COMPLETE READY-TO-FLY AIRPLANE

HOBBICO®

Instruction Manual

RED HAWK™

Quiet Electric Flight

Radio-Controlled Model

Requires 8 "AA" Alkaline Batteries (not included)

FLYZONE™ by HOBBICO®

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 this model.

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®, Inc. 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 model.** 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 this address:

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.

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

Your Red Hawk™ 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 Red Hawk, if not assembled and operated correctly, could possibly cause injury to yourself or spectators and damage to property.

We highly recommend that you get experienced knowledgeable help with assembly and during your first flights. This will make your modeling experience more enjoyable. You'll learn faster and avoid risking your model before you are truly ready to fly solo. Your local hobby shop has information about flying clubs in your area whose membership includes qualified instructors. You can also contact the **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 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 instructions**. **DO NOT** alter or modify the model. If you make any modifications, you 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 5mph) 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 Red Hawk airplane.

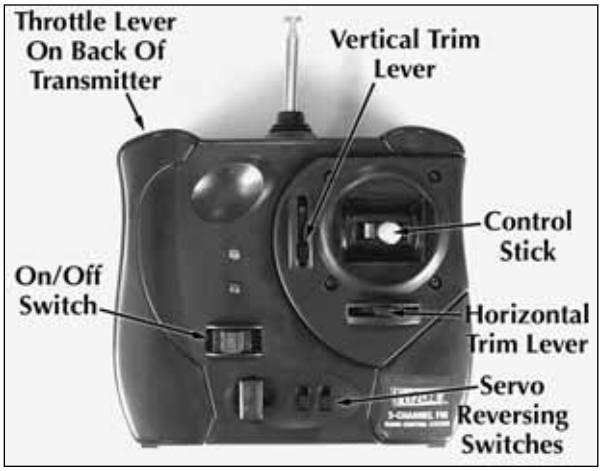
GLOSSARY

Electronic Speed Control / Receiver (ESC / RX): This unit controls the speed of the motor and control surfaces.

Elevon: The moving surfaces on the plane that control altitude and direction. Unlike most conventional aircraft that have independent elevators and rudder to control altitude and direction, the orientation of elevons allows them to control both. This method of linking the elevons together is done automatically in the electronics of the Red Hawk.

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

Transmitter (TX): This is the hand-held unit that sends the signal to the control unit, or RX. Moving the stick controls altitude and direction. The throttle lever on the back of the transmitter controls speed.



KIT INSPECTION

Before starting assembly, 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 ***"Kit Contents"*** list on this page.

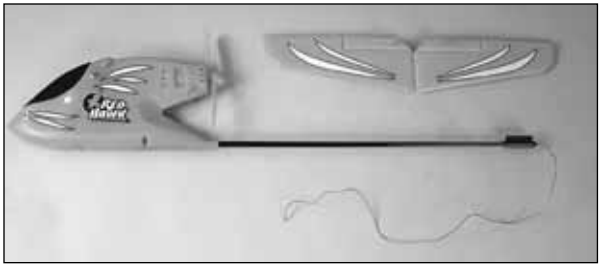
Hobbico Product Support:
3002 N. Apollo Drive, Suite 1
Champaign, IL 61822
Telephone: (217) 398-8970 ext. 3
Fax: (217) 398-7721
E-mail: **airsupport@hobbico.com**

Kit Contents	Qty	Kit Contents	Qty
1. Wing	1	7. V-tail	1
2. Fuselage	1	8. Propeller	1
3. Transmitter Antenna	1	9. Tail Wheel	1
4. Transmitter	1	10. Instructional DVD	1
5.12V Peak Charger	1	11. Landing Gear	1
6. AC Wall Charger	1	12. 7.2V 900mAh NiMH Battery Pack	1

