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hobbyzone®
hobbyzonesports.com



Super Cub

Instruction Manual



ACT
ANTI-CRASH
TECHNOLOGY

RTF
READY-TO-FLY

X
PORT


hobbyzone®

Z1



Welcome
to the World of


hobbyzone[®]

Congratulations on your purchase of the HobbyZone[®] Zone 1 Super Cub. Your Super Cub has come with everything needed to get you into the air—all in one box, and because it's a Zone 1 product, it is specifically designed for you to be able to teach yourself how to fly. You will only need to thoroughly read the instruction manual, attach the wing, tail, and landing gear, and then charge the flight battery prior to your first flight.

HobbyZone's innovative Anti-Crash Technology is the latest breakthrough in RC flight. Anti-Crash Technology™ (ACT) makes teaching yourself to fly easier and safer than ever before. With ACT, anyone can fly. Two sensors on the Super Cub, one on the top and one on the bottom of the fuselage, monitor the position of the plane in relation to the ground. When the plane is flying

level, the top sensor sees the sky, while the bottom sees the ground, and they tell the onboard computer that the plane is flying correctly. If the plane enters a dive and the sensors detect that the plane's orientation is incorrect, the system will automatically correct the control inputs and help prevent the plane from crashing, allowing you time to regain control. ACT lets you fly without worry. And once you've gained experience with your Super Cub, you can turn ACT off for more complete control and increased maneuverability.

Your HobbyZone Super Cub comes with everything needed to get you into the air. A video compact disc (VCD) is also included to give you some helpful hints before you take to the sky for the first time, and includes flying footage.

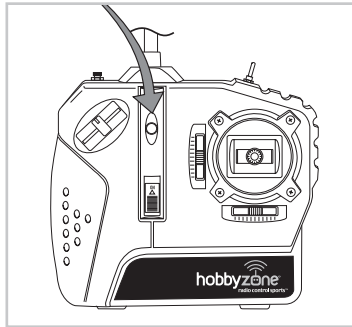
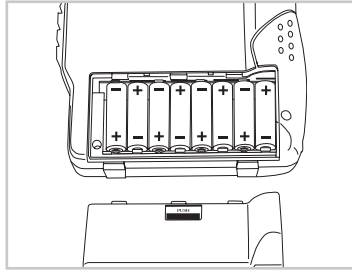


Crash damage is not covered
under the warranty.

Be sure to read the warranty
on page 34 and "Warnings and
Safety" on page 30 before you
proceed to Step 1.

Installation of Batteries into the Transmitter

1. Remove the battery cover and install the included 8 AA batteries.
2. Be certain that you observe proper polarity when installing the batteries, and then replace the cover on the transmitter.
3. To test the transmitter's function, turn on the switch on the front of the transmitter. The LED should glow brightly.
4. Replace the batteries with fresh AA batteries when you hear the low voltage battery alarm beeping.
5. Once the alarm goes off, you only have a few minutes of power left, so don't delay landing your plane any longer than necessary to land it safely.



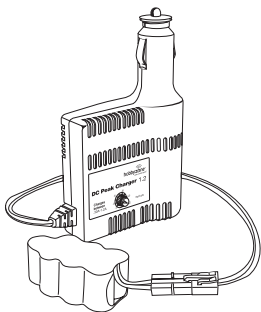
Motor Test and Battery Discharging

1. Turn on the transmitter.
2. Install the flight battery into the battery compartment (located at the bottom of the fuselage) and plug it into the connector. (The transmitter should ALWAYS be turned on prior to installing flight battery, and should be turned off AFTER the flight battery has been unplugged).
3. Make sure clothing, fingers, and property are clear of the propeller, and ensure you have a good grip on the plane. Move the slide throttle all the way back to arm the motor, and then slide the throttle forward slowly. The propeller should spin at a high speed when the throttle is moved forward. (If the prop does not spin, the battery is sufficiently discharged and you can go straight to the instruction section for charging the battery—Step 3).
4. Keep the throttle advanced until the propeller slows and finally stops. This means the battery is fully discharged and ready to be fully charged with one of the included chargers.
5. After you have ensured the motor functions correctly and the battery is completely discharged, unplug the flight battery and then turn off the transmitter.

WARNING: Keep everything clear of the propeller at all times! A moving propeller can cause severe injury and damage.

Charging the Aircraft Battery

Your Super Cub comes with a variable rate DC peak charger, as well as an AC peak charger. This way, you can use the charger that best fits your needs.



DC peak charger features:

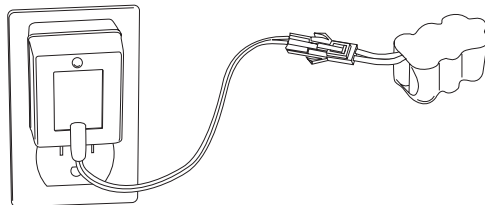
- Adjustable charge rate from 300mAh—1.2A
- LED indicator
- Peak charges 4- to 7-cell Ni-Cd and Ni-MH battery packs

1. Select the charge rate of 1.2A for charging the included 8.4V 1000mAh battery pack.
2. Connect the battery to the charger.
3. Plug the charger into a 12V power outlet of an automobile. Adult supervision is required. **PLACE BATTERY ON HEAT-RESISTANT SURFACE DURING CHARGING.**
4. The LED of the charger will blink on and off steadily while fast charging.
5. When the LED glows solid, the charger automatically switches to a trickle charge, indicating that the battery is charged. The battery will feel warm when it is charged.
6. We recommend that you peak charge your battery within a few hours of flying your Super Cub.

