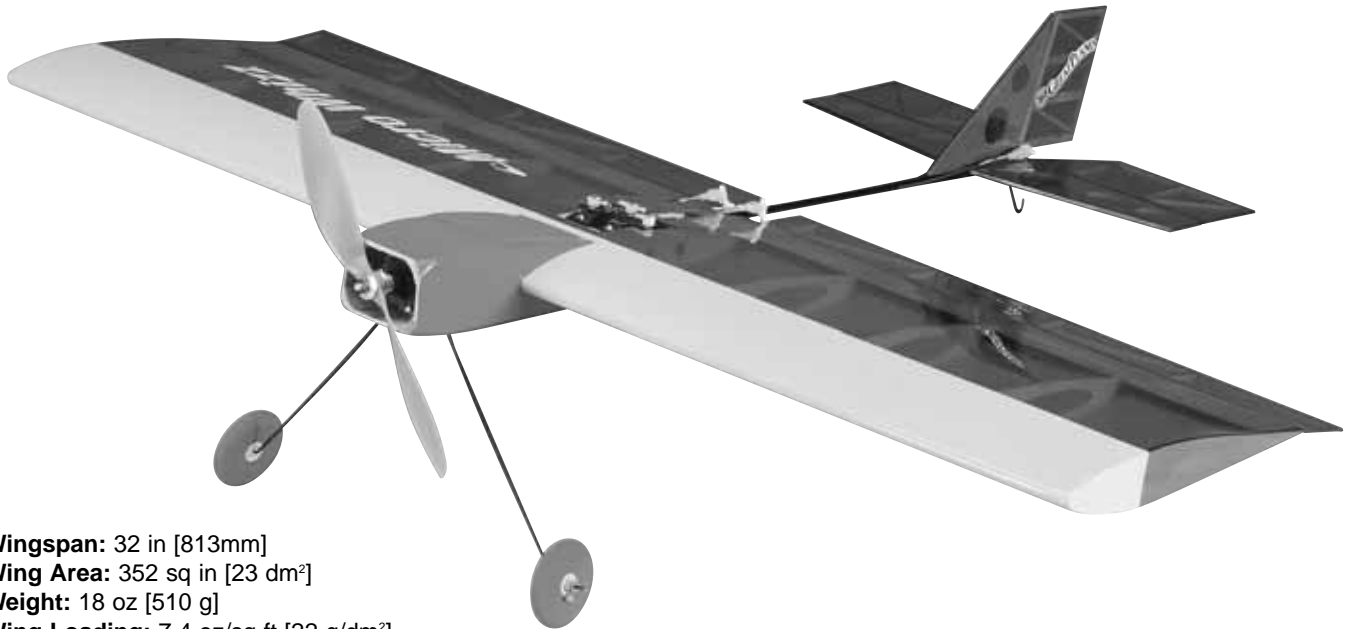


Micro Whizz™ ARF

INSTRUCTION MANUAL

Park Flyers



Wingspan: 32 in [813mm]
Wing Area: 352 sq in [23 dm²]
Weight: 18 oz [510 g]
Wing Loading: 7.4 oz/sq ft [22 g/dm²]
Length: 25-3/4 in [654mm]
Radio: 4-Channels
Motor: ElectriFly™ S-280 5:1 Ratio STD Gearbox,
ElectriFly Ferrite BB Motor

WARRANTY

Great Planes® Model Manufacturing Co. box 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 INSTRUCTIONS AND WARNINGS CONCERNING THE ASSEMBLY AND USE OF THIS MODEL.



Champaign, IL
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INTRODUCTION

The Great Planes Micro Whizz™ ARF is a high quality, fun flying electric ARF R/C park flyer. If you are able to successfully fly an advanced trainer-type R/C airplane on your own, you should feel confident flying your electric Micro Whizz. Do bear in mind that this airplane is capable of all aerobatic maneuvers. Therefore, you must realize that it may be a bit quicker on its responses than some trainer type airplanes you might be accustomed to. Smaller, lightweight park flyers like the Micro Whizz fly best in no wind or very light wind conditions.

If you are a first time R/C pilot, seek the guidance of an experienced R/C pilot before flying your Micro Whizz.

We hope your Great Planes Micro Whizz ARF will bring you many hours of R/C flying enjoyment.

For the latest technical updates or manual corrections to the Great Planes Micro Whizz ARF, visit the web site listed below and select the Great Planes Micro Whizz 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.

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

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

1. Your Great Planes Micro Whizz 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 Great Planes Micro Whizz 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 motor and components (batteries, wheels, etc.) throughout the assembly 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.

We, as the manufacturer, provide you with a top quality product 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
 Tele: (800) 435-9262
 Fax (765) 741-0057
 Or via the Internet at:
<http://www.modelaircraft.org>

TOOLS & SUPPLIES REQUIRED

- Hobby knife (HCAR0105)
- #11 blades (HCAR0211)
- Needle-nose pliers
- Pliers with wire cutters (HCAR0630)
- Small Phillips head screwdriver
- Medium-sized flat-head screwdriver
- Small piece of medium grade sandpaper
- Ruler
- Electric drill and 1mm drill bit
- 6-minute Epoxy (GPMR6045)
- Denatured alcohol (for epoxy clean up)
- 1/2 oz. Medium Pro™ CA (GPMR6007)
- CA debonder
- Pro Wood Glue (GPMR6160)
- Great Planes 1" x 6" Velcro® (GPMQ4480)
- Top Flite® Panel Line Pen (TOPQ2510)
- Great Planes Silver Solder Kit (GPMR8070)
- Hobbico® Soldering Iron (HCAR0776)
- 1/16" [1.6mm] x 3/4" [19mm] x 4" [102mm] scrap balsa
- 3/32" [2.4mm] x 1" [25mm] x 4" [102mm] scrap balsa

Hardware & Accessories

This is the list of hardware and accessories required to finish the Great Planes Micro Whizz ARF. Order numbers are provided in parentheses.

Motor/Gearbox/Prop

The Micro Whizz ARF was flown extensively with an ElectriFly™ S-280 5:1 Ratio STD Gearbox unit (GPMG0200). The ElectriFly Ferrite BB Motor (GPMG0305) was used for power along with an APC 9 x 6 SloFly Propeller (APCQ5013). This set-up also requires a 3mm Shaft Adapter (GPMQ4600). This is an excellent power unit for this airplane.

