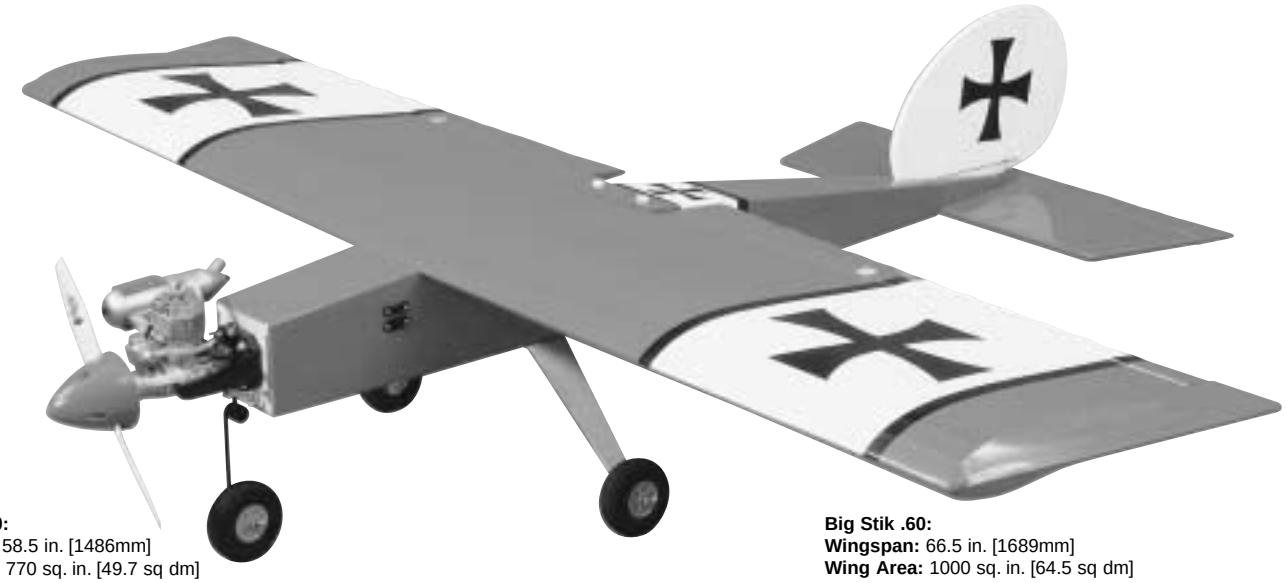
BIG STIK 40
BIG STIK 60

INSTRUCTION MANUAL



Big Stik .40:
Wingspan: 58.5 in. [1486mm]
Wing Area: 770 sq. in. [49.7 sq dm]
Weight: 5.25 lbs [2380g]
Wing Loading: 15.7 oz./sq. ft.[48 g/sq dm]
Length: 51.5 in. [1308mm]
Radio: 4-Channel with 5 servos
Engine: .40 – .51 2-stroke, .50 – .70 4-stroke
[6.5 – 8.5cc 2-stroke, 8.5 – 11.5cc 4-stroke]

Big Stik .60:
Wingspan: 66.5 in. [1689mm]
Wing Area: 1000 sq. in. [64.5 sq dm]
Weight: 6.5 lbs [2948g]
Wing Loading: 14.97 oz./sq. ft.[46 g/sq dm]
Length: 59 in. [1499mm]
Radio: 4-Channel with 5 servos
Engine: .60 – .91 two-stroke, .91 – .1.20 four-stroke
[10 – 15cc 2-stroke, 15 – 20cc 4-stroke]

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.

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

GREAT PLANES® MODEL MANUFACTURING COMPANY
1610 Interstate Drive Champaign, IL 61822
(217) 398-8970, Ext 2
airsupport@greatplanes.com

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INTRODUCTION

The Great Planes Big Stik ARFs are aircraft that let you progress from your trainer into a model that is not only a good choice for improving your flying skills but is also great for high performance aerobatics.

Either plane is a good choice for a second airplane or as an aerobatic trainer. We are sure that you will enjoy building and flying the Big Stik ARF.

For the latest technical updates or manual corrections for the Big Stik ARFs, visit the web site listed below and select the Great Planes Big Stik ARF. If there is new technical information or changes to this kit, a “tech notice” box will appear in the upper left corner of the page.

http://www.greatplanes.com/airplanes/index.html

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

1. Your 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 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 already an experienced R/C pilot, you should fly the model only with the help of a competent, experienced R/C pilot.

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, the modeler is responsible for taking steps to reinforce the high stress points.

We, as the kit manufacturer, provide you with a top quality 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.

If you 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.

In addition to joining an R/C club, we strongly recommend you join the AMA (Academy of Model Aeronautics). AMA membership is required to fly at AMA sanctioned clubs. There are over 2,500 AMA chartered clubs across the country. Among other benefits, the AMA provides insurance to its members who fly at sanctioned sites and events. Additionally, training programs and instructors are available at AMA club sites to help you get started the right way. 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*

DECISIONS YOU MUST MAKE

Engine Recommendations

There are several engines that will work well in your .40 or .60 sized Big Stik ARF.

For the .40 Big Stik we recommend a 2-stroke engine such as the O.S.® LA .40, O.S. .40 FX, O.S. .46 FX or the SuperTigre® G40. For unsurpassed power and realistic sound, an O.S. FS-70 can't be beat.

For the .60 Big Stik we recommend a 2-stroke engine such as the O.S. LA .65, O.S. .61 FX or the SuperTigre G61. If you prefer a four stroke engine the O.S.FS-70 or O.S. FS-91 are both good choices.

Radio Equipment

The Great Planes Big Stik ARF .40 and .60 require a good four channel radio system like the Futaba® 4VF. Both airplanes require a total of five servos each with a minimum of 44 oz-in of torque. A Y-harness and two 6" servo extensions are also required.

ADDITIONAL ITEMS REQUIRED

Covering Accessories

- ❏ 21st Century® sealing iron (COVR2700)
- ❏ 21st Century trim seal iron (COVR2750)
- ❏ 21st Century iron cover (COVR2702)

Adhesives and 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 Big Stik ARF. ***Great Planes Pro***™ *CA and Epoxy glue are recommended.*

- ❏ 2 oz. Pro CA (Thin, GPMR6003)
- ❏ Propeller (Top Flite® Power Point®-Refer To Your Engine's Instructions For Proper Size)
- ❏ 2 oz. Pro CA+ (Medium, GPMR6009)
- ❏ 6-Minute Pro Epoxy (GPMR6045)
- ❏ 30-Minute Pro Epoxy (GPMR6047)
- ❏ Epoxy Brushes (GPMR8060)
- ❏ Mixing Sticks (GPMR8055)
- ❏ Hobby Knife (HCAR0105), #11 blades (HCAR0211)
- ❏ Masking Tape (TOPR8018)
- ❏ 1/4" Latex Foam Rubber Padding (HCAQ1000)
- ❏ Paper Towels
- ❏ Drill Bits: 1/16" (1.5mm), 5/64" (2mm), 3/32" (2.4mm), 1/4" (6mm)
- ❏ Dremel® Moto-Tool™ with cutoff wheel
- ❏ 4-40 Tap and drill (Big Stik 40)
- ❏ 6-32 Tap and drill (Big Stik 60)

Optional Supplies and Tools

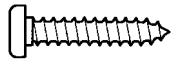
Here is a list of optional tools mentioned in the manual that will help you build the Big Stik ARF.

- ❏ Switch and Charge Jack (GPMM1000)
- ❏ Great Planes CG Machine™ (GPMR2400)
- ❏ Top Flite Precision Magnetic Prop Balancer™ (TOPQ5700)
- ❏ Straightedge with scale (HCAR0475)
- ❏ CA Debonder (GPMR6039)
- ❏ CA Applicator tips (GPMR6033)
- ❏ CA Accelerator (GPMR6034)
- ❏ Threadlocker (GPMR6060)
- ❏ Denatured Alcohol (for epoxy clean up)
- ❏ Builders Triangle Set (HCAR0480) (for fin alignment)
- ❏ Dead Center™ Engine Mount Hole Locator (GPMR8130)
- ❏ Great Planes AccuThrow™ Deflection Gauge (for measuring control throws, GPMR2405)

IMPORTANT BUILDING NOTES

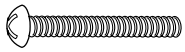
- There are two types of screws used in this kit:

Sheet metal screws are designated by a number and a length. For example #6 x 3/4"



This is a #6 screw that is 3/4" long.

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



This is a #4 screw that is 3/4" long with forty threads per inch.

• During the construction we often refer to the "top" or "bottom" of the model or a part of the model. It is understood that the "top" or "bottom" of the model is as it would be when the airplane is right side up and will be referred to as the "top" even if the model is being worked on upside-down.

• 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.

• The Big Stik ARF is factory-covered with Top Flite MonoKote® film. Should repairs ever be required, MonoKote can be patched with additional MonoKote purchased separately. MonoKote is packaged in six-foot rolls, but some hobby shops also sell it by the foot. MonoKote is applied with a model airplane covering iron, but in an emergency a regular iron could be used. A roll of MonoKote includes full instructions for application. Following are the colors used on this model and order numbers for six foot rolls.

True Red (TOPQ0227)
White (TOPQ0204)
Black (TOPQ0208)

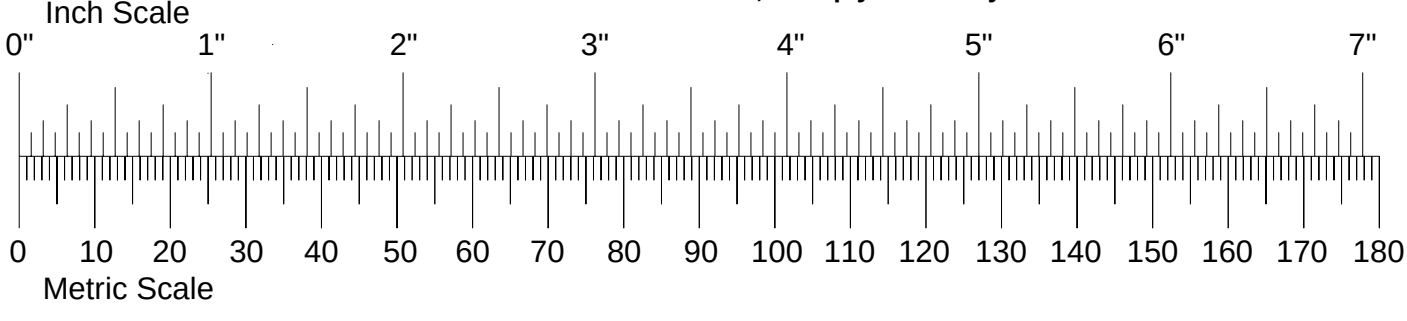
ORDERING REPLACEMENT PARTS

To order replacement parts for the Great Planes Big Stik ARF .40 or .60, use the order numbers in the **Replacement Parts List** that follows. Replacement parts are available only as listed. Not all parts are available separately (an aileron cannot be purchased separately, but is only available with the wing kit). Replacement parts are not available from Product Support, but can be purchased from hobby shops or mail order/Internet order firms. Hardware items (screws, nuts, bolts) are also available from these outlets. If you need assistance locating a dealer to purchase parts, visit **www.greatplanes.com** and click on "Where to Buy." If this kit is missing parts, contact **Great Planes Product Support**.

