



CESSNA CORVALIS[®]



RTF
READY-TO-FLY

INSTRUCTION MANUAL

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SPECIFICATIONS

Wingspan:	57 in [1450mm]		
Wing Area:	362 in ² [23.3 dm ²]	Wing Loading:	14 oz/ft ² [43g/dm ²]
Weight:	2.25 lbs [1020 g]	Length:	38 in [965mm]

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 or material used for final assembly, no liability shall be assumed nor accepted for any damage resulting from the use by the user of the final user-assembled product. By the act of using the user-assembled product, the user accepts all resulting liability.

If the buyer is not prepared to accept the liability associated with the use of this product, the buyer is advised to return

this kit immediately in new and unused condition to the place of purchase.

To make a warranty claim send the defective part or item to Hobby Services at the address below:

Hobby Services

3002 N. Apollo Dr. Suite 1
Champaign IL 61822 USA

Include a letter stating your name, return shipping address, as much contact information as possible (daytime telephone number, fax number, e-mail address), a detailed description of the problem and a photocopy of the purchase receipt. Upon receipt of the package the problem will be evaluated as quickly as possible.

READ THROUGH THIS MANUAL BEFORE STARTING CONSTRUCTION. IT CONTAINS IMPORTANT INSTRUCTIONS AND WARNINGS CONCERNING THE ASSEMBLY AND USE OF THIS MODEL.

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INTRODUCTION

Thank you for purchasing the Cessna 350 Corvalis. Originally produced by Columbia aircraft and called the Columbia 350, the design was recently purchased by Cessna and was renamed the Cessna 350 Corvalis—after the name of the town near where it was being manufactured. After opening the box, you will no doubt be anxious to see the sleek lines of this modern single-engine aircraft come together on your work bench. Fortunately, all of the time-consuming work has already been done for you. Innovative assembly methods allow this plane to virtually finish itself in under an hour. Once at the field, you will find that the Cessna flies smoothly but with authority from the pre-installed brushless outrunner motor and LiPo battery.

For the latest technical updates or manual corrections to the Cessna 350 Corvalis, visit the Flyzone web site at www.flyzoneplanes.com. Open the “manuals” link, then select the Cessna 350 Corvalis.



AMA

If you are not already a member of the AMA, please join! The AMA is the governing body of model aviation and membership provides liability insurance coverage, protects modelers' rights and interests and is required to fly at most R/C sites.

ACADEMY OF MODEL AERONAUTICS



5151 East Memorial Drive
Muncie, IN 47302-9252
Tele. (800) 435-9262
Fax (765) 741-0057

Or via the Internet at:

<http://www.modelaircraft.org>

IMPORTANT!!!

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

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

1. Your Cessna 350 Corvalis 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 Cessna, if not assembled and operated correctly, could possibly cause injury to yourself or spectators and damage to property.
2. You must assemble the model according to the instructions. Do not alter or modify the model, as doing so may result in an unsafe or unflyable model. In a few cases the instructions may differ slightly from the photos. In those instances the written instructions should be considered as correct.
3. If you are not an experienced pilot or have not flown this type of model before, we recommend that you get the assistance of an experienced pilot in your R/C club for your first flights. If you're not a member of a club, your local hobby shop has information about clubs in your area whose membership includes experienced pilots.
4. While this kit has been flight tested to exceed normal use, if the plane will be used for extremely high stress flying, such as racing, or if an engine larger than one in the recommended range is used, the modeler is responsible for taking steps to reinforce the high stress points and/or substituting hardware more suitable for the increased stress.

We, as the kit manufacturer, provide you with a top quality, thoroughly tested kit and instructions, but ultimately the quality and flyability of your finished model depends on how you build it; therefore, we cannot in any way guarantee the performance of your completed model, and no representations are expressed or implied as to the performance or safety of your completed model.

ADDITIONAL ITEMS REQUIRED

The following items are required for assembling the Cessna 350 Corvalis RTF:

- Fine-point felt-tip pen
- Masking tape
- #2 Phillips screw driver

ORDERING REPLACEMENT PARTS

Replacement parts for the Hobbico Flyzone Cessna 350 Corvalis are available using the order numbers in the **Replacement Parts List** that follows. The fastest, most economical service can be provided by your hobby dealer or mail-order company.

To locate a hobby dealer, visit the Hobbico web site at **hobbico.com**. Choose "Where to Buy" at the bottom of the menu on the left side of the page. Follow the instructions provided on the page to locate a U.S., Canadian or International dealer.

Parts may also be ordered directly from Hobby Services by calling (217) 398-0007, or fax at (217) 398-7721, but full retail prices and shipping and handling charges will apply. Illinois and Nevada residents will also be charged sales tax. If ordering via fax, include a Visa® or MasterCard® number and expiration date for payment.

Mail parts orders and payments by personal check to:

Hobby Services

3002 N. Apollo Drive, Suite 1
Champaign, IL 61822

Be certain to specify the order number exactly as listed in the **Replacement Parts List**. Payment by credit card or personal check only; no C.O.D.

If additional assistance is required for any reason, contact Product Support by telephone at (217) 398-8970, or by e-mail at productsupport@hobbico.com.

REPLACEMENT PARTS LIST

Order No.	Description	NOTE
HCAA6355	Fuselage	<p>Full-size plans are not available.</p> <p>You can download a copy of this manual at hobbico.com.</p>
HCAA6356	Wing Set	
HCAA6357	Stabilizer/Elevator	
HCAA6358	Hatch	
HCAA6359	Main Gear with Cover	
HCAA6360	Wheels/Pants	
HCAA6361	Nose Gear	
HCAA6362	30A ESC	
HCAA6363	Motor/Mount	
HCAA6364	Spinner	
HCAA6365	Light Set	
HCAA6366	9x5 Propeller	
HCAA3840	1800 mAh 15C LiPo Battery	
GPMM3318	Smart Charger	
TACJ2600	TTX600 2.4GHz Radio	
TACL0624	TR624 Receiver	

KIT INSPECTION

Before starting to build, 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.

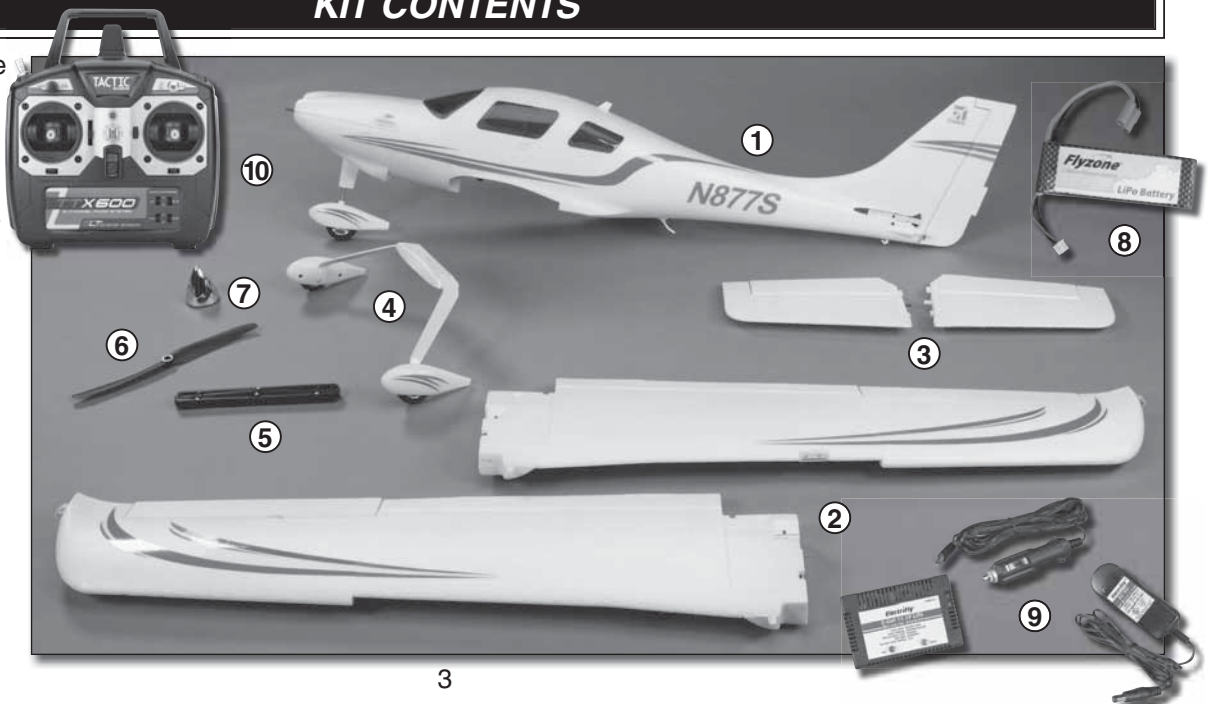
Hobbico Product Support

3002 N. Apollo Drive, Suite 1
Champaign, IL 61822

Telephone: (217) 398-8970, ext. 5 Fax: (217) 398-7721
E-mail: airsupport@hobbico.com

