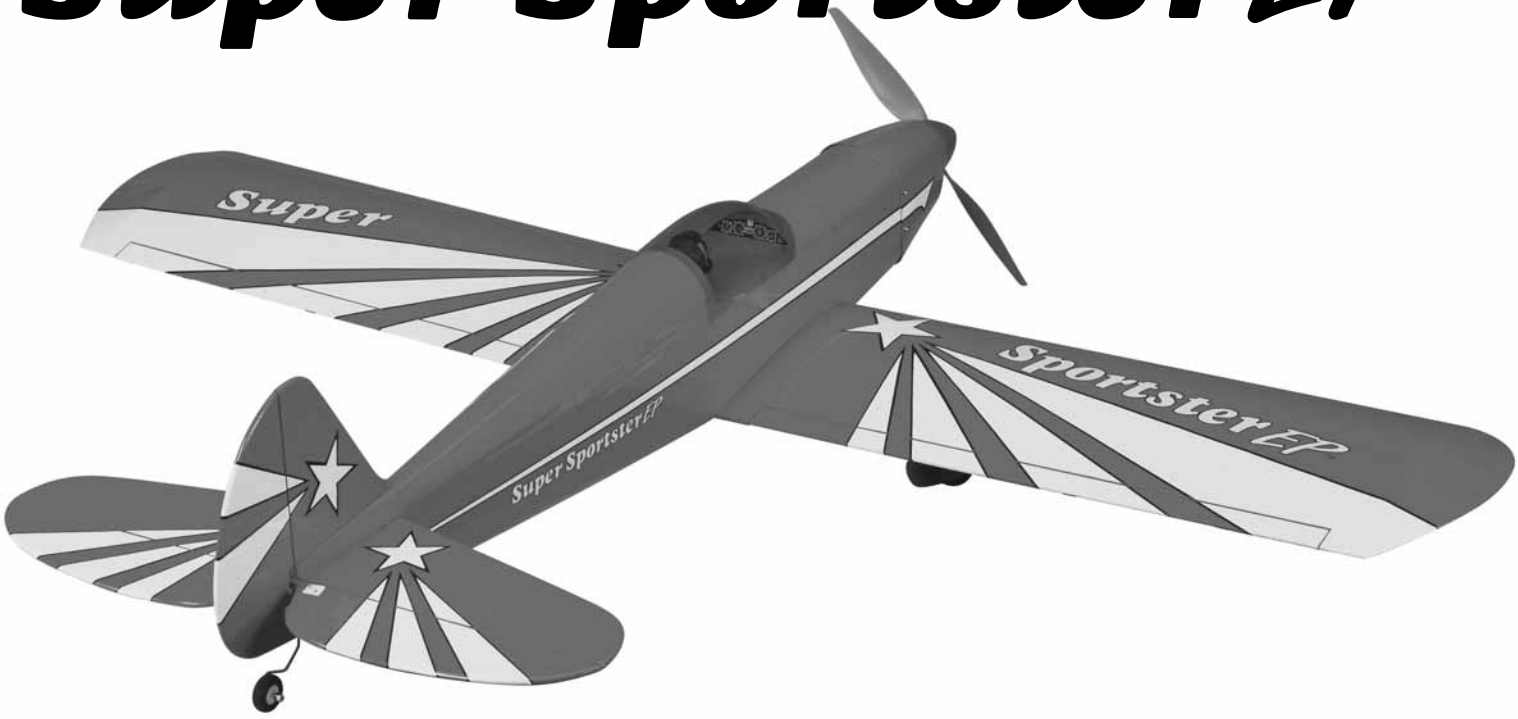
Super Sportster™ EP



INSTRUCTION MANUAL

SPECIFICATIONS

Wingspan:	48 in [1220mm]	**Weight:**	2.75 – 3.0 lb [1250 – 1360 g]
Wing Area:	383 sq in [24.7 dm^2]	**Wing Loading:**	17 – 18 oz/sq ft [52 – 55 g/dm^2]

Radio:	4-channel minimum with 3 micro mini servos
Motor:	RimFire .25 (42–40–1000kV) outrunner brushless
ESC:	45A brushless
Battery:	3-cell 3200 – 3700mAh LiPo and compatible charger

WARRANTY

Great Planes® Model Manufacturing Co. guarantees this kit to be free from defects in both material and workmanship at the date of purchase. This warranty does not cover any component parts damaged by use or modification. **In no case shall Great Planes' liability exceed the original cost of the purchased kit.** Further, Great Planes reserves the right to change or modify this warranty without notice.

In that Great Planes has no control over the final assembly or material used for final assembly, no liability shall be assumed nor accepted for any damage resulting from the use by the user of the final user-assembled product. By the act of using the user-assembled product, the user accepts all resulting liability.

If the buyer is not prepared to accept the liability associated with the use of this product, the buyer is advised to return this kit immediately in new and unused condition to the place of purchase.

To make a warranty claim send the defective part or item to Hobby Services at the address below:

Hobby Services
3002 N. Apollo Dr. Suite 1
Champaign IL 61822 USA

Include a letter stating your name, return shipping address, as much contact information as possible (daytime telephone number, fax number, e-mail address), a detailed description of the problem and a photocopy of the purchase receipt. Upon receipt of the package the problem will be evaluated as quickly as possible.

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

GREAT PLANES® MODEL MANUFACTURING COMPANY

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

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INTRODUCTION

The Great Planes Super Sportster kits have been a favorite among pilots since 1982. For many pilots the Super Sportster was their first low wing plane. Now, Great Planes brings you the Super Sportster tradition in an electric version. Following the lines of the Super Sportster 20, the Super Sportster EP BL ARF has been lightened to accommodate electric power without sacrificing performance and has been recently updated to accommodate a brushless motor and a LiPo battery pack for improved performance and extended flight time. If you're ready to continue the Super Sportster tradition without the fuss and mess of a glow engine, the Super Sportster EP BL ARF is just what you need.

For the latest technical updates or manual corrections to the Super Sportster EP BL ARF visit the Great Planes web site at www.greatplanes.com. Open the "Airplanes" link, and then select the Super Sportster EP BL ARF. If there is new technical information or changes to this model a "tech notice" box will appear in the upper left corner of the page.

AMA

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

Academy of Model Aeronautics
5151 East Memorial Drive
Muncie, IN 47302

Tele: (800) 435-9262
Fax (765) 741-0057

AMA
SINCE 1936

Or via the Internet at: **http://www.modelaircraft.org**

IMPORTANT!!! Two of the most important things you can do to preserve the radio controlled aircraft hobby are to avoid flying near full-scale aircraft and avoid flying near or over groups of people.

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

1. The Super Sportster EP BL 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 Super Sportster EP BL 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 throughout the building process.

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

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

7. If you are not an experienced pilot or have not flown this type of model before, we recommend that you get the assistance of an experienced pilot in your R/C club for your first flights. If you're not a member of a club, your local hobby shop has information about clubs in your area whose membership includes experienced pilots.

8. While this kit has been flight tested to exceed normal use, if the plane will be used for extremely high stress flying, such as racing, or if a motor larger than one in the recommended range is used, the modeler is responsible for taking steps to reinforce the high stress points and/or substituting hardware more suitable for the increased stress.

9. **WARNING:** The cowl and wheel pants included in this kit are made of fiberglass, the fibers of which may cause eye, skin and respiratory tract irritation. Never blow into a part (wheel pant, cowl) to remove fiberglass dust, as the dust will blow back into your eyes. Always wear safety goggles, a particle mask and rubber gloves when grinding, drilling and sanding fiberglass parts. Vacuum the parts and the work area thoroughly after working with fiberglass parts.

We, as the kit manufacturer, provide you with a top quality, thoroughly tested kit and instructions, but ultimately the quality and flyability of your finished model depends on how you build it; therefore, we cannot in any way guarantee the performance of your completed model, and no representations are expressed or implied as to the performance or safety of your completed model.

Remember: Take your time and follow the instructions to end up with a well-built model that is straight and true.

DECISIONS YOU MUST MAKE

This is a partial list of items required to finish the Super Sportster EP BL ARF that may require planning or decision making before starting to build. Order numbers are provided in parentheses.

Radio Equipment

A 4-channel radio system with three micro mini servos and a micro receiver are required for this plane. The servos and receiver shown in the manual are ElectriFly ES80 micro servos and the Futaba® R617FS receiver. Order numbers for these items are provided below.

- ❏ (3) ElectriFly ES80 Micro Servos (GPMM1220)
- ❏ Futaba R617FS 7-Channel 2.4GHz FASST™ Receiver (FUTL7627)

Motor Recommendation

The recommended motor for the Super Sportster EP BL ARF is the Great Planes RimFire .25 (42-40-1000) Brushless Outrunner Motor (GPMG4675)

Propeller

The recommended propeller for the Super Sportster EP BL ARF when using the Great Planes RimFire .25 (42-40-1000kV) motor is the APC 11x8.5E Thin Electric Propeller (APCQ4131)

Electronic Speed Control

A brushless electronic speed control is required for this plane. We recommend using the Great Planes Silver Series 45A Brushless ESC 5V/2A BEC (GPMM1840).

Battery

The Super Sportster EP BL ARF has been tested with 11.1V LiPo packs ranging from 3200mAh to 3700mAh. The recommended battery pack is the Great Planes ElectriFly LiPo 11.1V 3200mAh 20C Power Series (GPMP00727). The Great Planes ElectriFly LiPo 11.1V 3350mAh 25C Power Series (GPMP0541) may also be used.

Charger

Note: A cell balancer is required for the LiPo battery pack listed above.

❏ Great Planes ElectriFly™ Equinox™ LiPo 1 to 5 Cell Balancer (GPMM3160)

A suitable charger is also required. The Great Planes PolyCharge4™ is designed for LiPo packs only, but is able to charge four LiPo packs simultaneously. The Great Planes Triton2™ charger will only charge one pack at a time, but is capable of charging NiCd, NiMH, LiPo, and lead acid batteries. Order numbers for both are provided as follows:

❏ Great Planes PolyCharge4 DC Only 4 Output LiPo Charger (GPMM3015)

OR

❏ Great Planes ElectriFly Triton2 DC Comp Peak Charger (GPMM3153)

ADDITIONAL ITEMS REQUIRED

This is the list of hardware and accessories required to finish the Super Sportster EP BL ARF. Order numbers are provided in parentheses.

Adhesives and Building Supplies

This is the list of adhesive and building supplies required to finish the Super Sportster EP BL ARF. Order numbers are provided in parentheses.

❏ 1/2 oz. [15g] Thin Pro™ CA (GPMR6001)
❏ Pro 30-minute epoxy (GPMR6043)
❏ Denatured alcohol (for epoxy cleanup)
❏ Drill bits: 1/16" [1.6mm], 5/64" [2mm], 3/32" [2.4mm], 1/8" [3mm]
❏ #1 Hobby knife (HCAR0105)
❏ #11 blades (5-pack, HCAR0211)
❏ Hobbico Steel T-Pins 1" (100) (HCAR5100)
❏ Great Planes Pro Threadlocker (GPMR6060)
❏ CA applicator tips (HCAR3780)
❏ Felt-tip pen (TOPQ2510)
❏ 220 grit sandpaper
❏ Small clamps
❏ Oil or petroleum jelly

Optional Supplies and Tools

Here is a list of optional tools mentioned in the manual that will help you build the Super Sportster EP BL ARF.

❏ 1/2 oz. [15g] Medium Pro CA+ (GPMR6007)
❏ 21st Century® sealing iron (COVR2700)
❏ 21st Century iron cover (COVR2702)
❏ 2 oz. [57g] spray CA activator (GPMR6035)
❏ 4 oz. [113g] aerosol CA activator (GPMR6034)
❏ CA debonder (GPMR6039)
❏ Epoxy brushes (6, GPMR8060)
❏ Mixing sticks (50, GPMR8055)
❏ Mixing cups (GPMR8056)
❏ Hobbico® Flexible 18" Ruler Stainless Steel (HCAR0460)

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.

• The stabilizer and wing incidences and engine thrust angles have been factory-built into this model. However, some technically-minded modelers may wish to check these measurements anyway. To view this information visit the web site at **www.greatplanes.com** and click on "Technical Data." Due to manufacturing tolerances which will have little or no effect on the way your model will fly, please expect slight deviations between your model and the published values.

• The Super Sportster EP is factory-covered with Top Flite® MonoKote® film. Should repairs ever be required, MonoKote can be patched with additional MonoKote purchased separately. MonoKote is packaged in six-foot rolls, but some hobby shops also sell it by the foot. If only a small piece of MonoKote is needed for a minor patch, perhaps a fellow modeler would give you some. MonoKote is applied

with a model airplane covering iron, but in an emergency a regular iron could be used. A roll of MonoKote includes full instructions for application. Following are the colors used on this model and order numbers for six foot rolls.

Missile Red	TOPQ0201
Jet White	TOPQ0204
Black	TOPQ0208

ORDERING REPLACEMENT PARTS

Replacement parts for the Super Sportster EP BL ARF are available using the order numbers in the Replacement Parts List that follows. The fastest, most economical service can be provided by your hobby dealer or mail-order company.

To locate a hobby dealer, visit the Great Planes web site at **www.greatplanes.com**. Choose "Where to Buy" at the bottom of the menu on the left side of the page. Follow the instructions provided on the page to locate a U.S., Canadian or International dealer.

Parts may also be ordered directly from Hobby Services by calling (217) 398-0007, or via facsimile at (217) 398-7721, but full retail prices and shipping and handling charges will apply. Illinois and Nevada residents will also be charged sales tax. If ordering via fax, include a Visa® or MasterCard® number and expiration date for payment.

Mail parts orders and payments by personal check to:

Hobby Services
3002 N. Apollo Drive, Suite 1
Champaign, IL 61822

Be certain to specify the order number exactly as listed in the **Replacement Parts List**. Payment by credit card or personal check only; no C.O.D.

If additional assistance is required for any reason, contact Product Support by telephone at (217) 398-8970, or by e-mail at **productsupport@greatplanes.com**.

