Mini Slinger™

INSTRUCTION MANUAL

Wingspan: 805 mm [31.5 in]
Wing Area: 14.8 dm^2 [230 sq in]
Weight: 215-240 g [7.5-8.5 oz]
Wing Loading: 14-16 g/dm^2 [4.7-5.3 oz/sq ft]
Length: 380 mm [15 in]
Radio: 3-Channel with 2 servos, elevon mixer and ESC

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 WARNINGS AND INSTRUCTIONS CONCERNING THE ASSEMBLY AND USE OF THIS MODEL.

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

GPMZ0253 for GPMA1178 V1.1

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INTRODUCTION

Thank you for purchasing the Great Planes Mini Slinger ARF. The Mini Slinger is a lightweight, high performance model that can be flown just about anywhere there is an open area clear of obstacles. Ultimately, it is the modeler's responsibility to select a suitable, safe flying area. Since the Mini Slinger is constructed mostly of molded plastic foam, it is durable and can be easily repaired. The performance of the Mini Slinger is excellent with the included motor.

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

AMA

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

Academy of Model Aeronautics
5151 East Memorial Drive
Muncie, IN 47302-9252
Tele. (800) 435-9262
Fax (765) 741-0057
Or via the Internet at: *http://www.modelaircraft.org*

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

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

1. Your Mini Slinger 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 Mini Slinger 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 rated electronic speed controller and battery pack.

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 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.

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.

ADDITIONAL ITEMS REQUIRED

Radio Equipment and Electronics

The Mini Slinger requires a micro receiver and two micro servos (9 g or less). If you already have a transmitter you are going to use to fly the Mini Slinger, you can get the receiver and servos separately:

❏ Futaba® R114F 4-channel FM micro receiver w/o crystal (low band: FUTL0442, high band: FUTL0443)

❏ Futaba FM single conversion receiver crystal for R114F (low band: FUTL62**, high band: FUTL63**)

❏ Futaba S3108 micro servo 7.6 g (FUTM0042)

Or, you can purchase a complete system (including transmitter) specially packaged for park flyers. If purchasing a complete system, the Futaba 3FR Skysport single-stick radio is suitable. It comes with a micro receiver and two Futaba S3108 micro servos. The transmitter is also equipped with a rechargeable NiCd battery pack:

❏ Futaba 3FR Skysport single-stick radio system including transmitter, receiver, and servos (FUTJ53**)

An 8-cell 9.6V NiMH battery pack and suitable charger are also required. Although there are different battery packs and chargers available that will work with the Mini Slinger, the economical choices recommended by Great Planes are:

❏ Great Planes 9.6V 2/3AAA 350mAh (GPMP0067)

❏ Great Planes ElectriFly DC peak charger (GPMM3000)

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 (thus eliminating the on-board receiver battery). The Great Planes ElectriFly C-12 Micro Brushed Frequency Electronic Speed Control (GPMM2015) is recommended.

Mixer

The Mini Slinger is equipped with elevons that operate both as elevators and ailerons. The elevons must be mixed together to function properly using an auxiliary Elevon Mixer (GPMA2428) or a computerized transmitter that features an elevon mixing function. The elevon mixer (or elevon mixing function in transmitter) allows the elevons to move up and down together when elevator input is given and allows them to move opposite each other just like typical ailerons function when aileron input is given.

Adhesives and Building Supplies

This is the list of Adhesives and Building Supplies that are required to finish the Mini Slinger ARF.

❏ Pro™ 6-Minute Epoxy (GPMR6042)
❏ Pro Foam-Safe CA Glue, 1 oz (GPMR6069)
❏ Hobby Knife with #11 Blade (HCAR0105)
❏ Rubbing Alcohol
❏ Top Flite® Masking Tape (TOPR8018)
❏ Transparent Tape
❏ 1.6 mm [1/16"] drill bit
❏ Soldering Iron (HCAR0776)

Optional Supplies and Tools

❏ Great Planes Epoxy Brushes (6, GPMR8060)
❏ Great Planes Mixing Sticks (50, GPMR8055)
❏ Great Planes Mixing Cups (GPMR8056)
❏ Great Planes AccuThrow™ Deflection Gauge (GPMR2405)
❏ Great Planes CG Machine™ (GPMR2400)
❏ Heat Shrink Tubing for Servos (TRIC6047)

ORDERING REPLACEMENT PARTS

Replacement parts for the Mini Slinger 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. Parts may also be ordered directly from Hobby Services, but full retail prices and shipping and handling charges will apply. Illinois and Nevada residents will also be charged sales tax.

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. If a hobby shop is not available, replacement parts may also be ordered from Tower Hobbies at www.towerhobbies.com, or by calling toll free (800) 637-6050, or from Hobby Services by calling (217) 398-0007, or via facsimile at (217) 398-7721. 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 the appropriate Product Support by telephone at (217) 398-8970 or by e-mail at ***productsupport@greatplanes.com***.

