Seawind® ARF

INSTRUCTION MANUAL

Wingspan: 71 in [1805mm]
Wing Area: 676 sq in [43.6 dm²]
Weight: 10.25 – 12.25 lb [4620 – 5555g]
Wing Loading: 35 – 41 oz/sq ft [106 – 127 g/dm²]
Length: 56 in [1410mm]
Radio: 5 or 6-channel with 7-9 servos
Engine: .60 cu in [10cc] two-stroke,
.70 – .91 cu in [11.5 – 15cc] four-stroke

WARRANTY

Great Planes® Model Manufacturing Co. guarantees this kit to be free from defects in both material and workmanship at the date of purchase. This warranty does not cover any component parts damaged by use or modification. **In no case shall Great Planes' liability exceed the original cost of the purchased kit.** Further, Great Planes reserves the right to change or modify this warranty without notice.

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

If the buyer is not prepared to accept the liability associated with the use of this product, the buyer is advised to return this kit immediately in new and unused condition to the place of purchase.

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

Hobby Services
3002 N. Apollo Dr., Suite 1
Champaign, IL 61822
USA

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

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

GREAT PLANES® MODEL MANUFACTURING COMPANY

Champaign, IL
(217) 398-8970, Ext. 5
airsupport@greatplanes.com

TABLE OF CONTENTS

INTRODUCTION.....2
AMA.....2
SCALE COMPETITION.....3
SAFETY PRECAUTIONS.....3
DECISIONS YOU MUST MAKE.....3
Radio Equipment.....3
Engine Recommendations.....4
Optional Retracts.....4
ADDITIONAL ITEMS REQUIRED.....4
Required Hardware & Accessories.....4
Adhesives & Building Supplies.....4
Covering Tools.....4
Optional Supplies & Tools.....4
IMPORTANT BUILDING NOTES.....4
ORDERING REPLACEMENT PARTS.....5
METRIC CONVERSIONS.....5
KIT INSPECTION.....6
KIT CONTENTS.....6
ASSEMBLE THE AIRPLANE STAND.....7
ENGINE INSTALLATION.....7
Install the Engine.....7
Install the Throttle Pushrod.....7
Install the Fuel Tank.....8
Install the Throttle Servo.....9
INSTALL THE COWL.....10
LANDING GEAR INSTALLATION OR NOT.....11
Flying From Water Only.....11
Fixed Landing Gear.....11
Retractable Landing Gear.....14
INSTALL THE STABILIZER.....16
INSTALL THE RUDDER.....16
RADIO INSTALLATION.....17
FINISH THE WING.....18
FINISH THE RADIO INSTALLATION.....19
FINISH THE FUSELAGE.....20
GET THE MODEL READY TO FLY.....21
Check the Control Directions.....21
Set the Control Throws.....21
Balance the Model (C.G.).....22
Balance the Model Laterally.....22
PREFLIGHT.....22
Identify Your Model.....22
Charge the Batteries.....22
Balance the Propellers.....23
Ground Check.....23
Range Check.....23
ENGINE SAFETY PRECAUTIONS.....23
AMA SAFETY CODE (excerpts).....23
General.....24
Radio Control.....24
CHECK LIST.....24
FLYING.....25
Fuel Mixture Adjustments.....25
Taking Off from the Ground.....25
Taking Off from the Water.....25
Flight.....26
Landing.....26

INTRODUCTION

The full-size Seawind is manufactured by Seawind/S.N.A., Inc. It was designed as the world's best and fastest 4 or 5 place amphibian. It has a cruising speed of 190+ mph, allowing pilots to reach their destination quickly and comfortably. Being able to take-off and land from water or land opens up many destinations not possible with land based only planes.

Great Planes has now taken this great flying plane and developed a .60-size ARF. Now you too can fly from land or water, opening up new flying sites not available before. Many hours of development and test flying have gone into the Great Planes Seawind ARF to create an easy to build and fly amphibious plane. Whether you're an experienced float plane pilot or new to this segment of the hobby, we at Great Planes think you will be very pleased with the Seawind ARF.