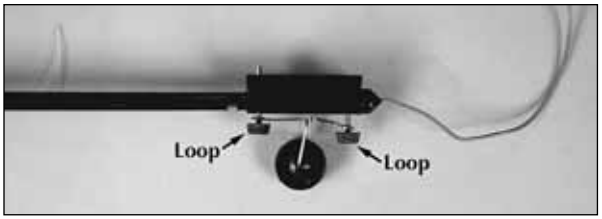
Items not shown

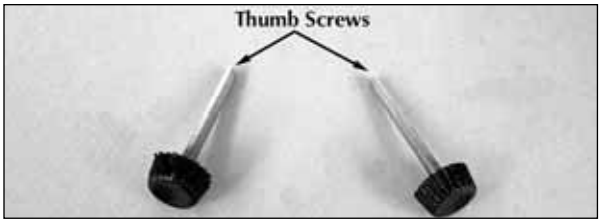
Wing Mounting Bands.....4 Control Bands.....2 Instruction Manual 1

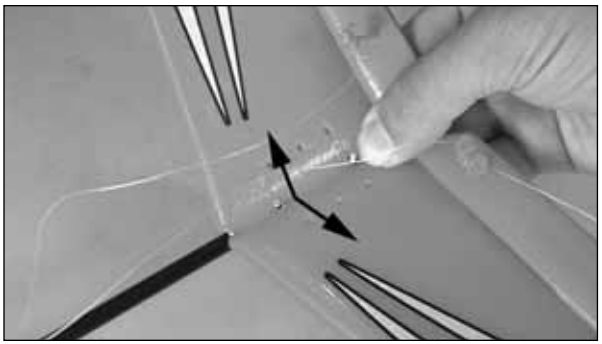
ASSEMBLE THE TAIL



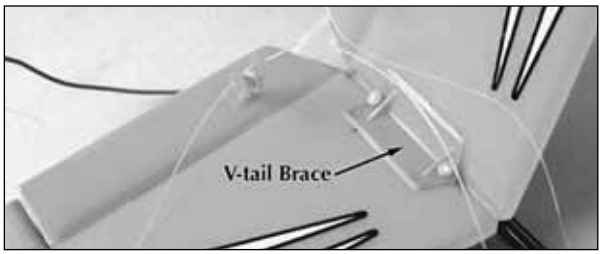
❑ 1. Remove the **fuselage** from the packaging. Be careful when removing the fuselage from the packaging as the **control wire** that is preinstalled in the fuselage is connected to the **V-tail**. Lay the parts out on a table ensuring the control wires are not intertwined or twisted together. Untie the red antenna wire and let it hang freely. **Do not cut off excess antenna wire!**



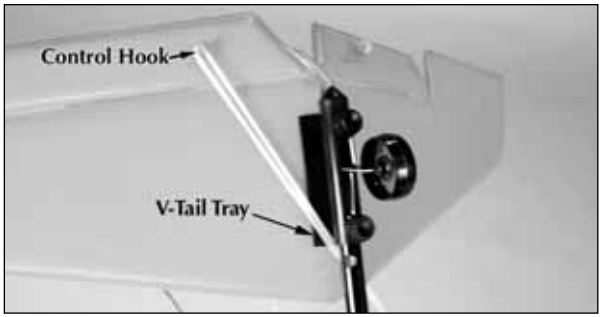


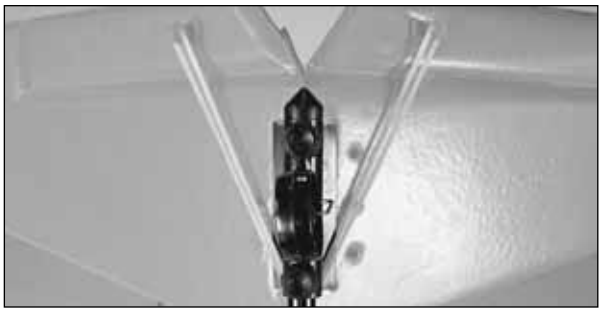


❑ 2. Align the two loops of the **tail wheel wire** with the holes at the back of the fuselage on the bottom. Push the two thumb screws through the two loops in the tail wheel wire and into the **V-tail tray** at the back of the fuselage tube. Fold the V-tail into a shallow "V" shape and press it into the angled tray allowing the thumb screws to properly position the tail on the tray.

