

Hawker Sea Fury 480 ARF

Assembly Manual



E-flite[®]
ADVANCING ELECTRIC FLIGHT

Notice

All instructions, warranties and other collateral documents are subject to change at the sole discretion of Horizon Hobby, Inc. For up-to-date product literature, visit <http://www.horizonhobby.com> and click on the support tab for this product.


Meaning of Special Language

The following terms are used throughout the product literature to indicate various levels of potential harm when operating this product:

NOTICE: Procedures, which if not properly followed, create a possibility of physical property damage AND a little or no possibility of injury.

CAUTION: Procedures, which if not properly followed, create the probability of physical property damage AND a possibility of serious injury.

WARNING: Procedures, which if not properly followed, create the probability of property damage, collateral damage, and serious injury OR create a high probability of superficial injury.

 **WARNING:** Read the ENTIRE instruction manual to become familiar with the features of the product before operating. Failure to operate the product correctly can result in damage to the product, personal property and cause serious injury.

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. Do not attempt disassembly, use with incompatible components or augment product in any way without the approval of Horizon Hobby, Inc. This 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 serious injury.

Warnings

Read and follow all instructions and safety precautions before use. Improper use can result in fire, serious injury and damage to property.

Age Recommendation:
Not for Children under 14 years.
This is not a toy.

COMPONENTS

Use only with compatible components. Should any compatibility questions exist, please refer to the product instructions, the component instructions or contact Horizon Hobby, Inc.

FLIGHT

Fly only in open areas to ensure safety. It is recommended flying be done at AMA (Academy of Model Aeronautics) approved flying sites. Consult local laws and ordinances before choosing a location to fly your aircraft.

PROPELLER

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 as injury can occur.

BATTERIES

Notes on Lithium Polymer Batteries

When misused, lithium polymer batteries are significantly more volatile than alkaline or Ni-Cd/ Ni-MH batteries used in RC applications. Always follow the manufacturer's instructions when using and disposing of any batteries. Mishandling of Li-Po batteries can result in fire causing serious injury and damage.

SMALL PARTS

This kit includes small parts and should not be left unattended near children as choking and serious injury could result.

SAFETY PRECAUTIONS

- Check all control surfaces prior to each takeoff.
- Do not fly your model near spectators, parking areas or any other area that could result in injury to people or damage of property.
- Do not fly during adverse weather conditions. Poor visibility and/or strong winds can cause disorientation and loss of control of your aircraft.
- Do not take chances. If at any time during flight you observe any erratic or abnormal operation, land immediately and do not resume flight until the cause of the problem has been ascertained and corrected. Safety can never be taken lightly.
- Do not fly near power lines.

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Introduction

The Hawker Sea Fury was a British fighter aircraft developed by Hawker Siddeley for the Royal Navy during the Second World War. The Sea Fury was designed as a single piston engine, propeller-driven fighter for aircraft carrier take-offs and landings. It is known for being one of the fastest single piston engine aircraft ever built, and, while it arrived too late for service during WWII, it did serve admirably during the Korean War. The most well-known historical event for the Hawker Sea Fury was on August 9, 1952, when Lieutenant Peter "Hoagy" Carmichael of the Royal Navy shot down a MiG-15 jet-powered fighter in combat. This was one of very few piston-engine powered fighters to successfully engage a turbine-powered adversary. The E-flite® Hawker Sea Fury 480 ARF has since been reproduced to offer a lightweight, durable and easily repairable Z-Foam™ construction that comes complete with accurately molded panel lines and a factory-painted and installed cockpit, pilot figure and canopy. For additional scale detail, optional factory finished rockets and retractable landing gear can also be installed. This 450 to 480-sized aircraft boasts factory-installed spars, hinges, and control horns.

Important Information Regarding Warranty Information

Please read our Warranty and Liability Limitations in the back of this manual before building this product. 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.

Specifications

Wingspan:	36.8 in (935mm)
Length:	33.3 in (845mm)
Wing Area:	268 sq in (17.4 sq dm)
Weight w/ Battery:	29.1–31.0 oz (825–880 g)
Weight w/o Battery:	23.0–24.9 oz (650–705 g)

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 its completion. Steps with a single circle (○) are performed once, while steps with two or more circles (○○) indicate 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:

EFL606501	Fuselage
EFL606502	Wing
EFL606503	Stabilizer
EFL606504	Cowling
EFL606505	Hatch
EFL606506	Wing Cover
EFL606507	Spinner
EFL606508	Rockets
EFL606509	Retracts
EFL606510	Fixed Gear
EFL606511	Pushrod Set



Recommended Radio Equipment

You will need a minimum 4-channel transmitter, receiver and four to six servos.

Complete Radio System

SPM6610 DX6i DSMX® 6CH system

Or Purchase Separately

SPMAR6115	AR6115 6CH DSMX Microlite Receiver
EFLRDS76	DS76 Digital Servo (4-6)
EFLREX6L	6-inch (152mm) Servo Extension, Lightweight (3)
EFLREX9L	9-inch (229mm) Servo Extension, Lightweight (2) (Optional Retracts)
EXRA320	Y-Harness 6-inch/Reverser Standard (Optional Retracts)

Required Tools and Adhesives

Tools & Equipment

EFLA250 Park Flyer Tool Assortment, 5-piece

Or Purchase Separately

EFLA257	Screwdriver, #1 and #2 Phillips (or included with EFLA250)
Felt-tipped pen	Hex wrench: 1.5mm
Hobby knife	#11 blades
Medium CA	Pin drill
Razor saw	Ruler
Sandpaper	Thin CA
Drill bit: 1/16-inch (1.5mm), 1/8-inch (3mm)	
Phillips screwdriver: #00, #0, #1	

Important Information About Motor Selection

We recommend the E-flite Park 450 Brushless Outrunner Motor, 890Kv (EFLM1400) for sport performance or the E-flite Park 480 Brushless Outrunner Motor, 1020Kv (EFLM1505) for maximum performance.

Sport Brushless Outrunner Setup

EFLM1400	Park 450 Brushless Outrunner Motor, 890Kv
EFLA1040L	40A Pro Switch-Mode BEC Brushless ESC
EFLAEC311	EC3™ Extension Lead with 6 inch Wire, 16GA
EFLB21003S	2100mAh 3S 11.1V 20C Li-Po
or	
THP21003SPL25	2100mAh 3S 11.1V G6 Pro Lite 25C Li-Po

High Power Brushless Outrunner Setup

EFLM1505	Park 480 Brushless Outrunner Motor, 1020Kv
EFLA1040L	40A Pro Switch-Mode BEC Brushless ESC
EFLAEC311	EC3 Extension Lead with 6 inch Wire, 16GA
EFLB22003S30	E-flite 3S 11.1V 2200mAh 30C Li-Po
or	
THP21003SPL25	2100mAh 3S 11.1V G6 Pro Lite 25C Li-Po

Optional Accessories

EFLA110	Power Meter
EFLC3020	Celectra™ 200W DC Multi-Chemistry Battery Charger
EFLAEC312	Charge Lead with 12-inch Wire and Jacks, 16AWG

E-tips

During the course of building your model, we suggest you use a soft base for the building surface.

Such things as a foam stand, large piece of bedding foam or a thick bath towel will work well and help protect the model from damage during assembly. This is not shown in the instructions to provide the greatest detail in the photos.

E-tips

When referencing directions (up, down, left, right top and bottom), these directions are in relationship to the pilot sitting in the cockpit of the aircraft, unless noted otherwise.

E-tips

Before starting the assembly of your model, we recommend preparing your radio system for installation. This includes charging the transmitter and receiver batteries, as well as centering the trims and sticks on your transmitter. If using a computer radio, make sure to reset a model memory and name it for this particular model. We also recommend binding the transmitter and receiver at this time, following the instructions provided with your radio system.

→ We highly recommend re-binding the radio system once all the control throws are set. This will keep the servos from moving to their endpoints until the transmitter and receiver connect.

Fixed Gear Installation

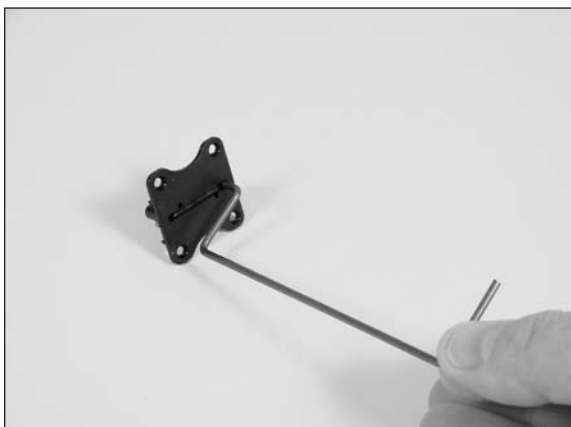
Required Parts

- Fixed main gear wire (right and left)
- Landing gear block (2)
- 2mm x 10mm shoulder screw (4)
- 3mm x 6mm countersunk sheet metal screw (8)

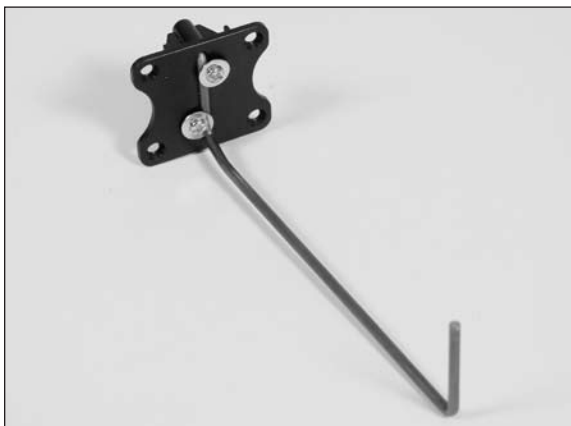
Required Tools and Adhesives

- Phillips screwdriver: #0, #1

- 1. Insert the landing gear into the landing gear block.