For the latest technical updates or manual corrections to the Great Planes Seawind ARF, visit the Great Planes web site at *www.greatplanes.com*. Open the "Airplane" link, then select the Seawind ARF. If there is new technical information or changes to this model a "tech notice" box will appear in the upper left corner of the page.

AMA

We urge you to join the **AMA** (Academy of Model Aeronautics) and a local R/C club. The AMA is the governing body of model aviation and membership is required to fly at AMA clubs. Though joining the AMA provides many benefits, one of the primary reasons to join is liability protection. Coverage is not limited to flying at contests or on the club field. It even applies to flying at public demonstrations and air shows. Failure to comply with the Safety Code (excerpts printed in the back of the manual) may endanger insurance coverage. Additionally, training programs and instructors are available at AMA club sites to help you get started the right way. There are over 2,500 AMA chartered clubs across the country. Contact the AMA at the address or toll-free phone number below:

Academy of Model Aeronautics
5151 East Memorial Drive
Muncie, IN 47302-9252
Tele: (800) 435-9262
Fax (765) 741-0057
Or via the Internet at:
http://www.modelaircraft.org

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

SCALE COMPETITION

Though the Great Planes Seawind is an ARF and may not have the same level of detail as an "all-out" scratch-built competition model, it is a scale model nonetheless and is therefore eligible to compete in the *Fun Scale* class in AMA competition (we receive many favorable reports of Great Planes ARFs in scale competition!). In Fun Scale, the "builder of the model" rule does not apply. To receive the five points for scale documentation, the only proof required that a full-size aircraft of this type in this paint/markings scheme did exist is a single sheet such as a kit box cover from a plastic model, a photo, or a profile painting, etc. If the photo is in black and white other written documentation of color must be provided. Contact the AMA for a rule book with full details.

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

1. Your Great Planes Seawind ARF should not be considered a toy, but rather a sophisticated, working model that functions very much like a full-size airplane. Because of its performance capabilities, the Seawind ARF, if not assembled and operated correctly, could possibly cause injury to yourself or spectators and damage to property.

2. You must assemble the model **according to the instructions**. Do not alter or modify the model, as doing so may result in an unsafe or unflyable model. In a few cases the instructions may differ slightly from the photos. In those instances the written instructions should be considered as correct.

3. You must take time to **build straight, true** and **strong**.

4. You must use an R/C radio system that is in first-class condition, and a correctly sized engine and components throughout the building process.

5. You must correctly install all R/C and other components so that the model operates correctly on the ground and in the air.

6. You must check the operation of the model before **every** flight to insure that all equipment is operating and that the model has remained structurally sound. Be sure to check clevises or other connectors often and replace them if they show any signs of wear or fatigue.

7. If you are not an experienced pilot or have not flown this type of model before, we recommend that you get the assistance of an experienced pilot in your R/C club for your first flights. If you're not a member of a club, your local hobby shop has information about clubs in your area whose membership includes experienced pilots.

8. While this kit has been flight tested to exceed normal use, if the plane will be used for extremely high-stress flying or if an engine larger than one in the recommended range is used, the modeler is responsible for taking steps to reinforce the high-stress points and/or substituting hardware more suitable for the increased stress.

9. **WARNING:** The cowl, canopy, wing tips and fuselage in this kit are made of fiberglass, the fibers of which may cause eye, skin and respiratory tract irritation. Never blow into a part (cowl) to remove fiberglass dust, as the dust will blow back into your eyes. Always wear safety goggles, a particle mask and rubber gloves when grinding, drilling and sanding fiberglass parts. Vacuum the parts and the work area thoroughly after working with fiberglass parts.

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

Remember: Take your time and follow the instructions to end up with a well-built model that is straight and true.

DECISIONS YOU MUST MAKE

This is a partial list of items required to finish the Seawind ARF that may require planning or decision making before starting to build. Order numbers are provided in parentheses.

Radio Equipment

For the basic setup to fly off of water the Seawind ARF requires:

- ❏ 5-Channel radio
- ❏ (3) Micro servos with metal gears S3102 (FUTM0034) for rudder, throttle and elevator
- ❏ (4) Standard Ball Bearing servos S9001 (FUTM0075) for (2) aileron (2) flaps
- ❏ (1) 12" [300mm] Servo extension (HCAM2711 for Futaba®)
- ❏ (7) 36" [910mm] Servo extension (HCAM2726 for Futaba)
- ❏ (2) Y-harness (HCAM2751 for Futaba)

Option 1: If the included fixed landing gear is installed, a fifth S9001 (FUTM0075) servo and a third Y-harness (HCAM2751) will be required for the nose steering.

