COMPLETE RTF AIRPLANE

HOBBICO®

FLYZONE™ by Hobbico™

Sky Zap 2™

Radio-controlled!
READY-TO-FLY

Quiet Electric Flight

Radio-Controlled Model

Requires 8 (AA) Alkaline Batteries (not included)

ASSEMBLE ONLY WITH ADULT SUPERVISION

Please read through this instruction booklet to **THOROUGHLY** familiarize yourself with the assembly and flight characteristics of this airplane before beginning to assemble the kit.

Please inspect all parts carefully before starting assembly! If any parts are missing, broken or defective, or if you have any questions about the assembly or flying of this airplane, please call us at **(217) 398-8970** and we'll be glad to help.

WARRANTY

Hobbico® 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 Hobbico's liability exceed the original cost of the purchased kit.** Further, Hobbico reserves the right to change or modify this warranty without notice.

In that Hobbico has no control over the 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 buyers are not prepared to accept the liability associated with the use of this product, they are 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.

Printed in China HCAZ3155 for HCAA1980 V1

PROTECT YOUR MODEL, YOURSELF AND OTHERS. FOLLOW THIS IMPORTANT SAFETY PRECAUTION

Your Sky Zap 2™ plane is not a toy, but rather a sophisticated, working model that functions very much like an actual airplane. Because of its realistic performance, the model, if not assembled and operated correctly, could possibly cause injury to yourself and spectators or damage property.

We highly recommend that you get experienced, knowledgeable help with assembly and during your first flights, to make your R/C modeling experience totally enjoyable. You'll learn faster and avoid risking your model before you're truly ready to solo. Your local hobby shop has information about flying clubs in your area whose membership includes qualified instructors. You can also contact the national **Academy of Model Aeronautics** (AMA), which has more than 2,500 chartered clubs across the country. Instructor training programs and insured newcomer training are available through any one of these clubs.

Contact the AMA at the address or toll-free phone number below.

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

PRECAUTIONS

1. Assemble the plane **according to the instructions. Do not** alter or modify the model. If you make any modifications, you will void your warranty.

2. **Test** the operation of the model **before each flight** to insure that all equipment is operating properly, and that the model remains structurally sound.

3. Fly only on calm days (with wind speeds less than 5 mph) and in large open areas free of trees, people, buildings or any other obstacles.

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

The R/C model hobby becomes more and more enjoyable as your experience grows. Your chances for success and graduation to higher levels are very good if you take your time and follow the assembly and flying instructions carefully and completely. We hope you enjoy flying your Sky Zap 2 plane.

GLOSSARY

Electronic Control Unit (ESC): This unit controls the motors.

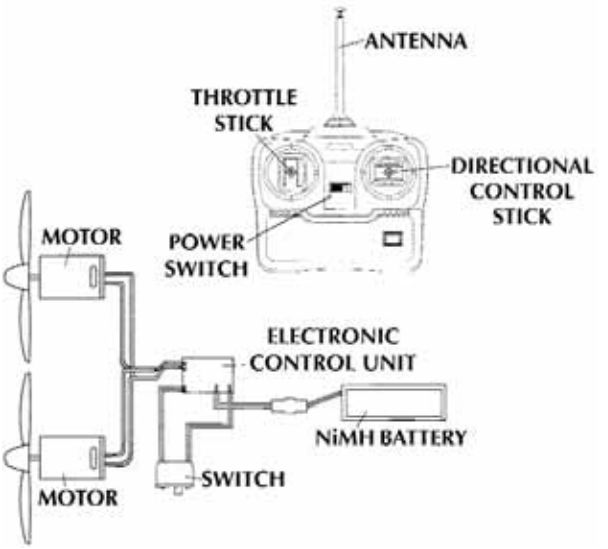
Fin: The fin is the vertical surface on the tail that prevents the tail from moving side-to-side.

Horizontal Stabilizer (Stab): The horizontal stabilizer is the horizontal surface on the tail that prevents the tail from moving up or down.