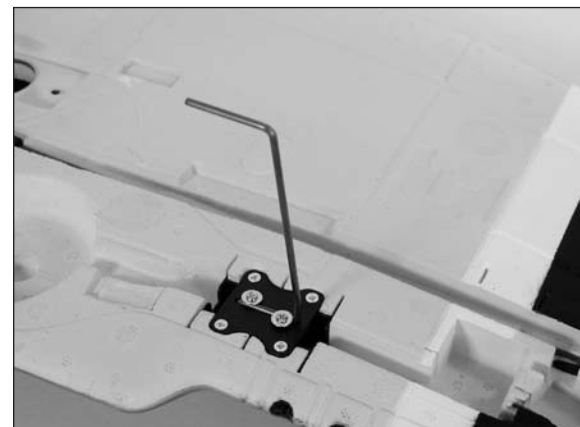
- 2. Use two 2mm x 10mm shoulder screws and a #0 Phillips screwdriver to secure the landing gear to the landing gear block.



- 3. Repeat Steps 1 and 2 to assemble the second landing gear. (Make one left and one right)



- 4. Secure the landing gear assembly in the wing using a #1 Phillips screwdriver and four 3mm x 6mm countersunk sheet metal screws per assembly. The strut is positioned toward the wing tip and is angled toward the leading edge when installed correctly.



Retract Installation

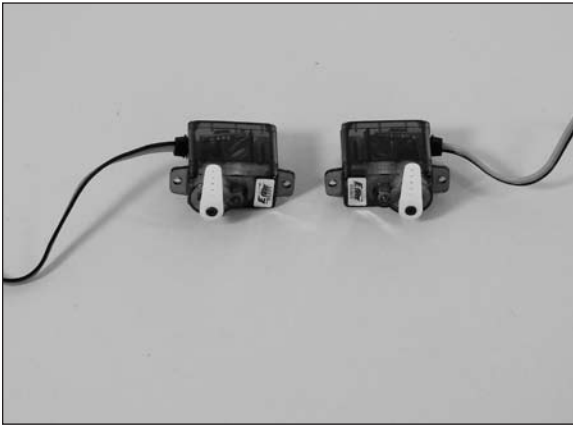
Required Parts

- Servo (2) Retract linkage (2)
- Double-sided tape (2 pcs)
- Retract assembly (right and left)
- 3mm x 6mm countersunk sheet metal screw (8)

Required Tools and Adhesives

- Phillips screwdriver: #0, #1 Hobby knife

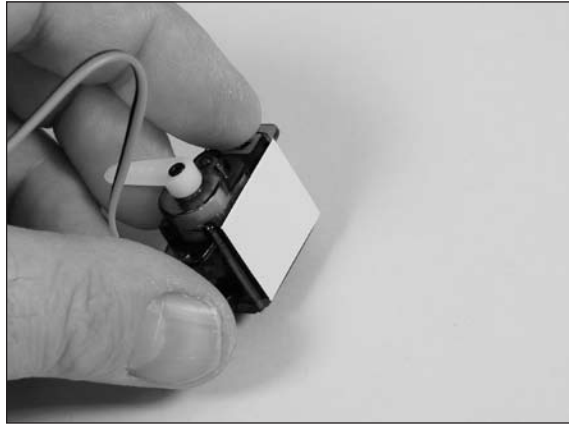
- 1. Prepare the retract servos by installing the servo arms on the servos.



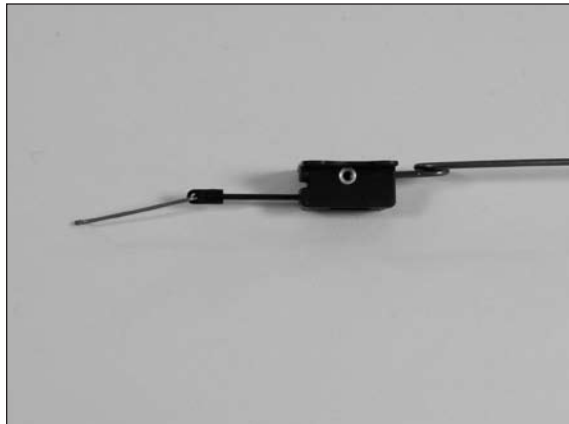
Etips

The servos are shown with the servo arms centered. Make sure to position the servo horn so they travel equally from this center position or your retracts may not operate correctly.

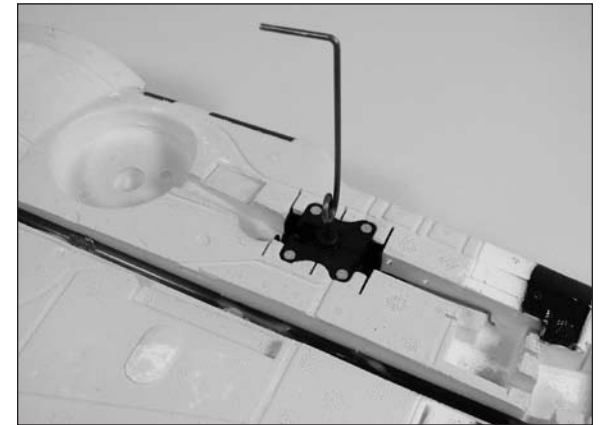
- 2. Apply a piece of double-sided tape onto each servo on the side opposite the servo arm.



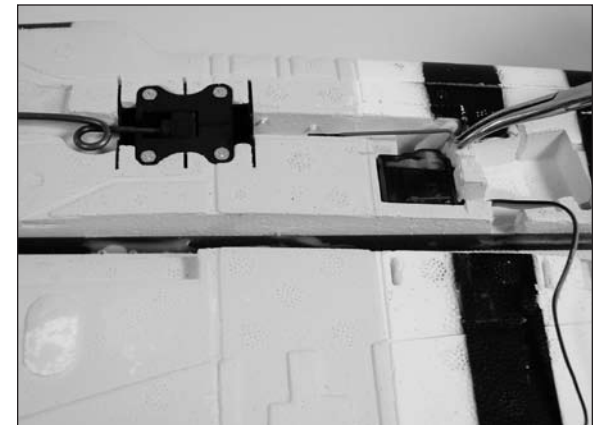
- 3. Connect the retract linkage to the retract actuator arm.



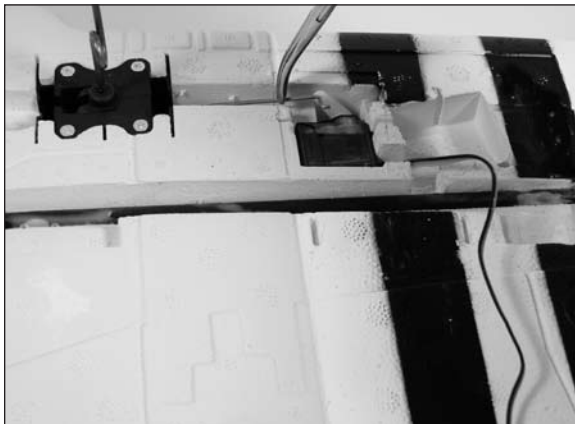
- 4. Secure the retract assembly in the wing using a #1 Phillips screwdriver and four 3mm x 6mm countersunk sheet metal screws per assembly.



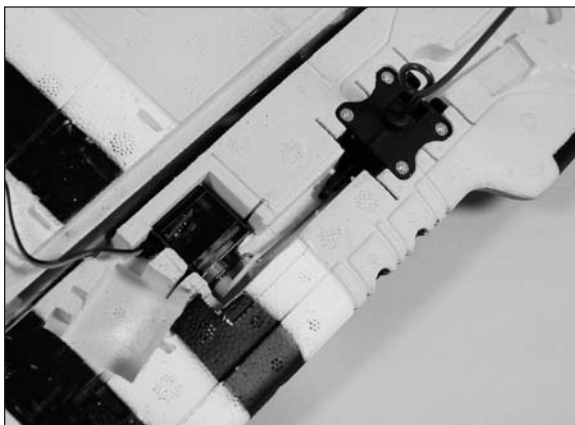
- 5. Place the retract in the UP position and insert the retract servo in the pocket. **Do not connect the linkage to the retract servo at this time.** Use the radio to move the servo arm to the UP position. Hold the linkage to the arm to make sure the linkage aligns with the servo arm. Adjust the end point at the radio to align the arm with the linkage.



- ○ 6. Place the retract in the DOWN position and use the radio to move the servo to the DOWN position. **Do not connect the linkage to the retract servo at this time.** Hold the linkage to the arm to make sure the linkage aligns with the servo arm. Adjust the end point at the radio to align the arm with the linkage.



- ○ 7. Remove the servos once the end points have been adjusted and attach the linkage to the servo. Use a hobby knife to enlarge the hole in the servo arm if needed. Peel the backing tape off of the servo and mount it in position.



E-tips

If you are using a 6-channel or more computer radio you can use a separate channel for each of the retract servos. Using two channels and mixing them together will give you the option for independent adjustment of the travel adjustment of each servo. If you are not using a computer radio with mixing, you will need to use a reversing Y-harness (EXRA320) instead.

- 8. Repeat Steps 2 through 7 to install the remaining retract and servo.