DC Peak Charger Maximum Charge Rates

4.8V 600mAh Ni-MH	.8 amps
	(requires HBZ1027)
6.0V 600mAh Ni-MH	.8 amps
	(requires HBZ1027)
4.8V 300mAh Ni-MH	.4 amps
	(requires HBZ1027)
7.2V 900mAh Ni-MH	1.2 amps
7.2V 1000mAh Ni-MH	1.2 amps
8.4V 1000mAh Ni-MH	1.2 amps

WARNING: If you exceed the maximum charge rate recommended above, you can cause permanent damage to the charger and battery, and in some cases, may cause a fire.

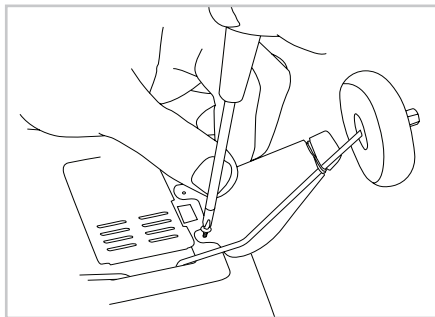
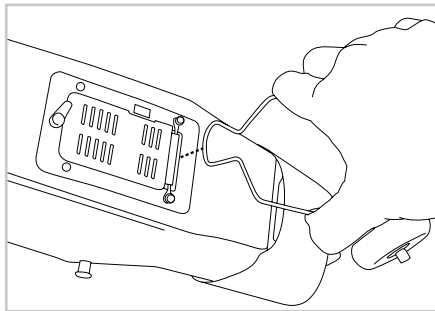


AC peak charger features:

- Delta peak charging circuitry safely charges your battery pack
 - 500mAh charge rate for 8.4V batteries
 - 400mAh charge rate for 9.6V batteries
 - LED and timer
 - Charges only 7- and 8-cell Ni-MH battery packs
1. Plug the battery pack into the connector of the AC peak charger.
 2. Plug the AC peak charger into a standard 110/120 AC wall outlet and place the battery on a heat-resistant surface while charging.
 3. Never leave the charger and battery unattended during charging.
 4. In about 2 hours, a completely discharged battery pack will be fully charged. The LED will flash while charging and glow solid when the pack is fully charged, and the battery will feel warm.
 5. We recommend that you peak charge the battery shortly before flying.

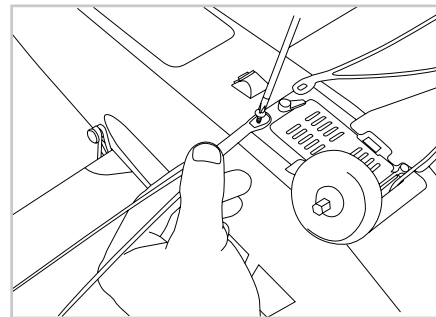
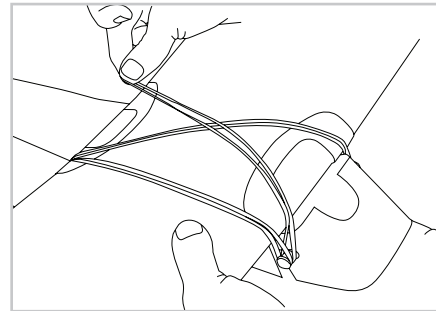
Landing Gear Attachment

1. Locate the included wire landing gear.
2. Slide landing gear into the allotted slot on the bottom of the fuselage.
3. Make sure the gear is securely in the slot by gently pulling on it after it is attached.
4. Attach the white plastic scale covers with the included 4 screws, as shown. They are located in the small bag labeled "A."



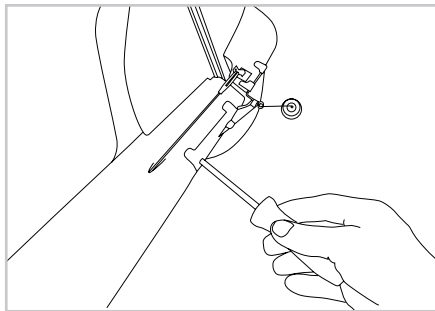
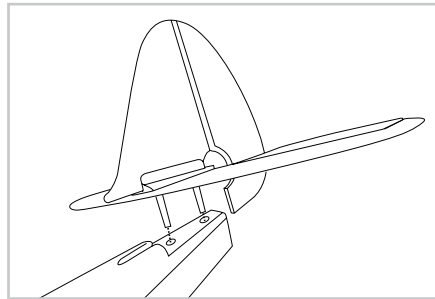
Attaching the Wing

1. Locate the wing and wing strut screws that are included.
2. Place the wing so that it is centered on the top of the fuselage.
3. Use the included rubber bands to secure the wing by attaching two bands straight across the top of the wing, where each end is attached to each set of band holders, and criss-crossing two diagonally across the top of the wing.
4. After you are satisfied that the wing is properly centered on the fuselage, turn the plane over and complete the wing attachment by attaching the struts, as shown. The screws that will be used to attach the struts are in the small bag labeled "B."
5. Make certain the wing is properly attached and centered prior to each flight.

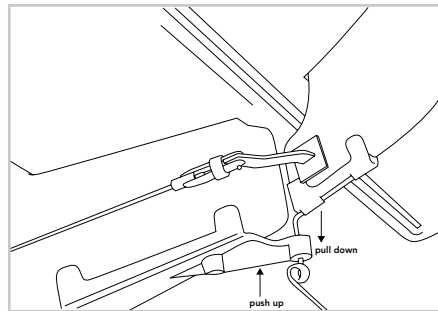


Attaching the Tail

1. Locate the rudder and horizontal stab assemblies and carefully remove them from the box. It may be helpful to watch the included video when installing the tail section.
2. Install the rudder assembly into the horizontal stab, as shown.
3. Install the complete tail assembly into the fuselage, as shown.
4. Secure this assembly to the fuselage, from the bottom, with the included screws. The 2 screws needed for this step are in the small bag marked "C" and are the two longest included.
5. Clip the tail wheel wire into the plastic wheel housing by pulling down slightly on the tail wheel, while at the same time you are pushing up on the plastic molding until the two parts "snap" together.