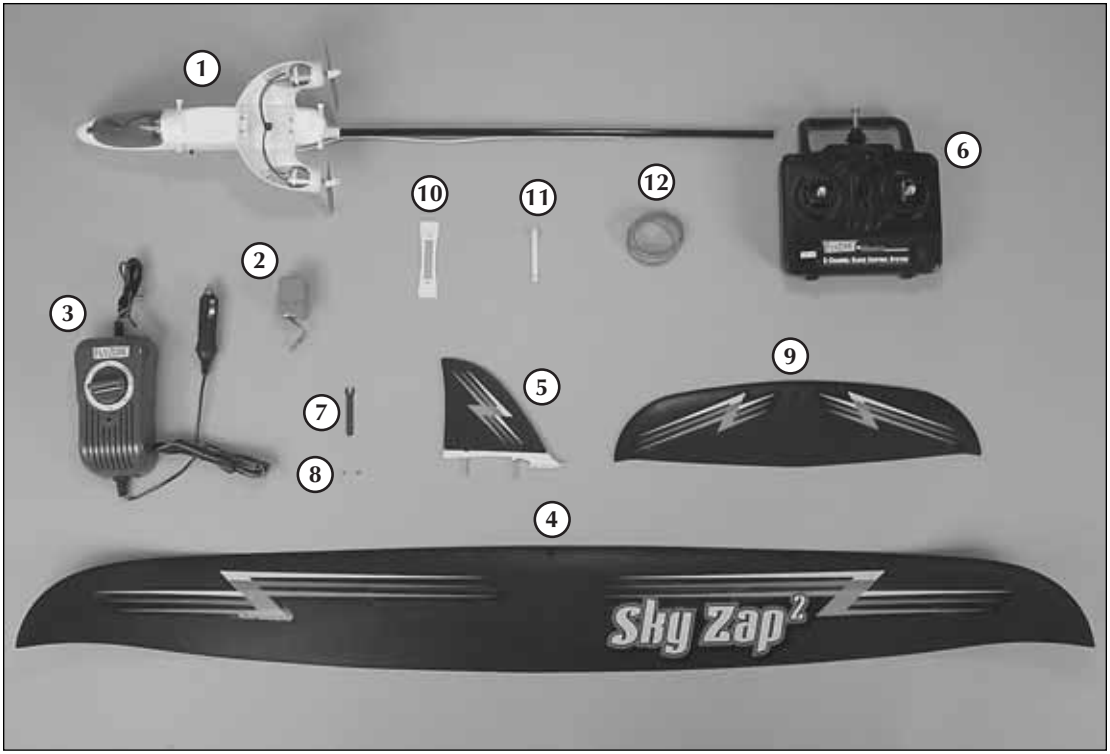
Motors: The motors rotate the props to provide thrust.

Nickel-Metal Hydride (NiMH) Battery: Rechargeable batteries which are used to power the airplane. NIMH batteries are lighter and smaller than most other types of rechargable batteries.

Transmitter (TX): This is the hand-held unit that sends the signal to the control unit. As you move the sticks on the transmitter, the motors in the airplane will react accordingly.



AIRFRAME PARTS AND HARDWARE



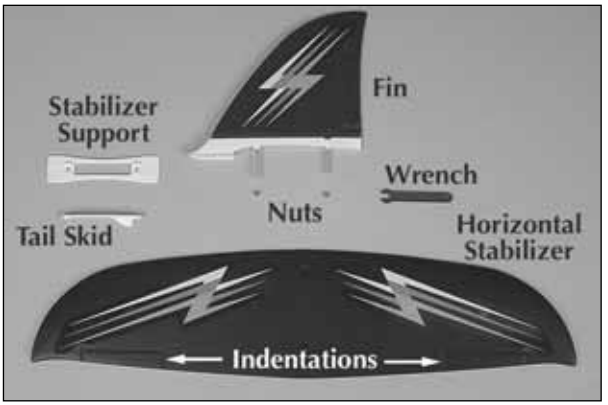
UNPACKING THE BOX

Check the parts against the list below.
If any parts are damaged or missing, give us a call at: (217) 398-8970.

	Part Name	Qty.
❑ 1.	Fuselage/Tail Boom	1
❑ 2.	600 mAh NiMH Battery	1
❑ 3.	Charger	1
❑ 4.	Wing	1
❑ 5.	Fin	1
❑ 6.	Transmitter	1
❑ 7.	Wrench for Tightening Nuts	1
❑ 8.	Nuts	2
❑ 9.	Horizontal Stabilizer	1
❑ 10.	Stabilizer Support	1
❑ 11.	Tail Skid	1
❑ 12.	Rubber Bands	4
❑	Spare Propellers (Not Shown in Photo)	2
❑	Instructional DVD (Not Shown in Photo)	1

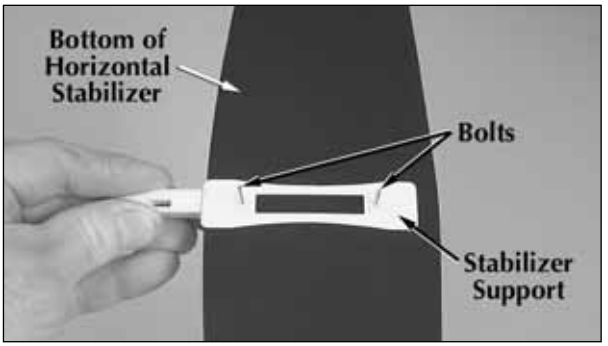
INSTALL THE STABILIZER & FIN

❑ 1. Apply the decals to the top of the airplane surfaces as seen on the box. (The top of the stabilizer has indentations for the elevator trim.)