Battery Recommendations

The Micro Whizz operates best using the 8-cell NiMH from ElectriFly (GPMP0072)

Radio Equipment

The Micro Whizz requires a mini receiver such as the ElectriFly 4 channel FM Mini Receiver (GPML0045) and 3 Futaba® S-3103 Micro Mini Servos (FUTM0037).

Speed Control

An electronic speed control with BEC (Battery Eliminator Circuitry) is required. The BEC allows both the motor and the radio system to be powered by the same battery and eliminates the additional battery required to power the radio gear. The ElectriFly C-10 Mini Electronic Speed Control (GPMM2010) is recommended for the Micro Whizz.

Chargers

The best type of charger to use is a peak charger, because it charges the batteries until they are fully charged, then automatically switches to a trickle charge mode. The Great Planes ElectriFly Peak Charger (GPMM3000) is suitable for nickel-metal hydride batteries, NiCds and transmitter battery packs.

You may want to consider the ElectriFly Triton™ computerized charger, discharger, and cyclor (GPMM3150). This unit will pay great dividends by extending battery life and is capable of charging virtually every hobby battery on the market today.

IMPORTANT BUILDING NOTES

- 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.

COMMON ABBREVIATIONS

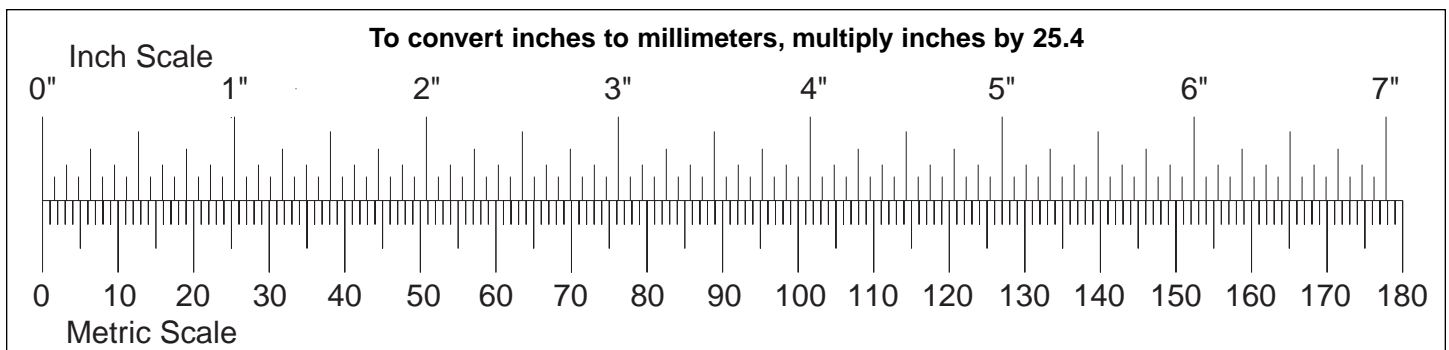
- Fuse = Fuselage
- Stab = Horizontal Stabilizer
- Fin = Vertical Fin
- LE = Leading Edge
- TE = Trailing Edge
- LG = Landing Gear
- " = Inches
- mm = millimeters

ORDERING REPLACEMENT PARTS

To order replacement parts for the Great Planes Micro Whizz ARF, 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

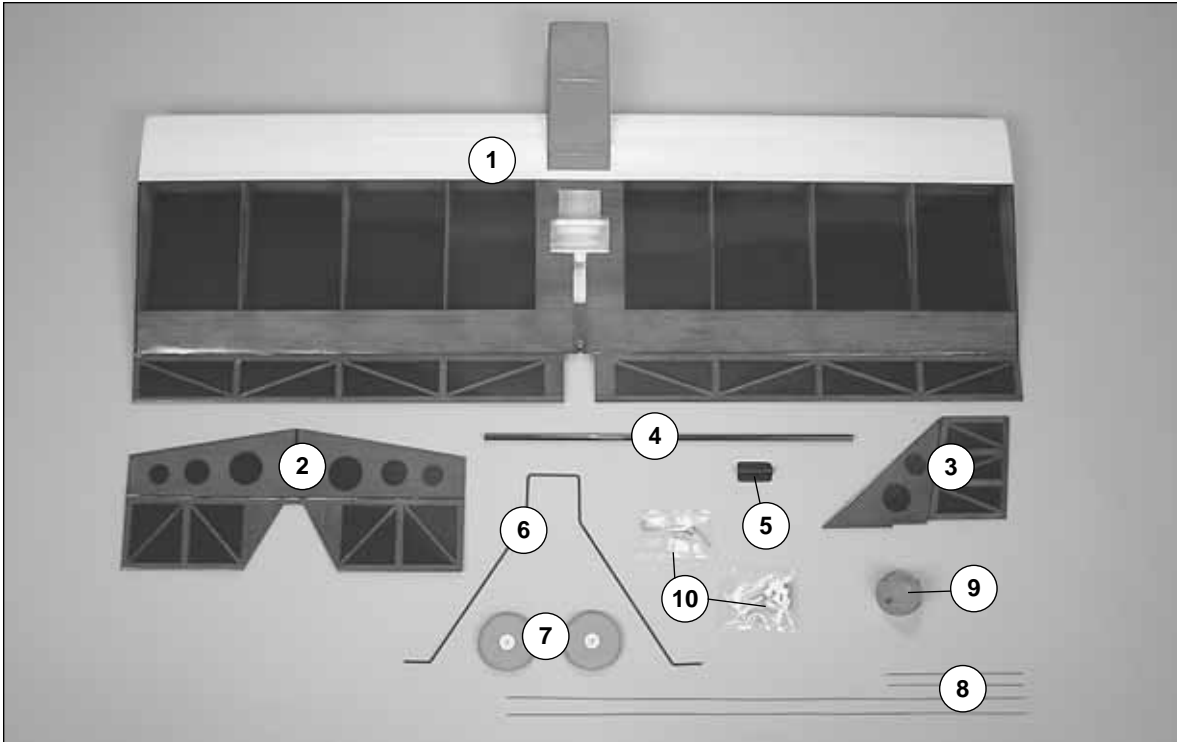
<u>Order Number</u>	<u>Description</u>	<u>How to Purchase</u>
	Missing pieces.....	Contact Product Support
	Instruction manual.....	Contact Product Support
	Full-size plans	Not available
GPMA2600	Wing Kit	} Contact Your Hobby Supplier to Purchase These Items
GPMA2601	Fuse (Nose Section)	
GPMA2602	Tail Rod	
GPMA2603	Tail Set	
GPMA2604	Landing Gear Set	
GPMA2605	Hardware Set	