Replacement Parts List

Order #	Description
GPMA3290	Fuselage
GPMA3291	Wing
GPMA3292	Tail Set
GPMA3293	Canopy
GPMA3294	Cowl
GPMA3295	Landing Gear
GPMA3296	Decal
GPMA3297	Wheel Pants
GPMQ4790	Spinner

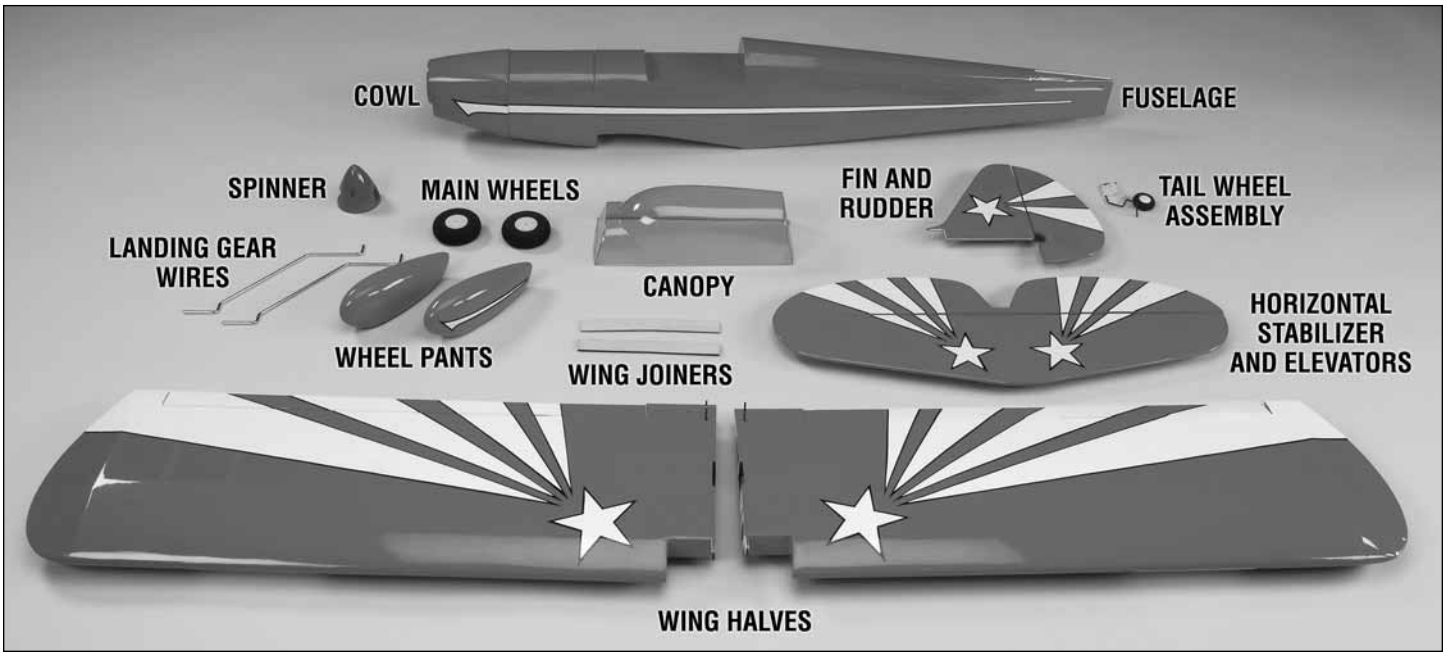
NOTE: *Full-size plans are not available. You can download a copy of this manual at* ***www.greatplanes.com****.*

KIT INSPECTION

Before starting to build inspect the parts to make sure they are of acceptable quality. If any parts are missing or are not of acceptable quality, or if you need assistance with assembly, contact **Product Support**. When reporting defective or missing parts, use the part names exactly as they are written in the Kit Contents list.

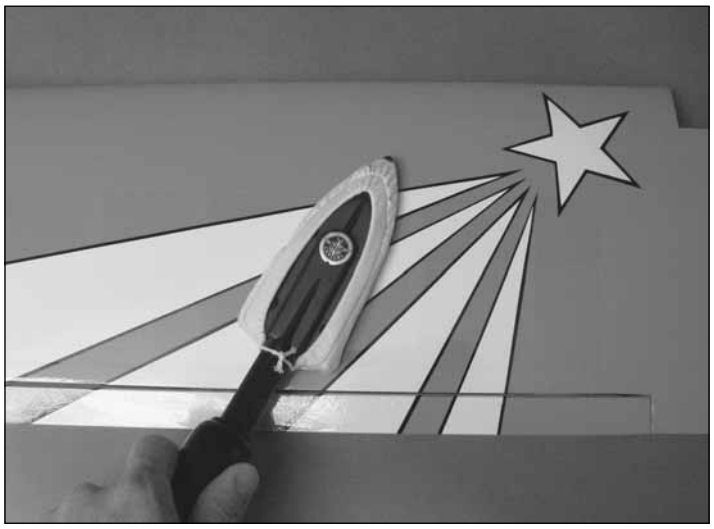
Great Planes Product Support
3002 N. Apollo Drive, Suite 1
Champaign, IL 61822
Telephone: (217) 398-8970, ext. 5
Fax: (217) 398-7721
E-mail: ***airsupport@greatplanes.com***

KIT CONTENTS



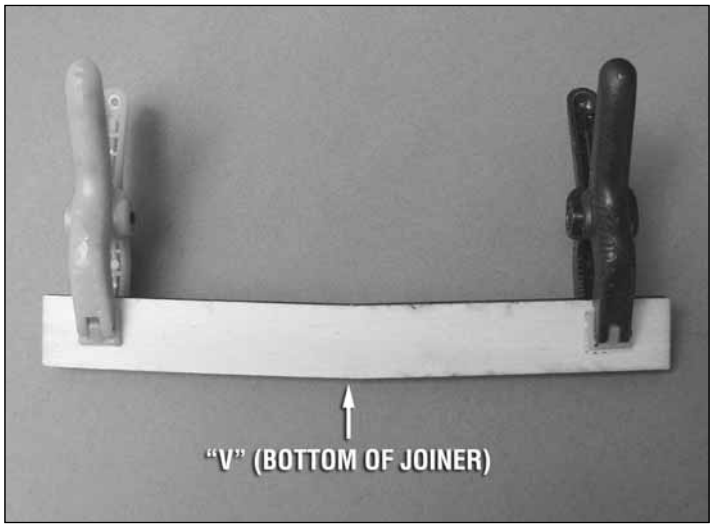
PREPARATIONS

❏ 1. If you have not done so already, remove the major parts of the kit from the box and inspect for damage. If any parts are damaged or missing, contact Product Support at the address or telephone number listed in the “Kit Inspection” section on page 5.

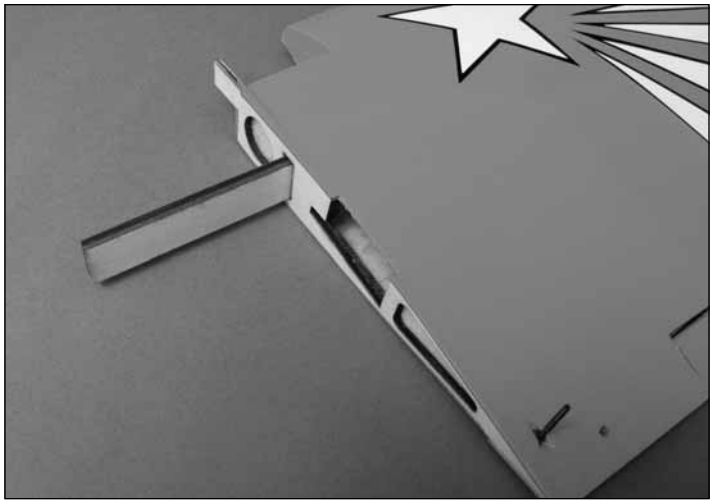


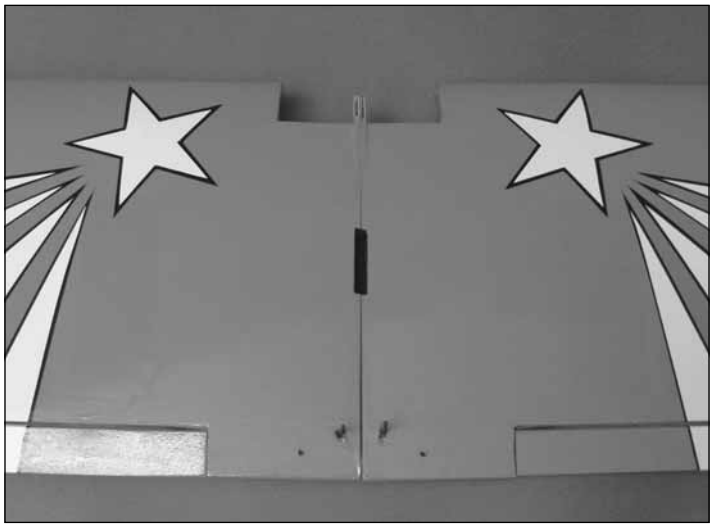
❏ 2. Carefully remove the tape and separate all the control surfaces. Use a covering iron with a covering sock on medium/high heat to tighten the covering if necessary. Apply pressure over sheeted areas to **thoroughly** bond the covering to the wood.

ASSEMBLE THE WING PANELS

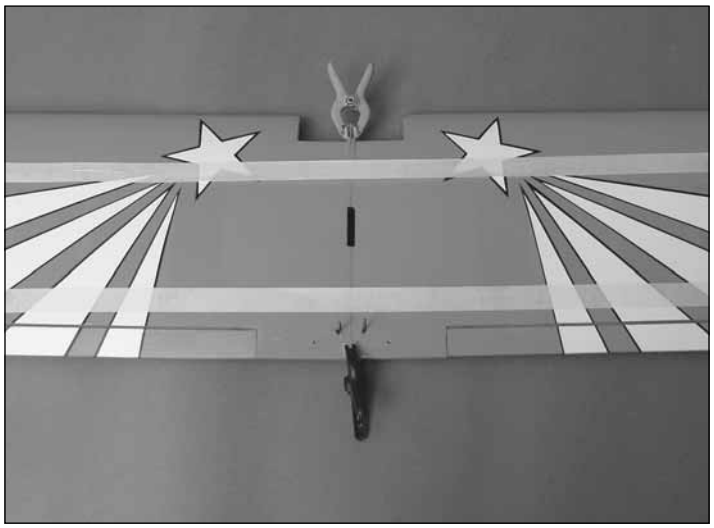


❏ 1. Use epoxy to join the two plywood **wing joiner** pieces together. Use a paper towel with denatured alcohol to clean off any excess epoxy. Small spring clamps can be used to hold the pieces together while the epoxy cures.



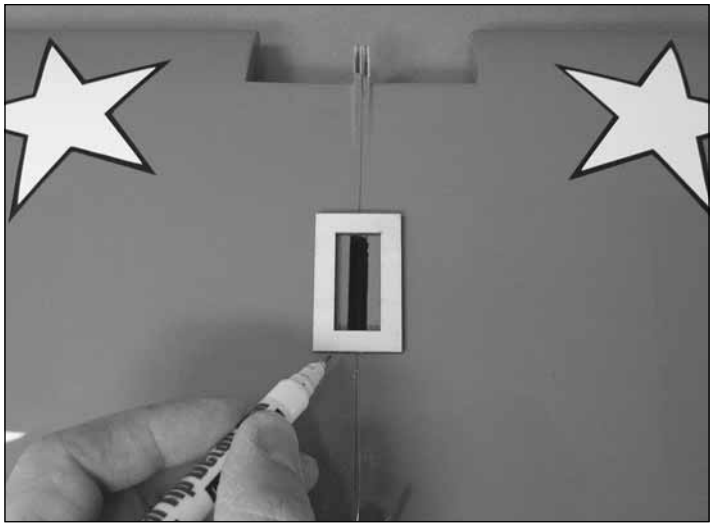


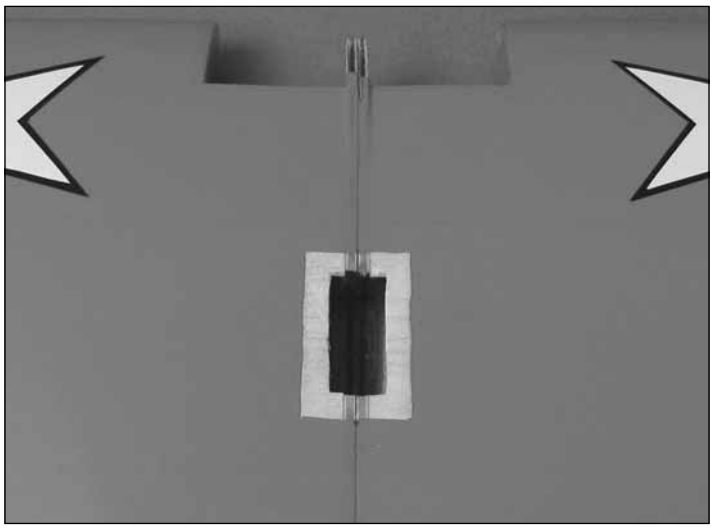
❏ 2. Test fit the wing joiner *without glue* half way into each **wing panel** with the “V” shape of the joiner pointing toward the bottom of the wings. The fit should be just slightly loose to allow space for epoxy when the panels are joined. When satisfied with the fit of the joiner into each panel, slide the wing panels together and confirm there are no gaps between the root ribs of the panels. Use a sanding bar to sand the root ribs flat if necessary.



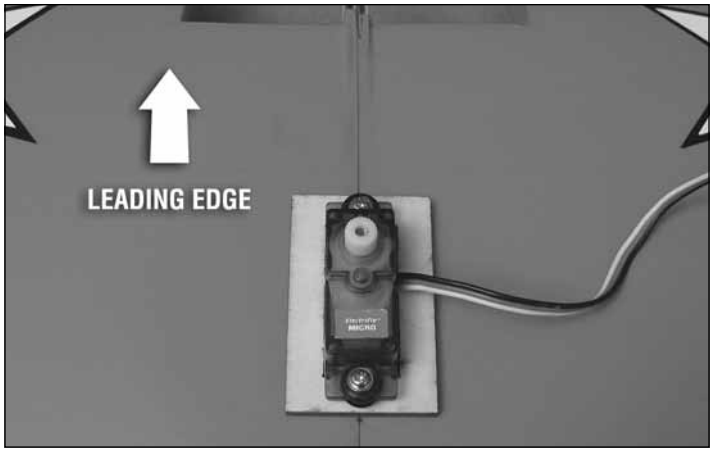
❏ 3. Mix up approximately 1/4 oz [7.5cc] of 30-minute epoxy. Use a mixing stick or something similar to coat the

insides of the joiner pockets in each wing panel with epoxy. Coat one half of the wing joiner and slide it into one of the panels. Coat the root ribs of both panels and the other end of the joiner. Join the panels together. Wipe away excess epoxy with denatured alcohol. Masking tape can be used to hold the panels together while the epoxy cures. We also recommend using small clamps to align the trailing edge and to squeeze the LE tabs together as shown. Allow the epoxy to cure undisturbed.

