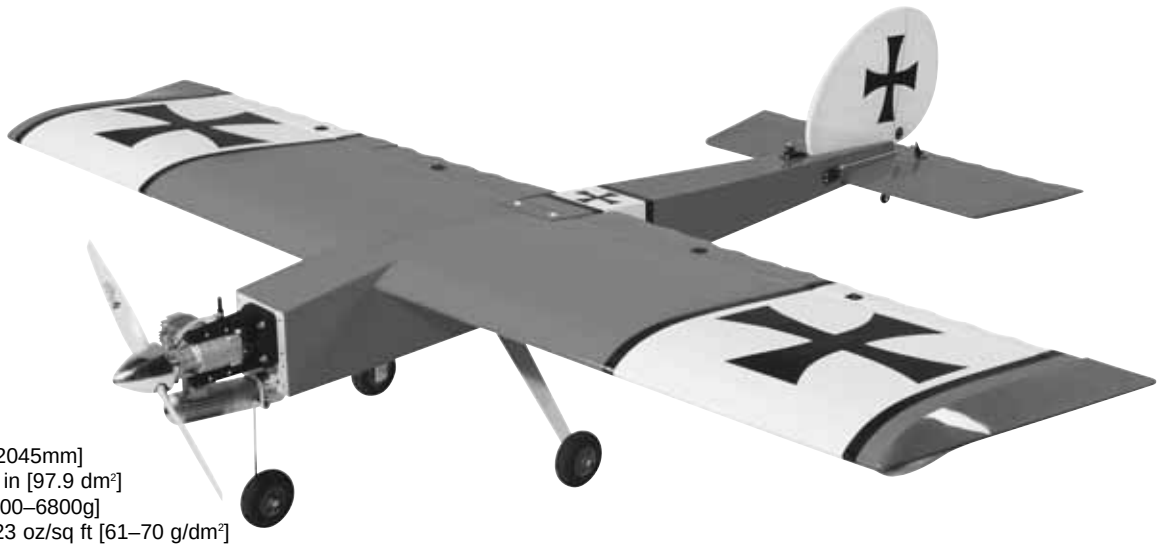
GIANT BIG STIK™ ARF

INSTRUCTION MANUAL



Wingspan: 80.5 in [2045mm]
Wing Area: 1518 sq in [97.9 dm²]
Weight: 13-15 lb [5900–6800g]
Wing Loading: 20–23 oz/sq ft [61–70 g/dm²]
Length: 54.5 in [1385mm]
Radio: 4 or 5-channel, 7 to 8 servos
Engine: 1.2–1.6 cu in [19.5–26.0cc] two-stroke,
1.2–1.8 cu in [19.5–29.5cc] four-stroke,
1.5–2.1 cu in [25–35cc] gas

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.

GREAT PLANES® MODEL MANUFACTURING COMPANY
Champaign, IL
(217) 398-8970, Ext. 5
airsupport@greatplanes.com

TABLE OF CONTENTS

INTRODUCTION

Thank you for purchasing the Great Planes Giant Big Stik™ ARF. Due to the popularity of the "Stik" series of models, it was only a matter of time before Great Planes released a giant version. And this Stik, like all of its predecessors, is simple and rugged. The Giant Big Stik ARF can be powered by either a spark-ignition "gas" engine or a glow engine. Refer to ***"Engine Recommendations"*** under the ***"DECISIONS YOU MUST MAKE"*** section of this manual for information that may help you decide how to power your Giant Big Stik ARF.

For the latest technical updates or manual corrections to the Great Planes Giant Big Stik ARF visit the Great Planes web site at *www.greatplanes.com*. Open the "Airplanes" link, then select the Giant Big Stik 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

We urge you to join the AMA (Academy of Model Aeronautics) and a local R/C club. The AMA is the governing body of model aviation and membership is required to fly at AMA clubs. Though joining the AMA provides many benefits, one of the primary reasons to join is liability protection. Coverage is not limited to flying at contests or on the club field. It even applies to flying at public demonstrations and air shows. Failure to comply with the Safety Code (excerpts printed in the back of the manual) may endanger insurance coverage. Additionally, training programs and instructors are available at AMA club sites to help you get started the right way. There are over 2,500 AMA chartered clubs across the country. Contact the AMA at the address or toll-free phone number below.

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.

IMAA

The Great Planes Giant Big Stik ARF is an excellent sport-scale model and is eligible to fly in IMAA events. The IMAA (International Miniature Aircraft Association) is an organization that promotes non-competitive flying of giant-scale models. If you plan to attend an IMAA event, obtain a copy of the **IMAA Safety Code** by contacting the IMAA at the address or telephone number below, or by logging on to their web site.

IMAA
205 S. Hilldale Road
Salina, KS 67401
(913) 823-5569
www.fly-imaa.org/imaa/sanction.html.

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

1. Your Giant Big Stik ARF 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 Giant Big Stik ARF, 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 first-class condition, and a correctly sized engine and components (fuel tank, wheels, etc.) throughout the building process.

5. You must correctly install all R/C and other components so that the model operates correctly on the ground and in the air.

6. You must check the operation of the model before **every** flight to insure that all equipment is operating and that the model has remained structurally sound. Be sure to check clevises or other connectors often and replace them if they show any signs of wear or fatigue.

7. 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.

8. 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.

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 Giant Big Stik ARF that may require planning or decision-making before starting to build. Order numbers are provided in parentheses.

Engine Recommendations

The recommended engine size range for the Giant Big Stik ARF is specified on the cover of this manual. All engines within the specified range will power this model well. Never fly the Giant Big Stik ARF with an engine larger than one in the specified range because it has not been designed or tested for larger engines. Powered by a two-stroke glow engine such as the O.S.® MAX 1.60 FX, the Giant Big Stik ARF performs like any .60-size sport plane with the added stability and durability of any well-designed giant plane. If flying the Giant Big Stik ARF with a spark-ignition gas engine, the kit includes a plywood engine mount plate and engine mount standoffs to facilitate the Fuji Engines™ BT-32. If using another brand of gas engine, use the instructions as a guide for how to mount yours.

If you haven't yet built a model with a gas engine, but are considering using one, two of the benefits are fuel economy (not only is gasoline cheaper than glow fuel, but gas engines typically burn less fuel as well) and considerably cleaner exhaust residue. Most gas engines, however, are heavier than glow engines and require premixing gas and oil.

Here are the order numbers for O.S. MAX and Fuji engines:

- ❏ O.S. 1.60 FX ringed **with** muffler (OSMG0660)
- ❏ O.S. 1.60 FX ringed **without** muffler (OSMG0661)

❏ #5010 muffler for O.S. 1.60 FX engine (OSMG2846)
❏ Fuji BT-32S R/C gas engine (FJIG0033)

Per the IMAA Safety Code, magneto spark-ignition engines must have a coil-grounding switch on the aircraft to stop the engine and prevent accidental starting. The switch must be operated manually (without the use of the transmitter) and be accessible by the pilot and assistant. For use with the Fuji engine shown, the manually operated switch was made from a .3 amp slide switch, 16-gauge wire and a covered, crimp-on connector purchased at the local Radio Shack®. Slightly different hardware may be required if using a different spark-ignition engine. All of the components required are available at any hardware or home-improvement store.

If using the Fuji BT-32SB engine the following hardware must be purchased separately:

❏ (4) 1/4-20 x 2-1/4" or 1/4-20 x 2-1/2" Phillips-head bolts
❏ (4) 1/4-20 blind nuts
❏ (4) 1/4" flat washers
❏ (4) 1/4" lock washers
❏ (4) 10-32 x 3/4" socket-head cap screws
❏ (4) #10 lock washers

Note: If using the Fuji BT-32 (or most other gas engines), the nose-gear option may not be used and the model must be built as a taildragger. This is because of the extended distance from the firewall that the engine would have to be mounted in order to clear the nose gear hardware.

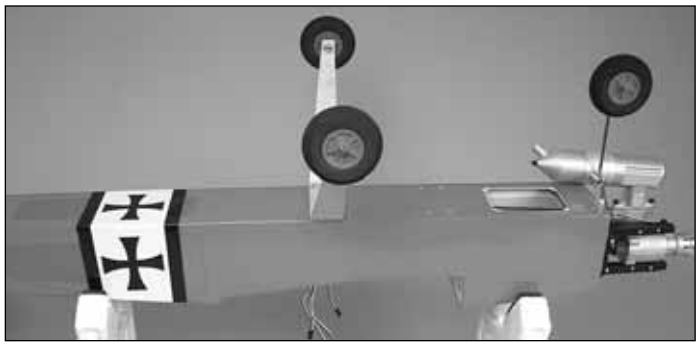
Fuel Tank Setup

The fuel tank included with this kit is suitable for use with glow fuel. However, if using a gas engine, the fuel tank must be converted to work with gasoline. This can be done by purchasing a Sullivan #484 Gasoline/Diesel fuel tank conversion kit (SULQ2684), a package of Du-Bro #813 1/8" [3.2mm] I.D. fuel line barbs (DUBQ0670) and 3' of Great Planes gasoline fuel tubing (GPMQ4135). Without the fuel line barbs some types of gas-compatible fuel line may slip off the metal fuel tubes. If the Sullivan conversion kit is not available the Du-Bro #400 gas conversion stopper (DUBQ0675) and one 12" [300mm] piece of K+S 1/8" [3.2mm] soft brass tubing (K+SR5128, box of 5) could also be used to make the conversion. Full instructions on how to set up the fuel tank and make the conversion to gas are provided in this manual.

Spinner

The model on the kit box cover is shown with a Great Planes 2-3/4" [70mm] aluminum spinner (GPMQ4555) (not included). An adapter nut for mounting the spinner cone is also required. (Order No. OSMG4588 for use with the O.S. 1.60 FX.) The Great Planes spinner is intended to be used on engines that have a threaded crankshaft–not engines that use a propeller bolt (such as most gas engines). In this case, a different type of spinner will have to be used. In most cases the propeller cutouts in the cone will also have to be enlarged. A rotary tool with a carbide cutter works great for the rough work, followed by a small metal file to clean up the edges. Always wear eye protection when working with power tools.

Building Stand



A building stand or cradle comes in handy. We use the Robart Super Stand II (ROBP1402) for all of our projects in R&D.

Flap & Aileron Setup

The Giant Big Stik ARF is intended to be flown with flaps using a radio with a minimum of five channels. If, however, you have only a four-channel radio, the Giant Big Stik ARF could be flown without flaps. In this case, the flap servos will have to be linked to the aileron servos using Y-connectors. Then, all four control surfaces on the wings will function as ailerons.

Radio Equipment

Since the Giant Big Stik ARF is a large model, standard servos should not be used to operate the control surfaces. Servos with a minimum torque rating of 50 oz-in are

suitable for the flaps and ailerons. The elevator and rudder should each be operated by a servo with approximately 70 oz-in torque. The throttle and nose wheel may be operated by standard servos.

The following servo extensions and Y-harnesses were also used to build the Giant Big Stik ARF as shown in the manual.

- ❏ (2) 36" [910mm] servo extensions for elevator and rudder (HCAM2726 for Futaba)
- ❏ (2) 24" [610mm] servo extensions for ailerons (HCAM2721 for Futaba)
- ❏ (2) 6" [150mm] servo extensions for flaps (HCAM2701 for Futaba)
- ❏ (2) Futaba AEC-13 Y-connectors for flap and aileron servos (FUTM4130)

A battery pack with a **minimum** of 1,000mAh should also be used. When flying giant-scale models such as this, ALWAYS check the battery condition before each flight.

ADDITIONAL ITEMS REQUIRED

Hardware & Accessories

In addition to the items listed in the ***"Decisions You Must Make"*** section, following is the list of hardware and accessories required to finish the Giant Big Stik ARF. Order numbers are provided in parentheses.

- ❏ Propeller and spare propellers suitable for your engine
- ❏ R/C foam rubber (1/4" [6mm] – HCAQ1000, or 1/2" [13mm] – HCAQ1050)
- ❏ 3' [900mm] standard silicone fuel tubing (GPMQ4131)

-or-

- ❏ 3' [900mm] gasoline fuel tubing (GPMQ4135)
- ❏ Stick-on segmented lead weights (GPMQ4485)

Adhesives & Building Supplies

In addition to common household tools and hobby tools, this is the "short list" of the most important items required to build the Giant Big Stik ARF. ***Great Planes Pro***™ *CA and Epoxy glue are recommended.*

- ❏ 1/2 oz. [15g] Thin Pro CA (GPMR6001)
- ❏ 1/2 oz. [15g] Medium Pro CA+ (GPMR6007)
- ❏ Pro 30-minute epoxy (GPMR6047)
- ❏ Denatured alcohol (for epoxy clean up)
- ❏ CA applicator tips (HCAR3780)
- ❏ Threadlocker™ thread-locking cement (GPMR6060)
- ❏ Drill bits: 1/16" [1.6mm], 3/32" [2.4mm], 1/8" [3.2mm], 3/16" [4.8mm], 13/64" [5.2mm] (or 3/16"), 15/64 [6mm] (or 1/4"), 1/4" [6.4mm], 9/32" [7.1mm]
- ❏ 8-32 tap and drill set (GPMR8103)

-or-

- ❏ 8-32 Tap and #29 drill
- ❏ Tap handle (GPMR8120)
- ❏ Small metal file
- ❏ Silver solder w/flux (GPMR8070)
- ❏ #1 Hobby knife (HCAR0105)
- ❏ #11 Blades (5-pack, HCAR0211)
- ❏ 21st Century® sealing iron (COVR2700)
- ❏ 21st Century iron cover (COVR2702)

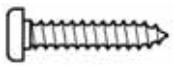
Optional Supplies & Tools

Here is a list of optional tools mentioned in the manual that will help you build the Giant Big Stik ARF.

- ❏ Pro 6-minute epoxy (GPMR6045)
- ❏ 2 oz. [57g] spray CA activator (GPMR6035)
- ❏ 4 oz. [113g] aerosol CA activator (GPMR634)
- ❏ CA debonder (GPMR6039)
- ❏ 3M 75 Repositionable spray adhesive (MMMR1900)
- ❏ Epoxy brushes (6, GPMR8060)
- ❏ Mixing sticks (50, GPMR8055)
- ❏ Mixing cups (GPMR8056)
- ❏ Builder's Triangle Set (HCAR0480)
- ❏ 36" Metal ruler (HCAR0475)
- ❏ Large T-pins (100, HCAR5200)
- ❏ Robart Super Stand II (ROBP1402)
- ❏ Switch & Charge Jack Mounting Set (GPMM1000)
- ❏ Rotary tool such as Dremel®
- ❏ Rotary tool reinforced cut-off wheel (GPMR8200)
- ❏ Hobby Heat™ Micro Torch II (HCAR0755)
- ❏ Dead Center™ Engine Mount Hole Locator (GPMR8130)
- ❏ AccuThrow™ Deflection Gauge (GPMR2405)
- ❏ CG Machine™ (GPMR2400)
- ❏ Precision Magnetic Prop Balancer™ (TOPQ5700)

IMPORTANT BUILDING NOTES

• **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 four screw that is 3/4" [19mm] long with forty threads per inch.

- When you see the term ***test fit*** in the instructions, it means that you should first position the part on the assembly **without using any glue**, then slightly modify or custom fit the part as necessary for the best fit.

- Whenever the term ***glue*** is written you should rely upon your experience to decide what type of glue to use. When a specific type of adhesive works best for that step, the instructions will make a recommendation.