Description	**How to Purchase**
Missing pieces	Contact Product Support
Instruction manual	Contact Product Support
Full-size plans	Not available
Kit parts listed below	Hobby Supplier

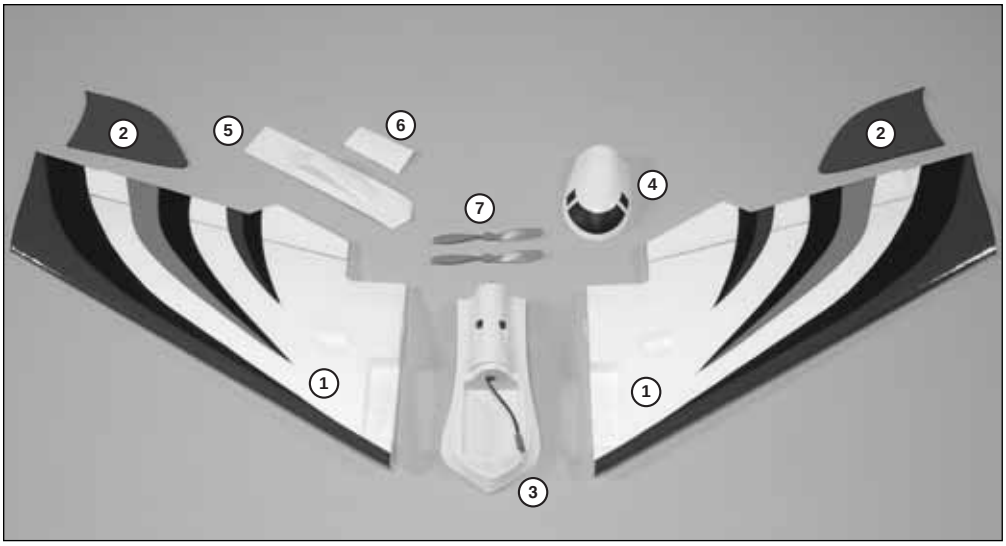
Replacement Parts List

GPMA2910.....Wing Set
GPMA2911.....Plastic Body w/Firewall
GPMA2912.....Hatch w/Velcro
GPMA2913.....Skid
GPMA2914.....Wing Tips (2) w/Screws
GPMA2915.....Motor w/Leads and JST connecter
GPMA2916.....Prop
GPMA2917.....Pushrods, Faslinks and Control Horns (2)
GPMA2918.....2 Wing Joiners

KIT INSPECTION

Before starting to build, take an inventory of this kit to make sure it is complete, and inspect the parts to make sure they are of acceptable quality. If any parts are missing or are not of acceptable quality, or if you need assistance with assembly, contact 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, ext. 5
Fax: (217) 398-7721
E-mail: *airsupport@greatplanes.com*



Kit Contents (Photographed)

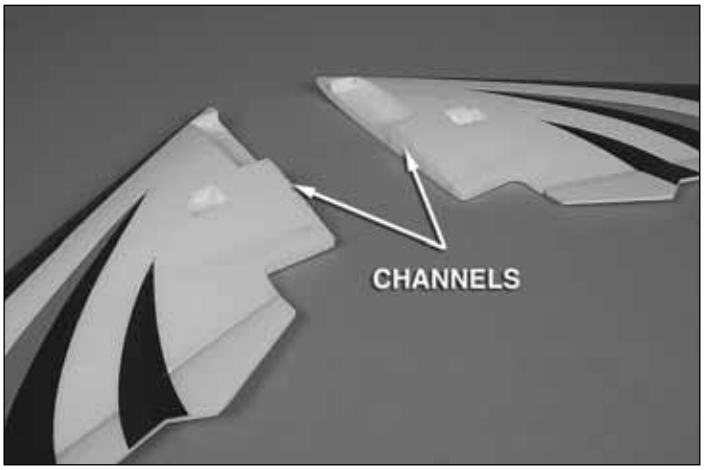
1 Wing Halves (2)
2 Wing Tips (2)
3 Radio Tray
4 Radio Tray Hatch
5 Sling Handle
6 Hook and Loop Material
7 Propellers (2)

Kit Contents (Not Photographed)

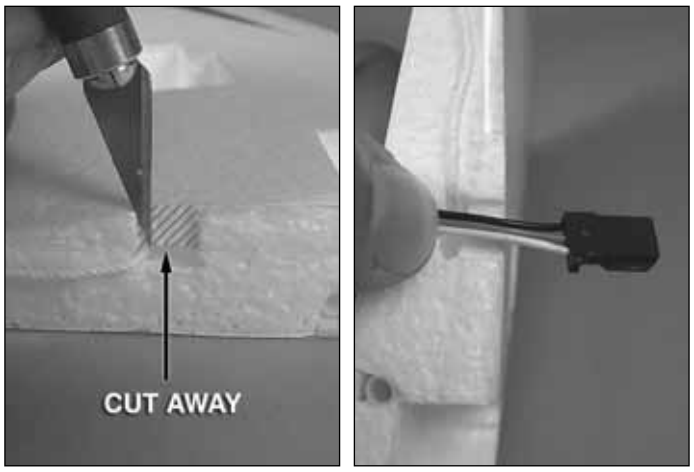
3x225 mm [1/8" x 8-7/8"] Fore Carbon Wing Joiner Rod (1)
3x500 mm [1/8" x 19-5/8"] Aft Carbon Wing Joiner Rod (1)
Control Horns (2)
Control Horn Back Plates (2)
#2 x 5/16" [8 mm] Screws (4)
90° Pushrod Connectors (2)
64mm [2-1/2"] Pushrods (4)
25mm [1"] Heat-Shrink Tubing (2)

BUILDING INSTRUCTIONS

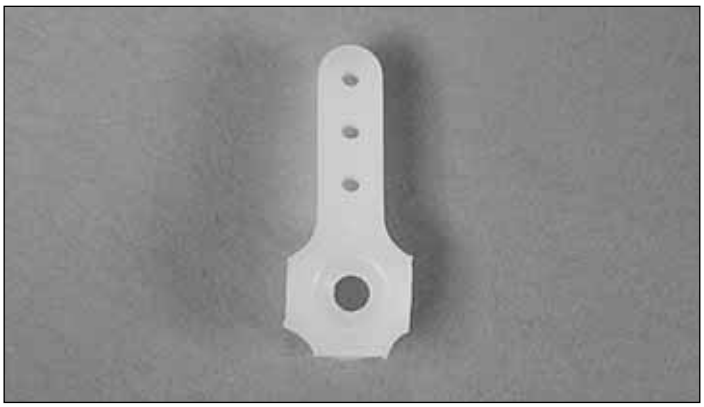
Install the Servos



❑ 1. Locate the channels in each **wing half** that contain the servo wire draw strings.