Replacement Parts List

Big Stik 60 Order #	Big Stik 40 Order #	Description	How to Purchase
		Missing pieces	Contact Product Support
		Instruction manual	Contact Product Support
		Full-size plans	Not available
GPMA2315	GPMA2310	Wing Set	Contact Your Hobby Supplier to Purchase These Items
GPMA2316	GPMA2311	Fuse Set	
GPMA2317	GPMA2312	Tail Set	
GPMA2318	GPMA2313	Landing Gear Set	

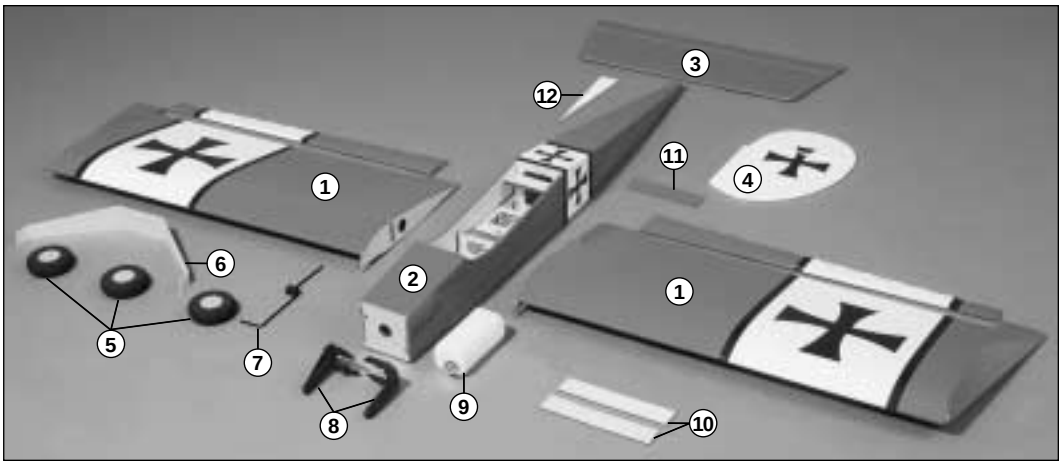
To convert inches to millimeters, multiply inches by 25.4



KIT CONTENTS

Before starting to build, use the **Kit Contents** list to take an inventory of your 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:
Phone: (217) 398-8970
Fax: (217) 398-7721
E-mail: airsupport@greatplanes.com



Kit Contents (Photographed)

1 Wing with Aileron
2 Fuselage
3 Stabilizer and Elevator
4 Fin and Rudder
5 Wheels
6 Main Gear
7 Nose Gear
8 Engine Mount
9 Fuel Tank and Hardware
10 Wing Joiners
11 Wing Bolt Plate
12 Small Ventral Fin

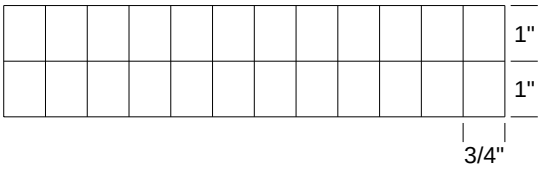
.40 Size Kit Contents (Not Photographed)

- (2) 1/4-20 Blind nuts (pre-installed in fuse)
- (2) 24" Grey plastic outer pushrod tube (pre-installed in fuse)
- (2) 11-3/4" Grey plastic outer pushrod tube (throttle, nose gear)
- (2) 12" 074 Wire threaded one end (ailerons)
- (4) 36" 074 Wire threaded one end (elevator, rudder, throttle, nose gear)
- (5) Nylon clevis (rudder, elevator, ailerons, throttle)
- (4) Faslink (rudder, elevator, ailerons)
- (2) Nylon 1/4 - 20 wing bolts
- (4) Large nylon control horn (aileron, rudder, elevator)
- (1) 2" x 9" Hinge material
- (6) Silicone clevis keepers (rudder, elevator, ailerons, throttle)
- (4) 4-40 x 3/4" Socket head cap screw (engine to engine mount)
- (4) # 4 Washers (engine to engine mount)
- (4) 6-32 x 1/2" Socket head cap screw (main gear to fuse)
- (4) 6-32 x 3/4" Socket head cap screw (engine mount to firewall)
- (8) 6-32 Blind nuts (main gear, engine mount)
- (8) #6 Washers (main gear, engine mount)
- (2) 5/32 x 1-1/4" Axles (main gear)
- (2) 5/32" Nuts for axles (main gear)
- (6) 5/32" Wheel collar (main landing gear, nose gear, nose steering)
- (1) Steering arm (nose gear)
- (6) 6-32 x 1/4" Hex head bolt (wheel collars)
- (8) 2-56 x 1/2" Machine screws (rudder, elevator, ailerons)
- (3) Brass quick connect body (throttle, nose gear)
- (3) Nylon retainer (throttle, nose gear)
- (3) 4-40 x 1/4" SHCS (throttle, nose gear)
- (1) 2-1/2" Red spinner
- (1) Fuel line 24"
- (1) Wire tail skid

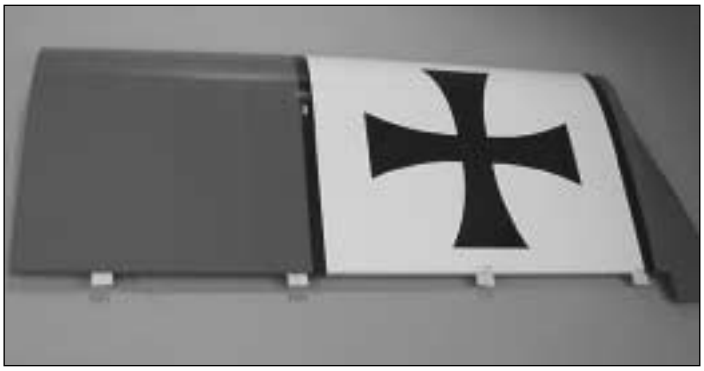
.60 Size Kit Contents (Not Photographed)

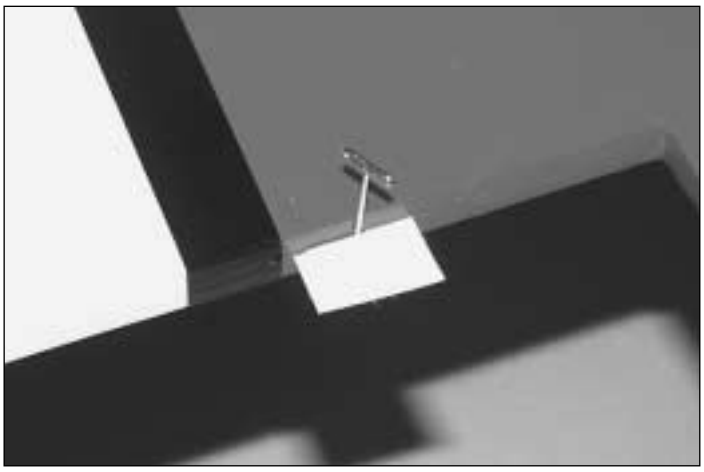
- (2) 1/4-20 Blind nuts (pre-installed in fuse)
- (2) 24" Grey plastic outer pushrod tube (pre-installed in fuse)
- (2) 11-3/4" Grey plastic outer pushrod tube (throttle, nose gear)
- (2) 12" 074 Wire threaded one end (ailerons)
- (4) 36" 074 Wire threaded one end (elevator, rudder, throttle, nose gear)
- (5) Nylon clevis (rudder, elevator, ailerons, throttle)
- (4) Faslink (rudder, elevator, ailerons)
- (2) 1/4 - 20 Nylon wing bolt
- (4) Large nylon control horn (aileron, rudder, elevator)
- (1) 2" x 9" Hinge material
- (6) Silicone clevis keepers (rudder, elevator, ailerons, throttle)
- (4) 6-32 x 1" Socket head cap screw (engine to engine mount)
- (4) #6 Washers (engine to engine mount)
- (4) 8-32 x 1/2" Socket head cap screw (main gear to fuse)
- (4) 8-32 x 1" Socket head cap screw (engine mount to firewall)
- (8) 8-32 Blind nuts (main gear, engine mount)
- (8) #8 Washers (main gear, engine mount)
- (2) 5/32 x 1-1/4 axles (main gear)
- (2) 5/32 Nuts (main gear axles)
- (6) 5/32" Wheel collar (main landing gear, nose, nose steering)
- (1) Steering arm
- (6) 6-32 x 1/4" Hex head bolt (wheel collars)
- (8) 2-56 x 1/2" machine screws (rudder, elevator, ailerons)
- (3) Brass quick connect body (throttle, nose gear)
- (3) Nylon retainer (throttle, nose gear)
- (3) 4-40 x 1/4" SHCS (throttle, nose gear)
- (1) 3" red spinner
- (1) Fuel line 24"
- (1) Wire tail skid

WING ASSEMBLY & INSTALLATION

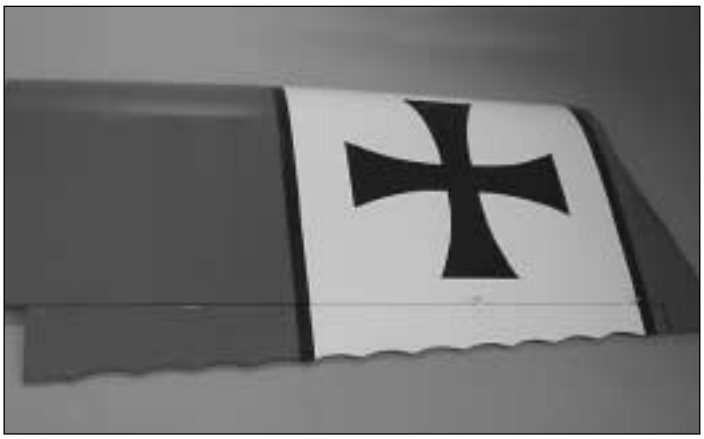


❑ 1. From the 2" x 9" [50mm x 230mm] hinge material, cut out 16 hinges, 3/4" x 1" each [19mm x 25mm].

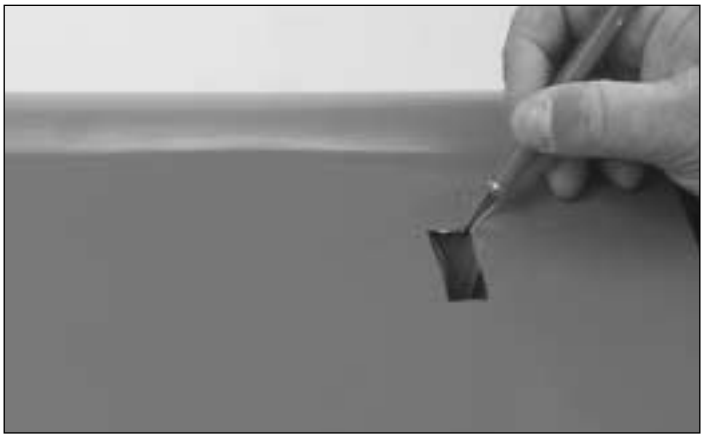


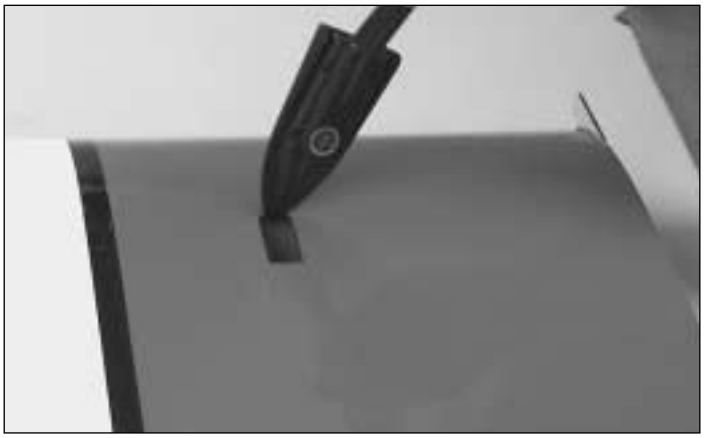


❑ ❑ 2. Insert a T-pin through the center of 4 hinges. Trial fit the 4 hinges into the right wing panel, making sure the T-pin is flush against the wing.