KIT CONTENTS

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:
Telephone: (217) 398-8970
Fax: (217) 398-7721
E-mail: airsupport@greatplanes.com

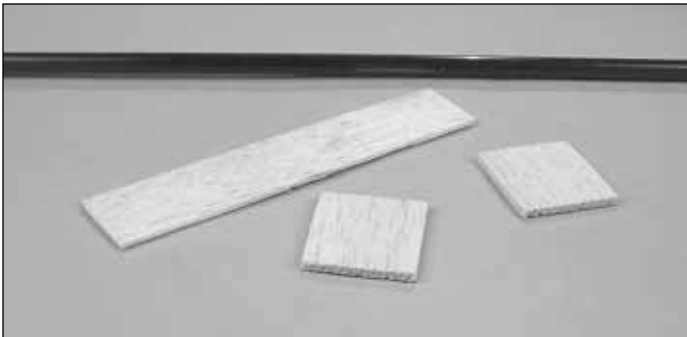


Kit Contents

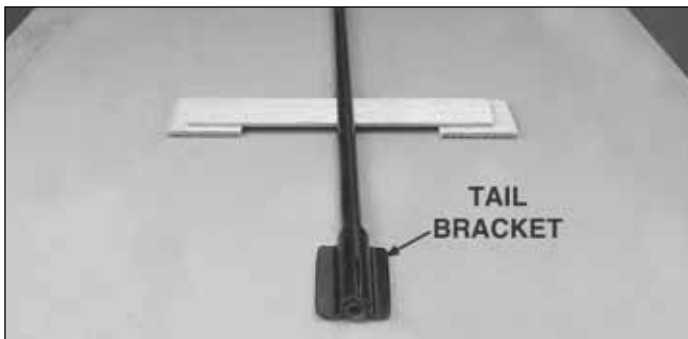
- | | |
|--------------------------------------|--------------------------|
| 1. Fuselage/Wing w/Ailerons | 7. Wheels |
| 2. Horizontal Stabilizer w/Elevators | 8. Pushrods (4) |
| 3. Fin w/Rudder | 9. Spinner |
| 4. Carbon Fiber Tail Boom | 10. Small Parts Bags (2) |
| 5. Tail Bracket | |
| 6. Landing Gear | |

ASSEMBLY OF THE MODEL

Installing the Tail Surfaces



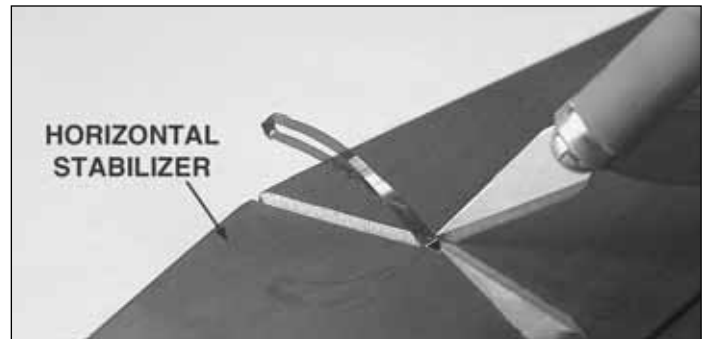
1. Locate the carbon fiber tail boom and note the pre-cut slot for the pushrods to exit. Cut a piece of 1/16" [1.6mm] balsa 3/4" [19mm] x 4" [102mm]. Also cut 2 squares of 3/32" [2.4mm] balsa 1" [25mm] x 1" [25mm]. **Note:** Wood not supplied with kit.



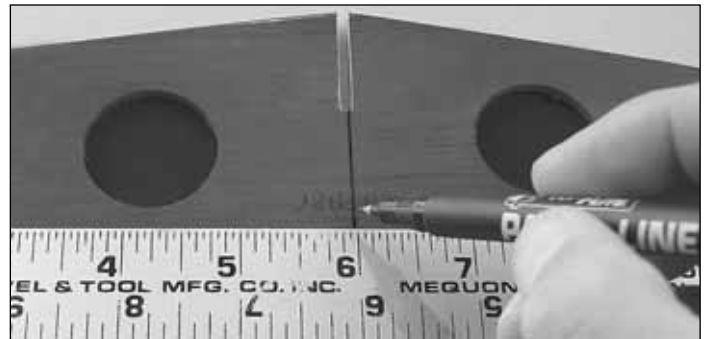
2. Slide the 1/16" balsa strip into the pre-cut slot. Place this onto a flat surface and slide the 3/32" balsa squares under the strip as shown in the above photograph. Locate the tail bracket and test fit it into place on the end of the tail boom making sure that both sides of the bracket touch the flat surface. Make sure that the bracket is flush with the rear of the tail boom and the pre-cut slot in the bracket is facing toward the rear. When satisfied with the fit, glue the bracket into place using medium CA.



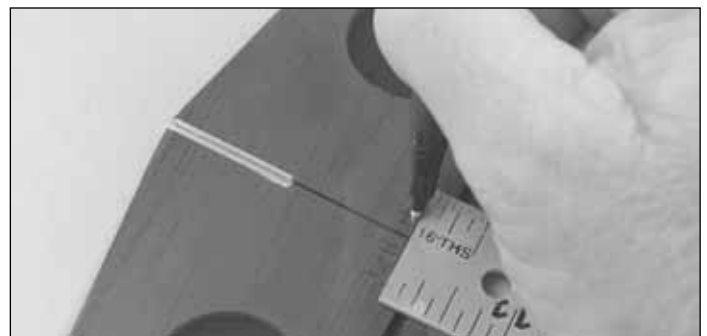
3. With a 3/64" [1mm] bit, drill a hole in the tail boom at the forward end of the pre-cut slot in the bracket.