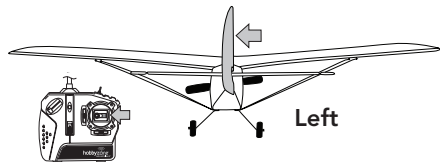
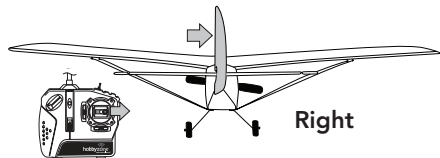


6. Attach the clevis from the rudder pushrod into the outermost hole of the control horn on the rudder, and slide the clear rubber sleeve down over the clevis.
7. Attach the clevis from the elevator pushrod into the outermost hole of control horn on the bottom of the elevator. Slide the clear rubber sleeve down over the clevis. Again, refer to the instructional video for a more detailed explanation.

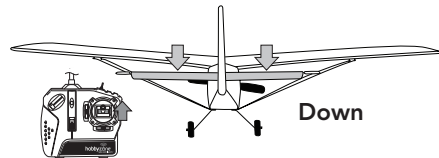


Tail Control Test

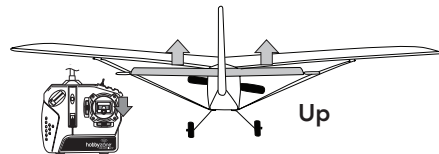
1. Make certain the throttle slider is in the "off" position. Turn on the transmitter.
2. Install the flight battery in the fuselage and plug the battery lead into the lead inside the airplane.
3. Move the stick on the transmitter (rudder control) side to side while observing the vertical control surface is moving per the input (as shown).



4. Push the stick full forward (elevator control). When this is done, the horizontal control surface should move down (as shown), causing the plane to pitch down.



5. Pull back on the stick (elevator control). When this is done, the horizontal control surface should move up (as shown), causing the plane to pitch up.



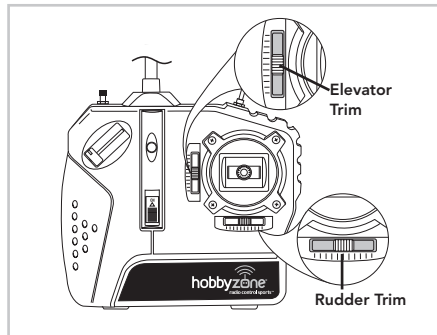
6. If your airplane is not responding, **DO NOT FLY IT!** Call the Horizon Hobby Product Support line at 1-877-504-0233.
7. When you are satisfied your airplane is set up properly, you can unplug the flight battery and then turn off the transmitter. This should be done every time you have finished flying.

NOTE: It is very important to make sure that the control surfaces (rudder and elevator) are at 0 degrees. Ideally, they will be at 0 degrees when the levers are centered. The next step explains how to make adjustments to the control surface.

WARNING: ALWAYS KEEP CLEAR OF THE PROPELLER IN THE EVENT THAT YOU ACCIDENTALLY TURN ON THE MOTOR!

Making Adjustment to the Control Surfaces

- Any changes necessary to bring both the rudder and elevator to neutral (zero degrees) should be able to be done by using the trim levers on the transmitter. To do this, place the control stick at center, and use the slider button below the stick to adjust the rudder (vertical surface) until it is flush with the stationary section of the elevator assembly. To adjust the movable section of the elevator so that it is flush with the stationary section of the elevator assembly, use the slider button to the left of the control stick.
 - Turn on the transmitter.
 - Insert the battery pack into the fuselage and plug the battery into the lead from the airplane.
 - Return the trim levers to center.
 - Remove the clevis from the control surface horn and adjust the length of the pushrod by turning clevis the appropriate direction. Turning clockwise makes the pushrod shorter and counterclockwise makes it longer.
- After this, if you find you are not able to get the control surfaces flush with each other, do not fly until things have been corrected.
- If corrections are needed, and moving the trim lever(s) is not adequate, you will need to:

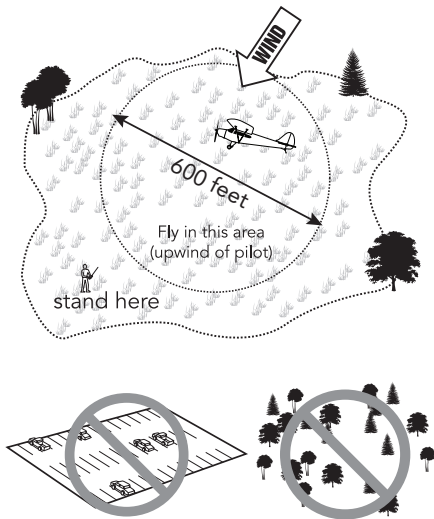


Choose a Large, Open Grass Field

In order to have the most success, and to protect property and your Super Cub, it is very important to select a place to fly that is very open.

The site should:

- Have a minimum of 300 feet (90 meters) of clear space in ALL directions.
- Be clear of pedestrians.
- Be free of trees, buildings, cars, power lines, or anything that could entangle your airplane or interfere with your sightline.
- Remember, your Super Cub can reach speeds of up to 30 mph (48 k/h), so it can cover ground quickly.
- Plan on flying in an area that gives you more space than you think you need, especially with first flights.