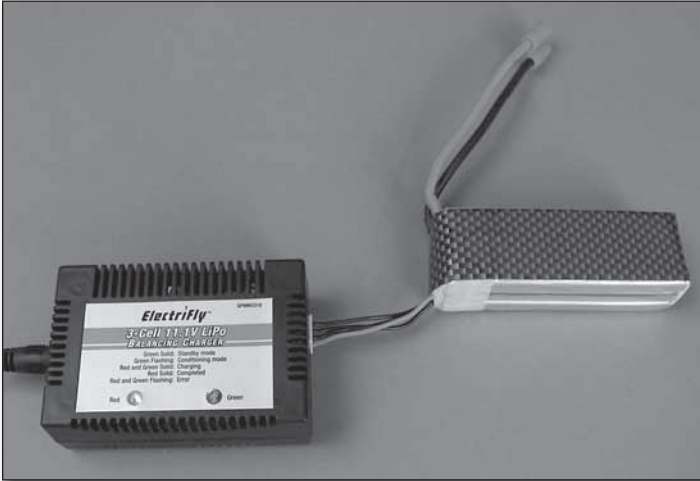
KIT CONTENTS

1. Fuselage (with nose gear installed)
2. Wing halves (with ailerons/flaps installed)
3. Horizontal stabilizer halves (with elevators installed)
4. Main landing gear (with wheels/wheelpants installed)
5. Wing joiner
6. Propeller
7. Spinner
8. Battery
9. Charger
10. Transmitter



BEFORE YOU BEGIN

Before you begin assembling your Cessna 350 Corvalis, thoroughly read the instruction manual included with the battery charger. Also familiarize yourself with the following lithium polymer battery cautions. When satisfied with your understanding of the battery charge process and safe handling of LiPo batteries, charge your flight battery so it will be ready to use when your assembly is complete.

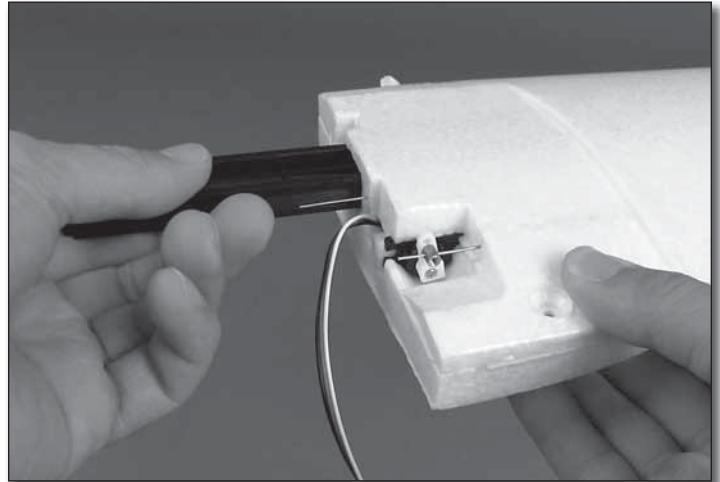


LITHIUM BATTERY HANDLING AND USAGE

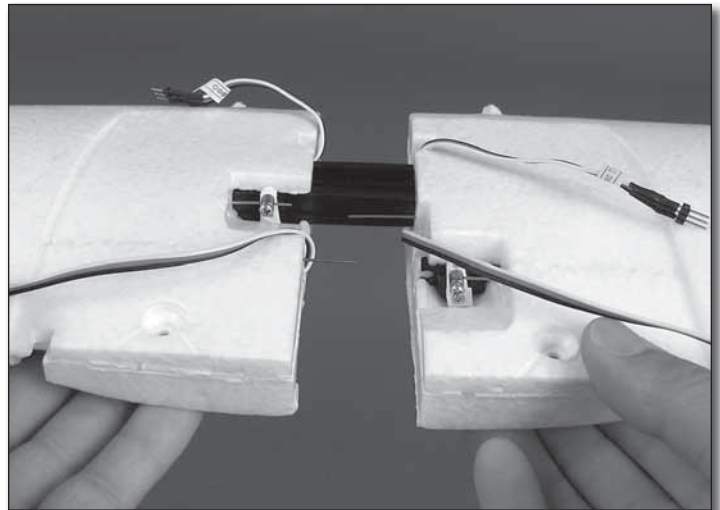
WARNING!! Read the entire instruction sheet included with your battery charger. Failure to follow all instructions could cause permanent damage to the battery and its surroundings, and cause bodily harm!

- ONLY use a Li-Po approved charger. NEVER use a NiCd/NiMH peak charger!
- NEVER charge in excess of 4.20V per cell.
- ONLY charge through the “charge” lead. NEVER charge through the “discharge” lead.
- NEVER charge at currents greater than 1C.
- ALWAYS set charger’s output volts to match battery volts.
- ALWAYS charge in a fireproof location.
- NEVER trickle charge.
- NEVER allow the battery temperature to exceed 150° F (65° C).
- NEVER disassemble or modify pack wiring in any way or puncture cells.
- NEVER discharge below 3.0V per cell.
- NEVER place on combustible materials or leave unattended during charge or discharge.
- ALWAYS KEEP OUT OF REACH OF CHILDREN.

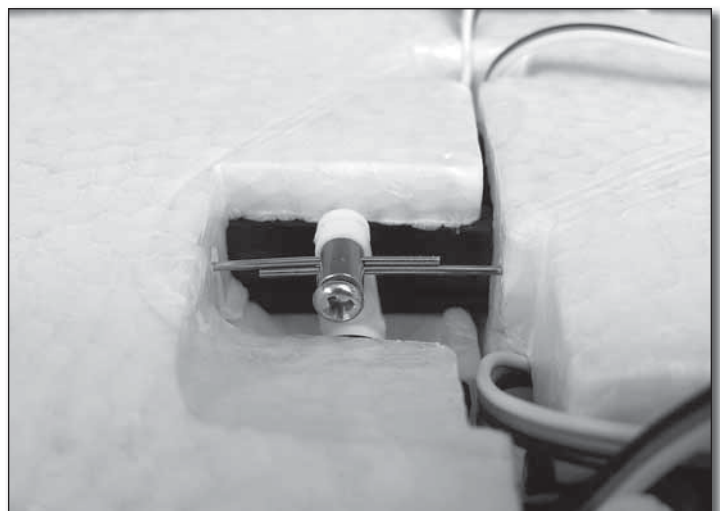
ASSEMBLE THE MODEL



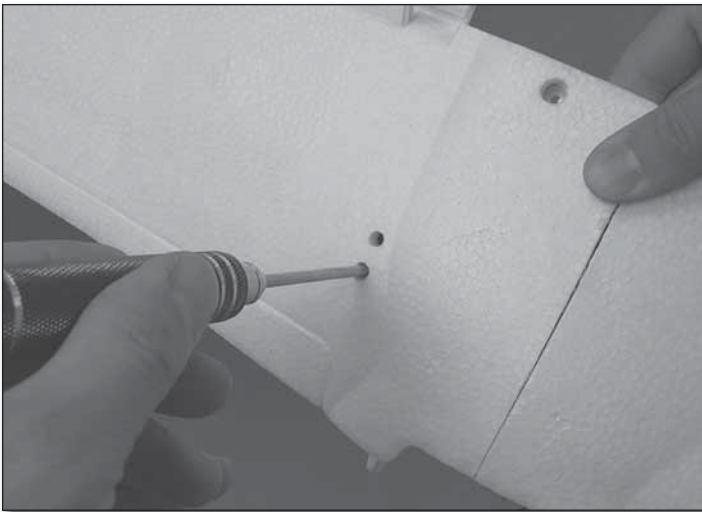
- ❑ 1. Insert the wing joiner into the wing pocket of one wing panel. Be sure that the “V” shape of the joiner points toward the underside of the wing.



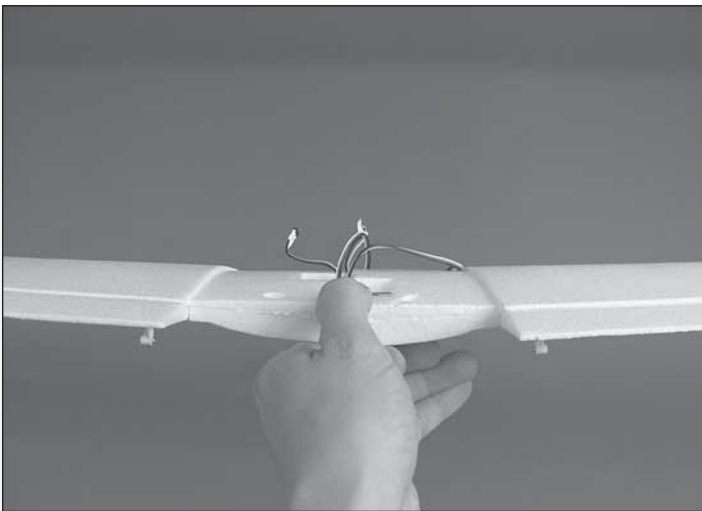
- ❑ 2. Fit the other wing panel onto the wing joiner.