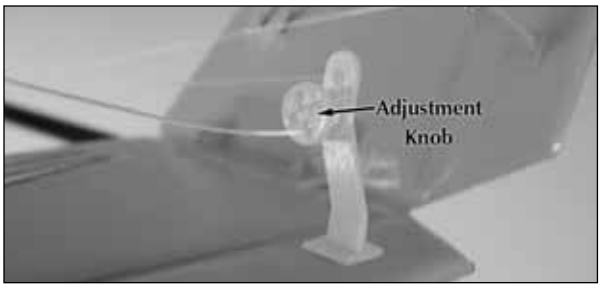


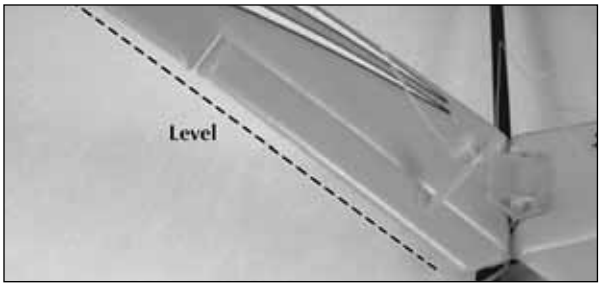
❑ 3. Locate the red plastic **V-tail brace** and align the pegs with the six holes in the V-tail. Secure the brace by turning the thumb screws drawing the brace tight against the tail. If you have difficulty tightening the brace, confirm that the thumb screws are aligned with the two screw holes in the brace. Confirm that the control wires are not pinched underneath the brace. Correct if necessary.



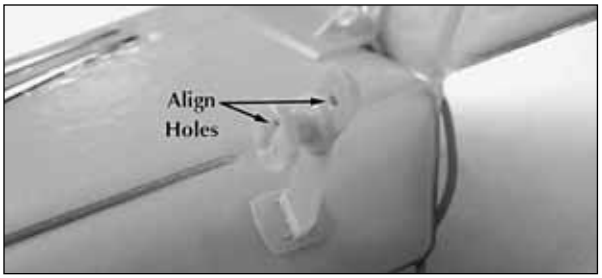


❑ 4. Locate a small rubber band included with the Red Hawk. Hook the rubber band to the left **elevon control hook**. Loop the rubber band around the front of the V-tail tray and connect the rubber band to the right control hook.

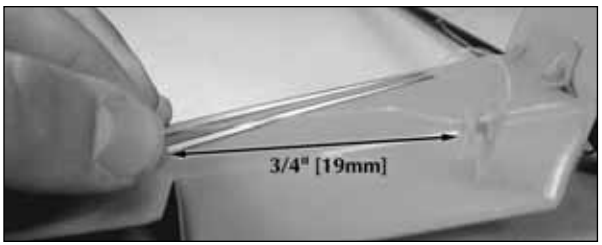




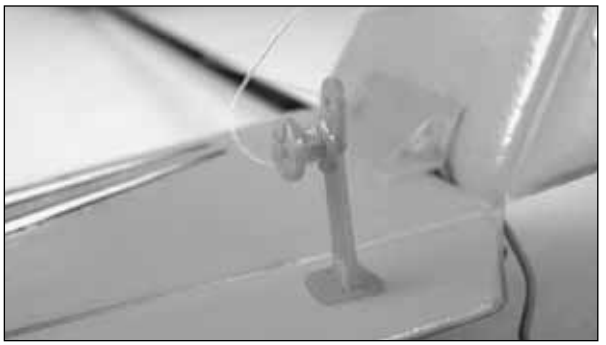
❏ 5. Using the **adjustment knobs** on the **control horns**, adjust each control line until the elevon surfaces are level with V-tail fins.



❏ 6. If at any time the control wire needs to be rethreaded onto the adjustment knobs, rotate the knob until the small hole in it aligns with the outer hole in the control horn.

