Taylorcraft 450 ARF

Assembly Manual

Specifications

Wingspan:	46 in (1170mm)
Length:	36 in (915mm)
Wing Area:	370 sq in (23.87 sq dm)
Weight w/o Battery:	29–31 oz (680–740 g) Weight w/
Battery:	24–26 oz (820–880 g)

E-flite®
ADVANCING ELECTRIC FLIGHT

Table of Contents

Introduction

Many a plane has been called a "classic" but few deserve the title more than Clarence Taylor's legendary creation. Designed to be the premier general aviation airplane of its day, the Taylorcraft has inspired aviators who fly simply for the fun of it for over 50 years.

E-flite has perfectly captured the spirit of the Taylorcaft with this outstanding ARF that boasts true-to-scale lines and is an absolute joy to fly. To keep the scale lines unspoiled, E-flite has designed the Taylorcraft 450 with internal servo mounts that are concealed from view. A classic cream and red UltraCote trim scheme, cockpit details and factory painted fiberglass parts further enhance the realism. In the air the Taylorcraft 450 offers a nice balance between maneuverability and stability that will please both newer and experienced pilots.

Using the Manual

This manual is divided into sections to help make assembly easier to understand, and to provide breaks between each major section. In addition, check boxes have been placed next to each step to keep track of each step completed. Steps with a single circle (○) are performed once, while steps with two circles (○ ○) indicate that the step will require repeating, such as for a right or left wing panel, two servos, etc.

Remember to take your time and follow the directions.

Contents of Kit/Parts Layout

Replacement Parts

EFL2626	Wing Set w/Ailerons
EFL2627	Fuselage
EFL2628	Tail Set
EFL2629	Cowling
EFL2630	Landing Gear & Covers
EFL2631	Wheel Pants
EFL2632	Pushrod Set
EFL2633	Fuselage Hatch
EFL2634	Window Set
EFL2635	Wing Strut Set
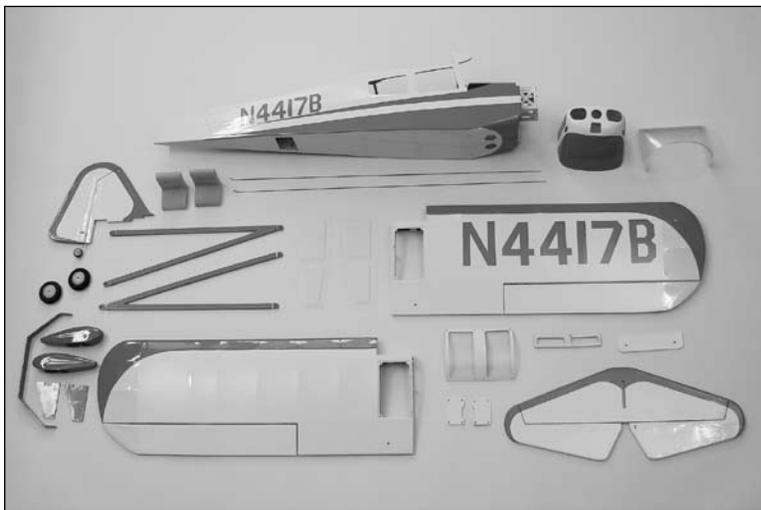
Required Radio Equipment

You will need a minimum 4-channel transmitter, crystals (for 72MHz), micro receiver, and four sub-micro servos. You can choose to purchase a complete radio system that includes all of these items or, if you are using an existing transmitter, just purchase the other required equipment separately. We recommend the crystal-free, interference-free Spektrum™ DX6i 2.4GHz DSM 6 channel system, which includes a micro receiver. You will need to purchase 4 sub-micro 7.5 gram servos. If using your own transmitter, we recommend the use of a JR SPORT™ 6-channel UltraLite receiver and E-flite® S75 Super Sub-Micro servos.

Complete Radio System

SPM6600	DX6i DSM 6CH Radio System

Or Purchase Separately

JSP30610	6-Channel UltraLite Rx w/o Crystal, Positive Shift JR/AIR (72MHz)
JSP30615	6-Channel UltraLite Rx w/o Crystal, Negative Shift Fut/HRC (72MHz)
JRPXFR**	FM Receiver Crystal (JR only, not AR6000)

Or

SPM6000	AR6000 DSM 6-Channel Park Flyer Receiver (DX6 users only)

Or

SPM6100	AR6100 DSM3 Micro Lite 6-Channel Receiver, Air (DX7 users only)

And

EFLRS75	7.5-gram Sub-Micro Servo (4)
EFLREX6L	6-inch Extension Lead (2)
JSP98020	Y-harness

Important Information About Motor Selection

We recommend the E-flite® Park 450 Brushless Outrunner, 890Kv (EFLM1400) to provide you with excellent sport and aerobatic power and a worry-free outrunner motor. The Taylorcraft does not include a propeller, but we recommend our 10X8 Electric Prop (EFLP1080E).

Sport Outrunner Setup

EFLM1400   Park 450 Brushless Outrunner Motor, 890Kv
EFLA1025   25-Amp Pro Brushless ESC
EFLB21003S 11.1V 2100mAh 3-Cell Li-Po, 16GA
THP21003SPL 2100mAh 3-Cell 11.1V Li-Po, 16GA
EFLP1080E   10 x 8 Electric Prop
EFLC3005   Celectra™ 1- to 3-cell Li-Po Charger

Or

THP21003SPL 2100 mAh 3-Cell 11.1V Li-Po, 16GA

High Power Setup

EFLM1505   Park 480 Brushless Outrunner Motor, 1020Kv
EFLA312B   40-Amp Brushless ESC
APC12060E   12x6 Electric prop
EFLB21003S 11.1V 2100mAh 3-Cell Li-Po, 16 GA

Or

THP21003SPL 2100 mAh 3-Cell 11.1V Li-Po, 16GA

Optional Accessories

EFLA110   Power Meter

Required Tools and Adhesives

Tools & Equipment

EFLA250   Park Flyer Tool Assortment, 5-piece

Or Purchase Separately

EFLA257   Screwdriver, #0 Phillips (or included with EFLA250)
EFLA251   Hex Wrench: 3/32-inch (or included with EFLA250)

#1 Phillips screwdriver	#2 Phillips screwdriver
Card stock	Epoxy brush
Felt-tipped pen	Hex wrench: 3/32-inch
Hobby knife (#11 blade)	Hobby scissors
Low-tack masking tape	Mixing sticks
Paper towels	Pencil
Pin drill	Pliers
Rubbing alcohol	Ruler
Side cutters	Square
String	Medium grit sandpaper

Drill bits: 1/16-inch (1.5mm), 3/32-inch (2mm)

Adhesives

6-minute epoxy (HAN8000)	30-minute epoxy (HAN8002)
Canopy glue	Thin CA
Medium CA	Threadlock

Notes Regarding Servos and ESC

WARNING: Use of servos other than those we recommend may overload the BEC of the recommended Electronic Speed Control (ESC). We suggest the use of only the servos we recommend when utilizing the recommended ESC's BEC, or the use of a separate BEC (like the UBEC) or receiver battery pack when using other servos.

Note on Lithium Polymer Batteries

Lithium Polymer batteries are significantly more volatile than alkaline or Ni-Cd/Ni-MH batteries used in RC applications. All manufacturer's instructions and warnings must be followed closely. Mishandling of Li-Po batteries can result in fire. Always follow the manufacturer's instructions when disposing of Lithium Polymer batteries.

Warning

An RC aircraft is not a toy! If misused, it can cause serious bodily harm and damage to property. Fly only in open areas, preferably at AMA (Academy of Model Aeronautics) approved flying sites, following all instructions included with your radio.

Keep loose items that can get entangled in the propeller away from the prop, including loose clothing, or other objects such as pencils and screwdrivers. Especially keep your hands away from the propeller.

Warranty Period

Horizon Hobby, Inc., (Horizon) warranties that the Products purchased (the "Product") will be free from defects in materials and workmanship at the date of purchase by the Purchaser.

Limited Warranty

(a) This warranty is limited to the original Purchaser ("Purchaser") and is not transferable. REPAIR OR REPLACEMENT AS PROVIDED UNDER THIS WARRANTY IS THE EXCLUSIVE REMEDY OF THE PURCHASER. This warranty covers only those Products purchased from an authorized Horizon dealer. Third party transactions are not covered by this warranty. Proof of purchase is required for warranty claims. Further, Horizon reserves the right to change or modify this warranty without notice and disclaims all other warranties, express or implied.

(b) Limitations- HORIZON MAKES NO WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, ABOUT NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OF THE PRODUCT. THE PURCHASER ACKNOWLEDGES THAT THEY ALONE HAVE DETERMINED THAT THE PRODUCT WILL SUITABLY MEET THE REQUIREMENTS OF THE PURCHASER'S INTENDED USE.

(c) Purchaser Remedy- Horizon's sole obligation hereunder shall be that Horizon will, at its option, (i) repair or (ii) replace, any Product determined by Horizon to be defective. In the event of a defect, these are the Purchaser's exclusive remedies. Horizon 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. 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 Horizon. Return of any goods by Purchaser must be approved in writing by Horizon before shipment.

Damage Limits

HORIZON SHALL NOT BE LIABLE FOR SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR PRODUCTION OR COMMERCIAL LOSS IN ANY WAY CONNECTED WITH THE PRODUCT, WHETHER SUCH CLAIM IS BASED IN CONTRACT, WARRANTY, NEGLIGENCE, OR STRICT LIABILITY. Further, in no event shall the liability of Horizon exceed the individual price of the Product on which liability is asserted. As Horizon 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.

Law: These Terms are governed by Illinois law (without regard to conflict of law principals).

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 directly. This will enable Horizon to better answer your questions and service you in the event that you may need any 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 this 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 is not responsible for merchandise until it arrives and is accepted at our facility*. A Service Repair Request is available at www.horizonhobby.com on the "Support" tab. If you do not have internet access, please include a letter with your complete name, street address, email address and phone number where you can be reached during business days, your RMA number, a list of the included items, method of payment for any non-warranty expenses and a brief summary of the problem. Your original sales receipt must also be included for warranty consideration. Be sure your name, address, and RMA number are clearly written on the outside of the shipping carton.

Warranty Inspection and Repairs

To receive warranty service, you must include your original sales receipt verifying the proof-of-purchase date. Provided 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 warranty the repair will be completed and payment will be required without notification or estimate of the expense unless the expense exceeds 50% of the retail purchase cost. By submitting the item for repair you are agreeing to payment of the repair without notification. Repair estimates are available upon request. You must include this request with your repair. Non-warranty repair estimates will be billed a minimum of ½ hour of labor. In addition you will be billed for return freight. Please advise us of your preferred method of payment. Horizon 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. *Please note: non-warranty repair is only available on electronics and model engines.*

Electronics and engines requiring inspection or repair should be shipped to the following address:

Horizon Service Center
4105 Fieldstone Road
Champaign, Illinois 61822

All other Products requiring warranty inspection or repair should be shipped to the following address:

Horizon Product Support
4105 Fieldstone Road
Champaign, Illinois 61822

Please call 877-504-0233 with any questions or concerns regarding this product or warranty.

Safety, Precautions, and Warnings

As the user of this product, you are solely responsible for operating it in a manner that does not endanger yourself and others or result in damage to the product or the property of others.

Carefully follow the directions and warnings for this and any optional support equipment (chargers, rechargeable battery packs, etc.) that you use.

This model is controlled by a radio signal that is subject to interference from many sources outside your control. This interference can cause momentary loss of control so it is necessary to always keep a safe distance in all directions around your model, as this margin will help to avoid collisions or injury.

- Always operate your model in an open area away from cars, traffic, or people.
- Avoid operating your model in the street where injury or damage can occur.
- Never operate the model out into the street or populated areas for any reason.
- Never operate your model with low transmitter batteries.
- Carefully follow the directions and warnings for this and any optional support equipment (chargers, rechargeable battery packs, etc.) that you use.
- Keep all chemicals, small parts and anything electrical out of the reach of children.
- Moisture causes damage to electronics. Avoid water exposure to all equipment not specifically designed and protected for this purpose.