Option 2: If the optional retracts are installed, a 6-channel radio and a Standard S3003 servo (FUTM0031) to operate the retract air valve are required.

If you would prefer to set the Seawind ARF up with flaperons, a 7-channel radio will be required.

Engine Recommendations

The recommended engine size range for the Seawind ARF is .60 cu in [10cc] two-stroke, .70 – .91 cu in [11.5 – 15cc] four-stroke. Because of the limited clearance between the engine and fuselage, a 3-bladed propeller is required. A 3-bladed spinner is included in the kit.

Optional Retracts

The Seawind ARF can be built three ways. If it will be flown off of water, no landing gear is required. If the Seawind ARF will be flown from land, it comes with fixed landing gear. The third option is to install retracts. The Robart retracts (ROBQ1622) are recommended. Along with the retracts you will need the #188VRX Complete Standard Air Kit (ROBQ2307) and #190 Air Line Quick Disconnect (ROBQ2395). All three options are covered in the instruction manual.

ADDITIONAL ITEMS REQUIRED

Required Hardware & Accessories

This is the list of hardware and accessories required to finish the Seawind ARF. Order numbers are provided in parentheses.

- ❏ R/C foam rubber (1/4" [6mm] – HCAQ1000)
- ❏ 3' [900mm] Standard silicone fuel tubing (GPMQ4131)
- ❏ (1) Aluminum fuel line plug (GPMQ4166)

Adhesives & Building Supplies

This is the list of Adhesives and Building Supplies that are required to finish the Seawind ARF.

- ❏ 1 oz. [30g] Thin Pro™ CA (GPMR6002)
- ❏ Pro 6-minute epoxy (GPMR6045)
- ❏ Pro 30-minute epoxy (GPMR6047)
- ❏ Threadlocker thread-locking cement (GPMR6060)
- ❏ Denatured alcohol (for epoxy clean up)
- ❏ Drill bits: 1/16" [1.6mm], 5/64" [2mm], 3/32" [2.4mm], 7/64" [2.8mm], 1/8" [3.2mm], 9/64" [3.6mm], 5/32" [4mm], 11/64" [4.4mm], 3/16" [4.8mm], 13/64" [5.2mm], 7/32" [5.6mm], 15/64 [6mm], 1/4" [6.4mm], 17/64" [6.7mm], 9/32" [7.1mm]
- ❏ 8-32 Tap and drill set (GPMR8103)
- ❏ Tap handle (GPMR8120)
- ❏ Small metal file
- ❏ Stick-on segmented lead weights (GPMQ4485)
- ❏ #1 Hobby knife (HCAR0105)
- ❏ #11 Blades (5-pack, HCAR0211)
- ❏ Silicone Sealant

Covering Tools

- ❏ Top Flite® MonoKote® sealing iron (TOPR2100)
- ❏ Top Flite Hot Sock™ iron cover (TOPR2175)
- ❏ Top Flite MonoKote trim seal iron (TOPR2200)
- ❏ Top Flite MonoKote heat gun (TOPR2000)
- ❏ 21st Century® sealing iron (COVR2700)
- ❏ 21st Century iron cover (COVR2702)
- ❏ 21st Century trim seal iron (COVR2750)
- ❏ Coverite™ Covering Thermometer (COVR2410)

Optional Supplies & Tools

Here is a list of optional tools mentioned in the manual that will help you build the Seawind ARF.