- ❑ 3. The aileron and flap pushrod wires must pass through the holes in the screw lock connectors when the wing panels are joined together.



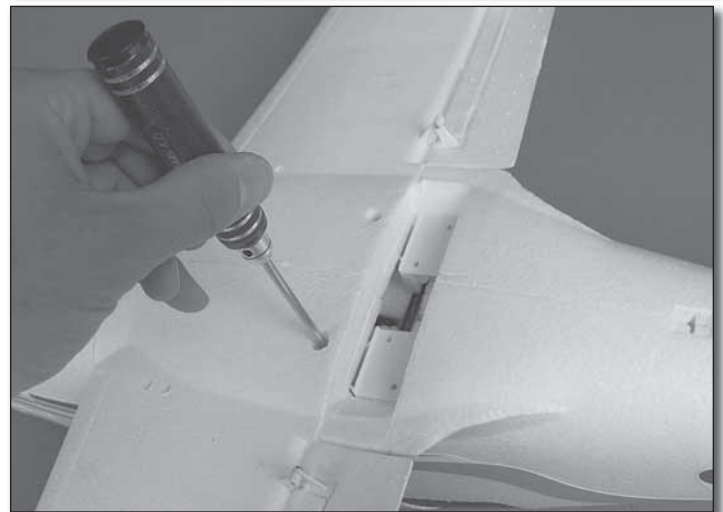
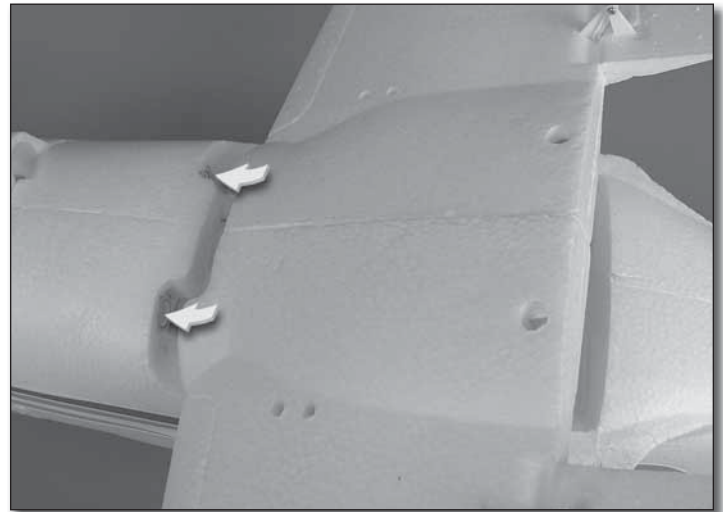
❑ 4. Tighten the wing joiner screws that can be seen through the access holes in the underside of the wing panels.



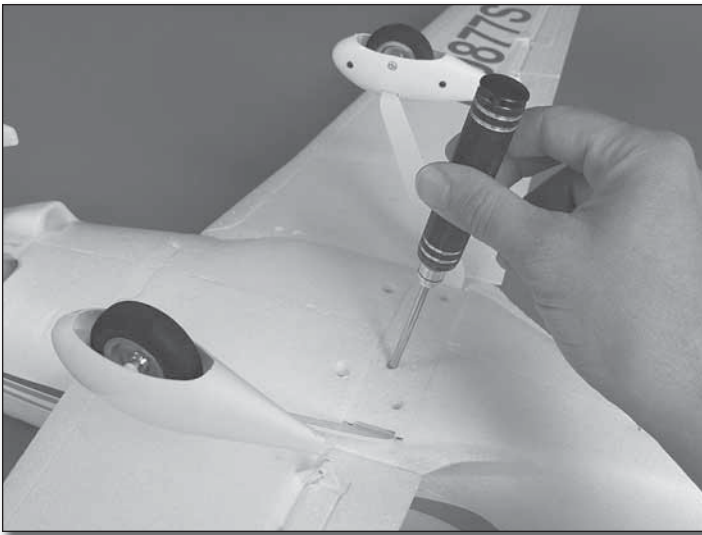
❑ 5. Position the flaps and ailerons inline with each other (left aileron and right aileron even with each other, left flap and right flap even with each other) and tighten the screws in the screw lock connectors. **Note:** After the receiver has been installed and you test the operation of the flaps and ailerons, you may need to loosen the screws, reposition the pushrod wires in the screw lock connectors, and retighten the screws.



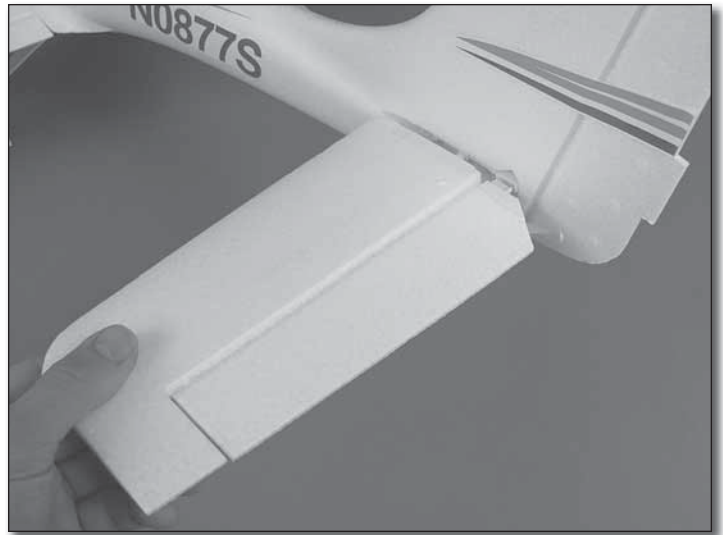
❑ 6. Connect the aileron servo lead to channel 1 on the receiver and the flap servo lead to channel 6 on the receiver. Connect the wing lights to the Y-harness (which is already plugged into channel 5).



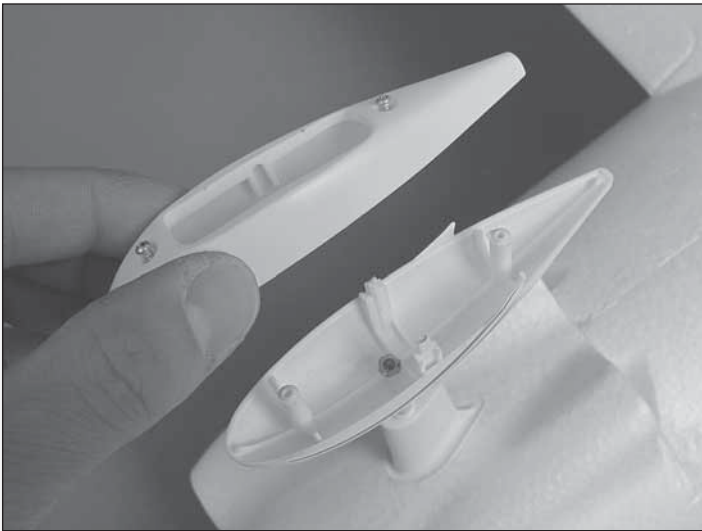
❑ 7. Insert the wing dowels into the holes in the fuselage at the front of the wing saddle. Make sure that none of the servo wires interfere with the tail servos. Press the wing into place and attach it to the fuselage using two 3x22mm machine screws.



❑ 8. Mount the landing gear to the fuselage using four 3x16mm self-tapping screws.



❑ 11. Slide the left horizontal stabilizer onto the fuselage. Align the plastic fittings into their mating slots in the fuselage and press the stab half against the fuse until fully seated.



❑ 9. Unscrew the bottom half of the nose wheel pant.



❑ 10. Insert the nose wheel axle through the nose wheel and fit it into the grooves in the lower nose wheel pant. Replace the lower nose wheel pant and screw it back into place.

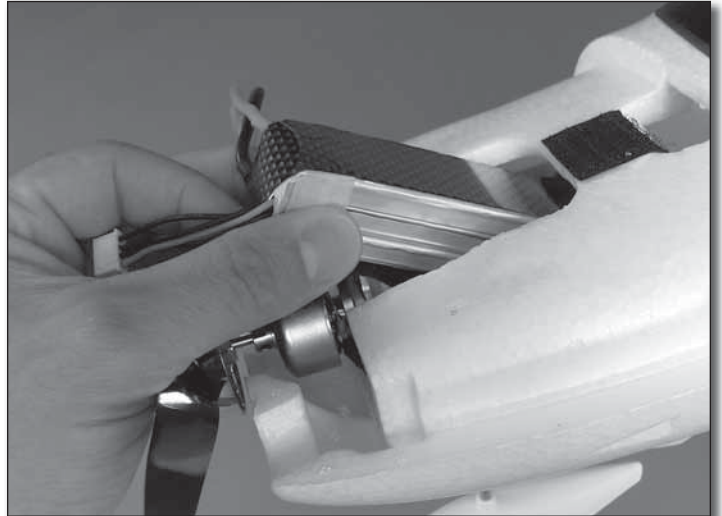


❑ 12. Install the right horizontal stabilizer in the same manner. Thread a 2.5x8mm self-tapping screw into each stab mounting hole and tighten them securely.