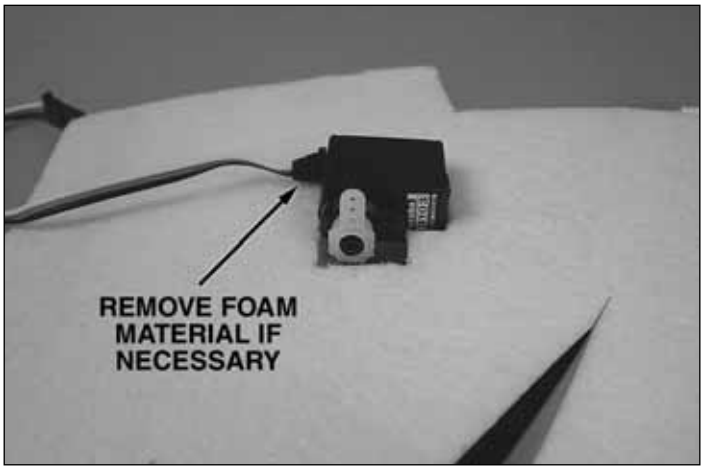


❑ 2. Being careful not to sever the strings, cut away just enough foam above these channels at the wing roots to accommodate the thickness of the servo wires.

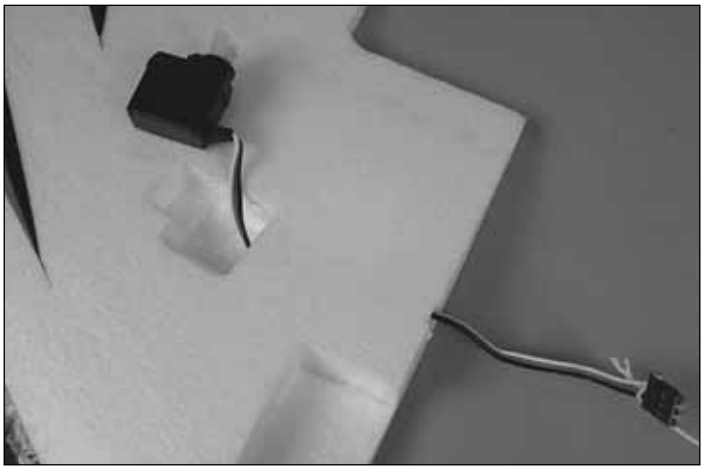


❑ 3. Cut off three arms from (2) four-arm servo horns, leaving one of the long arms intact as shown.

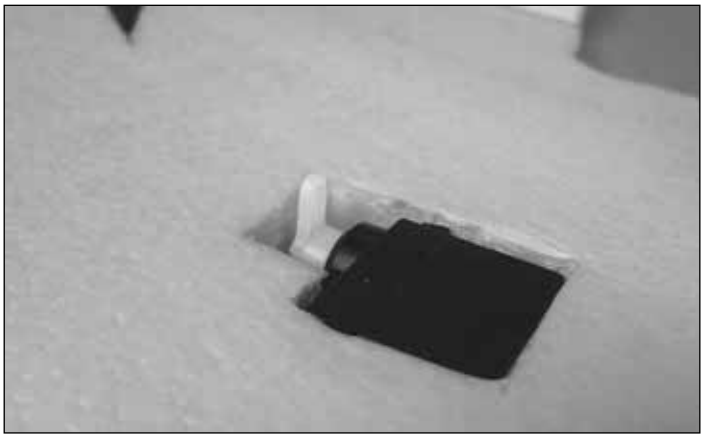
❑ 4. Cut off the mounting tabs from the servo cases.



❑ 5. Temporarily connect the servos to your radio system. Turn the transmitter on and center your trim levers. With the radio on, position the arms perpendicular to the servos. Make a left and a right servo. If the servo model you are using has the servo lead exiting from the side of the servo case as shown in the picture above, use a hobby knife to remove material from the servo bay in the wing until it fits properly.



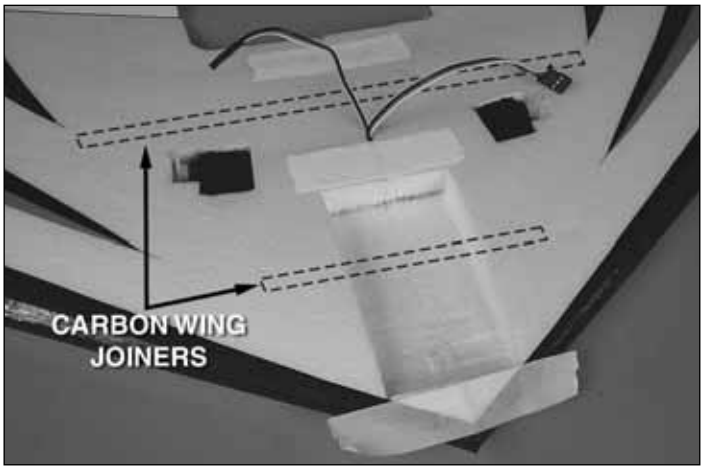
❑ 6. Use the strings to pull the servo leads through the wing panels.