- ❏ 4 oz. [113g] Aerosol CA activator (GPMR634)
- ❏ CA applicator tips (HCAR3780)
- ❏ CA debonder (GPMR6039)
- ❏ Epoxy brushes (6, GPMR8060)
- ❏ Mixing sticks (50, GPMR8055)
- ❏ Mixing cups (GPMR8056)
- ❏ Builder's Triangle Set (HCAR0480)
- ❏ 36" Metal ruler (HCAR0475)
- ❏ Curved-tip canopy scissors for trimming plastic parts (HCAR0667)
- ❏ Pliers with wire cutter (HCAR0630)
- ❏ Masking tape (TOPR8018)
- ❏ Rotary tool such as Dremel®
- ❏ Rotary tool reinforced cut-off wheel (GPMR8200)
- ❏ Servo horn drill (HCAR0698)
- ❏ Dead Center™ Engine Mount Hole Locator (GPMR8130)
- ❏ AccuThrow™ Deflection Gauge (GPMR2405)
- ❏ CG Machine™ (GPMR2400)
- ❏ Laser incidence meter (GPMR4020)
- ❏ Precision Magnetic Prop Balancer™ (TOPQ5700)

IMPORTANT BUILDING NOTES

• When you see the term ***test fit*** in the instructions, it means that you should first position the part on the assembly **without using any glue**, then slightly modify or *custom fit* the part as necessary for the best fit.

• Whenever the term ***glue*** is written you should rely upon your experience to decide what type of glue to use. When a specific type of adhesive works best for that step, the instructions will make a recommendation.

• Whenever just ***epoxy*** is specified you may use **either** 30-minute (or 45-minute) epoxy **or** 6-minute epoxy. When 30-minute epoxy is specified it is **highly** recommended that you use only 30-minute (or 45-minute) epoxy, because you will need the working time and/or the additional strength.

• ***Photos*** and ***sketches*** are placed **before** the step they refer to. Frequently you can study photos in following steps to get another view of the same parts.

• The Great Planes Seawind ARF is factory-covered with Top Flite MonoKote film. Should repairs ever be required, MonoKote can be patched with additional MonoKote purchased separately. MonoKote is packaged in six-foot rolls, but some hobby shops also sell it by the foot. If only a small piece of MonoKote is needed for a minor patch, perhaps a fellow modeler would give you some. MonoKote is applied with a model airplane covering iron, but in an emergency a regular iron could be used. A roll of MonoKote includes full instructions for application. Following is the color used on this model and order number for a six foot roll.

White – TOPQ0204

• The stabilizer and wing incidences and engine thrust angles have been factory-built into this model. However, some technically minded modelers may wish to check these measurements anyway. To view this information visit the web site at *www.greatplanes.com* and click on "Technical Data." Due to manufacturing tolerances which will have little or no effect on the way your model will fly, please expect slight deviations between your model and the published values.

ORDERING REPLACEMENT PARTS

Replacement parts for the Great Planes Seawind ARF are available using the order numbers in the **Replacement Parts List** that follows. The fastest, most economical service can be provided by your hobby dealer or mail-order company.

To locate a hobby dealer, visit the Hobbico web site at *www.hobbico.com*. Choose "Where to Buy" at the bottom of the menu on the left side of the page. Follow the instructions provided on the page to locate a U.S., Canadian or International dealer. If a hobby shop is not available, replacement parts may also be ordered from Tower Hobbies® at *www.towerhobbies.com*, or by calling toll free (800) 637-6050.

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

Mail parts orders and payments by personal check to:

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

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

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

Replacement Parts List

Order Number	Description	How to Purchase
	Missing pieces	Contact Product Support
	Instruction manual	Contact Product Support
	Full-size plans	Not available
GPMA2510	Wing Set w/o Tips	Contact Hobby Supplier
GPMA2511	Wing Tips	Contact Hobby Supplier
GPMA2512	Fuselage	Contact Hobby Supplier
GPMA2513	Stabilizer w/Elevator	Contact Hobby Supplier
GPMA2514	Stab Tube/Rods	Contact Hobby Supplier
GPMA2515	Water Rudder w/Post	Contact Hobby Supplier
GPMA2516	Rudder	Contact Hobby Supplier
GPMA2517	Canopy	Contact Hobby Supplier
GPMA2518	Cowl	Contact Hobby Supplier
GPMA2519	Landing Gear	Contact Hobby Supplier
GPMA2520	Nose Gear Doors	Contact Hobby Supplier
GPMA2521	Spinner	Contact Hobby Supplier

METRIC CONVERSIONS

1" = 25.4mm (conversion factor)