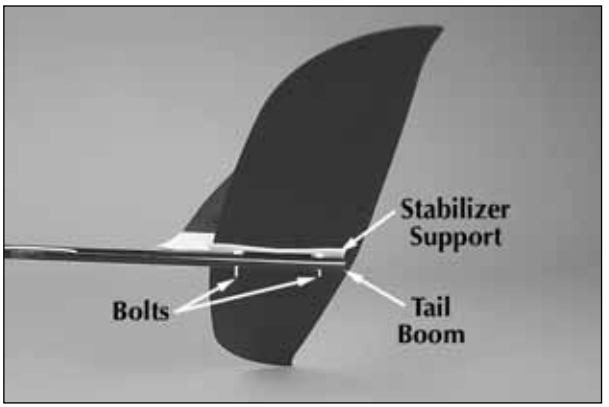


❑ 2. The above photo shows the components you will need to assemble the tail. You will need the horizontal stabilizer, fin, stabilizer support, tail skid, two nuts and included wrench for tightening the nuts.

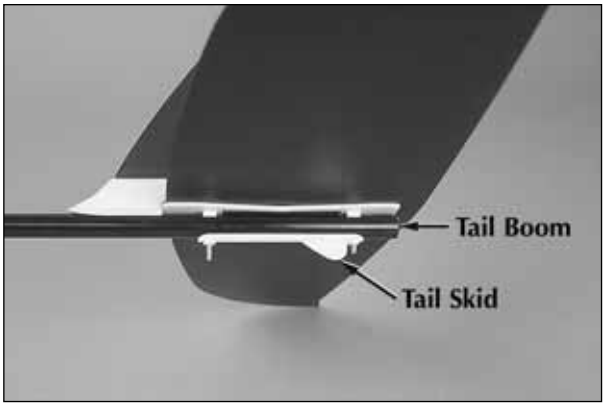
❑ 3. Note that the fin is installed on top of the horizontal stabilizer. Make sure that the swept back edge is mounted to the front of the model. Place the two fin mounting bolts (already installed on the bottom of the fin) through the top of the horizontal stabilizer, forming a single unit. The top of the horizontal stabilizer is the side with the decals applied.



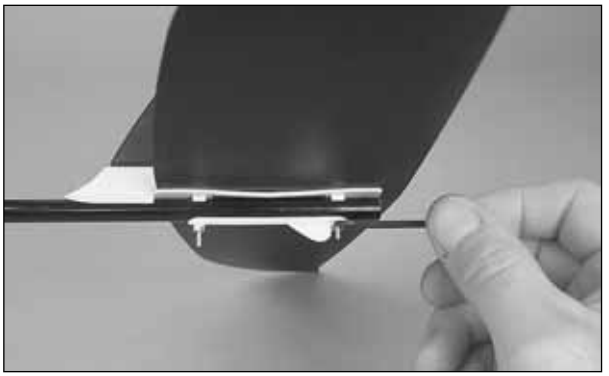
❑ 4. Install the stabilizer support over the two fin mounting bolts. The flat side of the stabilizer support goes against the stabilizer.



❑ 5. Insert the mounting bolts of the assembly through the holes from the top of the tail boom as shown in the photos.

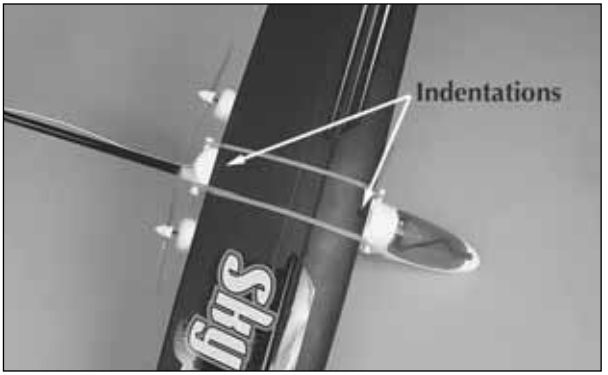


❑ 6. Install the tail skid over the mounting bolts. Make sure the tail skid is pointing down.