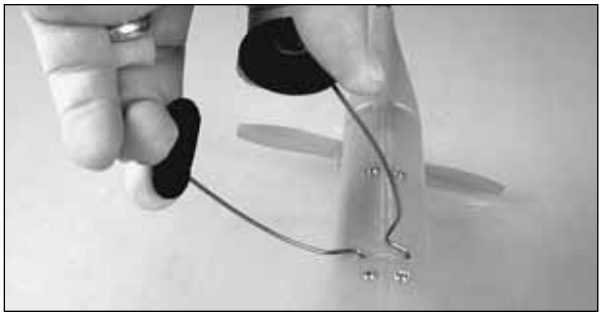


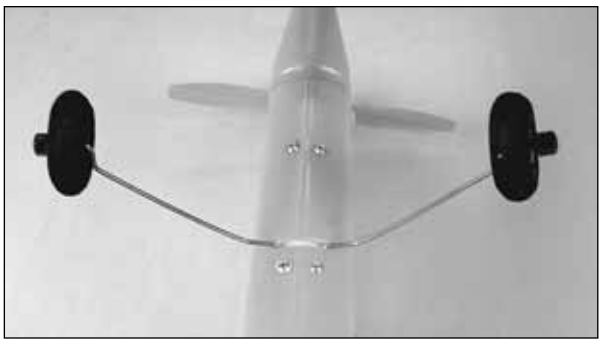
❏ 7. Feed the wire through the hole in the control horn and then through the hole in the adjustment knob. Pull approximately 3/4" [19mm] of excess wire through the knob.



❏ 8. While holding the excess wire taught, rotate the knob so that the wire is reeled in. A few rotations will then keep the wire tight on the knob. Adjust the knob until the elevon is level.

INSTALL THE MAIN LANDING GEAR





❏ 1. Locate the **main landing gear**. Squeeze the wheels together as shown in the picture and push the center of the landing gear wire into the slot as far as it will go into the underside of the fuselage body. Let go of the wheels and they will spring back into position securing the gear to the plane.

GET THE MODEL READY TO FLY

CHARGING THE BATTERY PACK

The Red Hawk can be charged using the **12V peak charger** or the **AC wall charger**. If using the 12V peak charger, plug the battery charger into a 12V power outlet in a vehicle. When using the 12V charger, place it and the battery outside the car, away from flammables. If using the AC wall charger, connect it to a 120V outlet in your home.

To begin charging the battery pack, plug the battery pack into the 12V peak charger connector or AC wall charger connector. It will only connect one way, do not force it. The 12V peak charger will automatically detect when the battery pack is fully charged and will terminate charge when this occurs. The red light on the 12V charger will turn green when charging is complete. If using the 12V peak charger, **Do not have the engine of your vehicle running. Overcharging the battery may result!** Typical charge time for a depleted pack is approximately one hour. The actual time the charger takes to fully charge the Red Hawk battery pack may vary.

If using the AC wall charger, allow the battery pack to charge at least 12 hours. Even though the AC wall charger has a slow charger, it still should be monitored and safety precautions taken.

During charging the red LED will be illuminated. When charging is complete the LED will go out.

IMPORTANT! NEVER LEAVE A CHARGING BATTERY UNATTENDED

Always disconnect the charger from the 12V power outlet in your vehicle or unplug it from the wall outlet when finished charging.

After each flight, completely discharge the battery and remove the battery pack from the airplane and allow it to cool completely before recharging. To fully discharge your airplane battery, run the motor at high speed until the motor starts to pulse on and off.

BATTERY CHARGING PRECAUTIONS

❏ 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 or have fully discharged the battery). 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 Red Hawk 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 red light is still on during charging.

❏ 3. Charging the Red Hawk 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 Red Hawk 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 60 minutes when using the 12V peak charger. 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 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 the battery and charger, resulting in personal injury or damage to surroundings.

BATTERY RECYCLING

NiMH

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.

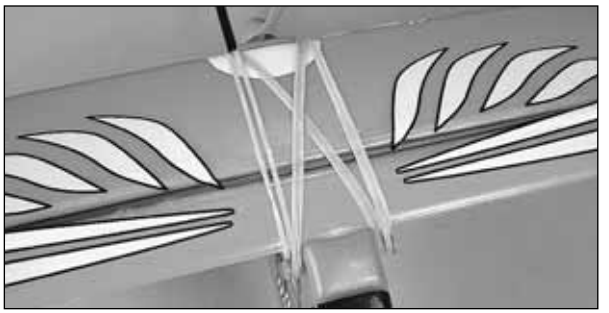
WARNING: This product contains a chemical known to the State of California to cause cancer.

INSTALL THE BATTERY

❑ 1. Lift the canopy by tilting the front of it upwards. It is hinged at the top and is held tight against the fuselage with a rubber band.