Aileron Servo Installation

Required Parts

Wing w/ailerons (R&L)
Micro pushrod connector (2)
Servo mounting plate (R&L)
Sub-micro servo (2)
6-inch (152mm) servo extension (2)
2mm x 4mm machine screw (2)
2mm x 6mm sheet metal screw (8)
Pushrod wire, 3 3/4-inch (95mm) (2)
5/16 x 5/16 x 1/2-inch (8 x 8 x 12mm) mounting block (4)

Servo arm (medium length)
Pushrod connector backplate (2)
Control horn (2)
Y-harness

Required Tools and Adhesives

Pin drill
Side cutters
Pencil
#1 Phillips screwdriver

Drill bit: 1/16-inch (1.5mm)
String
6-minute epoxy
Low-tack masking tape

❍ ❍ 1. Use a pin drill and 1/16-inch (1.5mm) drill bit to enlarge the outer hole in a medium length servo arm.
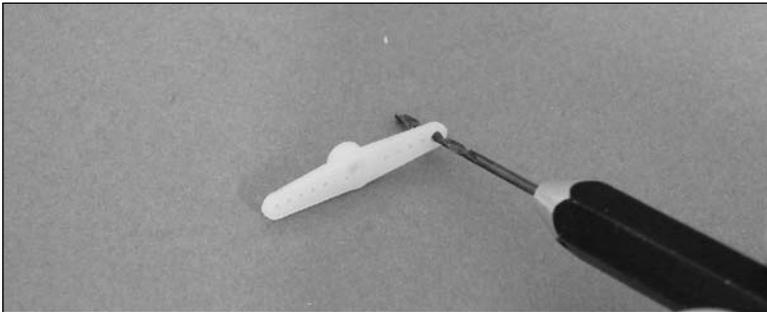
❍ ❍ 2. Slide a micro pushrod connector into the hole drilled in the previous step.
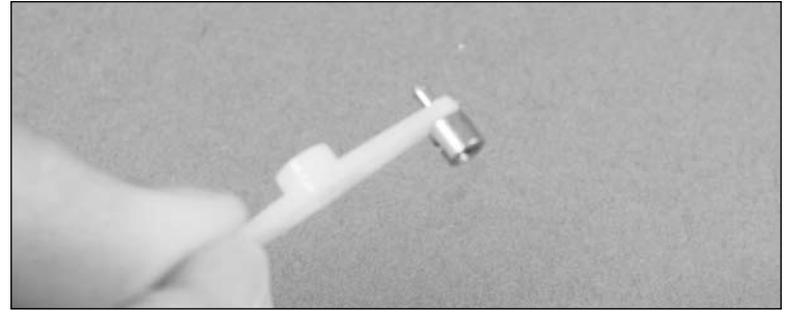
❍ ❍ 3. Use a pushrod connector backplate to secure the connector to the servo arm.
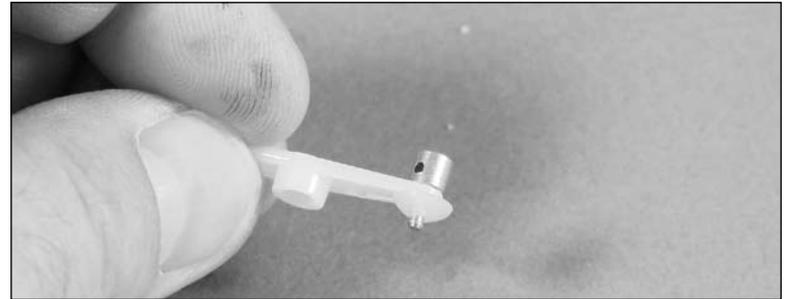
❍ ❍ 4. Use side cutters to remove the remaining arm so it won't interfere with the operation of the servo.
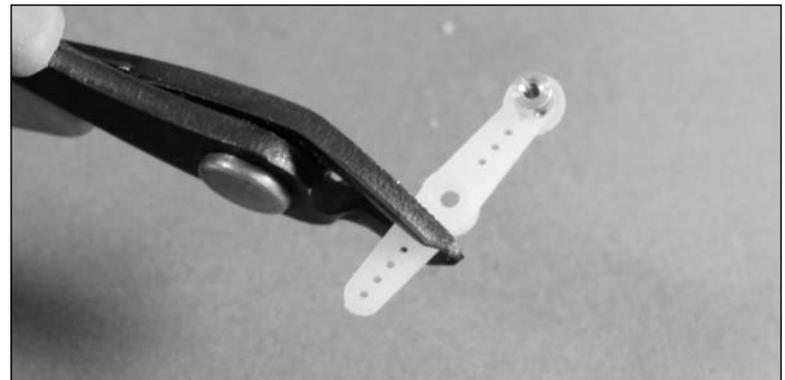
5. Turn on the transmitter and center the aileron stick and trim. Check that any programming has been cleared if you are using a programmable radio. Plug the aileron servos into a Y-harness, then into the receiver and check the operation of the servos. Attach the arm perpendicular to the servo.
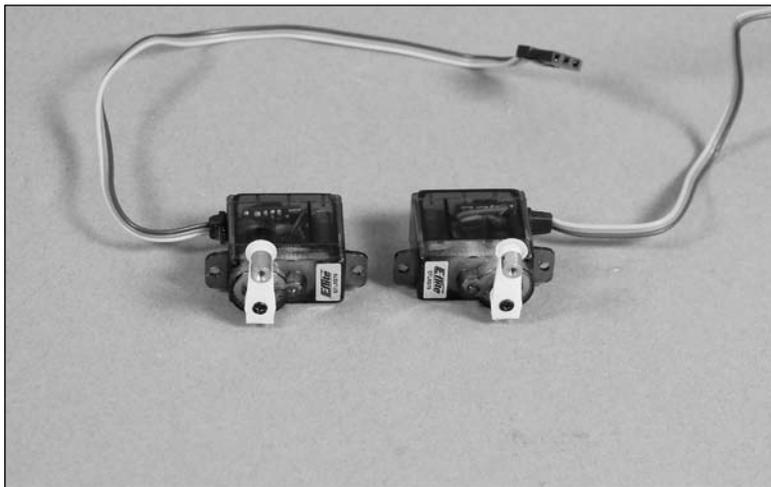
6. Secure a 6-inch (152mm) servo extension to the servo lead using your favorite brand of servo wire keeper or tape.
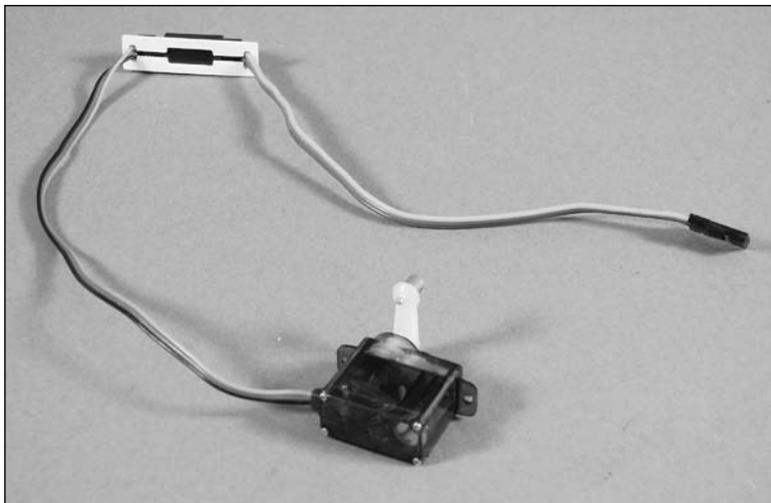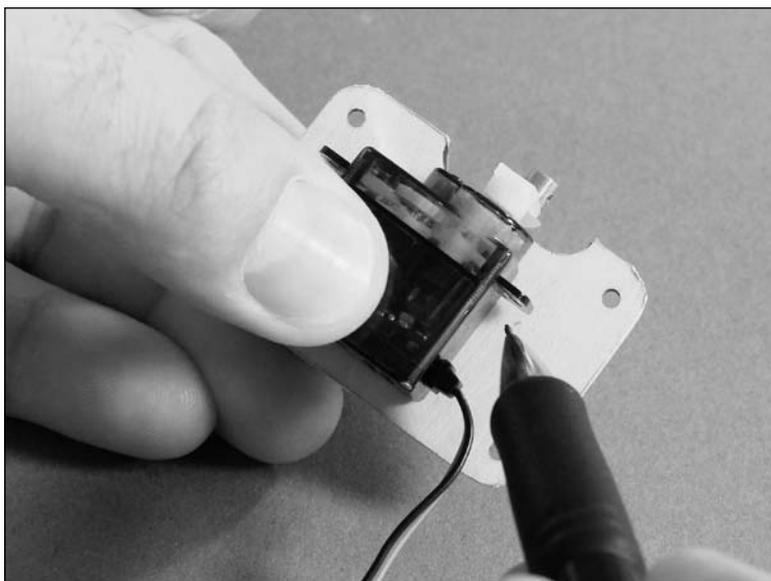
7. Locate the correct servo mounting plate for your wing. The notch in the correct plate will align with the notch in the wing as shown below.

Correct Alignment

Incorrect Alignment
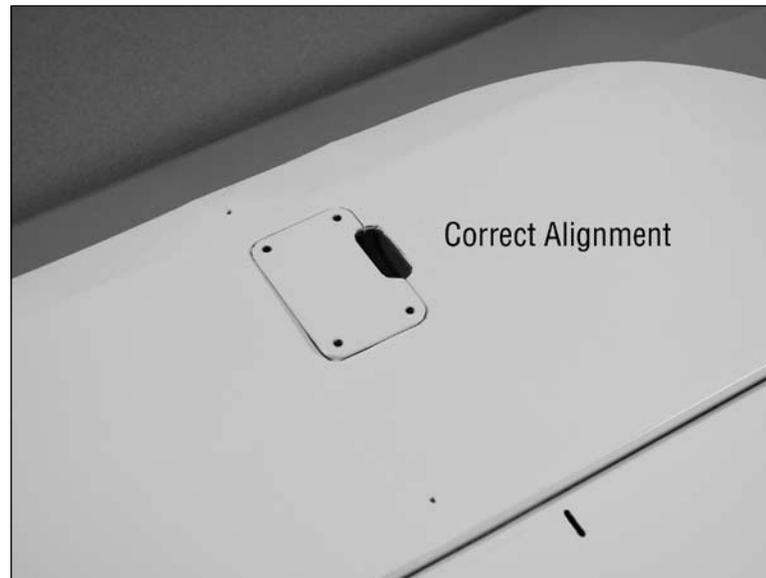
❍ ❍ 8. Position the servo on the mounting plate so the arm is centered in the notch.

❍ ❍ 9. Use a pencil to mark the location of the servo mounting tabs on the plate.