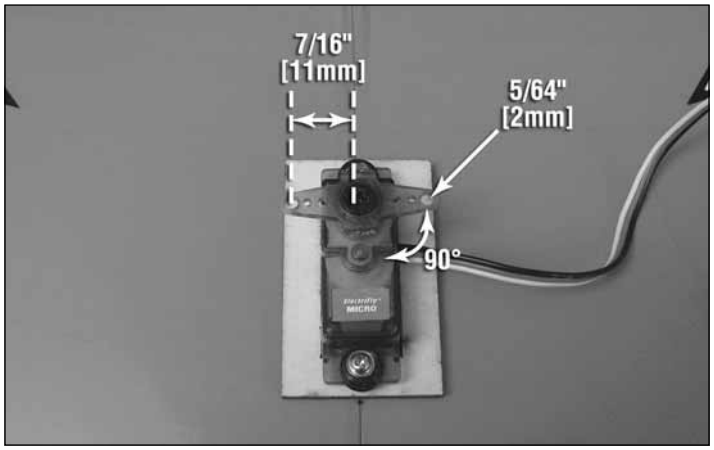




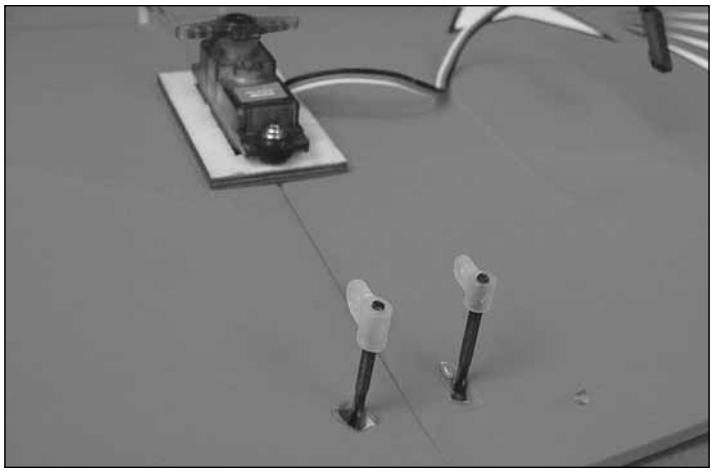
❏ 4. Center the plywood aileron servo tray over the opening on top of the wing. Trace around the inner and outer edges of the tray onto the wing using a felt-tip pen. Use a sharp hobby knife to cut the balsa and covering from the inner lines you drew, and just the covering from where the tray will be glued. Take care to cut just through the covering and not into the wood along the outer lines you drew. Wipe away the lines with denatured alcohol and glue the tray in place.



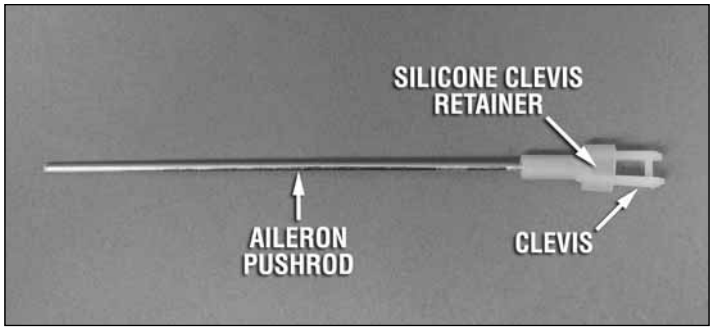
❏ 5. Fit the aileron servo into the tray with the servo spline towards the LE of the wing. Drill 1/16" [1.6mm] holes through the mounting tabs on the servo into the tray. Thread a servo mounting screw (included with the servo) into each hole and then back it out. Apply a drop of thin CA to each hole to harden the surrounding wood. Install the servo using the hardware included with the servo.



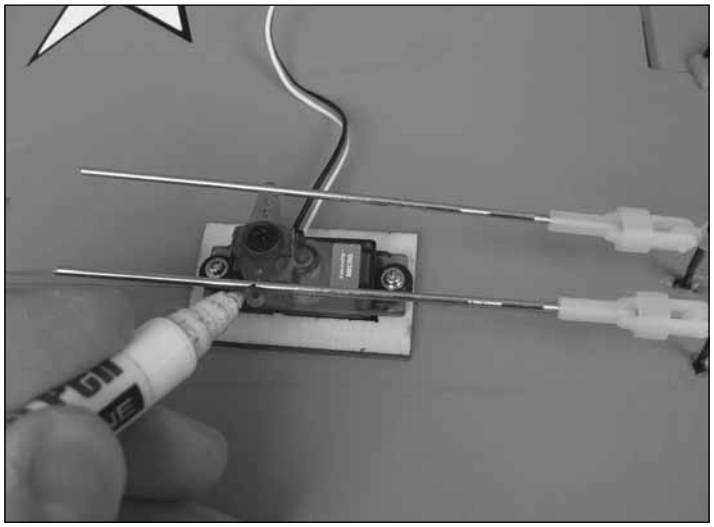
❏ 6. Use your radio system to center the servo. Cut two arms from a four-arm servo arm. Use a 5/64" [2mm] drill bit to enlarge the holes on each remaining arm that are closest to 7/16" [11mm] from the center of the servo spline. Install the servo arm perpendicular to the servo case being sure to reinstall the servo arm screw.



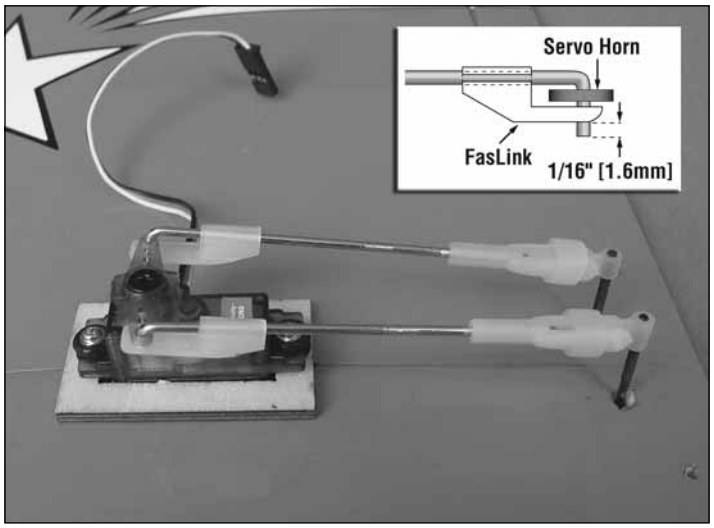
❏ 7. Thread a nylon torque rod horn onto each aileron torque rod as shown.



❏ 8. Thread a nylon clevis 20 complete turns onto each aileron pushrod. Slide a silicone clevis retainer over each clevis.

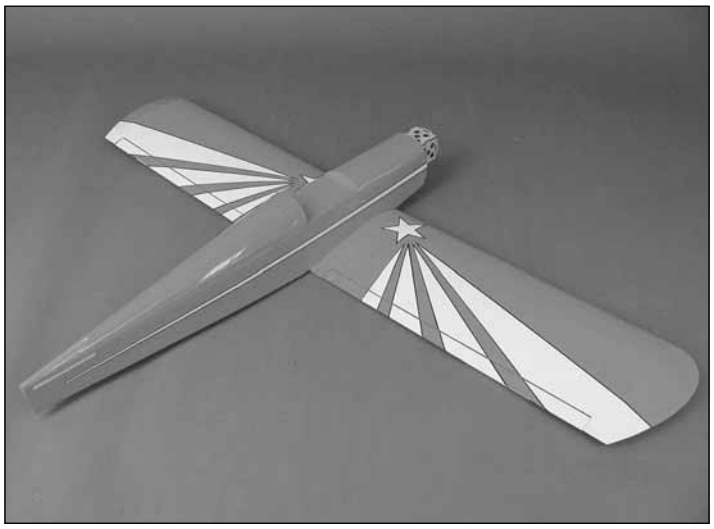


❏ 9. Connect the clevises to the torque rod horns. Center each aileron and use tape or small clamps to hold them in the neutral position. With the aileron servo arm still perpendicular to the servo case, mark the pushrods where they cross the holes you enlarged in the servo arm.

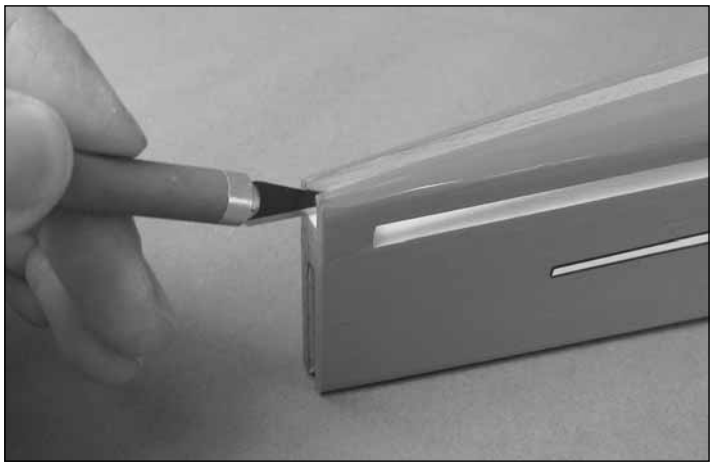


❏ 10. Make a 90° bend at the marks on the pushrods and cut off the excess pushrod 1/4" [6mm] beyond the bend. Attach the pushrods to the servo arm using 90 degree pushrod connectors. Thread the clevises up or down on the pushrods as necessary to center the ailerons with the servo arm centered. When satisfied, slide the silicone clevis retainers to the ends of the clevises to secure them.

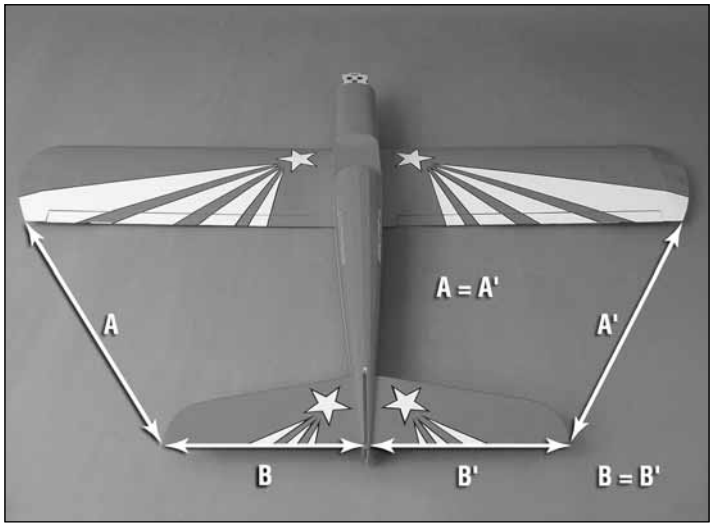
INSTALL THE TAIL SECTION

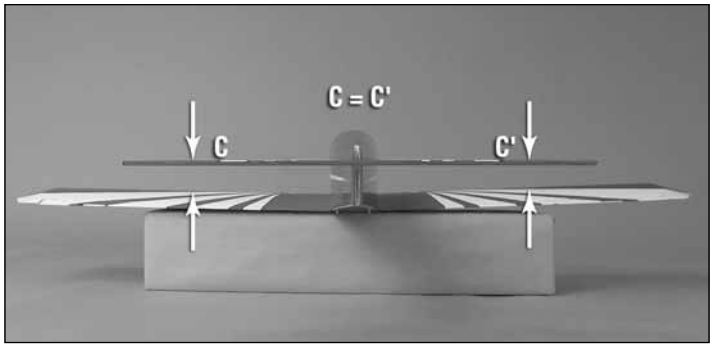


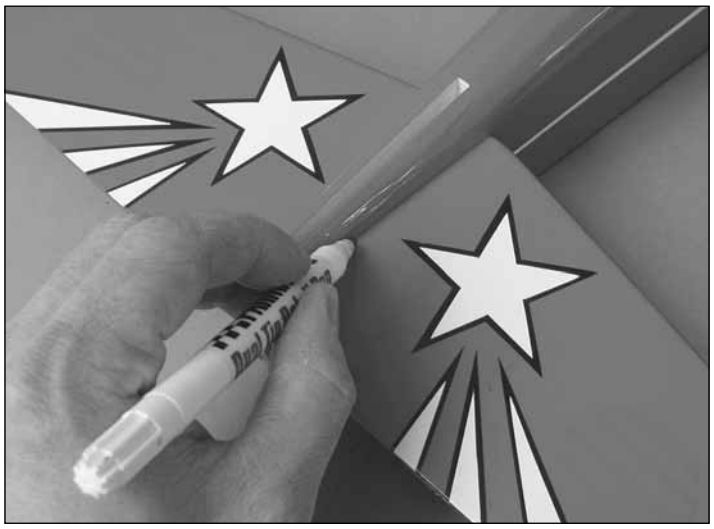
❏ 1. Temporarily mount the wing to the **fuselage** using two 3x30mm machine screws and two 3mm flat washers.



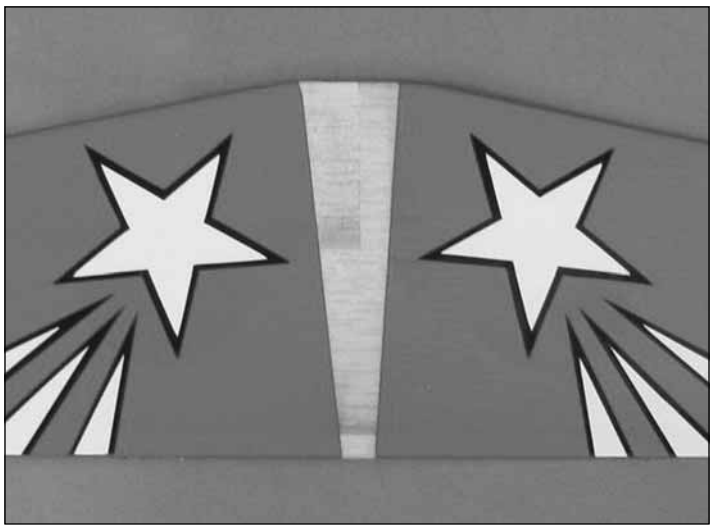
❏ 2. Cut the tail support block from the aft end of the horizontal stabilizer slot in the fuse.







❏ 3. Insert the horizontal stabilizer into the stab slot and center it left and right. Stand several feet back from the model and view it from behind. Confirm that the stab and wing are parallel. If not, sand the slot as necessary until they are. A weight can also be added to the high side when gluing the stab in place to bring them parallel. Measure from the outer edge of each aileron to the stab tips and adjust the stab until those measurements are equal. When satisfied with the position of the stab, use a felt-tip pen to trace around the fuse onto the stab.