Aileron Servo Installation

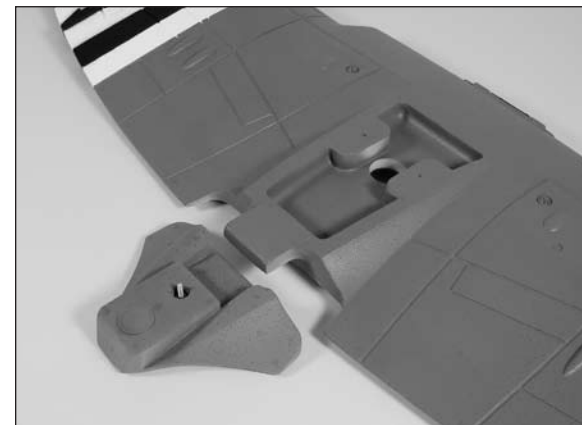
Required Parts

Aileron linkage with clevis and keeper (2)
 Servo (2) Double-sided tape (2 pcs)
 Wing extension Wing
 6-inch (152mm) extension
 9-inch (228mm) extension (2) (for optional retracts)

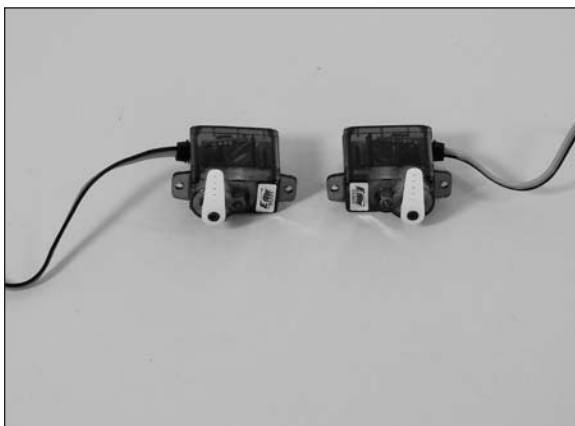
Required Tools and Adhesives

Hobby knife Medium CA
 Phillips screwdriver: #0

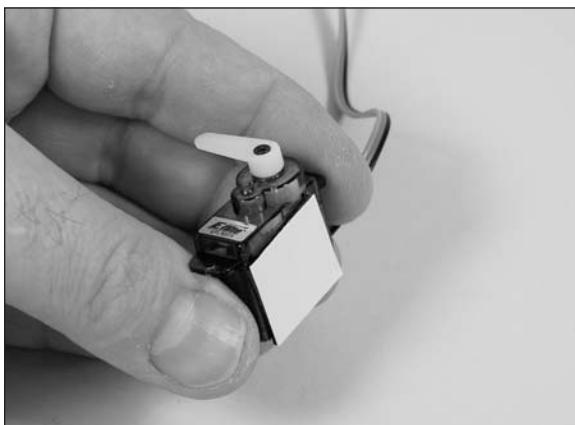
- 1. Locate the wing extension and test fit it to the rear of the wing. Use medium CA to glue the extension directly to the wing.



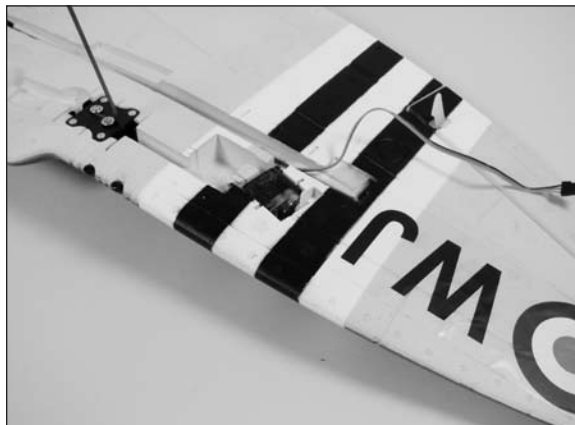
- 2. Prepare the aileron servos by installing the servo arms on the servos. Use your radio to center these servos at this time.



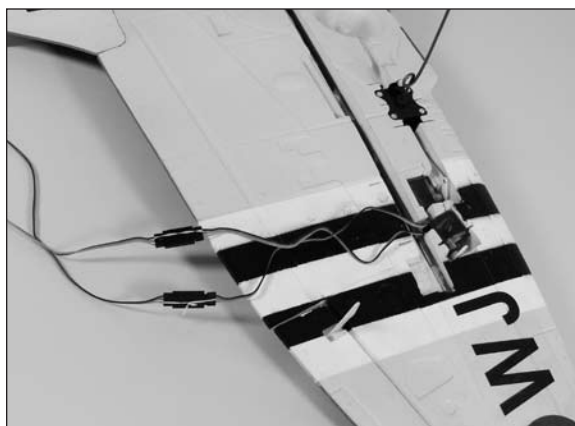
- 3. Apply a piece of double-sided tape onto each servo, on the side opposite the servo arm.



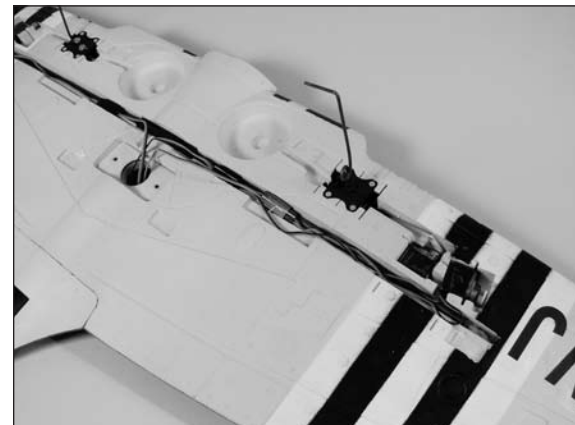
- 4. Remove the backing from the double-sided tape. Position the servo so the arm is facing toward the aileron and the outboard side off the wing. Press each aileron servo into the openings in the wing.



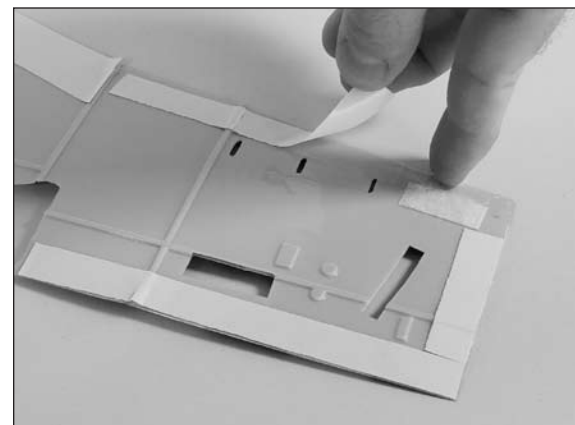
- 5. Connect a 6-inch (152mm) extension to each aileron servo lead. If you have opted to install retracts, attach a 9-inch (228mm) extension to each retract servo lead. Use string to secure the extension(s) so they do not unplug accidentally.



- 6. Route the leads for the aileron (and retract) servo(s) along the channel in the wing. The extension(s) then pass to the top of the wing through the hole in the center of the wing.



- 7. Remove the backing from the double-sided tape on the wing cover.



- 8. Carefully position the wing cover on the bottom of the wing. Make sure to align the cover during positioning.



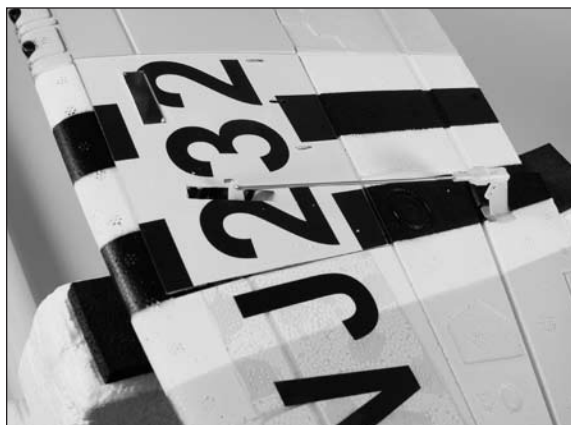
- 9. Use a hobby knife to enlarge the outer hole on the aileron servo arm to accept the aileron linkage.



- 10. Insert the Z-bend on the aileron linkage into the outer hole of the aileron servo horn.



- 11. Connect the clevis of the aileron linkage to the aileron control horn. With the radio on, it may be necessary to adjust the length of the linkage so the aileron is centered.



- 12. Repeat Steps 9 through 11 to connect the remaining aileron linkage.

Main Wheel Installation

Required Parts

Wheel spacer (2) Main wheel (2)
Wheel axle cap (2)

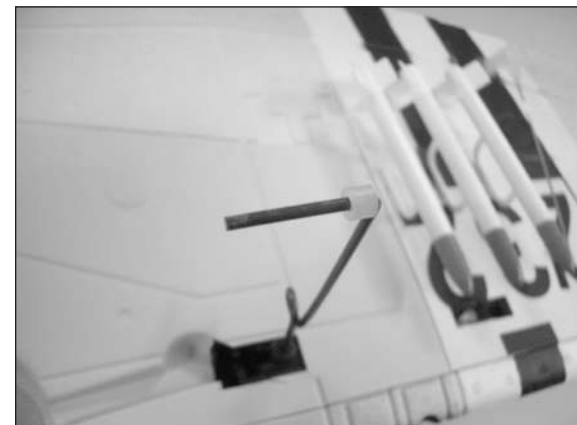
Required Tools and Adhesives

Medium CA

E-tips

The wheel installation is the same for both fixed gear and retracts.

- 1. Slide the wheel spacer onto the landing gear axle.



- 2. Slide the wheel onto the landing gear axle.



- 3. Secure the wheel using the wheel axle cap and medium CA. Use care not to get CA between the landing gear and wheel, which will prevent the wheel from rolling.



- 4. Repeat Steps 1 through 3 to install the remaining wheel.