❍ ❍ 10. Use 6-minute epoxy to glue the 5/16 x 5/16 x 1/2-inch (8 x 8 x 12mm) mounting blocks on the plate.
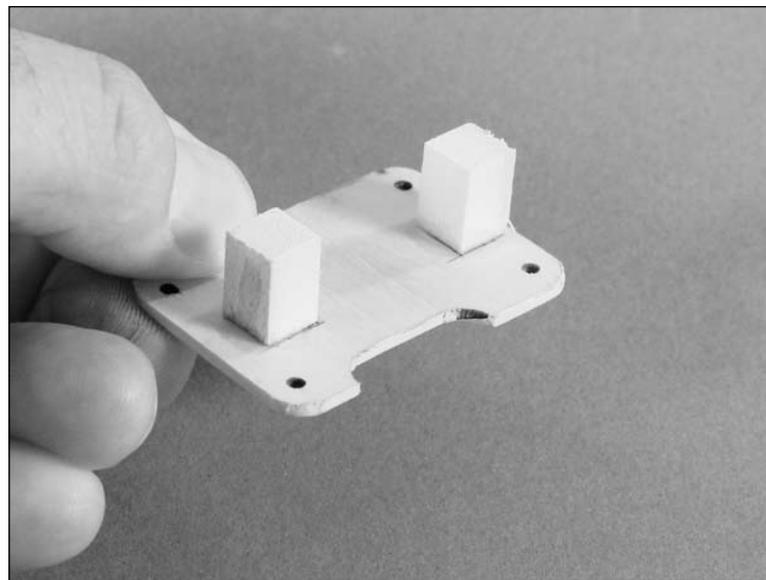
❍ ❍ 11. Use a pin drill and 1/16-inch (1.5mm) drill bit to drill the two mounting holes for the servo in the blocks.
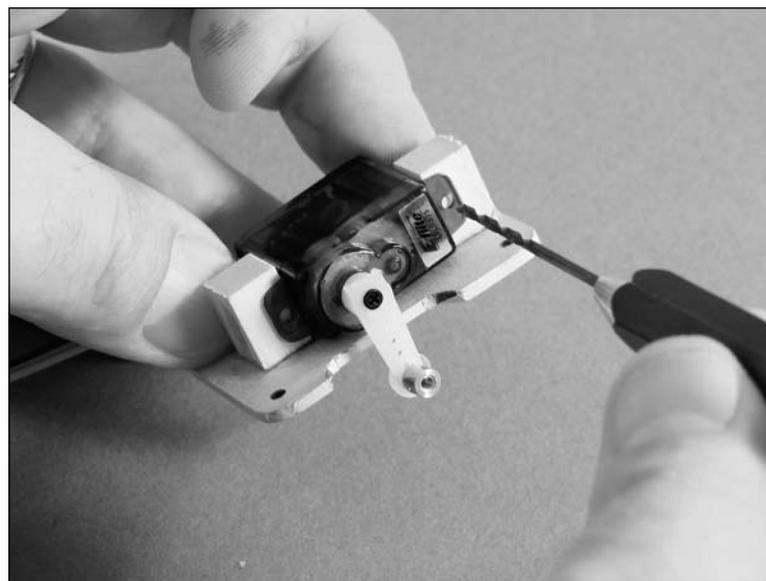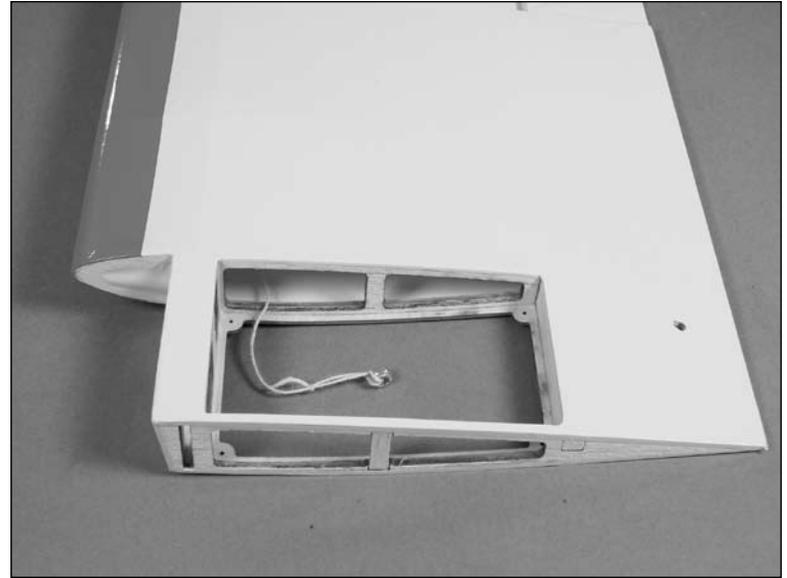
❍ ❍ 12. Use the hardware provided with the servo to secure it to the blocks using a #1 Phillips screwdriver.
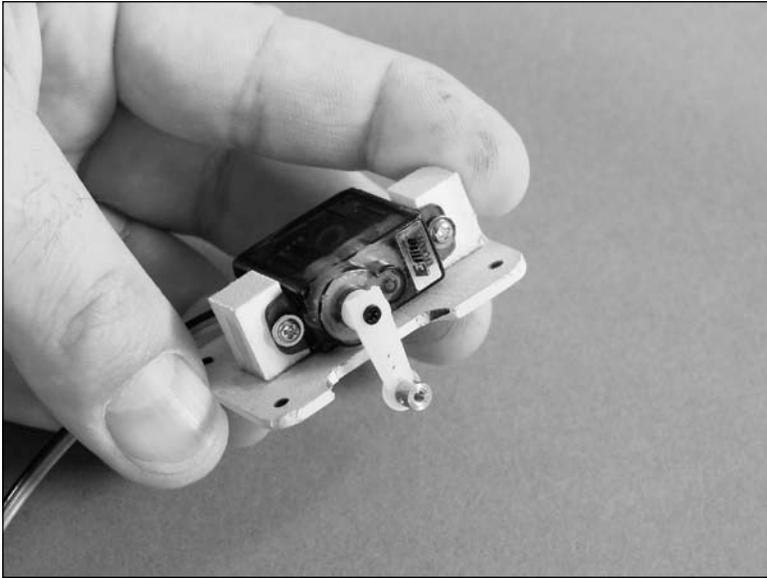
❍ ❍ 13. Attach a weight to a piece of string. Lower the string into the opening in the wing for the servo.
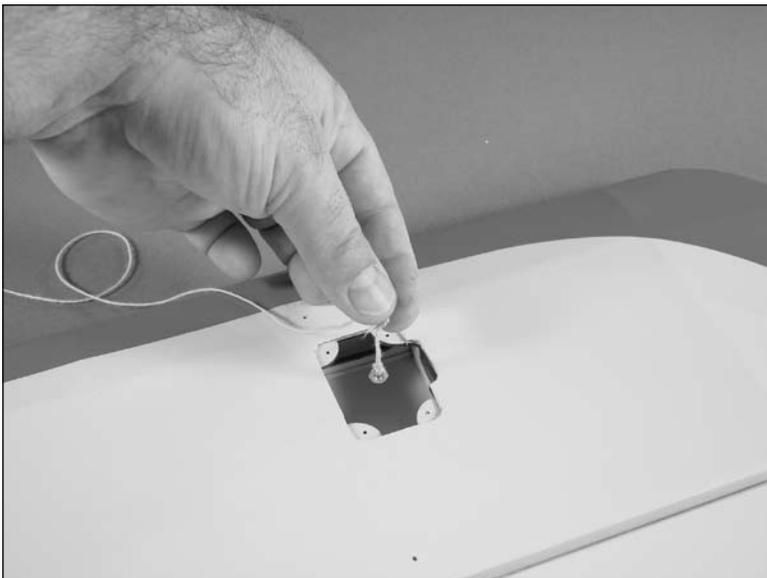
❍ ❍ 14. Tip the wing up and allow the weight to drop to the center of the wing.

❍ ❍ 15. Tie the string to the servo extension and pull it through the wing to the center section.
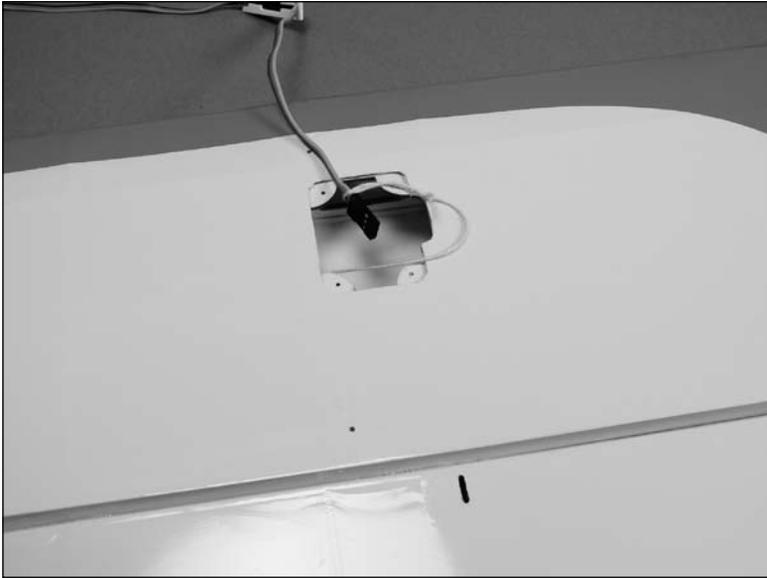
❍ ❍ 16. Attach the servo mounting plate to the wing using four 2mm x 6mm sheet metal screws using a #1 Phillips screwdriver.

❍ ❍ 17. Use 6-minute epoxy to glue the aileron servo horn in position. Make sure to press the horn fully into the slot in the aileron.

❍ ❍ 18. Attach the 3 3/4-inch (95mm) aileron pushrod to the middle hole of the control horn.

❍ ❍ 19. Slide the opposite end of the pushrod through the connector on the servo arm.

❍ ❍ 20. Use a piece of low-tack tape to hold the aileron in neutral. You can leave the tape in place until you are ready to set the control throws to help prevent moving the aileron and possibly stripping the servo gears.

❍ ❍ 21. With the radio on, check the operation of the aileron servo again. Use a 2mm x 4mm machine screw and a #1 Phillips screwdriver to secure the pushrod to the connector. Use side cutters to remove any excess wire extending beyond the connector.

❍ 22. Repeat Steps 1 though 21 for the remaining aileron servo and linkage.

Joining the Wing Panels

Required Parts

Wing (R&L)   Wing joiner
Wing dowel (2)   Skylight window
Wing bolt brace
2mm x 6mm sheet metal screw (8)

Required Tools and Adhesives

Pencil   30-minute epoxy
Mixing stick   Epoxy brush
Hobby knife w#11 blade   Felt-tipped pen
Medium CA   Low-tack masking tape
Medium grit sandpaper   Paper towels
Rubbing alcohol   #1 Phillips screwdriver

❍   1. Use a pencil to mark the wing panel and joiner so you can return the joiner into the orientation in which it was fit into the wing panels.
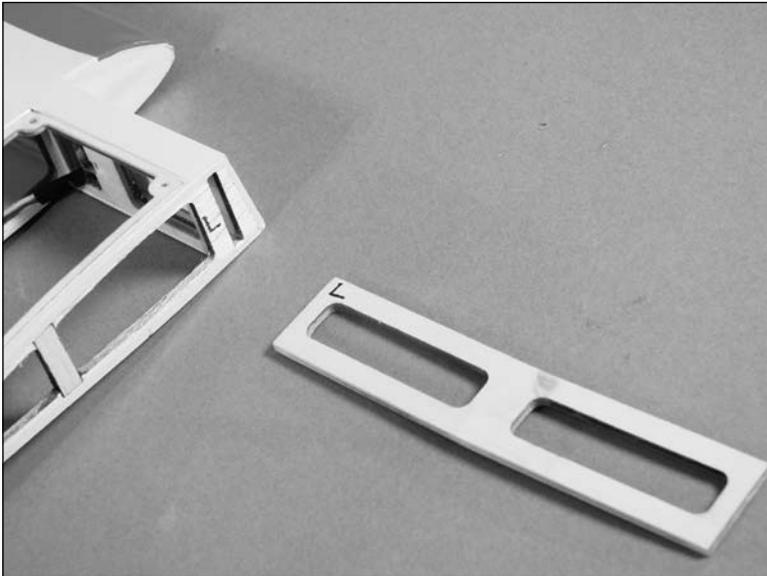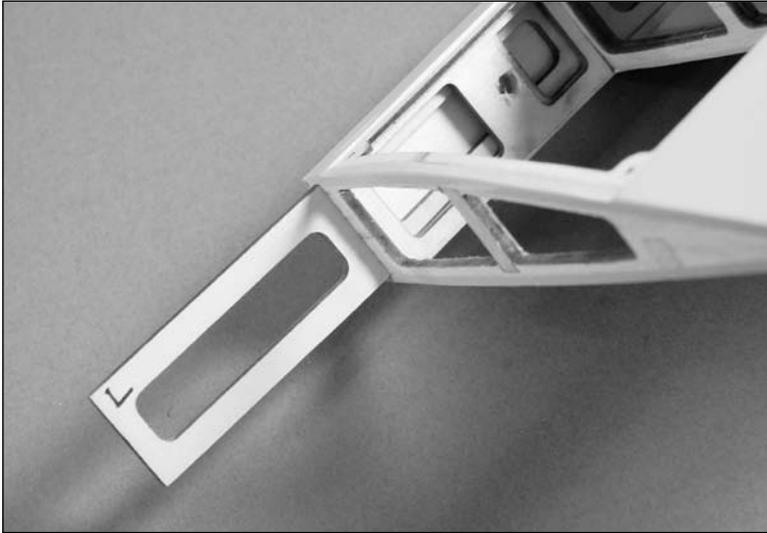
❍   2. Slide the wing joiner into the wing panel. It may be necessary to sand it lightly for the best fit.
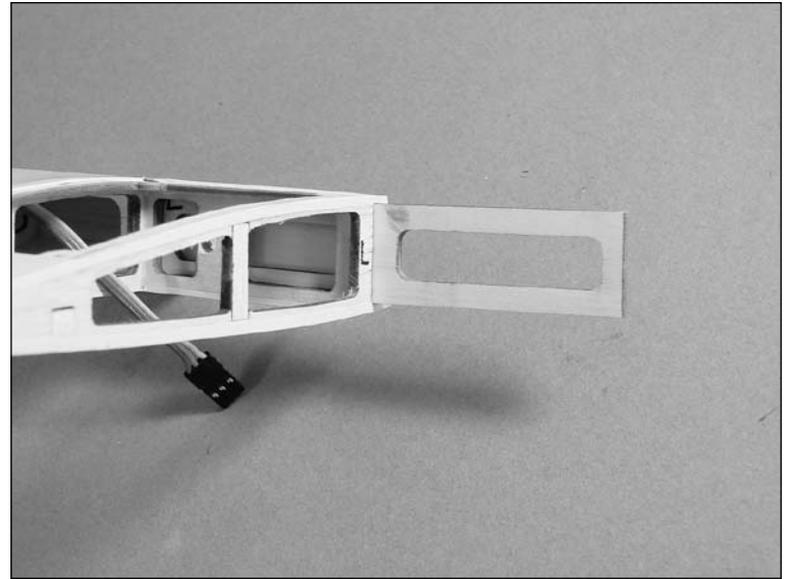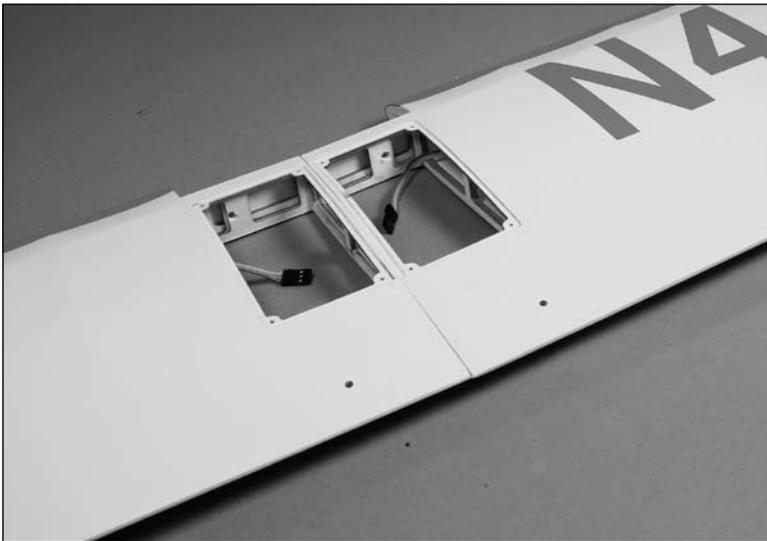
❍   3. Use a pencil to draw a line on the joiner against the wing.
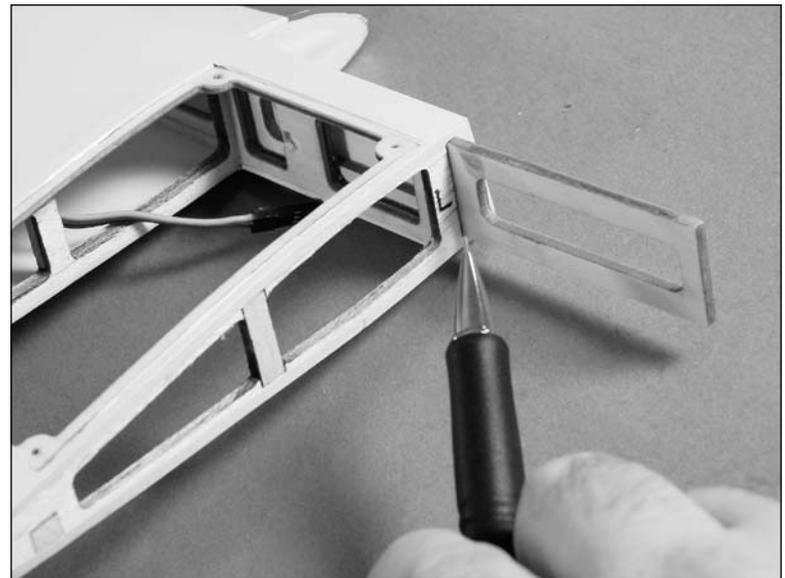
4. Slide the joiner into the other wing panel. It should slide in the panel up to or farther than the line drawn in the previous step. If not, sand the end of the joiner so it will slide in at least up to the line.