- Whenever just ***epoxy*** is specified you may use **either** 30-minute (or 45-minute) epoxy **or** 6-minute epoxy. When 30-minute epoxy is specified it is **highly** recommended that you use only 30-minute (or 45-minute) epoxy, because you will need the working time and/or the additional strength.

- ***Photos*** and ***sketches*** are placed **before** the step they refer to. Frequently you can study photos in following steps to get another view of the same parts.

- Following are the MonoKote® colors used on the Giant Big Stik ARF in case patches or repairs are ever needed:

  True Red – TOPQ0227
  Black – TOPQ0208
  White – TOPQ0204

- 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 Giant Big Stik 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. If a hobby shop is not available, replacement parts may also be ordered from Tower Hobbies® at *www.towerhobbies.com*, or by calling toll free (800) 637-6050.

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

Order Number	Description	How to Purchase
	Missing pieces	Contact Product Support
	Instruction manual	Contact Product Support
	Full-size plans	Not Available
GPMA2815	Wing Set	Contact Hobby Supplier
GPMA2816	Fuselage	Contact Hobby Supplier
GPMA2817	Tail Surface Kit	Contact Hobby Supplier
GPMA2818	Main Gear	Contact Hobby Supplier
GPMA2819	Nose Gear	Contact Hobby Supplier
GPMA2820	Wing Tube	Contact Hobby Supplier

METRIC CONVERSIONS

1" = 25.4mm (conversion factor)

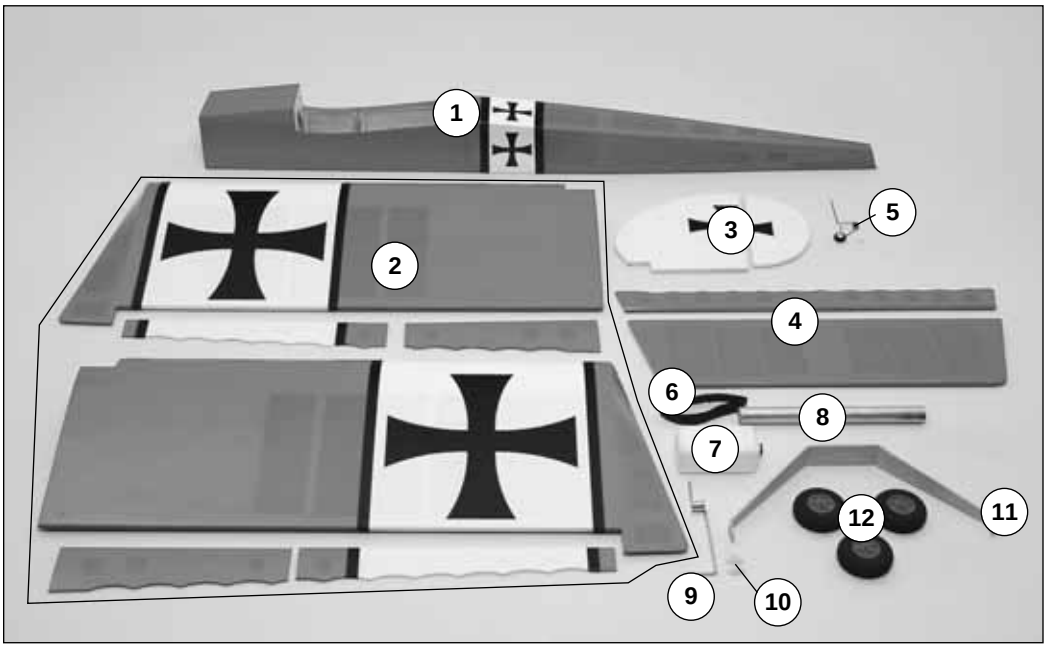
1/64"	=	.4 mm	3/4"	=	19.0 mm
1/32"	=	.8 mm	1"	=	25.4 mm
1/16"	=	1.6 mm	2"	=	50.8 mm
3/32"	=	2.4 mm	3"	=	76.2 mm
1/8"	=	3.2 mm	6"	=	152.4 mm
5/32"	=	4.0 mm	12"	=	304.8 mm
3/16"	=	4.8 mm	18"	=	457.2 mm
1/4"	=	6.4 mm	21"	=	533.4 mm
3/8"	=	9.5 mm	24"	=	609.6 mm
1/2"	=	12.7 mm	30"	=	762.0 mm
5/8"	=	15.9 mm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

KIT INSPECTION

Before starting to build, use the **Kit Contents** list to 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 **Great Planes Product Support**. When reporting defective or missing parts, use the part names exactly as they are written in the Kit Contents list on this page.

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*

Parts Layout



Kit Contents

1. Fuselage
2. Wings, Flaps & Ailerons
3. Fin & Rudder
4. Stabilizer & Elevator
5. Tail Gear Assembly
6. 13-3/4" [350mm] Velcro Strip
7. Fuel Tank
8. Wing Joiner Tube
9. Nose Gear Wire
10. Nose Gear Bearing
11. Main Landing Gear
12. Wheels (3)

Kit Contents (Not Photographed)

Wood Parts:
(2) Plywood Fuel Tank Former Set
(2) Plywood Fuji Engine Mount Plates
(1) Plywood Receiver/Battery Tray
(1) 1/4" x 1/4" x 8" [6.3 x 6.3 x 200mm] Hardwood Stick
(1) 1/16" x 1" x 8" [1.6 x 25 x 200mm] Sheeting
(2) 3/8" x 2" [9.5 x 50mm] Hardwood Dowels
(1) 1/4" x 1-3/16" [6.3 x 30mm] Hardwood Dowel

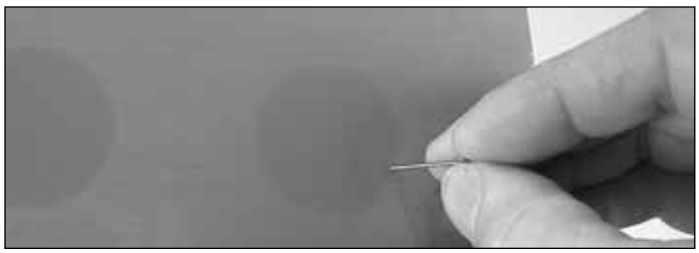
Hardware:
(1) Nylon Tail Gear Eyelet
(4) Fuji Gas Engine Mounting Standoffs
(1) 1.20 – 1.60 Engine Mount, Right
(1) 1.20 – 1.60 Engine Mount, Left
(2) 2-56 x 36" [914mm] Pushrods
(6) 4-40 x 12" [305mm] Pushrods
(1) 36" [914mm] White Pushrod Tube (for gas engine)
(1) 3/16" x 36" [4.8 x 914mm] Pushrod Guide Tube
(6) Giant Control Horns
(6) Giant Control Horn Mounting Plates
(2) CA Hinge Strips
(6) Heat-Shrink Tubing
(1) Steering Arm

Nuts, Bolts, Connectors:
(2) 1/4-20 Blind Nuts (factory-installed in fuselage)
(2) 1/4-20 x 2" [51mm] Nylon Wing Bolts
(12) 6-32 Blind Nuts (8 factory-installed)
(4) 6-32 x 1" [25mm] Screws
(8) #6 Flat Washers
(8) #6 Lock Washers
(2) 3/16" x 2" [4.8 x 50mm] Bolt-on Axles
(2) 5/16" Lock Nuts (for axles)
(2) 3/16" [4.8mm] Wheel Collars
(2) 6-32 Set Screws (for wheel collars)
(4) 6-32 x 3/4" [19mm] Phillips Screws
(1) 6-32 x 1/4" [6mm] Socket-Head Cap Screw
(4) 8-32 x 1-1/4" [32mm] Socket-Head Cap Screws (engine mount)
(4) 8-32 x 1" [25mm] Socket-Head Cap Screws (engine)
(4) 8-32 Blind Nuts
(4) #8 Flat Washers
(8) #8 Lock Washers
(2) Brass Screw-Lock Pushrod Connectors
(2) Nylon Retainers (for screw-lock pushrod connectors)
(2) 4-40 x 1/8" [3.2mm] Socket-Head Cap Screws
(2) Nylon Clevises
(2) 2-56 x 1" [25mm] Threaded Rod (gas)
(1) Nylon Ball Link (gas)
(1) 2-56 Ball Link Ball (gas)
(1) 2-56 Lock Nut (gas)
(6) 4-40 Clevises
(6) Large Solder Clevises
(6) 4-40 Nuts
(24) 4-40 x 3/4" [19mm] Phillips Screws (control horns)
(14) Silicone Clevis Retainers
(8) #2 x 3/8" [9.5mm] Phillips Screws (4-fuel tank hatch cover, 4-battery/receiver tray)
(8) #2 Washers
(1) 3/32" [2.4mm] Wheel Collar (tail gear)
(1) 4-40 Set Screw

PREPARATIONS

EXPERT TIP

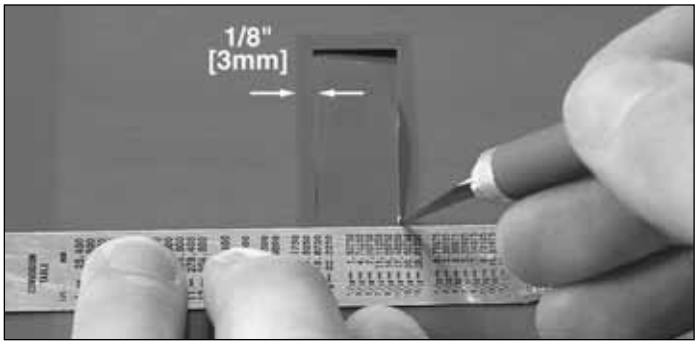
During construction there will be several occasions where epoxy cleanup will be necessary. Instead of wasting whole paper towels, stack three or four paper towels on top of each other and cut them into small squares. This will conserve paper towels and the little squares are easier to use. For epoxy clean up dampen the squares with denatured alcohol.



Use a covering iron with a covering sock to remove any wrinkles in the covering. Over sheeted areas, first glide the iron over the wrinkle until it disappears, then come back pressing hard on the iron to thoroughly bond the covering to the wood. **Hint:** Use a small T-pin to poke several holes in the covering over the lightening holes on the **bottom** of the control surfaces. This will allow expanding air to escape during the heating and tightening process.

ASSEMBLE THE WINGS

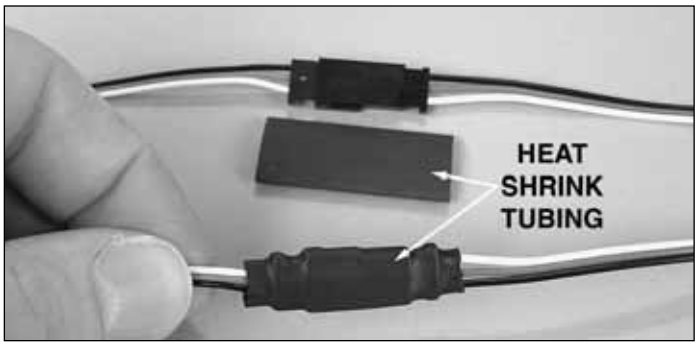
Mount the Servos



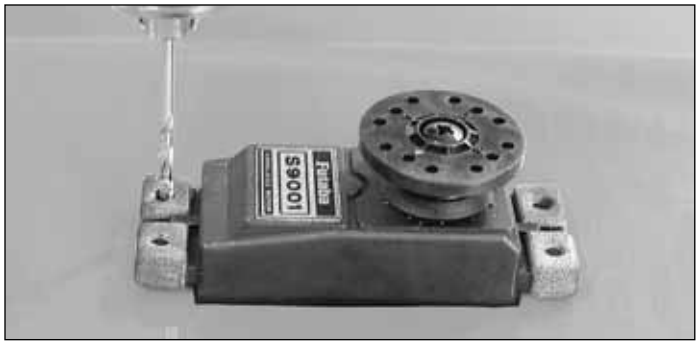
❏ 1. Use a straightedge and a hobby knife to cut the covering 1/8" [3mm] inside the openings in the bottom of both wings for the flap and aileron servos.

❏ 2. Slit the covering up to the corners of the openings, then use a trim iron to iron the covering down inside.

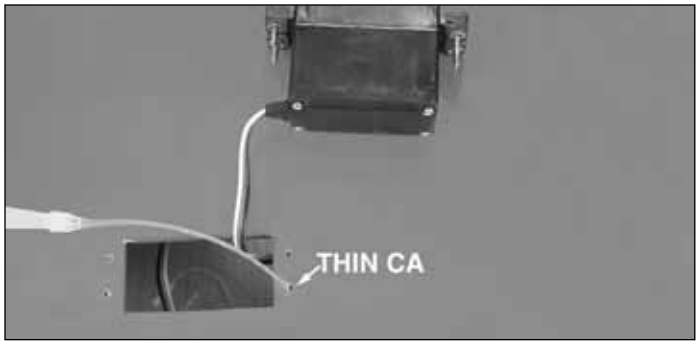
❏ 3. Cut the covering from the bottom of the wing over the holes for the servo wires next to the root end of both wings.



❏ 4. Connect one 12" [300mm] servo extension wire to each aileron servo and connect one 6" [150mm] extension wire to each flap servo. Cut two pieces of the included black heat shrink tubing in half, making four 1-1/2" [40mm] pieces. Center the pieces of tubing over the connections between the servo wires and the extensions. Use a heat gun to shrink the tubing, making the connections secure.

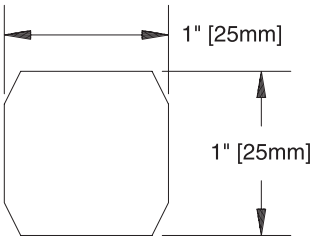


❏ 5. Use the strings in the wings to pull the servo wires out while placing the servos into the openings. With the servos in position, drill 1/16" [1.6mm] holes into the wing for all the servo mounting screws. Temporarily mount the servos with the servo mounting screws that came with your servos.



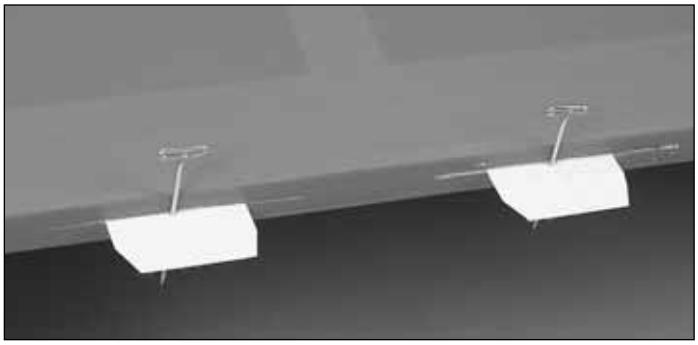
❏ 6. Remove the servo mounting screws and take the servos out of the openings. Add a few drops of thin CA to each screw hole to harden the "threads." After the CA has hardened reinstall all the screws to securely mount the servos.

Hinge the Flaps & Ailerons



CA Hinge

❏ 1. Cut twelve 1" x 1" [25 x 25mm] CA hinges from the 2" x 9" [50 x 230mm] CA hinge strip. Cut the corners off so the hinges go in easier.



❏ 2. Stick a T-pin through the middle of all the hinges. Insert six hinges into the hinge slots of both wings.