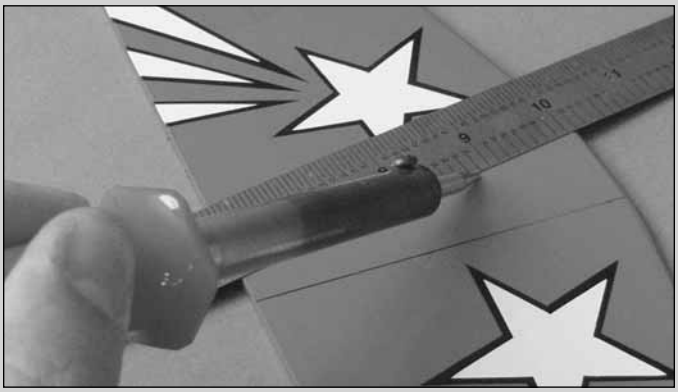


❏ 4. Trim the covering from the stab just inside the lines you drew. Use a sharp hobby knife, taking care not to cut into the wood beneath, or use the following "Expert Tip." Wipe away the lines with denatured alcohol.

EXPERT TIP

HOW TO CUT COVERING FROM BALSA

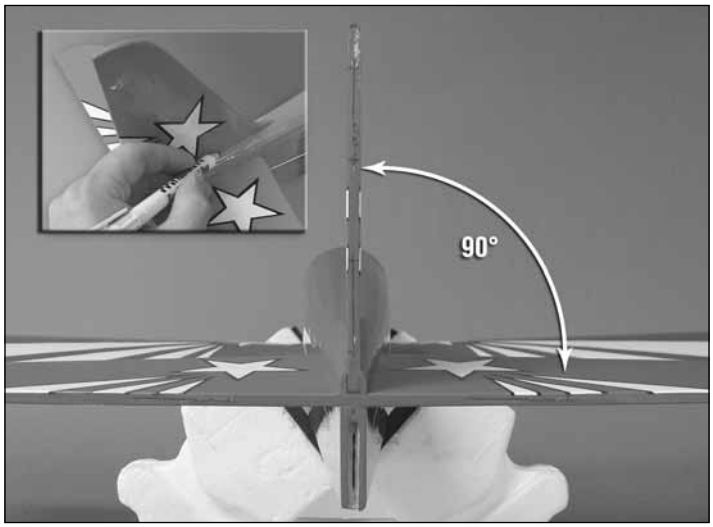
Use a soldering iron to cut the covering from the stab. The tip of the soldering iron doesn't have to be sharp, but a fine tip does work best. Allow the iron to heat fully.



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.

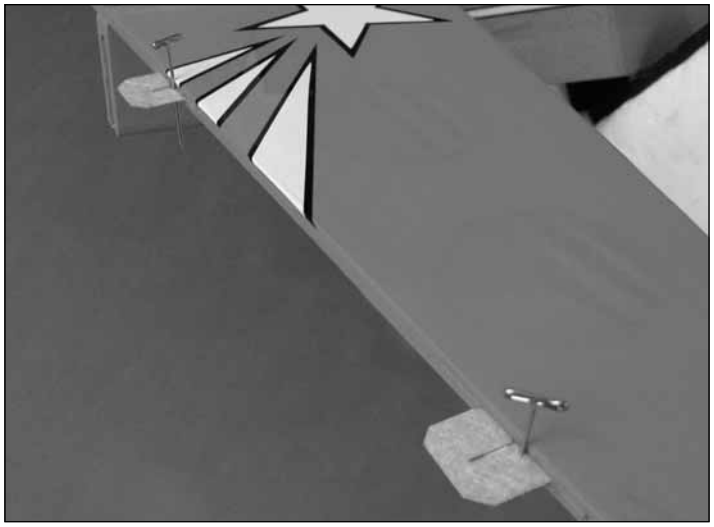
❏ 5. Glue the stab into place with epoxy.

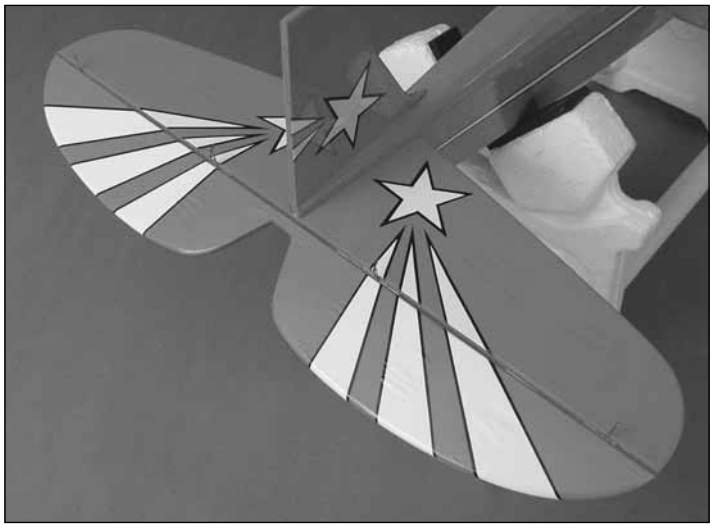
❏ 6. The wing can now be removed from the fuselage for the remainder of the building process.



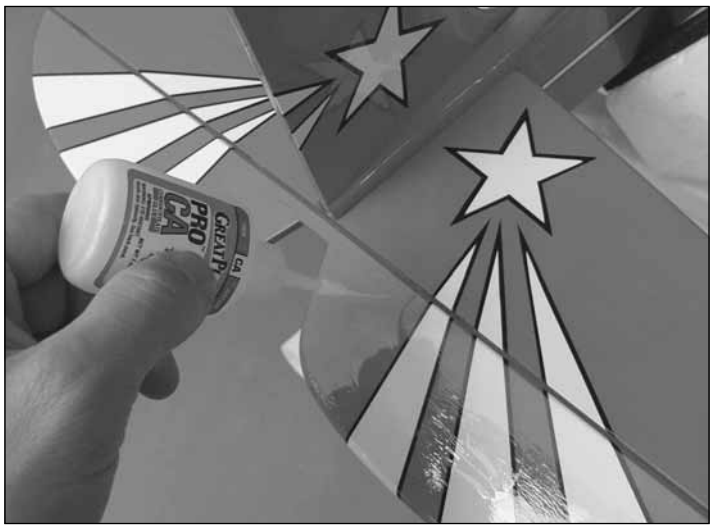
❏ 6. As you did with the stab, trace around the fuse onto the vertical fin and remove the covering inside the lines you drew. Use epoxy to glue the fin in place. Check that the fin is perpendicular to the stab. If not, use tape to hold the fin square while the epoxy cures.

❏ 7. Test fit a CA hinge halfway into each hinge slot in the stab and **elevators**. If the hinges are difficult to insert or the covering needs to be cut open over the slots, use a sharp hobby knife to slightly enlarge the slot or slit open the covering.

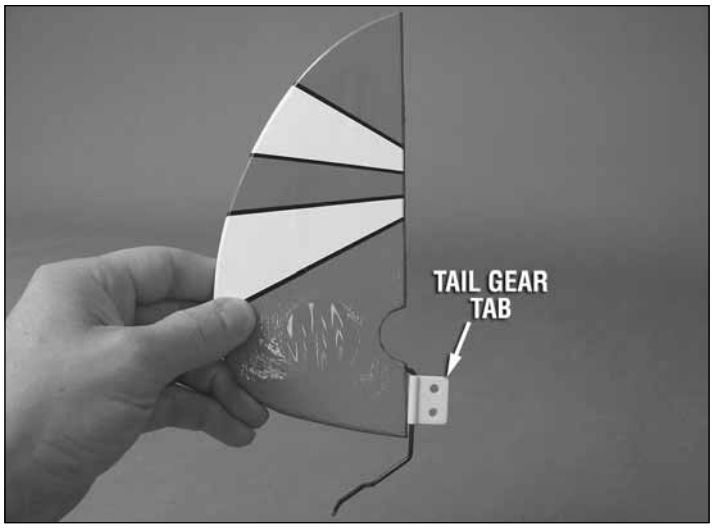


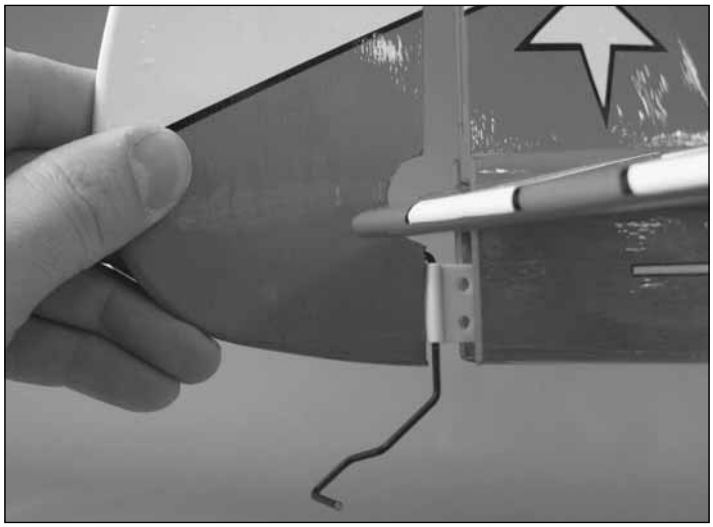


❏ 8. Push a small T-pin through the center of each CA hinge. The pins will keep the hinges centered during assembly. Insert the hinges into the hinge slots in the stab. Fit the elevators onto the other ends of the hinges and align the outside tips of the elevators with the stab tips.

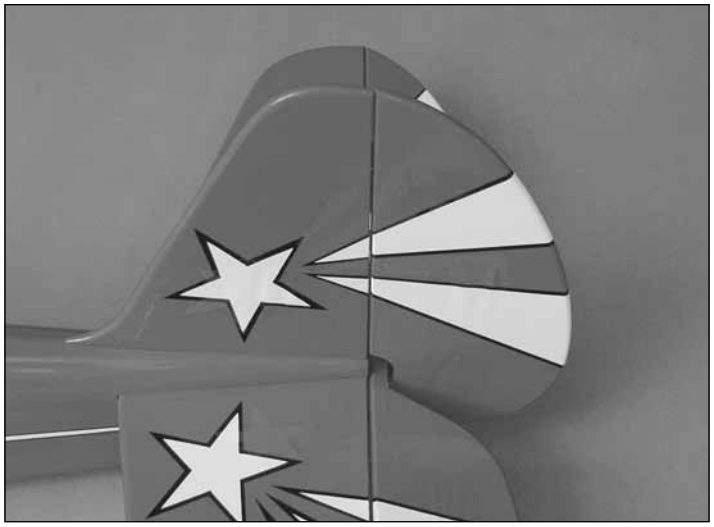


❏ 9. Remove the pins from the hinges and push the elevators against the trailing edge of the stab. Deflect the elevators down to their maximum throw (beveled leading edge of elevators is against the trailing edge of the stab) and apply 7-8 drops of thin CA glue to each hinge. Flip the plane over and apply the same amount of CA to the other side of each hinge. Allow the CA a minute or two to harden and then tug on the elevators to confirm they are well secured to the stab.



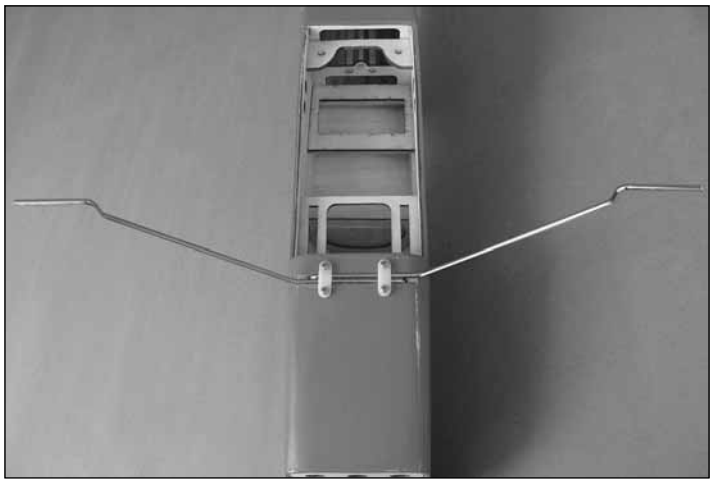


❏ 10. Without glue, insert the aft end of the **tail gear wire** into the hole in the LE of the rudder. Coat the nylon tail gear tab with epoxy (take care not to get epoxy on the wire) and insert the tab into the slot at the aft end of the fuse. Align the rudder with the fin. When satisfied with the position of the rudder, carefully remove it from the tail gear wire. Leaving the nylon tab in place in the fuse, wipe away any excess epoxy with alcohol and allow the epoxy to cure undisturbed.

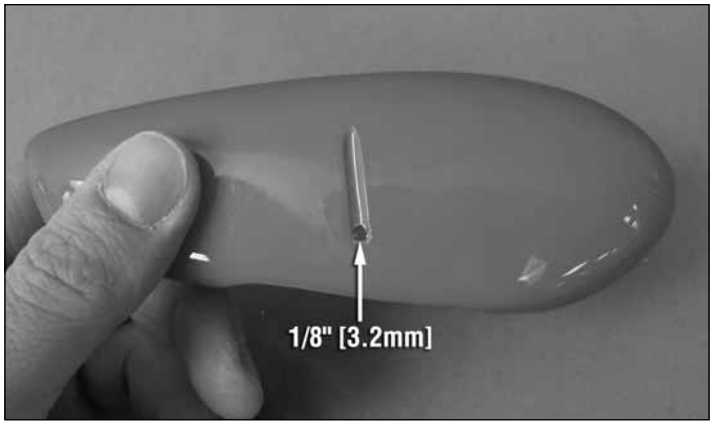


❏ 11. As you did with the elevators, install the rudder to the fuse with two CA hinges. Coat the end of the tail gear wire with epoxy before inserting it into the hole in the rudder.