5. Fit the two panels together. They should fit tight against each other with no gaps.

6. Mix around 1/2 oz (15ml) of 30-minute epoxy. Apply epoxy to the joiner, including any edges that will come in contact with the wing panel when it is installed.


7. Apply epoxy inside the opening in the wing as well.

8. Finally, apply epoxy to the root ribs that will come in contact with each other. Slide the panels together and use low-tack tape to hold the two panels together until the epoxy has fully cured.
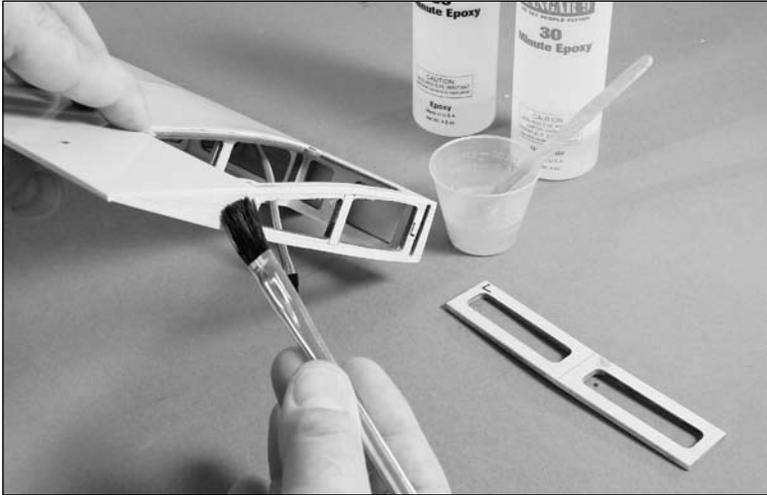

9. Use medium CA to glue the wing dowels in position. They will slide in the wing until they are flush with the back side of the wing center section.
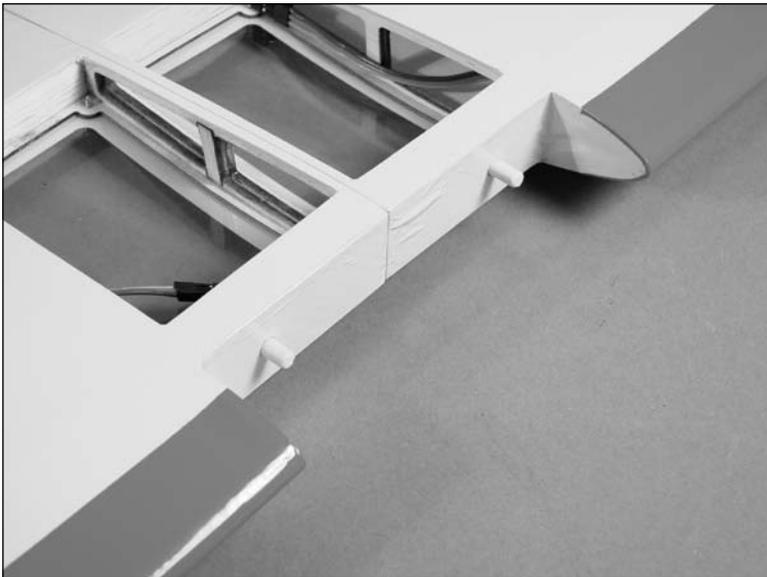

10. Attach the skylight to the wing using eight 2mm x 6mm sheet metal screws using a #1 Phillips screwdriver. Leave the screws slightly loose until they have all been started so you can adjust the position of the window.
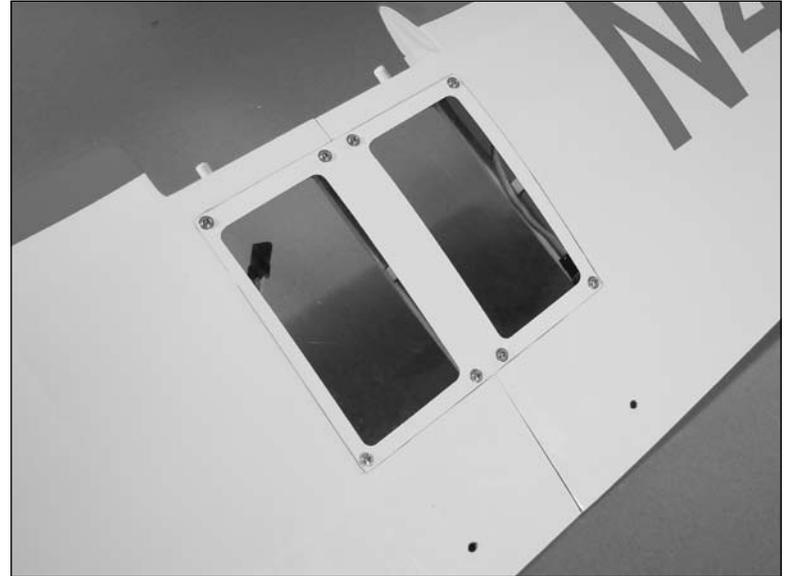
11. Lightly score the wing bolt brace so it can bend to conform to the dihedral in the wing when installed.
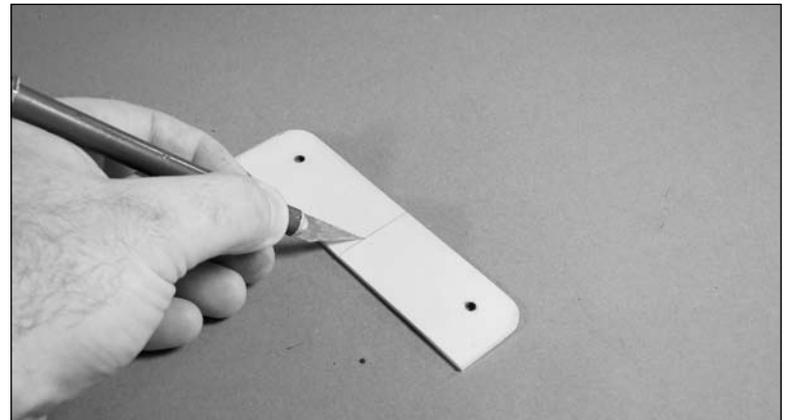
❍ 12. Position the brace on the trailing edge of the wing. Use a felt-tipped pen to trace the outline of the brace on the wing.
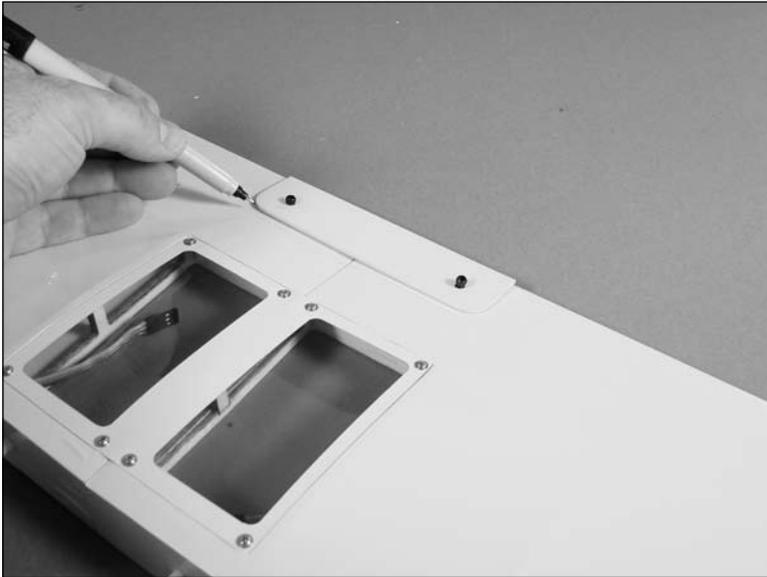
Hint: Use two of the 4-40 bolts through the holes in the brace and wing to keep it in position while tracing it with the pen.

❍ 13. Use a hobby knife with a new #11 blade to remove the covering 1/16-inch (1.5mm) inside the line drawn in the previous step.
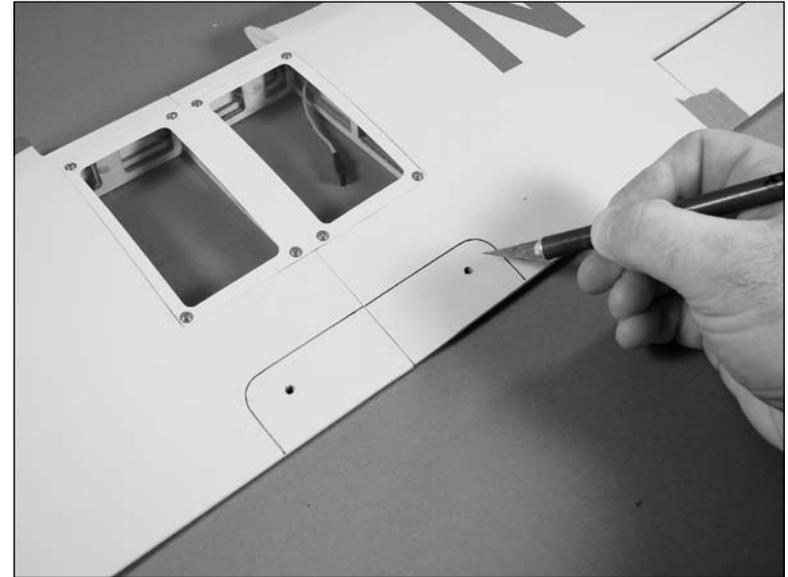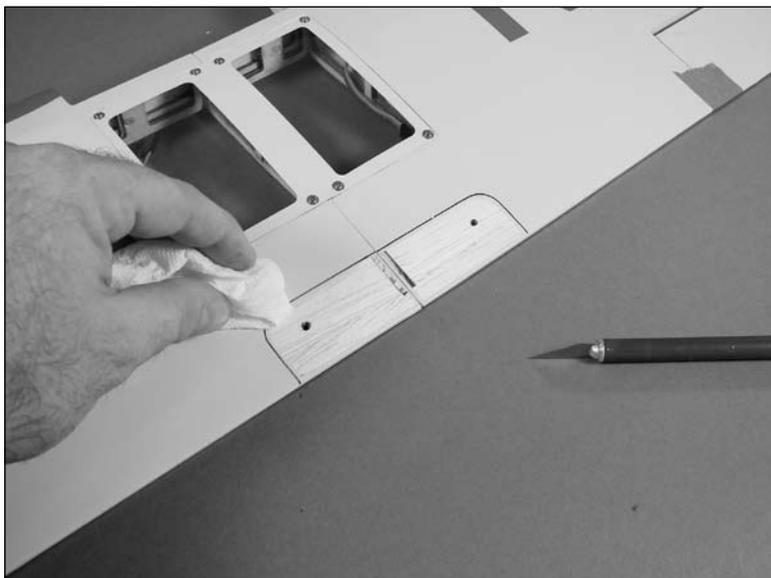
Note: Use light pressure to avoid cutting into the underlying structure. A soldering iron of hot knife can be used as an option, reducing the chances of cutting into the wood.

❍   14. Remove the covering, exposing the underlying wood.
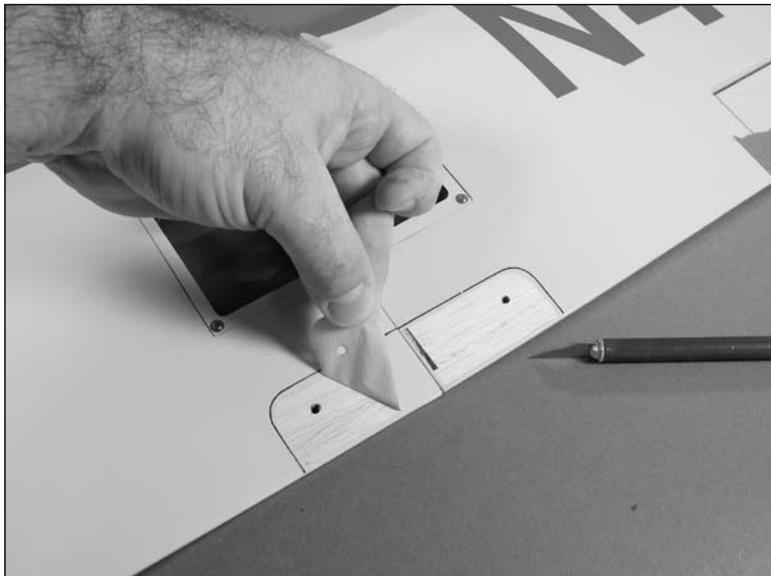
❍   15. Use a paper towel and rubbing alcohol to remove the lines drawn on the wing.