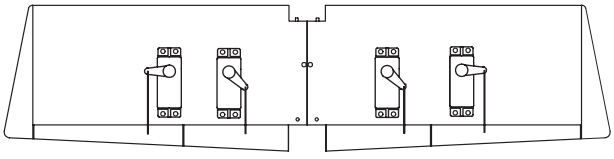
❏ 3. Join the flaps and ailerons to the wings with the hinges. Make sure there is a small gap between the leading edge of the flaps and ailerons and the trailing edge of the wings–just enough to see light through or to slip a piece of paper through. Take out the T-pins, then apply at least eight drops of thin CA to **both sides** of all the hinges on both wings. Allow enough time between each drop of CA so the hinge can absorb it instead of running into the hinge gap. CA applicator tips are **highly** recommended here so the amount and location of the CA can be controlled.

❏ 4. After the CA has hardened for a few minutes, pull hard on the flaps and ailerons to make sure they are secure. Add more CA to any hinges that aren't securely glued.

Hook Up the Flaps & Ailerons

If you're building your Giant Big Stik ARF with flaps hook up the servos this way.

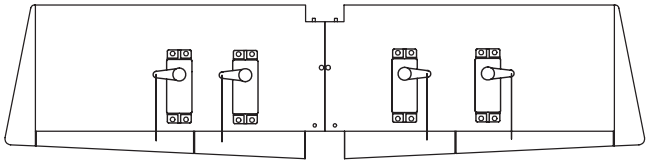
Connect the pushrods this way if using a five-or-more-channel radio with flaps.

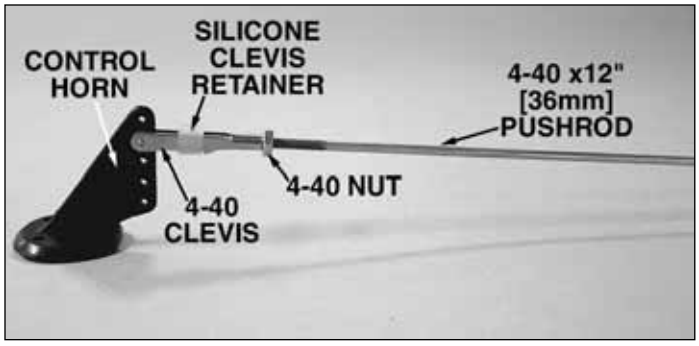


(The flaps should be retracted (up) when the servo arms are in this position.)

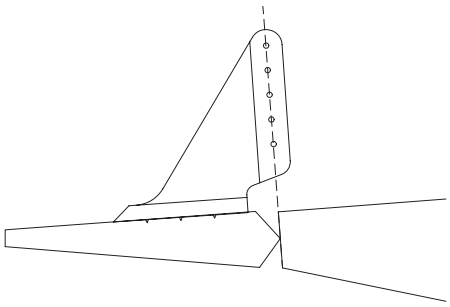
If you're *not* building your Giant Big Stik ARF with flaps hook up the servos this way.

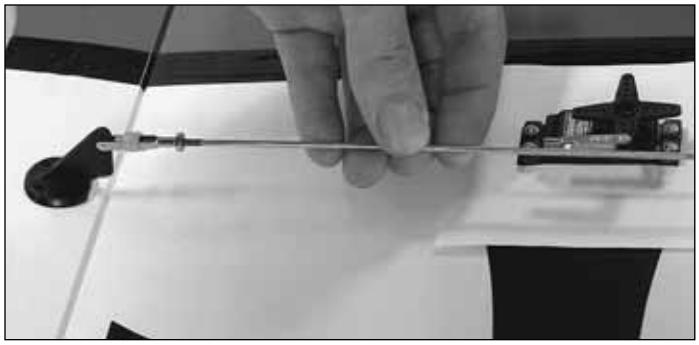
Connect the pushrods this way if using a four-channel radio (no flaps).



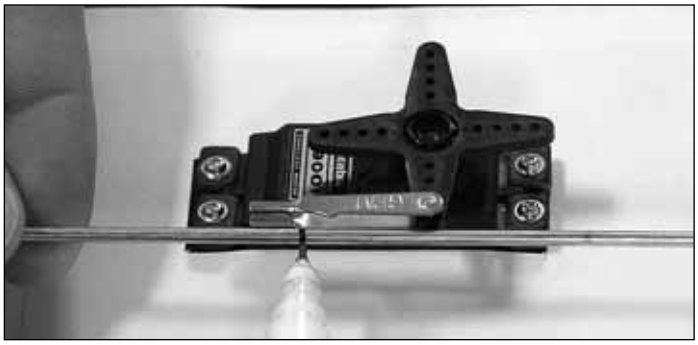


❏ 1. Make **four** pushrod assemblies from the hardware shown in the photo. Turn the pushrods into the clevis approximately twenty full turns.





❏ 2. Connect a solder-on clevis into the outer hole of one of the aileron servo arms. (Do not cut off the unused servo arms until instructed to do so when setting up the radio later.) Hold one of the control horn/pushrod assemblies to the wing with the horn resting on the aileron (as shown in the sketch) and the pushrod up to the clevis.



❏ 3. Use a fine-point felt-tip pen to mark the pushrod where it should be cut for soldering onto the clevis.

❏ 4. Cut the pushrod at the mark. Take the clevis off the horn, then refer to the ***"Expert Tip"*** that follows about soldering and solder the clevis onto the end of the pushrod.

HOW TO SOLDER

1. Use denatured alcohol or other solvent to thoroughly clean the pushrod. Roughen the end of the pushrod with coarse sandpaper where it is to be soldered.

2. Apply a few drops of soldering flux to the end of the pushrod, then use a soldering iron or a torch to heat it. "Tin" the heated area with ***silver solder*** *(GPMR8070) by applying the solder to the end. The heat of the pushrod should melt the solder–not the flame of the torch or soldering iron–thus allowing the solder to flow. The end of the wire should be coated with solder all the way around.*

3. Place the clevis on the end of the pushrod. Add another drop of flux, then heat and add solder. The same as before, the heat of the parts being soldered should melt the solder, thus allowing it to flow. Allow the joint to naturally cool without disturbing. Avoid excess blobs, but make certain the joint is thoroughly soldered. The solder should be shiny, not rough. If necessary, reheat the joint and allow to cool.

4. Immediately after the solder has solidified, but while it is still hot, use a cloth to quickly wipe off the flux before it hardens. ***Important:*** *After the joint cools, coat with oil to prevent rust.* ***Note:*** *Do not use the acid flux that comes with silver solder for electrical soldering.*

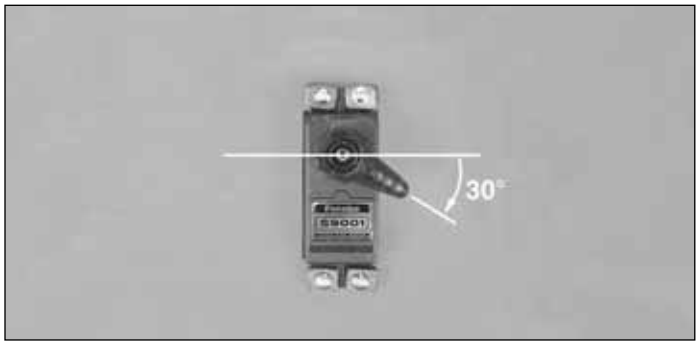
This is what a properly soldered clevis looks like–shiny solder with good flow, no blobs, flux removed.

❏ 5. Reconnect the pushrod to the servo horn, then mark and drill 1/8" [3.2mm] holes through the aileron for the control horn mounting screws. Mount the horn to the aileron with four 4-40 x 3/4" [19mm] screws and the mounting plate on the top.

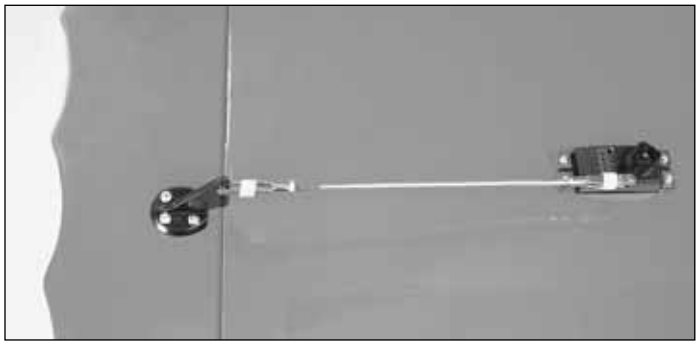
❏ 6. Make the other aileron pushrod the same length as the first, then hook up the other aileron with another control horn and mounting screws.

❏ 7. If you're building your model ***without*** flaps, make two more pushrods the same way and connect the "flap" servos to the "inner ailerons." Then proceed to ***"Finish the Wings."*** If you ***are*** building flaps, follow steps 8 through 10.

Now onto the flaps…



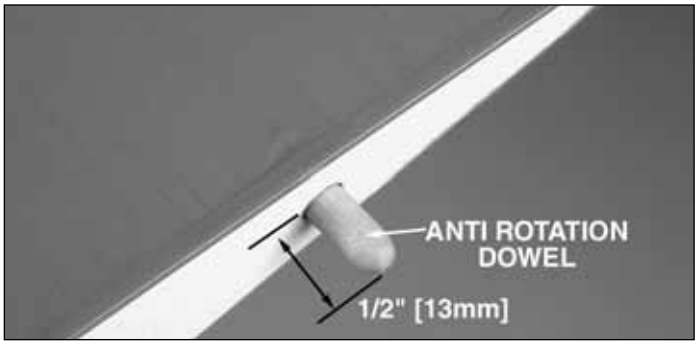
❏ 8. Place a servo arm on one of the flap servos. Rotate the arm downward 30-degrees.

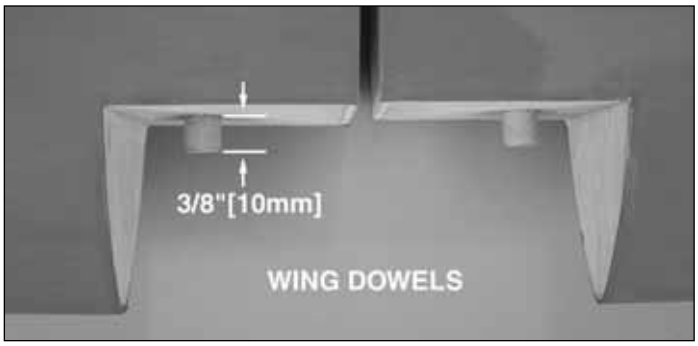


❏ 9. Make the flap pushrod and connect the flap to the flap servo the same way you did the ailerons.

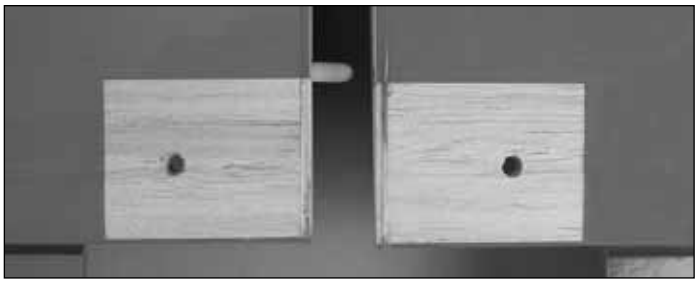
❏ 10. Hook up the other flap the same way.

Finish the Wings

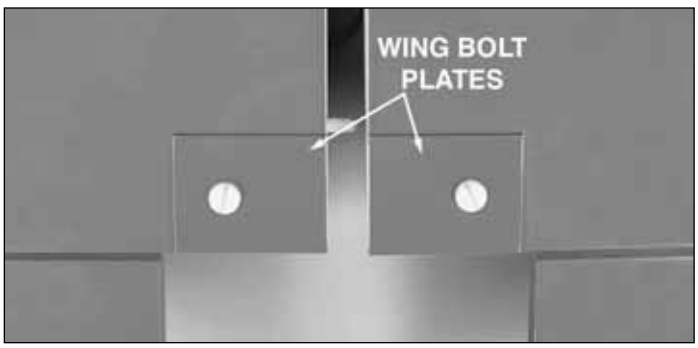




❏ 1. Round one end of the 1/4" x 1-3/16" [6.4 x 30mm] hardwood **anti-rotation dowel**. Use 30-minute epoxy to glue the dowel into the end of one of the wings. Glue both 3/8" x 2" [9.5 x 50mm] hardwood wing dowels into the front of both wings. 3/8" [10mm] of the **wing dowels** should protrude.



❏ 2. Cut the covering from the wing bolt holes in the wings and from the holes in both 1/16" [1.6mm] plywood **wing bolt plates**. Place the wing bolt plates on the wings using the 1/4-20 x 2" [50mm] nylon wing bolts to hold them in place. Mark the outline of the wing bolt plates onto the wings using a ballpoint pen. Remove the wing bolt plates and cut the covering from the wings 1/8" [3mm] **inside** the lines you marked.

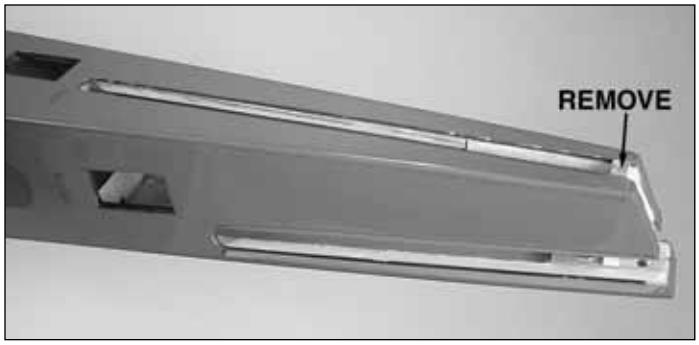


❏ 3. Glue the wing bolt plates into position using the wing bolts to keep them in alignment.

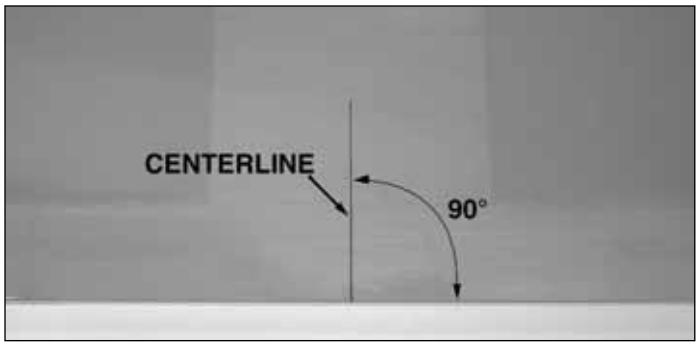
ASSEMBLE THE FUSELAGE

Mount the Stab

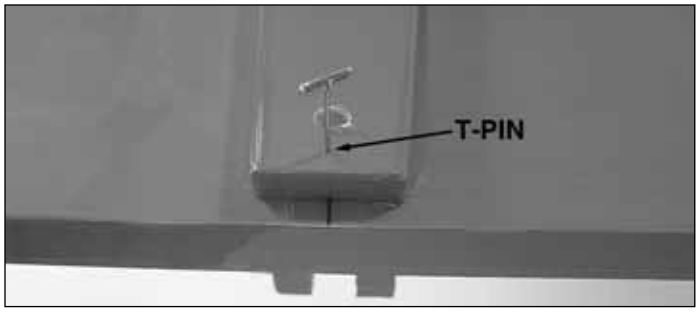
There are a few preparation and alignment procedures that must be done before the stabilizer can be glued into the fuselage...