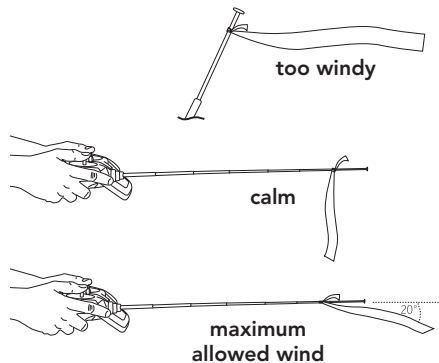
Choose a Calm Day

We know you want to fly your Super Cub as soon as you have it. However, flying in too much wind can place your aircraft in jeopardy. On your first flights, make sure that the winds are no more than 5–7 mph (8–11 k/h).

To check the wind conditions:

- Tie the antenna ribbon to the transmitter.
- Hold the transmitter so the antenna is parallel to the ground.

If the flag hangs down, it is calm enough to fly. If the angle between the antenna and the flag is less than 20 degrees, it is too windy and you need to postpone your flight.

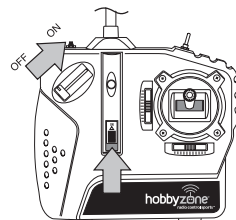
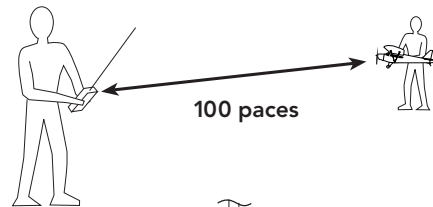


Range Test

Prior to your first flight, you will need to perform a range test. Two people are needed to do this—one to hold the airplane and one to hold the transmitter.

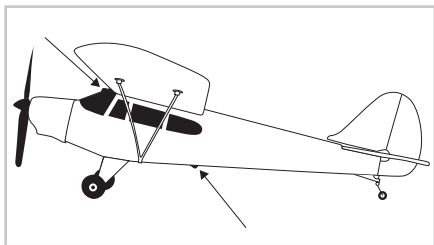
1. One person holds the transmitter while the other person walks 100 paces away with the Super Cub.
2. Be sure the throttle slider is in the "off" position.
3. Extend the antenna and turn on the transmitter.
4. Plug in the flight battery, close the hatch cover, and turn the latch so the hatch cover stays in place.
5. As soon as the throttle is advanced, the prop should spin quickly.
6. As the person moves the transmitter controls, the airplane should respond correctly with the controls operating smoothly.

Warning: The person holding the airplane needs to make sure the propeller will not come in contact with any clothing, hair, or parts of the body.

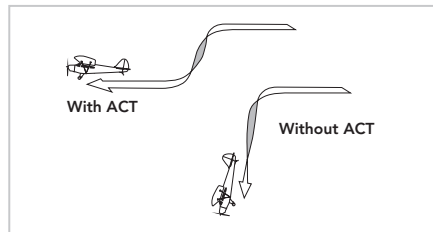


Anti-Crash Technology (ACT)

Your HobbyZone® Super Cub comes equipped with exclusive Anti-Crash Technology™. This software will help to prevent crashes due to over-control. The sensors that are located on the fuselage “see” the horizon. One sensor is located at the top of the windshield and the other is on the bottom side of the fuselage, in front of the landing gear.



The electronic system connected to the sensors knows that the airplane (with ACT “on”) should not be allowed to enter a steep dive. If you give transmitter input that causes the plane to enter into a steep dive that could lead to a crash, the ACT software will override your input to help prevent the aircraft from crashing to the ground. ACT will cut the power going to the motor and add some up elevator, as well. This causes the nose of the airplane to pull up, thereby helping to prevent your aircraft from crashing. However, in order for ACT to work properly, there has to be sufficient altitude for recovery (at least 200 feet or 61 meters). ACT will only interrupt flight in extreme situations, allowing you to enjoy as much control of your Super Cub as you need.



If, with ACT™ on, you enter into a threatening dive, you will notice the following:

- You will hear the motor power decrease as the ACT programming overrides your input. This slows the speed of the airplane and will reduce the risk of a crash.
- The ACT software will give up elevator input to help pull the nose up and out of the dive.
- Once the ACT software has been engaged (takes over), you will not regain control until after you have released the steering stick and returned it to neutral.

Remember, the purpose of Anti-Crash Technology is to help you learn to fly properly and smoothly. When ACT is engaged, it means you have placed your aircraft in jeopardy. Keeping the stick more in the middle, and less to the “corners” of the transmitter, will allow you to fly more smoothly and prevent ACT from engaging. The key is to learn to make minor movements on the controls. The transmitter is proportional and is sensitive to movements of the control stick. Once you have gained more experience, and feel comfortable flying, you can turn off ACT and have full control at all times. It is possible to change flight modes (turn ACT on or off) while in flight, but sufficient altitude is required.

To turn off ACT, simply move the switch on the top of the transmitter to the appropriate position.

ACT Flying Tips

- Never fly at too low of an altitude and expect ACT™ to save you from a crash. You must maintain an altitude of at least 200 feet (61 meters) for the software to be able to help prevent crashes.
- Even when flying with ACT on, if you feel that your aircraft is in jeopardy reduce the throttle immediately and release the stick. You can then add a small amount of up elevator (pull back slightly on the stick), as well, to aid the recovery.
- Because the sensors are used to activate the protective software, there may be times when they can be fooled. This may be especially true when flying in very bright sun shine and/or when the sun is close to the horizon.
- With ACT on, never fly over water, light colored sand, ice, snow, or anything else that can reflect light and “fool” the sensors.
- Never fly in too tight of an area. Anti-Crash Technology™ will not prevent you from crashing into trees, buildings, or other obstacles.
- Make several successful flights (including several soft landings) prior to attempting to fly with ACT off.
- Never let the aircraft fly too far down wind from you, which can cause the aircraft to fly away.
- It is always a good idea to have an experienced pilot who has mastered control with at least a 3-channel radio system to help you on your first flights.