❍   16. Use medium CA to glue the brace to the wing. Hold the brace tightly against the wing until the CA cures.
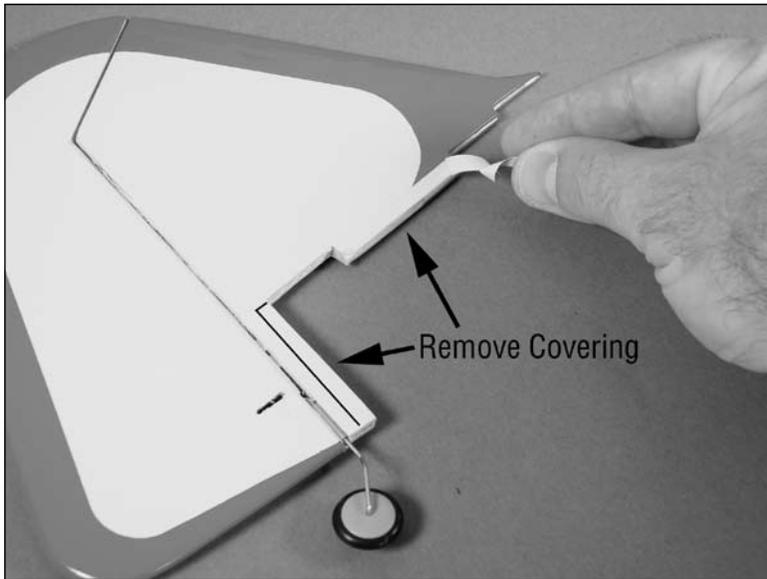
Tail Installation

Required Parts

Fin/rudder	Stabilizer/elevator
Fuselage	Assembled wing
#4 washer (2)	
4-40 x 1-inch socket head bolt (2)	

Required Tools and Adhesives

30-minute epoxy	Mixing stick
Square	Epoxy brush
Hobby knife w/#11 blade	Felt-tipped pen
Hex wrench: 3/32-inch	

❍ 1. Carefully remove the covering slightly below the edge of the fin and on the lower tailpost.

*Note*: You will want the slot for the elevator to be on the right side of the vertical fin and rudder during the next step.

❍ 2. Use 30-minute epoxy to glue the tab from the fin into the stabilizer. Check that the fin and stabilizer are square while the epoxy cures.
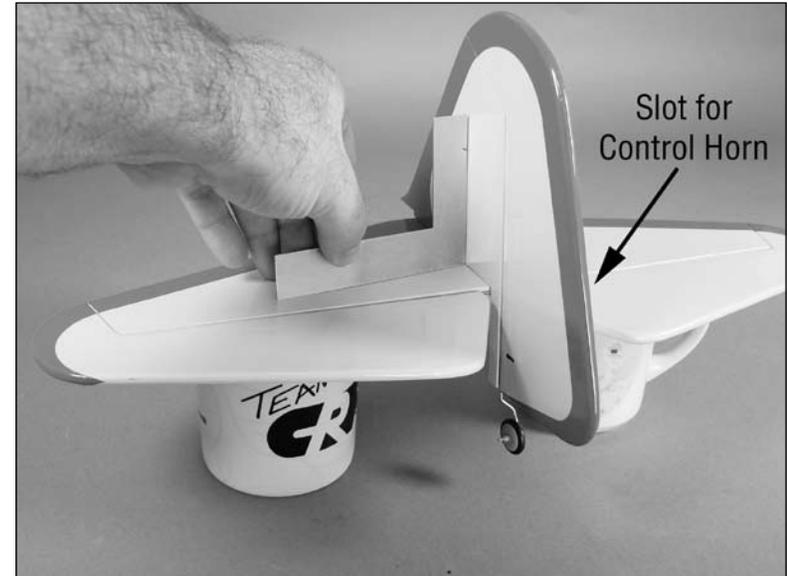
Hint: Rest the stabilizer on two coffee cups. This will suspend the assembly and keep the tail wheel from causing any issues with keeping things square.

○ 3. Position the tail assembly onto the fuselage. The tab on the fin will extend slightly, locking into the slot in the fuselage. Make sure the fin is straight with the center line of the fuselage.
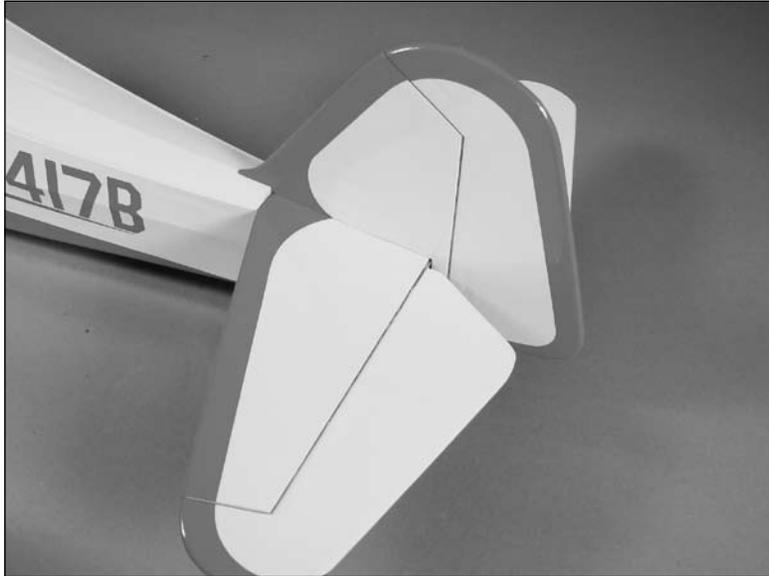
○ 4. Trace the outline of the fuselage on the bottom of the stabilizer using a felt-tipped pen.
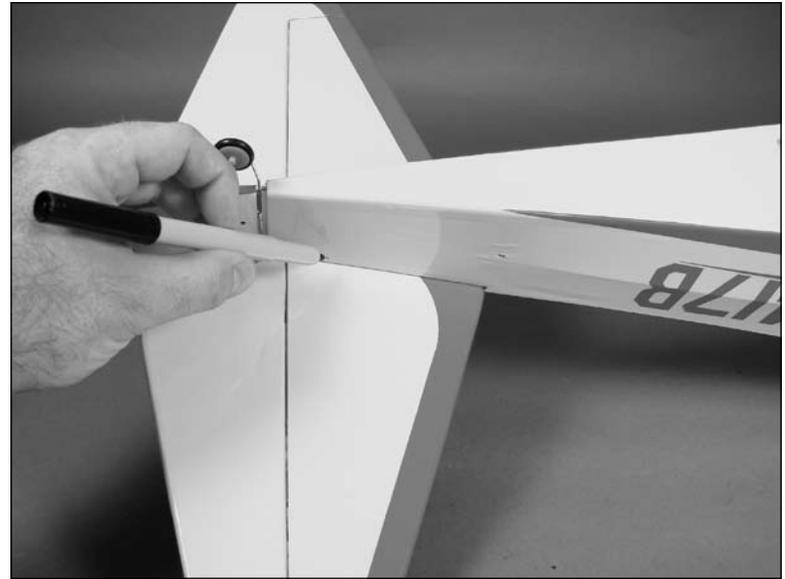
5. Use a hobby knife to remove the covering from inside the lines on the bottom of the stabilizer. Again, be careful not to cut into the stabilizer.
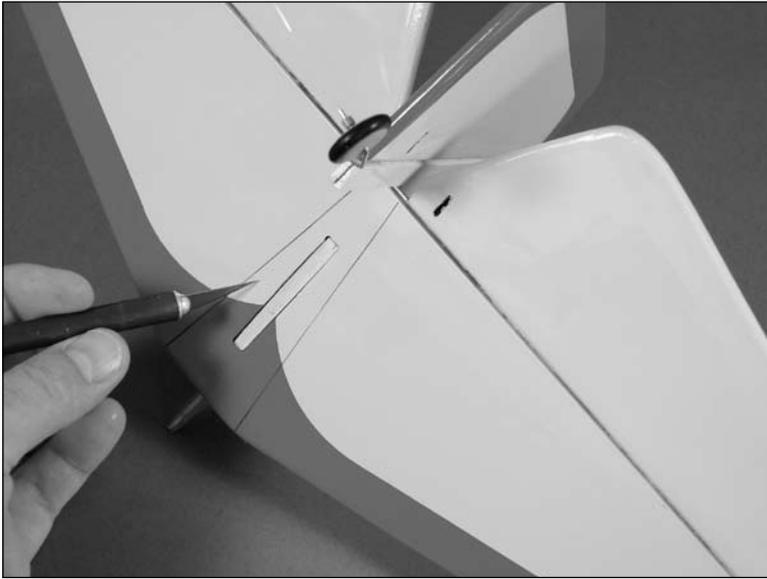
6. Slide the dowels in the wing in the holes of the fuselage.

7. Secure the wing to the fuselage using two 4-40 x 1-inch socket head screws and two #4 washers.

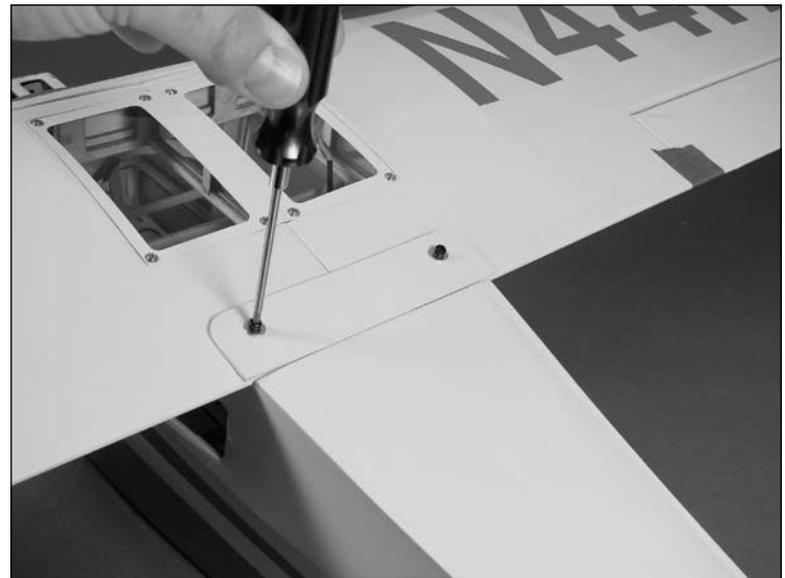8. Stand back from the aircraft about 6–8 feet (2–3 meters) and check that the wing and stabilizer are parallel. If not, lightly sand the fuselage where the stabilizer rests to correct any alignment issues.
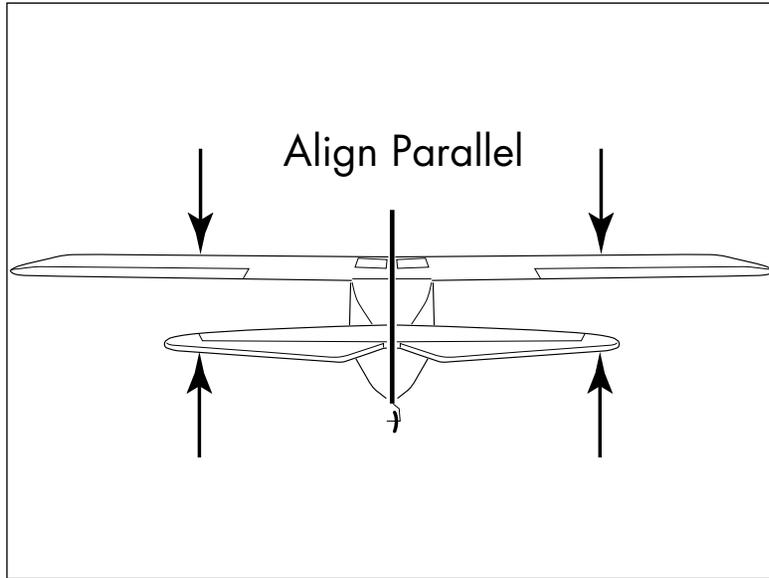
9. Apply 30-minute epoxy to the exposed wood of the stabilizer and to the fuselage where the stabilizer will rest. Place the tail assembly on the fuselage and double-check all alignments made. Allow the epoxy to fully cure before moving your airframe.