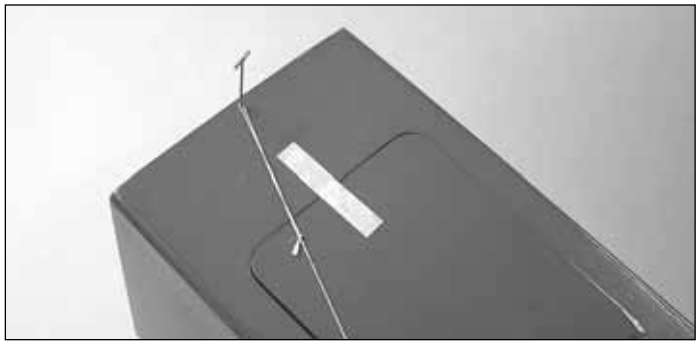
❏ 1. Cut the covering from the slots in the fuselage for the horizontal stabilizer ("stab") and vertical stabilizer ("fin"). Remove the balsa stick temporarily glued in place for shipping. The same as was done for the servo openings in the wings, cut and iron down the covering around the elevator and rudder servo openings in the fuselage.



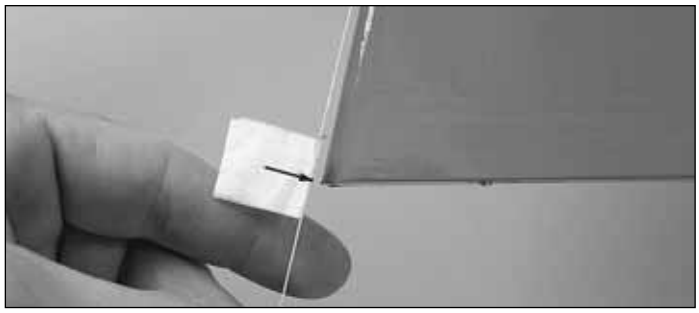
❏ 2. Taking accurate measurements, use a fine-point felt-tip pen to mark the middle of the stabilizer near the trailing edge. Use a builder's square to extend the line marking a short centerline.

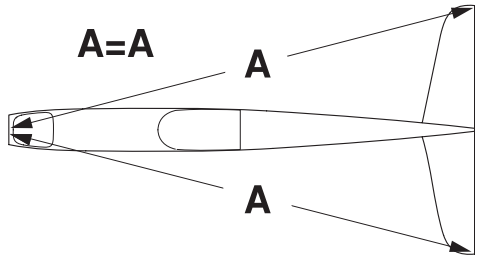


❏ 3. With the fuselage upside-down, slide the stabilizer **all the way** into the slot with the centerline on the bottom. Use the centerline to center the stab in the fuselage, then stick a T-pin through the bottom of the fuselage into the stab to hold the trailing edge in place.



❏ 4. Stick another T-pin into the bottom of the fuselage **centered** over the firewall. Tie a loop in an approximately 70" [180cm] piece of non-elastic string. Slip the loop in the string over this T-pin.



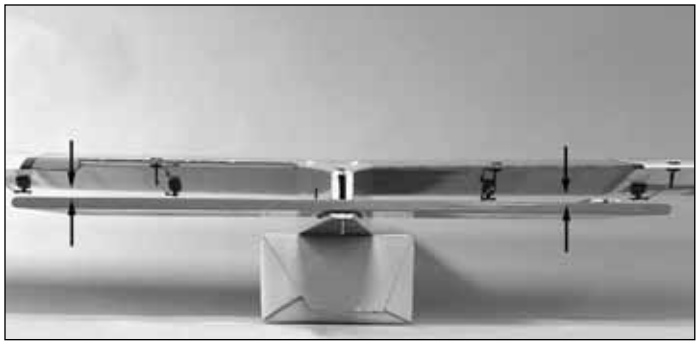


❏ 5. Fold a piece of masking tape over the string near the other end and draw an arrow on it. Slide the tape along the string and align the arrow with one end of the stab as shown. Swing the string over to the same position on the other end of the stab. Rotate the stab about the T-pin and slide the tape along the string until the stab is centered and the arrow aligns with both ends.

❏ 6. Use a fine-point felt-tip pen such as a Top Flite® Panel Line Pen (TOPQ2510) to mark the outline of the fuselage on the top and bottom of the stab.

One more alignment procedure…

❏ 7. Carefully turn the fuselage back over (so it is upright) and fit the wings together with the wing tube. Bolt the wing to the fuselage with two 1/4-20 x 2" [50mm] nylon wing bolts.

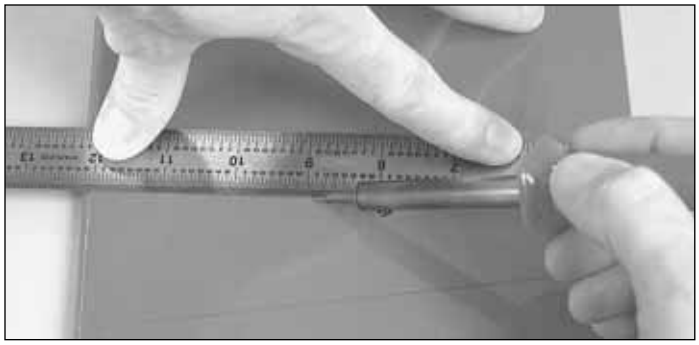


❏ 8. Stand approximately ten feet behind the model and see if the stab aligns horizontally with the wing. If they align, go to the next step. If the stab and wing do not align, first try placing a few ounces of weight on the high side of the stab. If that doesn't do it, remove the stab from the fuselage and lightly sand the slots in the fuselage to get the stab to align with the wing. Reinsert the stab and check the alignment. Continue to make small adjustments until alignment is achieved.

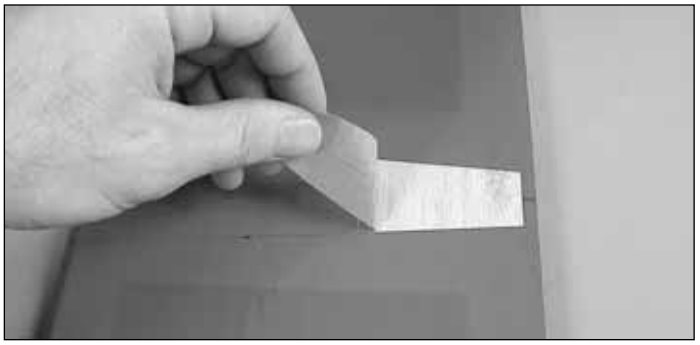
❏ 9. Remove the stab from the fuselage. Use a sharp #11 hobby knife or follow the ***"Expert Tip"*** below to cut the covering from the stab along the lines. Use care to cut **only** into the covering and **not** into the wood. Cutting into the balsa will weaken the structure.

EXPERT TIP

HOW TO CUT COVERING FROM BALSA



To avoid cutting into the balsa, use a soldering iron instead of a hobby knife to cut the covering. The tip of the soldering iron doesn't have to be sharp, but a fine tip does work best. Allow the iron to heat fully. Use a straightedge to guide the soldering iron at a rate that will just melt the covering and not burn into the wood. The hotter the soldering iron, the faster it must travel to melt a fine cut.



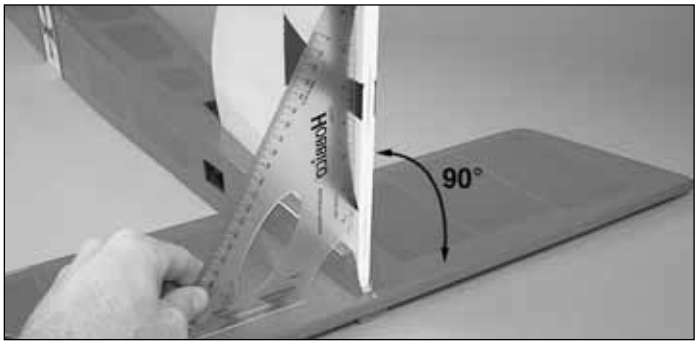
❏ 10. Peel the covering from the stab. Remove any ink with one of your paper towel squares dampened with denatured alcohol.

Finally! Time to glue in the stab…

❏ 11. **Thoroughly** coat all joining areas of the stabilizer and fuselage with 30-minute epoxy. Slide the stab into position. Use more paper towel squares and denatured alcohol to wipe off excess epoxy. Reinsert the T-pin through the back of the fuselage and the stab. Use the pin-and-string to center the stab the same as before. Position any weight used to align the stab with the wing. Do not disturb the model until the epoxy has fully hardened. **Note:** Be certain the spacing of the slot in the top of the fuselage for the fin remains the same so the fin can be glued into position next.

Mount the Fin

❏ 1. After the epoxy on the stabilizer has hardened, test fit the fin. Make sure it sits all the way down into the fuselage and is fully contacting the stab. The same as was done with the stabilizer, mark both sides of the fin around the top of the fuselage, then cut and peel off the covering.

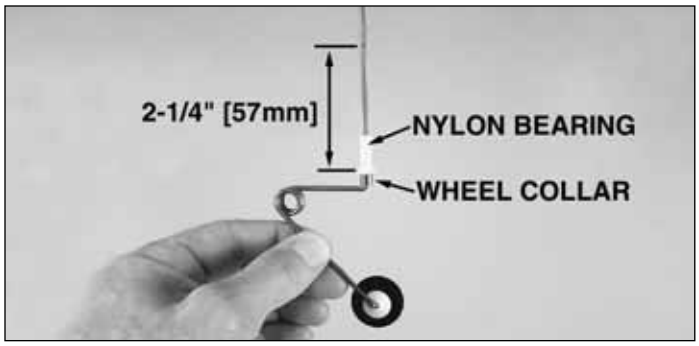


❏ 2. Glue the fin into position with 30-minute epoxy. Use a Builder's Triangle to make sure the fin is perpendicular to the

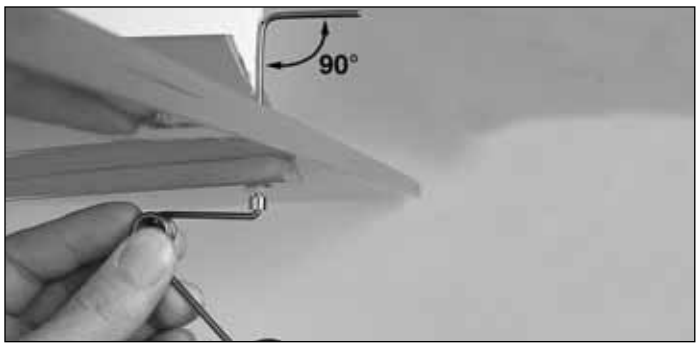
stabilizer. If necessary, use a long strip of masking tape to pull the top of the fin over to one side or the other of the stab.

If flying your Giant Big Stik ARF with a Fuji BT-32, the nose-gear option may not be used due to the distance that the engine would have to be extended from the firewall. Mount the tail gear as illustrated in the following steps.

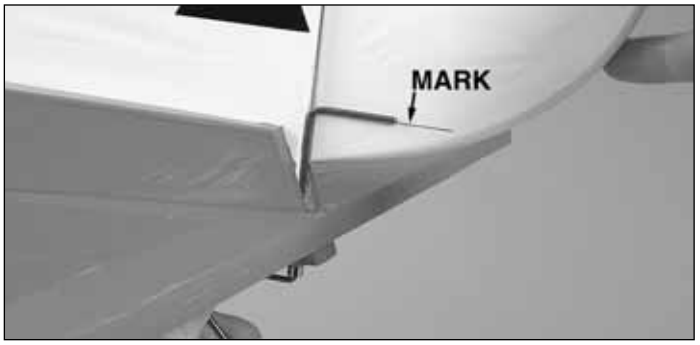
❏ 3. **Taildragger:** If building your Giant Big Stik ARF as a taildragger, use the hole already in the bottom of the fuselage under the trailing edge of the stabilizer as a guide to drill a 15/64 [6mm] (or 1/4" [6.4mm]) hole up through the stabilizer.



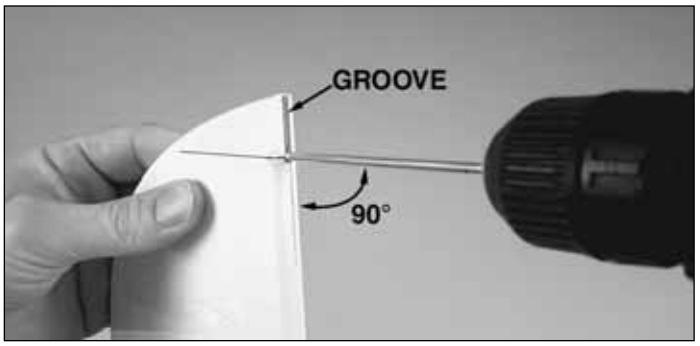
❏ 4. **Taildragger:**Use coarse sandpaper to roughen the top couple of inches of the tail gear wire. Slide a 3/32" [2.4mm] wheel collar and the nylon bearing onto the wire. Mark the wire 2-1/4" [57mm] up from the collar on the base of the bearing.



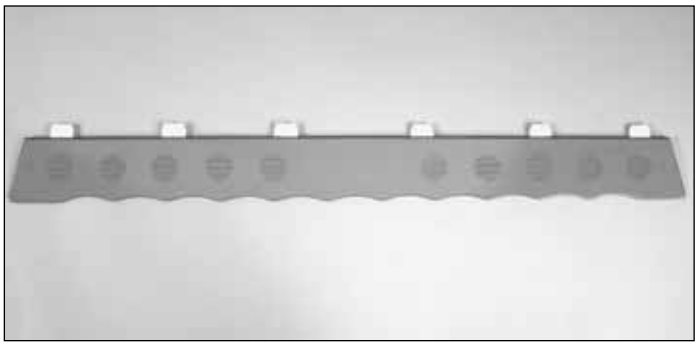
❏ 5. **Taildragger:** Insert the assembly up through the bottom of the fuselage. Use two pairs of pliers to make a 90° bend in the wire at the mark–be sure to make the bend in the correct direction so the wheel will be facing the correct direction–and be centered, when the wire is inserted into the rudder.



❏ 6. **Taildragger:** Hold the rudder up to the fin and mark where the “arm” of the tail gear wire will enter the rudder.



❏ 7. **Taildragger:** Use a hobby knife or a 3/32" [2.4mm] brass tube sharpened on the end to cut a groove in the leading edge of the rudder to accommodate the tail gear wire. Drill a 3/32" [2.4mm] hole at the mark for the arm.



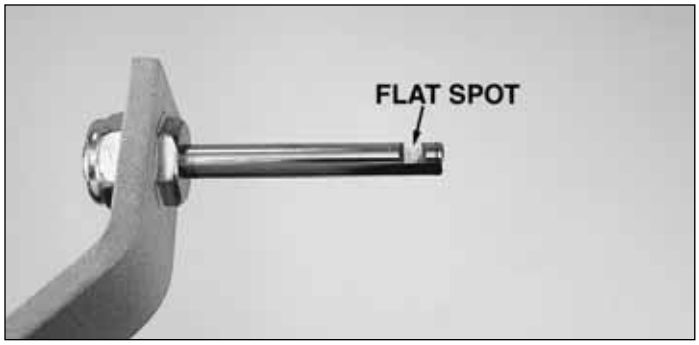
❏ 8. Cut three more 1" x 1" [25 x 25mm] CA hinges for the rudder (or cut nine hinges for both the elevator and rudder). Test fit the rudder to the fin and the tail gear wire. Make any adjustments necessary for a good fit.

❏ 9. Remove the rudder. Apply epoxy in the groove and the hole for the tail gear wire, then permanently glue the rudder into position with the CA hinges. Wipe away excess epoxy that comes out of the rudder before it hardens. Add a drop of threadlocker to a 4-40 set screw and tighten it into the wheel collar on the tail gear.