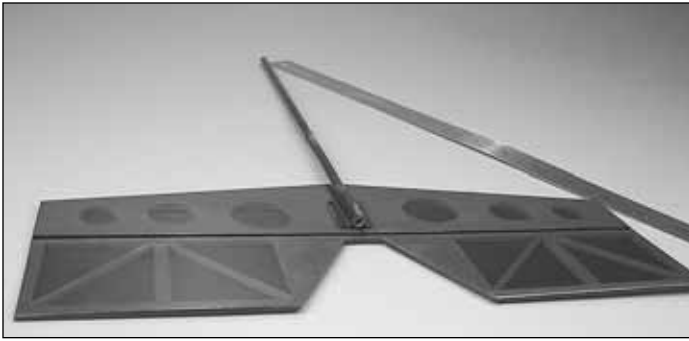
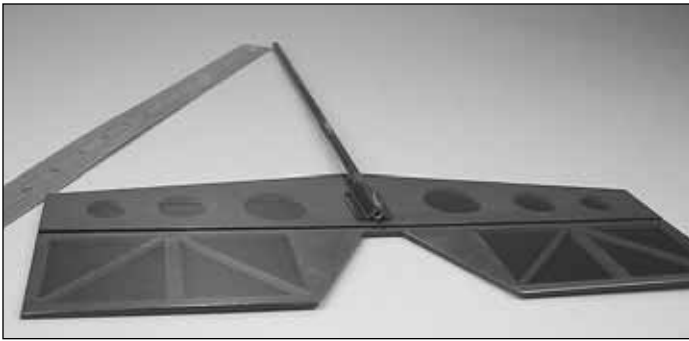
4. Use a sharp hobby knife to cut the covering away from the slot in the center of the leading edge of the horizontal stabilizer.



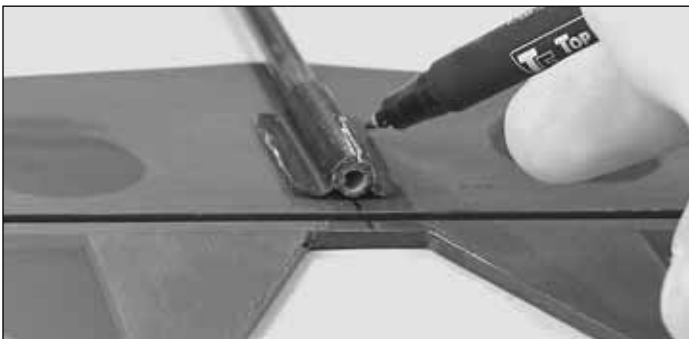
5. Measure the width of the horizontal stabilizer and mark a centerline on the bottom of the stabilizer with a felt-tipped pen as shown above.



6. Measure 3/16" [5mm] forward from the trailing edge of the horizontal stabilizer at the centerline and mark this location.



7. With the horizontal stabilizer placed bottom up on a flat surface, place the tail boom (with the bracket attached) on top of the stabilizer as shown in the above photographs with the rear of the assembled tail boom positioned on the centerline and the 3/16" [5mm] mark. Make the correct alignment by measuring the distance from the tip of the tail boom to both forward corners of the horizontal stab. Make the necessary adjustments until both measurements are equal on both sides.

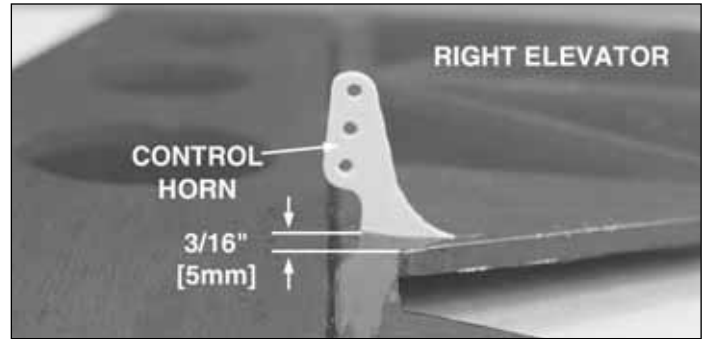


8. When you are satisfied with the correct position of the tail boom, mark the position of the bracket onto the stabilizer.



9. Using a sharp hobby knife cut away the covering just inside the lines you drew on the covering. Do not cut into the balsa as this will weaken the structure. Glue the tail boom

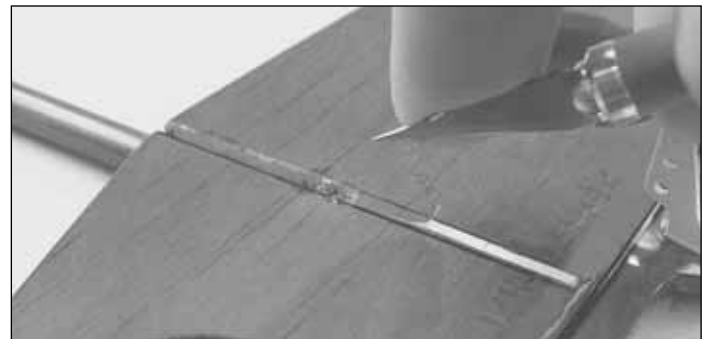
into place with CA. While the glue cures check the positioning with a ruler in the same way as when you marked the location.



10. Cut a slot into the right elevator at a point 3/16" [5mm] toward the outer end of the elevator from the inside edge of the elevator. Place the control horn into the slot in a manner that allows the holes in the horn to align with the hinge line as shown in the above photograph. Make sure that the horn is placed on top of the elevator. When you are satisfied with the placement, glue it into place with CA.



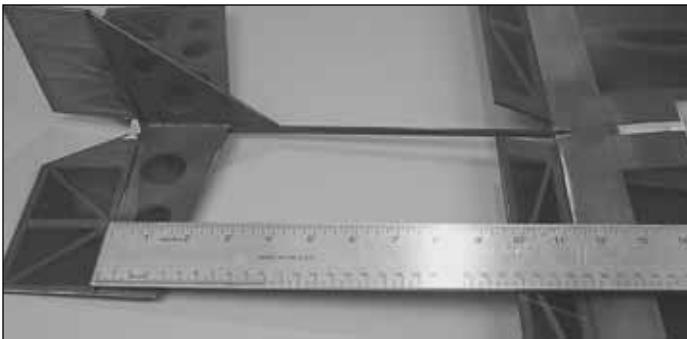
11. Place the fin/rudder into the slot on top of the horizontal stabilizer. Use a felt-tipped pen and mark the position on both the fin and the stabilizer as shown in the photograph above.



12. Using the same procedure as before, cut the covering away from the top of the stabilizer as shown in the photograph above. Do the same with the base of the fin where you made the marks. Before gluing the fin/rudder into place in the next step, position the control horn for the rudder into the left side of the rudder and glue the control horn into place with CA.



