

Skysprite

Ready-To-Fly Radio Controlled Electric Airplane

Instruction Manual



Instructions for setting up and flying Skysprite

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FMA
Direct

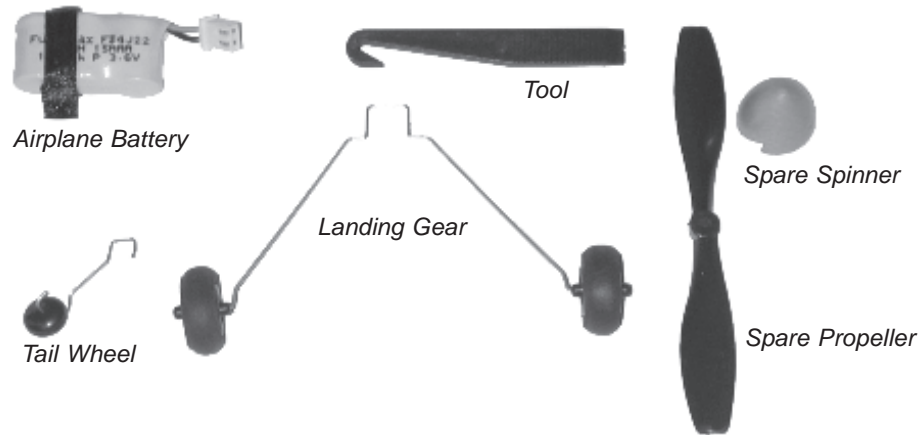
Check the parts

Check the contents of the package to make certain you have all the parts:

- Airplane
- Transmitter
- Landing Gear
- Tail Wheel
- Airplane Battery
- Tool
- Spare Propeller
- Spare Spinner

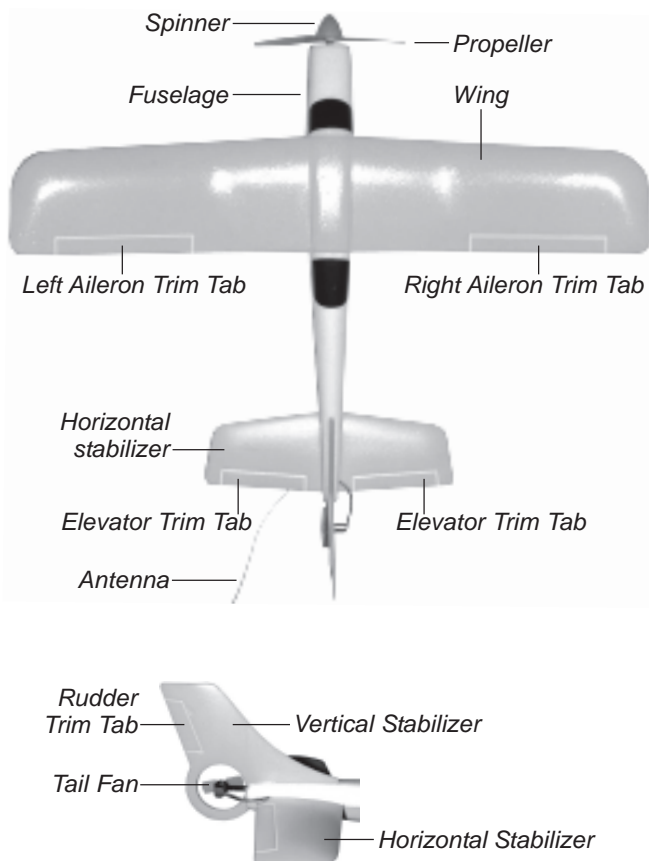
You need to supply:

- 6 AA alkaline cells (You can also use rechargeable NiCD or NiMH AA cells. You will need to provide a charger for these cells.)
- Hobby knife
- Pliers



Identify key features

Airplane



Transmitter

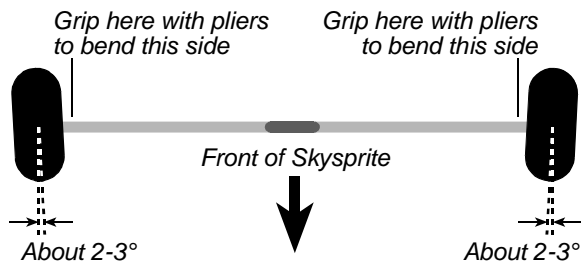


Assemble the airplane

1. Using a sharp hobby knife, make 10 cuts along the short indentations in the elevator, wing and vertical fin as shown by the black lines below.