❑ 7. Use epoxy to glue the servos into the servo bays. If you would like the servos to be easily removable from the Mini Slinger in the future, cover the servos in heat-shrink wrap (TRIC6074) prior to gluing. You will then be able to cut the heat-shrink to extract the servos from the wing with little damage.

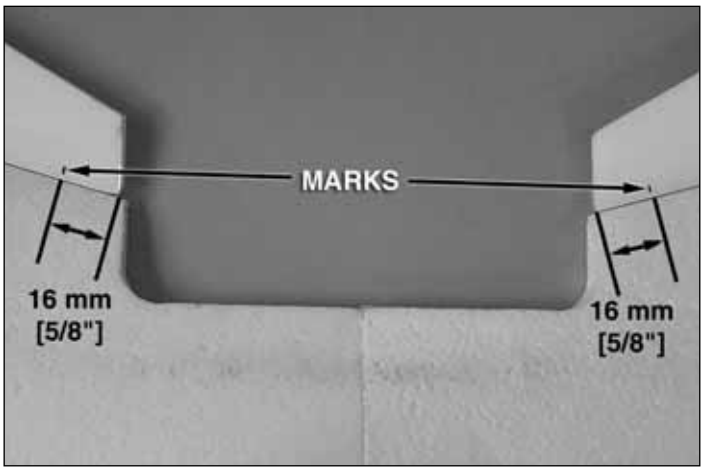
Join the Wing Halves

❑ 1. Test fit the wing halves together with the **carbon wing joiner rods,** with the long rod (500 mm [19-5/8"]) in the rear and the short rod (225 mm [8-7/8"]) in the front. If the rods prevent the wing halves from mating together, cut or sand the rods as necessary until a good fit is achieved. When satisfied, lightly coat one half of each rod with epoxy and insert them into a wing half. With rubbing alcohol, wipe away any excess epoxy that collects on the root of the wing half.

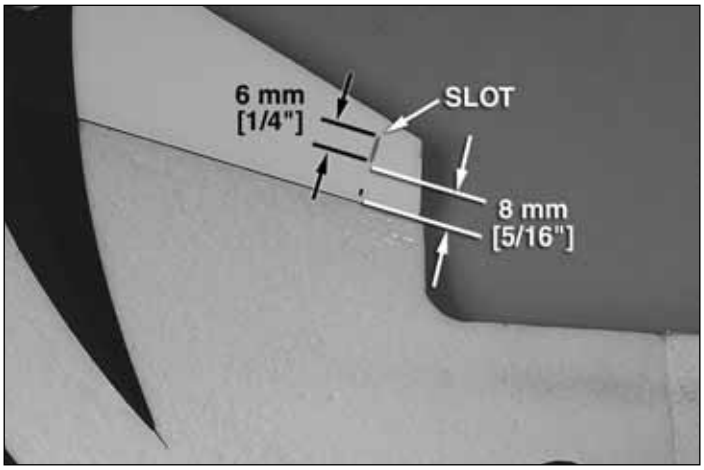


❑ 2. When the epoxy has cured, mix another batch and coat the other ends of the carbon tubes and the roots of the wing panels. Slide the panels together making sure the servo leads exit on top of the wing and use tape to hold them tight while the epoxy cures. Wipe away any excess epoxy that squeezes out.

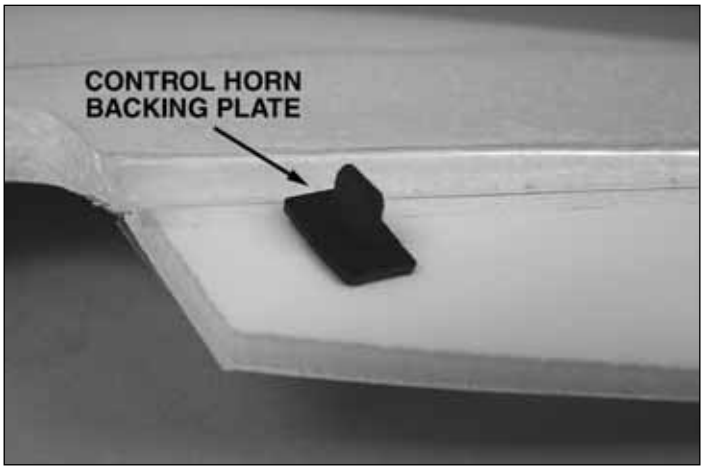
Connect the Control Linkages



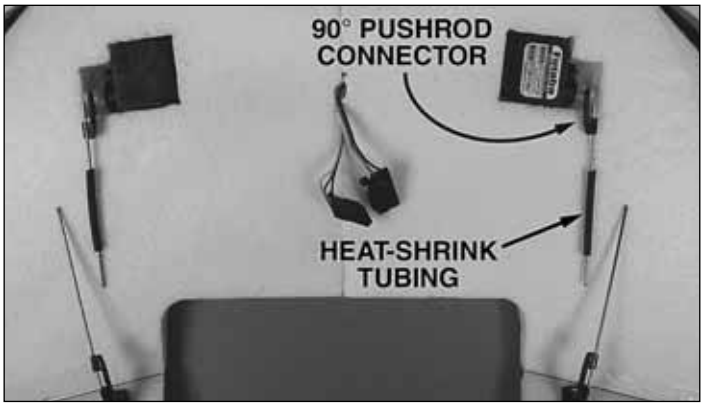
❑ 1. Measure 16 mm [5/8"] from the inside edge of each **elevon** and make a mark as shown in the picture.