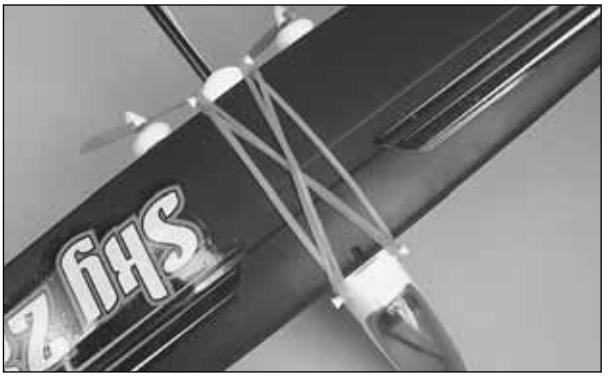


❑ 7. Place the two nuts on the mounting bolts that extend through the bottom of the tail boom as shown in the photo. Using the included wrench, tighten the nuts firmly but do not overtighten. You have now completed the assembly of the fin and stabilizer.

INSTALL THE WING



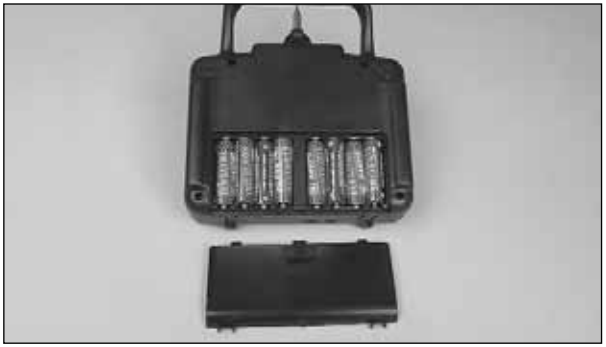
❑ 1. Position the wing, centered on the fuselage. The two indentations on the top of the wing should be aligned with the center of the fuselage. Secure the wing with two rubberbands.

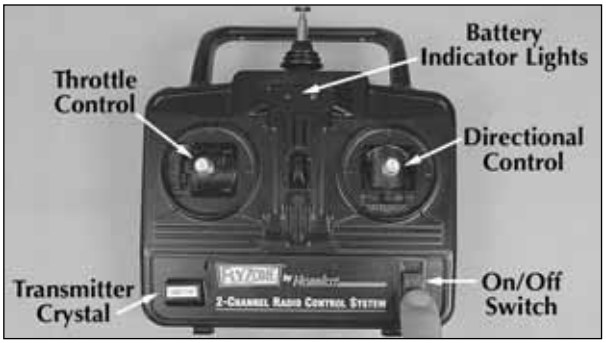


❑ 2. Attach two additional rubberbands, crossing them over the top of the wing.

PREPARE THE TRANSMITTER

❑ 1. Remove the antenna from box and insert it in the top of the transmitter. Screw the antenna into the antenna base tightly. Do not overtighten.





❑ 2. The transmitter that controls your airplane requires power, in the form of eight "AA" batteries. To install the batteries, just turn over the transmitter, remove the battery hatch and install the batteries following the diagram inside the battery compartment. Reinstall the battery hatch, switch on the transmitter and check the LEDs on the front of the transmitter. If the green light is on, it is safe to fly. If only the red light is on or flashing, you need to install fresh batteries.

❑ 3. On the bottom of the transmitter are two switches. Both switches should be positioned to the left.

Caution:

- Do not use rechargeable (NiCd) batteries.
- Do not mix old and new batteries.
- Do not mix alkaline, standard (carbon-zinc) or rechargeable (NiCd) batteries

CHARGE THE PLANE'S NIMH BATTERY

❑ 1. Plug the battery charger into a 12-volt power outlet in a vehicle, placing the charger and battery outside the car, away from flammables.

❑ 2. Plug the battery pack into the charger connector. Be careful - the battery pack will plug in only one way.

❑ 3. Rotate the timer knob on the charger to **30 minutes.** Make sure the red light comes on.

❑ 4. **IMPORTANT! NEVER LEAVE A CHARGING BATTERY UNATTENDED.**

❑ 5. During charging, feel the battery every 5 minutes to see if it is starting to warm up. A warmed up (but not hot) battery pack is a sign that it is fully charged. Once the pack is warm, disconnect it from the charger. Depending on how much charge was already in the pack, you may have to disconnect the battery early.

❑ 6. Always disconnect the charger from the 12-volt power outlet in your vehicle when finished charging.

❑ 7. After each flight, completely discharge the battery and remove the battery pack from the airplane and allow it to cool completely before recharging.

CHARGING THE BATTERY WARNINGS!

❑ 1. Be careful to avoid overcharging the battery! When you plug the battery into the charger there is no way to know how much charge is left in the battery (unless you have just completed a flight in which the battery was run all the way down). If you put too much charge into the battery, it will get very hot. This may result in melting the plastic battery cover, causing the cells to vent and damaging the charger! Always remove the battery from your Sky Zap 2 before charging.

❑ 2. Remember to check the temperature of the battery every 5 minutes during the charge. Unplug the battery as soon as it warms up (before it gets hot), even if the timer has not yet run down.