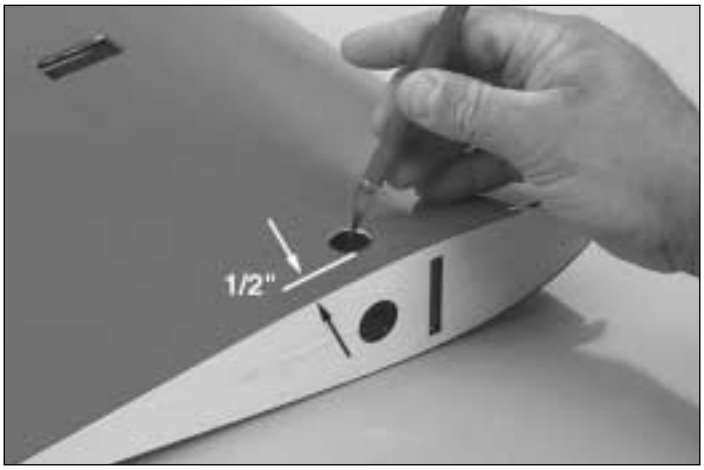


❑ ❑ 3. Test fit the right aileron to the right wing. The aileron should be tight against the T-pins, with no more than a 1/32" gap at any point. When satisfied with the fit, remove the T-pins and attach the aileron by applying 6 drops of thin CA to each side of each hinge. After the glue has cured, flex the aileron back and forth a few times to loosen up the hinges. Pull on the aileron to make sure that the aileron is firmly attached to the wing.





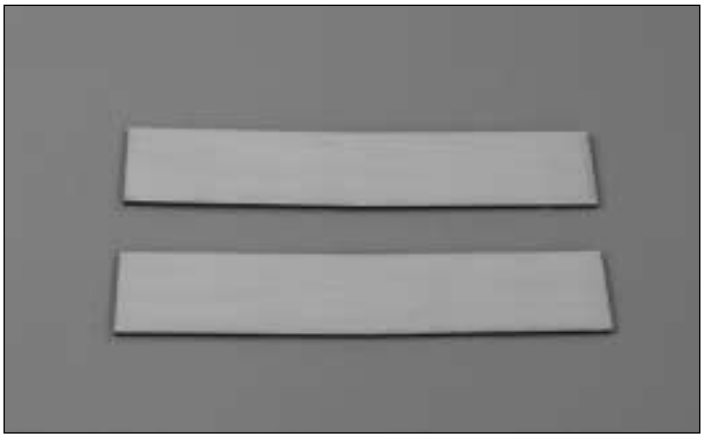
❑ ❑ 4. Using the photo as a guideline, locate the servo bay in the bottom of the right wing panel. Cut the MonoKote 1/16" to the inside of the edges of the servo tray. Using a MonoKote Covering Iron or Trim Tool, iron the edges down into the servo tray. **NOTE:** It is important that you securely iron down the edges to avoid the possibility of the covering “flapping” and peeling off.

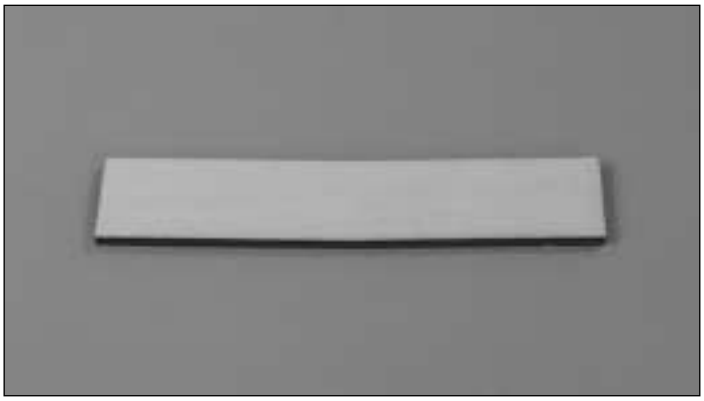


❑ ❑ 5. Using a dime for size reference and a hobby knife, cut a hole in the BOTTOM of the wing parallel to the hole in the root rib and 1/2" from the root rib.

❑ ❑ 6. Taped to the inside of the root rib is a fine string. This is used to ease installation of the aileron servo lead. Untape the string from the root rib, pull the end through the hole you just cut and tape the string to the underside of the wing.

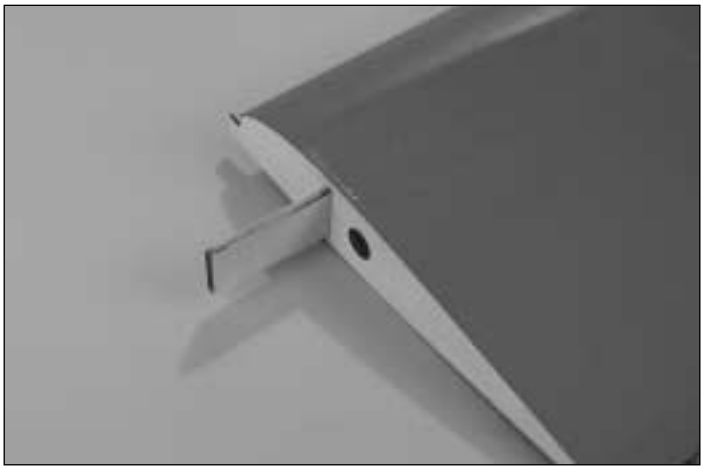
❑ 7. Repeat steps 2-6 for the left wing.

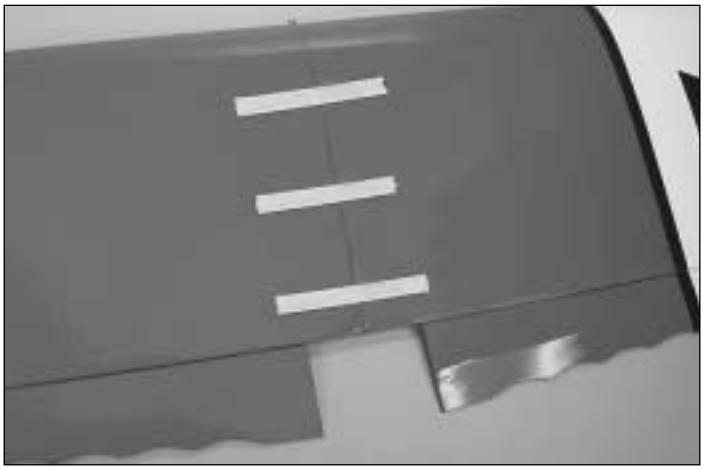




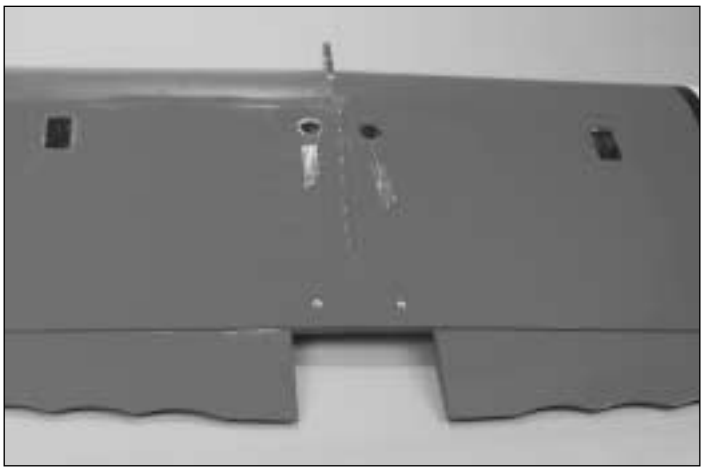
❑ 8. Select the two wing joiners. Being sure to align the angled sides, epoxy them together with 6-minute Epoxy. Do not disturb for 1/2 hour or until the epoxy is fully cured.

❑ 9. Test fit the joiner into the right wing panel up to its center, using no glue. Note that the pointed side of the V shaped joiner points toward the hole you cut in step 5. Test fit the left wing panel onto the joiner as well. Repeat until you can comfortably join the wings. **NOTE:** If the wing panels do not align (have more than a 1/16" gap on either the top or bottom side of the wing), carefully sand the joiners to fit.



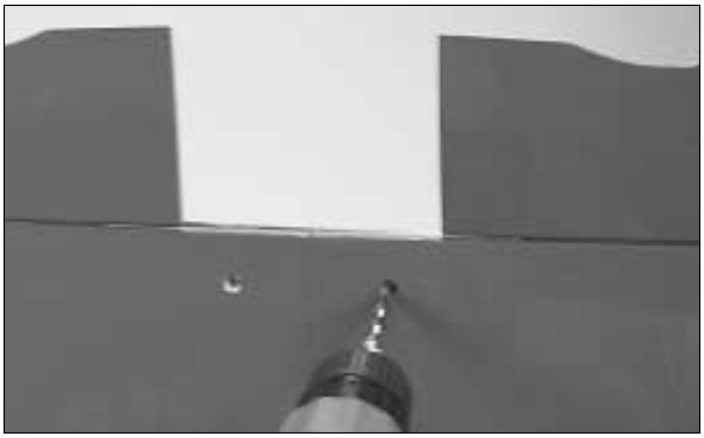


❑ 10. Coat the right half of the joiner and the right wing root rib with 30-minute epoxy. Slide the joiner into the right wing. Coat the left root rib and joiner half with epoxy and slide the wing halves together. Tape the panels together, top and bottom, with masking tape and do not disturb overnight. **NOTE:** Wipe off any excess epoxy. Alcohol will help clean up any partially cured epoxy.



❑ 11. Locate the two holes, for the wing bolts, at the trailing edge of the bottom of the wing and cut the covering away.

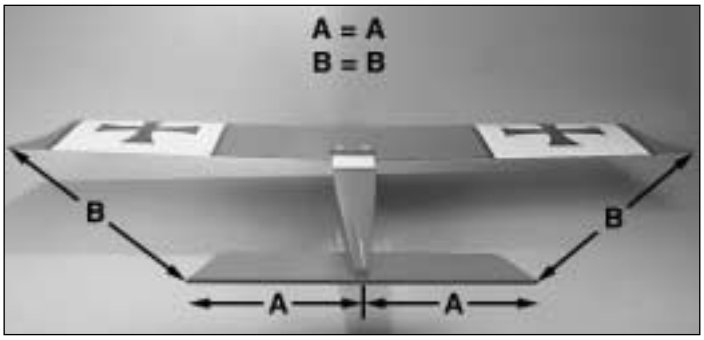
❏ 12. Turn the wing right side up. Position the MonoKote-covered wing bolt plate centered on the wing and flush with its trailing edge. Draw a line around the bolt plate. Remove the bolt plate. Using a hobby knife and being careful to cut ONLY the covering, cut 1/8" inside the lines you just drew and remove the covering where the wing bolt plate will go. Using medium CA, glue the non-covered side of the bolt plate to the wing.



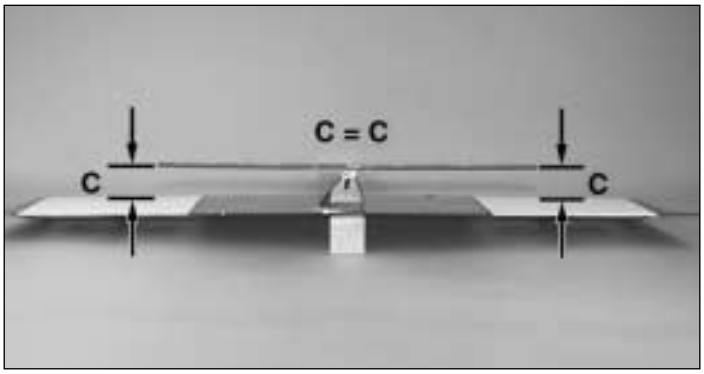
❏ 13. Turn the wing upside-down. Using the hole through the bottom of the wing as a guide, drill two 1/4" [6 mm] holes through the wing.