Servo Installation

Required Parts

Control horn (2)   Control horn backplate (2)
Micro pushrod connector (2)   Connector backplate (2)
2mm x 4mm machine screw (2)
Pushrod wire, 24-inch (610mm) (2)

Required Tools and Adhesives

Medium CA   Low-tack masking tape
#1 Phillips screwdriver   Side cutters

❍ ❍ 1. Pass the bend in the 24-inch (610mm) pushrod wire through the center hole of the control horn.
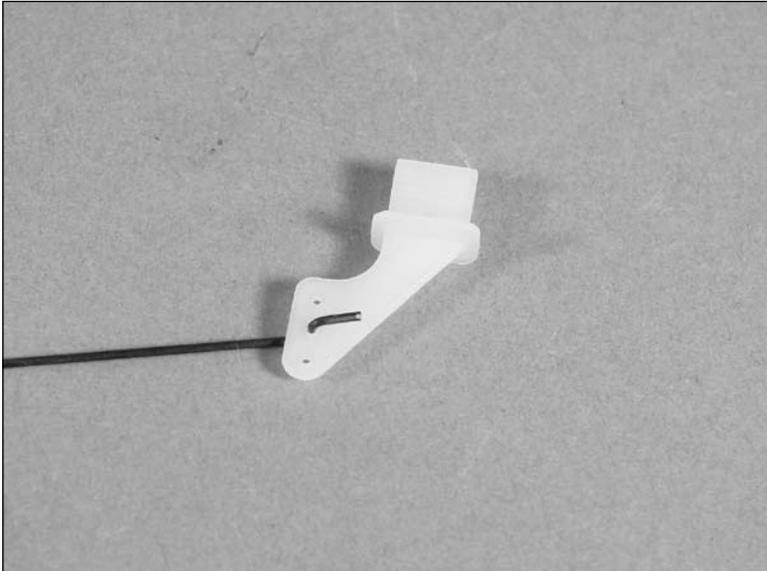
❍ ❍ 2. Slide the pushrod wire into the pre-installed pushrod tube in the fuselage.
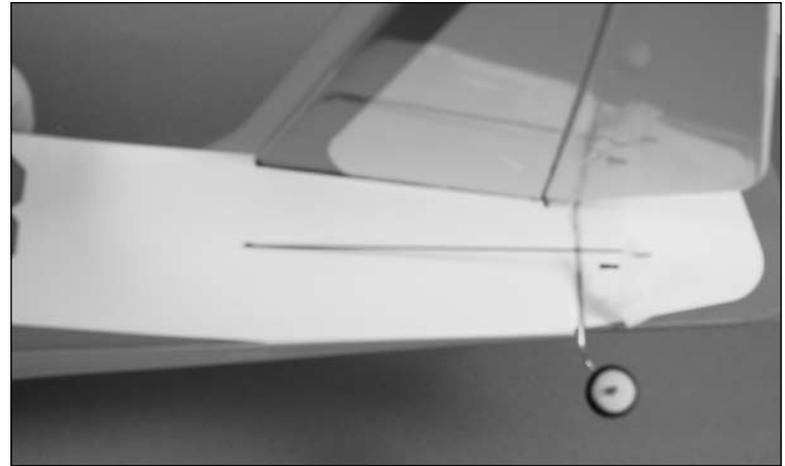
❍ ❍ 3. Insert the control horn into the slot in the rudder.
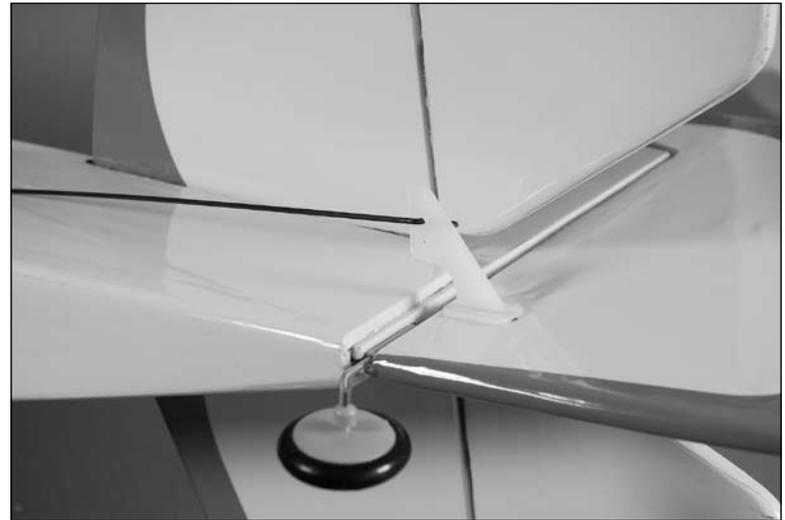
Hint: Use low-tack masking tape to hold the rudder and elevator centered while installing the servos.

4. Snap the control horn backplate on the control horn. Hold the horn while pressing the backplate tight against the rudder.
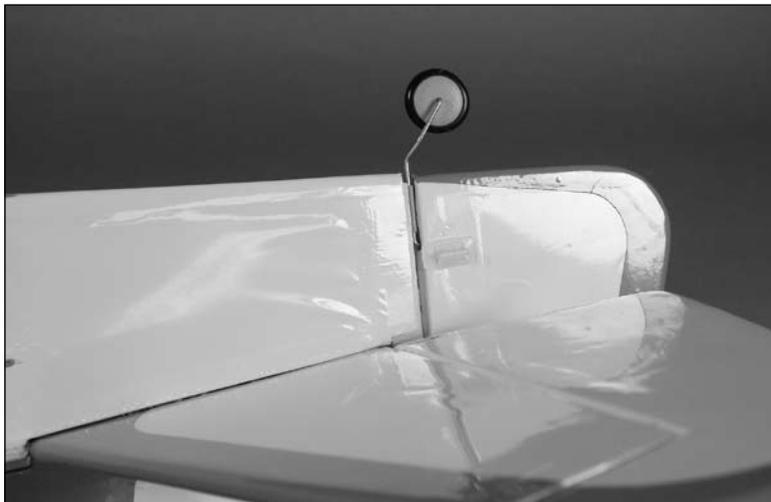
5. Apply a few drops of medium CA to the junction between the control horn and backplate to secure it in place.

6. Attach the micro pushrod connector to the servo arm using the same technique used for the aileron servo. Mount the rudder servo using the hardware provided with the servo. After centering the servo, secure the pushrod using a 2mm x 4mm machine screw and #1 phillips. Use side cutters to trim the pushrod wire to the correct length.

7. Repeat Steps 1 through 6 to install the elevator pushrod and servo.

Landing Gear Installation

Required Parts

Landing gear	Landing gear cover (2)
#4 washer (4)	4-40 locknut (4)
4-40 nut (2)	$1 \frac{3}{4}$-inch (44mm) foam wheel (2)
Wheel pant (R&L)	2mm x 8mm sheet metal screw (2)

4-40 x $1 \frac{1}{4}$-inch socket head screw (2)
4-40 x 3/8-inch socket head screw (2)
2mm x 6mm machine screw (4)

Required Tools and Adhesives

Pin drill	Drill bit: 1/16-inch (1.5mm)
Hex wrench: 3/32-inch	#1 Phillips screwdriver
Felt-tipped pen	Pliers
Threadlock	

1. Attach the landing gear covers to the landing gear using four 2mm x 6mm machine screws. The front edge of the covers will line up with the front edge of the landing gear when installed correctly.
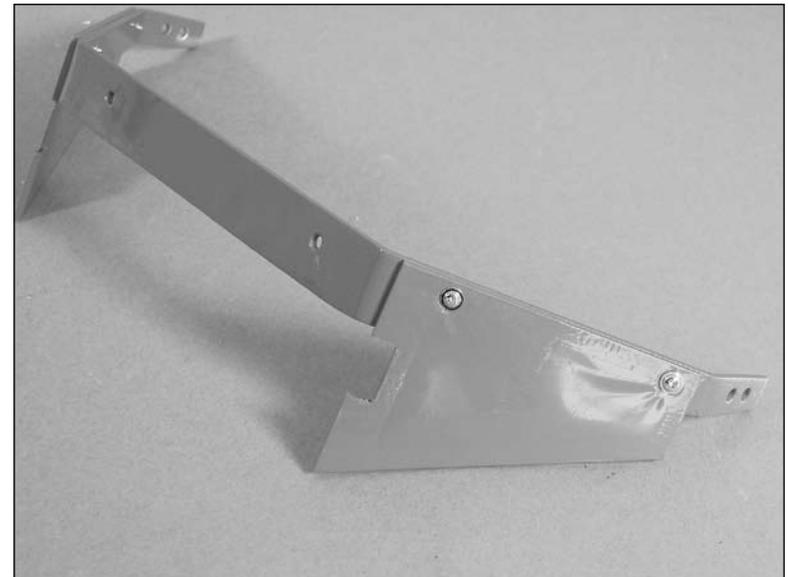
❍ 2. Attach the landing gear to the fuselage using two 4-40 x 3/8-inch socket head screws and two #4 washers. Use threadlock on the screws to prevent them from vibrating loose in flight.
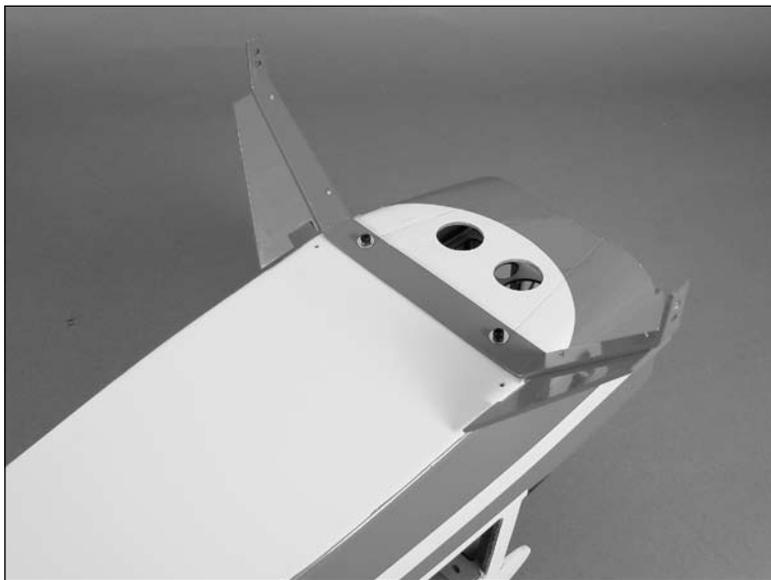
❍ ❍ 3. Slide a 4-40 x 1 $\frac{1}{4}$-inch-inch socket head screw through the wheel. Place a washer on the screw and thread a 4-40 locknut onto the screw. A 4-40 nut is then tightened against the locknut. Check that the wheel can spin freely on the screw.

❍ ❍ 4. Pass the screw into the lower hole in the landing gear. Secure the wheel using a 4-40 locknut.

❍ 5. Repeat Steps 3 and 4 to install the remaining wheel.

❍ ❍ 6. Rest your model on a flat surface. Slide the wheel pant over the wheel and position it so there is ground clearance for the wheel pant.

❍ ❍ 7. Use a felt-tipped pen to mark the location for the wheel pant screw.

❍ ❍ 8. Drill the location marked in the previous step using a pin drill and 1/16-inch (1.5mm) drill bit.
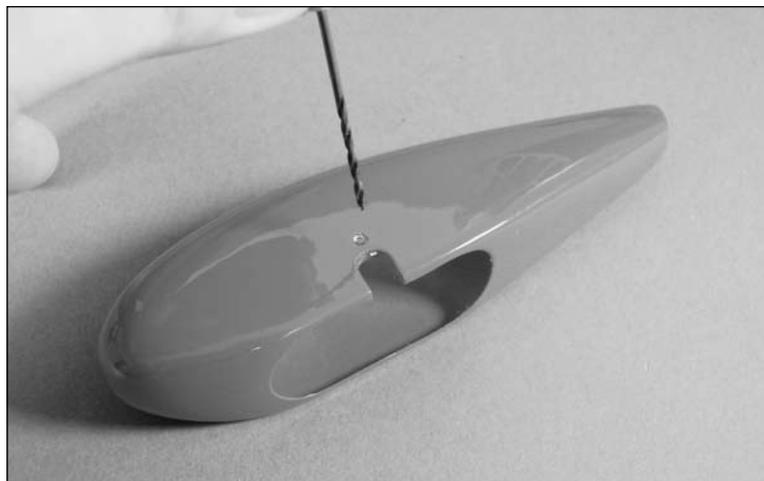
❍ ❍ 9. Position the wheel pant back on the gear and secure it using a 2mm x 6mm sheet metal screw.

❍ 5. Repeat Steps 6 through 9 to install the remaining wheel pant.

Motor and Cowling Installation

Required Parts

Fuselage assembly	Motor w/X-mount & hardware
Speed control	Cowling
Propeller	2mm x 8mm screw (4)
Hook and loop tape	
4-40 x 3/8-inch socket head screw (4)	

Required Tools and Adhesives

Low-tack masking tape	Card stock
Thin CA	Pin drill
#1 Phillips screwdriver	Hex wrench: 3/32-inch
#2 Phillips screwdriver	Threadlock
Drill bit: 1/16-inch (1.5mm), 3/32-inch (2mm)	

Special note:

Your Taylorcraft has been designed with a new motor mounting system which enables you to install either a Park 450 or Park 480 motor with no modifications from you. The motors bolt on the same, you just need to space out the floating blind nut system that is installed in the firewall.

❍ 1. Attach the X-mount to the motor using the hardware provided with the motor. Use threadlock to prevent the screws from vibrating loose during flight.