Motor and Cowling Installation

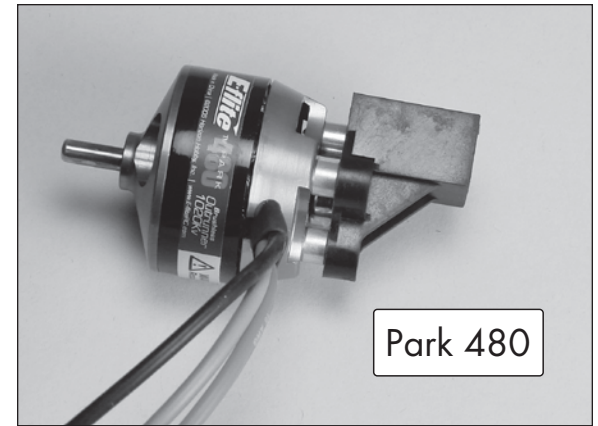
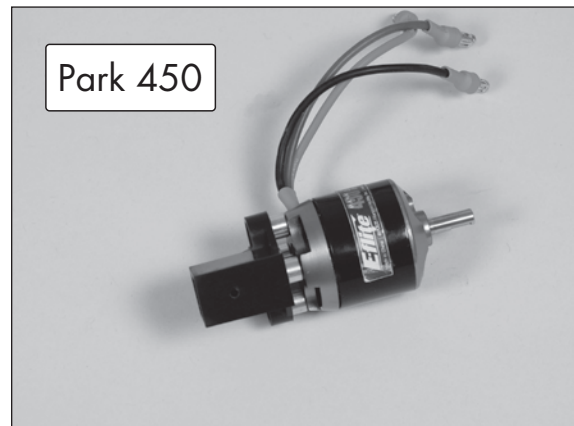
Required Parts

Motor mount	6-inch (152mm) servo extension
Propeller	Electronic speed control
Spinner cone	Spinner washer
Spinner backplate	Motor with accessories
1/8-inch (3mm) spacer (4)	
1.5mm x 10mm self-tapping screw	
6-inch (152mm) battery extension	
3mm x 10mm machine screw (4)	

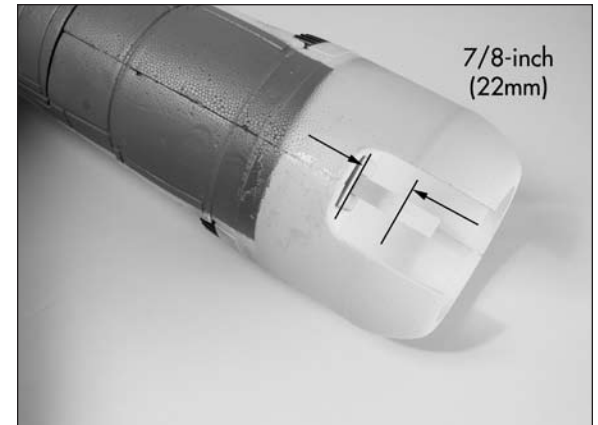
Required Tools and Adhesives

Razor saw Phillips screwdriver: #00, #1

- 1. Attach the Park 450 motor to the mount using a #1 Phillips screwdriver and four 3mm x 10mm machine screws and the four 1/8-inch (3mm) spacers as shown. Use threadlock on the screws to prevent the vibrations of the motor from loosening the screws.



- 2. Use a razor saw to cut the length of the motor mounting stick to 7/8-inch (22mm) as shown below.



E-tips

When installing the Park 480 motor, use a #1 Phillips screwdriver, four 3mm x 10mm machine screws and the four 1/8-inch (3mm) spacers as shown. Use threadlock on the screws to prevent the vibrations of the motor from loosening the screws.

- 3. Lift the hatch from the fuselage as shown.



- 4. Remove the battery stop from the inside of the fuselage by sliding it rearward and out of the fuselage.



Etips

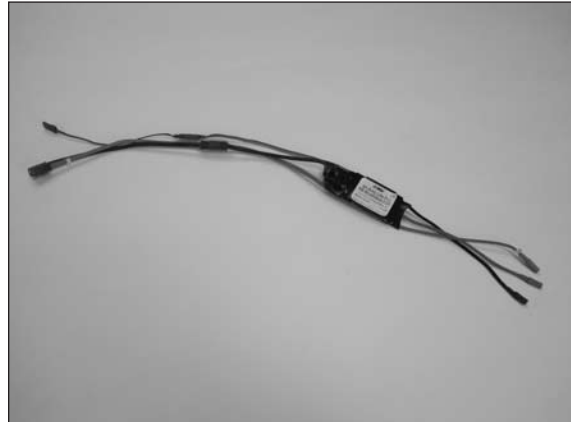
Important Information About Your Brushless ESC

Make sure your ESC brake is programmed to Off. Also, be sure to use an ESC with the proper low-voltage cutoff and have it set correctly for the batteries you are using.

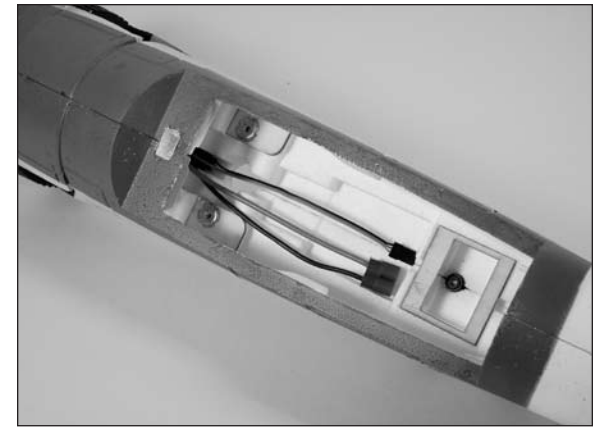
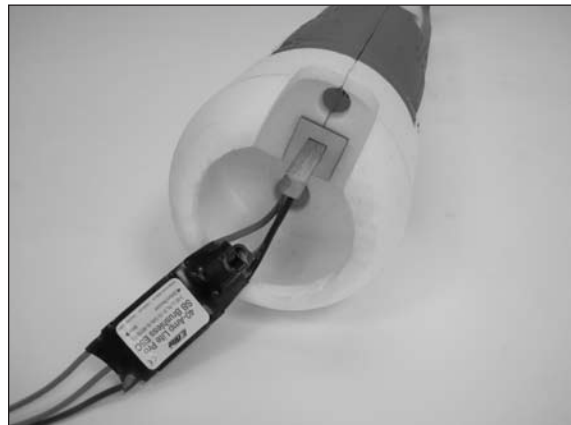
Etips

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.

- 5. Connect the battery and servo lead extensions to the speed control. Secure them using string to prevent them from being unplugged inside the fuselage.



- 6. Pass the battery and servo extensions into the lower hole in the fuselage and into the main radio compartment as shown below.



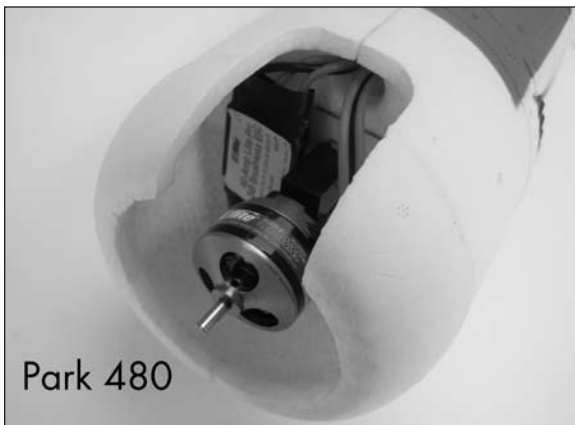
- 7. Secure the speed control inside the motor compartment using double-sided tape.



- 8. Connect the leads from the motor to the speed control. Slide the motor mount onto the motor stick.

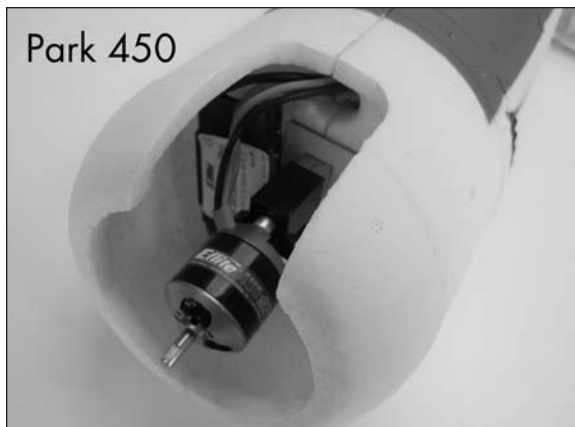


- 9. Secure the motor mount using the 1.5mm x 10mm self-tapping screw and a #00 Phillips screwdriver. Secure the wires inside the motor compartment so they will not interfere with the operation of the motor.

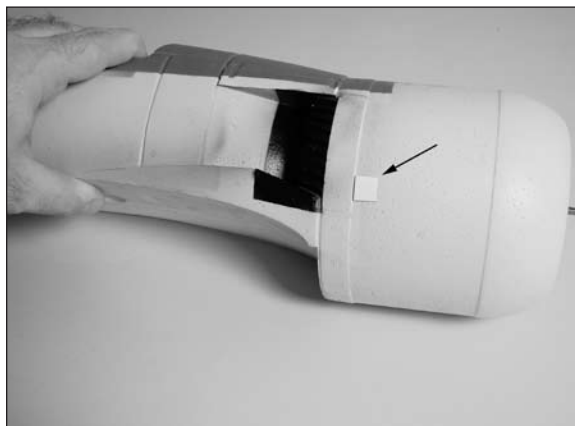


Park 480

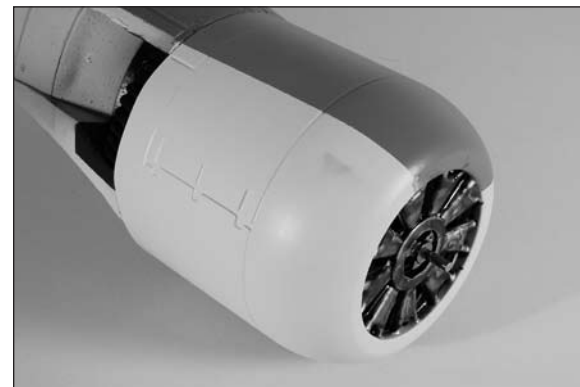
Park 450



- 10. Check the operation of the motor at this time. It should rotate counterclockwise when viewed from the front of the aircraft. If not, follow the instructions provided with your speed control to correct the situation.
- 11. Remove the backing from the double-sided tape on both sides of the fuselage.