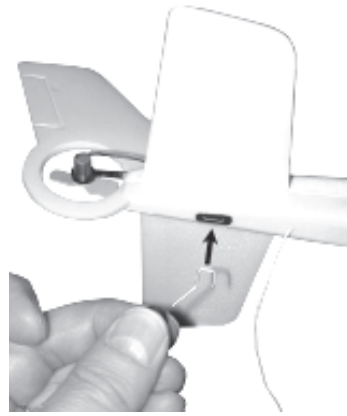
2. Using pliers, bend the Landing Gear as shown below. This *toe-in* helps Skysprite roll straight as it takes off from a smooth surface.



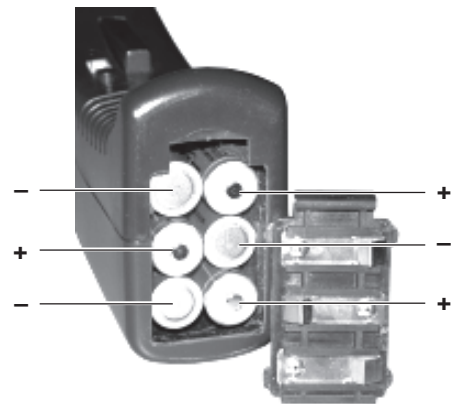
3. With the toe-in toward the front of the airplane, slide the Landing Gear into the slot on the bottom of the fuselage until it is all the way in.



4. Slide the Tail Wheel into the slot in the bottom rear of the fuselage until it is all the way in.



5. Gently straighten the antenna wire that exits the fuselage under the tail. Don't pull on the wire.
6. Install 6 AA alkaline cells in the Transmitter:
 - a. Turn the Transmitter On/Off switch to Off.
 - b. Remove the Battery Cover from the bottom of the Transmitter.
 - c. Install the cells as shown here:



- d. Replace the Battery Cover on the bottom of the Transmitter.

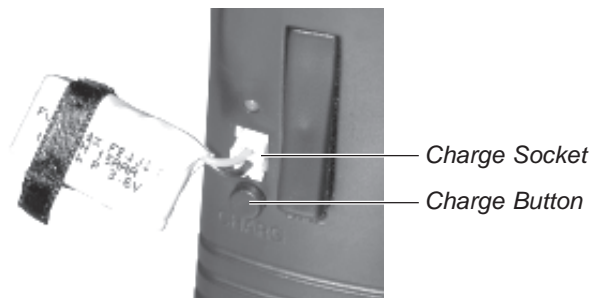
Charge and install the Airplane Battery

1. Turn on the Transmitter and check the three Status Lights above the On/Off Switch.

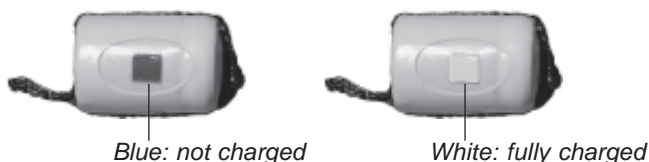
Red	Green	Red	Voltage	Status
ON	ON	ON	9.0	Ready
ON	ON	off	7.5	Ready
ON	dim	off	6.5	Marginal (Airplane Battery takes longer to charge)
ON	off	off	5.5	Don't charge or fly

- If the Transmitter status is “Ready,” turn the Transmitter off, then go to step 2.
- If the Transmitter status is “Marginal,” the transmitter batteries may be able to charge the Airplane Battery, but charging will take longer. After charging, check the Status Lights again. If the status is still “Marginal,” you may be able to make one more flight before you change the transmitter batteries. Otherwise...
- If the Transmitter status is “Don't fly,” turn the Transmitter off. Remove and discard the transmitter batteries. Install fresh AA alkaline cells, then check the Status Lights again.