❏ 14. Using the two 1/4"x20 nylon wing bolts and the built-in leading edge tab, mount the wing to the fuselage.

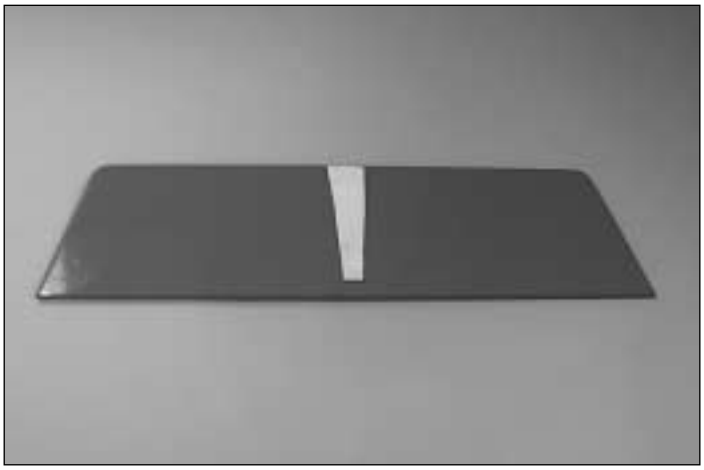
INSTALL THE TAIL COMPONENTS



❏ 1. Remove the elevators from the stabilizer (there is only tape holding them in place). Lay the plane upside down and place the horizontal stabilizer into position. Check the alignment as shown in the photo. **Note:** The plane is shown right side up in the photo. Yours should be inverted.



❏ 2. Stand back 8 to 10 feet [2.5 to 3 meters] and view the model from the front and rear. The stabilizer tips should be equally spaced above the wing tips. If not, lightly sand the high side of the stabilizer saddle to correct the problem. Work slowly and check the alignment often.

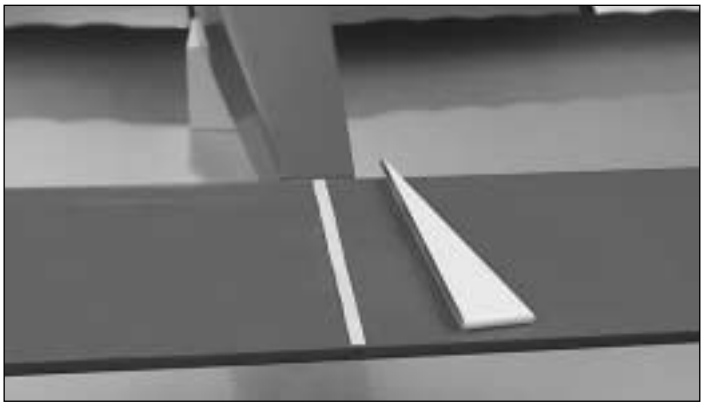


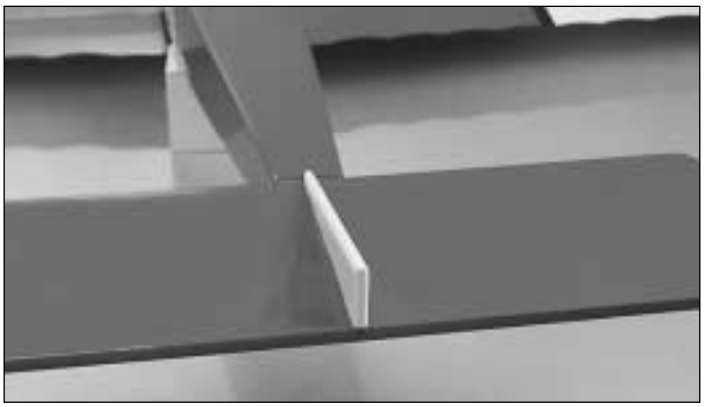
❏ 3. When the alignment looks good, mark the outline of the fuselage onto the top of the stabilizer. Remove the stabilizer and trim the covering about 1/16" [2 mm] inside of the lines, being very careful not to cut into the underlying wood. Note: Use a new knife blade to insure virtually no pressure is required to cut through the covering. Re-check your alignment and glue the stabilizer to the fuselage with 6-minute epoxy.

EXPERT TIP

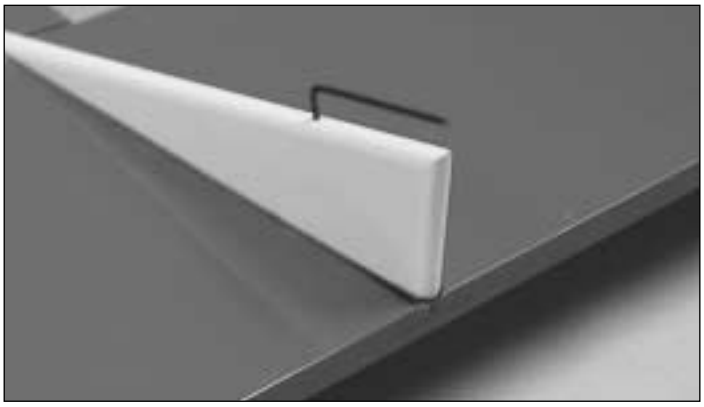
How to cut covering from balsa.

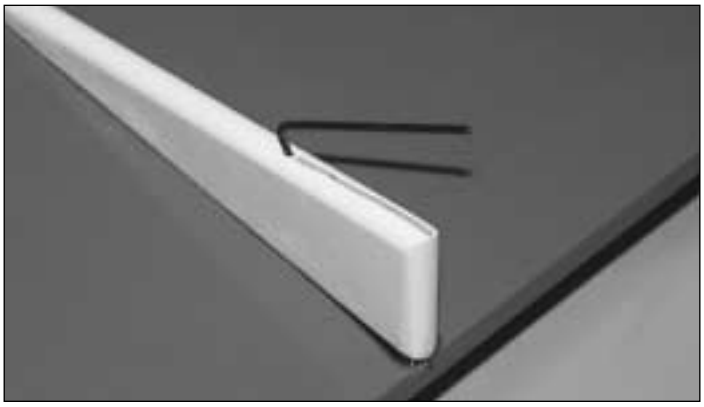
Use a soldering iron to cut the covering from the stab. The tip of the soldering iron doesn't have to be sharp, but a fine tip does work best. Allow the iron to heat fully. Use a straightedge to guide the soldering iron at a rate that will just melt the covering and not burn into the wood. The hotter the soldering iron, the faster it must travel to melt a fine cut. Peel off the covering (see the photo at step 11).



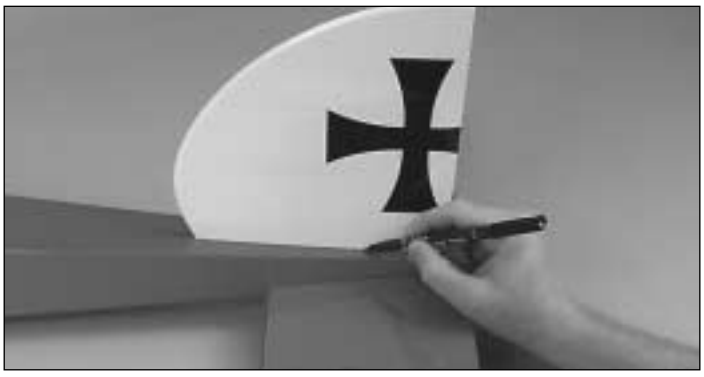


❏ 4. Remove a 1/4" strip of covering from the center of the underside of the stab. Glue the small ventral fin in place with medium CA.

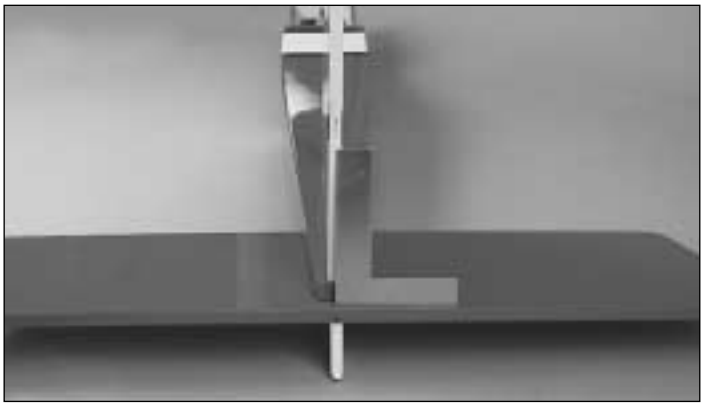




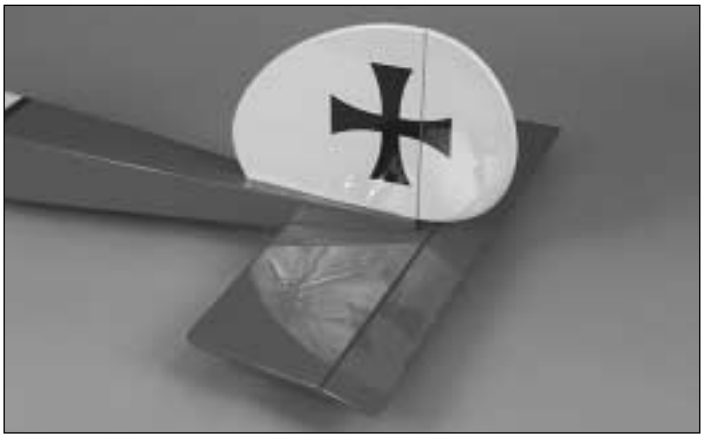
❏ 5. Aligning the end of the skid with the trailing edge of the ventral fin, push the tail skid into the ventral fin. Cut the covering along either side of the tail skid and remove it. Glue the tail skid in place with medium CA.



❏ 6. Cut the covering out of the slot on the top of the fuse. Test fit the fin in the slot in the fuselage. When you are satisfied with the fit, mark a line on both sides of the fin where the top of the fuselage contacts the fin. Trim the covering about 1/16" [2 mm] inside of the lines.

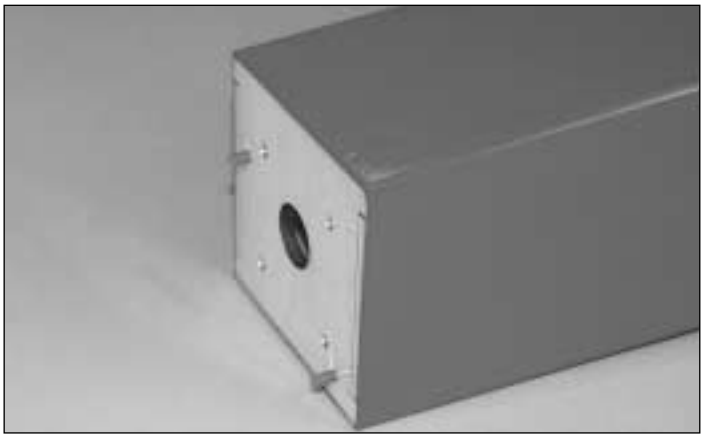


❑ 7. When you are satisfied with the fit, use 6-minute epoxy to glue the fin in position. Check the alignment of the fin to the stabilizer with a triangle, then secure it in position with masking tape until the epoxy has cured. Double-check the alignment of the fin with the stabilizer while the epoxy cures.

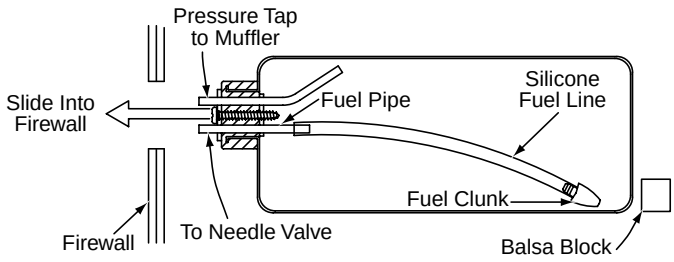


❑ 8. Install the hinges in the stabilizer and elevator. Glue the hinges in place the same way you did with the ailerons on page 6, steps 1 – 3. Repeat this procedure for the rudder.