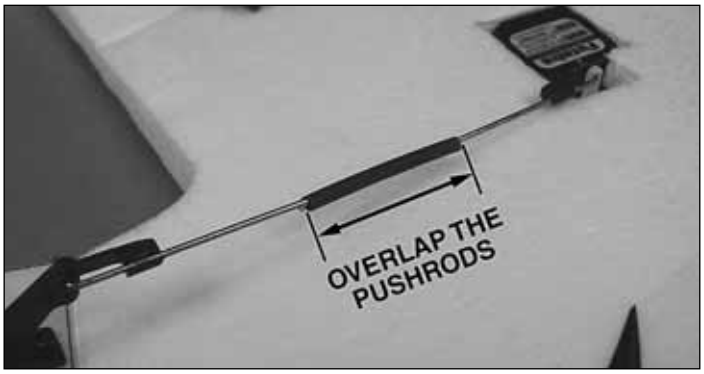
❑ 2. Cut a 6 mm [1/4"] slot 8 mm [5/16"] aft of the hinge line for the **control horns**. Make the cuts so that the control horns will be **parallel** with the servo arms.

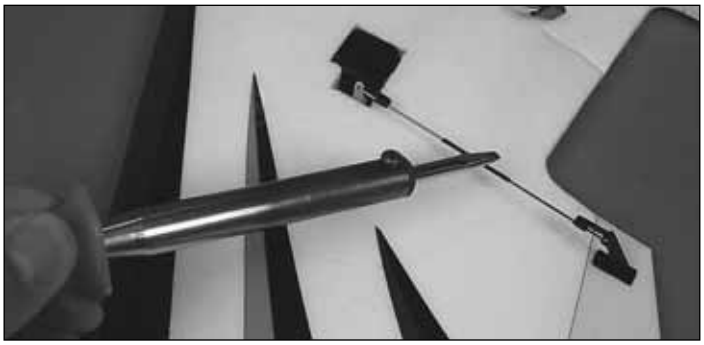


❑ 3. Push the control horns through the cuts you made in the elevons. Press a **control horn backing plate** onto the underside of each control horn. Secure the backing plates and control horns to the elevons with foam safe CA glue.



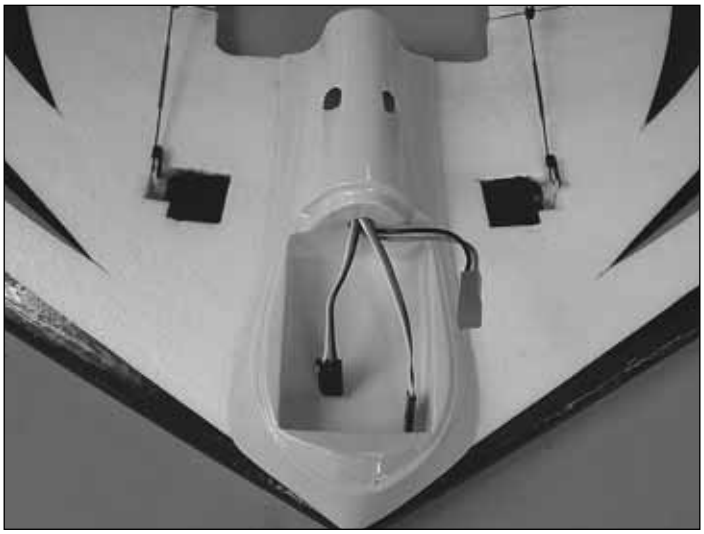
❏ 4. Locate the four 2-1/2" [64mm] pushrods and two 1" [25mm] long pieces of heat shrink tubing. Using the 90° pushrod connectors, attach a pushrod to the outer hole of each servo horn and the middle hole of each control horn. If necessary, use a 1/16" [1.6mm] drill bit to enlarge the holes. Insert a piece of heat shrink tubing onto the two pushrods attached to the servo horns.



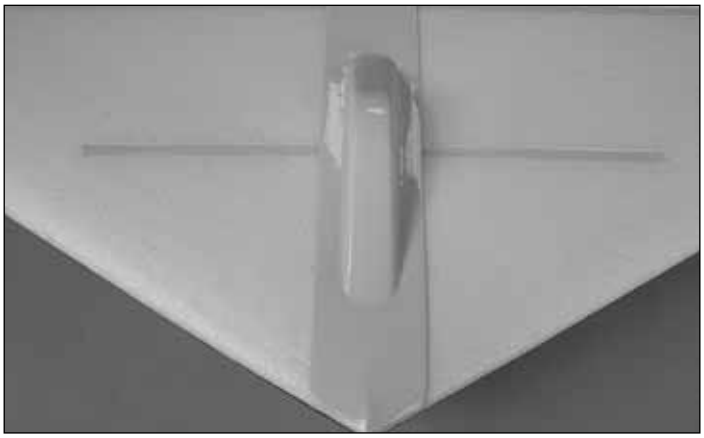


❏ 5. Use tape to temporarily hold the elevons in the neutral position. Overlap the pushrod ends and join them together using the heat shrink tubing. Use a soldering iron to shrink the tubing around the pushrods by moving it quickly back and forth across it (do not use a micro torch or heat gun to shrink the tubing as this will melt the foam close to the pushrods). With the elevons still in the neutral position, apply a couple drops of CA glue to each end of the heat shrink tubing to secure them in place.