2. Plug the Airplane Battery into the Charge Socket next to the Motor Trigger on the Transmitter. The plug is keyed and will only go into the socket one way.



3. Press and hold the Charge button. Watch the blue Charge Indicator on the end of the Airplane Battery. Release the Charge button when the Charge Indicator becomes pale blue or white.

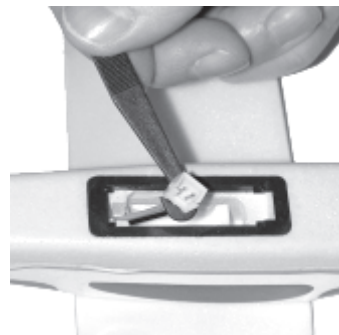


CAUTION: The Airplane Battery is now HOT!

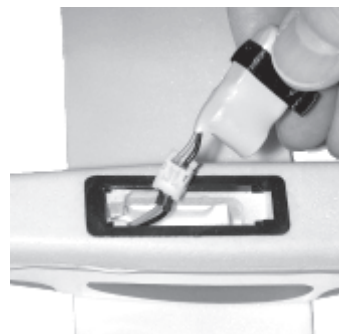
4. Disconnect the Airplane Battery from the Transmitter.

5. Remove the Battery Cover from the bottom of the airplane.

6. Gently pull the Battery Connector a short distance out of the Battery Compartment. If necessary, use the supplied Tool to hook the wire so you can grasp it.

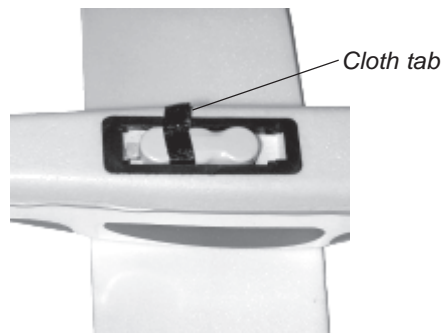


7. Plug the Airplane Battery into the Battery Connector. The plug is keyed and will only go into the Battery Connector one way.



CAUTION: The airplane is now on, and the Propeller can turn.

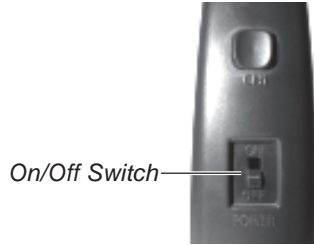
8. Push the connectors into the Compartment, then push the Battery into the Compartment with the cloth tab up.



9. Fold the cloth tab flat against the Battery. Replace the Battery Cover and snap it into place.

Test operation

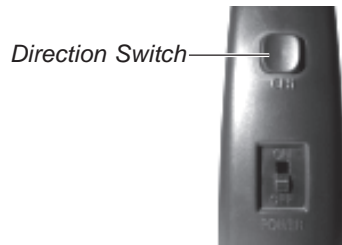
1. Hold Skysprite firmly in one hand and the Transmitter in the other hand.
2. Turn on the Transmitter and extend the antenna.



3. Squeeze the Motor Trigger with your index finger. Skysprite's propeller should turn at high speed. Release the Motor Trigger.



4. Move the Direction Switch in both directions. Skysprite's Tail Fan (at the rear of the fuselage) should turn at high speed.

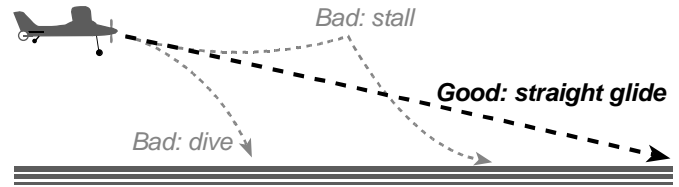


5. Turn off the Transmitter and collapse the antenna.

Trim Skysprite

You must trim Skysprite before you attempt powered flights. Trimming is the process of adjusting Skysprite's trim tabs for stable flight. During trimming, the Airplane Battery must be installed (it's weight affects Skysprite's balance), but it will not be used to power the airplane (this initial trimming involves gliding Skysprite). With the Transmitter off...