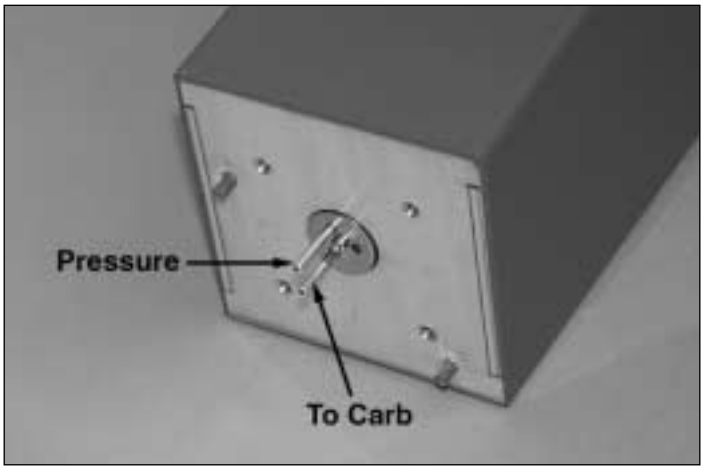
TANK INSTALLATION



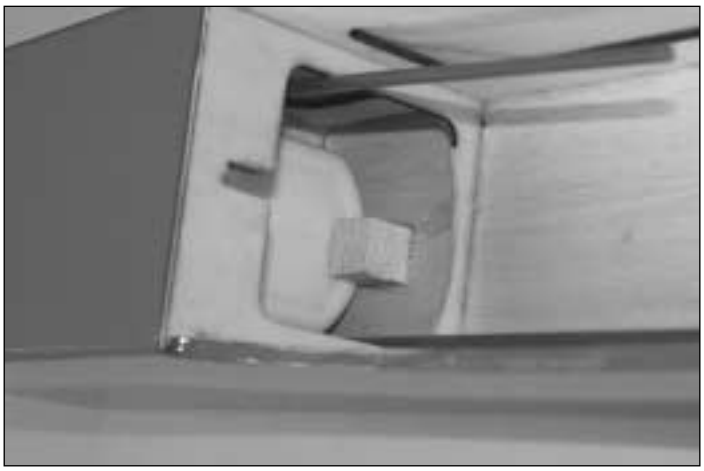
❑ 1. Slide the two 12" gray pushrod tubes through the firewall and the corresponding holes in the second former, leaving 1/8" [3 mm] of each of the tubes protruding from the front of the firewall. Glue the pushrod tubes to the firewall with thin CA.



❑ 2. Assemble the tank as shown in the sketch. **Note:** Make sure the aluminum tubes are positioned as shown in the photo.



❑ 3. Fit the tank into the fuse.



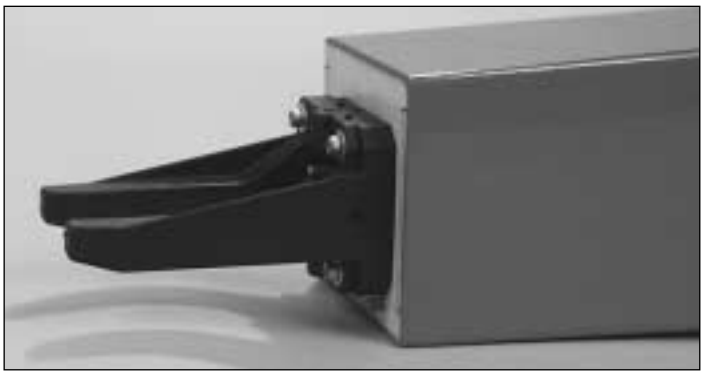
❑ 4. Glue the 3/4" x 3/4" x 3/4" [19mm x 19mm x 19mm] balsa block to the fuse bottom at the back of the tank.

ENGINE INSTALLATION

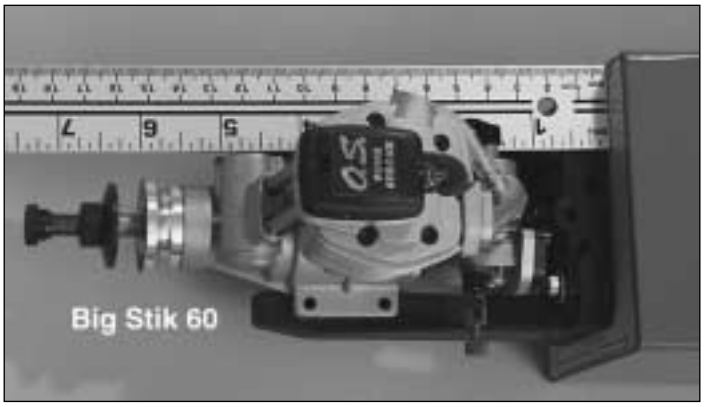
❏ 1. Cut the “spreader bar” from each engine mount half. Carefully trim any extra material left by the spreader from each mount half. The surfaces where the spreader bars were attached must be smooth to allow the mount halves to fit together. Trim the flashing off any rough edges if necessary.

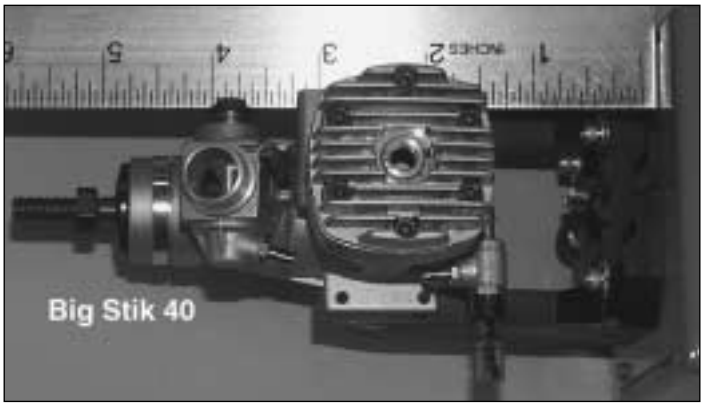
Use this table for the following 4 steps:

Specific Measurements and Hardware Usages	.40 Size	.60 Size
Mount to firewall: Washers	#6	#8
Mount to firewall: Bolts	6-32 x 3/4"	8-32 x 1"
Thrust washer to firewall	4-3/4" [120mm]	6" [150mm]
Engine mount drill	#43 [2.4mm]	#36 [2.8mm]
Engine mount tap	4-40	6-32
Engine to mount: Washers	#4	#6
Engine to mount: Bolts	4-40 x 3/4"	6-32 x 1"



❏ 2. Locate the washers and socket head screws for your model size in the chart above. Use these bolts and washers to attach the engine mount to the firewall. Position the engine on the engine mount. Adjust the width of the mount as needed for your engine. Tighten the bolts.





❏ 3. Position the front of your engine's thrust washer the distance from the firewall listed in the table for your model.

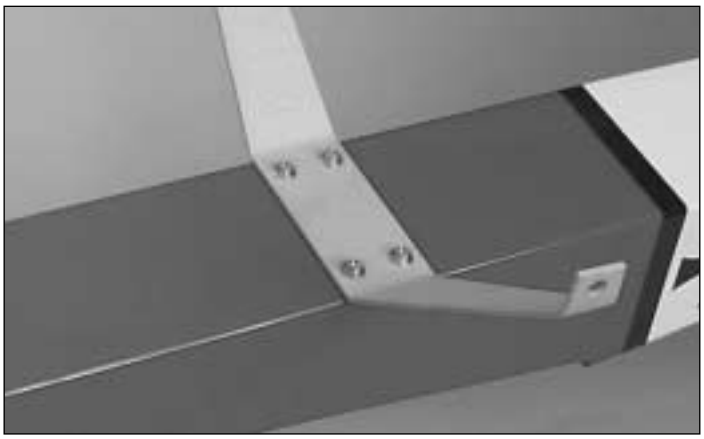
❏ 4. Using the bit size called for in the table, drill the four mounting holes for the engine into the engine mount. After the holes have been drilled, tap as listed in the table. The Great Planes Dead Center™ (GPMR8130) Engine Mount Hole Locator works really well for this task.

❏ 5. Install the engine with four washers and four socket head screws of the size listed in the table.

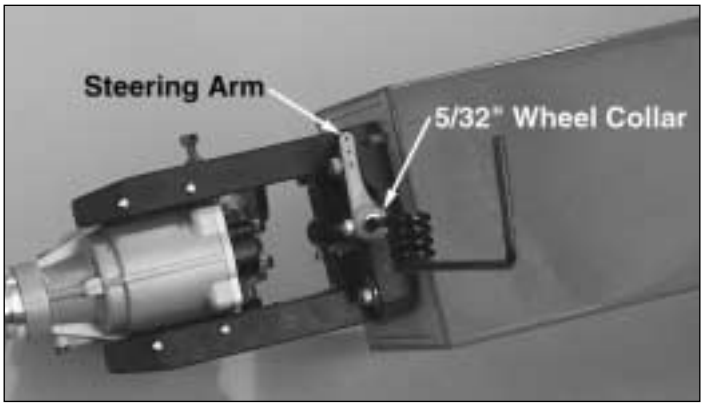
MOUNT THE LANDING GEAR

❏ 1. Locate the four blind nuts in the bottom of the fuse. Cut the covering from the inside of the holes.

Specific Measurements and Hardware Usages	.40 Size	.60 Size
Gear mounting washers	#6	#8
Gear mounting bolts	6-32 x 3/4"	8-32 x 1"

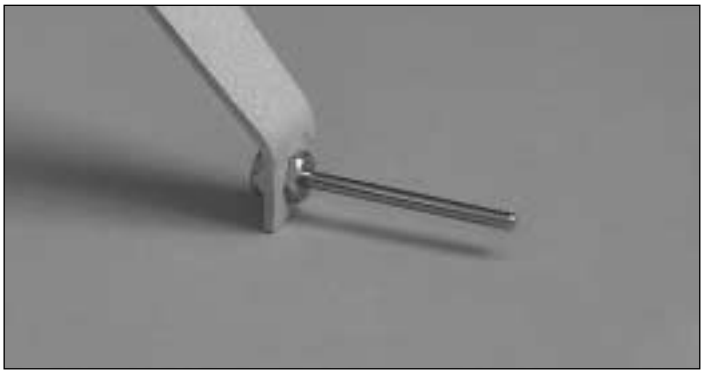


❏ 2. Mount the aluminum landing gear to the fuse with the four washers and four socket head screws of the size listed for your model.



❏ 3. Locate the wire nose gear, plastic steering arm, two 5/32" [4mm] wheel collars and two 6-32 x 1/4" [6mm] socket head screws. Place one wheel collar into the center of the steering arm and hold it in place with one screw. Insert the second screw into the remaining wheel collar. Place the steering arm onto the wire nose wheel wire and insert the nose gear into the landing gear mount holes of the engine mount. The steering arm should line up with the hole in the firewall for the steering pushrod. Place the other wheel collar on the top of the wire, above the top of the engine mount. Tighten the screws. This will hold the wire in place. **Note:** It might be necessary to enlarge the hole in the engine mount slightly to fit the nose gear.