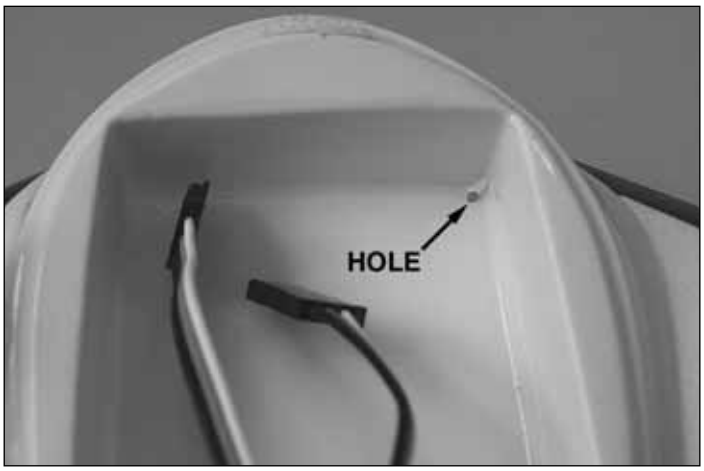
Install the Radio Equipment



❏ 1. Using rubbing alcohol, clean the area where the **radio tray** will be installed. Feed the servo wires through the hole in the hatch. Peel the paper backing from the tape on the underside of the radio tray hatch and press it into position. Be sure that the hatch is held securely in place by the tape.

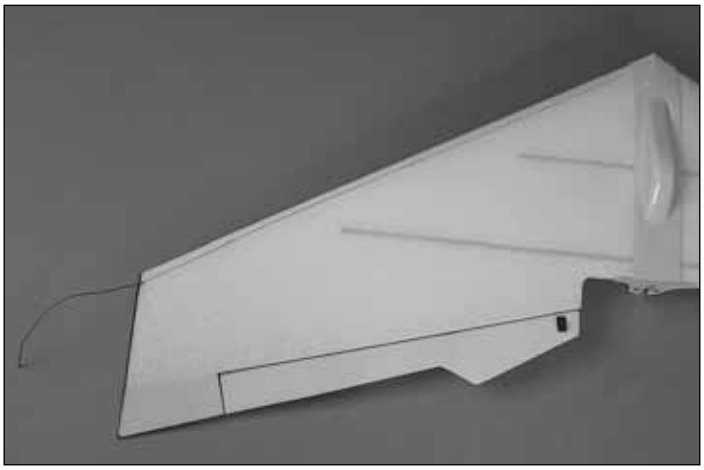


❏ 2. Install the **sling handle** on the underside of the wing in the same manner.



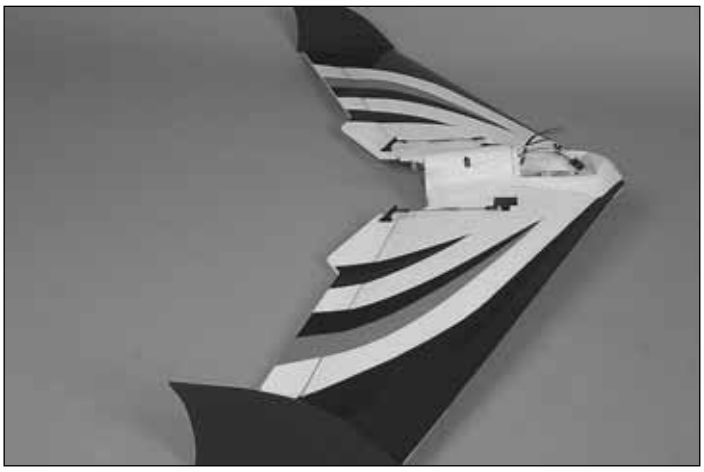
❏ 3. Drill a 1.6 mm [1/16"] hole at an angle through the corner of the radio tray and out the bottom of the wing.

❏ 4. With a sharp hobby knife, cut a 3 mm [1/8"] deep slit on the underside of the wing from this hole to the end of the wing parallel with the leading edge.

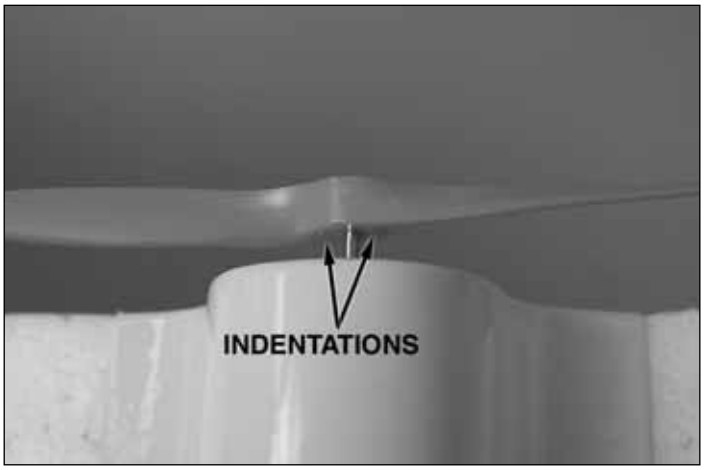


❏ 5. Feed the receiver antenna through the hole and embed it in the slit. Cover the slit with transparent tape.