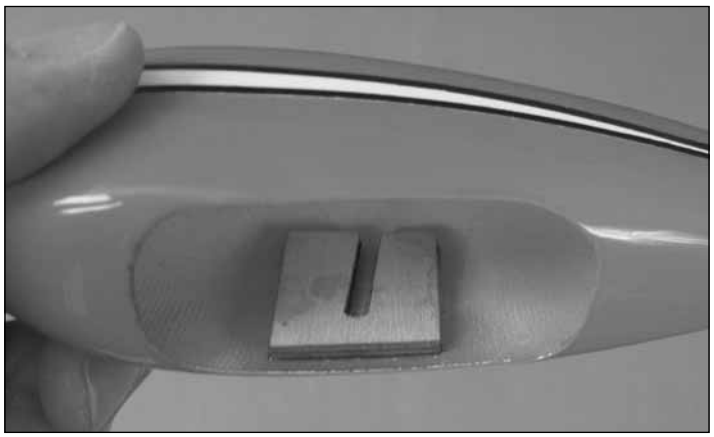
INSTALL THE LANDING GEAR



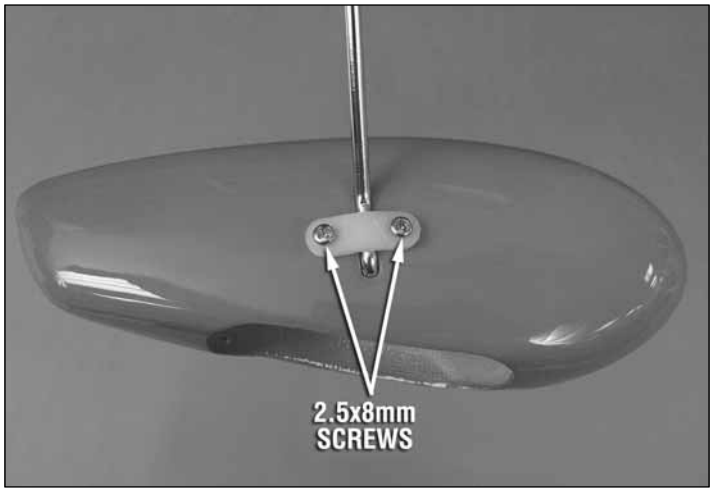
❏ 1. Fit the **landing gear wires** into the slot and holes on the underside of the fuse. Position two landing gear straps over the wires in the positions shown and mark the location of the screw holes. Drill 5/64" [2mm] holes at your marks. Install the straps over the wires using four 3x10mm self-tapping screws. Be sure to harden the screw holes with thin CA.



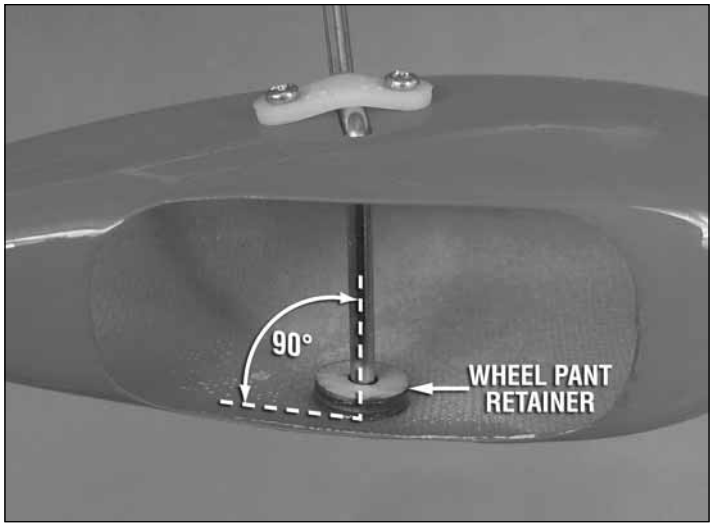
❏ 2. Drill a 1/8" [3.2mm] hole at the bottom of the groove on each wheel pant.



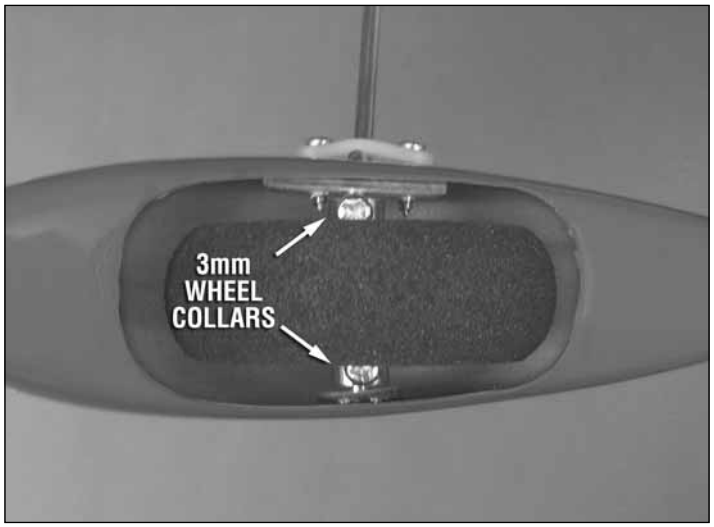
❏ 3. Use sandpaper to roughen the inside of the wheel pants in the area around the groove. Clean the area with denatured alcohol. Trial fit the plywood wheel pant mounting plates inside the wheel pants. The top edge of the mounting plate may need to be rounded to match the curve of the wheel pant. Once satisfied with the fit, use epoxy to glue the mounting plates in the wheel pants.



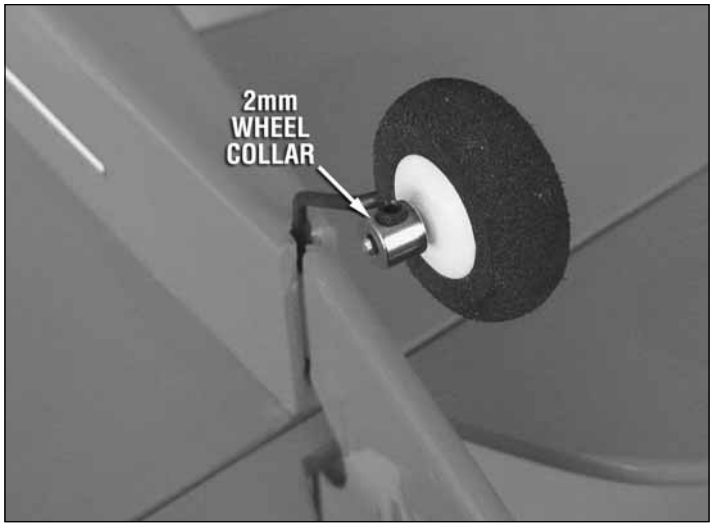
❏ 4. Once the epoxy has cured, slide the wheel pants onto the main landing gear. Position a nylon landing gear strap over each main landing gear and drill 1/16" [1.6mm] holes through the strap and the plywood mounting plate. Attach the landing gear straps to the wheel pants with four 2.5x8mm self-tapping screws. Harden the holes with thin CA.



❏ 5. Remove one of the screws from each landing gear strap and slide a round plywood wheel pant retainer onto the landing gear wires. Re-attach the landing gear straps. Align the axle of the landing gear so that it is perpendicular to the centerline of the wheel pant. Apply a thin coat of oil or petroleum jelly on the axle to prevent the epoxy from adhering to the wire. Roughen the inside of the wheel pants and glue the wheel pant retainers to the wheel pants with epoxy.

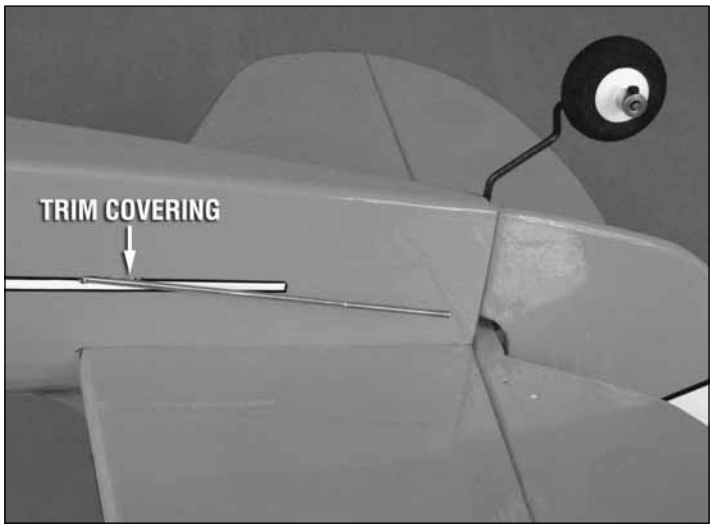


❏ 6. Install a 3x4mm machine screw with threadlocking compound in two 3mm wheel collars. Remove one of the screws from the landing gear strap and install on the landing gear a wheel collar, wheel and a second wheel collar. Insert the landing gear in the wheel pant retainer and reinstall the landing gear strap. Tighten the 3x4mm machine screws in the two wheel collars. Make sure that the wheel rotates freely. Repeat this step for the other side.

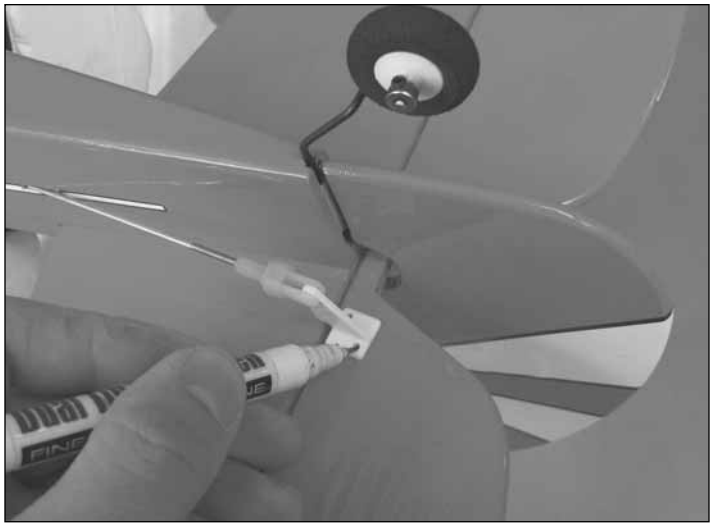


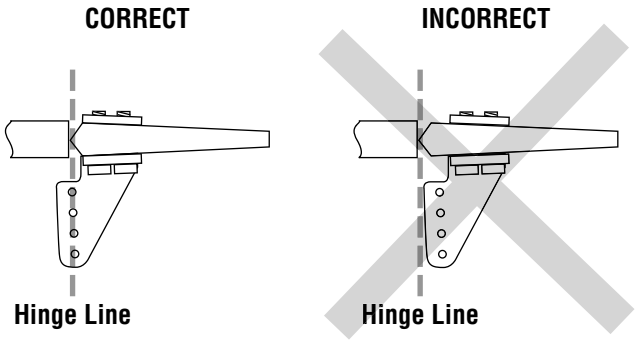
❏ 7. Install the tail wheel onto the tail wheel wire. Secure it in place using a 2mm wheel collar and a 3x4mm set screw. Be sure that the tail wheel rotates freely. Oiling the tail wheel axle is recommended.

INSTALL THE TAIL SERVOS AND PUSHRODS

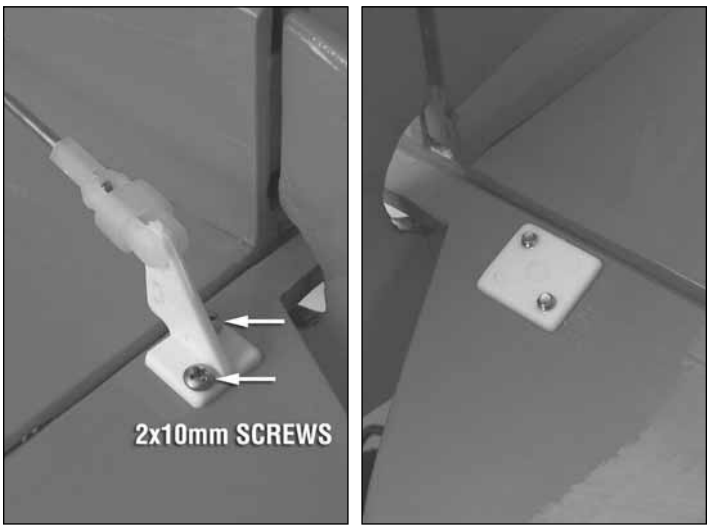


❏ 1. Insert the two 2x505mm wire pushrods into the outer pushrod tubes inside the fuselage. Notice at the aft end of the fuselage where the pushrods press against the covering. Using a sharp hobby knife, cut a small slot in the covering to allow the pushrods to exit the fuselage.

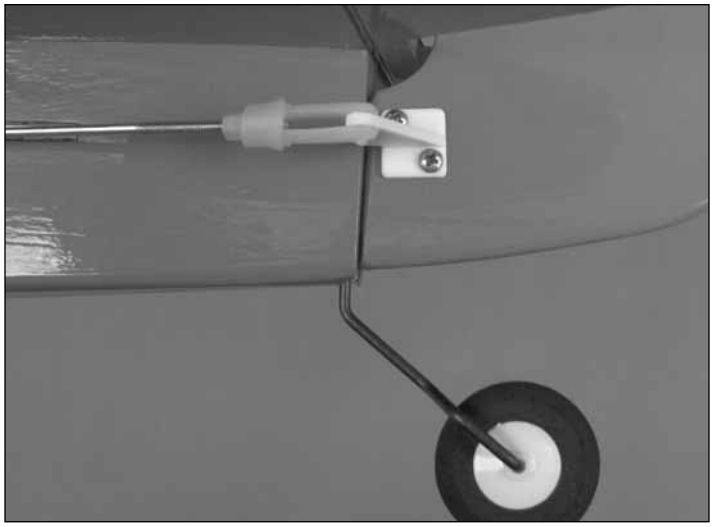




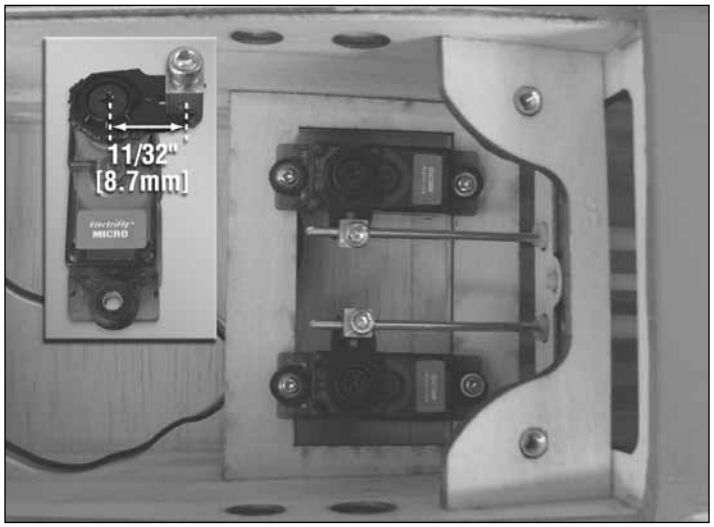
❏ 2. Thread a nylon clevis onto the elevator pushrod (exits out of the right side of the fuse) 20 complete turns and slide a silicone clevis retainer onto the clevis. Connect the clevis to the outer hole of a control horn and use the position of the pushrod exiting the fuse to mark the location of control horn mounting holes.