- 12. Slide the cowling onto the fuselage. Press the cowling against the tape to secure it in position.



E-tips

Always balance your propeller. An unbalanced propeller can cause vibrations to be transmitted into the airframe, which could damage the airframe or other components as well as produce unwanted flight characteristics.

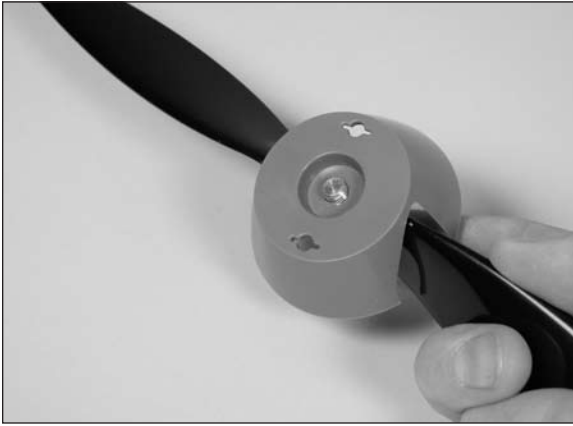
E-tips

If it is necessary to enlarge the hole in the propeller or the spinner, make sure to check the balance of each afterwards.

- 13. Slide the propeller adapter into the propeller.



- 14. The spinner backplate is then placed on the adapter.



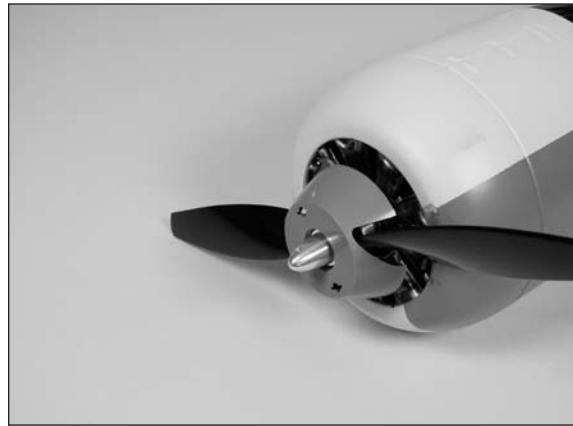
- 15. Next, slide the supplied washer onto the adapter.



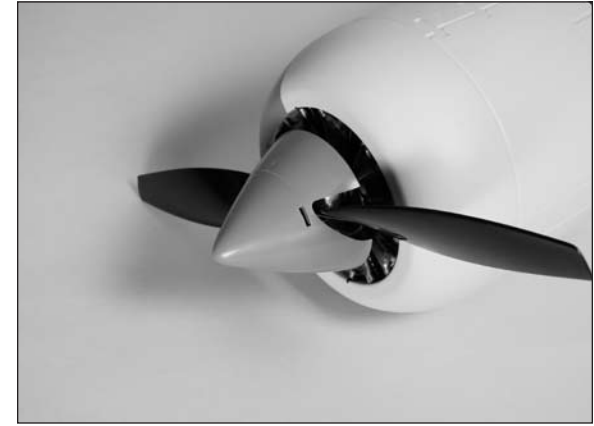
- 16. Install the adapter nut, but do not tighten it at this time.



- 17. Place the spinner assembly on the motor shaft. Check that the positioning of the assembly will allow the backplate and propeller to spin without rubbing on the cowling. Tighten the adapter nut once all is well.



- 18. Snap the spinner cone onto the spinner backplate to complete the motor assembly.



Radio Installation - Fuselage

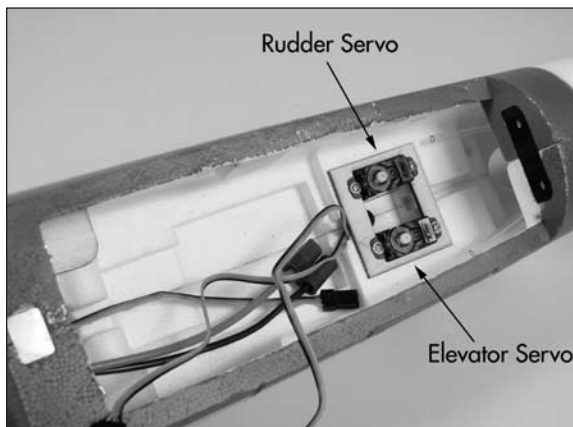
Required Parts

Hook and loop tape Receiver
6-inch (152mm) servo extension (2) (ailerons)
Servo (two required if using rudder control)

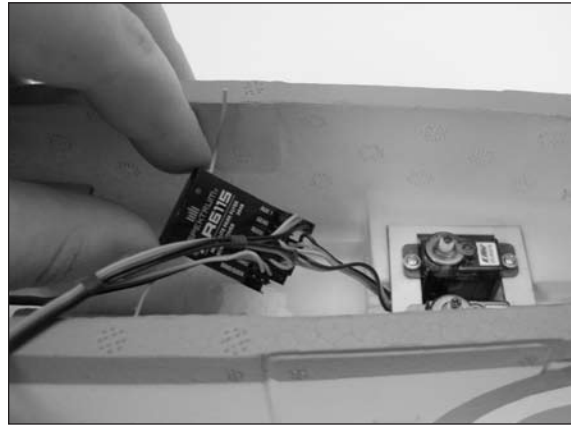
Required Tools and Adhesives

Phillips screwdriver: #0 Pin drill
Drill bit: 1/16-inch (1.5mm)

- 1. Mount the rudder and elevator servos in the fuselage using a pin drill, a 1/16-inch (1.5mm) drill bit and the hardware provided with the servo.



- 2. Plug the leads from the servos and speed control to the appropriate outputs on the receiver. Also connect the 6-inch (152mm) extensions for the ailerons to the receiver.



- 3. Use double-sided tape to secure the receiver in the fuselage as shown.



Rudder Preparation

Required Parts

Control horn Control horn backplate
2mm x 10mm sheet metal screw (2)
Operational tail gear wire Tail wheel
Wheel spacer Wheel axle cap

Required Tools and Adhesives

Hobby knife Thin CA
Drill bit: 1/8-inch (3mm) Pin drill
Felt-tipped pen Sandpaper
Medium CA

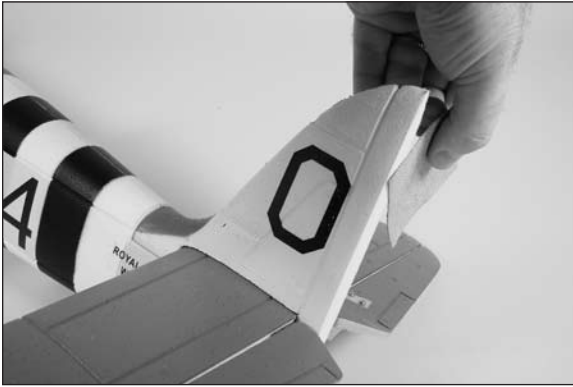
E-tips

Although the rudder can be installed after the stabilizer, it is much easier to do so before installing the stabilizer. The photos show the stabilizer installed for reference, even though the actual installation will be covered later in the manual.

- 1. Use a hobby knife to cut the rudder from the fin. Cut as close to the fin as possible for the best results.



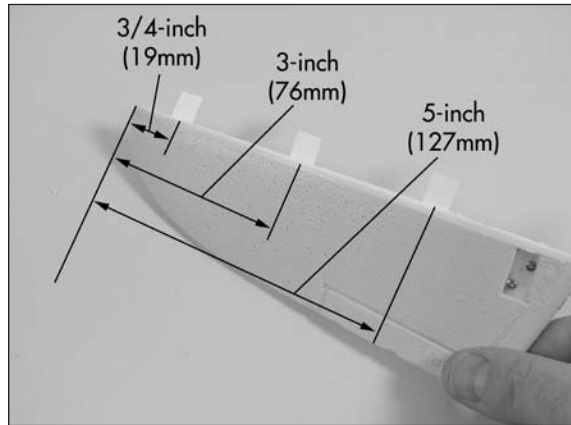
- 2. Use sandpaper to remove any irregularities from the fin and rudder.



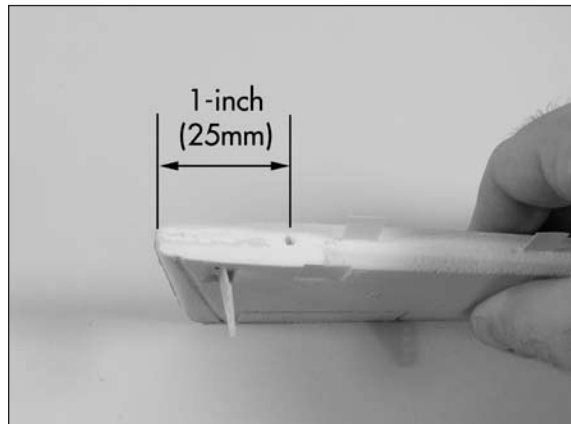
- 3. Mount the control horn to the rudder as shown using two 2mm x 10mm sheet metal screws, control horn backplate and a #1 Phillips screwdriver.



- 4. Cut slots in the rudder for the three rudder hinges. Use thin CA to glue the hinges half-way into the rudder as shown.



- 5. Use a pin drill and 1/8-inch (3mm) drill bit to drill a hole for the tail gear wire in the rudder.