❍ 2. Attach the motor to the motor box using four 4-40 x 3/8-inch socket head screws. Use threadlock to prevent the screws from vibrating loose during flight.
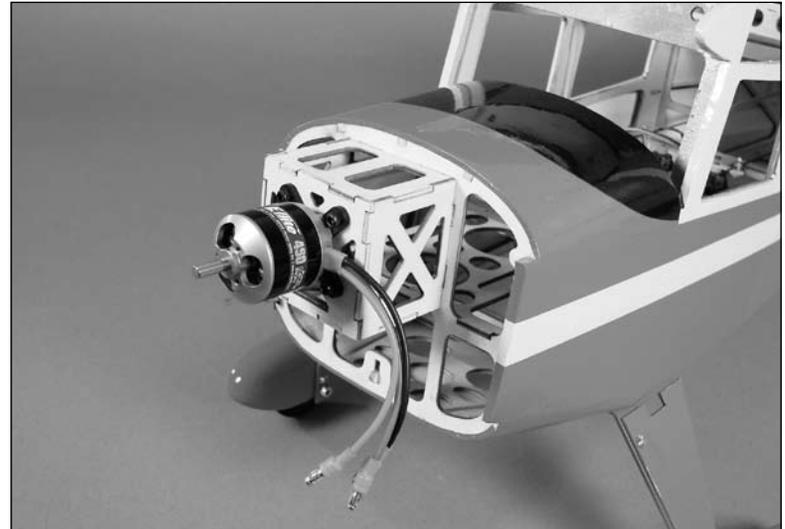
❍ 3. Plug the motor wires into the speed control. Secure the speed control to the bottom of the motor box using hook and loop tape.

❍ 4. This photo shows the installation of the 480 motor. Simply follow Steps 1 through 3, only using the 480 motor instead of the 450 motor.

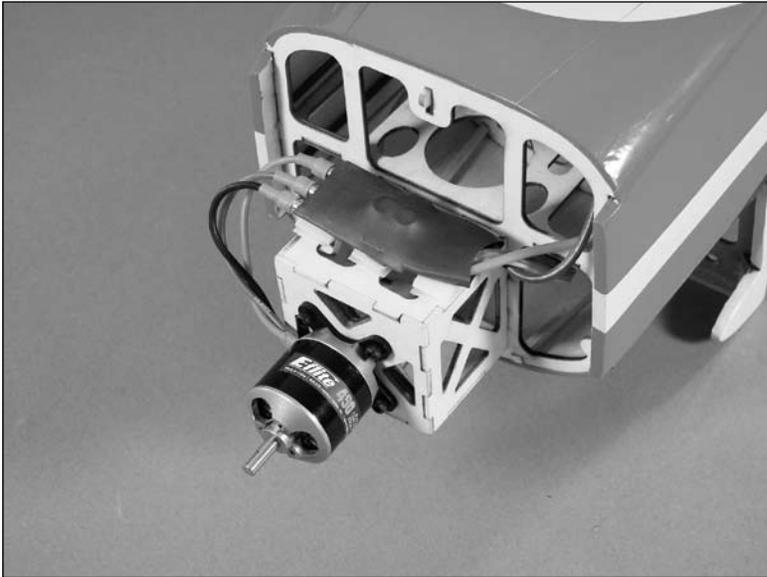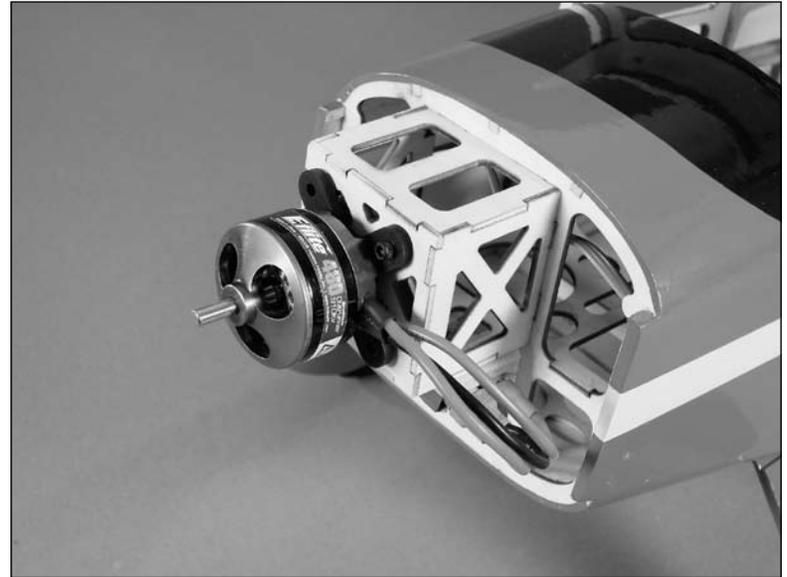❍ 5. Turn on the radio system and plug the battery into the speed control. Use the throttle to check that the motor rotates counterclockwise when viewed from the front. If not, follow the directions included with your speed control to change the direction of the motor rotation.

Note: Never check the motor rotation on the bench with the propeller installed. The plane could move and cause serious injury. Always check the motor without the propeller to avoid injury.

6. Cut and tape a piece of card stock on both sides of the fuselage to indicate the front edge of the fuselage.
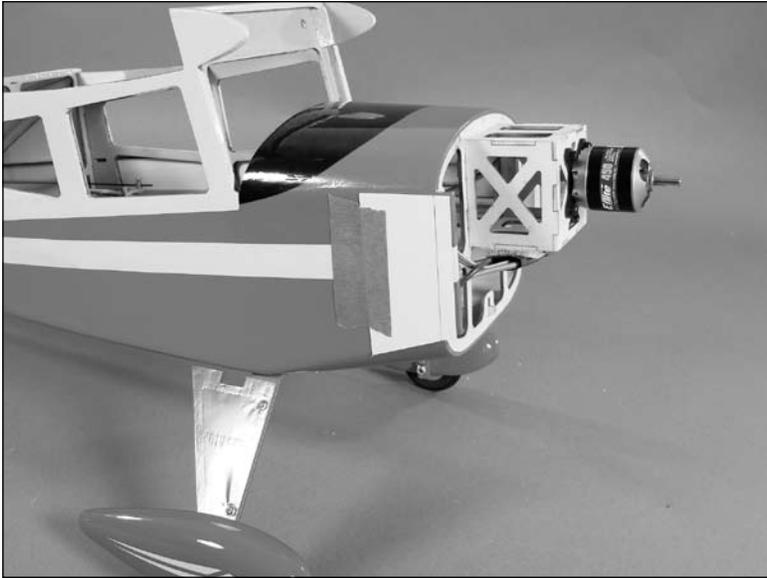
7. Slide the cowling onto the fuselage.
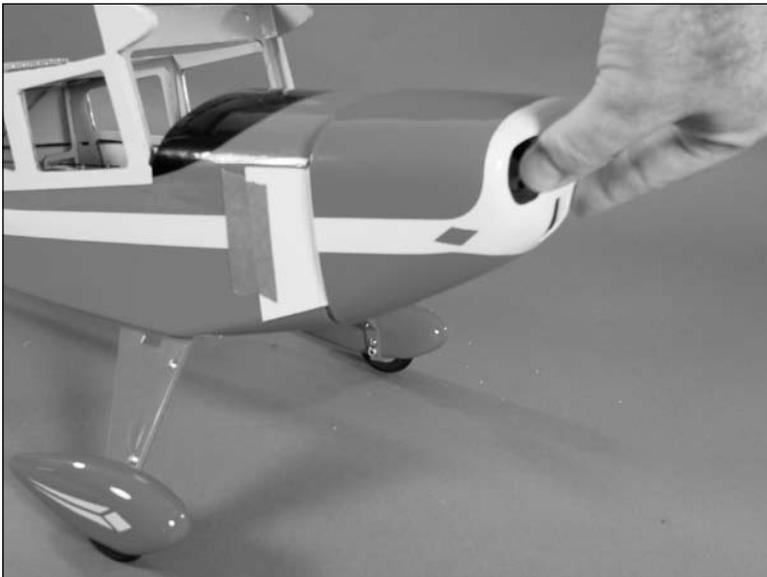
8. Attach the propeller to the adapter and slide the assembly onto the motor shaft.

Important Information About Your Propeller

It is very important to check to be sure the propeller is balanced before installing onto the shaft. An unbalanced propeller may strip the gears or cause poor flight characteristics.

Note: If it is necessary to enlarge the hole in the propeller, make sure to check the balance of the propeller afterwards.

9. Position the cowling so the hole for the propeller is centered with the propeller adapter, and so the propeller will not rub against the cowling. Use low-tack tape to hold the cowl in position for the following step.

10. Use a pin drill and 1/16-inch (1.5mm) drill bit to drill four locations (two each side) for the cowl mounting screws.
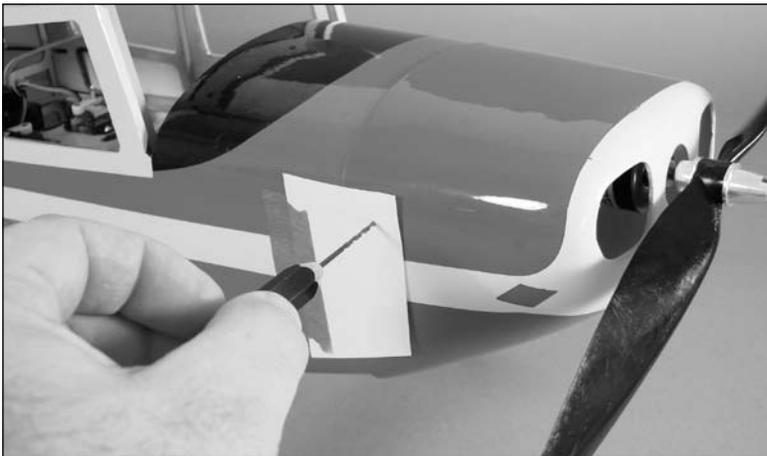
Note: Ensure the painted stripe on the cowl lines up with the stripe on the fuselage

11. Use a 3-32-inch (2mm) drill bit to enlarge the holes in the cowling ONLY.
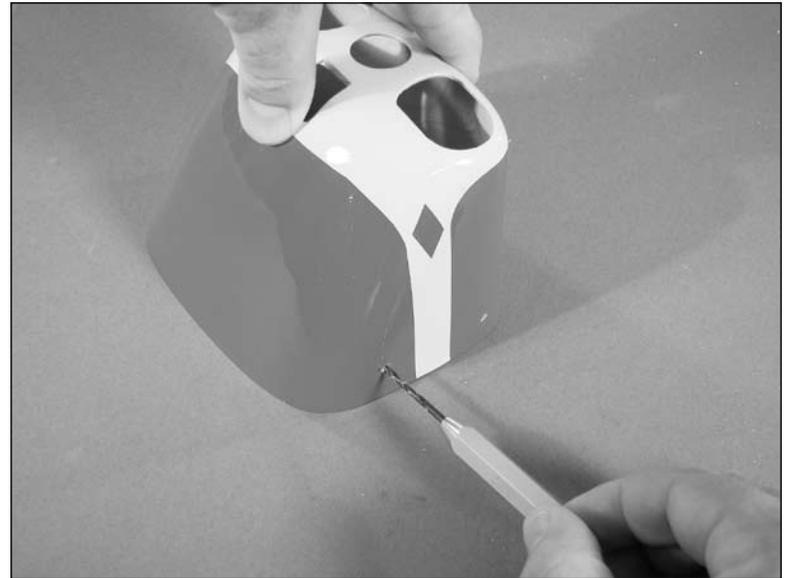
12. Apply 2–3 drops of thin CA to each of the holes in the fuselage to harden the surrounding wood.

❍ 13. Secure the cowl to the fuselage using four 2mm x 8mm sheet metal screws.

❍ 14. Secure the propeller to the motor.
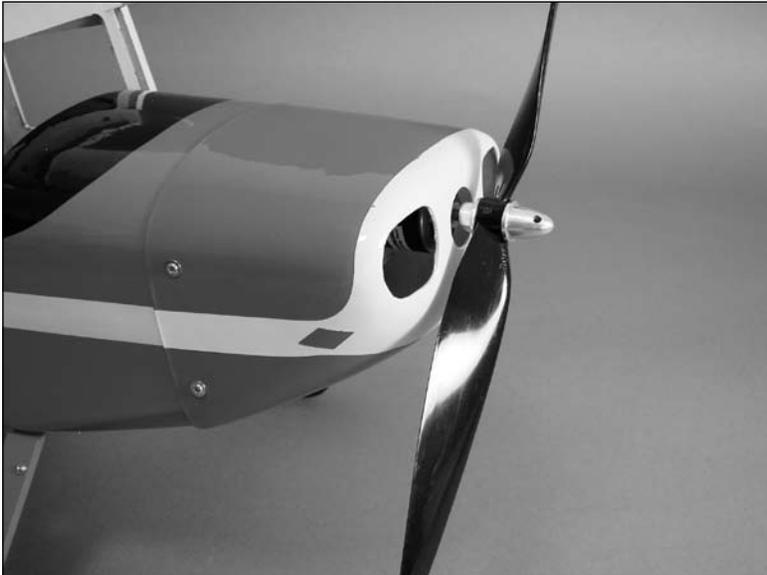
Final Radio Installation

Required Parts

Fuselage assembly	Receiver
Y-harness	Hook and loop tape
8-inch (204mm) hook and loop strap	

❍ 1. Plug the speed control, rudder and elevator leads to the appropriate connectors of your receiver. Plug a Y-harness to the connector for the ailerons.

❍ 2. Use hook and loop tape to secure the receiver under the radio tray inside the fuselage.