❏ 3. Drill 5/64" [2mm] holes at the marks you made through the elevator. Install the control horn with a control horn backplate using two 2x10mm machine screws. Slide the silicone clevis retainer to the end of the clevis.

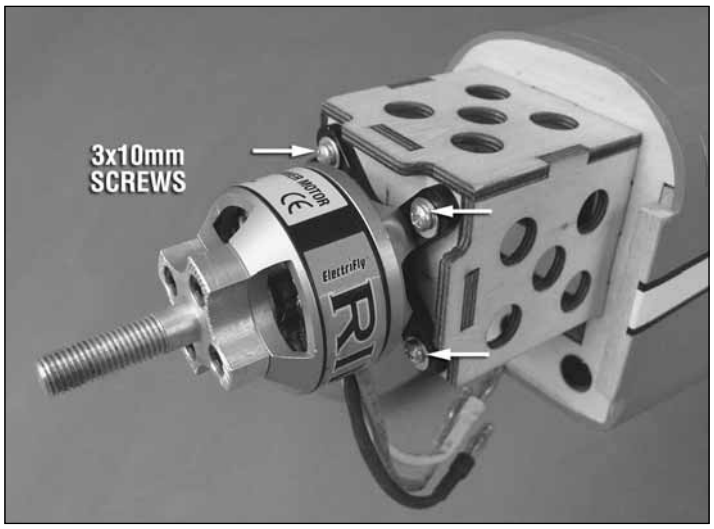


❏ 4. Install the rudder pushrod and control horn in the same manner.

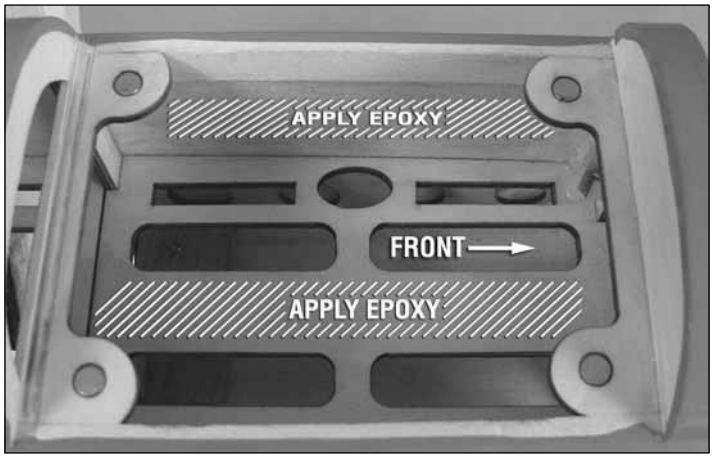


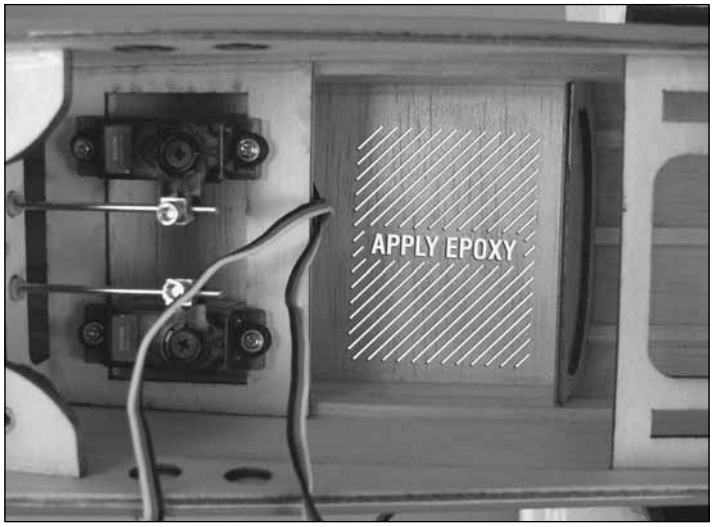
❏ 5. Use your radio system to center the elevator and rudder servos. Cut three arms from a four-arm servo arm for each servo. Choose the servo arm hole of the remaining arms closest to 11/32" [8.7mm] from the center of the servo to install a screw-lock pushrod connector with a nylon retainer into each servo arm. Loosely install a 3x5mm socket head cap screw into each screw-lock connector. Using the photo as a guide, install the elevator and rudder servos onto the servo tray using the hardware that came with the servos (be sure to harden the screw holes with thin CA). Slide the pushrods through the screw-lock pushrod connectors, center the control surfaces, and tighten the screws against the pushrods. If necessary, the excess pushrod can be cut off 1/4" [6mm] beyond the pushrod connectors.

INSTALL THE POWER SYSTEM AND RECEIVER

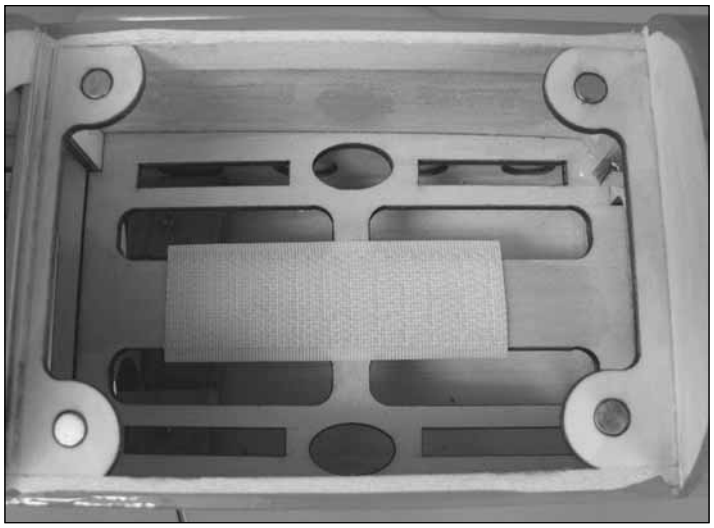


❏ 1. If you haven't done so already, attach the prop adapter to the motor using the screws included with the motor and threadlocking compound. Install the motor onto the motor mounting box using four 3x10mm machine screws, four 3mm flat washers, and threadlocking compound.

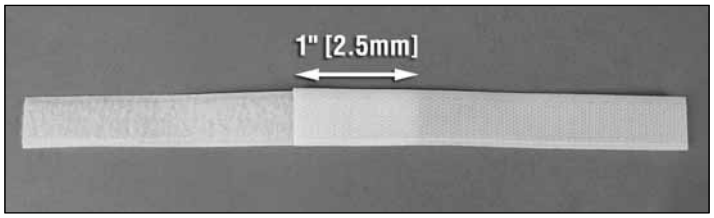


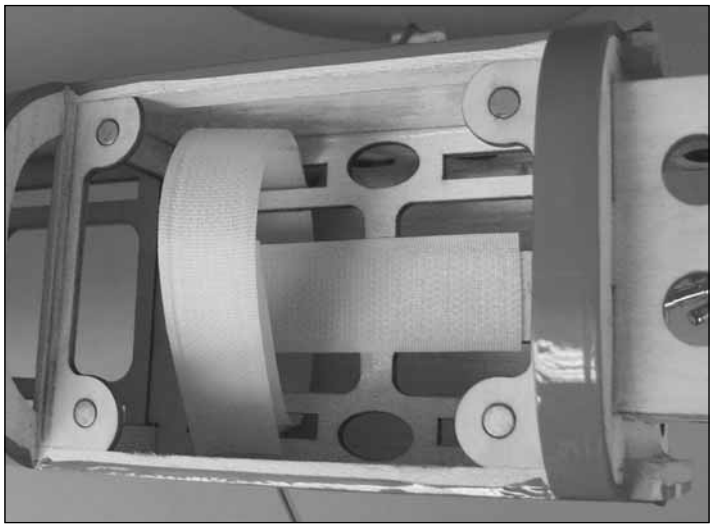


❏ 2. Apply a thin coat of epoxy to the center of the battery tray, side of the battery tray, and in the location of the receiver in front of the servo tray. The epoxy will improve the adhesion of the self-adhesive hook and loop material. Allow the epoxy to cure undisturbed.

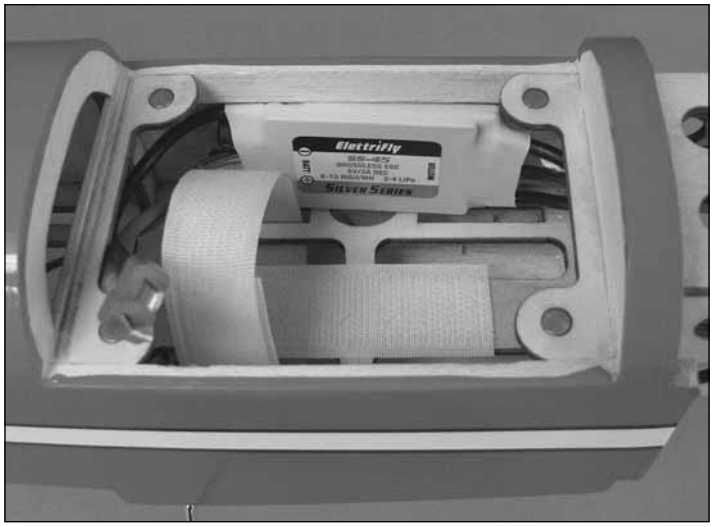


❏ 3. Cut a piece of the hook side from the included self-adhesive hook and loop material. Apply the piece to the center of the battery tray.

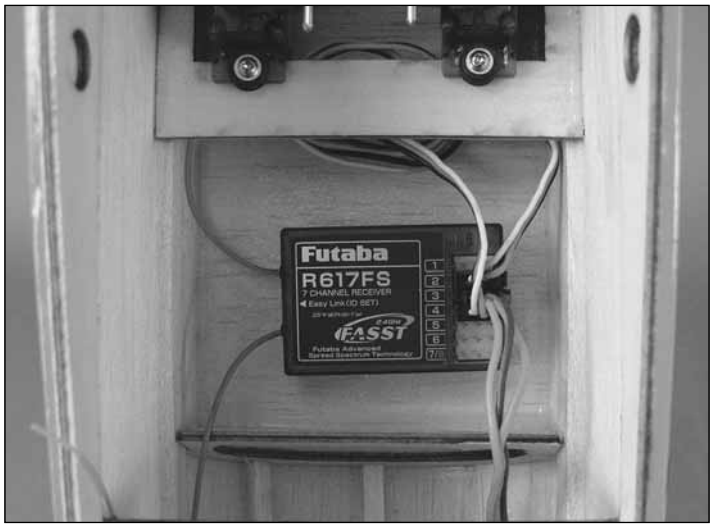




❏ 4. Make a strap to fit your LiPo battery from the included non-adhesive hook and loop material by overlapping the mating ends of the material by 1" [25mm]. Feed the strap through the slots in the battery tray as shown.



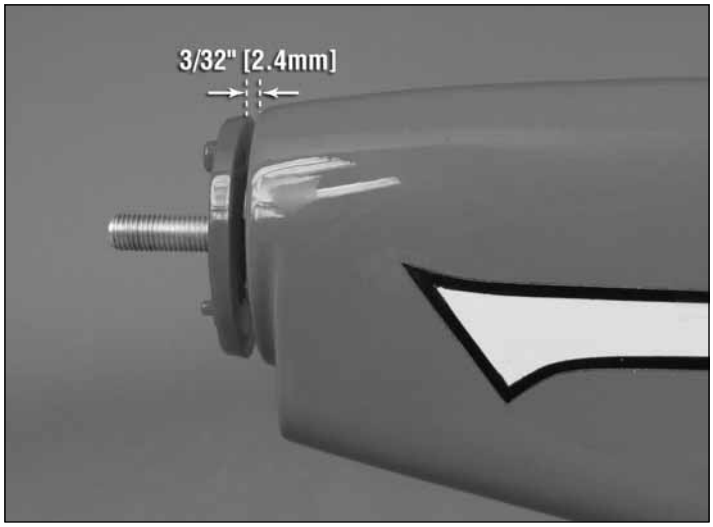
❏ 5. Cut a piece from the included double-sided foam mounting tape and attach the ESC to the side of the battery compartment. Connect the ESC to the motor. Now would be a good time to use your radio system and battery to confirm that the motor rotates in the correct direction. If the motor does not rotate counter-clockwise when viewing it from the front, simply disconnect any two of the three motor leads and swap their positions.



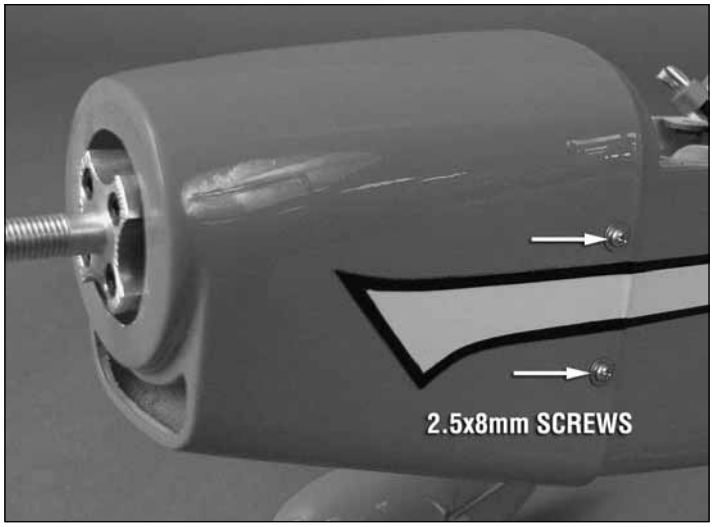
❏ 6. Cut a piece from the remainder of the self-adhesive hook and loop material and use it to secure the receiver in the location shown. Connect the elevator servo, rudder servo, and ESC to the receiver.

❏ 7. We used small scraps of fuel tubing we had laying around the shop and glued them to the sides of the fuselage to support the antennas of the 2.4GHz receiver shown in the picture. If you are using an FM or PCM receiver, an antenna tube is provided between the two outer pushrod tubes.