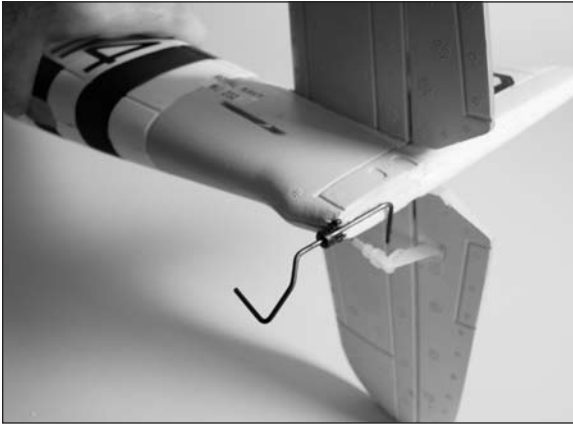
- 6. Hold the rudder against the fin and use a felt-tipped pen to transfer the location of the hinges to the fin.



- 7. Use a hobby knife to cut the slots for the rudder hinges in the fin.



- 8. Slide the tail gear wire through the tail gear bushing as shown.



- 9. Test fit the rudder to the fin. Once satisfied with the fit, use thin CA on the hinges and tail gear wire to secure the rudder to the fin. Make sure not to get CA in the tail gear assembly.



- 10. Slide the wheel spacer onto the tail gear wire.



- 11. Slide the tail wheel onto the tail gear wire.



- 12. Secure the wheel using the wheel axle cap and medium CA. Use care not to get CA between the tail gear wire and wheel, which will prevent the wheel from rolling.



Stabilizer/Elevator Installation

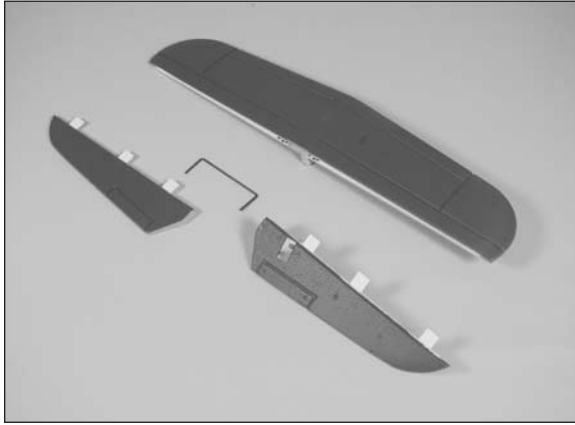
Required Parts

Fuselage assembly Stabilizer assembly
13⁷/₃₂-inch (335mm) pushrod with clevis
13⁹/₁₆-inch (345mm) pushrod with clevis

Required Tools and Adhesives

Thin CA Medium CA

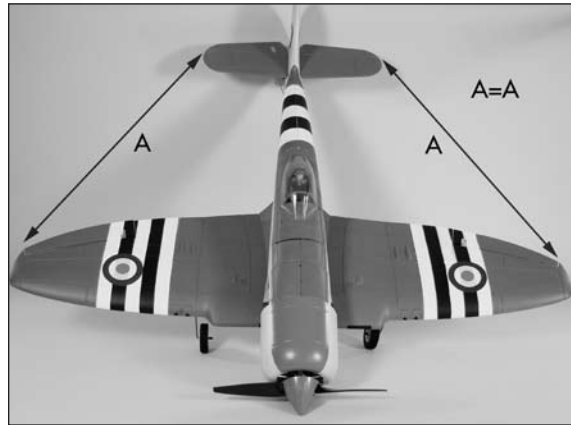
- 1. Remove the elevators and elevator joiner wire from the stabilizer.



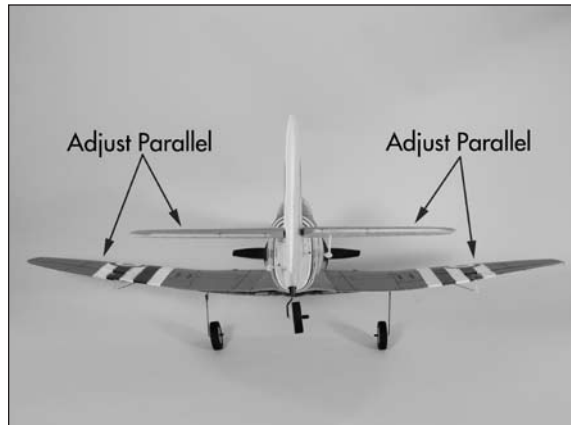
- 2. Place the elevator joiner wire in the slot in the fuselage for the stabilizer.



- 3. Slide the stabilizer into the slot in the fuselage. Measure the distance from each stabilizer tip to each wing tip. The measurements must be equal. If necessary, adjust the position of the stabilizer to correct for the alignment.



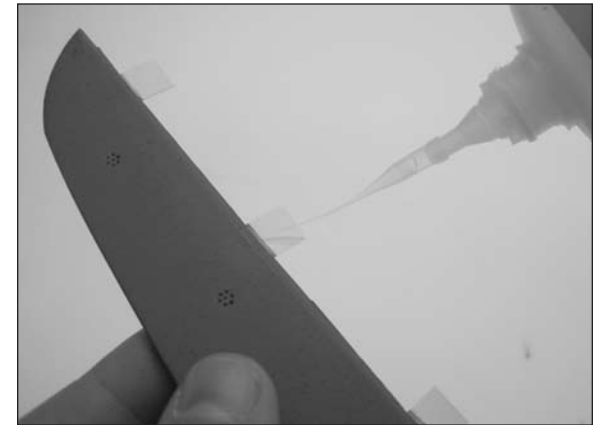
- 4. Stand back and view the model from the rear. The wing and stabilizer must be parallel to each other. Lightly sand the opening in the fuselage for the stabilizer to correct for any alignment issues.

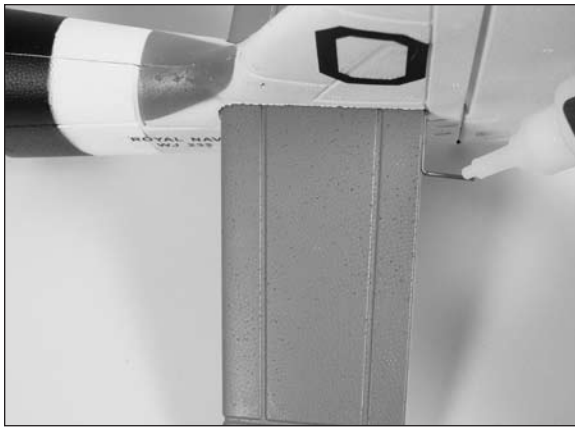


- 5. After aligning the stabilizer to the wing, use medium CA to glue the stabilizer in place. Double check the alignment one last time before the CA fully cures. Once the CA cures, snap the joiner wire back into the bracket at the trailing edge of the stabilizer.



- 6. Apply thin CA to each side of the hinge, as well as to the elevator joiner wire.

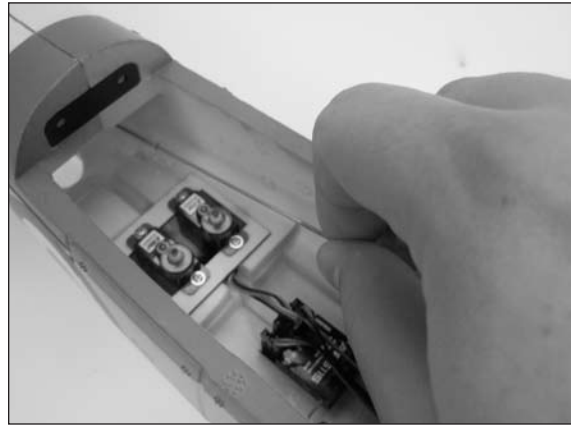




- 7. Attach both elevator halves to the stabilizer. Remember to work quickly to avoid having the CA cure before the elevator installation is complete.



- 8. Remove the clevis from the $1\frac{3}{32}$ -inch (335mm) pushrod. Slide the pushrod into the preinstalled tube in the fuselage.



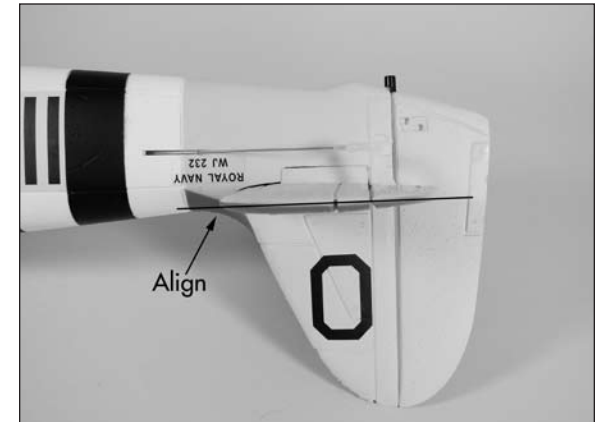
- 9. Connect the bend in the pushrod to the elevator servo horn. Position the horn so the angle between it and the servo is 90 degrees. Secure the horn to the servo.



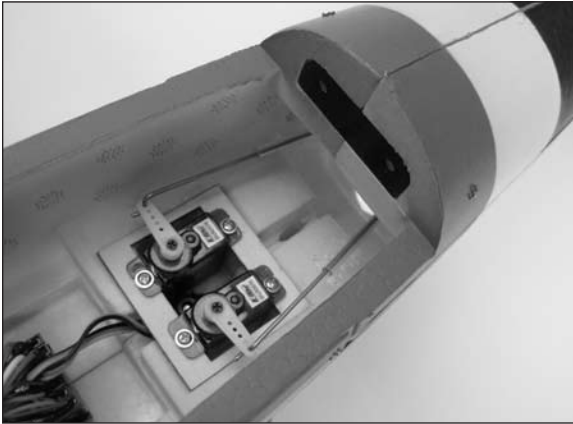
- 10. Thread the clevis back on the pushrod wire. Connect the clevis to the elevator control horn.