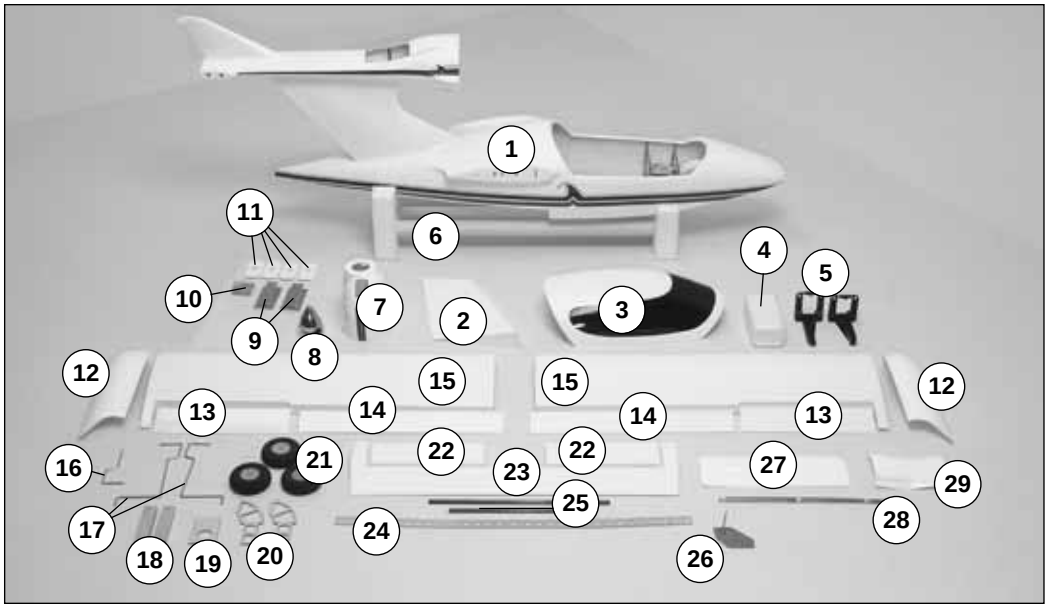
1/64"	=	.4 mm	3/4"	=	19.0 mm
1/32"	=	.8 mm	1"	=	25.4 mm
1/16"	=	1.6 mm	2"	=	50.8 mm
3/32"	=	2.4 mm	3"	=	76.2 mm
1/8"	=	3.2 mm	6"	=	152.4 mm
5/32"	=	4.0 mm	12"	=	304.8 mm
3/16"	=	4.8 mm	18"	=	457.2 mm
1/4"	=	6.4 mm	21"	=	533.4 mm
3/8"	=	9.5 mm	24"	=	609.6 mm
1/2"	=	12.7 mm	30"	=	762.0 mm
5/8"	=	15.9 mm	36"	=	914.4 mm

KIT INSPECTION

Before starting to build, take an inventory of this kit to make sure it is complete, and inspect the parts to make sure they are of acceptable quality. If any parts are missing or are not of acceptable quality, or if you need assistance with assembly, contact **Product Support**. When reporting defective or missing parts, use the part names exactly as they are written in the Kit Contents list.

Great Planes Product Support
3002 N. Apollo Drive, Suite 1
Champaign, IL 61822
Telephone: (217) 398-8970, ext. 5
Fax: (217) 398-7721
E-mail: *airsupport@greatplanes.com*

Parts Layout



Kit Contents

1. Fuselage
2. Rudder
3. Canopy
4. Fuel Tank
5. Engine Mount
6. Airplane Stand
7. Cowl
8. Spinner
9. Main Fixed LG Mount (2)
10. Nose Gear Mounting Plate
11. Aileron & Flap Servo Covers
12. L&R Wing Tips
13. L&R Ailerons
14. L&R Flaps
15. L&R Wing Panels
16. Nose Gear
17. Main LG
18. Main LG Blocks
19. Throttle Servo Tray
20. L&R Wing Tip Supports
21. Main Wheels (3)
22. L&R Horizontal Stabilizer
23. Elevator
24. Aluminum Wing Joiner
25. Horizontal Stabilizer Tubes (2)
26. Water Rudder
27. Nose Gear Cover
28. Pushrods
29. Throttle Servo Hatch Cover