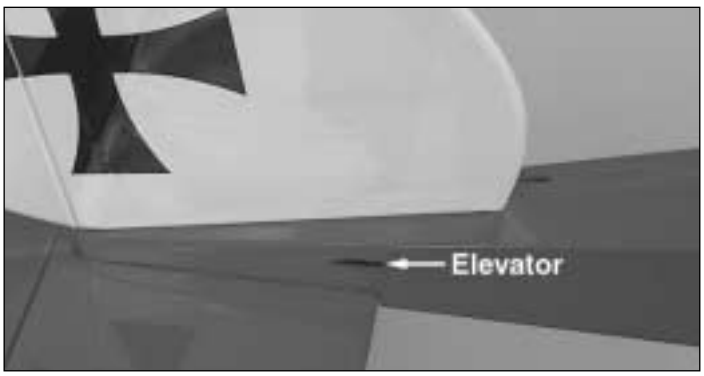
❏ 4. Locate two 5/32" [4mm] wheel collars and two 6-32 x 1/4" [6mm] socket head screws. Put the screws in the wheel collars. Slide one collar onto the nose wheel axle, then the nose wheel and then the remaining collar. File a flat spot on the nose gear wire where the outside wheel collar will be. Tighten the screws to hold the wheel on the center of the axle.



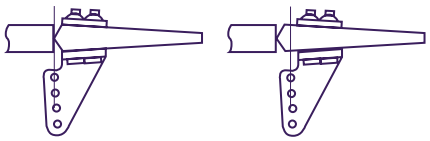
❑ 5. Mount the two 5/32 axles with the two axle nuts to the main gear.

❑ 6. Mount the main wheels to the axles with the 5/32" [4mm] wheel collars. Using a Moto-Tool® and cut-off wheel, cut the axles off flush with the wheel collar.

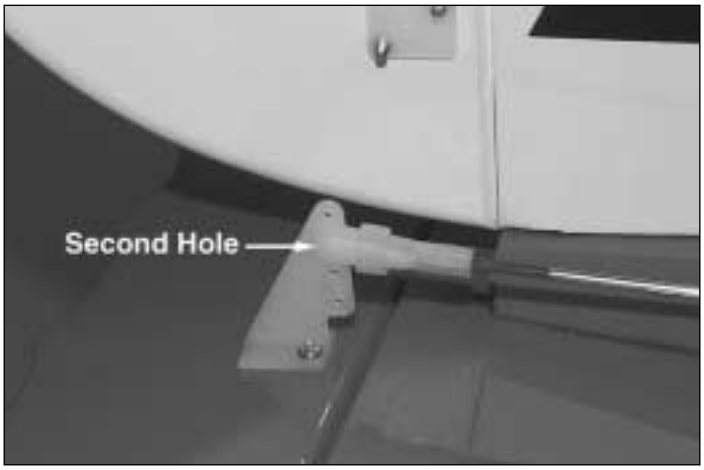
RADIO INSTALLATION



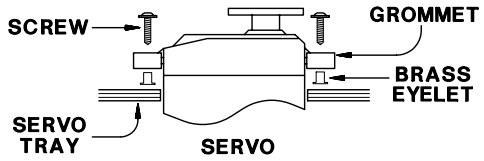
❑ 1. Cut away the covering where the pushrod tubes exit the right side and top of the fuselage. Screw the nylon clevises 20 turns onto the 36" pushrods. Place a silicone retainer over each of the clevises. Holding the clevis end, slide the two pushrods into the fuse through the openings you just trimmed.

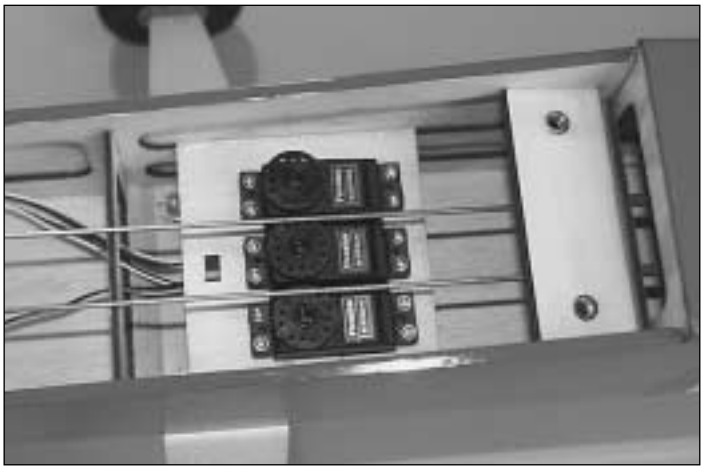


Correct Incorrect



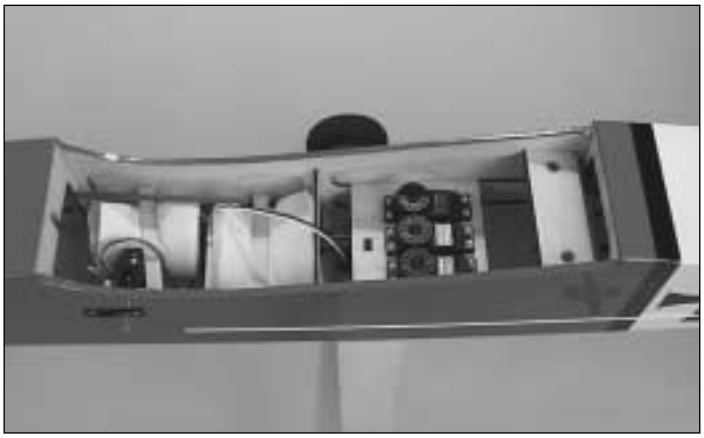
❑ 2. Use the pushrods to set the location for the control horns. Hold the horn in position and mark the location of the mounting holes. Drill 3/32" [2.4mm] mounting holes through the marks. Attach the horns using #2 x 1/2" [13mm] screws and nylon nut plates. Do not over-tighten the screws, as this may crush the underlying balsa. Attach the clevis to the control horns using the second hole in from the outside and slip the silicone retainer into place on the clevis.



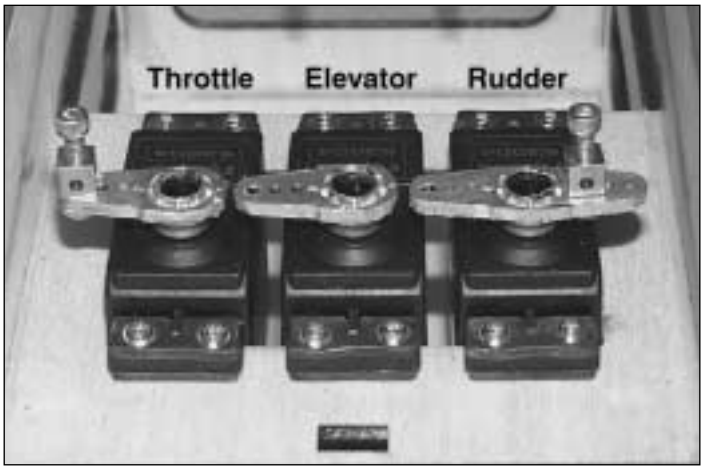


❑ 3. Use the following sequence for mounting the servos into the servo tray:

- ❑ A. Install rubber grommets and brass eyelets in the servos.
- ❑ B. Test fit the servos in the tray.
- ❑ C. Mark servo hole locations on the tray, then drill 1/16" [1.5mm] pilot holes through each mark. Harden the holes with a drop of thin CA through each hole.
- ❑ D. Referencing the photo above for orientation, mount the servos with the screws provided with your radio system.

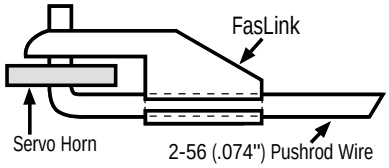


❑ 4. Following the manufacturer's recommendations, hook up the three servos, the receiver, switch and battery as shown in the photograph. Wrap the receiver and battery in 1/4" foam, then hold them in place by gluing small balsa sticks (not included) above them. We added a Great Planes Switch Mount and Charge Jack (GPMM1000, not included) for convenience and ease of use at the field, installed on the left side of the fuselage, away from the exhaust.

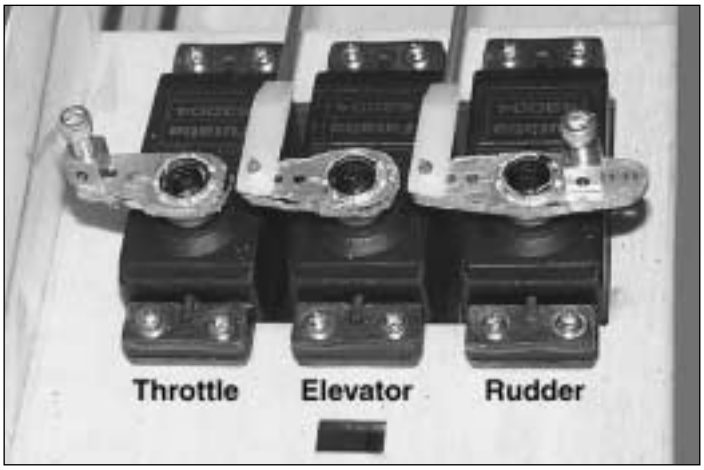


❑ 5. Turn on your transmitter and receiver and position the aileron, rudder, elevator and throttle trims and throttle stick on your transmitter to the center. (This is called “centering” the servos and will allow you to place the servo horns on the servos in a neutral position.) **Note:** The servo arms have been painted to make them show up better in the photos. Prepare the servo arms as shown in the photo. You will need to cut excess arms off the servo horns supplied with your radio system. This is perfectly normal, as the multi-arm servo horns are provided for just such purposes. Note that the rudder servo uses a 2-armed horn.

❑ 6. Connect the brass screw lock pushrod connectors with the nylon retainers to the throttle and nose-gear arm of the servo horns as shown. **Note:** The size and shape of servo horns varies from manufacturer to manufacturer. The sketches and photos show a typical radio installation with standard horns. All standard servos should fit the Big Stik with only minor modifications.

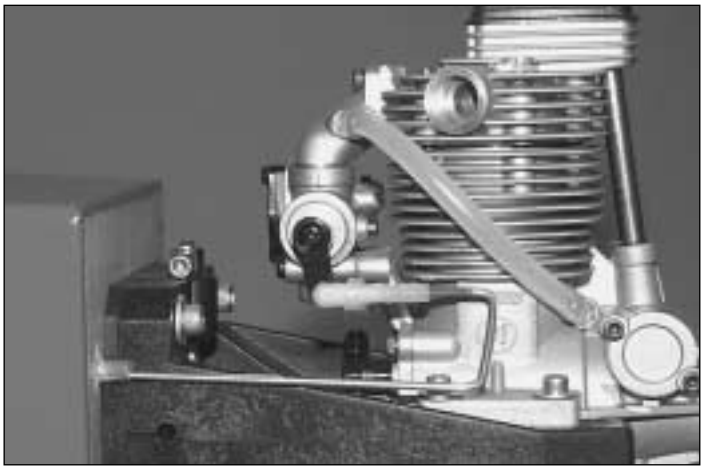


❑ 7. Mark the elevator pushrod where it crosses the servo arm. Enlarge the servo horn holes with a 5/64" [2mm] drill bit.

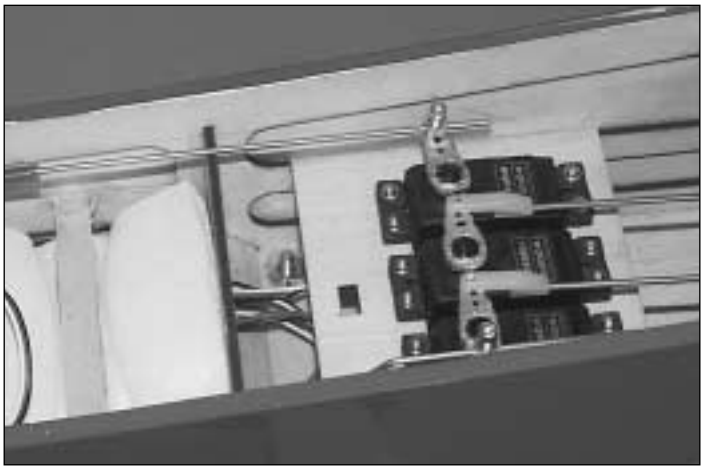


❏ 8. Make a 90-degree bend in the pushrod on your mark, then insert it through the enlarged hole in the servo arm. Cut off the excess wire 3/8" [9.5mm] above the bend. Secure the wire in place with a nylon FasLink.