1. Gently toss Skysprite into the wind, with the wings level, aiming for a point about 15 to 20 feet in front of you. Watch how it glides.



2. Trim Skysprite according to how it glides:

- If Skysprite dives into the ground, gently bend the elevator trim tabs up about 1/32" (about the thickness of a credit card).
- If Skysprite swoops up and stalls, gently bend the elevator trim tabs down about 1/32" (about the thickness of a credit card).
- If Skysprite turns to the left, gently bend the rudder trim tab to the right about 1/32" (about the thickness of a credit card).
- If Skysprite turns to the right, gently bend the rudder trim tab to the left about 1/32" (about the thickness of a credit card).

3. Repeat steps 1 and 2 (bending the trim tabs a little farther) until Skysprite glides in a straight line without diving into the ground or swooping into a stall.

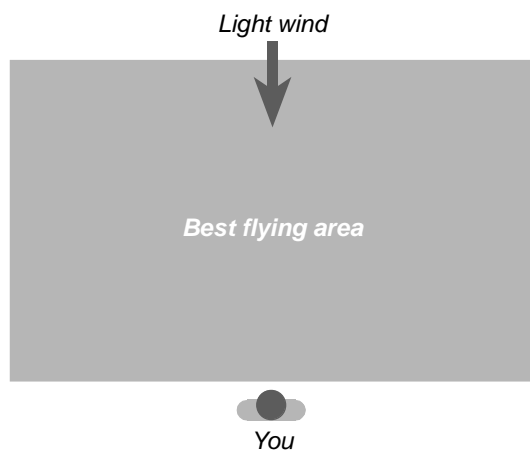
Skysprite is now ready to fly!

Note: If you will not be flying the airplane in the next few minutes, remove and disconnect the Airplane Battery. If you leave the Airplane Battery connected, it will eventually discharge.

Things you should know before you fly Skysprite

- **Where to fly.** You'll need an open area about the size of a baseball field, football field or soccer field. A large, empty parking lot is also good. Avoid areas with trees, power lines, houses, buildings, cars and people. If the area is paved or hard dirt, Skysprite can take off from the surface. Otherwise, you'll need to launch it by hand.
- **Wind speed.** Don't fly if the wind is moving tree branches or blowing dust and dirt. A strong wind could blow Skysprite away. A gentle, steady breeze that you can barely feel is good for flying.
- **Wind direction.** Always take off or hand launch Skysprite into the wind (the wind will be in your face). Always land Skysprite into the wind. Why? Flying into the wind provides more lift when Skysprite is moving slowly over the ground. A length of ribbon or sewing thread tied to the top of the Transmitter antenna will tell you which way the wind is blowing.

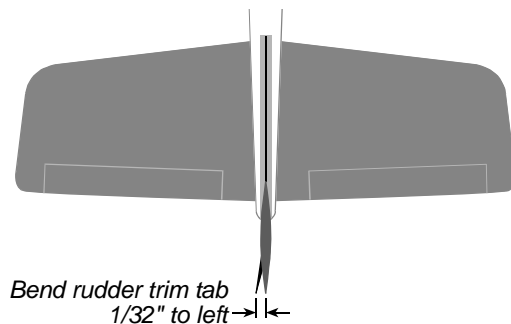
Always keep Skysprite upwind from you: if you are facing into the wind, and Skysprite is in front of you, it is upwind from you. Why? If the Airplane Battery runs down, the wind will help Skysprite glide back toward you, instead of away from you.