13. Apply CA to the areas where you removed the covering and into the slot in the stabilizer. Slide the fin/rudder into position and place a 90° tool onto the top of the stabilizer holding the fin in place until the glue sets as shown in the above photograph.



14. Test fit the tail boom into the hole on the wing trailing edge. Place the assembly onto a flat surface and move the assembled tail section forward and aft until the measurement from the hinge line of the elevators to the hinge line of the ailerons is 11-1/2" [292mm]. Measure the distance from both sides of the horizontal stabilizer to the table surface. Adjust the tail boom until these measurements are equal. Carefully mark the location of the tail boom in the wing.

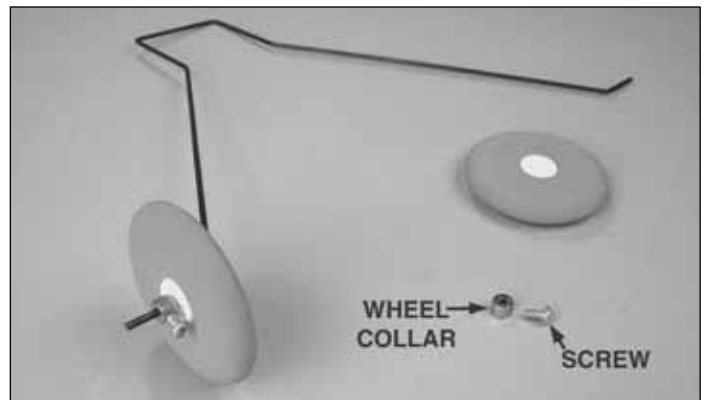


15. When satisfied with the fit and position of the tail assembly, remove it and apply CA inside the hole. Then return the tail assembly to the correct position. Make sure that the position is right before the CA has cured.

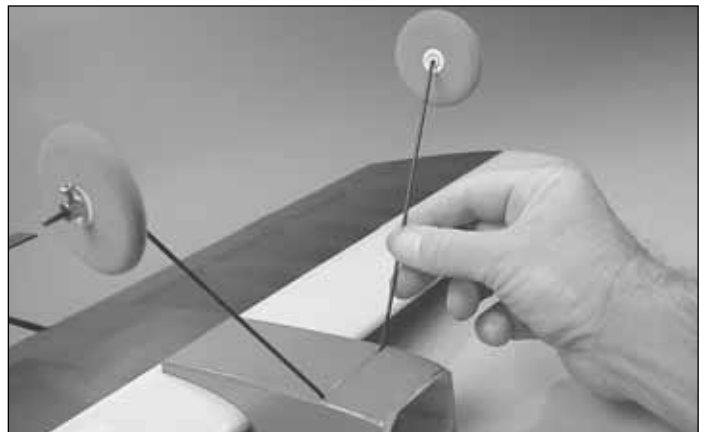
Assembly of the Fuselage/Wing



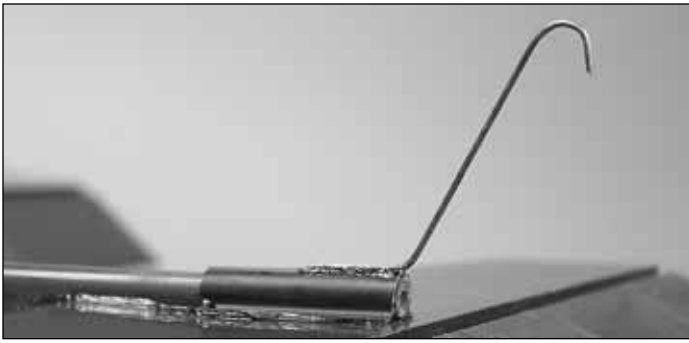
1. As shown in the photograph above, install the two control horns in the ailerons by cutting a small portion of the aileron away with a sharp hobby knife. Use sandpaper to rough up the areas where the control horns will be glued. Make sure the holes line up with the hinge line. When you are satisfied with the position, glue it into place with CA.



2. To install the landing gear, first fit the wheels onto the axle portion of the gear. Slip the wheel collars onto the axle. Insert the Phillips head screws into the wheel collar and tighten them securely. Use the photograph above as a guide.



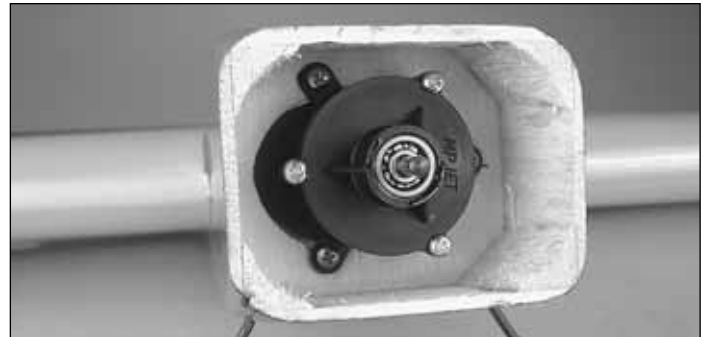
3. Place the airplane on your work surface upside-down. Using a sharp hobby knife, remove the covering over the opening in the wood where the gear is placed. As shown in the photograph above, place the landing gear into the slot in the bottom of the fuselage.



4. Locate and test fit the tail skid into the hole you drilled earlier at the forward end of the slot in the bracket under the horizontal stabilizer. When satisfied with the fit glue it into place with CA.

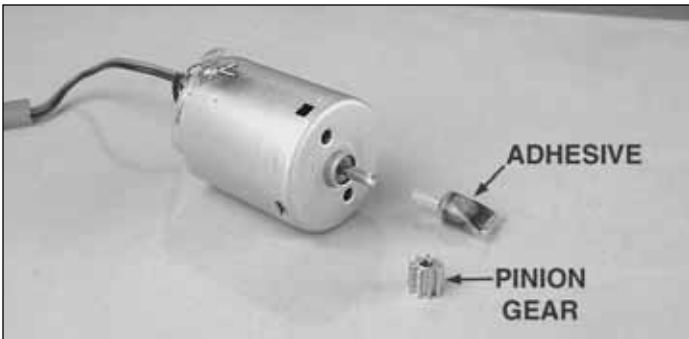


2. When the adhesive has cured completely, insert the motor all the way into the gear drive unit. This is a tight fit and you will also have to move the gear box back and forth to allow the pinion gear to slide all the way into alignment.