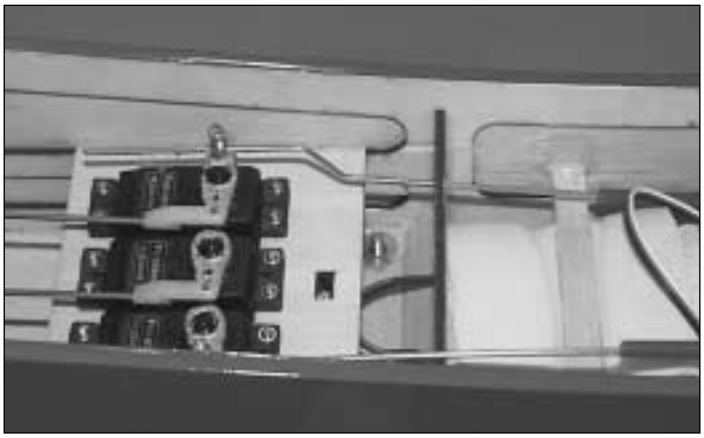
❏ 9. Follow the same steps for the rudder servo. Remember you used the two-arm type control arm on the servo in step 5. Attach the rudder pushrod to the inside arm. You will attach the nose wheel to the outside arm later.



❏ 10. Screw a clevis 20 turns onto a 36" pushrod. Slide the pushrod into the throttle pushrod tube. **Note:** Depending on your engine choice it might be necessary to bend the pushrod.

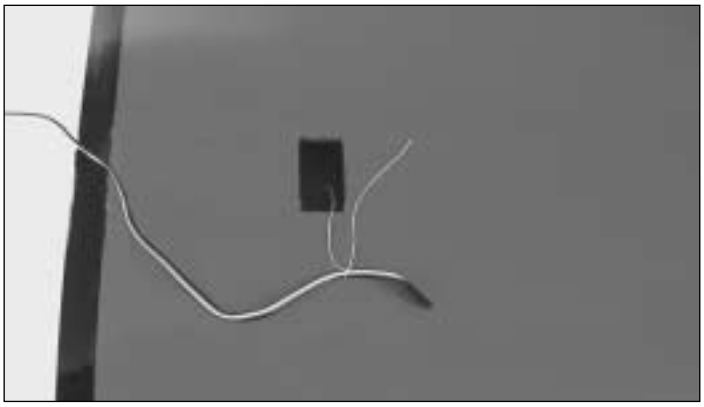


❏ 12. Connect the pushrod to the brass screw lock pushrod connector on the throttle servo. Trim the extra wire off behind the servo.



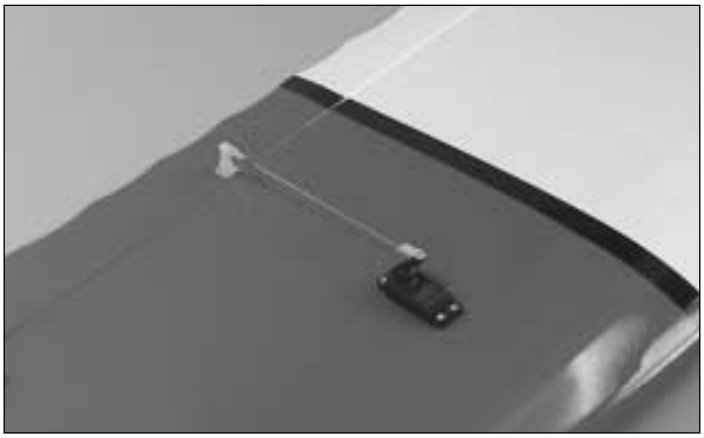
❏ 13. Slide the remainder of the throttle pushrod into the steering pushrod tube. Bend the servo end of the pushrod so that it does not touch the former in front of the servos. Connect the pushrod to the brass screw lock pushrod connector on the rudder servo.

❏ 14. Use the last brass screw lock pushrod connector to attach the pushrod to the steering arm. Adjust the nose wheel and tighten the cap screw. Minor adjustments to the steering can be done at either the servo or the nose wheel by adjusting the wire position with the screw lock pushrod connectors. Cut the excess pushrod off in front of the steering arm.



❑ 15. Use the following sequence for mounting the servos into the wings:

- ❑ A. Test fit the servos in the tray in each half of the wing.
- ❑ B. Mark servo hole locations on the tray, then drill 1/16" [1.5mm] pilot holes through each mark.
- ❑ C. Pull the string out of the servo opening and tie it to the servo lead. Pull the lead through the wing.
- ❑ D. Mount the servos in both sides of the wing with the screws provided with your radio system. Notice the orientation when installing.
- ❑ E. Slide a silicone retainer over both servo leads so that they won't fall back into the wing.



❑ 16. Install the aileron nylon control horn in line with the servo arm. Hold the horn in position and mark the location of the mounting holes. Drill 3/32" [2.4mm] mounting holes through the marks. Wick two to three drops of thin CA into the holes to harden the underlying balsa, then re-drill the holes. Attach the horns using #2 x 1/2" Screws and Nylon Nut Plates. Do not overtighten the screws, crushing the underlying balsa.

❑ 17. Center the aileron trim and aileron servo with the transmitter and receiver on. Mark the pushrod where it crosses the servo arm. Enlarge the servo horn hole with a 5/64" [2mm] drill bit.

❑ 18. Screw a clevis and the silicone retainer onto the pushrod. Make a 90-degree bend in the pushrod on your mark, then insert it through the enlarged hole in the servo arm. Cut off the excess wire 3/8" [9.5mm] above the bend. Secure the wire in place with a nylon FasLink.

PROP SPINNER & FUEL LINE INSTALLATION

❑ 1. Install the back plate, prop and prop washer onto the engine crankshaft. Tighten the nut to hold everything in place.

❑ 2. Screw the spinner onto the backplate.

❑ 3. If you have not installed your muffler, do so now. If you already have installed it just leave it in place.

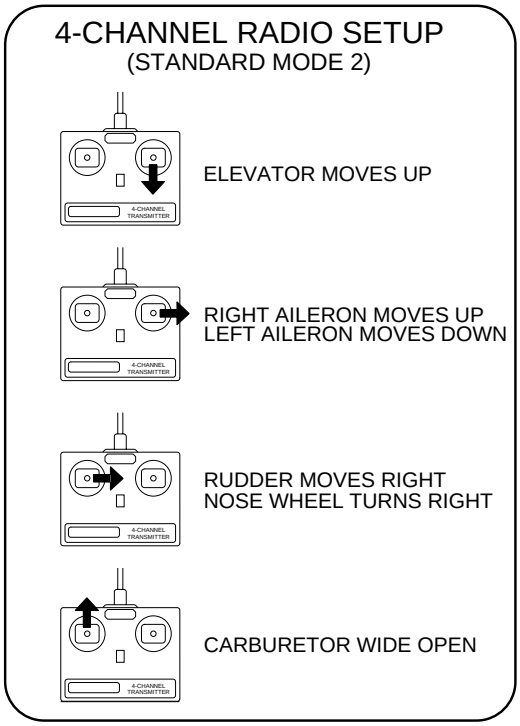
❑ 4. Connect the lower line from the tank to the fuel inlet on your engine. Connect the upper line from the tank to the pressure outlet of your engine.

GET THE MODEL READY TO FLY

Check the Control Directions

❑ 1. Turn on the transmitter and receiver and center the trims. If necessary, remove the servo arms from the servos and reposition them so they are centered. Reinstall the screws that hold on the servo arms.

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



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

Set the Control Throws

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

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

These are the recommend control surface throws for the **Big Stik .40**:

	High Rate	**Low Rate**
ELEVATOR:	3/4" [19mm] up 3/4" [19mm] down	5/8" [16mm] up 5/8" [16mm] down
RUDDER:	1-3/8" [41mm] right 1-3/8" [41mm] left	1" [25mm] right 1" [25mm] left
AILERONS:	7/8" [22mm] up 7/8" [22mm] down	5/8" [16mm] up 5/8" [16mm] down

These are the recommend control surface throws for the **Big Stik .60**:

	High Rate	**Low Rate**
ELEVATOR:	7/8" [22mm] up 7/8" [22mm] down	5/8" [16mm] up 5/8" [16mm] down
RUDDER:	1-1/2" [38mm] right 1-1/2" [38mm] left	1-1/4" [32mm] right 1-1/4" [32mm] left
AILERONS:	1" [25mm] up 1" [25mm] down	3/4" [19mm] up 3/4" [19mm] down

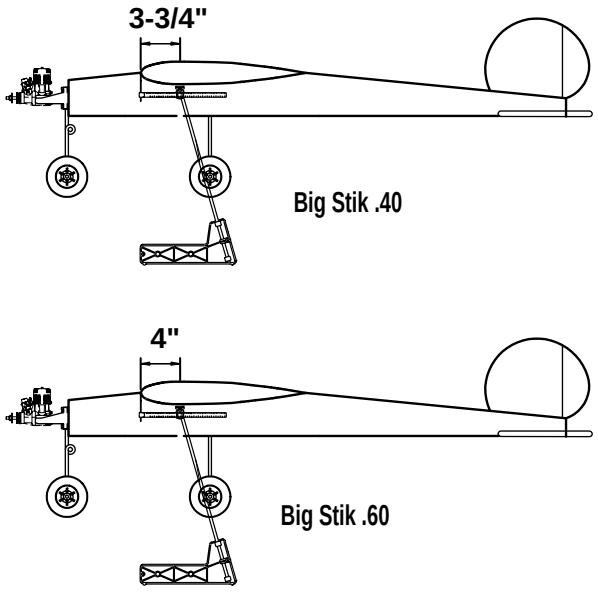
IMPORTANT: The Big Stik ARF has been **extensively** flown and tested to arrive at the throws at which it flies best. Flying your model at these throws will provide you with the greatest chance for successful first flights. If, after you have become accustomed to the way the Big Stik ARF flies, you would 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

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.

C.G.	.40 Size	.60 Size
Starting Point	3-3/4" [95mm]	4" [102mm]
Total Range	3-1/4" to 4" [82mm to 102mm]	3-3/4" to 4-1/2" [95mm to 115mm]

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. Use a felt-tip pen or 1/8"-wide tape to accurately mark the C.G. on the bottom of the wing on both sides of the fuselage. The C.G. is located as indicated in the table above, measured back from the leading edge of the wing.

This is where your model should balance for your first flights. Later, you may wish to experiment by shifting the C.G. within the range given above to change the flying characteristics. Moving the C.G. forward may improve the smoothness and stability, but it 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 for you to control. In any case, start at the location we recommend and do not at any time balance your model outside the recommended 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 right side up on a Great Planes CG Machine, or lift it right side up at the balance point you marked.