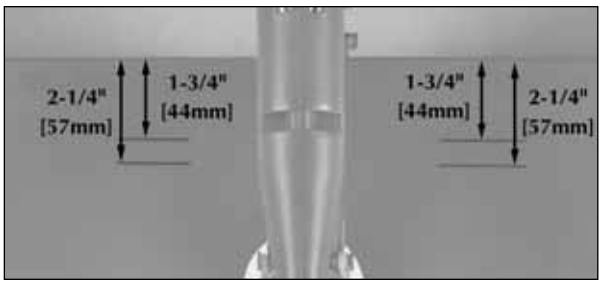
❑ 2. Slide the battery in between the two foam pieces inside the fuselage with the connector facing the back of the plane. Push the battery until it is seated against the bottom of the fuselage. Do not connect the battery until you are ready to fly.

ATTACH THE WING



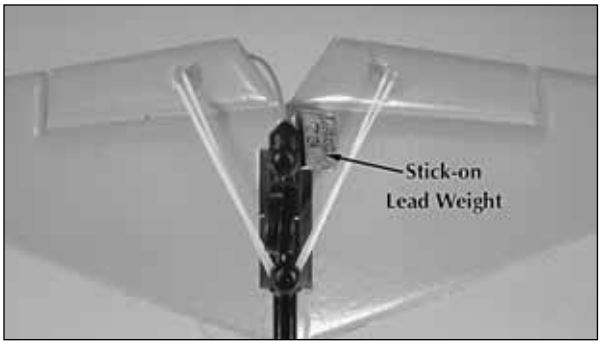
❑ 1. Center the **wing** onto the fuselage. Use the alignment bump at the front of the wing by positioning the wing so the bump is even with the mold line in the fuselage body. Secure the wing to the fuselage using four of the included **large** rubber bands. Hook the rubber bands onto the front and rear **rubber band pegs**. Attach two rubber bands straight and two diagonally as shown in the picture.

BALANCE THE MODEL

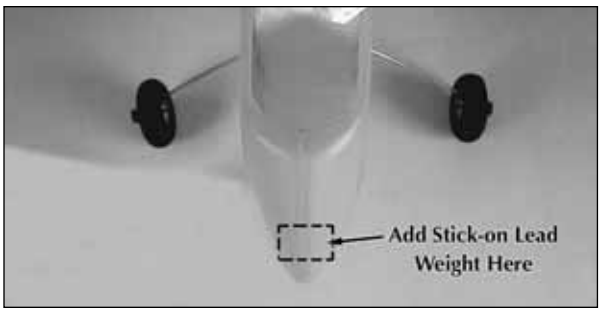


❑ 1. Use a fine-point felt-tip pen to mark the balance range on both sides of the bottom of the wing according to the measurements shown in the photo. Note that the measurements are from the front, or leading edge of the wing.

❏ 2. With the battery in place, lift the model with your fingertips between the lines under the wing. Position your fingertips where necessary to get the model to sit level, or "balance." If your fingertips are between the lines, the Red Hawk is ready to fly.



❏ 3. If the model balances with your fingertips **ahead** of the lines, weight will have to be added to the **tail** to get it to balance. Tail weight may be stuck to the bottom of the V-tail at the center. Be sure that any added weight does not interfere with the operation of the elevons.



❏ 4. If the model balances with your fingertips **behind** the lines, weight will have to be added to the **nose** to get the model to balance. Nose-weight may be stuck to the upper inside of the fuselage, just in front of the foam battery holder. Stick-on lead weight may be purchased from your local hobby shop.

Stick on as much weight as required to get the model to balance when lifted by your fingers between the lines. If you added any weight, recheck the balance.

PREPARE THE TRANSMITTER

❏ 1. Locate the antenna and screw it into the top of the transmitter.

❏ 2. The transmitter that controls your airplane requires power, in the form of eight "AA" batteries. To install the batteries, remove the battery hatch on the back of the transmitter.

❏ 3. Install eight new "AA" batteries, following the diagram in the battery compartment.

❏ 4. Reinsert the battery holder in the transmitter case. Reinstall the battery hatch on the back of the transmitter case.

❑ 5. Switch on the transmitter and check the LED on the front of the transmitter. If both LEDs are illuminated, it is safe to fly. If the red LED is flashing, you need to install fresh batteries.