3. Slide the motor/gear drive assembly into the nose of the airplane. Mark the location of the mounting holes onto the firewall. Remove the unit and drill 1/16" [1.5mm] holes at the marked locations. Mount the assembly as shown above with #2 x 3/8" [13mm] screws.

Installing the Motor

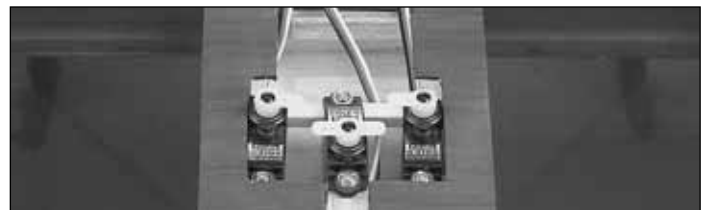


1. Locate the brass gear and the small tube of green adhesive. Test fit the gear onto the motor shaft. If you are finding no problems with the fit, place a drop of the adhesive from the small tube into the hole in the center of the gear. Before the glue sets, position the gear on the shaft at a location where the end of the motor shaft is flush with the end of the gear. Let the adhesive cure for an hour before proceeding.

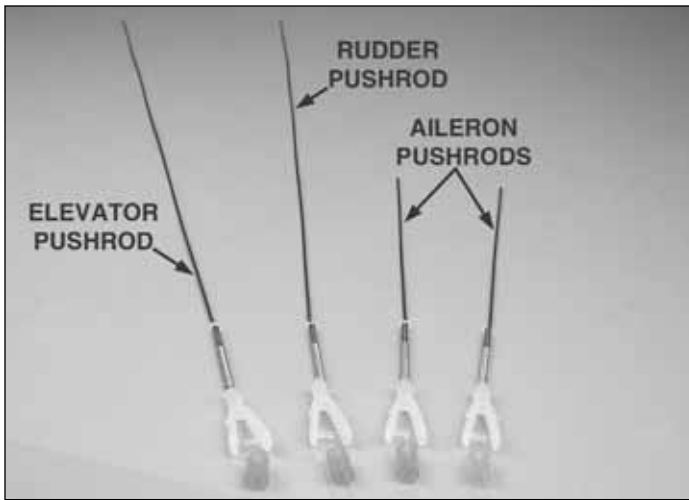


4. Install the collet, propeller adapter, and the propeller as shown in the photograph above.

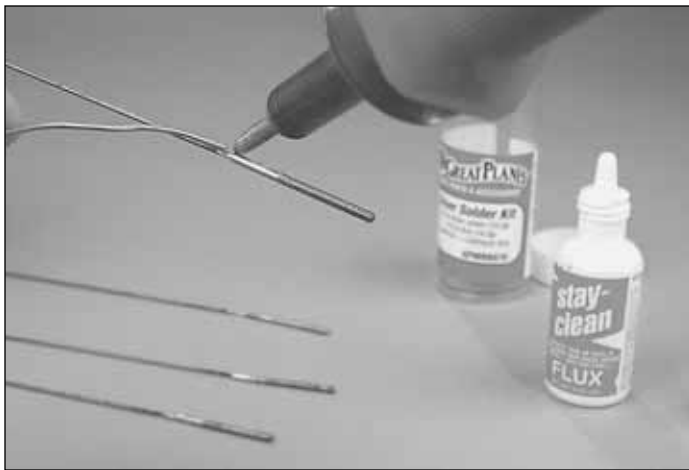
Installing the Servos



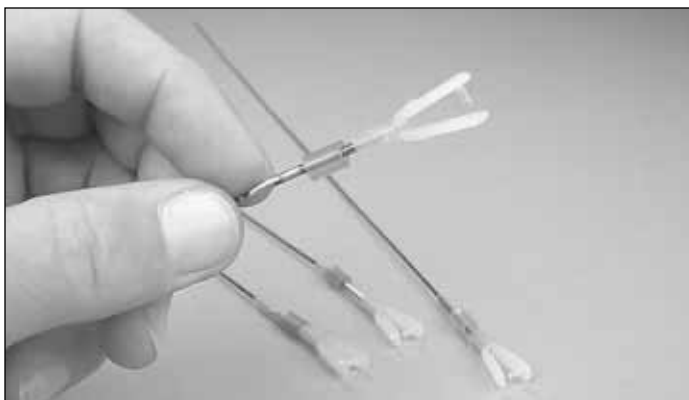
1. Install the three servos in the position shown in the above photograph. Follow the directions included with your particular servos for the proper mounting.



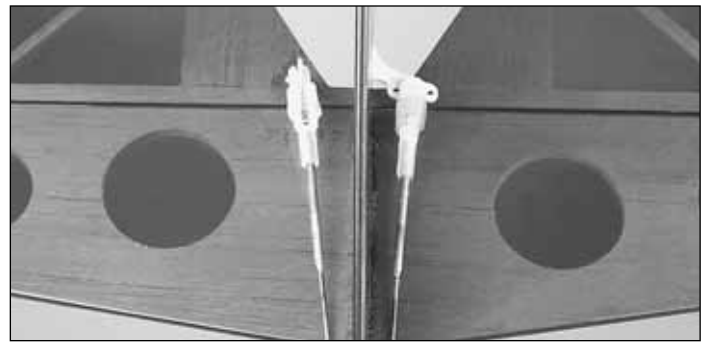
2. Gather the four pushrods, threaded couplers, clevises, and clevis retainers as shown in the above photograph.



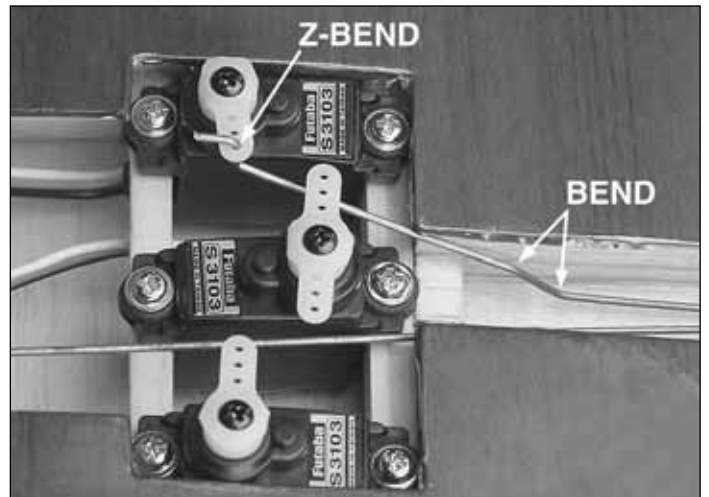
3. Prepare the pushrods for assembly by sanding or filing one end of each pushrod. Use silver solder to attach the threaded couplers to the end you have sanded on each of the four pushrods. Follow the instructions with the silver solder carefully.