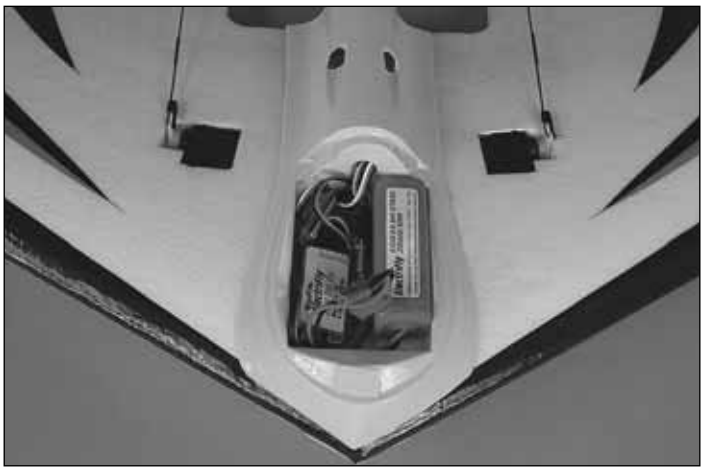
Finish the Model



❏ 1. Use (4) #2 x 5/16" [8 mm] screws to attach the **wing tips** to the wing.



❏ 2. Press the propeller onto the motor shaft. The two indentations at the center of the prop should face the model.



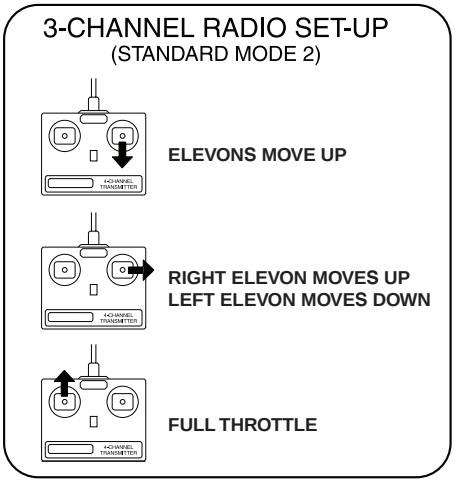
❏ 3. Use the included hook and loop material to secure the battery pack, receiver, and ESC to the radio tray. You can also use optional double-sided servo tape. If using an auxiliary elevon mixer, place it into the tray at this time and check control surface operation with your radio. Computer radio systems equipped with an elevon function will not require a separate mixer to be installed.

GET THE MODEL READY TO FLY

Check the Control Directions

❑ 1. Turn on the transmitter and receiver and center the trims.

❑ 2. With the transmitter and receiver still on, check all of the control surfaces to see if they are centered. If necessary, break the CA bond on the heat shrink tubing, adjust the position of the pushrods inside the tubing to center the control surfaces, and re-glue the tubing to the pushrods.



❑ 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 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.

These are the recommended control surface throws:

	High Rate	Low Rate
ELEVON:	10 mm [3/8"] up	6 mm [1/4"] up
	10 mm [3/8"] down	6 mm [1/4"] down

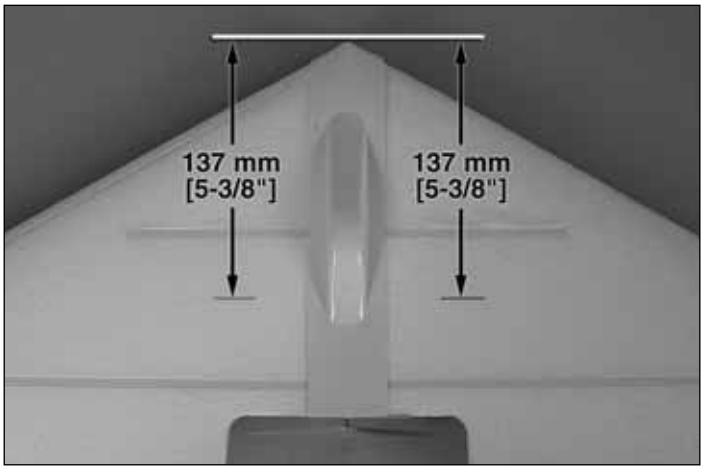
NOTE: The throws are measured at the outer edges of the elevons. Use the elevator stick to check control throws.

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

Balance the Model (C.G.)

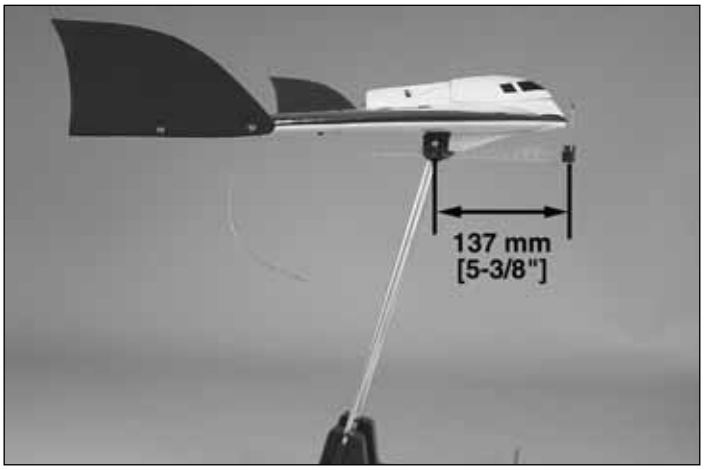
More than any other factor, the **C.G.** (balance point) can have the **greatest** effect on how a model flies, and may determine whether or not your first flight will be successful. If you value this model and wish to enjoy it for many flights, **DO NOT OVERLOOK THIS IMPORTANT PROCEDURE**. A model that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

At this stage the model should be in ready-to-fly condition with all of the systems in place.