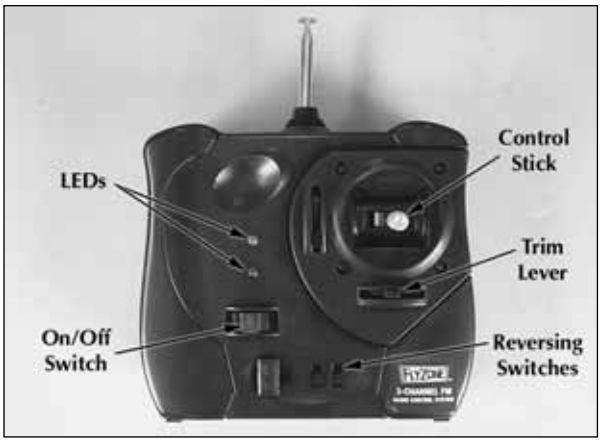
Caution:
- **Do not use rechargeable (NiCd) batteries.**
- **Do not mix old and new batteries.**
- **Do not mix alkaline, standard (carbon-zinc) or rechargeable (NiCd) batteries.**

CHECK THE CONTROL DIRECTIONS

❑ 1. Be sure your transmitter has fresh "AA" batteries installed (not included). Turn on the transmitter and center the trims. If necessary, adjust the control surfaces with the adjustment knobs to center them or use the trim levers on the radio.

❑ 2. Lift the canopy and connect the battery to the receiver/ESC.

❑ 3. Check the operation of all control surfaces.



When the control stick is moved **down**, the elevons will move **up** together. When the control stick is moved **up**, the elevons will move **down** together. When the control stick is moved **right**, the left elevon will move **up** and the right elevon will move **down**. When the control stick is moved **left**, the left elevon will move **down** and the right elevon will move **up**.

The reversing switches at the bottom of the transmitter "reverse" the direction that the control stick moves the elevon. If the control stick operates differently than desired, flip the reversing switch and check the control direction again.

The Red Hawk has a red arming button on the left side of the fuselage. The throttle will not operate until this button is pushed. **Do not push the arming button until you are ready to fly, or when the airplane is in a safe location and secured to check the operation of the throttle lever!** After the arming button has been pushed, the Red Hawk will be "armed" until the battery pack is unplugged from the airplane.

CHOOSE A GOOD FLYING SITE

The Red Hawk should be flown only when the wind speed is 5 mph or less. If the wind is calm or very light, the Red Hawk will be docile and easy to control. 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 downwind and not have enough power to get back.

❑ 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. 1 through 6 and 26.995 through 27.255). This is the channel number and frequency you are using. If someone is on the same channel or frequency, **DO NOT** switch on your transmitter until they are finished flying.

FLYING THE RED HAWK

Your transmitter controls the altitude, direction and speed of the airplane. The control stick controls both the altitude and direction of the airplane. The throttle lever on the back of the transmitter controls the speed

When the battery power gets too low, the "Auto Cut-Off" feature of the speed control provides an extra degree of insurance. It reacts to low power by pulsing the motor on and off, in effect saving power for the receiver. That way your airplane goes into a glide and you stay in control as you land.

Extend the antenna on the transmitter and turn the power switch to the "ON" position. Lift the canopy and connect the battery to the receiver/ESC.

Move the throttle lever all the way to the left. Arm the motor by pressing the arming button on the left side of the airplane. Now when the throttle lever is moved to the right, the propeller will start to turn. The farther the lever is moved, the faster the propeller will turn.

Caution: Keep hands away from the propeller!

Perform a range check on your radio before each flight. Switch on the transmitter and then push the arming button on the airplane. Have a helper hold the airplane. With the transmitter antenna collapsed, walk 100 feet away from the airplane, holding the transmitter with the antenna pointing up. Move the control stick, checking that the control surface responds. Also, turn the motor on and check the range. If you still have control of the airplane, it is safe to extend the transmitter 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 airplane.

With the throttle lever moved fully to the right, hand launch the Red Hawk into the wind, at a slight upward angle. **Note:** For the first couple of flights, we recommend having a helper hand launch the airplane. After you become familiar with the flight characteristics of the airplane, it can be flown off a hard surface instead of hand launched.

Move the control stick down so that the plane climbs at a 20° to 30° angle. Allow the airplane to climb a few seconds before turning it.