- **Frequencies.** Skysprite is available on two frequencies: 27MHz and 49MHz. You and someone else can fly Skysprites on different frequencies at the same time. You cannot fly two Skysprites on the same frequency at the same time.
- **Flight behavior.** Here is how Skysprite responds to the Transmitter controls:

If the Motor is...	and the Direction Switch is...	then Skysprite will...
On	centered	fly straight ahead and up
On	left (or right)	fly left (or right) and down
Off	centered	fly straight ahead and down

- **RECOMMENDED: trim for a circle.** Until you learn how to control Skysprite in the air, you should set it up to fly in a circle. This will keep it nearby so you can see how it reacts when you use the Transmitter controls. To trim for a left turn, gently bend the rudder trim tab to the left about 1/32".



- **Holding the Transmitter.** Before you fly the airplane for the first time, figure out how you will hold the Transmitter and press its buttons. There are two possibilities:

- One-handed method: Squeeze the Motor Trigger with your index finger and press the Direction Switch with the thumb on the same hand.



- Two-handed method: Squeeze the Motor Trigger with the index finger on the hand holding the Transmitter. Press the Direction Switch with the thumb on the other hand.



Flying Skysprite the first time

- **Preflight check.** It's a good idea to perform a preflight check before each flight to make certain everything is working:

- a. Turn on the Transmitter and extend the antenna.
- b. Check the Status Lights to make sure it's okay to fly.
- c. Hold Skysprite firmly in one hand. Squeeze the Motor Trigger to make sure the propeller turns very fast.
- d. Press the Direction Switch to make sure the Tail Fan turns fast.

If everything checks out, you are ready to fly.

- **Taking off from the ground.** If your flying area has a smooth, flat surface, it's easiest to take off from the ground.

- a. Place Skysprite on the ground or pavement, with its nose pointed into the wind.
- b. Squeeze and hold the Motor Trigger.
- c. After rolling about 20 feet, Skysprite should lift off and begin to climb.

- **Launching by hand.** If your flying area is grass or has a rough surface, you must hand-launch Skysprite.

- a. Hold Skysprite from below the fuselage, just behind the wing. Hold the Transmitter in the other hand.
- b. Point Skysprite into the wind.
- c. Squeeze and hold the Motor Trigger.
- d. Gently toss Skysprite straight out with the wings level.

You don't need to throw Skysprite hard—it should just fly out of your hand from a gentle toss. Also, you don't need to throw Skysprite up—if the Airplane Battery is fully charged, Skysprite will maintain altitude and slowly climb.

- **Controlling Skysprite in the air.**

- Keep squeezing the Motor Trigger. If you trimmed the rudder as recommended, Skysprite should fly gradually up and to the left. Fly Skysprite until it is at least 50 feet above the ground before you try turning it yourself.
- Release the Motor Trigger. Notice that Skysprite begins to glide downward.

Important point: Squeeze the Motor Trigger to make Skysprite go up. Release the Motor Trigger to let Skysprite come down.

- Squeeze the Motor Trigger, then press the Direction Switch to one side for a short time (just a few seconds, at most). Skysprite should make a gentle turn in that direction. If you hold the Direction Switch too long, Skysprite will begin to descend, even if you are still squeezing the Motor Trigger.
- Using the Direction Switch, practice making gentle turns to the right and left.

Important point: When Skysprite is flying toward you, the Direction Switch will seem reversed—you want Skysprite to turn to your left, but it turns the other way. This is one of the challenges of flying radio-controlled aircraft. We recommend lots of practice until you can make Skysprite turn the direction you want, whether it's flying away from you or toward you.

- Try making Skysprite fly straight without rising by alternating short left and right bursts with the Direction Switch.

Important point: When properly trimmed, Skysprite goes up when it is flying straight ahead, and it goes down when it is turning. By turning a little left, a little right, a little left, a little right, and so forth, you can keep Skysprite from rising while it moves straight ahead.

- **How long can you fly?** If the Airplane Battery starts with a full charge, you can fly for about 5 minutes. As the Airplane Battery starts to run down, Skysprite will not climb when you squeeze the Motor Trigger. When you notice this, you should land the airplane.