- 11. With the radio system on, adjust the position of the clevis so the elevator is parallel to the stabilizer.



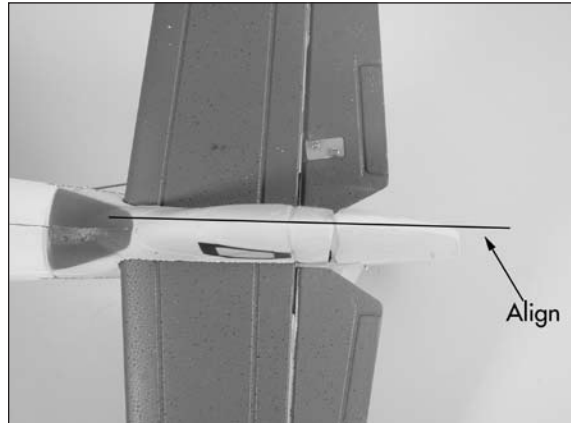
- 12. Remove the clevis from the 13⁹/₁₆-inch (345mm) pushrod. Slide the pushrod into the preinstalled tube in the fuselage. Connect the bend in the pushrod to the rudder servo horn. Position the horn so the angle between it and the servo is 90 degrees. Secure the horn to the servo.



- 13. Thread the clevis back on the pushrod wire. Connect the clevis to the rudder control horn.



- 14. With the radio system on, adjust the position of the clevis so the rudder is parallel to the fin.



Final Assembly

Required Parts

Rocket (6)	3mm x 45mm machine screw (2)
Battery stop	Canopy

Required Tools and Adhesives

Phillips screwdriver: #1

- 1. Connect the aileron servo extensions to the aileron servos. The retract leads will pass into the fuselage and connect to the receiver with a reversing Y-harness.



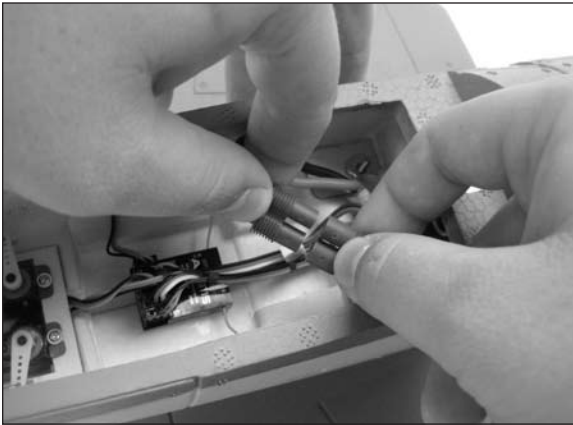
- 2. Secure the wing using two 3mm x 45mm machine screws in the center of the wing, and the pre-installed screw at the trailing edge of the wing. Use a #1 Phillips screwdriver to tighten the screws.



- 3. Slide the motor battery into the fuselage. Slide the battery as far forward as possible.



- 4. Connect the motor battery to the speed control.



Etips

Make sure to be clear of the propeller when connecting the battery in case the motor starts unexpectedly.

- 5. Slide the battery stop back into the fuselage. If it is not fully in position, the canopy will not fit back onto the fuselage.



- 6. Place the canopy back onto the fuselage.



- 7. The rockets are installed by pressing them into the precut slots in the wing cover and into the slots in the wing.



Center of Gravity

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

Caution: Do not inadvertently skip this step!

Please balance your model inverted with the battery installed. With the model inverted, lift the model at the Center of Gravity (CG) marks molded into the wing using your fingertips, or a commercially available balancing stand. The model will rest level or slightly nose down when balanced correctly. If necessary, add the supplied clay weight to the nose or tail to achieve the correct CG.



After the first flights, the CG position can be adjusted for your personal preference.

Control Throws

- 1. Turn on the transmitter and receiver of your model. Check the movement of the rudder using the transmitter. When the stick is moved right, the rudder should also move right. Reverse the direction of the servo at the transmitter if necessary.
- 2. Check the movement of the elevator with the radio system. Moving the elevator stick toward the bottom of the transmitter makes the airplane elevator move up.
- 3. Check the movement of the ailerons with the radio system. Moving the aileron stick right makes the right aileron move up and the left aileron move down.
- 4. Use a ruler to adjust the throw of the elevator, ailerons and rudder. Adjust the position of the pushrod at the control horn to achieve the following measurements when moving the sticks to their endpoints.

E-tips

Measurements are taken at the widest point on the surface.

Ailerons

Throw Measurement	D/R	Expo
High Rate 1/2-inch (13mm) (Up/Down)	100	15%
Low Rate 5/16-inch (8mm) (Up/Down)	60	10%

Elevator

High Rate 7/16-inch (11mm) (Up/Down)	100	20%
Low Rate 5/16-inch (8mm) (Up/Down)	60	15%

Rudder

Throw Measurement	D/R	Expo
High Rate 13/16-inch (20mm) (Right/Left)	100	20%
Low Rate 1/2-inch (13mm) (Right/Left)	60	10%

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

Once all the control throws have been set, make sure to slide the clevis retainers over the clevises to prevent them from opening accidentally.



E-tips

Travel Adjust and Sub-Trims are not listed and should be adjusted according to each individual model and preference.

NOTICE: Always re-bind the radio system once all the control throws are set. This will keep the servos from moving to their endpoints until the transmitter and receiver connect.

Preflight

Check Your Radio

Before going to the field, make sure your batteries are fully charged per the instructions included with your radio. Charge the transmitter and motor battery 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, run the motor. With the model securely anchored, check the range again. The range test should not be significantly affected. If it is, do not attempt to fly! Have your radio equipment checked out by the manufacturer.

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).

Check all the control horns, servo horns, and clevises to make sure they are secure and in good condition.

Range Test Your Radio

Before each flying session, and especially with a new model, it is important to perform a range check. It is helpful to have another person available to assist during the range check. If you are using a Spektrum™ transmitter, please refer to your transmitter's manual for detailed instructions on the range check process.

- 1. With the model resting on the ground, stand 30 paces (approximately 90 feet) away from the model.
- 2. Face the model with the transmitter in your normal flying position. Be sure the throttle is in the full down position and plug the flight battery into the speed control.
- 3. As you move the controls, watch to be sure the airplane's motor and controls operate smoothly. You should have total control of the model at 30 paces (90 feet).
- 4. If control issues exist, call the appropriate Horizon Product Support office (see addresses listed in the Warranty Services section of this manual) or go to horizonhobby.com to find a local Spektrum distributor in your country for service when using a Spektrum radio system.

Flying Your Model

Begin by placing the model on the ground. Check all control throws and ensure everything is traveling in the right direction. Move your idle trim up until the prop begins to spin; this will be your flight idle. Taxi into position on the runway, facing into the wind. Apply power slowly and steer with rudder. The tail will come up very quickly. As you apply full throttle and come to speed, apply a slight amount of up elevator and the Sea Fury should lift off gently and begin to climb upwards. As you climb out, release the elevator and maintain a gentle climb to about 100 feet of altitude.

Once at about 100 feet of altitude, trim the model for level flight at 5/8 throttle. You will find the Sea Fury to be very gentle on the control and feel quite light on the sticks. The model is capable of all the basic aerobatic maneuvers; loops, rolls, stall turns, inverted flight, etc.

If you have no roll issues with the model, then you are ready to set up for landing. We normally do a pass over the runway first. Turn into the downwind leg and manage the power at about 1/2 throttle. As you turn to base leg, you may reduce the throttle a bit and then, when you turn onto final approach, adjust the power to maintain a shallow descent with the model. As you come down to an altitude of about 8 feet over the runway, begin to level the model out, and, as you get within 3 feet, you will begin to flare for landing. The Sea Fury likes to be either landed on the mains or three pointed on the gear in a full stall. The choice is yours.

We at E-flite hope you enjoy your Sea Fury as much as we have. Happy landings!

Daily Flight Checks

- 1. Check the battery voltage of the transmitter battery. Do not fly below the manufacturer's recommended voltage. To do so may cause your aircraft to crash.

E-tips

When you check these batteries, ensure you have the polarities correct on your expanded scale voltmeter.

- 2. Check all hardware (linkages, screws, nuts, and bolts) prior to each day's flight. Be sure that binding does not occur and that all parts are properly secured.
- 3. Ensure all surfaces are moving in the proper manner.
- 4. Perform a ground range check before each day's flying session.
- 5. Prior to starting your aircraft, turn off your transmitter, then turn it back on. Do this each time you start your aircraft. If any critical switches are on without your knowledge, the transmitter alarm will sound a warning.
- 6. Check that all trim levers are in the proper location.
- 7. All servo pigtails and switch harness plugs should be secured in the receiver. Make sure the switch harness moves freely in both directions.

Limited Warranty

WHAT THIS WARRANTY COVERS

Horizon Hobby, Inc. ("Horizon") warrants to the original purchaser that the product purchased (the "Product") will be free from defects in materials and workmanship at the date of purchase.

WHAT IS NOT COVERED

This warranty is not transferable and does not cover (i) cosmetic damage, (ii) damage due to acts of God, accident, misuse, abuse, negligence, commercial use, or due to improper use, installation, operation or maintenance, (iii) modification of or to any part of the Product, (iv) attempted service by anyone other than a Horizon Hobby authorized service center, or (v) Products not purchased from an authorized Horizon dealer.

OTHER THAN THE EXPRESS WARRANTY ABOVE, HORIZON MAKES NO OTHER WARRANTY OR REPRESENTATION, AND HEREBY DISCLAIMS ANY AND ALL IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE PURCHASER ACKNOWLEDGES THAT THEY ALONE HAVE DETERMINED THAT THE PRODUCT WILL SUITABLY MEET THE REQUIREMENTS OF THE PURCHASER'S INTENDED USE.