❑ 3. Charging the Sky Zap 2 battery while your car's engine is running can be dangerous, because it increases the chances of overcharging. For this reason, you should **never** charge your Sky Zap 2 battery while your car's engine is running.

❑ 4. If your battery is not completely discharged before charging, the charging time may take less than 30 minutes. Again, only let the battery get warm to the touch – not hot.

❑ 5. If you use a different battery charger, charge this battery pack only at a maximum charge rate of 1/2 amp. A higher charge rate will charge the battery pack too quickly and heat up the wires.

❏ 6. A properly cared for battery pack will last a long time. If the battery pack is continually overcharged or charged at too high of a rate, the life of the battery pack will be shortened.

WARNING: Misuse or malfunction may overheat battery and charger resulting in personal injury or damage to surroundings.

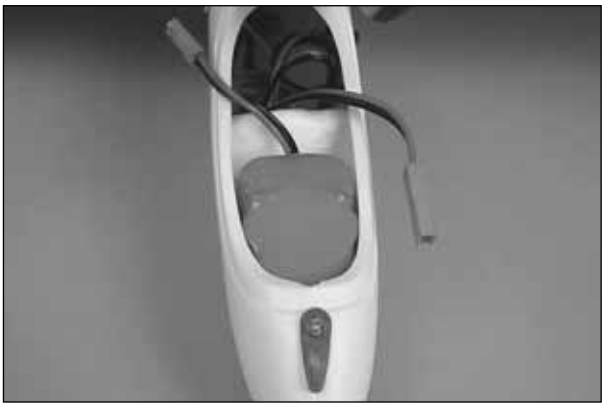
BATTERY RECYCLING

ATTENTION: The product you have purchased is powered by a rechargeable battery. At the end of the battery's useful life, under various state and local laws, it may be illegal to dispose of this battery into the municipal waste system. Check with your local solid waste officials for details in your area for recycling options or proper disposal.

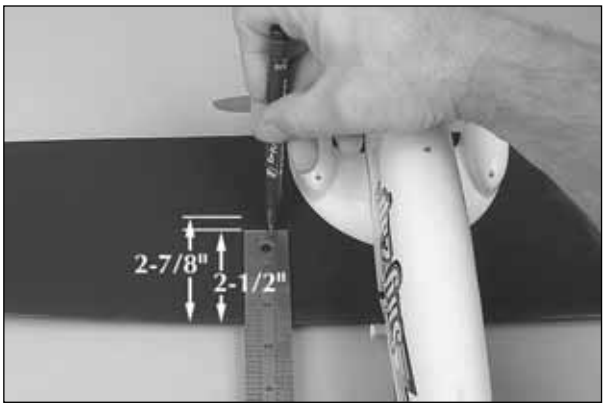
WARNING: This product contains a chemical known to the State of California to cause cancer.

CHECK THE BALANCE OF YOUR MODEL

Note: This section is VERY important and must NOT be omitted! A model that is not properly balanced will be unstable and possibly unflyable.



❏ 1. After the battery pack is charged, open the battery hatch canopy. Insert the battery pack inside the fuselage. Do not plug the battery pack into the connector inside the fuselage. Close the canopy.



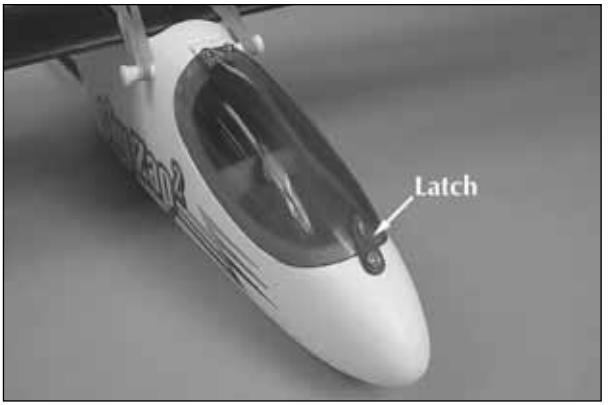
❏ 2. Place marks on the bottom of the wing 2-1/2" [63mm] and 2-7/8" [73mm] back from the front of the wing, next to the left and right sides of the fuselage. Turn the airplane right side up. Try balancing the airplane on your finger tips, between these marks. This is where the model should balance. We also found that most of our test models balanced at this point without having to add weight to the nose or tail. If it does not balance at these marks, weight will need to be added to the nose or tail. At most hobby shops, you can purchase stick-on lead weight made specifically for balancing airplanes.

HOW DOES THE SKY ZAP 2 WORK?

Your transmitter controls the altitude of the airplane by operating both motors and the direction of the plane by reducing the speed of either the left or right motor.

❏ 1. First switch on the transmitter and make sure the green light is on.