Tip: To fly longer, use the optional Lithium Polymer Airplane Battery. This battery is described later in the manual.

- **Landing.**

- a. Turn Skysprite so it is flying into the wind.
- b. Release the Motor Trigger to let Skysprite glide down. If Skysprite is coming down too fast, squeeze the Motor Trigger in short bursts to maintain a gentle glide path.

- **After the flight.**

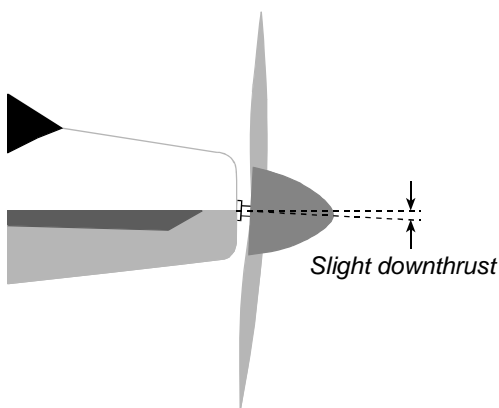
CAUTION: The Airplane Battery becomes very hot during a flight. Let it cool down for about 30 minutes before you remove it from the airplane.

- a. Turn off the Transmitter and collapse the antenna.
- b. After the Airplane Battery cools down, remove it from the airplane.

More information

- **Don't leave Skysprite in hot sunlight.** Skysprite won't warp on its own, but it can be permanently bent if left in a hot area with its surfaces against something. If that happens, Skysprite may not fly as expected.
- **Motor downthrust.** Notice that the Motor Shaft is angled slightly downward. This is called *downthrust*, and it helps Skysprite fly level. If you handle Skysprite roughly, or fly it into a tree or building, the downthrust angle may change. If downthrust is incorrect, Skysprite may ascend too rapidly when launched, then stall (the wing stops lifting the airplane) and fall to the ground.

Check the downthrust angle periodically. If the angle has changed, use a scrap of matchbook or folded paper to wedge the Motor back into position.



- **Replacing the Spinner and Propeller.** If the Propeller is damaged, you should replace it with the Spare Propeller. Pull the original Spinner and Propeller off of the Motor shaft. Press the Spare Propeller onto the Motor Shaft. Glue the Spinner onto the Propeller with a small amount of white glue (for example, Elmer's brand).

- **Trimming.** Here are some common flight problems, and how to solve them:

- *If Skysprite rises too fast after launch, then stalls and falls to the ground:*
 - ◆ Make sure the Motor has the correct downthrust (it may have too little). If it doesn't, shim the Motor into place. Fly Skysprite. If that doesn't solve the problem, then...
 - ◆ Add a little down elevator trim. Gently bend both elevator trim tabs down about 1/32" (about the thickness of a credit card). Fly Skysprite. If that doesn't solve the problem, then...
 - ◆ Add a little left rudder trim. Gently bend the rudder trim tab toward the left side of Skysprite. Turning helps keep Skysprite from rising.
- *If Skysprite dives into the ground after launch:*
 - ◆ Recharge the Airplane Battery (see "Charge and install the Airplane Battery," earlier in this manual). Fly Skysprite. If that doesn't solve the problem, then...
 - ◆ Make sure the Motor has correct downthrust (it may have too much). If it doesn't, shim the Motor into place. Fly Skysprite. If that doesn't solve the problem, then...
 - ◆ Add a little up elevator trim. Gently bend both elevator trim tabs up about 1/32".
- *If Skysprite rolls to the left or right during launch (instead of climbing with the wings level):*
 - ◆ There may be too much rudder trim. Reduce rudder trim. Fly Skysprite. If that doesn't solve the problem, then...
 - ◆ Correct the roll using the aileron trim tabs. If Skysprite rolls to the left, gently bend the left aileron trim tab down and the right trim tab up about 1/32". If Skysprite rolls to the right, gently bend the right aileron trim tab down and the left trim tab up.
- *If Skysprite dives (instead of slowly descending) when you release the Motor Trigger:*
 - ◆ Add a little up elevator trim. Gently bend both elevator trim tabs up about 1/32".