Using Elevator (Pitch Control)

Your HobbyZone® Super Cub is equipped with a third channel for pitch control (elevator). Pulling back on the transmitter stick will cause the nose of the airplane to raise and allows for more tighter turns, shorter runway take-offs, flares for landing, a better climb rate, and the ability to perform aerobatic maneuvers, such as loops and stalls. However, giving too much UP elevator (pulling back too much on the stick) can also place your aircraft in jeopardy, as your airplane can enter an unplanned stall, especially when the plane is traveling at slower speeds.

Just after a stall occurs, the nose of the airplane will go down, and the airplane will begin to enter a dive. To recover from a stall, pull the stick back slowly (UP elevator) to pull the nose up and out of the dive. This should return the airplane to straight and level flight. Be careful, as pulling back too quickly or too far will once again cause the plane to enter a stall.

Hand Launch

On first flights, it is a good idea to have a second person, ideally an adult, help you launch the plane. This will allow you to focus entirely on the transmitter input.

1. Make sure the battery is fully charged and has recently been peaked.
2. Make certain that no one is flying, or preparing to fly, on the same channel within approximately ½ mile (.8 kilometers). If someone were to turn on a transmitter on the same frequency as yours, you will lose control of your airplane. This could cause damage to your airplane, cause it to fly away, or cause damage to other property if your airplane were to crash into it. When you are confident it is safe to turn on your transmitter, you can move on to the next step.
3. Install and plug in the flight battery.
4. If you are hand launching the aircraft yourself, place the plane in your right

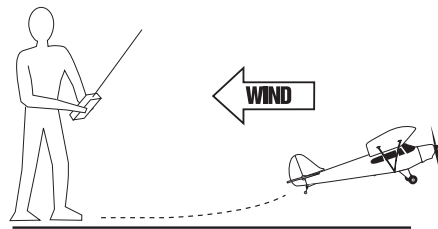
hand and the transmitter in your left hand.

5. Use caution and advance the throttle to FULL.
6. Take a few steps forward, and launch the airplane DIRECTLY and firmly into the wind, while keeping the airplane and its wings level with the ground.
7. Allow the plane to climb steadily at full throttle, into the wind, until you have achieved an altitude of 100 to 150 ft (30 to 46 meters). You will not need to use elevator in order for your airplane to climb. A few clicks down on the elevator trim should allow a steady climb.



Runway Takeoff (ROG)

Your HobbyZone® Super Cub can be launched by way of a runway takeoff (ROG). However, this is not recommended for inexperienced pilots.

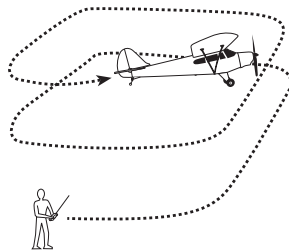


1. Make sure your landing gear is properly installed.
2. Stand behind your Super Cub and point it directly into the wind on smooth asphalt or concrete.
3. Apply FULL power via the throttle slider and adjust the control stick as necessary to keep the aircraft headed directly into the wind.
4. If the battery is fully charged, your Super Cub should lift off the ground in approximately 30 feet (12 meters). Apply some UP elevator by pulling back on the stick, and the plane will lift off of the ground in a shorter distance. Remember, only a small amount of UP is needed. Too much will cause a stall after your aircraft has left the ground.

Flying

1. After you have launched your Super Cub, it will begin climbing at full throttle. With the throttle advanced all the way forward, your Super Cub should not need any elevator input to climb steadily.
2. Make adjustments on the throttle slider and control stick that are necessary to keep your aircraft heading directly into the wind. Do not attempt a turn until you have reached a minimum of 50–100 feet (15.25–30.5 meters) of altitude (about as tall as a four-story building).
3. Control range is 2500 feet (762 meters), so if you fly beyond that, you will lose control of your airplane. At that distance, however, you would likely lose sight of your airplane before you'd lose control.
4. Don't let your airplane get too far downwind from you. Always fly with the airplane UPWIND from you. Failure to do this could result in a fly-away! Remember, the wind is stronger as your plane flies higher in the air. It's ok to fly higher, just be cautious and watch how your plane reacts to the wind. Most of the time, you can fly at higher altitudes at half-throttle. This is great for smooth, easy flying when you're first learning to fly, and conserves battery power.
5. When you have reached higher altitudes and want to practice using the elevator, begin with small and smooth inputs to the transmitter. Very little input is needed to get the plane to turn, climb, or descend.
6. Avoid long vertical dives, with the motor on or off, as it can cause a lot of stress on the aircraft.

7. It may be helpful to fly in smooth large ovals at higher altitudes so that you can get used to steering the plane with the nose coming at you. Flying the with plane coming towards you takes some practice and is one of the hardest things to get used to when you first begin to fly.



Sharp Turns: Move the stick in the direction you want to turn and add a bit of UP elevator at the same time (pull back on the stick). The plane will make a sharper banking turn.

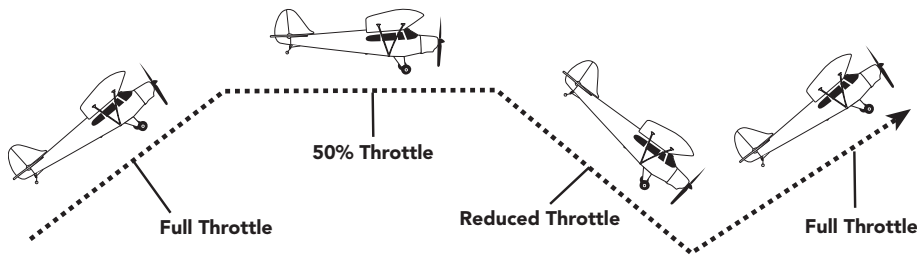
Rudder Trim: If the HobbyZone® Super Cub seems to drift in one direction when the control stick is in the neutral (centered) position, gradually move the rudder trim lever (below the control stick) in the OPPOSITE direction of the drift. Adjust until the plane flies straight with the control stick at neutral.