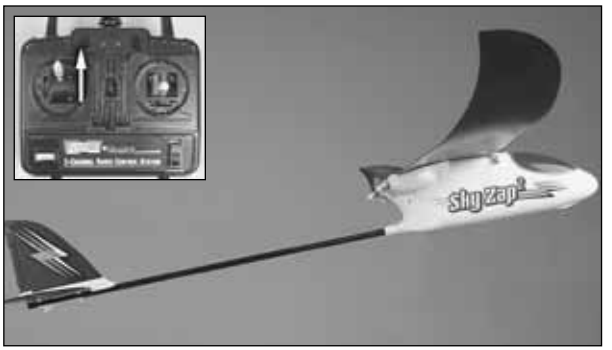
❑ 2. Open the battery canopy and plug the battery pack into the plug in the fuselage.



❑ 3. Close and latch the canopy.

❑ 4. Move the power switch backward to the "ON" position.

CAUTION: Stay clear of the propellers once the battery pack is plugged in and the switch is turned on.



❑ 5. Have an assistant hold the Sky Zap 2 while you move the left stick on the transmitter forward, or away from you. Both motors will run. When flying, with the motors running, the plane should climb at a 20 to 30 degree angle. Release the left stick and both motors will stop. In flight, the Sky Zap 2 will start to glide and slowly descend to the ground.

❑ 6. Moving the right stick to the right, the left motor will run and the right motor will go to 50% power. This will cause the plane to turn to the right in flight.

❑ 7. Moving the right stick to the left, the right motor will run and the left motor will go to 50% power. This will cause the plane to turn to the left in flight.

CHOOSE A GOOD FLYING SITE

The Sky Zap 2 should be flown only when the wind speed is 5 mph or less. If the wind is calm or very light, the Sky Zap 2 will be docile and easy to control, especially for beginners. Also, find an area clear of trees, power lines and other structures. A flying field for R/C planes is best. Don't fly around groups of people, especially children or within 6 miles of existing R/C flying fields.

PREPARE FOR TAKEOFF

1. Find an open area free of buildings, trees, power lines and people.

2. For your first few flights, fly only when the wind is calm. After you are comfortable with the airplane, you can fly in winds that are no more than 5 miles per hour. If flown in stronger winds, the plane may be blown down wind and not have enough power to get back to you.

3. Make sure the battery pack is fully charged and that the transmitter has fresh "AA" batteries installed.

4. If others are flying in the same area, make sure that they are not using the same channel radio system you are. The front of your transmitter has a tag with a number on it (i.e. 27.195 MHz). This is the channel frequency you are using. If someone is on the same frequency, **DO NOT** switch on your transmitter until they are finished flying.

5. Range check your radio before each flight. Switch on the transmitter and then switch on the airplane. Have a helper hold the airplane. With the antenna collapsed, walk 50 feet away from the airplane. Move both control sticks, checking that the motors run and turn off following the control stick movement. If you still have control over the airplane, it is safe to extend the antenna and fly the airplane. If you do not have control of the plane, make sure the batteries in the transmitter are fresh and the battery in the plane is charged. Also, make sure the wire antenna is extending out the back of the plane.

ELEVATOR TRIMMING

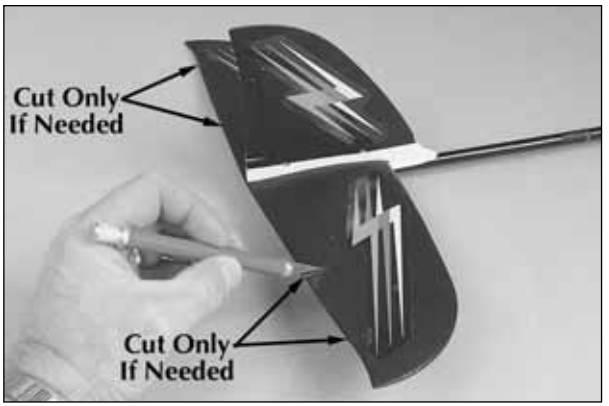
❑ 1. **Caution:** Always launch the airplane away from people and obstacles. It is important to adjust or "trim" your airplane before each flight. Select an open area to test your plane.

❑ 2. With the motor off, grasp the airplane fuselage and gently toss the airplane into the wind. It should glide straight ahead and settle gently to the ground. See the diagram below. If your plane dives (A) or stalls (B) follow the steps included below until you have a correct path (C).