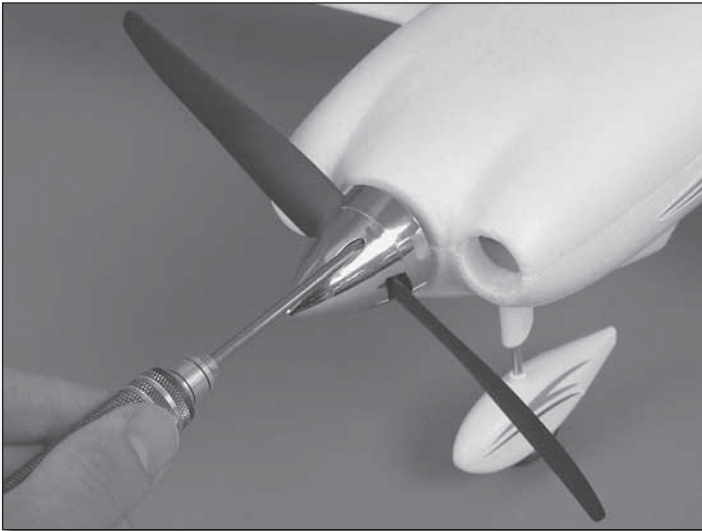
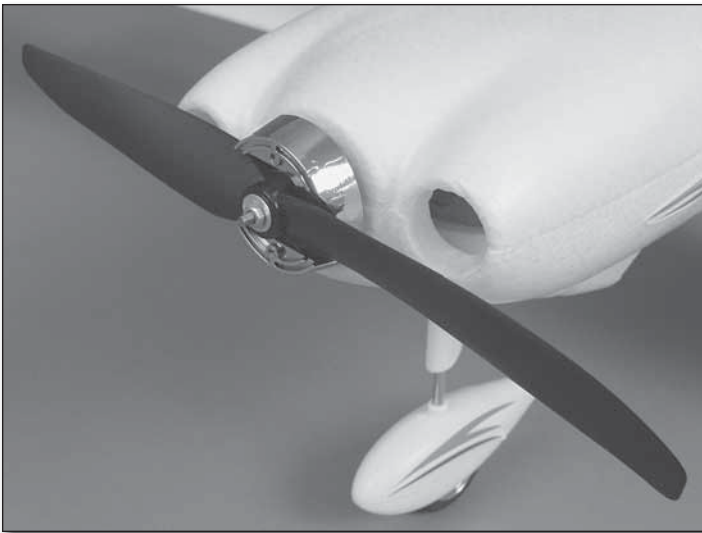
PREPARE FOR FLIGHT



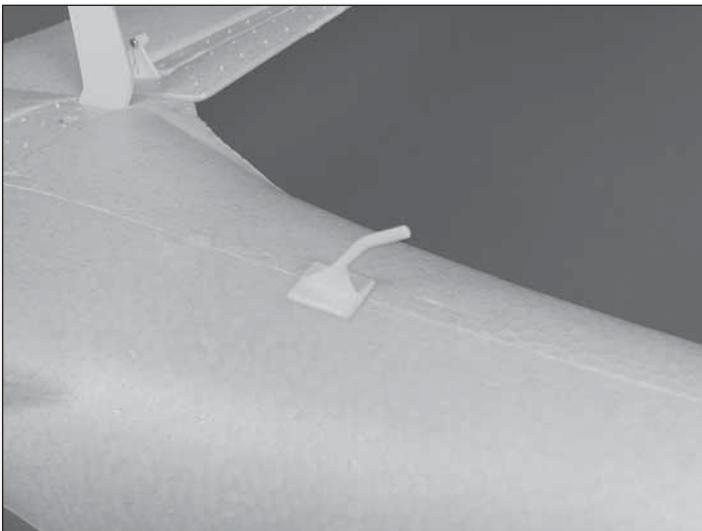
❑ 1. Remove the cowl top by grasping it through one of the front cooling holes and lifting up.



❑ 2. With your battery fully charged, slide it into the battery compartment as far as it will go. Secure the battery with the hook and loop strap attached to the battery compartment. **Do not yet plug the battery into the ESC!**

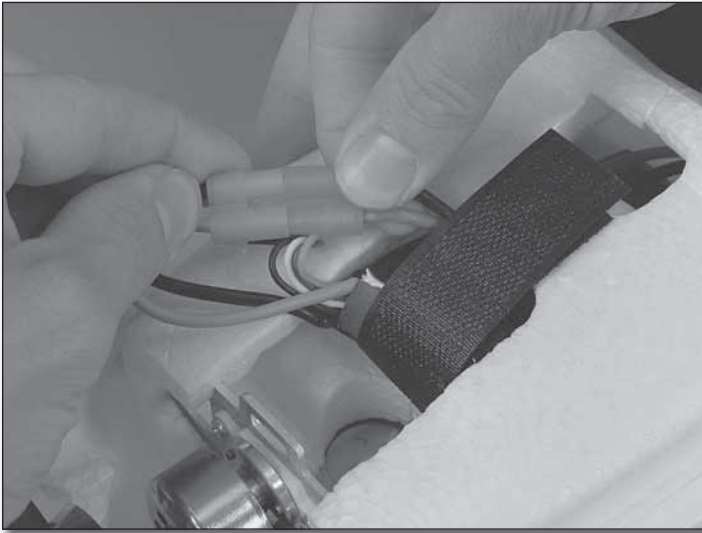


❑ 13. Remove the spinner cone by unscrewing the two screws that hold it to the spinner backplate. Install the propeller followed by the prop washer and then the prop nut. Thoroughly tighten the prop nut. Reinstall the spinner cone.



❑ 14. Install the antenna onto the underside of the fuselage. Apply a couple drops of glue to the base of the antenna before fitting it in place. CA, epoxy, white glue, hot glue, or any other household glue would be acceptable.

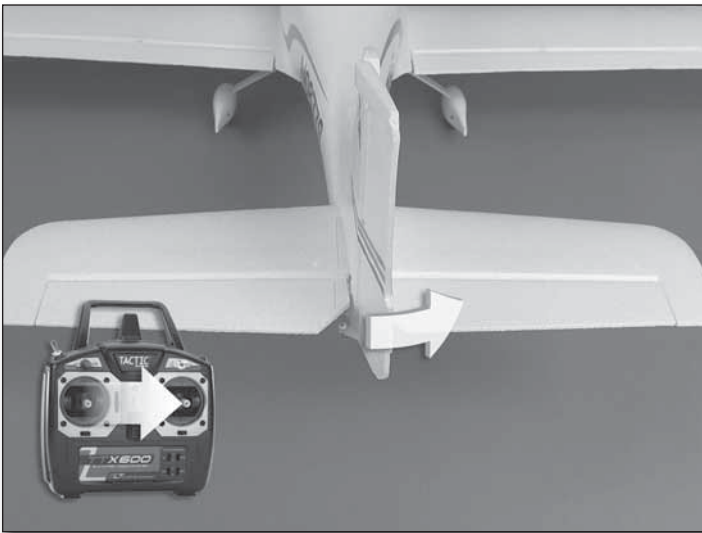
❑ 3. Turn on your transmitter. Move the throttle stick to the **middle position** (50% of stick travel). Each and every time before you plug your flight battery into the ESC you must be sure that the propeller is free of anything that could interfere with its rotation and is pointed in a safe direction.



❑ 4. Being careful to keep your hands clear of the propeller arc, plug the battery into the ESC. Reinstall the cowl top onto the fuselage and confirm that it is securely clipped into place.

Check the Control Directions

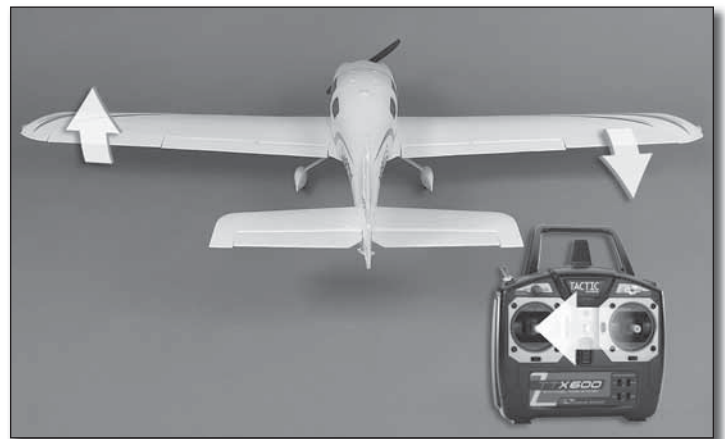
As described in the previous section, your throttle stick should still be in the middle position. When checking the control directions, keep the throttle stick in this position to avoid arming the ESC until you are ready to operate the motor. (If the control surfaces do not operate with the transmitter, follow the binding procedure found on page 14.)