❏ 10. Permanently join the elevator to the stabilizer with the hinges and thin CA.

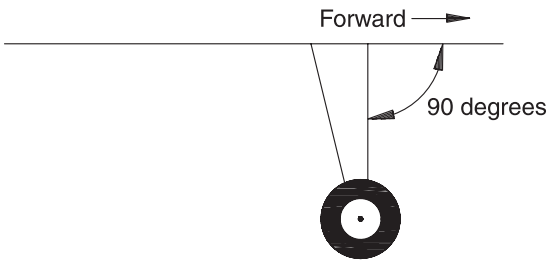
Mount the Landing Gear

❏ 1. Slide a wheel and a 3/16" [4.8mm] wheel collar onto one of the 3/16" x 2" [4.8 x 50mm] axles. Use a fine-point felt-tip pen to mark the end of the collar and the hole for the set screw in the collar all the way around the axle. Mark the other axle the same way.



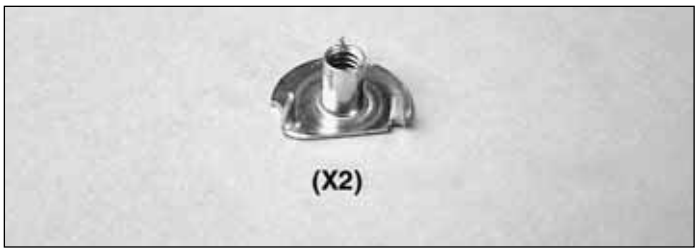
❏ 2. Use a cutoff wheel or a metal-cutting saw to cut the axles about 1/16" [2mm] past the line that marks the end of the collar. File a flat spot over the line that marks the set screw. Fasten the axles to the landing gear with the 5/16"-24 lock nuts.

❏ 3. Mount a wheel to each axle with a wheel collar fastened to the axle with a 6-32 set screw and a drop of Threadlocker. Add a drop of oil to both sides of the wheels.



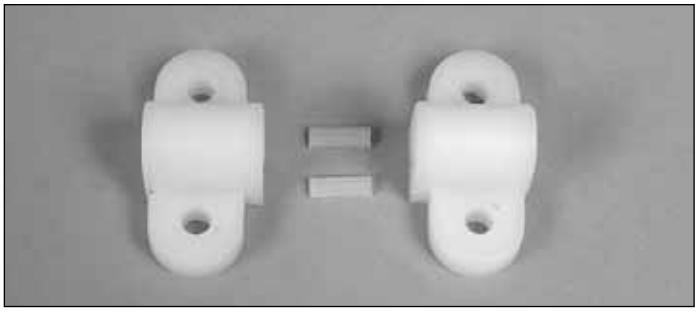
❏ 4. **Taildragger:** If building your Giant Big Stik ARF as a taildragger, mount the main landing gear at the forward mounting location with four 6-32 x 1" [25mm] screws, #6 washers and #6 flat washers. If building your Giant Big Stik ARF with a nose gear, mount the landing gear in the aft mounting location. Note that the 90° angle side of the gear faces forward.

Follow these steps if building your Giant Big Stik ARF with nose gear. Otherwise, skip to step 1 on page 16.



❏ 5. **Tricycle:** Use a metal file, wire cutters or a rotary tool with a cut-off wheel to grind one edge off of **two** 6-32 blind nuts.

❏ 6. **Tricycle:** Apply a few dabs of epoxy to the front of the two blind nuts, then use a 6-32 x 3/4" [19mm] screw to pull the nuts into the bottom two holes in the back of the firewall for the nose gear bearing. Pull two more blind nuts into the top holes the same way.



❏ 7. **Tricycle:** Cut apart the two pieces of the nylon nose gear bearing.

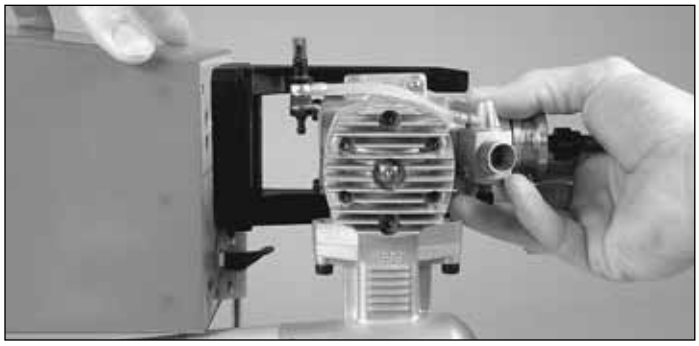
❏ 8. **Tricycle:** Slide the nose gear wire onto the nose gear bearings and the steering arm in between. Temporarily mount the bearings to the firewall with four 6-32 x 3/4" [19mm] screws, #6 lock washers and #6 flat washers. For now, it doesn't matter which side the steering arm is on, but the top of the nose gear wire should be even with the top bearing.

Mount the Engine

GLOW ENGINE

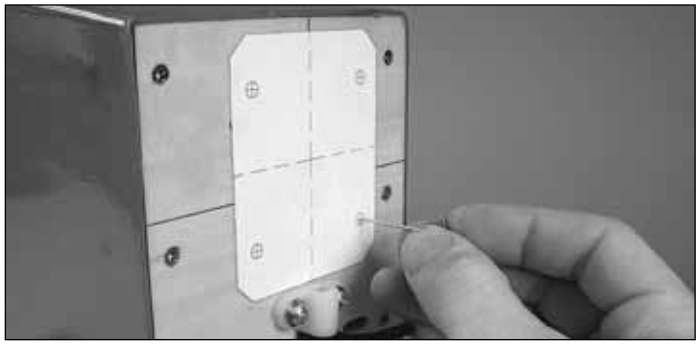
❏ 1. Fit the engine to the engine mount halves and hold the assembly together using small C-clamps. (Since this plane has no engine cowl it doesn't matter how far forward or aft you position the engine on the mount.) Use a Great Planes Engine Hole Locator or a drill bit to mark the engine mounting holes into the engine mounts.

❏ 2. Take the engine off the mount. Drill #29 holes at the marks. Use an 8-32 tap to cut threads into the holes. Mount the engine to the mount with four 8-32 x 1" [25mm] socket head cap screws and #8 lock washers.



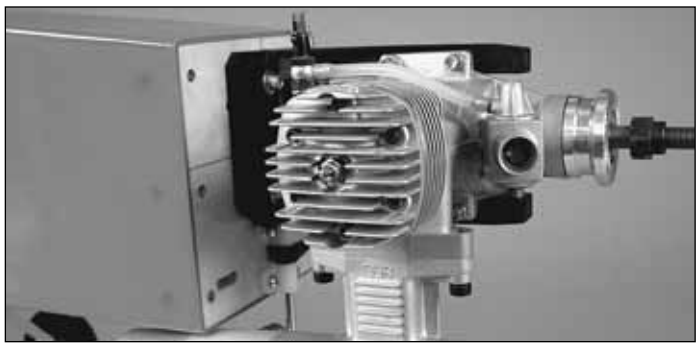
❏ 3. Temporarily mount the muffler to your engine. Hold the engine and mount to the firewall to see which way it will be mounted. As shown in the photo, side mounting is preferred as the engine exhaust will be under the fuselage. But in order to side mount the engine, the muffler must clear the nose gear and the bottom of the fuselage. If it does not, you will have to mount the engine a different way. **Note:** The engine must be centered laterally on the vertical line on the firewall, but it is okay to move the engine up, above the horizontal line in order to clear the nose gear bearing.

❏ 4. Once you have decided which way to mount the engine, cut out the Glow Engine Mounting Template from the back of the manual. As the supplied Great Planes engine mount is adjustable and the mounting bolt holes are slotted, the crossmarks for the bolt holes on the template will work for all engines that fit the mount, but the outline depicts the engine mount "footprint" when an O.S. 1.60 FX is mounted.



❏ 5. Use tape or spray adhesive to hold the glow engine mount template to the firewall. As mentioned before, the vertical line on the template should align with the vertical line on the firewall, but it is okay if you have to raise the template so the mount will clear the nose gear bearing. If the nose gear is not in the way, center the horizontal line on the template with the horizontal line on the firewall as well. Use a large T-pin or a wire sharpened on the end to transfer the bolt hole marks on the template into the firewall.

❏ 6. Drill 13/64" [5.2mm] (or 3/16" [4.8mm]) holes at the marks. Apply a few dabs of epoxy to the front of four 8-32 blind nuts. Use an 8-32 x 1-1/4" [32mm] bolt with large washers to draw the blind nuts into the back of the firewall.



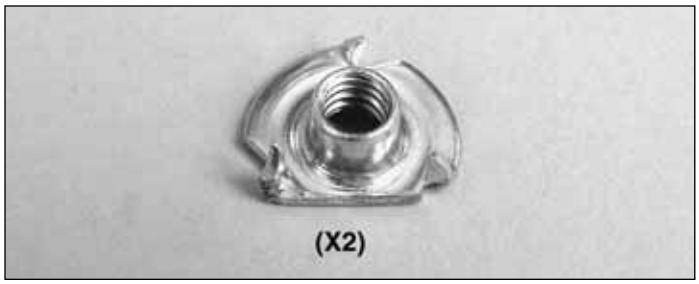
❏ 7. Mount the engine mount with the engine to the firewall using four 8-32 x 1-1/4" [32mm] socket head cap screws and #8 flat washers and lock washers.

GAS ENGINE (FUJI BT-32)

If mounting a gas engine other than the Fuji BT-32, use these instructions for ideas how to mount your engine in a similar manner.

❏ 1. Cut the Fuji BT-32 Engine Mount Template from the back of the manual 1/16" [1.6mm] outside the dashed lines. Use tape or repositionable spray adhesive to temporarily hold the template to the firewall. The horizontal and vertical lines on the template should align with the lines on the firewall. Use a large T-pin or a sharpened wire to mark the crossmarks for the bolt holes onto the firewall.

❏ 2. Remove the template. Drill 1/8" [3.2mm] pilot holes at the marks you made. Enlarge the holes with a 19/64" [7.5mm] (or 9/32" [7mm] drill).

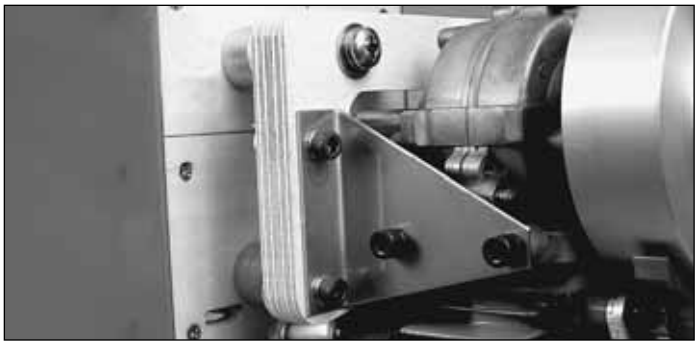


❏ 3. Cut or grind the side off two 1/4-20 blind nuts.

❏ 4. Apply epoxy to the front of one of the blind nuts you just cut off. Use a couple of large washers and a 1/4-20 bolt to draw the nut into the back of the firewall in one of the holes on the left side of the fuselage (to clear the aluminum bracing inside).

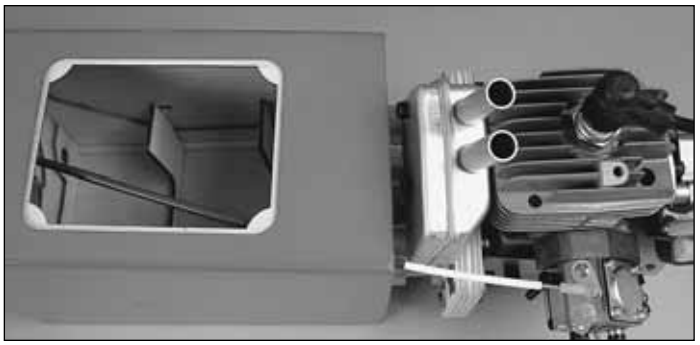
❏ 5. Draw the other blind nut into the other hole on the left side, and two more blind nuts into the remaining two holes the same way.

❏ 6. Glue together the two 1/4" [6.4mm] plywood Fuji engine mount plates. Install four 10-32 blind nuts (not included) in the back of the plate where shown. These will be for holding the engine to the plate.



❏ 7. Mount the engine mount plate to the firewall with the included aluminum standoffs, 1/4-20 x 2-1/2" [63mm] Phillips or hex-head bolts and 1/4" [6.4mm] flat and lock washers (not included). Do not use socket-head cap screws–they stick out too far and will interfere with the engine. **Note:** The actual standoffs included with your kit might look different than the ones in the photo.

While we're working on the front of the fuselage let's go ahead and hook up the throttle …

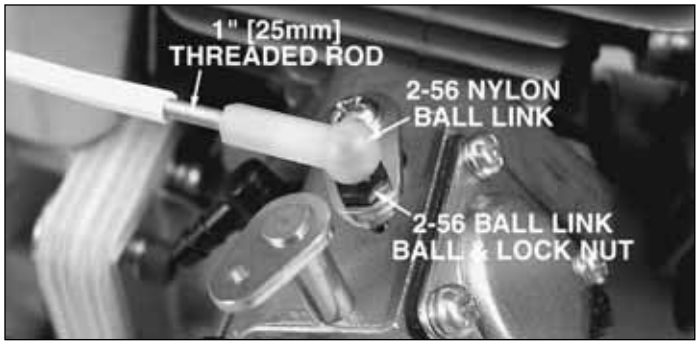


Refer to this photo to install the throttle pushrod.

❏ 8. Drill a 3/16" [4.8mm] hole through the firewall in the location shown (in the lower left corner for the Fuji BT-32) for

the throttle pushrod guide tube–this may require temporary removal of the engine. Drill the hole at an angle so the guide tube will cross to the other side of the fuselage and so the pushrod will align with the carburetor arm on the engine.

❏ 9. Cut 17" [430mm] from the 36" [915mm] gray pushrod guide tube. Use coarse sandpaper to roughen the outside of the tube so glue will adhere. Slide the guide tube through the hole in the firewall up into the radio compartment. There is another hole in the former between the optional landing gear mounting locations that the guide tube should go into.

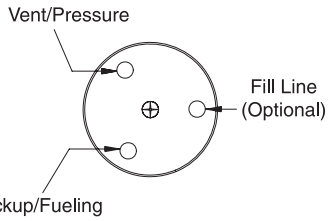


❏ 10. Cut the white, plastic throttle pushrod to a length of 23" [585mm]. Connect the pushrod to the carburetor arm using the hardware shown in the photo.

We'll connect the other end of the pushrod to the servo later…

❏ 11. It's not necessary to do at this moment, but don't forget to fuelproof the plywood engine mount plate before you fly the model.