❑ 1. Use a felt-tip pen or 3 mm [1/8"]-wide tape to accurately mark the C.G. on the bottom of the wing as shown. **The C.G. is located 137 mm [5-3/8"] 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 6 mm [1/4"] forward or 6 mm [1/4"] 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 of the 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. If additional weight is required, use Great Planes (GPMQ4485) "stick on" lead. Begin by placing incrementally increasing amounts of weight on the wings at the tips or in the radio tray until the model balances. If you are adding weight at the tail, be sure that weight is added evenly at each trailing edge of the wing halves to maintain lateral balance. Once you have determined the amount of weight required, it can be permanently attached.

❑ 4. **IMPORTANT:** If you found it necessary to add any weight, recheck the C.G. after the weight has been installed.

Balance the Model Laterally

❑ 1. With the wing level, lift the model by the leading edge tip and motor shaft. 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 additional screw works well for this). **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 11 and place it on or inside your model.

Charge the Batteries

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

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

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 30 meters [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.

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.

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.
- ❏ 3. Balance your model laterally as explained in the instructions.
- ❏ 4. Confirm that all controls operate in the correct direction and the throws are set up according to the manual.
- ❏ 5. Be sure the propeller is securely pressed onto the motor shaft.
- ❏ 6. Place your name, address, AMA number and telephone number on or inside your model.
- ❏ 7. Cycle your battery pack (if necessary) and make sure it is fully charged.
- ❏ 8. If you wish to photograph your model, do so before your first flight.
- ❏ 9. Range check your radio when you get to the flying field.

FLYING

IMPORTANT: If you are an inexperienced modeler we strongly urge you to seek the assistance of a competent, experienced R/C pilot to check your model for airworthiness AND to teach you how to fly. No matter how stable or "forgiving" the Mini Slinger is, attempting to learn to fly on your own is dangerous and may result in destruction of your model or even injury to yourself and others. Therefore, find an instructor and fly only under his or her guidance and supervision until you have acquired the skills necessary for safe and fully controlled operation of your model.

Takeoff

We recommend flying the Mini Slinger when the wind is no greater than 16 kmph [10 mph]. Less-experienced flyers should fly the Mini Slinger only in calm (less than one mile per hour) conditions. Frequently, winds are calm in the early morning and early evening. Often these are the most enjoyable times to fly anyway!

Until you have the Mini Slinger properly trimmed for level flight, we recommend having an assistant hand-launch the model instead of launching it yourself.

Turn on the transmitter and plug the battery into the speed control. Turn on the receiver by following the instructions that came with your speed control. Secure the radio tray hatch in place.

IMPORTANT: Confirm that the transmitter operates the controls properly by moving the sticks and watching the surfaces respond.

When ready to launch, the assistant should hold the Mini Slinger by the sling handle, with the model in front of him and pointed **into the wind**. With the pilot *(that would be you!)* standing behind the plane, fully advance the throttle to start the motor. When the motor is at full power, the hand launcher should gently push the plane into the air at a **level** or **slightly** nose-up attitude. Be certain the model is being launched **into** the wind and be immediately ready to make corrections to keep the airplane flying straight, level and into the wind.

When the model has gained adequate flying speed under its own power, **gently** pull the elevator stick back until the airplane starts a gradual climb. Many beginners tend to pull too hard causing the model to stall, so be gentle on the elevator and don't panic. If you do pull too hard and you notice the model losing speed, release the elevator stick and allow the model to regain airspeed.

Continue a **gradual** climb and establish a gentle turn (away from yourself and others) until the airplane reaches an altitude of 20 to 30 meters [75 to 100 feet].

Flight

The main purpose of the first few flights is to learn how the model behaves and to adjust the trims for level flight. After the model has climbed to a safe altitude, reduce the throttle slightly to slow the model, yet maintain altitude. The Mini Slinger should fly well and maintain adequate airspeed at about 1/2 throttle.

Adjust the elevator trim so the model flies level at the throttle setting you are using. Adjust the aileron trim to level the wings. It may take a few minutes to get the trims adjusted, but this should be your first priority once at a comfortable altitude. Continue to fly around, executing turns and making mental notes (or having your assistant take notes for you) of what additional adjustments or C.G. changes may be required to fine tune the model so it flies the way you like.

Landing

Begin the landing approach by flying downwind at an altitude of approximately 6 meters [20 feet]. When the airplane is approximately 15 to 30 meters [50 to 100 feet] past you, gradually reduce power and make the "final" 180-degree turn into the wind aligning the airplane with the runway or landing area. Do not dive the airplane, as it will pick up too much speed. Instead, allow the airplane to establish a gradual descent. Concentrate on keeping it heading into the wind toward the runway. When the plane reaches an altitude of about 3 feet [1 meter], gently apply a little "up elevator" to level the plane, but be careful as too much up elevator will cause it to stall. While holding a slight amount of up elevator the airplane will slow and descend as it loses flying speed, thus touching-down on the runway.

Until you are able to accurately judge how far the Mini Slinger can glide, it may be helpful to reserve some battery power to run the motor so the plane can be flown back to the runway.

Best of luck and happy flying!