❏ 3. If the tail drops, the model is “tail heavy” and the battery pack and/or receiver must be shifted forward or weight must be added to the nose to balance. If the nose drops, the model is “nose heavy” and the battery pack and/or receiver must be shifted aft or 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 required, nose weight may be easily added by using a “spinner weight” (GPMQ4645 for the 1 oz. weight, or GPMQ4646 for the 2 oz. weight). If spinner weight is not practical or is not enough, use Great Planes (GPMQ4485) “stick-on” lead. A good place to add stick-on nose weight is to the firewall (don't attach weight to the cowl–it is not intended to support weight). Begin by placing incrementally increasing amounts of weight on the top of the fuse over the firewall until the model balances. Once you have determined the amount of weight required, it can be permanently attached. If required, tail weight may be added by cutting open the bottom of the fuse 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 wing level, have an assistant help you lift the model by the engine propeller shaft and the top of the rudder. 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

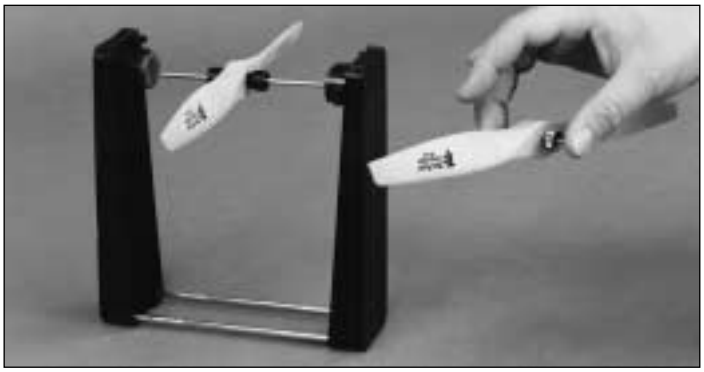
No matter if you fly at an AMA sanctioned R/C club site or if you fly somewhere on your own, you should always have your name, address, telephone number and AMA number on or inside your model. It is **required** at all AMA R/C club flying sites and AMA sanctioned flying events

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.

NOTE: Checking the condition of your receiver battery pack is **highly recommended**. All battery packs, whether it's a trusty pack you've just taken out of another model, or a new battery pack you just purchased, should be cycled, noting the discharge capacity. Oftentimes, a weak battery pack can be identified (and a valuable model saved!) by comparing its actual capacity to its rated capacity. Refer to the instructions and recommendations that come with your cycler. If you don't own a battery cycler, perhaps you can have a friend cycle your pack and note the capacity for you.

Balance Propellers



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

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

Ground Check

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 (EXCERPT)

Read and abide by the following Academy of Model Aeronautics Official Safety Code:

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 to and avoid flying in the proximity of full scale aircraft. Where necessary an observer shall be used 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.

7. I will not fly my model unless it is identified with my name and address or AMA number, on or in the model.

9. 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. I will perform my initial turn after takeoff away from the pit or spectator areas and I will not thereafter fly over pit or spectator areas, unless beyond my control.

4. I will operate my model using only radio control frequencies currently allowed by the Federal Communications Commission.

CHECKLIST

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 checklist 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 as off they are completed (that's why it's called a check list!).

❑ 1. Fuelproof all areas exposed to fuel or exhaust residue such as the firewall, wing saddle area, etc.

❑ 2. Check the C.G. according to the measurements provided in the manual.

❑ 3. Be certain the battery and receiver are securely mounted in the fuse. Simply stuffing them into place with foam rubber is not sufficient.

❑ 4. Extend your receiver antenna and make sure it has a strain relief inside the fuselage to keep tension off the solder joint inside the receiver.

❑ 5. Balance your model *laterally* as explained in the instructions.

❑ 6. Use threadlocking compound to secure critical fasteners such as the set screws that hold the wheel axles to the struts, screws that hold the carburetor arm (if applicable), 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, cowl 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. Secure the pressure tap (if used) to the muffler with high temp RTV silicone, thread locking compound or J.B. Weld.

❑ 15. Make sure the fuel lines are connected and are not kinked.

❑ 16. Use an incidence meter to check the wing for twists and attempt to correct before flying.

❑ 17. Balance your propeller (and spare propellers).

❑ 18. Tighten the propeller nut and spinner.

❑ 19. Place your name, address, AMA number and telephone number on or inside your model.

❑ 20. Cycle your receiver battery pack (if necessary) and make sure it is fully charged.

❑ 21. If you wish to photograph your model, do so before your first flight.

❑ 22. Range check your radio when you get to the flying field.

FLYING

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

CAUTION (THIS APPLIES TO ALL R/C AIRPLANES): If, while flying, you notice any unusual sounds, such as a low-pitched "buzz," this may indicate control surface *flutter*. Because flutter can quickly destroy components of your airplane, any time you detect flutter you must **immediately** cut the throttle and land the airplane! Check all servo grommets for deterioration (this may indicate which surface fluttered) and make sure all pushrod linkages are secure and free of play. If the control surface fluttered once, it probably will flutter again under similar circumstances unless you can eliminate the free-play or flexing in the linkages. Here are some things which can cause flutter: Excessive hinge gap; Not mounting control horns solidly; Poor fit of clevis pin in horn; Side-play of pushrod in guide tube caused by tight bends; Poor fit of Z-bend in servo arm; Insufficient glue used when gluing in the elevator joiner wire; Excessive *play* or *backlash* in servo gears; and Insecure servo mounting.

Takeoff

Before you get ready to take off, see how the model handles on the ground by doing a few practice runs at **low speeds** on the runway. If necessary, adjust the nose wheel so the model will roll straight down the runway. If you need to calm your nerves before the maiden flight, shut the engine down and bring the model back into the pits. Top off the fuel, then check all fasteners and control linkages for peace of mind.

Remember to take off into the wind. When you're ready, point the model straight down the runway, then gradually advance the throttle. 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 the 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

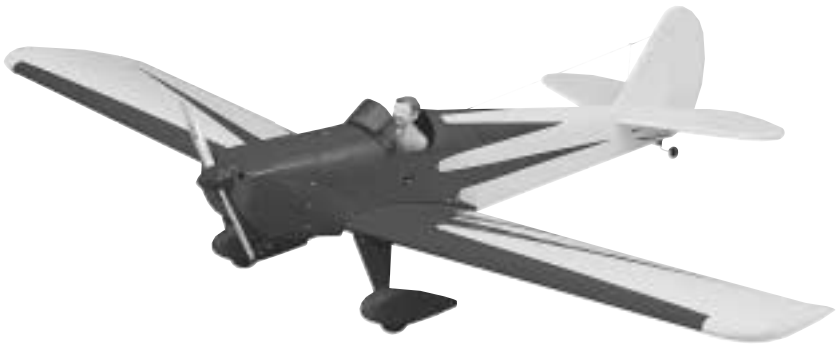
To initiate a landing approach, lower the throttle while on the downwind leg. Allow the nose of the model to pitch downward to gradually bleed off altitude. Continue to lose altitude, but maintain airspeed by keeping the nose down as you turn onto the crosswind leg. Make your final turn toward the runway (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 to make another attempt. When you're ready to make your landing flare and the model is a foot or so off the deck, smoothly increase up elevator until it gently touches down. Once the model is on the runway and has lost flying speed, hold up elevator to place the tail on the ground, regaining tail wheel control.

One final note about flying your 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!

OTHER PLANES FROM GREAT PLANES



SpaceWalker ARF
GPMA1300

Based on Jesse Anglin's '86 tribute to '30s homebuilts, the SpaceWalker takes only a few hours to assemble. It has a strong, wood frame; welded, steel landing gear; side plates; ABS wheel pants; windshield; and a cowl color-matched to the MonoKote covering. Smooth in flight, it blends the muscle of dual aileron servos with the aerobatic potential of a symmetrical airfoil.

Note: Pilot figure not included.

Piper J-3 Cub ARF
GPMA1310

This sport-scale model is all-wood, impressively detailed, and flight-ready in as little as 15-20 hours! Surrounding the CAD-engineered framework is real woven Coverite™ 21st Century® fabric. With its dual aileron servos the Cub maneuvers well. It also lands gently and includes a prepainted fiberglass cowl, replica cylinder heads, adjustable engine mount and Great Planes-brand hardware.

Note: Pilot figure not included.

AT-6 Texan ARF
GPMA1245

Enjoy smooth flight and easy aerobatics with this kit-quality ARF. Precision-molded, painted parts include a glass-reinforced cowl. Plus, the AT-6 offers the strength of wood...the dependability of Great Planes hardware...and the fine finish of Top Flite MonoKote film. Fixed landing gear is supplied, though wheel wells and mounting rails are built-in for retracts.

Note: Pilot figures not included.

Giles G-202
GPMA1315

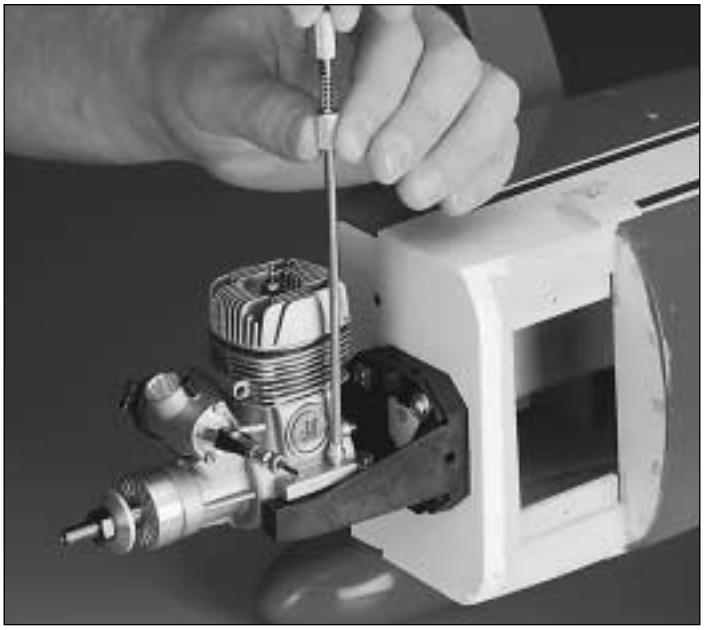
Designed to convince "kitters" that ARFs can be outstanding! Parts interlock for strength, and are all-wood except for fiberglass parts factory-painted to match the preapplied MonoKote covering. Competition mounted servos (2 each for ailerons and elevators, 1 for the rudder) plus double-beveled rudder and elevator control surfaces open the way for wild, 3D stunts.

Note: Pilot figure not included.

OTHER ITEMS AVAILABLE FROM GREAT PLANES

Great Planes® Pre-Built Master Caddy with APS™ (GPMP1001)

The pre-painted, Pre-Built Master Caddy field box is flight-ready in less than an hour. Its design saves space while neatly storing and organizing all necessary equipment. It includes three top compartments, two large drawers with dividers, and a shelf for securely holding a gallon of fuel. Cushioned, adjustable-width cradles safely hold planes for cleanup or repairs. Plus, the unique Auxiliary Power Station (APS) holds all of your starting gear and detaches from the Master Caddy for convenient starting anywhere at the field.



Great Planes® Dead Center™ Engine Mount Hole Locator (GPMR8130)

Makes perfect mount installations easy! Just position the engine on the mount, and Dead Center's self-centering cone in the bolt hole. Twist the shaft, and a drill bit inside makes a small starter hole.

Great Planes® Accu-Throw™ Control Surface Deflection Meter GPMR2405

One leading cause of crashes is flying an airplane with its control throws set differently from those recommended in the instructions. The Great Planes AccuThrow™ lets you quickly and easily measure actual throws first, so you can make necessary corrections before you fly. Large, no-slip rubber feet provide a firm grip on covered surfaces without denting or marring the finish. Spring tension holds AccuThrow's plastic ruler steady by each control surface. Curved to match control motions, the ruler provides exact readings in both standard or metric measurements.

Hobbico® DC Quick Field Charger (HCAM3000)

The Quick Field Charger recharges 9.6V transmitter and 4.8V or 6.0V receiver batteries right on the spot, using any 12V DC input. Advanced Delta peak sensing technology automatically switches to trickle once batteries are fully charged. Unique voltage boost circuitry peaks transmitter NiCds even in diode-equipped radios. Includes 2.5A fuse, alligator clips on a 14" input cord and banana plugs. 2-year warranty. Connectors required.

BUILDING NOTES

Kit Purchased Date: _____

Where Purchased:_____

Date Construction Started: _____

Date Construction Finished: _____

Finished Weight: _____

Date of First Flight: _____

FLIGHT LOG