Elevator Trim: If the model “hunts” up or down, use the trim lever to the left of the stick to correct this problem. If it hunts up, slide the left trim lever up one notch at a time until it flies level. If it hunts down, slide the left trim lever down one notch at a time until it flies level. The model should fly straight with the stick at neutral. Your Super Cub should have a steady climb at full throttle when it is trimmed properly.

Throttle Adjustment

1. When launching, the throttle should be all the way on.
2. Once you have achieved the altitude where you want to fly, you can reduce throttle to about 50% for cruising. This will also allow for longer flights.
3. If you want to reduce altitude, reduce throttle to less than 50%.
4. To increase altitude again, increase throttle to more than 50%.

Note: If you're flying with the motor off, or at a slow speed, allow the HobbyZone® Super Cub a bit more area for turns.



Landing

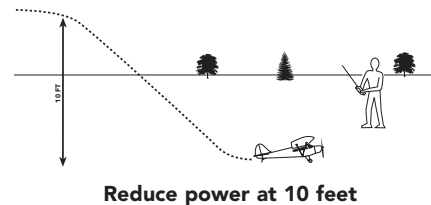
When you notice that your HobbyZone® Super Cub no longer climbs well under full power, normally after about 10–12 minutes, the battery is getting low and it is time to land. Line the airplane up directly into the wind toward the desired landing spot. At about 10–15 feet (3–4.5 meters) of altitude, reduce the throttle gradually until it is completely shut off. Your airplane will glide in for a landing.

Auto Cutoff: When the battery gets low enough, this feature will automatically shut off the motor and save enough battery power to maintain control of the tail so you can land correctly and safely. If the motor cuts off, prepare to land immediately. If you are gliding down and have some time to rest the battery, you may re-arm the motor by moving the throttle slider back to off and then advancing it again. This will only allow

the motor to run briefly, and may allow you to better adjust your landing. Do not re-arm the motor more than once.

Warning: Do not attempt to catch the airplane or injury may occur. Turn the motor off prior to touchdown in order to prevent damage to the wing and/or propeller.

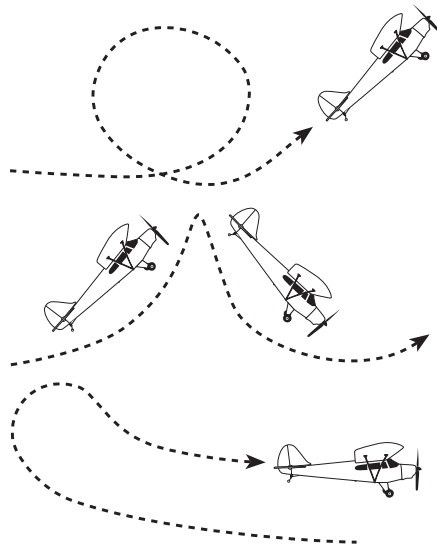
Expert Tip: As you get more experienced at flying, try adding a small amount of UP elevator just before touchdown to “flare” the airplane. With more and more practice, your landings will be smooth and on target.



Aerobatic Flight

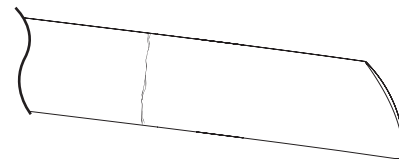
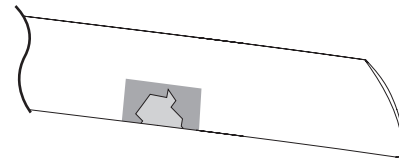
It is recommended in the directions that the Super Cub controls be set for softer responses and at the outer holes of the control surfaces. However, once you get used to the flight characteristics and want to perform more aerobatic maneuvers (with ACT™ off) you can change the amount of throw that is permitted by moving the clevises to the inner holes of the control horns. After making any adjustments, always turn on the transmitter, center the transmitter trim levers, and make sure the control surfaces are even. Make the proper adjustments to make the surfaces even, if they are not (see Step 8).

Note: By making these changes, the controls will be much more responsive. However, this makes the airplane much less forgiving and it will be easier to stall. Remember, crash damage is not covered under the warranty.



Repairing Minor Damage

If you happen to crash, and part of the tail or wing breaks, it can be repaired by using packing tape to cover the missing pieces. Also, any type of CA will help repair the foam fuselage and wing. However, if damage is severe, or if the wing and/or tail are bent, replace the damaged parts prior to flying again. There is a complete list of replacement parts in the back of this manual.



Replace wing immediately

Warnings and Safety Checklist

1. Read and follow this manual and included video CD completely, observing all instructions and safety directions. If you do not do this, serious injury and damage can occur. Think about safety first.
2. Keep the propeller away from all body parts at all times! Beware of loose clothing or hair becoming entangled in the propeller.
3. Never fly when it is too windy or you may lose control of the airplane. Never fly near people, vehicles, train tracks, buildings, power lines, water, or trees, and never attempt to catch the airplane.
4. Adult supervision is recommended for ages 12 and under.
5. Only use a battery charger that is compatible for use with the Super Cub battery. We recommend using the chargers that come with your airplane. Never leave the chargers unattended while charging! During charging, place the battery and charger on a heat-resistant surface. Do not place them on carpet or upholstery.
6. Never cut into the battery charger or airplane wires, or serious injury can occur. Causing the battery to short out (crossing negative and positive bare wires) can cause a fire, serious injury and damage.
7. Hold the plane securely, and keep all body parts away from the propeller at all times. Carry the plane as though the propeller could start spinning at any time when you have the battery pack plugged into the lead from the plane.
8. After you have finished flying, or at any time you have the radio system on, ALWAYS unplug the battery prior to turning the transmitter off. ALWAYS turn on the transmitter prior to plugging the flight battery in.
9. Never fly on the same frequency as another RC vehicle in your area. Doing so will cause you, or the other person, to lose control of your plane.