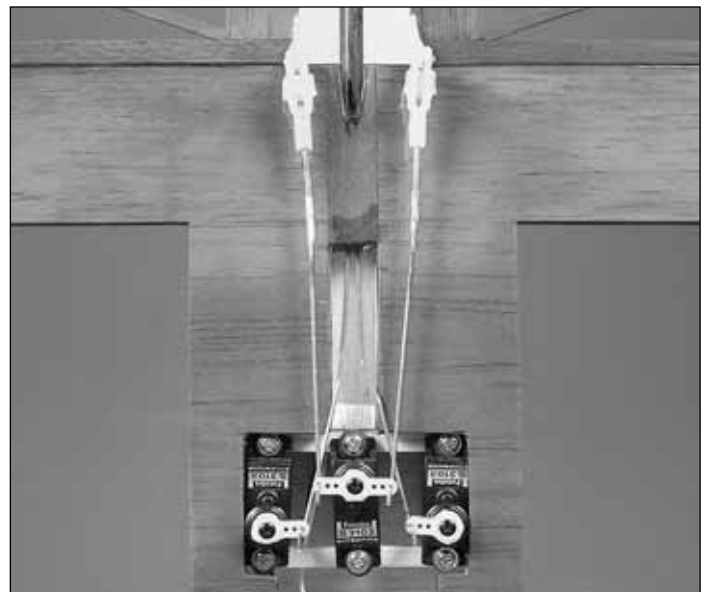
4. Place a clevis and clevis retainer on each of the pushrods as shown.



5. Insert the rudder and elevator pushrods into the slot in the tail boom. Snap the clevis onto the elevator and rudder control horns as shown in the photograph above.



6. Position the rudder so that it is directly aligned with the fin. As indicated in the photograph above, place a bend in the pushrod in the location shown. Again, make sure that the fin is in exact alignment and make a "Z" bend in the pushrod where the pushrod meets the holes in the centered servo arm. Repeat this process for the elevator pushrod.



7. Use the same procedure to connect the aileron pushrods. Your completed assembly should look the same as shown in the preceding photographs.

Installing the Receiver & Speed Control



1. The areas where you will be mounting your receiver, speed control, and battery must have a thin coating of glue to allow the Velcro to attach. You can use CA or any type of wood glue for this purpose. Allow the glue to dry or cure completely before attaching the Velcro. Note the location of the mounted speed control in the above photograph.



2. The photograph illustrates the placement of the receiver. Place a 1/16" [1.6mm] hole close to the receiver in the bottom of the fuselage. Feed the antenna through this hole and tape it into place on the wing.



3. Note the installation and position of the battery pack.

4. Install the hatch.

Apply the Decals

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

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

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

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

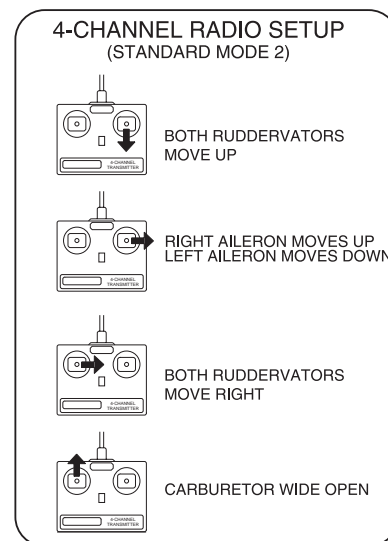
GET THE MODEL READY TO FLY

Check the Control Directions

Note: For safety reasons, remove the propeller from the airplane before proceeding.

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.

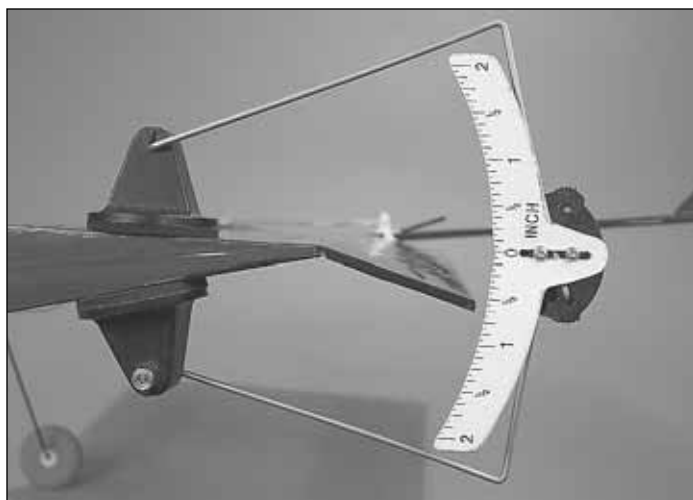
2. While the transmitter and receiver are still on, check all the control surfaces to see if they are centered. If necessary, adjust the clevises on the pushrods to center the control surfaces.



3. Make certain that the control surfaces 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 recommended control surface throws:

	High Rate	Low Rate
ELEVATOR:	1" [25mm] up 1" [25mm] down	5/8" [16mm] up 5/8" [16mm] down
RUDDER:	13/16" [20mm] right 13/16" [20mm] left	5/8" [16mm] right 5/8" [16mm] left
AILERONS:	1" [25mm] up 1" [25mm] down	5/8" [16mm] up 5/8" [16mm] down

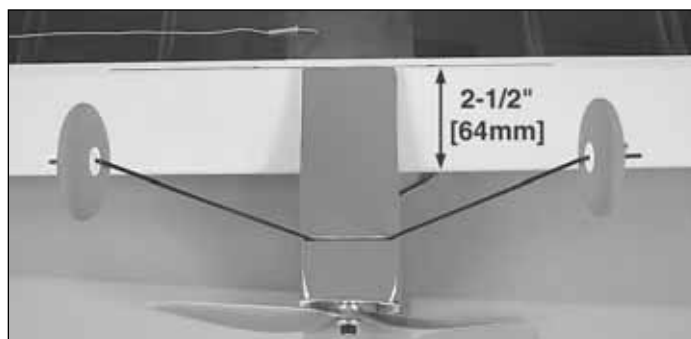
IMPORTANT: The Great Planes Micro Whizz ARF has been extensively flown and tested to arrive at the throws at which it flies best. Flying your model at these throws will provide you with the greatest chance for successful first flights. If, after you have become accustomed to the way the Great Planes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

When you have completed this section, replace the propeller onto the airplane.