Install the Fuel Tank



Front View

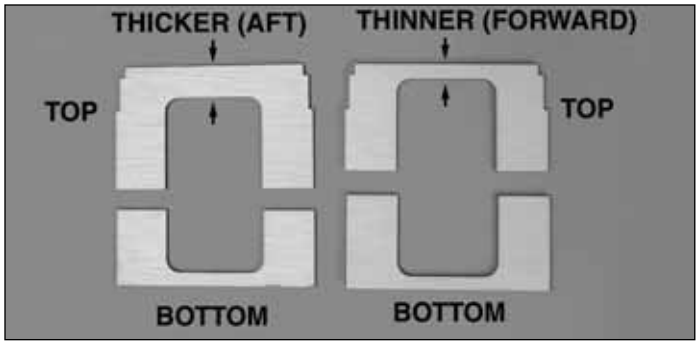
❏ 1. Remove the stopper from the fuel tank and shake out the contents. If using a gas engine, follow the instructions in the ***"Gas Fuel Tank Conversion"*** text box that follows this step. Otherwise, assemble the stopper assembly to suit your requirements for glow–most applications will require only a two-line system–one line for the fuel pickup and fueling/defueling and another line for overflow/muffler pressure (or for a vent on gas engines). Since the engine and fuel lines on this model are easy to get to, fueling will be done through the pickup line. If, however, a third line is required for fueling/defueling, simply install the third line into the stopper (additional fuel line and clunk not included with this kit). The third line will have to be closed after fueling. Install the aluminum tubes into the stopper **as shown in the sketch above**. When it's time to install the tank and connect the lines later, you can refer to the sketch so you will know which line goes to the carb and which line goes to the muffler.

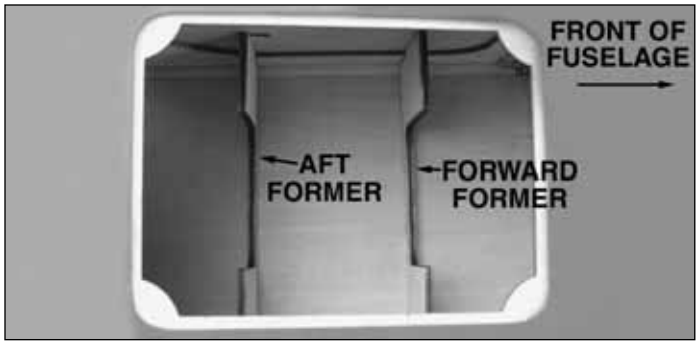
Gas Fuel Tank Conversion

1. The hardware necessary to do the gas conversion is listed in the front of the manual. Substitute the included aluminum fuel line tubes with 1/8" brass tubing. Cut the vent tube and the pickup tube to the correct length, then solder fuel line barbs onto one end of the tubes. Install the tubes into the stopper assembly, then solder another fuel line barb onto the other end of the pickup tube.

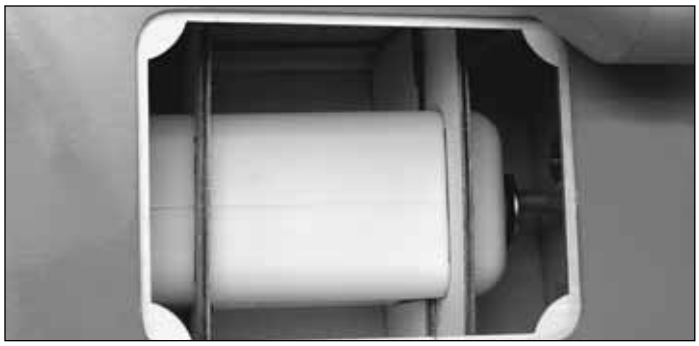
2. Connect the clunk to the pickup tube via a piece of gas-compatible fuel line (not included).

❏ 2. Install the stopper assembly into the tank and tighten the screw to complete the seal. Make sure the clunk on the end of the fuel line does not contact the rear of the tank-otherwise it may become stuck above the fuel level while the model is in flight.





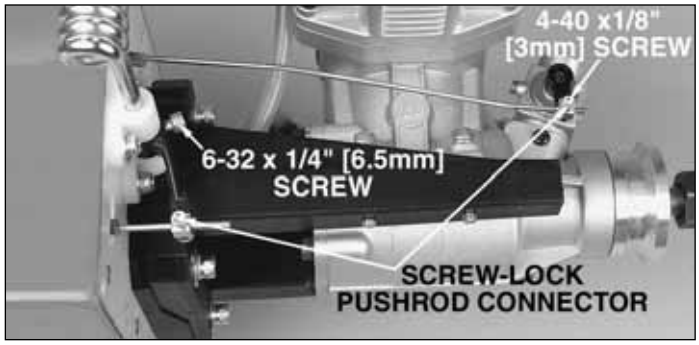
❏ 3. Determine how far forward or aft you will be mounting the fuel tank in the fuel tank compartment. The tank may be positioned to accommodate a battery pack for the electronic ignition system should you be using one on a spark-ignition (gas) engine. Glue the plywood top fuel tank formers into position so they will support the tank–be certain to glue the aft former behind the forward former.

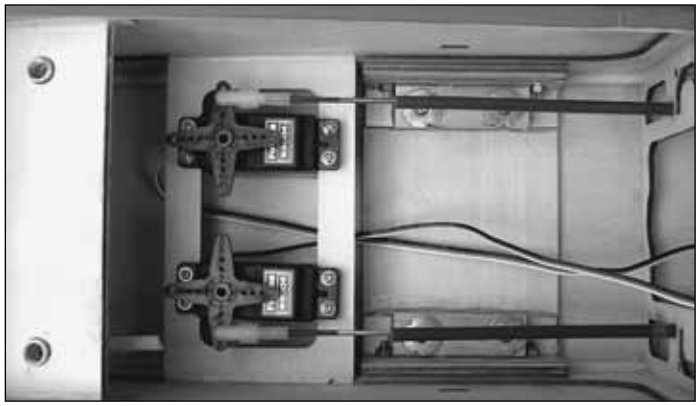


❏ 4. Fit the tank into the fuel tank compartment. Connect the fuel lines (not included) to the tank, then guide the lines through the hole in the middle of the firewall and connect them to the carburetor and the pressure fitting on the muffler (on glow engines). Temporarily lift the tank out of the way, then apply a few dabs of RTV silicone to the top fuel tank formers and drop the tank back into position. Apply a few dabs of RTV silicone to the bottom fuel tank formers, then glue them into position.

Hook Up the Throttle & Nose Gear Steering

The nose gear steering and throttle are installed simultaneously. Refer to the following photos for installation. (Remember, the unused servo arms won't be trimmed from the four-arm servo arms until setting up the radio later.)





❏ 1. If you've installed a Fuji engine, the throttle pushrod is already connected to the engine. If you are using a glow engine and have not yet installed the throttle pushrod, drill a 3/16" [4.8mm] hole through the firewall for the throttle pushrod guide tube. (If you don't have an extended drill bit the engine will have to be removed–or you could drill the hole with a 3/16" [4.8mm] brass tube sharpened on the end). As best as you can, position the hole so the throttle pushrod will align with the carburetor arm–it doesn't have to be perfect because you will be able to bend the pushrod later. Be certain you do not drill into the fuel tank.

❏ 2. Cut 17" [430mm] from the 36" [915mm] gray pushrod guide tube. Use coarse sandpaper to roughen the outside of the tube so glue will adhere. Slide the guide tube through the hole you drilled in the firewall and through the holes in the other two formers in the fuselage.

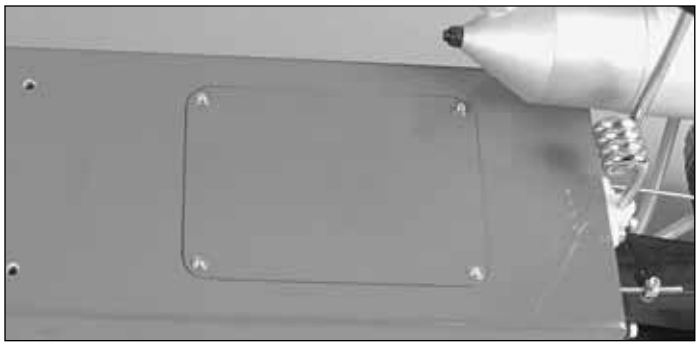
❏ 3. Thread a nylon clevis onto a 36" [915mm] wire pushrod. Start out by cutting the pushrod to a length of 27" [685mm], then mount the throttle servo in the fuselage and hook up the throttle using the hardware shown. Bend the pushrod as necessary to connect it to the brass screw-lock connector carburetor arm, then cut the pushrod approximately 3/8" [9.5mm] past the connector.

❏ 4. If you are building your Giant Big Stik ARF with nose gear, use another 36" [915mm] pushrod, the remainder of the 3/16" [4.8mm] guide tube and the same hardware to hook up the nose gear steering. Mount the nose gear steering servo. It will be easiest to position the steering arm on the side opposite the throttle pushrod-there are two slots in the firewall for the pushrod–use the one that works best for your setup.

❏ 5. Once the throttle and nose steering are connected, use medium CA to glue the guide tubes in place. Don't

forget to temporarily remove the servo mounting screws, harden the holes with thin CA, allow to harden, then reinstall the screws.

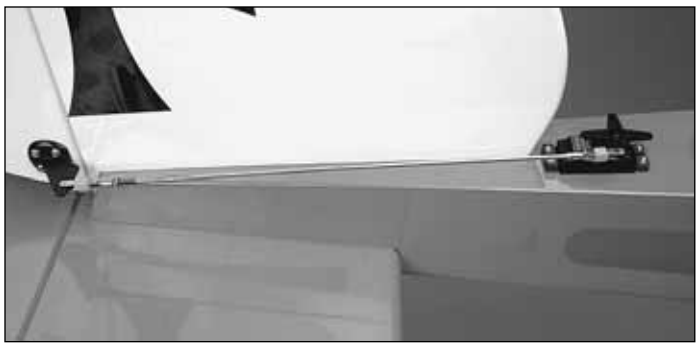
❏ 6. If you've installed the nose gear, temporarily remove the nose gear wire and file a flat spot for the screw in the steering arm. Reinstall the wire and tighten the 6-32 x 1/4" [6.4mm] screw with a drop of threadlocker.



❏ 7. Position the fuel tank hatch over its opening. Using the holes already in the hatch as a guide, drill 1/16" [1.6mm] holes into the support ledge. Mount the hatch with four #2 x 3/8" screws and #2 washers. Remove the screws and hatch, harden the holes with thin CA, allow to harden, then mount the hatch.

Hook Up the Elevator & Rudder Servos

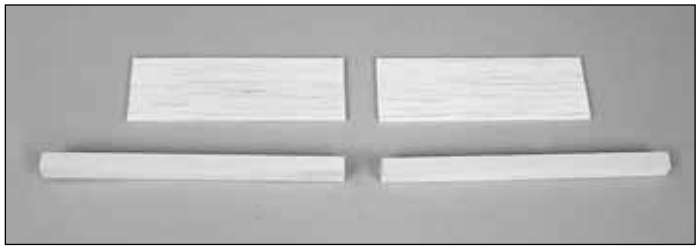
❏ 1. Connect one 36" [910mm] servo extension to each servo for the elevator and rudder. Secure the connections with heat shrink tubing. Guide the servo wires down through the fuselage and mount the servos using the same procedures used for mounting servos all along (don't forget to harden the screw holes with thin CA).



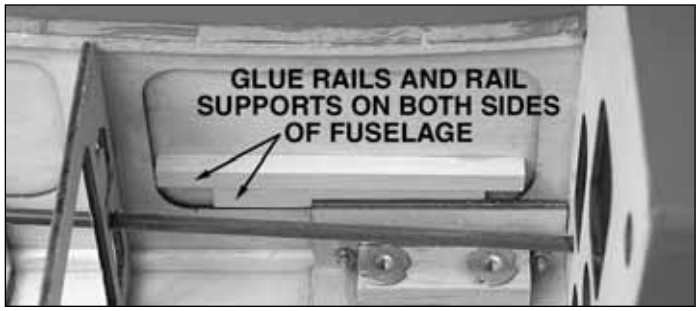
❏ 2. Make the pushrods and hook up the rudder and elevator using the same hardware used for the flaps and ailerons. Be certain to distance the elevator control horn far enough away from the rudder so that the two will not interfere.

GET THE MODEL READY TO FLY

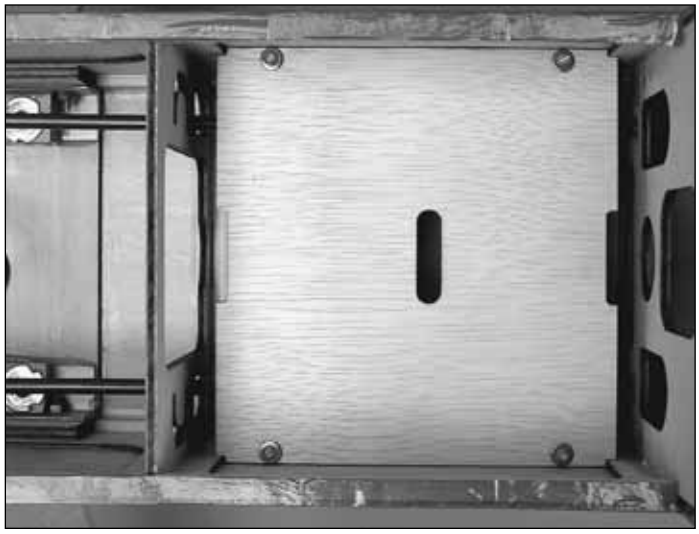
Mount the Receiver & Battery



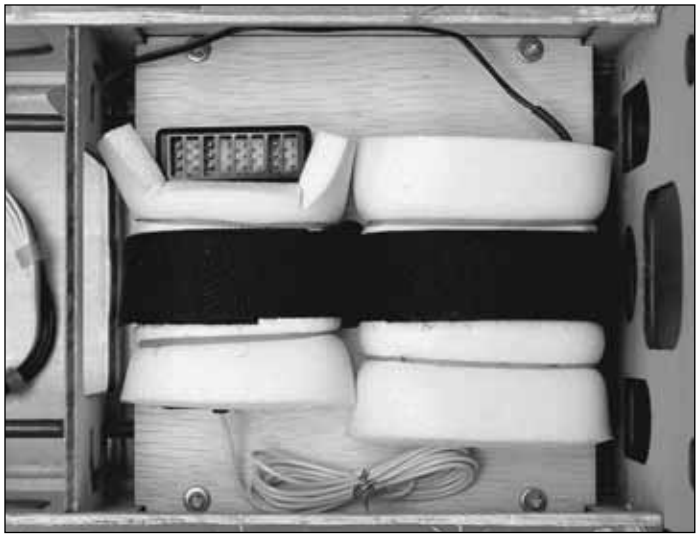
❏ 1. Cut the 1/4" x 1/4" x 8" [6.4 x 6.4 x 200mm] hardwood mounting rails into two 4" [100mm] pieces. Cut the 1/16" x 1" x 6" [1.6 x 25 x 150mm] balsa rail support into two 3" [75mm] pieces.



❏ 2. A plywood receiver/battery tray is included with this kit. For C.G. considerations, the tray may be mounted ahead of or behind former 3. If using a glow engine, mount the tray in the forward location. If using a gas engine, mount the tray in the aft location. Trim the 1/16" x 1" x 3" [1.6 x 25 x 75mm] balsa rail supports as necessary to position the rails at the desired height in the fuselage. For the model shown in this manual, the supports were cut to a width of 1/2" [13mm]. Glue the rail supports and the rails into position.



❏ 3. Test mount the receiver/battery tray to the rails by drilling 1/16" [1.6mm] holes through the rails and screwing them in place with four #2 x 3/8" [9.5mm] screws and #2 washers.



❏ 4. Take the tray out of the fuselage, then use the included Velcro strips and R/C foam rubber (not included) to mount the receiver and battery. Add a few drops of thin CA to the screw holes, allow the glue to harden, then mount the tray back into the fuselage.

❏ 5. Mount the receiver on/off switch in a location that is easily accessible and will not get coated by engine exhaust. A Great Planes Switch & Charge Jack Mounting Set (GPMM1000) was used on this model and is a great way to easily connect to the battery pack for voltage monitoring.