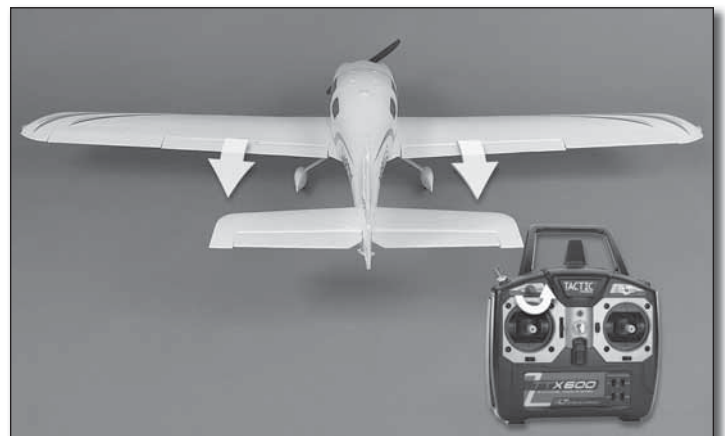
❑ 1. Viewing the model from behind, move the rudder stick to the right. The rudder should move to the right as shown. If it does not, change the position of the rudder channel servo reversing switch.



❑ 2. Move the elevator stick down. The elevators should move up. If they do not, change the position of the elevator channel servo reversing switch.



❑ 3. Move the aileron stick to the left. The left aileron should move up and the right aileron move down. If they do not, change the position of the aileron channel servo reversing switch.



❑ 4. Rotate the flap dial on the transmitter and test the operation of the flaps.

❑ 5. With the trim levers all in the neutral position, confirm that the control surfaces are still centered. If necessary, remove the wing from the fuselage and make adjustments to the positions of the pushrods in the screw lock connectors to re-center the control surfaces. Double check that the left flap and aileron are in line with the right flap and aileron.

Dual Rates

The dual rate switch (D/R) on the transmitter changes the amount of control throw from high rate (advanced aerobatic flying) to low rate which is for more gentle control and also is good for pilots with less experience.

It is suggested that at least the first flight be done on the low rate setting until you become familiar with the flight characteristics of the Cessna 350 Corvalis.



Operate the Motor

❑ 1. Move the throttle stick to the middle position and plug the battery into the ESC. Move the throttle stick to the idle position. The ESC will make an audible tone (either one tone or two tones). **Assume now that the ESC is armed and the propeller will rotate when the throttle stick is advanced!**

❑ 2. With a firm grip on the tail of the plane and the propeller pointed in a safe direction, slowly advance the throttle stick. The propeller should begin to rotate. If it does not, return the throttle stick to the idle position, disconnect the battery, and flip the throttle channel servo reversing switch.

❑ 3. Move the throttle stick to the middle position. Reconnect the battery. Move the throttle stick to the idle position. With a firm grip on the tail of the plane, slowly advance the throttle stick and confirm that the propeller rotates.

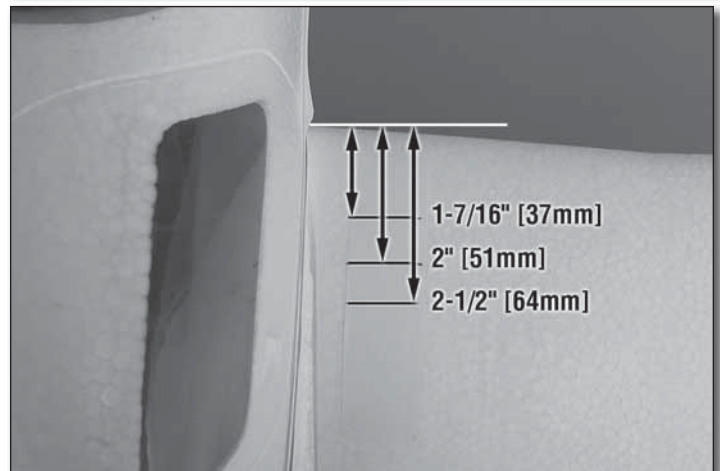
❑ 4. The ESC is equipped with a BRAKE feature. We recommend flying the Cessna with the brake OFF. When the ESC is armed, one beep indicates the brake is off. Two beeps indicate the brake is on. To toggle the brake on and off, first disconnect the battery from the ESC. Advance the throttle stick to full throttle and reconnect the battery. After a few moments, the motor will emit a tone (one beep for brake off, one beep for brake on). Move the throttle to the idle position to arm the ESC. If you wish to toggle the brake feature on or off again in the future, repeat this step.

Note: The motor is connected to the ESC at the factory to rotate in the correct direction. If at any time you disconnect the motor from the ESC for repair or replacement and the motor rotates the wrong direction, simply disconnect any two of the three motor leads and swap their positions.

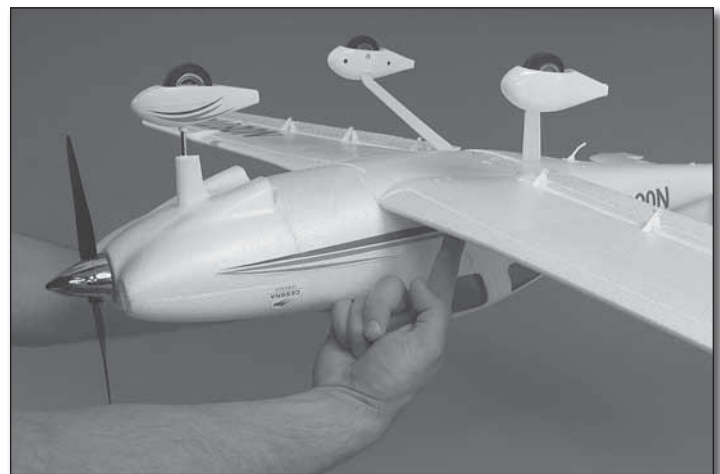
❑ 5. Disconnect the battery from the ESC but leave the battery installed in the fuselage to check the C.G.

Check the C.G. (Center of Gravity)

The C.G. (Center of Gravity) is the location on the wings, measured back from the leading edge on both sides of the fuselage, where the model balances. In addition to the control surface throws, the C.G. has a **GREAT** effect on the way the model flies. If the C.G. is too far aft (tail heavy), the model will be too responsive and difficult to control. If the C.G. is too far forward (nose-heavy), the model will be too stable and not responsive enough. Follow the instructions to make sure the model is balanced properly and the C.G. is in the correct location.

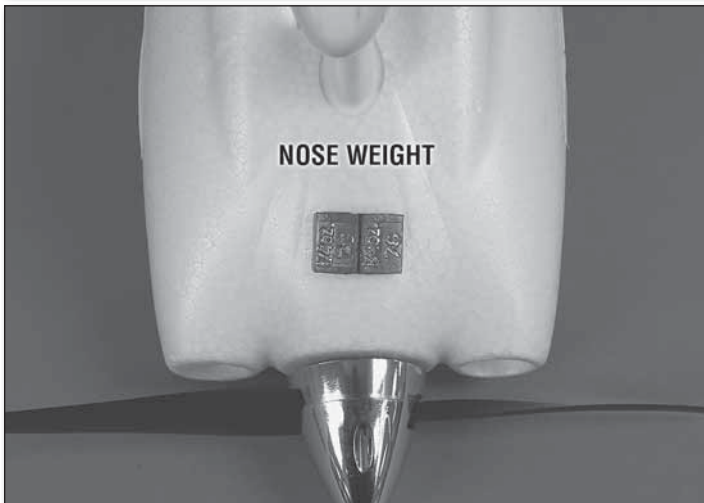
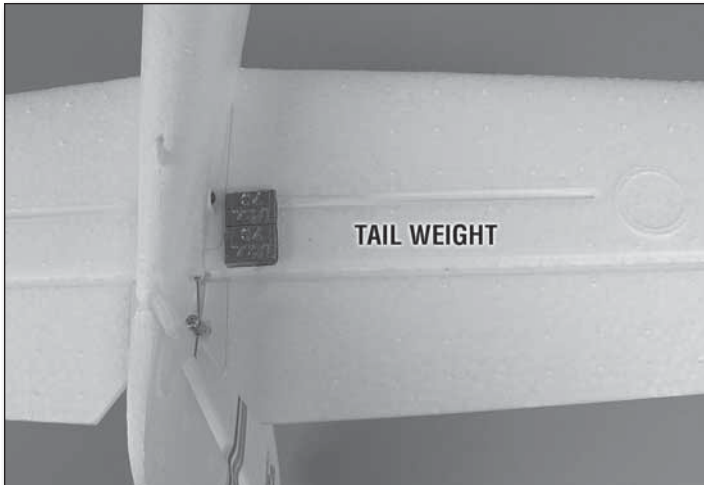


❑ 1. Place pieces of masking tape onto the top of each wing panel. Measure back from the leading edge of the wings where they meet the fuselage and draw three lines onto each piece of tape using the measurements shown. These three lines represent the forward limit, recommended and aft limit C.G. positions.