❍ 3. Remove the battery hatch from the fuselage.

❍ 4. Install the battery in the fuselage using the 8-inch (204mm) hook and loop strap. Replace the battery door once the battery has been installed.
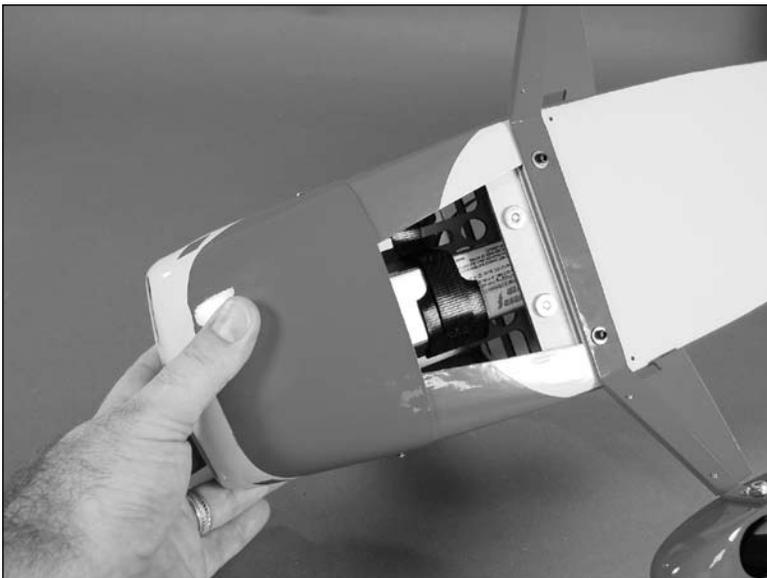
Window and Strut Installation

Required Parts

Fuselage	Wing
Wing strut (2)	2mm x 8mm sheet metal screw (6)
Side window (R&L)	Windshield
Molded seats (2)	

Required Tools and Adhesives

Canopy glue	#1 Phillips screwdriver
Hobby scissors	Low-tack masking tape

❍ 1. Use hobby scissors to trim the side windows. Lines have been molded into the windows to use as a guide for trimming the windows.
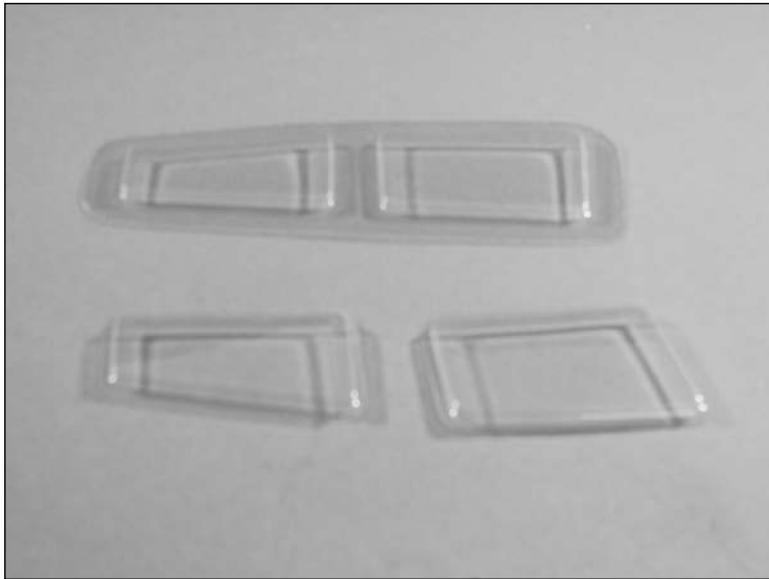
❍ 2. Use canopy glue to glue the window in from the inside of the fuselage. Use low-tack masking tape to hold the windows in position until the glue fully cures.

❍ 3. Use canopy glue to glue the windshield to the fuselage. Use low-tack masking tape to hold the windshield in position until the glue fully cures.

○   4. Use canopy glue to secure the seats inside the fuselage. Allow the fuselage to rest on its wheels until the glue fully cures.
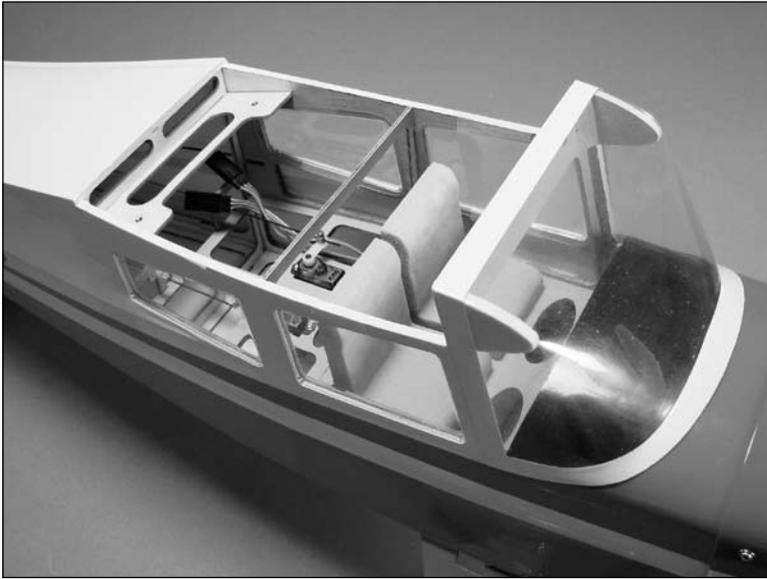
○   5. Test fit the struts between the fuselage and wing. The strut end will slide under the landing gear covers as shown. They can be turned over (top to bottom) if they do not align with the holes in the wing and fuselage. Secure the strut to the fuselage using a 2mm x 8mm sheet metal screw.

6. Secure the struts to the wing using two 2mm x 8mm sheet metal screws.

Control Throws

Use a ruler to adjust the throw of the elevator, ailerons and rudder. This measurement is taken at the widest part of the control surface. Adjust the position of the pushrod at the control horn to achieve the following measurements when moving the sticks to their endpoints.

Note: Measurements are taken at the widest point on the surface.

Ailerons
Low Rate: 1/2-inch (13mm) with 15% Expo (Up/Down)

High Rate: 3/4-inch (19mm) with 25% Expo (Up/Down)

Elevator
Low Rate: 1/2-inch (13mm) with 15% Expo (Up/Down)

High Rate: 7/8-inch (22mm) with 25% Expo (Up/Down)

Rudder
$1\,^1/_2$-inch (38mm) (Left/Right)

These are general guidelines measured from our own flight tests. You can experiment with higher rates to match your preferred style of flying.

Center of Gravity

An important part of preparing the aircraft for flight is properly balancing the model.

Caution: Do not inadvertently skip this step!

The recommended Center of Gravity (CG) location for the Taylorcraft is $2\,^3/_8$–$2\,^7/_8$-inch (60–73mm) back from the leading edge of the wing. Mark the location for the Center of Gravity on the bottom of the wing as shown.

When balancing your Taylorcraft, support the plane upright at the marks made on the bottom of the wing with your fingers or a commercially available balancing stand. Move the motor battery as necessary so the model hangs level or slightly nose down. This is the correct balance point for your model.

Use the $2\,^3/_8$-inch (60mm) CG for sport/scale flying and the $2\,^7/_8$-inch (73mm) CG for aerobatic flying.
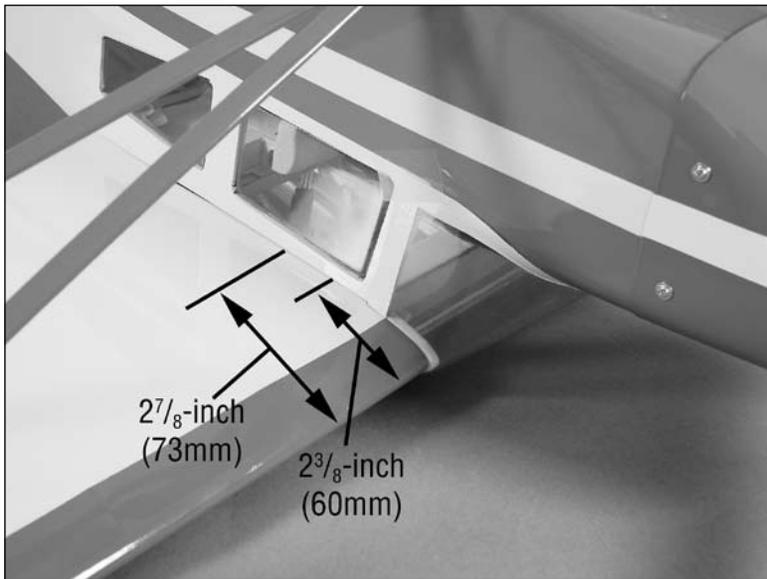
After the first flights, the CG position can be adjusted for your personal preference.

Range Test Your Radio

❍ 1. Before each flying session, be sure to range check your radio. This is accomplished by turning on your transmitter with the antenna collapsed. Turn on the receiver in your airplane. With your airplane on the ground and the engine running, you should be able to walk 30 paces (approximately 100 feet) away from your airplane and still have complete control of all functions.

If not, don't attempt to fly! Have your radio equipment checked out by the manufacturer.

❍ 2. Double-check that all controls (aileron, elevator, rudder and throttle) move in the correct direction.

❍ 3. Be sure that your transmitter batteries are fully charged, per the instructions included with your radio.

Preflight

Check Your Radio

Before going to the field, be sure that your batteries are fully charged per the instructions included with your radio. Charge both the transmitter and receiver pack for your airplane. Use the recommended charger supplied with your particular radio system, following the instructions provided with the radio. In most cases, the radio should be charged the night before going out flying.

Before each flying session, be sure to range check your radio. See your radio manual for the recommended range and instructions for your radio system. Each radio manufacturer specifies different procedures for their radio systems. Next, start the motor. With the model securely anchored, check the range again. The range test should not be significantly affected. If it is, don't attempt to fly! Have your radio equipment checked out by the manufacturer.

> **Note**: Keep loose items that can get entangled in the propeller away from the prop. These include loose clothing, or other objects such as pencils and screwdrivers. Especially keep your hands away from the propeller.

Double-check that all controls (aileron, elevator, rudder and throttle) move in the correct direction.

Check the radio installation and make sure all the control surfaces are moving correctly (i.e. the correct direction and with the recommended throws). Test run the motor and make sure it transitions smoothly from off to full throttle and back. Also ensure the engine is installed according to the manufacturer's instructions, and it will operate consistently.

Check all the control horns, servo horns, and clevises to make sure they are secure and in good condition. Replace any items that would be considered questionable. Failure of any of these components in flight would mean the loss of your aircraft.

Flying Your Taylorcraft

Flying the Taylorcraft is a pleasure. Takeoffs are easy as well as landings. Loops and rolls are as easy as pushing the control stick in the desired direction with the control throws listed in the manual. Flight times of 12 minutes with the recommended Li-Po battery are common.

The Taylorcraft is capable of flying in light winds up to 10 mph, and can do just about any basic aerobatic manuever you would like to accomplish. The Taylorcraft carries itself very well on final approach. It is happy with a descending approach to maintain the speed during final. Touch downs are easily accomplished in a three point state.

Please note:

If using the Park 480 motor please use the throttle respectively. This is a high power setup which can easily push the model to a very high speed envelope. Ensure you reduce throttle during any down line maneuvers.

We hope you enjoy flying your Taylorcraft as much as we do.

Happy Landings!

2007 Official AMA National Model Aircraft Safety Code

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 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 or deliberately fly my models in a careless, reckless and/or dangerous manner.
4) The maximum takeoff weight of a model is 55 pounds, except models flown under Experimental Aircraft rules.
5) I will not fly my model unless it is identified with my name and address or AMA number on or in the model. (This does not apply to models while being flown indoors.)
6) I will not operate models with metal-bladed propellers or with gaseous boosts, in which gases other than air enter their internal combustion engine(s); nor will I operate models with extremely hazardous fuels such as those containing tetranitromethane or hydrazine.

RADIO CONTROL

1) I will have completed a successful radio equipment ground range 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 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. (Only properly licensed Amateurs are authorized to operate equipment on Amateur Band frequencies.)
5) Flying sites separated by three miles or more are considered safe from site-to-site interference, even when both sites use the same frequencies. Any circumstances under three miles separation require a frequency management arrangement, which may be either an allocation of specific frequencies for each site or testing to determine that freedom from interference exists. Allocation plans or interference test reports shall be signed by the parties involved and provided to AMA Headquarters.

   Documents of agreement and reports may exist between (1) two or more AMA Chartered Clubs, (2) AMA clubs and individual AMA members not associated with AMA Clubs, or (3) two or more individual AMA members.

6) For Combat, distance between combat engagement line and spectator line will be 500 feet per cubic inch of engine displacement. (Example: .40 engine = 200 feet.); electric motors will be based on equivalent combustion engine size. Additional safety requirements will be per the RC Combat section of the current Competition Regulations.
7) At air shows or model flying demonstrations, a single straight line must be established, one side of which is for flying, with the other side for spectators.
8) With the exception of events flown under AMA Competition rules, after launch, except for pilots or helpers being used, no powered model may be flown closer than 25 feet to any person.
9) Under no circumstances may a pilot or other person touch a powered model in flight.

E-flite®

ADVANCING ELECTRIC FLIGHT

HORIZON
H   O   B   B   Y

10870