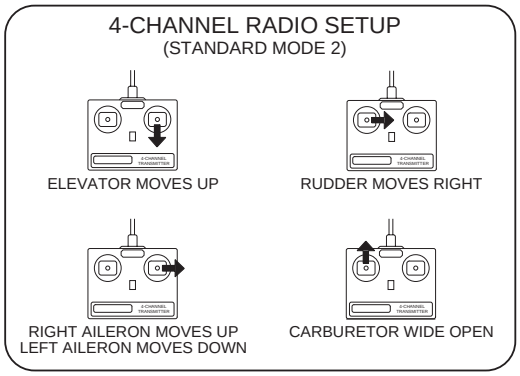
❏ 6. Connect the servos in the fuselage to the receiver. Guide the receiver antenna away from the servos and on/off switch and down through the antenna tube that is factory-built into the fuselage. Note the Y-connectors connected to the receiver for the flaps and ailerons.

Center the Servos

With the radio system connected and operating, turn on the transmitter and receiver. Make sure the trims on the transmitter are centered. Starting with the rudder servo, test fit the four-arm servo arm in one of the four positions until you find the one that is 90-degrees. Cut off the remaining arms. Repeat this procedure for the rest of the servos. **Note:** For this procedure, the flap servos **cannot** be connected to a function operated by a two-position switch. Temporarily connect the flap servos to a function that has a center (such as one of the control sticks or a slider) to find the servo arm that will be 90-degrees.

Check the Control Directions

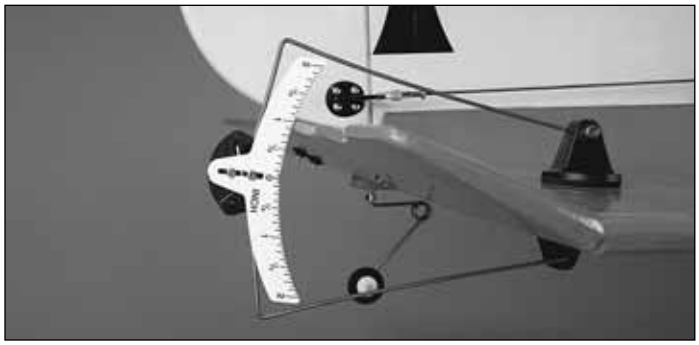
❏ 1. With the transmitter and receiver still on, check all the control surfaces to see if they are centered. If necessary, adjust the clevises on the pushrods to center the control surfaces.



❏ 2. 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



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 high rate setting. **Note:** The throws are measured at the widest part of each control surface.

These are the recommended control surface throws:

	High Rate	Low Rate
ELEVATOR:	3/4" [19mm] up 3/4" [19mm] down	1/2" [13mm] up 1/2" [13mm] down
RUDDER:	3" [76mm] right 3" [76mm] left	1-1/2" [38mm] right 1-1/2" [38mm] left
AILERONS:	1-1/4" [32mm] up 1-1/4" [32mm] down	1" [25mm] up 1" [25mm] down
FLAPS:	1-5/8" [42mm] full 13/16" [21mm] half	

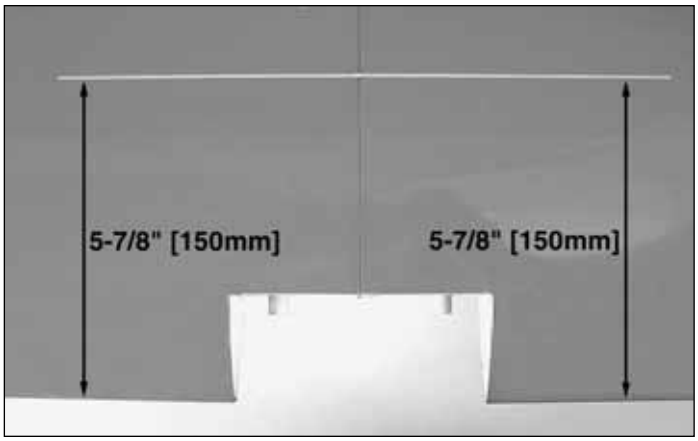
Note: If you've set up your Giant Big Stik ARF with flaps, 1/8" [3mm] of **down** elevator mixing is recommended with the half-flap setting and 1/4" [6mm] of **down** elevator is recommended with the full-flap setting. Without this down elevator mixing, the nose will noticeably pitch upward when the flaps are extended.

IMPORTANT: The Giant Big Stik ARF has been **extensively** flown and tested to arrive at the throws at which it flies best. Flying your model at these throws will provide you with the greatest chance for successful first flights. If, after you have become accustomed to the way the Giant Big Stik ARF flies, you would like to change the throws to suit your taste, that is fine. However, too much control throw could make the model difficult to control, so remember, "more is not always better."

Balance the Model (C.G.)

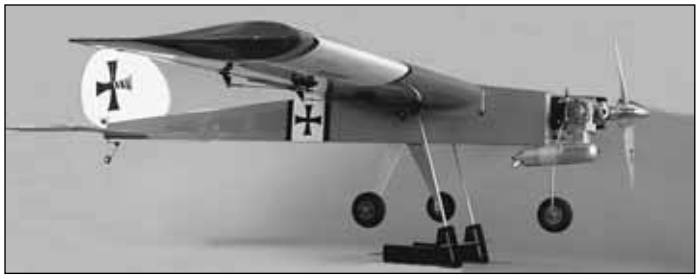
More than any other factor, the **C.G.** (balance point) can have the **greatest** effect on how a model flies, and may determine whether or not your first flight will be successful. If you value this model and wish to enjoy it for many flights, **DO NOT OVERLOOK THIS IMPORTANT PROCEDURE.** A model that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



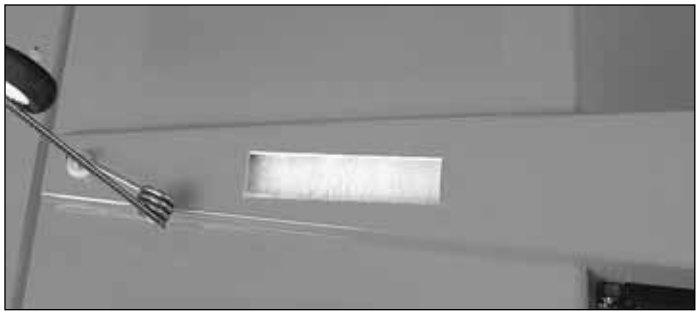
❏ 1. Temporarily join the wings with the joiner tube. If you will be using a Great Planes C.G. Machine to balance the model, set the rulers to 5-7/8" [150mm], then mount the wing to the fuselage and proceed to the next step. If you will not be using a C.G. Machine, use a fine-point felt-tip pen to accurately mark the C.G. on the bottom of the wing 5-7/8" [150mm] back from the leading edge. Lay a piece of narrow (1/8" [2mm]) tape over the line so you will be able to feel it with your fingers when lifting the model to check the C.G.

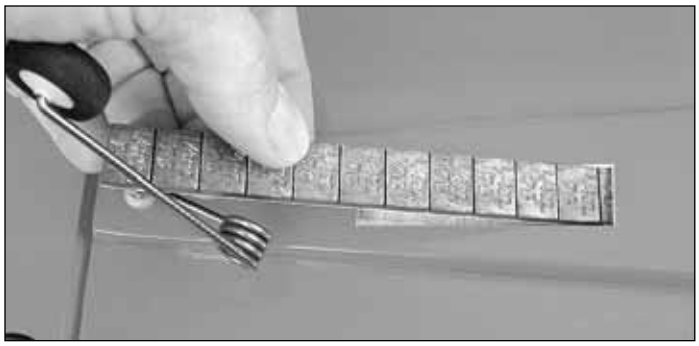
This is where your model should balance for the first flights. Later, you may wish to experiment by shifting the C.G. up to 5/8" [16mm] forward or back to change the flying characteristics. Moving the C.G. forward may improve the smoothness and stability, but the model may then require more speed for takeoff and make it more difficult to slow for landing. Moving the C.G. aft makes the model more maneuverable, 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 the wing attached to the fuselage, all parts of the model installed (ready to fly) and an empty fuel tank, place the model on the CG Machine or lift it at the balance point you marked.

❏ 3. 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 possible, relocate the battery pack and receiver to minimize or eliminate any additional ballast required. If additional weight is still required and you are using a glow engine, 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 cannot be used or is not enough, use Great Planes (GPMQ4485) "stick-on" lead. To find out just how much weight is needed, begin by placing incrementally increasing amounts of weight on the fuselage where needed until the model balances. Once you have determined the amount of weight required, it can be permanently attached. A good place to add stick-on nose weight is inside the fuel tank compartment.





If tail weight is required, it may be added by cutting open the bottom of the fuselage and gluing it permanently inside.

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.

❏ 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 wings level, have an assistant help you 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

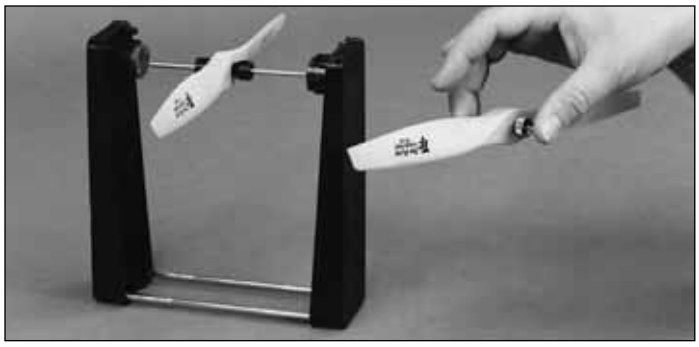
No matter if you fly at an AMA sanctioned R/C club site or if you fly somewhere on your own, you should always have your name, address, telephone number and AMA number on or inside your model. It is **required** at all AMA R/C club flying sites and AMA sanctioned flying events. Fill out the identification tag on page 28 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 fifteen 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 the 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

If the engine is new, follow the engine manufacturer's instructions to break-in the engine. After break-in, confirm that the engine idles reliably, transitions smoothly and rapidly to full power and maintains full power-indefinitely. After you run the engine on the model, inspect the model closely to make sure all screws remained tight, the hinges are secure, the prop is secure and all pushrods and connectors are secure.

Range Check

Ground check the operational range of your radio before the first flight of the day. With the transmitter antenna collapsed and the receiver and transmitter on, you should be able to walk at least 100 feet away from the model and still have control. Have an assistant stand by your model and, while you work the controls, tell you what the control surfaces are doing. Repeat this test with the engine running at various speeds with an assistant holding the model, using hand signals to show you what is happening. 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.**

IMAA SAFETY CODE (excerpts)

Since the Giant Big Stik ARF qualifies as a "giant-scale" model and is therefore eligible to fly in IMAA events, we've printed excerpts from the IMAA Safety Code which follow.

What is Giant-Scale?

The concept of large or giant-scale is generally considered to apply to radio controlled model aircraft with minimum wingspans of 80 inches for monoplanes and 60 inches for multi-wing aircraft. Quarter-scale or larger replicas of person-carrying aircraft with proper documentation (minimum 3-view drawing) which do not fit the size requirements will also be permitted.

SECTION 1.0: SAFETY STANDARD

1.1 Adherence to Code: The purpose of this Safety Code is to provide a structure whereby all participants, including spectators, will be aware of the inherent dangers in the operation of radio controlled aircraft. This code is meant to serve as a minimum guideline to all participants. It is understood that the ultimate responsibility for the safety of any aircraft lies with the owner(s), pilot(s) and spectator(s) involved in any event. It is the responsibility of all participants to exercise caution when operating, or observing the operation of all radio controlled aircraft. The pilot/owner of an aircraft will not be dissuaded from taking whatever steps they deem necessary, in addition to this code, to insure that their aircraft is safe.

1.2 The most current AMA Safety Code in effect is to be observed.

SECTION 3.0: SAFETY REVIEW

3.4 Flight Testing: All aircraft are to have been flight tested and flight trimmed with a minimum of six (6) flights before the model is allowed to fly at an IMAA Sanctioned event.

3.5 Proof of Flight: The completing and signing of the Declaration section of the Safety Review form (see Section 3.2) by the pilot (or owner) shall document, as fact, that the noted aircraft has been successfully flight tested and proven airworthy prior to the IMAA event.

Section 4.0: SPOTTER/HELPER

4.1 Spotter/Helper Definition: An assistant to aid the pilot during start-up, and taxing onto the runway. The spotter/helper will assist the pilot in completing a safe flight.

4.2 Each pilot is required to have a spotter/helper at all IMAA sanctioned events. The event Safety Committee should be prepared to assist those pilots who do not have a spotter/helper to make sure that every registered pilot has the opportunity to fly at a sanctioned event.

SECTION 5.0: EMERGENCY ENGINE SHUT OFF (Kill Switch)

5.1 Magneto spark ignition engines must have a coil-grounding switch on the aircraft to stop the engine. This will also prevent accidental starting of the engine. This switch shall be readily available to both pilot and spotter/helper. This switch is to be operated manually and without the use of the Radio System.

5.2 Engines with battery powered ignition systems must have a switch to turn off the power from the battery pack to disable the engine from firing. This will also prevent accidental starting of the engine. This switch

shall be readily available to both pilot and spotter/helper. This switch shall be operated manually and without the use of the Radio System.

5.3 There must also be a means to stop the engine from the transmitter. The most common method is to completely close the carburetor throat using throttle trim; however, other methods are acceptable. This requirement applies to all glow/gas ignition engines regardless of size.

SECTION 6.0: RADIO REQUIREMENTS

6.1 All transmitters must be FCC type certified.

6.2 FCC Technician or higher-class license required for 6 meter band operation only.

The following recommendations are included in the Safety Code not to police such items, but rather to offer basic suggestions for enhanced safety. It is expected that IMAA members will avail themselves of technological advances as such become available, to promote the safety of all aircraft and participants.

Servos need to be of a rating capable to handle the loads that the control surfaces impose upon the servos. Standard servos are not recommended for control surfaces. Servos should be rated heavy-duty ounces of torque. For flight critical control functions a minimum of 45 inch/ounces of torque should be considered. This should be considered a minimum for smaller aircraft and higher torque servos are strongly encouraged for larger aircraft. The use of one servo for each aileron and one for each stabilizer half is strongly recommended. Use of dual servos is also recommended on larger aircraft.

On-board batteries should be, at a minimum, 1000mAh up to 20 lbs., 1200mAh to 30 lbs., 1800mAh to 40 lbs., and 2000mAh over 40 lbs. flying weight. The number and size of servos, size and loads on control surfaces, and added features should be considered as an increase to these minimums. Batteries should be able to sustain power to the on-board radio components for a minimum of one hour total flying time before recharging.

Dependable, redundant and fail safe battery systems are recommended.

The use of anti-glitch devices for long leads is recommended.

There is no maximum engine displacement limit, as it is the position of this body that an underpowered aircraft presents a greater danger than an overpowered aircraft. However, the selections of engine size relative to airframe strength and power loading mandates good discretionary judgment by the designer and builder. Current AMA maximums for engine displacement are 6.0 cu. in. for two stroke and 9.6 cu. in. for four stroke engines. These maximums apply only to AMA Sanction competition events such as 511, 512, 515 and 520. All non competition events should be sanctioned as Class C events, in which these engine size maximums do not apply.