Advanced techniques

After you master basic flying skills, you are ready for some new challenges:

- **Loop.** Fly Skysprite to an altitude of about 150 feet. Hold a left turn until Skysprite is diving and building up speed. Switch to a right turn and hold that until Skysprite starts up into the loop. As Skysprite comes out of the loop, hold a left turn to keep it from going back up again.

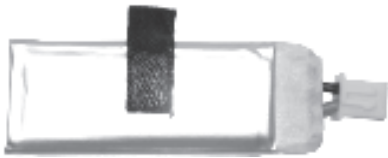
- **Barrel roll.** Start out like a loop (see above). As Skysprite reaches vertical (about 1/4 of the way into the loop), give it a right turn.
- **Spot landing.** Mark a spot on your flying field, and see how close you can land Skysprite to it.

Optional Lithium Polymer Battery and Charger

An optional Lithium Polymer (LiPo) Airplane Battery is available from your dealer. This battery is lighter and more powerful than the standard Airplane Battery. When powered by the LiPo Airplane Battery, Skysprite will fly faster and glide farther. Skysprite will also fly longer—up to 10 minutes on a charge.

■ Parts

- Lithium Polymer Airplane Battery (3.7 volts, 350 milliamp-hour capacity)
- Lithium Polymer Charger



Lithium Polymer Airplane Battery



Lithium Polymer Charger

■ Charging the LiPo Airplane Battery

Important

- Adult supervision is required to charge and use the LiPo Airplane Battery and Charger.
- Charge the LiPo Airplane Battery **ONLY** with the supplied LiPo Charger.
- **DO NOT** charge the LiPo Airplane Battery with the Transmitter.
- **DO NOT** charge the standard NiMH Airplane Battery with the LiPo Charger.
- **ALWAYS** remove and disconnect the LiPo Airplane Battery after flying.

- a. Plug the LiPo Airplane Battery into the LiPo Charger.



- b. Plug the LiPo Charger into a 110VAC power outlet.
- c. Charge the LiPo Airplane Battery for 2 hours.

Note: Charging longer than 2 hours will not harm the Battery. The Charger has a built-in protection device that prevents overcharging.

- d. When charging is complete, unplug the Charger from the power outlet, then unplug the LiPo Airplane Battery from the Charger.

■ Using the LiPo Airplane Battery

- a. Install the LiPo Airplane Battery in Skysprite (see steps 5 through 9 in “Charge and install the Airplane Battery,” earlier in this manual).
- b. Because the LiPo Airplane Battery is lighter, Skysprite may climb too fast. Bend the elevator trim tabs down about 1/32" (about the thickness of a credit card). If Skysprite still climbs too quickly, bend the tabs down a little more.
- c. As with the standard Airplane Battery, you must disconnect and remove the LiPo Airplane Battery after flying. If you forget and leave it plugged in for a long time, the battery may not recharge.

Where to find more information about radio controlled airplanes...

- **Academy of Model Aeronautics (AMA)**

www.modelaircraft.org

AMA is the official national organization for model aviation in the United States. Membership is open to anyone interested in flying model airplanes.

- **Your local model airplane club**

www.modelaircraft.org/clubsearch.aspx

Local clubs chartered by the AMA can help beginners with airplane selection, construction and flying instruction.

- **Your local hobby shop**

www.modelaircraft.org/HobbyShopSearch.aspx

- **The Internet**

Many resources for beginners are available on the Web.

- **Books and magazines**

And when you need batteries, receivers, servos and other components, always check here first...

- **FMA Direct**

www.fmadirect.com

FMA limited warranty for Skysprite

FMA, Inc. warrants this product to be free of manufacturing defects. Should any defects covered by this warranty occur, the product shall be repaired or replaced with a unit of equal performance by FMA or an authorized FMA service station.

Call (301) 668-4280 for more information about service and warranty repairs.