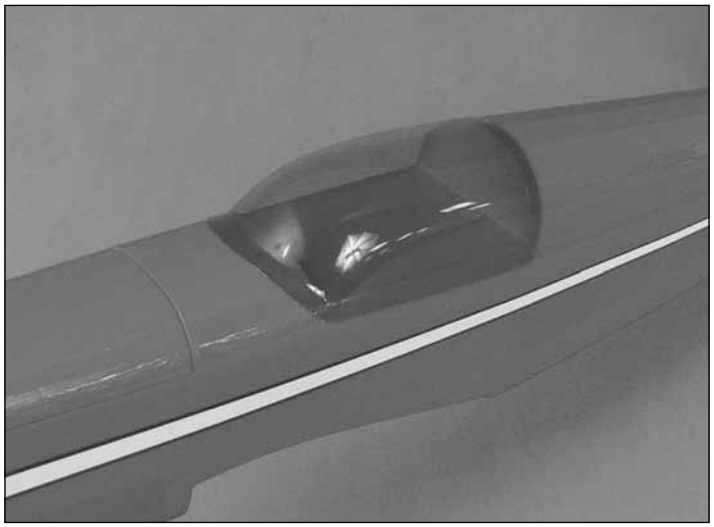
FINISH THE MODEL



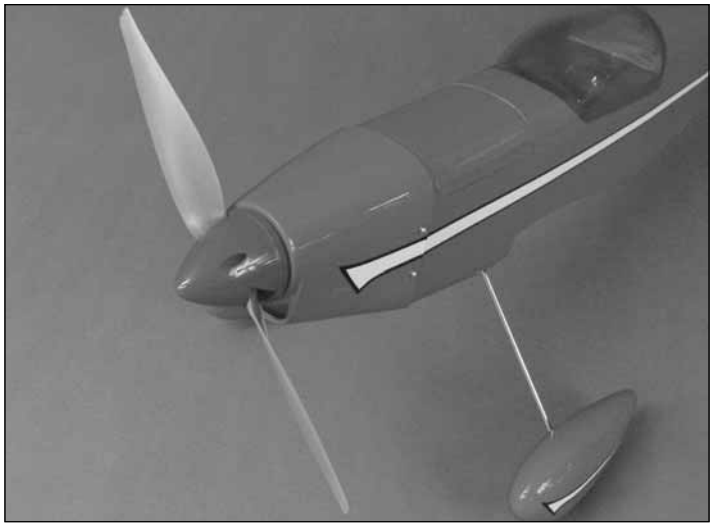
❏ 1. Place the cowl onto the fuselage and position it so that it is 3/32" [2.4mm] behind the face of the prop adapter. Temporarily installing the spinner backplate onto the prop adapter will make this easier to measure. You may need to ream or drill the backplate larger to fit the shaft. When satisfied with the placement of the cowl, tape it to the fuselage.



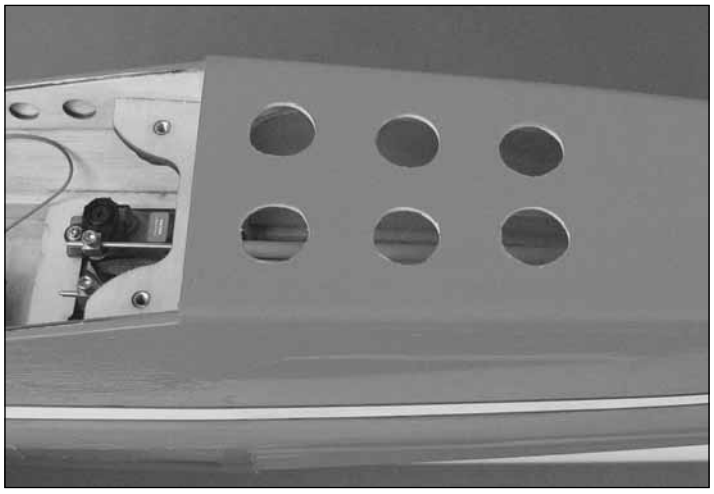
❏ 2. Drill 1/16" [1.6mm] holes through the cowl and into the cowl mounting tabs. Remove the cowl and enlarge the holes in the cowl to 3/32" [2.4mm]. Thread a 2.5x8mm self-tapping screw into each hole in the fuse and back it out. Apply a drop of thin CA to each hole to harden the surrounding wood. When the CA has hardened, install the cowl onto the fuse with four 2.5x8mm self-tapping screws and four 2.5mm flat washers.



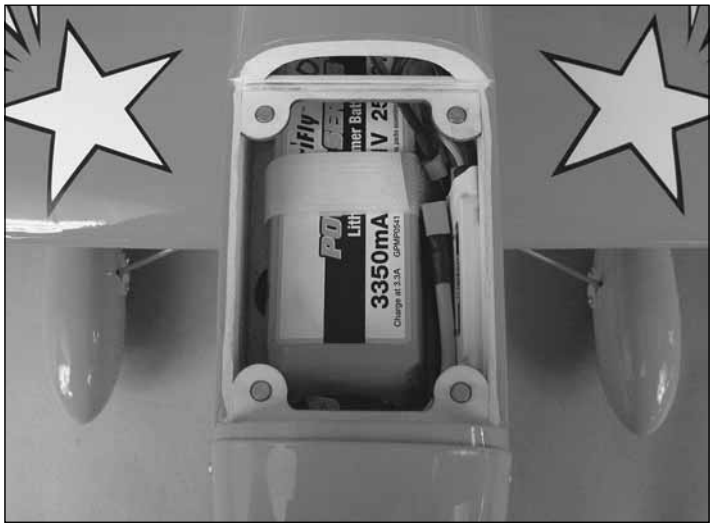
❏ 3. If you plan to install the instrument panel decal and optional pilot figure (not included), do so now. Trim the canopy along the molded-in cut lines. The canopy can be glued on using canopy glue or taped in place.



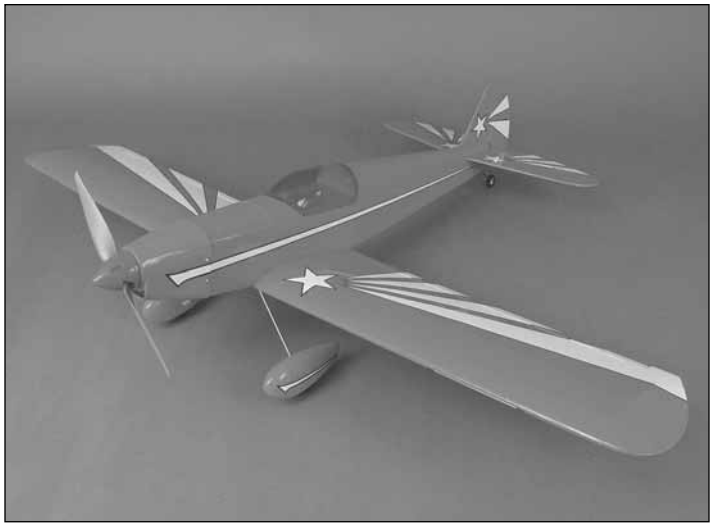
❏ 4. Install the spinner backplate, propeller, prop washer, prop nut, and spinner. Be sure to balance your prop first!



❏ 5. Trim the covering from the six battery cooling holes on the underside of the fuse just behind the wing.



❏ 6. Cut a piece of the loop side from the included self-adhesive hook and loop material and stick it to your battery pack. Test fit the battery into the battery compartment and use the strap you made to secure it in place. You will need the battery installed when balancing the airplane.



❏ 7. This completes the assembly of the Super Sportster EP BL!

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. Submerse the decal in the soap and water and peel off the paper backing. **Note:** Even though the decals have a "sticky-back" and are not the water transfer type, submersing them in soap and water allows accurate positioning and reduces air bubbles underneath.

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

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

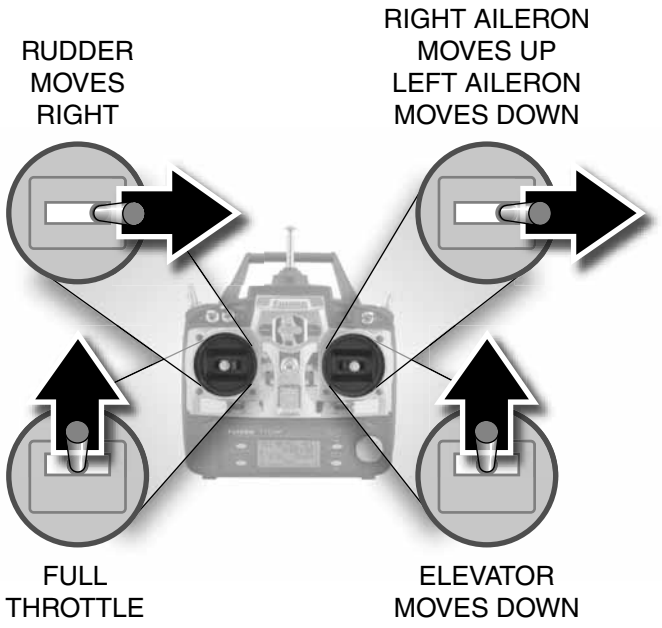
GET THE MODEL READY TO FLY

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.

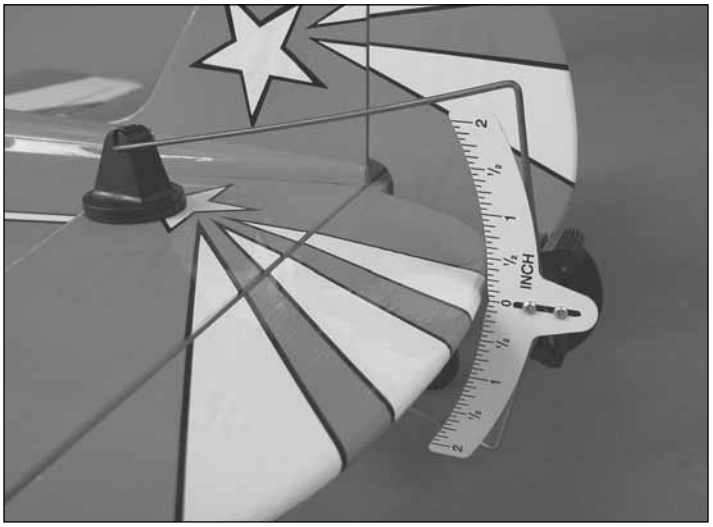
❏ 2. With the transmitter and receiver still on, check all the control surfaces to see if they are centered. If necessary, adjust the clevises on the pushrods to center the control surfaces.

4-CHANNEL RADIO SET UP (STANDARD MODE 2)

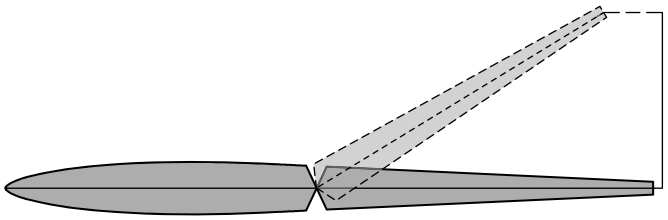


❏ 3. Make certain that the control surfaces and the throttle respond in the correct direction as shown in the diagram. If any of the controls respond in the wrong direction, use the servo reversing in the transmitter to reverse the servos connected to those controls. Be certain the control surfaces have 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 for your first few flights at the ***low*** rate setting.



NOTE: The throws are measured at the ***widest part*** of the elevators, rudder and ailerons. If you are using a ruler to set your control surface throws, the deflection distance is measured as the height from the center TE of the control surface when moved from the neutral position as shown in the sketch. Deflection in degrees is also provided for an alternative measuring method.

These are the recommended control surface throws:				
	HIGH RATE		LOW RATE	
	Up	Down	Up	Down
ELEVATOR	1/2" [13mm] 12°	1/2" [13mm] 12°	3/8" [10mm] 9°	3/8" [10mm] 9°
	Right	Left	Right	Left
RUDDER	1" [25mm] 18°	1" [25mm] 18°	3/4" [19mm] 13°	3/4" [19mm] 13°
	Up	Down	Up	Down
AILERONS	3/8" [10mm] 25°	3/8" [10mm] 25°	1/4" [6mm] 16°	1/4" [6mm] 16°

IMPORTANT: The Super Sportster EP BL 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 Sportster flies, you would like to change the throws to suit your taste, that is fine. However, too much control throw could make the model difficult to control, so remember, "more is not always better."

Balance the Model (C.G.)

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

At this stage the model should be in ready-to-fly condition with all of the systems in place including the motor, landing gear, battery pack, and the radio system.

❏ 1. Use a felt-tip pen or 1/8" [3mm]-wide tape to accurately mark the C.G. on the top of the wing on both sides of the fuselage. The C.G. is located 2-3/4" [70mm] back from the leading edge of the wing at the fuselage.

This is where your model should balance for the first flights. Later, you may wish to experiment by shifting the C.G. up to 1/4" [6mm] forward or 1/4" [6mm] 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) and the battery pack installed, 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 to balance. If the nose drops, the model is "nose heavy" and the battery pack and/or receiver must be shifted aft to balance. If possible, move the battery pack and receiver to minimize or eliminate any additional ballast required.

❏ 4. **IMPORTANT:** If you found it necessary to move the battery pack or receiver for the Sportster to balance, recheck the C.G. after this has been done.

Balance the Model Laterally

❏ 1. With the wing level, have an assistant help you lift the model by the engine 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

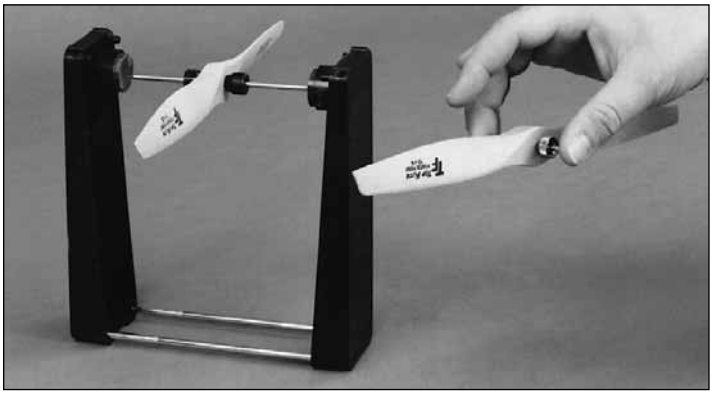
No matter if you fly at an AMA sanctioned R/C club site or if you fly somewhere on your own, you should always have your name, address, telephone number and AMA number on or inside your model. It is **required** at all AMA R/C club flying sites and AMA sanctioned flying events. Fill out the identification tag on page 23 (or on the decal sheet) and place it on or inside your model.

Charge the Batteries

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

CAUTION: Unless the instructions that came with your radio system state differently, the **initial** charge on **new** transmitter batteries should be done for 15 hours **using the slow-charger that came with the radio system**. This will "condition" the batteries so that the next charge may be done using the fast-charger of your choice. If the initial charge is done with a fast-charger the batteries may not reach their full capacity and you may be flying with batteries that are only partially charged.

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.