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 motor, landing gear, battery, 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 2-1/2" [64mm] back from the leading edge of the wing.

This is where your model should balance for the first flights. Later, you may wish to experiment by shifting the C.G. up to 2-3/8" [67mm] forward or 3" [76mm] 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 all parts of the model installed (ready to fly), place the model on a Great Planes CG Machine, or lift it at the balance point you marked.

❑ 3. If the tail drops, the model is “tail heavy” and the battery pack and/or receiver must be shifted forward 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. Begin by placing incrementally increasing amounts of weight on the airplane until the model balances. Once you have determined the amount of weight required, it can be permanently attached.

Note: Do not rely upon the adhesive on the back of the lead weight to permanently hold it in place. 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 motor propeller shaft and the bottom of the fuse under the TE of the fin. Do this several times.

❑ 2. If one wing always drops when you lift the model, it means that side is heavy. Balance the airplane by adding weight to the other wing tip. An airplane that has been laterally balanced will track better in loops and other maneuvers.

PREFLIGHT

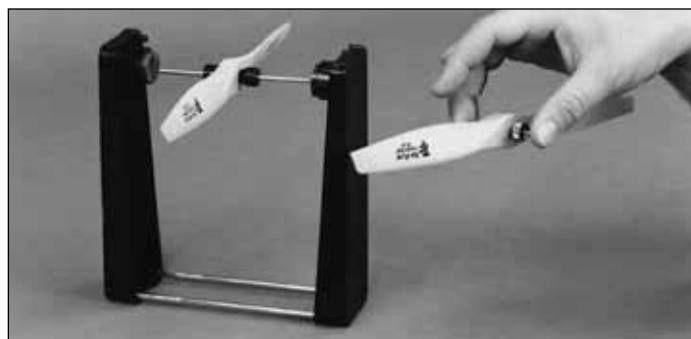
Identify Your Model

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

Charge the Batteries

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

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 motor mounting screws and bolts loosen, possibly with disastrous effect, but vibration may also damage your radio receiver and battery.

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 motor is new, follow the motor manufacturer's instructions to break-in the motor. After break-in, confirm that the motor transitions smoothly and rapidly to full power and maintains full power-indefinitely. After you run the motor on the model, inspect the model closely to make sure 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 motor 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.

MOTOR SAFETY PRECAUTIONS

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

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

Use safety glasses when running motors.

Do not run the motor 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 run the motor.

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.

The motor gets hot! Do not touch it during or right after operation.

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.

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

5. 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.

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.

- 1. Check the C.G. according to the measurements provided in the manual.
- 2. Be certain the battery, speed control, and receiver are securely mounted in the fuse. Simply stuffing them into place with foam rubber is not sufficient.
- 3. Extend your receiver antenna and make sure it has been properly attached to the airplane.
- 4. Balance your model laterally as explained in the instructions.
- 5. Use thread locking compound to secure critical fasteners such as the set screws that hold the wheel collars.
- 6. Add a drop of oil to the axles so the wheels will turn freely.

- 7. Reinforce holes for wood screws with thin CA where appropriate, such as servo mounting screws.
- 8. Confirm that all controls operate in the correct direction and the throws are set up according to the manual.
- 9. 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.
- 10. Balance your propeller (and spare propellers).
- 11. Tighten the propeller nut and spinner.
- 12. Place your name, address, AMA number and telephone number on or inside your model.
- 13. If you wish to photograph your model, do so before your first flight.
- 14. Range check your radio when you get to the flying field.

FLYING

The Great Planes Micro Whizz ARF is a great-flying model that flies smoothly and predictably. The Great Planes Micro Whizz 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 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; excessive play or backlash in servo gears; and insecure servo mounting.

Takeoff

Before you get ready to takeoff, see how the model handles on the ground by doing a few practice runs at low speeds on the runway. Check all fasteners and control linkages for peace of mind.

Remember to takeoff into the wind. When you're ready, point the model straight down the runway, hold a bit of up elevator and then gradually advance the throttle. 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 tail dragger is to always be ready to apply right rudder to

counteract motor 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 motor 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 Great Planes Micro Whizz 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, 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. Monitor your battery charge 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, adjusting 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.

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:

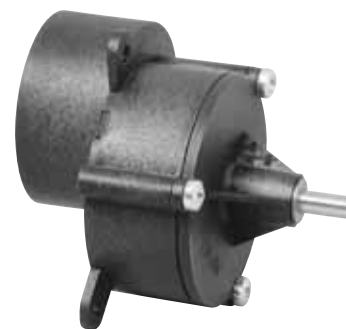
Name

Address

City, State Zip

Phone number

AMA number



Great Planes ElectriFly S-280 Gearbox

Developed for low noise and low maintenance, this Great Planes ElectriFly gearbox features a 5:1 gear ratio and uses standard bronze bushings for long-lasting sport use. A lightweight, fiber-reinforced, sealed gear case resists damage and keeps out dust and debris. Paired with a 280-size motor, it helps draw the maximum climbing power and flight times from every battery mAh. It uses a brass pinion gear for strength and a nylon main gear for quiet, low-friction operation. **GPMG0200**

OTHER ITEMS AVAILABLE FROM GREAT PLANES



Great Planes ElectriFly S-280 Ferrite BB Motor

Compact electric park flyer models demand high power in an efficient package – and it's supplied by this 7.2 – 8.4V, speed 280-size motor from ElectriFly. Among its features are ball bearings, a single-wind armature, factory-installed capacitors, and a factory-installed 2-pin connector designed to plug into Great Planes ElectriFly C-5 or C-10 electronic speed controls. **GPMG0305**



Great Planes ElectriFly Peak Charger

Designed for small, lightweight electrics and transmitter batteries, this charger can also be used with any 6 – 8-cell NiCd or NiMH pack. It plugs into a power supply or cigarette lighter for fast charges. Pulsed current charging protects small packs from overheating. Charge rate adjusts to 200 mAh or 600mAh. A 15mA trickle charge keeps packs topped off for use anytime. Includes 2-pin connector for ElectriFly packs; adapters available separately. 1-year warranty. **GPMG3000**