❑ 2. With the battery and cowl top installed, place your fingers on the middle balance marks, turn the plane upside down and lift the model. The fuselage should remain level—it may be helpful to have an assistant view the model from the side (or have your assistant lift the model) to see if it is level. If the nose of the plane drops, move your fingers forward of the middle lines and recheck the balance. If the tail of the plane drops, move your fingers aft of the middle lines and recheck the balance. As long as the plane will

balance with your fingers somewhere between the forward and aft lines, the Cessna will be safe to fly. We recommend that the plane balance at or close to the middle lines, at least for your first few flights. Add weight to the nose or tail of the plane as necessary until the plane balances with your fingers on the middle lines. If the tail drops, nose weight will be required. If the nose drops, then tail weight will be required. The best way to add weight to balance the model is to place segments of stick-on lead weight on the fuselage wherever it may be needed. For this, Great Planes stick-on lead weight (GPMQ4485) should be used.



- 3. Determine the amount of weight required by placing segments over the cowl or tail where shown, but do not attach the lead yet.
- 4. Once you can get the model to balance and you know how much lead will be required, permanently stick it into position. If nose weight is required, you could simply stick it to the bottom of the fuselage just in front of the nose landing gear. If you prefer the lead to be concealed, stick it out of the way in the battery compartment. If tail weight is required, simply adhere it to the underside of the horizontal stabilizer.
- 5. Recheck the C.G. to make certain the model still balances where required. Once finished, remove the battery. Never charge the battery while it is installed in the model.
- 6. Later, once you become an expert at flying your Cessna, you may change the flying characteristics by changing the balance point—but do not go beyond the marks you already

made on the top of the wing. Moving the C.G. forward (nose heavy) will improve the model's stability. This could be an advantage on breezy days. Moving the C.G. aft (tail heavy) will make the model more sensitive to control input.

Identify Your Model

No matter if you fly at an AMA sanctioned R/C club site or if you fly somewhere on your own, you should always have your name, address, telephone number and AMA number on or inside your model. It is **required** at all AMA R/C club flying sites and AMA sanctioned flying events and simply a "good idea" even if flying somewhere else. Write this information on a strip of masking tape and place it on the inside of the cowl top (or simply write the information directly on the inside of the cowl top).

FLYING THE CESSNA 350 CORVALIS

Although the Cessna 350 Corvalis is an extremely sturdy airplane made of durable foam, its low wing configuration does not have the self-righting characteristics of a trainer plane and is therefore not recommended for beginner pilots. The Cessna is, however, easy to fly even for pilots with moderate experience. If you have not previously flown a trainer it is strongly suggested that you learn to fly with one first. Or, get the assistance of an experienced pilot to help you with the first few flights (or however many it takes until you are proficient with the entire flight from take-off to landing).

Find a Suitable Flying Site

Find a flying site clear of buildings, trees, power lines and other obstructions. Until you know how much area will be required and have mastered flying your Cessna in confined spaces, a site at least the size of two or three football fields should be adequate—a flying field specifically intended for R/C planes is best. Don't fly within six miles of R/C flying fields and never fly near people—especially children who can wander unpredictably.

Perform a Range Check

The "range" is the safe operating distance from the Tx to the Rx, and should be as far as you can clearly see the model. With the assistance of another person, place the aircraft on the ground and walk 100 feet (30m) away from the model. With the Tx pointed directly at the model, operate the transmitter's controls, and ensure the movement of all surfaces is according to the movement of the transmitter.

Monitor Your Flight Time

Monitor and limit your flight time using a timer such as the one on your wrist watch. When the batteries are getting low you will usually notice a performance drop before the ESC cuts off motor power, so when you notice the plane flying slower you should land.

To avoid an unexpected dead-stick landing on your first flight, set your alarm or timer to a conservative 4 minutes. When the alarm sounds you can either land your model or, if you are an experienced pilot, you may continue to fly—planning for a dead-stick landing to see just how long the motor will run. Circle the plane upwind of the landing area until the motor quits. Note the run time, then land.

When you learn how much flight time you are getting you can adjust your timer accordingly. Always be conservative so the motor won't quit unexpectedly and you will have enough battery to land under power.

Takeoff

Until you have become comfortable with flying your Cessna 350 Corvalis, do not fly if the wind speed is greater than 10 mph [16 km/hr].

One final check before takeoff: **always double-check the flight control response to your inputs from the transmitter before every flight.** Be certain the ailerons, elevator and rudder respond correctly and that none of the controls have inadvertently become reversed.

Place the model on your “runway” with the nose pointing into the wind—this will reduce the ground speed that must be reached and automatically provide “heading assist,” making steering and takeoff easier. Slowly advance the throttle, adding rudder correction as needed to keep the model rolling straight. When the plane becomes “light” continue to apply throttle until you are at full-power—all this will happen in a few seconds. When sufficient liftoff speed has been reached gradually apply “up” elevator, allowing the model to leave the ground. Do not “yank” up on the stick—rather, be smooth and allow the plane to establish a gentle climb.

Once you have reached a safe flying speed at a comfortable altitude (approximately 50' [15m]), work the controls as necessary to establish a gentle turn away from the runway.

Flying

One thing to remember is that, when the plane is flying away from you, moving the aileron stick to the right will make the plane bank to **your** right. However, when the model is flying toward you, moving the aileron stick to the right will make the plane move to **your** left. Of course, the plane is still responding the same way; it's just that your orientation has reversed. This must be kept in mind while learning to fly (and is also a good reason to take flight lessons from an experienced pilot!).

To establish a turn, “up” elevator (pulling back on the stick) is usually required along with aileron input to get the model into a bank. To stop the turn, apply a small amount of opposite aileron.

Once you get the plane into the air and have climbed to a comfortable altitude, the first “order of business” will be to “trim” the model for straight-and-level flight. The model flies best at approximately 3/4-throttle. Adjust the trims on the transmitter to make minor control surface adjustments as necessary until

the plane will fly straight without any control inputs. Often, your assistant can reach over and adjust the trims for you.

Remember to keep the model high enough to give yourself time to make corrections, but don't let it get too far away. Otherwise, it will be difficult to see its attitude and which way it is going. Also, be sure to attempt your first roll with adequate altitude. The long wingspan of the Cessna will cause it to roll slowly in a scale-like manner and you should be prepared for this.

One final check before landing: see how the model will react when it's time to land and you cut the power. To do this, while still at altitude, cut the motor power. The model should establish a gentle, downward glide path. This is how the model will react when it's actually time to land. Add power and climb back up to your original altitude.

Practice a few of these “climb and glides” to judge how far out you will need to be when it's time to land.

Landing

To land, fly down-wind past the landing area. Gently turn into the wind and reduce the throttle so that the airplane initiates a descending glide path. If necessary, add power to extend the glide path to reach the runway. As the model approaches and loses altitude, gradually and proportionally, add “up” elevator to control the glide path and altitude. Continue to apply elevator until the model touches down at which time you should be holding full, or nearly full up elevator. This will cause the airplane to slow and settle to the ground.

Caution: If, during a rough landing, the propeller becomes jammed and cannot rotate, the battery and speed control will become very hot. Immediately move the throttle down to stop the motor. If you fail to do this, the motor, speed control and/or battery will be damaged.

Flaps

Full flaps make the Cessna very steady in the landing pattern, but just carry a little extra power to make up for the extra drag. The extra drag of the flaps also allows you to make shorter, steeper approaches. Touch-and-go's and go-arounds can be accomplished with full flaps. Just use the elevator to establish a shallow climb. It is preferred to have the flaps up or at “half” setting for takeoffs and climb-out because the plane will accelerate and climb much better.

After Flight

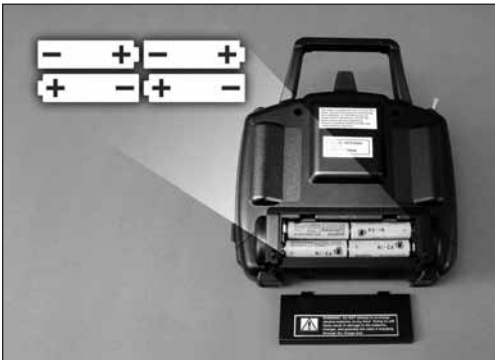
Disconnect the battery and remove it from the airplane, then turn off the transmitter. Allow the battery to cool before recharging, or allow the motor to cool before installing another battery for the next flight. Inspect the airplane to make sure nothing has become loose or damaged.

TACTIC TTX600 2.4 GHz 6-CHANNEL RADIO



Transmitter Batteries

Four "AA" batteries are required to power the Tx (not included). Non-rechargeable 1.5V alkaline, or 1.2V rechargeable nickel-cadmium (NiCd) or nickel-metal hydride (NiMH) cells, can be used. Do not mix cell types, or old and new cells, etc.



To install the batteries, slide the battery door down. Insert the cells as shown in the diagram, making sure to note proper polarity for each cell. Close the battery door.

POWER SWITCH, LED, and LOW BATTERY ALARM

The red power LED should light when the power switch is moved upwards to the "ON" position. The Tx should have adequate power for flight when the LED is on constantly. Anytime the LED begins to flash, accompanied by the sounding of an audible tone, the Tx battery voltage has dropped too low and operation of the model should NOT be attempted!



WARNING! Never operate an R/C model with weak Tx batteries! Reduced operational range and/or possible loss of control of the aircraft could result. Replace weak alkaline batteries, or re-charge NiCd or NiMH batteries, before attempting a flight!