Success Tips

1. Don't fly in winds over 7 mph (11 K/h). First-time pilots should get help from an experienced radio control pilot during first flights.
2. Choose your flying field carefully—grass and soft ground with a 600-foot (183-meter) diameter of open space is optimal for flying and will lengthen the life of the Super Cub. Make sure there are no obstacles that will get in your way when flying, such as trees or buildings. Make sure you do not fly where there are pedestrians who could be hurt by the airplane.
3. Remember that holding the stick full over for too long can cause the airplane to spiral dive and crash. At the very first sign of the Super Cub beginning to spiral down, immediately release the stick and give the opposite turn control to the spiral, then pull back on the elevator gently to level flight and level the wings.
4. Don't attempt to fly or do maneuvers beyond your flying abilities without seeking the assistance of an experienced pilot.
5. If you're gliding with the motor off, allow the Super Cub more area for turns.
6. Position yourself at your flying field to keep the sun at your back and out of your eyes. Wear sunglasses on bright days.
7. Keep the Super Cub upwind, especially on windier days, to prevent it from "flying away." The wind is normally stronger at higher altitudes than it is on the ground.
8. Keep your plane in front of you so you don't have to turn in circles as you fly. Try to avoid flying directly overhead.

Troubleshooting

PROBLEM	POSSIBLE CAUSE	SOLUTION
Unit does not operate	<ol style="list-style-type: none"> 1. Transmitter "AA" batteries are depleted or installed incorrectly as indicated by a dim or unlit LED on the transmitter or the low battery alarm 2. No electrical connection 3. Flight battery is not charged 4. Crash has damaged the radio inside the fuselage 	<ol style="list-style-type: none"> 1. Check polarity installation or replace with fresh "AA" batteries 2. Push connectors together until they click 3. Fully charge the battery 4. Replace the fuselage or receiver
Aircraft keeps turning in one direction	<ol style="list-style-type: none"> 1. Rudder or rudder trim is not adjusted correctly 2. Wing is not centered over the fuselage 	<ol style="list-style-type: none"> 1. Adjust stick trim lever or adjust rudder position (see page 14) 2. Center the wing
Aircraft is difficult to control	<ol style="list-style-type: none"> 1. Wing or tail is damaged 	<ol style="list-style-type: none"> 1. Replace damaged part
Aircraft keeps pitching up steeply	<ol style="list-style-type: none"> 1. Wind is too gusty or strong 2. Elevator is trimmed 'up' too much 	<ol style="list-style-type: none"> 1. Postpone flying until the wind calms down 2. Adjust elevator trim 'down'
Aircraft won't climb	<ol style="list-style-type: none"> 1. Battery is not fully charged 2. Elevator may be trimmed 'down' 	<ol style="list-style-type: none"> 1. Charge battery fully shortly before flying 2. Adjust elevator trim 'up' (see page 14)

Warranty and Follow-Up Procedures

Limited Warranty Period

Horizon Hobby, Inc. guarantees this product to be free from defects in both material and workmanship at the date of purchase.

Limited Warranty & Limits of Liability

Pursuant to this Limited Warranty, Horizon Hobby, Inc. will, at its option, (i) repair or (ii) replace, any product determined by Horizon Hobby, Inc. to be defective. In the event of a defect, these are your exclusive remedies.

This warranty does not cover cosmetic damage or damage due to acts of God, accident, misuse, abuse, negligence, commercial use, or modification of or to any part of the product. This warranty does not cover damage due to improper installation, operation, maintenance, or attempted repair by anyone

other than an authorized Horizon Hobby, Inc. service center. This warranty is limited to the original purchaser and is not transferable. In no case shall Horizon Hobby's liability exceed the original cost of the purchased product and will not cover consequential, incidental or collateral damage. Horizon Hobby, Inc. reserves the right to inspect any and all equipment involved in a warranty claim. Repair or replacement decisions are at the sole discretion of Horizon Hobby, Inc. Further, Horizon Hobby reserves the right to change or modify this warranty without notice.

REPAIR OR REPLACEMENT AS PROVIDED UNDER THIS WARRANTY IS THE EXCLUSIVE REMEDY OF THE CONSUMER. HORIZON HOBBY, INC. SHALL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES.

As Horizon Hobby, Inc. has no control over use, setup, final assembly, modification or misuse, no liability shall be assumed nor accepted for any resulting damage or injury. By the act of use, setup or assembly, the user accepts all resulting liability.

If you as the purchaser or user are not prepared to accept the liability associated with the use of this product, you are advised to return this product immediately in new and unused condition to the place of purchase.

Safety Precautions

This is a sophisticated hobby product and not a toy. It must be operated with caution and common sense, and requires some basic mechanical ability. Failure to operate this product in a safe and responsible manner could result in injury or damage to the product

or other property. This product is not intended for use by children without direct adult supervision.

The product manual contains instructions for safety, operation and maintenance. It is essential to read and follow all the instructions and warnings in the manual, prior to assembly, setup or use, in order to operate correctly and avoid damage or injury.

Questions, Assistance, and Repairs

Your local hobby store and/or place of purchase cannot provide warranty support or repair. Once assembly, setup or use of the product has been started, you must contact Horizon Hobby, Inc. directly. This will enable Horizon to better answer your questions and service you in the event that you may need any assistance.

Warranty and Follow-Up Procedures (continued)

Questions or Assistance

For questions or assistance, please direct your email to productsupport@horizonhobby.com, or call 877.504.0233 toll free to speak to a service technician.