When your airplane is moving away from you, moving the control stick to the left will make your plane turn to the left. Moving the stick to the right will make the airplane turn to the right. By adding a little up elevon (moving the stick down) during the turn, the airplane will turn much tighter. To stop the turn, move the stick the opposite direction until the airplane is flying straight.

When the airplane is coming toward you, moving the control stick left still causes left elevon, but your airplane goes to your right. In short, you have to reverse the way you control the elevons. Here's a good way to familiarize yourself with the controls: When the airplane is coming toward you, turn your body so that you are facing the same direction the airplane is going, looking over your shoulder at the airplane. Now when you move the control stick left, the plane will go to your left.

Now that you have gained some altitude, it is time to trim the plane for straight, level flight. If the airplane wants to climb when the control stick is released, move the vertical trim lever up away from you. If the airplane wants to dive, move the vertical trim lever down away from you. It should require very little trim. Your goal is to have the airplane fly level with the control stick centered.

Now, with the airplane flying level, check to see if the airplane is flying straight. If it wants to turn when the control stick is centered, move the horizontal trim lever opposite the direction the airplane is turning. The airplane should be trimmed so that if you take your hands off of the control stick, the airplane will fly straight and level on its own. Having the airplane trimmed properly makes flying much easier and more enjoyable.

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

❑ 2. When learning to fly, it is best to keep the airplane 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 motor stops. Your Red Hawk 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 motor off and notice how the Red Hawk reacts. This will give you an idea of how the airplane will react during a landing.

❏ 3. To land the Red Hawk, fly downwind, past the landing area. Gently turn into the wind and reduce the throttle so that the airplane starts to come down. Adjust the throttle as needed to reach the landing area, but not fly past it.

❏ 4. Just before landing, at about 1 foot above the ground, apply a little up elevon to flare (raise the nose of the airplane). This will cause the airplane to slow and settle to the ground.

Caution: If, during a rough landing, the propeller on the Red Hawk should become jammed and cannot rotate with the throttle in the run position, the battery and speed control will become very hot. Immediately move the throttle lever to the left to stop the motor. If you fail to do this, the motor, speed control and/or battery will be damaged.

AFTER THE FLIGHT

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

REPAIRS

Even the best R/C pilots in the world damage their airplanes 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 areas 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 Red Hawk, use the order numbers in the list on the back cover. 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 you need assistance with assembly, contact Product Support. When reporting defective or missing parts, please use the part names exactly as they are written in the parts list.

PARTS LIST

Stock #	Description
HCAP9923	CHARGER 12V DC PEAK
HCAA3800	7.2V 900mAh NiMH BATTERY
HCAA3801	MAIN WING
HCAA3802	V-TAIL W/ ACCESSORIES
HCAQ3492	PROPELLER
HCAA3803	CONTROL LINKAGE
HCAG1057	MOTOR 380
HCAM7535	RECEIVER / ESC UNIT
HCAL7501	CRYSTAL SET, 26.995 CH 1
HCAL7502	CRYSTAL SET, 27.045 CH 2
HCAL7503	CRYSTAL SET, 27.095 CH 3
HCAL7504	CRYSTAL SET, 27.145 CH 4
HCAL7505	CRYSTAL SET, 27.195 CH 5
HCAL7506	CRYSTAL SET, 27.255 CH 6
HCAL7525	TRANSMITTER
HCAA3804	CONTROL HORN SET
HCAA3805	MAIN LANDING GEAR
HCAA3806	FUSELAGE W/ TAIL BOOM
HCAA3807	V-TAIL BRACE
HCAA3808	CANOPY COVER
HCAP9924	CHARGER AC WALL
HCAA3809	RUBBER BANDS (6)
HCAA3810	TAIL WHEEL
HCAM7536	TRANSMITTER ANTENNA
HCAA3817	DECAL SET
HCAA3818	HOLD DOWN RODS (2) / CAPS (4)
HCAA3819	TAIL SCREWS (2)
HCAM7538	TRANSMITTER BATTERY DOOR
HCAM7539	SERVO
HCAA3820	V-TAIL MOUNTING BRACKET
HCAA3821	WING BRACE CARBON FIBER
HCAA3822	TAIL BOOM FIBERGLASS