If during a flight the Tx LED starts to flash, accompanied by the sounding of audible tones, it's a warning that the Tx batteries have become weak and the aircraft should be landed as soon as possible!

Adjustable Sticks



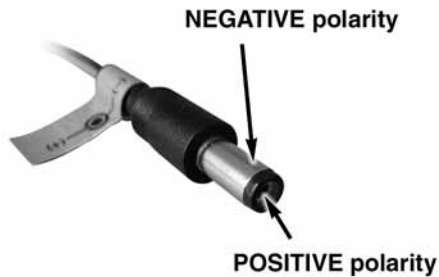
The length of both gimbal sticks can be adjusted as desired. Loosen the set screw inside the center of the stick with a 2mm hex wrench. Rotate the stick end counter-clockwise to lengthen the stick, or clockwise to shorten the stick. Once the desired stick length is found, tighten the set screw with the hex wrench.

Charge Jack



WARNING!! Do NOT attempt to recharge alkaline batteries! The charge jack should ONLY be used if rechargeable cells are used in the transmitter.

The TTX600 includes a built-in charge jack for convenient recharging of NiCd or NiMH batteries, and is compatible with charge leads designed for Futaba® brand transmitters (HCAP0101). This jack is NOT compatible with charge leads for Hitec®, Airtronics®, JR® or Spektrum® radios.



To use the charge jack with optional rechargeable batteries, first remove the sticker that covers the charge jack on the side of the Tx – making sure not to allow any object to be inserted inside the jack itself. Next, insert the cells inside the Tx's battery compartment noting proper polarity. Make sure the transmitter's power switch is in the OFF position. Connect a compatible charge lead to the jack and follow the instructions included with the charger for charging of NiCd or NiMH batteries that are rated at 4.8V.

Tactic's optional TACP1000 rechargeable battery and wall charger kit includes eight "AA" size rechargeable NiMH cells and 110V AC wall charger, which is compatible with this Tx and can be found at local retailers. Make sure to follow the instructions included with the charge kit.



WARNING!! It's not recommended to charge batteries at greater than 1 amp through this charge jack. Fast charging of NiCd and NiMH batteries should ONLY be done with chargers that are specifically designed to include the peak-detection function which can automatically stop charge when full charge is detected. Misuse, improper charging, or over-charging of rechargeable cells can result in damage to the cells that could include cell rupture, explosion, or fire!!

Trainer Function

The TTX600 Tx includes a built-in **wireless** trainer function – no trainer cable required! This trainer system connects a teacher's Tactic Tx to a student's Tactic Tx by wireless connection. Tactic's wireless trainer function is not compatible with trainer systems in any other brand radios.



IMPORTANT! Before attempting to fly the airplane, it's very important to make sure all reversing switches and trim lever adjustments on the student's Tx match the settings on the teacher's Tx! Otherwise, the airplane could suddenly veer off in an unwanted manner when the teacher's trainer switch is pressed. Proper matching of the student and teacher's Tx settings should ensure that no unexpected movements occur when the trainer switch is pressed. This is especially true of the throttle control!

1. The Tx that was used to set up the controls on the aircraft must be used by the TEACHER.
2. The student must use a separate Tactic Tx with wireless trainer function.
3. Place the teacher and student's transmitters within 1 meter of each other, and make sure the throttle stick for each Tx is set to idle.
4. Turn ON the power switch for the Tx being held by the student.
5. Pull and hold the trainer switch on the teacher's Tx, and then turn ON the teacher's Tx power switch.
6. The LED on the teacher's Tx will flash 3 times to indicate it has become bound with the student's Tx.
7. The teacher can then release his trainer switch.
8. Once both transmitters are bound together, power can be applied to the receiver to prepare for flight.

When the training session has ended, with the model on the ground and all power removed from the model, place both transmitters within 1 meter of each other and simply turn the power switch for both transmitters to the OFF position. This will terminate the wireless link between both transmitters. If additional training will be performed again, return to step 1 above to re-establish the wireless link between the teacher and student's transmitters.

Bind the Receiver to the Transmitter

For proper operation it's necessary to "bind" the Tx and Rx together electronically. This ensures sole communication between the two, and prevents other transmitters from being able to control the receiver.

1. Turn on the Tx.
2. Apply power to the Rx.
3. If the Rx LED flashes once and then stays on, the Rx is already bound to the Tx and you can skip to the next section. Otherwise, insert a small diameter screwdriver through the hole marked "BIND" and press the pushbutton until the Rx LED glows red and then turns off after about one second.
4. Release the "BIND" button.
5. If the binding is successful, the Rx LED will flash once and then remain ON.
6. Test for proper Tx/Rx functionality before use. If the radio doesn't appear to have become properly bound, repeat steps 1–5 above.

Failsafe Function

The included TR624 receiver has a failsafe feature which engages in the event that the radio signal from the transmitter somehow becomes interrupted. If radio contact is broken, this safety feature causes the servos to automatically move either to a certain position, or hold their last position to prevent the model from moving in an erratic manner. Channels 1, 2, 4, 5, and 6 will enter a "hold" mode, whereby the servos will lock in their last recognized position.

The servo connected to channel 3, normally being the throttle control, will move to a pre-set position. The factory default failsafe position for channel 3 is to move to **0% throttle**. Motor/prop movement should stop if the receiver loses signal from the transmitter. The throttle servo's failsafe position can be manually re-set to any other position if desired, as follows:

IMPORTANT NOTE: Before manually resetting the failsafe, make sure the servo reversing switches are in the correct position for the application.

1. Apply power to the Tx and Rx.
 - 2a. If using an ESC, do NOT arm the ESC. Do NOT attempt to adjust the throttle's failsafe position if the ESC is armed.
 - 2b. If using a gas or glow powered engine, do NOT attempt to adjust the throttle's failsafe position while the engine is operating.
3. Move the Tx throttle stick to the desired position for the throttle control to move if the Rx goes to failsafe.
4. Press and hold the "Bind" button on the receiver, and the Rx's LED should blink twice. Release the Bind button, and the receiver's LED should turn on (stop flashing). The Tx and Rx should now be bound, with the throttle failsafe in the new position as set above.

NOTE: If you're using an ESC which has a signal loss feature, the pre-set failsafe position is irrelevant as the signal loss feature will cease the throttle operation if the signal is lost.

System Check and Operation

WARNING! During all pre-flight preparations with the aircraft on the ground, make sure the throttle stick remains at the minimum position and do not stand the Tx upright on the ground. Carefully lay the Tx on its back on the ground to prevent it from falling over and possibly dislodging the throttle stick from the low position which would create a safety hazard. Make sure all devices are properly mounted inside the model, and all wiring connections are solid to prevent them from easily becoming dislodged during normal flight. It's best to check the system with the propeller removed from the aircraft.

1. Once all connections are made, check the general operation of the radio and all other components before attempting a flight.
2. Move the Tx throttle stick to the minimum (idle) position.
3. Turn on the Tx, and then the Rx.
4. Make sure all controls are operating in the proper direction. If any servo is turning in the wrong direction, change the position of the reversing switch for that particular channel.
5. With both sticks at center position, move the trim levers for the aileron, elevator, and rudder channels so each respective control surface is perfectly aligned with the main surface. For example: When the aileron trim lever is in the center position, it's best that the trailing edge of the aileron is aligned with the trailing edge of the wing itself (not above or below the wing's trailing edge).
6. Make sure that movements of the throttle stick result in an equal adjustment of the throttle in the model. Confirm that when the throttle stick is at maximum position the electronic speed control gives the appropriate indications (LED and/or audible indicators) for full forward flight. And, when the throttle stick is at minimum position the electronic speed control gives the appropriate indications for "off" or no motor rotation.
7. Anytime power is to be removed from the radio system, it's important to shut down power in the aircraft **first**. Otherwise, the aircraft could become out of control and cause a safety hazard! Move the throttle stick and throttle trim lever to minimum position to stop the glow engine or shut down the ESC. Once the propeller has stopped rotating, shut off the ON/OFF power switch in the model, and disconnect the power battery from the ESC in electric airplanes. Then turn off the power switch in the Tx.

AMA Safety Code (Excerpts)

Read and abide by the following excerpts from the Academy of Model Aeronautics Safety Code. For the complete Safety Code refer to Model Aviation magazine, the AMA web site or the Code that came with your AMA license.

GENERAL

1. I will not fly my model aircraft in sanctioned events, air shows, or model flying demonstrations until it has been proven to be airworthy by having been previously, successfully flight tested.
2. I will not fly my model aircraft higher than approximately 400 feet within 3 miles of an airport without notifying the airport operator. I will give right-of-way and avoid flying in the proximity of full-scale aircraft. Where necessary, an observer shall be utilized to supervise flying to avoid having models fly in the proximity of full-scale aircraft.
3. Where established, I will abide by the safety rules for the flying site I use, and I will not willfully and deliberately fly my models in a careless, reckless and/or dangerous manner.
5. I will not fly my model unless it is identified with my name and address or AMA number, on or in the model. **Note:** This does not apply to models while being flown indoors.
7. I will not operate models with pyrotechnics (any device that explodes, burns, or propels a projectile of any kind).