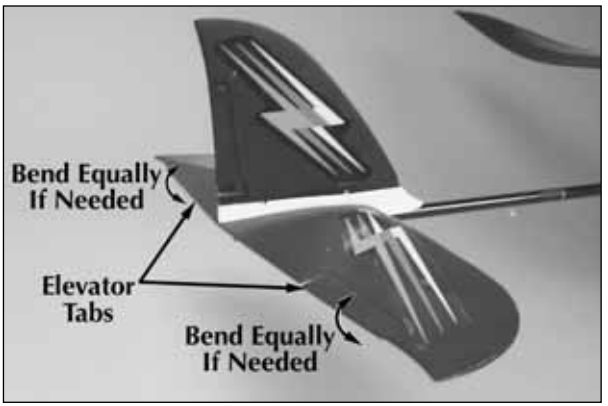
A = Dive.
B = Stall and crash.
C = Correct flight path.

Note: If your airplane flies flat and level the first time, DO NOT make any further adjustments!

❑ 3. If your airplane does not glide on path (C), using a hobby knife, carefully cut along the sides of the elevator. Repeat step 2 until proper flight is achieved.

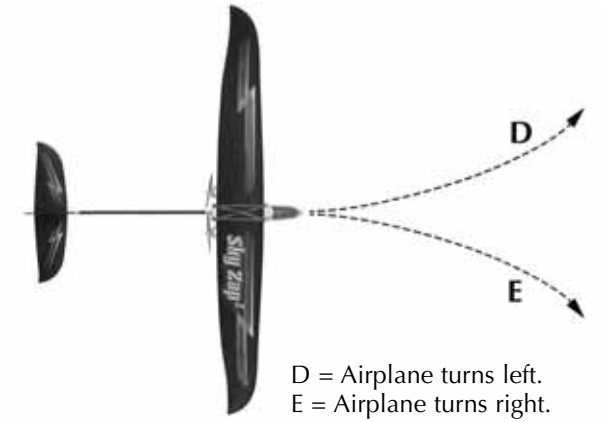


If you have an airplane that follows either path (A) or (B), cut the sides of BOTH elevator tabs as shown in the photo above.

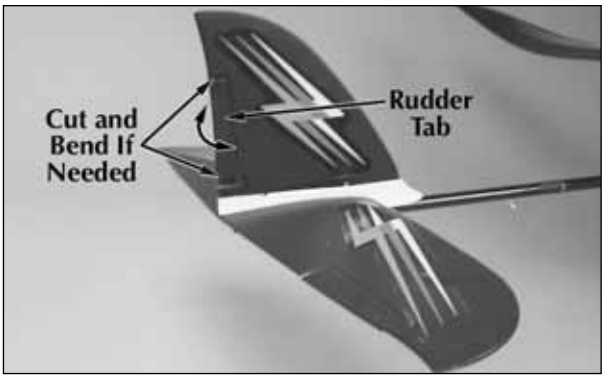


If your airplane follows path (A), bend both elevator tabs up slightly. If your airplane follows path (B), bend both elevators down slightly.

RUDDER TRIMMING



D = Airplane turns left.
E = Airplane turns right.



If your airplane follows either path E or D, cut the top and bottom of the rudder tab as shown. If your airplane turns right (E), bend the rudder to the left. If your airplane turns to the left (D), bend the rudder to the right.

FLYING THE SKY ZAP 2

If you have never flown an R/C airplane before, we recommend that you get help from an experienced R/C pilot. Most R/C clubs have training programs that will help you learn to fly quickly. If you cannot find an experienced pilot to help you learn, the following will help you get your airplane into the air.

1. Have an assistant help with the launch. Move the throttle stick forward so that the motors are running. Have your assistant launch the plane into the wind. It is not necessary to throw the plane really hard. Just a nice, smooth and level toss into the wind is more than enough.

2. Allow the airplane to climb at a 20 to 30 degree angle for a few seconds before turning it. This will allow the plane to gain altitude and air speed.

3. To turn the Sky Zap 2, quickly move the right stick to the left or right until the plane has turned, then release the stick. If you hold the right stick, instead of releasing it, the plane will turn tightly and lose altitude. When the Sky Zap 2 is moving away from you, moving the right stick to the left will make your plane turn to the left. Moving the right stick to the right will make the plane turn to the right.

4. When the plane is coming toward you, moving the right stick left still causes the plane to turn left, but it appears to turn to your right. In short, you have to reverse the way you control the right stick. A good way to familiarize yourself with the controls is when the plane is coming toward you, is to turn your body so that you are facing the same direction the plane is going, looking over your shoulder at the plane. Now when you move the right stick left the plane will go to your left.

5. Don't let the airplane get too far away from you. The farther away it is, the harder it is to see what the plane is doing.

6. When learning to fly, it is best to keep the plane high enough so that if you make a mistake, you have enough altitude to correct the mistake.

IT'S NOW TIME TO LAND

It's a known fact among fellow R/C pilots that your airplane will land. It is up to you as to where and how it lands.