Generally, it is recommended that no attempt should be made to fly a radio controlled model aircraft with a gasoline engine in which the model aircraft weight would exceed 12 pounds per cubic inch of engine displacement (underpowered), or be less than 5 pounds per cubic inch of engine displacement (overpowered). **Example:** Using a 3 cu. in. engine, a model would likely be underpowered at an aircraft weight greater than 36 pounds. With the same engine, an aircraft weighing less than 15 pounds would likely be overpowered.

Servo arms and control horns should be rated heavy-duty. Glass-filled servo arms and control horns are highly recommended.

Control surface linkages are listed in order of preference:

1. Cable system (pull-pull). A tiller bar is highly recommended along with necessary bracing.
2. Arrow-shaft, fiberglass or aluminum, 1/4" [6.4mm] or 5/16" [8mm] OD. Bracing every six (6) to ten (10) inches is highly recommended.
3. Tube in tube (Nyrod). Bracing every few inches is highly recommended. Inner tube should be totally enclosed in outer tube.
4. Hardwood dowel, 3/8" OD. Bracing every six (6) to ten (10) inches is highly recommended.

Hinges should be rated heavy-duty and manufactured primarily for use in giant-sized aircraft. Homemade and original design hinges are acceptable if determined to be adequate for the intended use.

Clevis (steel, excluding heavy-duty ball links) and attachment hardware should be heavy-duty 4-40 thread-and-rod type. 2-56 Thread size rod is acceptable for some applications (e.g. throttle). Clevises must have lock nuts and sleeve (fuel tubing) or spring keepers.

Propeller tips should be painted or colored in a visible and contrasting manner to increase the visibility of the propeller tip arc.

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. Fuelproof all areas exposed to fuel or exhaust residue such as the wing saddle area, the framework around the fuel tank hatch, the top of the fuel tank hatch, etc.

❏ 2. Double-check the C.G. according to the measurements provided in the manual.
❏ 3. Be certain the battery and receiver are securely mounted in the fuselage. Simply stuffing them into place with foam rubber is not sufficient.
❏ 4. Extend your receiver antenna and make sure it has been guided up through the antenna tube.
❏ 5. Balance your model *laterally* as explained in the instructions.
❏ 6. Use thread-locking compound to secure critical fasteners such as the set screws in the wheel collars, screw-lock pushrod connectors, etc.
❏ 7. Add a drop of oil to the axles so the wheels will turn freely.
❏ 8. Make sure all hinges are **securely** glued in place.
❏ 9. Reinforce holes for wood screws with thin CA where appropriate (servo mounting screws, receiver/battery tray mounting screws, etc.).
❏ 10. Confirm that all controls operate in the correct direction and the throws are set up according to the manual.
❏ 11. 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.
❏ 12. 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.
❏ 13. Make sure any servo extension cords you may have used do not interfere with other systems (servo arms, pushrods, etc.).
❏ 14. Make sure the fuel lines are connected and are not kinked.
❏ 15. Balance your propeller (and spare propellers).
❏ 16. Tighten the propeller nut and spinner.
❏ 17. Place your name, address, AMA number and telephone number on or inside your model.
❏ 18. Cycle your receiver battery pack (if necessary) and make sure it is fully charged.
❏ 19. If you wish to photograph your model, do so before your first flight.
❏ 20. Range check your radio when you get to the flying field.

FLYING

The Giant Big Stik ARF is a great-flying model that flies smoothly and predictably. The Giant Big Stik ARF does not, however, possess the self-recovery characteristics of a primary R/C trainer and should be flown only by experienced R/C pilots.

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.

Take Off

Before you get ready to takeoff, see how the model handles on the ground and make sure it steers straight by doing a few practice runs at low speeds on the runway. If you built your Giant Big Stik ARF as a taildragger, hold a little "up" elevator to keep the tail wheel on the ground. If you built it with tricycle gear, keep the elevator neutral or hold a little bit of down to hold the nose on the ground. If necessary, adjust the tail wheel (or nose wheel) so the model will roll straight down the runway. Double-check all pushrod connections to make sure they are all secure.

Remember to takeoff into the wind. When ready, point the model straight down the runway, hold elevator as necessary to keep whichever wheel is doing the steering (nose or tail) on the ground, then gradually advance the throttle. Taildraggers: As the model gains speed decrease up elevator, allowing the tail to come off the ground. One of the most important things to remember with a taildragger is to always be ready to apply right rudder to counteract engine torque. Gain as much speed as your runway and flying site will practically allow before gently applying up elevator, lifting the model into the air. At this moment it is likely that you will need to apply more right rudder to counteract engine torque. Be smooth on the elevator stick, allowing the model to establish a gentle climb to a safe altitude before turning into the traffic pattern.

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 is usually desirable for takeoff, most models fly more smoothly at reduced speeds.

Take it easy with your Giant Big Stik ARF for the first few flights, gradually getting acquainted with it as you gain confidence. Adjust the trims to maintain straight and level flight. 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 she 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

To initiate a landing approach, lower the throttle while on the downwind leg. Allow the model to slow before extending the flaps. If executing your first landing with flaps you could try the half-flap setting. When using flaps, it's also a good idea to keep a few extra "clicks" of power to maintain airspeed. Allow the nose of the model to pitch downward to gradually bleed off altitude. Continue to lose altitude, but maintain airspeed by keeping the nose down as you turn onto the crosswind leg. Make your final turn toward the runway (into the wind) keeping the nose down to maintain airspeed and control. Level the attitude when the model reaches the runway threshold, modulating the throttle as necessary to maintain your glide path and airspeed. If you are going to overshoot, smoothly advance the throttle (always ready on the right rudder to counteract torque) and climb out, then retract the flaps and go around 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 elevator as needed (up or down depending on if you built a nose gear or a taildragger) to hold the wheel that is doing the steering on the ground.

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!

This model belongs to:

Name

Address

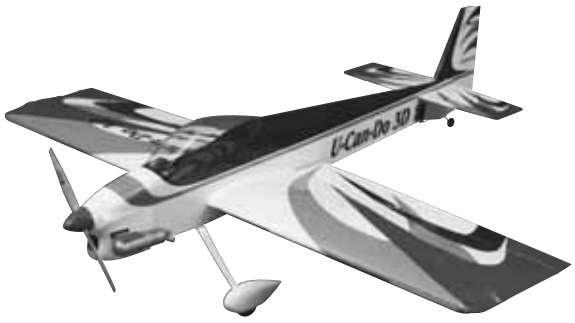
City, State Zip

Phone number

AMA number

Fill in and place on or inside your model.

OTHER ITEMS AVAILABLE FROM GREAT PLANES



Great Planes U-Can-Do 3D™ 60 ARF
Assembly time is only 6-8 hours, from workbench to "Wow!" The interlocking airframe is built from hand-selected woods, the hardware is Great Planes-brand, and the factory-applied covering is Top Flite MonoKote. Servos for each elevator and aileron offer added authority and tuning possibilities. Exterior mounting for control surface servos keeps linkages short and direct and response swift and strong. With an engine from the high end of the range and maxed throws, the U-Can-Do 60 ARF is everything a 3D star should be. **GPMA1270**

Great Planes Giant Super Chipmunk 1.20 ARF
Art Scholl performed airshow magic with his Super Chipmunk for over 25 years. And with the help of Great Planes' magic, you can have this scale replica ready to perform in just 12-15 hours. The trim scheme is authentic, provided by MonoKote on the built-up wings and stab and paint on the fiberglass fuselage, cowl, wheel pants and landing gear fairings. Instrument panel decals and a pilot figure provide extra "eye candy" without extra work. Routing tubes for pushrods, a 3-piece wing and a steerable tailwheel offer added ease on the ground. Dual servos on each flap, aileron and elevator half put the power to dazzle a crowd at your fingertips. **GPMA1303**

PENNZOIL®

Manufactured under license by Pennzoil-Quaker State Company, 2004. Hobbico, Inc. 2904 Research Rd, Champaign, IL 61826.

O.S.® Engines 1.60 FX
The 1.60 FX features dual ball bearings for durability and smooth operation, plus a low crankcase profile that allows for a proportionally taller, semi-squared head – a design refinement that increases cooling fin area and improves heat dispersion. The threaded portion of the crankshaft is extra-long for more secure prop and spinner nut engagement, and the needle valve is remotely mounted for safety during adjustments. The high-speed needle can also be mounted horizontally, vertically, or separate from the engine for more installation options! Includes glow plug and 2-year warranty. **OSMG0660**

Futaba 7CAP 7-Channel PCM Computer Radio
For virtually the same price as some 6-channel radios, you can enjoy 7-channel versatility and the ease of Dial-N-Key programming. Toggle switches are accessible without taking your thumbs off the sticks, or your eyes off of your model...and can be assigned to operate almost any function. Contrast on the big 72x32 LCD adjusts for maximum visibility, and programming includes both Basic and Advanced menus for airplanes and helis. Includes an R138DP receiver, 600mAh Tx and Rx NiCds, dual output charger and four digital S3151 servos. 72MHz only. **FUTJ71****

Fuji BT-32B 2.1 Gasoline Engine
Fuji Engines are giant-scale favorites, because each is designed strictly for R/C by an engineer who is also a gas modeler. Throttle linkages are short and direct. Mufflers are compact, custom units that help preserve scale looks as they improve performance. Walbro carbs are standard, chosen for pinpoint control and equipped with regulating pumps to ensure consistent fuel flow at all times. Flywheels, hubs and crankshafts are dynamically balanced to reduce vibration, stress and electrical noise. And all operate on a 40:1 gasoline/oil mix, which helps them last up to four times longer than other gasoline engines. Includes a Walbro WT407 carb, Champion RCJ6Y spark plug, firewall mount and rear-mounted muffler. **FJIG0033**

GREAT PLANES® MODEL MANUFACTURING COMPANY

BUILDING NOTES

Kit Purchased Date: _____

Where Purchased:_____

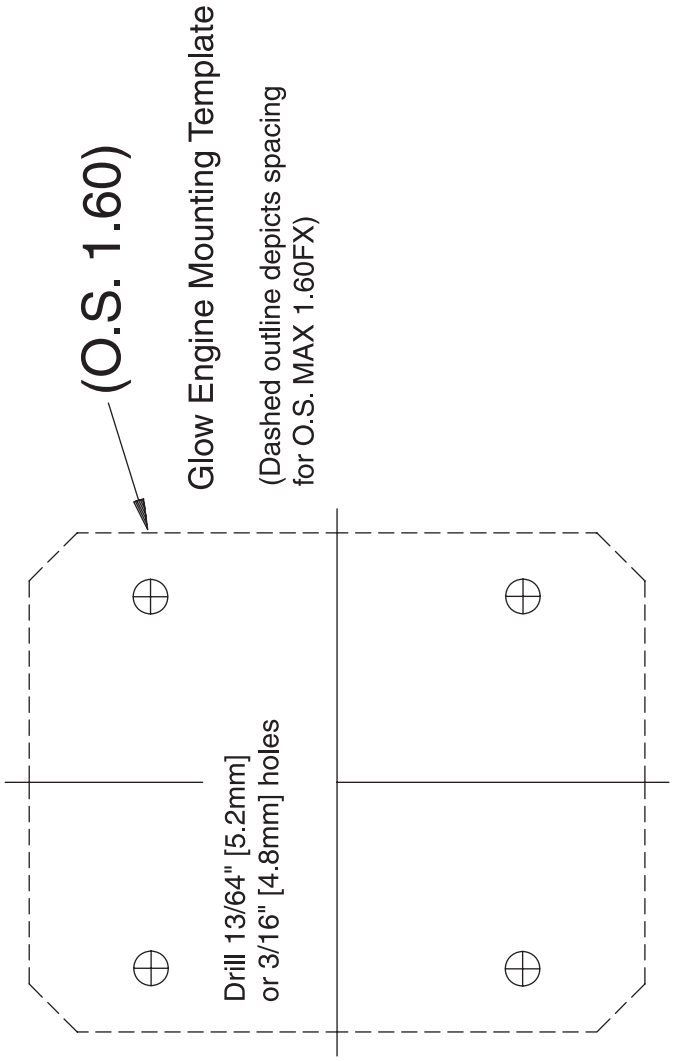
Date Construction Started: _____

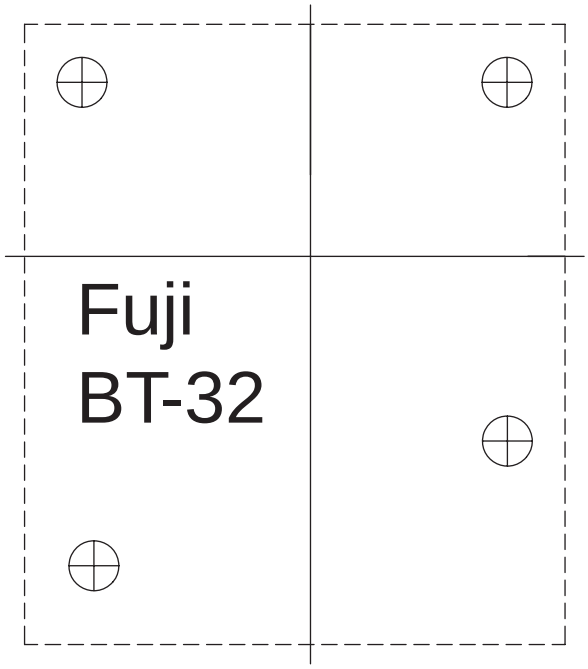
Date Construction Finished: _____

Finished Weight: _____

Date of First Flight: _____

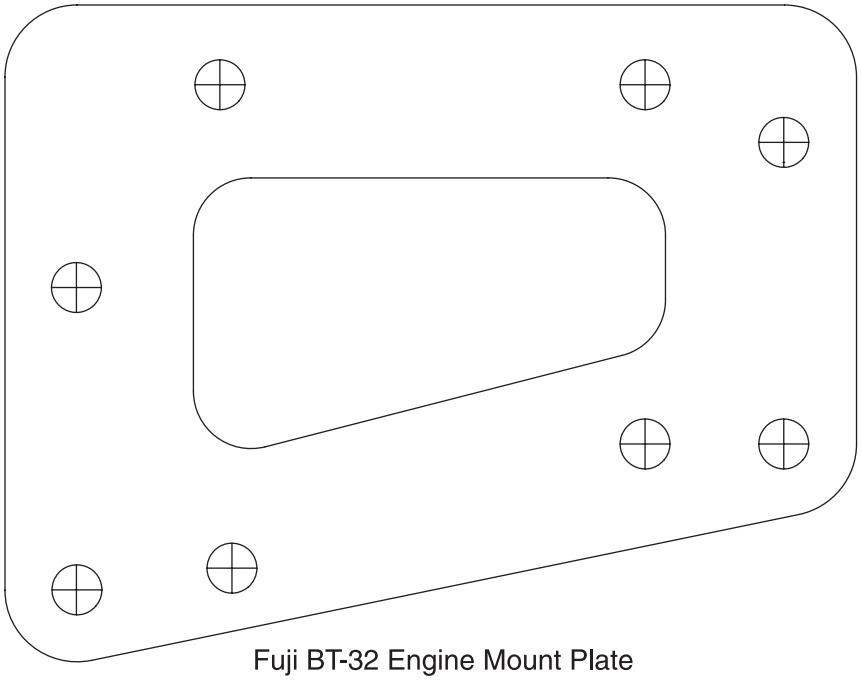
FLIGHT LOG





Fuji BT-32 Engine Mounting Template

Drill 19/64" [7.5mm] (or 9/32" [7.2mm) holes at the crossmarks for the 1/4-20 blind nuts that go into the back of the firewall.



Fuji BT-32 Engine Mount Plate
(Paper template for backup)