PURCHASER'S REMEDY

Horizon's sole obligation and purchaser's sole and exclusive remedy shall be that Horizon will, at its option, either (i) service, or (ii) replace, any Product determined by Horizon to be defective. Horizon reserves the right to inspect any and all Product(s) involved in a warranty claim. Service or replacement decisions are at the sole discretion of Horizon. Proof of purchase is required for all warranty claims. SERVICE OR REPLACEMENT AS PROVIDED UNDER THIS WARRANTY IS THE PURCHASER'S SOLE AND EXCLUSIVE REMEDY.

LIMITATION OF LIABILITY

HORIZON SHALL NOT BE LIABLE FOR SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR PRODUCTION OR COMMERCIAL LOSS IN ANY WAY, REGARDLESS OF WHETHER SUCH CLAIM IS BASED IN CONTRACT, WARRANTY, TORT, NEGLIGENCE, STRICT LIABILITY OR ANY OTHER THEORY OF LIABILITY, EVEN IF HORIZON HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. 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 the Product, purchaser is advised to return the 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). This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. Horizon reserves the right to change or modify this warranty at any time without notice.

Warranty Services

QUESTIONS, ASSISTANCE, AND SERVICES

Your local hobby store and/or place of purchase cannot provide warranty support or service. 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 Product Support representative. You may also find information on our website at www.horizonhobby.com.

INSPECTION OR SERVICES

If this Product needs to be inspected or serviced, please use the Horizon Online Service Request submission process found on our website or call Horizon to obtain a Return Merchandise Authorization (RMA) number. 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. An Online Service Request is available at <http://www.horizonhobby.com> under the Support tab. If you do not have internet access, please contact Horizon Product Support to obtain a RMA number along with instructions for submitting your product for service. When calling Horizon, you will be asked to provide your complete name, street address, email address and phone number where you can be reached during business hours. When sending product into Horizon, please include your RMA number, a list of the included items, and a brief summary of the problem. A copy of your original sales receipt must be included for warranty consideration. Be sure your name, address, and RMA number are clearly written on the outside of the shipping carton.

Notice: Do not ship LiPo batteries to Horizon. If you have any issue with a LiPo battery, please contact the appropriate Horizon Product Support office.

WARRANTY REQUIREMENTS

For Warranty consideration, you must include your original sales receipt verifying the proof-of-purchase date. Provided warranty conditions have been met, your Product will be serviced or replaced free of charge. Service or replacement decisions are at the sole discretion of Horizon.

NON-WARRANTY SERVICE

Should your service not be covered by warranty service 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 service you are agreeing to payment of the service without notification. Service estimates are available upon request. You must include this request with your item submitted for service. Non-warranty service estimates will be billed a minimum of ½ hour of labor. In addition you will be billed for return freight. Horizon accepts money orders and cashiers checks, as well as Visa, MasterCard, American Express, and Discover cards. By submitting any item to Horizon for service, you are agreeing to Horizon's Terms and Conditions found on our website <http://www.horizonhobby.com/Service/Request/>.

UNITED STATES

(Electronics and engines)

Horizon Service Center
4105 Fieldstone Rd
Champaign, Illinois
61822 USA
productsupport@horizonhobby.com
877-504-0233
Online Repair Request visit:
www.horizonhobby.com/service

(All other products)

Horizon Product Support
4105 Fieldstone Rd
Champaign, Illinois
61822 USA
productsupport@horizonhobby.com
877-504-0233

UNITED KINGDOM

Horizon Hobby Limited
Units 1-4 Ployters Rd
Staple Tye
Harlow, Essex
CM18 7NS
United Kingdom
sales@horizonhobby.co.uk
+44 (0) 1279 641 097

GERMANY

Horizon Technischer Service
Christian-Junge-Straße 1
25337 Elmshorn, Germany
service@horizonhobby.de
+49 4121 46199 66

FRANCE

Horizon Hobby SAS
14 Rue Gustave Eiffel
Zone d'Activité du Réveil Matin
91230 Montgeron
+33 (0) 1 60 47 44 70

Compliance Information for the European Union



INSTRUCTIONS FOR DISPOSAL OF WEEE BY USERS IN THE EUROPEAN UNION

This product must not be disposed of with other 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 where you purchased the product.

Academy of Model Aeronautics National Model Aircraft Safety Code

Effective January 1, 2011

A. GENERAL

A model aircraft is a non-human-carrying aircraft capable of sustained flight in the atmosphere. It may not exceed limitations of this code and is intended exclusively for sport, recreation and/or competition. All model flights must be conducted in accordance with this safety code and any additional rules specific to the flying site.

1. Model aircraft will not be flown:
 - (a) In a careless or reckless manner.
 - (b) At a location where model aircraft activities are prohibited.
2. Model aircraft pilots will:
 - (a) Yield the right of way to all man carrying aircraft.
 - b) See and avoid all aircraft and a spotter must be used when appropriate. (AMA Document #540-D-See and Avoid Guidance.)
 - (c) Not fly higher than approximately 400 feet above ground level within three (3) miles of an airport, without notifying the airport operator.
 - (d) Not interfere with operations and traffic patterns at any airport, heliport or seaplane base except where there is a mixed use agreement.
 - (e) Not exceed a takeoff weight, including fuel, of 55 pounds unless in compliance with the AMA Large Model Aircraft program. (AMA Document 520-A)
 - (f) Ensure the aircraft is identified with the name and address or AMA number of the owner on the inside or affixed to the outside of the model aircraft. (This does not apply to model aircraft flown indoors).
 - (g) Not operate aircraft with metal-blade propellers or with gaseous boosts except for helicopters operated under the provisions of AMA Document #555.
 - (h) Not operate model aircraft while under the influence of alcohol or while using any drug which could adversely affect the pilot's ability to safely control the model.

(i) Not operate model aircraft carrying pyrotechnic devices which explode or burn, or any device which propels a projectile or drops any object that creates a hazard to persons or property.

Exceptions:

- Free Flight fuses or devices that burn producing smoke and are securely attached to the model aircraft during flight.
- Rocket motors (using solid propellant) up to a G-series size may be used provided they remain attached to the model during flight. Model rockets may be flown in accordance with the National Model Rocketry Safety Code but may not be launched from model aircraft.
- Officially designated AMA Air Show Teams (AST) are authorized to use devices and practices as defined within the Team AMA Program Document (AMA Document #718).
 - (j) Not operate a turbine-powered aircraft, unless in compliance with the AMA turbine regulations. (AMA Document #510-A).
- 3. Model aircraft will not be flown in AMA sanctioned events, air shows or model demonstrations unless:
 - (a) The aircraft, control system and pilot skills have successfully demonstrated all maneuvers intended or anticipated prior to the specific event.
 - (b) An inexperienced pilot is assisted by an experienced pilot.
- 4. When and where required by rule, helmets must be properly worn and fastened. They must be OSHA, DOT, ANSI, SNELL or NOCSAE approved or comply with comparable standards.

B. RADIO CONTROL (RC)

1. All pilots shall avoid flying directly over unprotected people, vessels, vehicles or structures and shall avoid endangerment of life and property of others.
2. A successful radio equipment ground-range check in accordance with manufacturer's recommendations will be completed before the first flight of a new or repaired model aircraft.

3. At all flying sites a safety line(s) must be established in front of which all flying takes place (AMA Document #706-Recommended Field Layout):
 - (a) Only personnel associated with flying the model aircraft are allowed at or in front of the safety line.
 - (b) At air shows or demonstrations, a straight safety line must be established.
 - (c) An area away from the safety line must be maintained for spectators.
 - (d) Intentional flying behind the safety line is prohibited.
4. RC model aircraft must use the radio-control frequencies currently allowed by the Federal Communications Commission (FCC). Only individuals properly licensed by the FCC are authorized to operate equipment on Amateur Band frequencies.
5. RC model aircraft will not operate within three (3) miles of any pre-existing flying site without a frequency-management agreement (AMA Documents #922- Testing for RF Interference; #923- Frequency Management Agreement)
6. With the exception of events flown under official AMA Competition Regulations, excluding takeoff and landing, no powered model may be flown outdoors closer than 25 feet to any individual, except for the pilot and the pilot's helper(s) located at the flight line.
7. Under no circumstances may a pilot or other person touch a model aircraft in flight while it is still under power, except to divert it from striking an individual. This does not apply to model aircraft flown indoors.
8. RC night flying requires a lighting system providing the pilot with a clear view of the model's attitude and orientation at all times.
9. The pilot of a RC model aircraft shall:
 - (a) Maintain control during the entire flight, maintaining visual contact without enhancement other than by corrective lenses prescribed for the pilot.
 - (b) Fly using the assistance of a camera or First-Person View (FPV) only in accordance with the procedures outlined in AMA Document #550.

C. FREE FLIGHT

1. Must be at least 100 feet downwind of spectators and automobile parking when the model aircraft is launched.
2. Launch area must be clear of all individuals except mechanics, officials, and other fliers.
3. An effective device will be used to extinguish any fuse on the model aircraft after the fuse has completed its function.

D. CONTROL LINE

1. The complete control system (including the safety thong where applicable) must have an inspection and pull test prior to flying.
2. The pull test will be in accordance with the current Competition Regulations for the applicable model aircraft category.
3. Model aircraft not fitting a specific category shall use those pull-test requirements as indicated for Control Line Precision Aerobatics.
4. The flying area must be clear of all utility wires or poles and a model aircraft will not be flown closer than 50 feet to any above-ground electric utility lines.
5. The flying area must be clear of all nonessential participants and spectators before the engine is started.

Building and Flying Notes



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www.e-fliterc.com

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