RADIO CONTROL

1. I will have completed a successful radio equipment ground check before the first flight of a new or repaired model.
2. I will not fly my model aircraft in the presence of spectators until I become a qualified flier, unless assisted by an experienced helper.
3. At all flying sites a straight or curved line(s) must be established in front of which all flying takes place with the other side for spectators. Only personnel involved with flying the aircraft are allowed at or in the front of the flight line. Intentional flying behind the flight line is prohibited.
4. I will operate my model using only radio control frequencies currently allowed by the Federal Communications Commission.
5. **I will not knowingly operate my model within three miles of any pre-existing flying site except in accordance with the frequency sharing agreement listed [in the complete AMA Safety Code].**
9. Under no circumstances may a pilot or other person touch a powered model in flight; **nor should any part of the model other than the landing gear, intentionally touch the ground, except while landing.**

Specifications

TTX600 6-Channel Transmitter	
Channels	6
Frequencies	2.403 – 2.480GHz
Modulation	FHSS spread spectrum
Input power	Four “AA” alkaline, NiCd, or NiMH cells (3.8 – 8.0V, not included)
Output power	< 0.1W
Power indicators	LED, with low voltage alarm
Reversing switches	Slide switches, four channels
Trims	Analog for throttle, digital for aileron, elevator, rudder
Antenna	Built-in non-removable
Charge jack	Built-in (Futaba® compatible, for use with optional NiCd or NiMH cells)
Trainer function	Wireless (compatible with Tactic brand transmitters only)
Optional mixes	Elevon, V-Tail
Dual rates	100/60 % for aileron/elevator/rudder
Channel 5	Non-proportional on/off
Channel 6	Proportional

Tactic TR624 Receiver	
Channels	6
Frequencies	2.403 – 2.480GHz
Modulation	FHSS spread spectrum
Input power	Four “AA” alkaline, NiCd or NiMH cells (4.0 – 6.0V, not included)
Failsafe	Programmable throttle, all other channels hold
Dimensions	1.77 × 0.98 × 0.5" (45 × 25 × 13mm)
Weight	0.28 oz (8g)

OTHER ITEMS INCLUDED

- On/off switch harness with built-in charge lead
- 4 cell “AA” battery holder for receiver
- Neck strap

Important Warnings and Precautions



- **NEVER** allow water or moisture to make contact with the electronic components inside the transmitter, receiver, servos, switch harness, etc.! This could lead to failure or improper functionality of components and poor control of aircraft which could pose a safety hazard.
- **NEVER** operate R/C model aircraft near power lines, radio or cell phone towers, roads or automobiles, buildings, or pedestrians. Be very careful in locations where many R/C aircraft are being used simultaneously.
- **NEVER** operate R/C equipment if you are physically impaired as it could pose a safety hazard to yourself or others in the area.
- **NEVER** allow small children to operate/control model R/C equipment without the supervision of an adult.
- **NEVER** allow the transmitter’s throttle stick to accidentally be moved away from the “off” or minimum position while the model’s engine/motor is moving.
- **ALWAYS** range check the radio system before use.
- **ALWAYS** make sure that all transmitter stick movements operate all servos properly in the model. Check the proper operation of control surfaces before and after starting the engine/motor.
- **ALWAYS** make sure the transmitter antenna is unfolded entirely so that it’s pointing upright to ensure max. range and control of the aircraft.
- Do not store your radio equipment in extremely hot or cold locations, in direct sunlight, or in locations with high humidity. Store R/C equipment in cool and dry locations.
- Do not allow chemicals to come in contact with any parts of the radio system. Substances such as glow fuel, gasoline, CA glue, etc. could permanently damage plastic parts of the radio system.
- If NiCd batteries were installed in the transmitter, remove the batteries before placing the radio in long-term storage.

Troubleshooting

RANGE IS SHORT

Interference – check Rx installation and servo connections.
Low Tx or Rx battery – replace the batteries or recharge if applicable. Rx may need to be located to a different position in the model for better reception. Crash damage – send the radio to Hobby Services for repair.

RUN TIME IS SHORT

Low Tx or Rx batteries – replace or recharge the batteries.
Obstructed servo linkages causing excess battery drain – free the linkages / pushrods.

Tx POWER SWITCH ON BUT SERVOS DO NOT FUNCTION

Tx or Rx batteries are low – replace or recharge the batteries. Rx switch is in the off position – turn on the ESC or switch harness. Switch harness or ESC is connected incorrectly – check all connections and the ESC instruction manual. Rx is not binded to the Tx properly – perform binding process again. Check Tx or Rx battery polarity.

INTERFERENCE OR SERVOS GLITCHING

Out of range – operate the model more closely to the transmitter. Outside radio interference from pagers, strong industrial or other commercial transmitters in the area - check your local R/C club regarding local operation. Rx located too closely to engine, motor, or servos or other moving mechanical parts which might be creating unwanted electrical noise – relocate the Rx inside the model or relocate the ESC.

CONTROL SURFACE MOVES IN THE WRONG DIRECTION

Reverse the position of the reversing switch for the appropriate channel.

ONLY ONE SERVO GLITCHES

Servo is bad – replace the servo or send to Hobby Services for repair.

FAILSAFE NOT WORKING CORRECTLY

Receiver is not properly binded to the transmitter – bind the Rx to the Tx and re-try. Contact Hobby Services for further details.

WIRELESS TRAINING FUNCTION NOT BINDING

Check to see that another Tactic 2.4GHz system is not on in your area. The teacher's and student's transmitters were not powered in the proper sequence. Carefully follow the instructions on page 17 for proper binding and operation for training.

RECHARGEABLE BATTERIES WON'T ACCEPT CHARGE THROUGH THE TRANSMITTER

Check the charger for proper setup and operation. Make sure the charge plug is inserted fully into the charge jack. Make sure the transmitter's power switch is in the OFF position. Make sure the cells are inserted inside the battery compartment in the proper direction.

FCC Statement

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions.

- (1) This device may not cause harmful interference.
- (2) This device must accept any interference received, including interference that may cause undesired operation.

FCC Rf Radiated Exposure Statement: The equipment complies with FCC Rf radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.

Note: The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC ID: IYFTTX600

CE Compliance Information for the European Union

Instructions for Disposal of Waste Equipment by Private Users in the European Union:



This symbol on the product or its packaging indicates this product must not be disposed of with other household waste. Instead, it is the user's responsibility to dispose of their waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local city office, your household waste disposal service or location where you purchased the product.

Declaration of Conformity:

Product: Tactic TTX600 2.4GHz 6-Channel Tx Rx

Item number: TACJ2600

Equipment class: 1



Tactic TTX600 transmitter and Tactic TR624 receiver:

The objects of the declaration described here are in conformity with the requirements of the specifications listed below, following the provisions of the European 2006/95/EC Low Voltage Directive:

EN 60950-1:2006

Safety

The objects of the declaration described here are in conformity with the requirements of the specifications listed below, following the provisions of the European R&TTE directive 1995/5/EC:

ETSI EN 300 328 V1.7.1

Technical requirements for radio equipment

ETSI EN 301 489-1 V1.8.1,

General EMC requirements for radio equipment

301 489-17 V1.3.2

Tactic

c/o Hobbico, Inc.

2904 Research Road

Champaign, IL USA 61826

CE COMPLIANCE INFORMATION FOR THE EUROPEAN UNION

The associated regulatory agencies of the following countries recognize the noted certifications for this product as authorized for sale and use.

UK	DE	DK	BG	SE	FI	
EE	LV	LT	PL	CZ	SK	HU
RO	SI	AT	IT	ES	PT	IE
NL	LU	MT	CY	GR		

TTX600 One Year Limited Warranty *U.S.A and Canada

Tactic warrants this product to be free from defects in materials and workmanship for a period of one (1) year from the date of purchase. During that period, Tactic will, at its option, repair or replace without service charge any product deemed defective due to those causes. You will be required to provide proof of purchase (invoice or receipt). This warranty does not cover damage caused by abuse, misuse, alteration or accident. If there is damage stemming from these causes within the stated warranty period, Tactic will, at its option, repair or replace it for a service charge not greater than 50% of its then current retail list price. Be sure to include your daytime telephone number in case we need to contact you about your repair. This warranty gives you specific rights. You may have other rights, which vary from state to state.

For service on your Tactic product, send it post paid and insured to:

HOBBY SERVICES Ph: (217) 398-0007
3002 N. Apollo Dr., Suite 1 (9:00am–5:00pm CST, M–F)
Champaign, IL 61822

E-mail: hobbyservices@hobbico.com
tacticrc.com

- This product is suitable only for people of 14 years and older. This is not a toy!
- **WARNING: CHOKING HAZARD** - May contain small parts. Keep away from children under 3 years. Please retain packaging for future reference.
- No part of this manual may be reproduced in any form without prior permission.
- The contents of this manual are subject to change without prior notice.
- Tactic is not responsible for the use of this product.