Inspection or Repairs

If your product needs to be inspected or repaired, please call for a Return Merchandise Authorization (RMA). Pack the product securely using a shipping carton. Please note that original boxes may be included, but are not designed to withstand the rigors of shipping without additional protection. Ship via a carrier that provides tracking and insurance for lost or damaged parcels, as Horizon Hobby, Inc. is not responsible for merchandise until it arrives and is accepted at our facility. Include your complete name, address, and phone number where you can be reached

during business days, RMA number, and a brief summary of the problem. Be sure your name, address, and RMA number are clearly written on the shipping carton.

Warranty Inspection and Repairs

To receive warranty service, you must include your original sales receipt verifying the proof-of-purchase date. Providing warranty conditions have been met, your product will be repaired or replaced free of charge. Repair or replacement decisions are at the sole discretion of Horizon Hobby.

Non-Warranty Repairs

Should your repair not be covered by the warranty and the expense exceeds 50% of the retail purchase cost, you will be provided with an estimate advising you of your options. You will be billed for any return freight for non-warranty

repairs. Please advise us of your preferred method of payment. Horizon Hobby accepts money orders and cashiers checks, as well as Visa, MasterCard, American Express, and Discover cards. If you choose to pay by credit card, please include your credit card number and expiration date. Any repair left unpaid or unclaimed after 90 days will be considered abandoned and will be disposed of accordingly.

Electronics and engines requiring inspection or repair should be shipped to the following address (freight prepaid):

Horizon Service Center
4105 Fieldstone Road
Champaign, Illinois 61822

All other products requiring inspection or repair should be shipped to the following address (freight prepaid):

Horizon Product Support
4105 Fieldstone Road
Champaign, Illinois 61822

Replacement Parts

Replacement parts are available at your local hobby shop or www.horizonhobby.com.

PART#	DESCRIPTION	RETAIL	PART#	DESCRIPTION	RETAIL
PKZ1005	Propeller	\$3.49	HBZ7151	ESC/Receiver Ch.1	\$29.99
HBZ7104	Prop Shaft with Tires	\$2.49	HBZ7152	ESC/ Receiver Ch. 2	\$29.99
HBZ7106	Landing Gear with Tires	\$5.99	HBZ7153	ESC/ Receiver Ch. 3	\$29.99
HBZ7107	Spinner	\$0.99	HBZ7154	ESC/ Receiver Ch. 4	\$29.99
HBZ7110	Decal Sheet	\$3.99	HBZ7155	ESC/ Receiver Ch. 5	\$29.99
HBZ7112	Battery Door with Latch	\$1.99	HBZ7156	ESC/ Receiver Ch. 6	\$29.99
HBZ7114	Firewall with Screws	\$1.79	HBZ7161	Fuselage, Ch. 1, 26.995	\$69.99
HBZ7115	Instruction Manual	\$0.99	HBZ7162	Fuselage, Ch. 2, 27.045	\$69.99
HBZ7116	Instruction VCD	\$2.99	HBZ7163	Fuselage, Ch. 3, 27.095	\$69.99
HBZ7117	Tail Wheel	\$2.99	HBZ7164	Fuselage, Ch. 4, 27.145	\$69.99
HBZ7120	Standard Wing with Struts	\$19.99	HBZ7165	Fuselage, Ch. 5, 27.195	\$69.99
HBZ7121	Control Horns (4)	\$1.29	HBZ7166	Fuselage, Ch. 6, 27.255	\$69.99
HBZ7122	Wing Struts with Screws	\$2.19	HBZ7185	Bare Fuselage (no receiver)	\$20.99
HBZ7124	2 Wing Hold Down Rods	\$1.49	HBZ1026	DC Peak Charger (1.2A)	\$19.99
HBZ7125	Tail with Accessories	\$11.99	HBZ1058	Transmitter Antenna	\$4.99
HBZ7126	Cowl	\$2.99	HBZ6057	Transmitter Battery Cover	\$2.50
HBZ7127	White Rubber Bands	\$0.99	HBZ1013	8.4V 1000mAh Ni-MH Battery	\$29.99
HBZ7128	Pushrods and Clevis Set	\$0.99	HBZ7071	Transmitter, Ch. 1, 26.995	\$32.99
HBZ7129	Gearbox with Firewall	\$8.99	HBZ7072	Transmitter, Ch. 2, 27.045	\$32.99
HBZ7130	AC Peak Charger w/Timer	\$19.99	HBZ7073	Transmitter, Ch. 3, 27.095	\$32.99
HBZ7134	Motor with Pinion	\$10.99	HBZ7074	Transmitter, Ch. 4, 27.145	\$32.99
HBZ7135	Metal Pinion (2)	\$0.99	HBZ7075	Transmitter, Ch. 5, 27.195	\$32.99

PART#	DESCRIPTION	RETAIL	PART#	DESCRIPTION	RETAIL
HBZ7076	Transmitter, Ch. 6, 27.255	\$32.99	PKZ1536	Motor Screws (2): M 2.5 x 6	\$0.99
PKZ1130	Mini Servo (5W) with Arms	\$9.99			
PKZ1131	Servo Gear Set	\$2.49			
PKZ1132	Servo Arm Assortment	\$1.59			

Optional Parts

PART#	DESCRIPTION	RETAIL	PART#	DESCRIPTION	RETAIL
HBZ1081	Charger Connector w/Wire	\$0.99	PKZ1023	9.6V 1000mAh Ni-MH Battery	\$29.99
HBZ1083	Battery Connector: 900mAh	\$0.79	HBZ6023	Aerial Drop Module	\$19.99

To learn more about flying RC model airplanes, locate your nearest AMA club, learn the AMA safety code and frequency guidelines, and much more, we highly recommend that you contact:

The Academy of Model Aeronautics
 5161 East Memorial Drive
 Muncie, IN 47302
 Toll-free (800) 435-9262
www.modelaircraft.org