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 (consult your radio manual if using a 2.4GHz system). 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, 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 electric motors.
- Use safety glasses when running electric motors.
- Do not operate 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 operate 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.

LITHIUM BATTERY HANDLING AND USAGE

WARNING!! *Read the entire instruction sheet included with your battery. Failure to follow all instructions could cause permanent damage to the battery and its surroundings, and cause bodily harm!*

- ONLY use a LiPo approved charger. NEVER use a NiCd/NiMH peak charger!
- NEVER charge in excess of 4.20V per cell.
- ONLY charge through the “charge” lead. NEVER charge through the “discharge” lead.
- NEVER charge at currents greater than 1C.
- ALWAYS set charger’s output volts to match battery volts.
- ALWAYS charge in a fireproof location.
- NEVER trickle charge.
- NEVER allow the battery temperature to exceed 150° F (65° C).
- NEVER disassemble or modify pack wiring in any way or puncture cells.
- NEVER discharge below 2.5V per cell.
- NEVER place on combustible materials or leave unattended during charge or discharge.
- ALWAYS KEEP OUT OF REACH OF CHILDREN.

AMA SAFETY CODE (EXCERPTS)

Read and abide by the following excerpts from the Academy of Model Aeronautics Safety Code. For the complete Safety Code refer to Model Aviation magazine, the AMA web site or the Code that came with your AMA license.

General

1) I will not fly my model aircraft in sanctioned events, air shows, or model flying demonstrations until it has been proven to be airworthy by having been previously, successfully flight tested.

2) I will not fly my model aircraft higher than approximately 400 feet within 3 miles of an airport without notifying the airport operator. I will give right-of-way and avoid flying in the proximity of full-scale aircraft. Where necessary, an observer shall be utilized to supervise flying to avoid having models fly in the proximity of full-scale aircraft.

3) Where established, I will abide by the safety rules for the flying site I use, and I will not willfully and deliberately fly my models in a careless, reckless and/or dangerous manner.

5) I will not fly my model unless it is identified with my name and address or AMA number, on or in the model. Note: This does not apply to models while being flown indoors.

7) I will not operate models with pyrotechnics (any device that explodes, burns, or propels a projectile of any kind).

Radio Control

1) I will have completed a successful radio equipment ground check before the first flight of a new or repaired model.

2) I will not fly my model aircraft in the presence of spectators until I become a qualified flier, unless assisted by an experienced helper.

3) At all flying sites a straight or curved line(s) must be established in front of which all flying takes place with the other side for spectators. Only personnel involved with flying the aircraft are allowed at or in the front of the flight line. Intentional flying behind the flight line is prohibited.

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

5) **I will not knowingly operate my model within three miles of any pre-existing flying site except in accordance with the frequency sharing agreement listed [in the complete AMA Safety Code].**

9) Under no circumstances may a pilot or other person touch a powered model in flight; **nor should any part of the model other than the landing gear, intentionally touch the ground, except while landing.**

CHECK LIST

During the last few moments of preparation your mind may be elsewhere anticipating the excitement of the first flight. Because of this, you may be more likely to overlook certain checks and procedures that should be performed before the model is flown. To help avoid this, a check list is provided to make sure these important areas are not overlooked. Many are covered in the instruction manual, so where appropriate, refer to the manual for complete instructions. Be sure to check the items off as they are completed.

❏ 1. Check the C.G. according to the measurements provided in the manual.

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

❏ 3. Extend your receiver antenna (if applicable).

❏ 4. Balance your model *laterally* as explained in the instructions.

❏ 5. Add a drop of oil to the axles so the wheels will turn freely.

❏ 6. Make sure all hinges are **securely** glued in place.

❏ 7. Confirm that all controls operate in the correct direction and the throws are set up according to the manual.

❏ 8. Make sure that all servo arms are secured to the servos with the screws included with your radio.

❏ 9. Balance your propeller (and spare propellers).

❏ 10. Tighten the propeller nut and spinner.

❏ 11. Place your name, address, AMA number and telephone number on or inside your model.

❏ 12. If you wish to photograph your model, do so before your first flight.

❏ 13. Range check your radio when you get to the flying field.

FLYING

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

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

Takeoff

If you have access to a smooth, paved runway, we suggest using it to takeoff, especially for the first few flights. Position the Sportster onto the runway pointed into the wind. Slowly advance the throttle stick to half throttle leaving the elevator in the neutral position. As the tail rises off the ground, slowly increase throttle and apply a bit of up elevator to lift the model into the air.

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 Super Sportster EP BL 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 battery charge, 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 ITEMS AVAILABLE

ElectriFly™ RimFire™ .25 Outrunner Brushless Motor GPMG4675

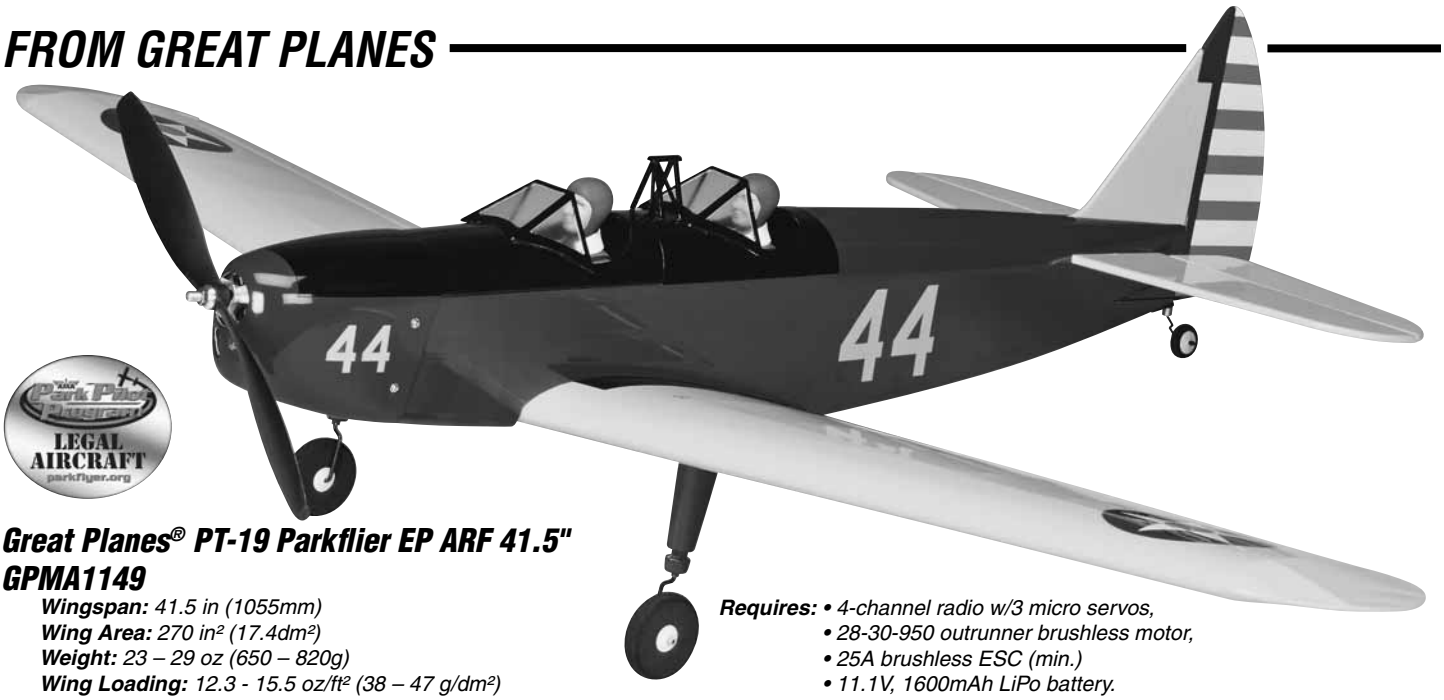
Diameter: *1.7 in (42 mm)*
Length: *1.6 in (40 mm)*
kV: *1000*
Burst Watts: *740*
Weight: *4.4 oz (125 g)*
Shaft Diameter: *5 mm*
Input: *11.1-14.8V (3-4S LiPo)*

Compared to other power systems, the RimFire .25 is a natural choice. It has as much power as most .25 glow engines, but runs cleaner and quieter. And better-than-brushed advantages include longer life, higher performance and greater efficiency, with virtually no maintenance needs. It's perfect for 3D planes up to 3 lb (1360 g) and sport planes weighing up to 4.5 lb (2040 g). Arrives installation-ready, with a mount, prop adapter, hardware & gold-plated bullet connectors compatible with ElecriFly's SS-45 ESC. Female connectors are included; male connectors are installed.

Great Planes ElectriFly LiPo 11.1V 3350mAh 25C Power Series GPMP0541

Capacity and a high, 25C discharge rate make this 3-cell pack perfect for aggressive 3D flying and hot competition. And because it's a balanced pack, you can charge each cell to its 4.2V maximum, which adds up to an extra 1.5V of performance power. Arrives shrink-wrapped and ready to charge, with a standard balancing connector and a Deans® Ultra Plug® connector. Weight: 9.7 oz (275 g); Dimensions: 5.9 x 2.0 x 08 in (150 x 47 x 27 mm).

FROM GREAT PLANES



LEGAL AIRCRAFT
parkflyer.org

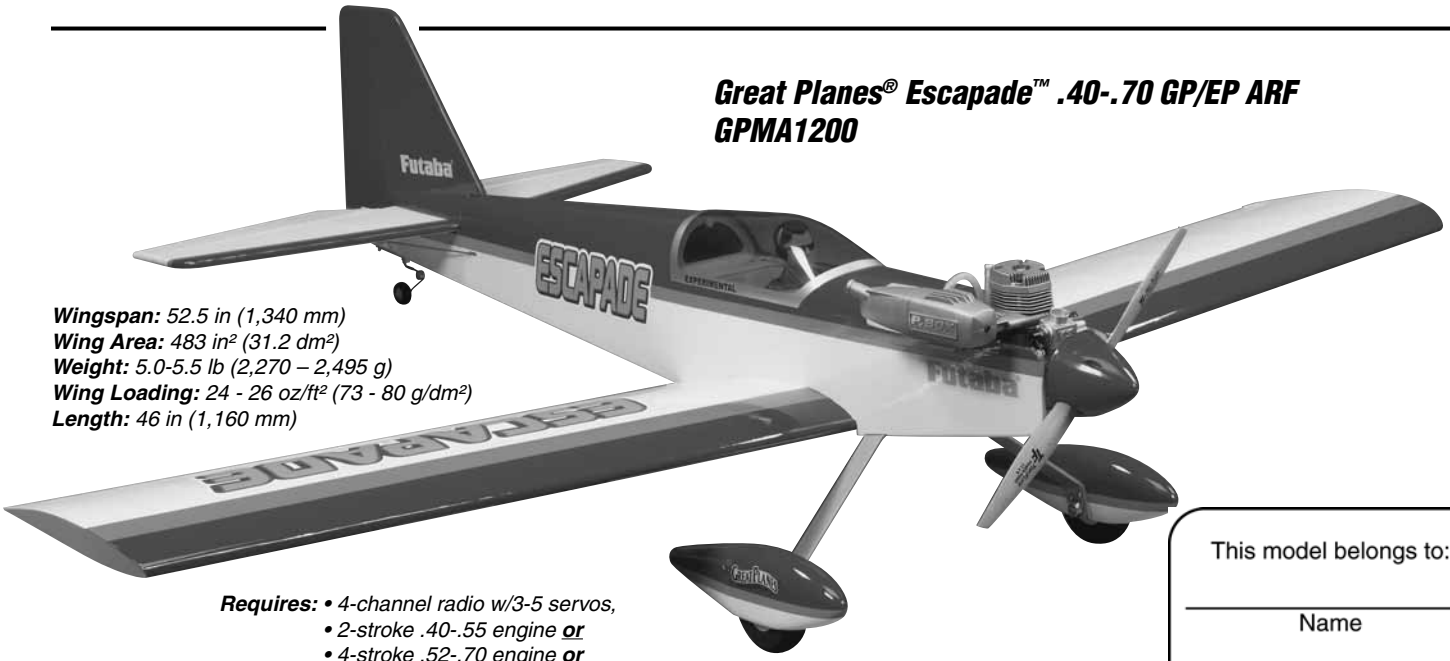
Great Planes® PT-19 Parkflier EP ARF 41.5" GPMA1149

Wingspan: *41.5 in (1055mm)*
Wing Area: *270 in² (17.4dm²)*
Weight: *23 – 29 oz (650 – 820g)*
Wing Loading: *12.3 - 15.5 oz/ft² (38 – 47 g/dm²)*
Length: *31.5 in (800mm)*

Requires: *• 4-channel radio w/3 micro servos,*
• 28-30-950 outrunner brushless motor,
• 25A brushless ESC (min.)
• 11.1V, 1600mAh LiPo battery.

The reason the PT-19 stands out is because ElectriFly put so much into it. It's compact for easier carrying. There's a steerable tailwheel for smooth, superior ground handling. The all-wood airframe is strong, lightweight and already assembled. The motor box is prebuilt, too, and magnets in the battery make the hatch and cowl easy to remove…and reattach…in seconds. Scale details — including instrument panels and formed windscreens for the dual cockpits, a rollover pylon, and formed wire gear and strut covers — offer noteworthy detail with minimal effort. An authentic trim scheme done in genuine MonoKote® film make it as easy to look at as it is to fly.

Great Planes® Escapade™ .40-.70 GP/EP ARF GPMA1200



Wingspan: *52.5 in (1,340 mm)*
Wing Area: *483 in² (31.2 dm²)*
Weight: *5.0-5.5 lb (2,270 – 2,495 g)*
Wing Loading: *24 - 26 oz/ft² (73 - 80 g/dm²)*
Length: *46 in (1,160 mm)*

Requires: *• 4-channel radio w/3-5 servos,*
*• 2-stroke .40-.55 engine **or***
*• 4-stroke .52-.70 engine **or***
• 800kV outrunner brushless motor, 60A brushless ESC (min) & a 14.8V, 3200mAh LiPo battery pack

The Escapade is destined to become the plane you can't put down, the model that stands out as your all-time favorite. Easy handling and aerobatic performance are just two of the reasons you'll want to fly this ARF again and again. It flies great with either glow or electric power. With its built-up airframe, bolt-together construction, pre-hinged control surfaces and striking MonoKote® trim scheme already applied, assembling the Escapade requires just 4-6 hours. And ailerons can be set up for single-servo simplicity or dual-servo authority with no modification.

This model belongs to:

Name

Address

City, State Zip

Phone number

AMA number

Please fill in this identification tag and place inside your model.


GREAT PLANES®
MODEL MANUFACTURING COMPANY