1. For your first couple of flights we recommend that you attempt to land before the motors stop. Your Sky Zap 2 comes with an auto cut-off feature which reserves battery power for safe landings.

2. During your first flight, while at a high altitude, turn the motors off and notice how the Sky Zap 2 reacts. This will give you an idea of how the plane will react during landing.

3. To land the Sky Zap 2, fly down wind, past the landing area a few yards. Gently turn into the wind and turn the motors off. The plane will start to come down. If it appears that the Sky Zap 2 will be short of the landing area, turn the motors back on for a couple of seconds to lengthen your approach.

4. As the Sky Zap 2 slowly descends, use the right stick to control the direction. The Sky Zap 2 will just about land itself. All you need to do is control its direction.

AFTER THE FLIGHT

Switch off the airplane. Then, switch the transmitter off. Unplug the battery from the plane and remove it from the battery compartment. Allow the motor battery to cool before recharging. Check the plane over to make sure nothing has come loose or may be damaged.

REPAIRS

Even the best R/C pilots in the world damage their planes every now and then. In the unfortunate event that you damage your airplane, repairs are fairly simple to make yourself. If there are any cracks in the wing or fuselage, apply 6-minute epoxy or white glue to the broken area and hold together with clear packaging tape. Let the glue cure, leaving the tape in place for added strength.

REPLACEMENT PARTS LIST

To order replacement parts for your Sky Zap 2, use the order numbers in the list below. Replacement parts are available only as listed. Replacement parts are not available from Product Support, but can be purchased from hobby shops or mail order/Internet order firms. If you need assistance locating a dealer to purchase parts, contact:

Product Support
Phone: 217-398-0007
Fax: 217-398-7721
E-mail: productsupport@hobbico.com

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 Product Support. When reporting defective or missing parts, use the part names exactly as they are written in the parts list.

Stock Number	Description
HCAA3505	Main Wing Kit
HCAA3506	Tail Assembly Kit
HCAA3507	Canopy (Hatch)
HCAA3508	Decals
HCAA3509	Fuselage Set
HCAA3510	Motor Pod
HCAG1012	Motors (2)
HCAM7024	Battery NIMH
HCAM7106	Transmitter Antenna
HCAP9918	12V Field Charger
HCAQ3303	Propellers (4)

OTHER ITEMS AVAILABLE FROM HOBBICO

REEF RACER 2

HCAB14**

Hobbico® AquaCraft™ Reef Racer 2™

The compact, 15" long Reef Racer 2 is ideal for small ponds, lakes - and boaters looking for immediate, nonstop off-shore action! Out of the box, it's factory-assembled and ready to run, complete with water-cooled motor, electronic speed control, 7.2V NiMH battery and 12V field battery charger. The prepainted hull features a unique, self-righting design plus on-board compartments that are specially sealed for superior water resistance. Using the supplied AquaCraft 2-channel radio for control - with a transmitter that can easily be adapted for left- or right-hand use - you'll love the quick response and "turn on a dime" handling of the Reef Racer 2 - even at its fast top speeds!

EVADER ST

DTXD20**

DuraTrax® Evader™ ST Ready-to-Run

Check it out and you'll agree: *nothing* can touch the 2WD Evader ST electric ready-to-run stadium truck for convenience, set-up ease, performance extras or toughness. It arrives assembled and painted, with a 20-turn Photon Speed™ motor, Sprint™ electronic speed control, and a DuraTrax 2-channel radio system made by Futaba®. Built-in "extras" include: slipper clutch, ball diff, ball bearings, steel universal drives, FREE video and still more. Requires only a 6-7 cell NiCd and charger.

AERO VOYAGER

HCAA1981

Hobbico® FlyZone™ Aero Voyager™ RTF

With its V-tail mixing and full-function, 3-channel radio, the Aero Voyager is the next step up in a ready-to-fly electric airplane. You'll learn the subtleties of control surface pushrods–good things to know for moving up to larger, more complex models. With its lightweight, blow-molded fuselage, the Aero Voyager is designed for durability. The one-piece wing attaches quickly and includes spars for extra support. The batteries are accessed easily underneath the canopy, and the model comes with virtually everything you need -- even an instructional DVD with tips on plane setup and successful flying.

SEA SCOUT

HCAB0020

Hobbico® Sea Scout™ Micro R/C Sub RTR

The nearly 5" long Sea Scout with working lights takes R/C "undersea" – so easily that even 8-year-olds can be the commander. Two motors turn propellers for steering and forward/reverse thrust. A third motor offers instant diving or surfacing ability (even straight up and down!). The Sea Scout's built-in NiMH battery recharges in just minutes on the provided DC battery charger. Available on 27MHz (Black) or 49MHz (Gray) – so two subs can dive and explore at the same time! Requires one 9V and six "C" alkaline batteries.