Kit Contents (Not Photographed)

(8) Clevis
(2) CA Hinge Strip
(6) Large Control Horn
(34) #2 x 3/8" [9.5mm] Philips Screws
(7) 2-56 x 6" [152mm] Pushrod Threaded One End
(8) Nylon FasLink
(8) 1/4" [6.4mm] Silicone Clevis Retainer
(2) Screw-Lock Pushrod Connector
(2) 4-40 x 1/4" Socket-Head Cap Screw
(2) Nylon Retainer (for screw-lock pushrod connector)
(2) #6 Flat Washer
(8) #8 Lock Washer

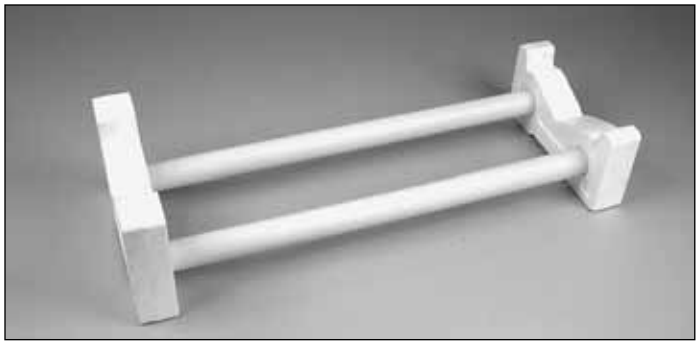
(8) 8-32 x 1" [25mm] Socket-Head Cap Screw
(8) #8 SAE Flat Washer Plated
(8) #8 Split Ring Lock Washer Plated
(4) 8-32 Blind Nuts
(1) #4 x 5/8" [16mm] Sheet Metal Screw
(5) #4 Flat Washer
(8) #2 Flat Washer
(9) 5/32" [4mm] Wheel Collar
(8) 6-32 x 1/8" [3mm] Set Screw
(4) Landing Gear Strap
(2) 6-32 x 3/4" [19mm] Pan Head Screw
(2) 6-32 Hex Nut
(1) 6-32 x 1/4" Socket Head Bolt

(1) Steering Arm
(8) #6 x 1/2" [13mm] Philips Sheet Metal Screw
(1) 5/32 Nose Gear Bearing
(4) Metal Clevis 2-56 Threaded
(4) 2-56 Hex Nut
(2) Metal Retainer (for screw-lock pushrod connector)
(1) 1200 x 10 x 2mm Foam Tape
(2) 1/4-20 Thumb screws
(1) Complete Water Bailer
(2) Steel Wing Alignment Pins
(1) Wheel Collar with Wire (for steering mechanism)
(2) Hardwood Blocks (throttle servo)

(1) Retainer Plate (throttle servo)
(1) 25 x 25 x 0.8mm Double-Sided Foam Tape (throttle servo)
(2) Threaded Cable Connectors
(2) Steering Cable
(1) 2.5mm Hex Wrench

not used
10 x 10 x 230mm Balsa Sticks

ASSEMBLE THE AIRPLANE STAND



❏ 1. Remove the two styrofoam airplane stand ends and the two 1-5/8" x 27-1/2" [41 x 660mm] plastic tubes. Slide the tubes into the two ends.

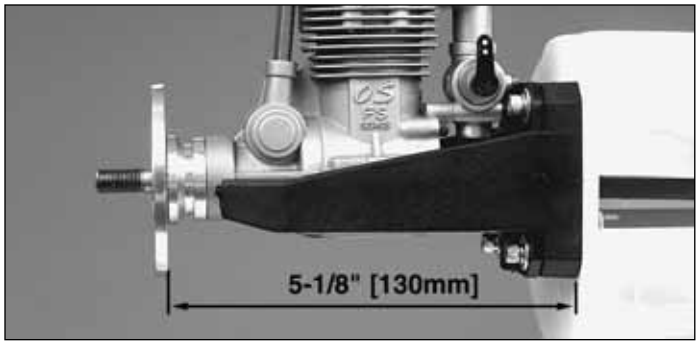
ENGINE INSTALLATION

Install the Engine

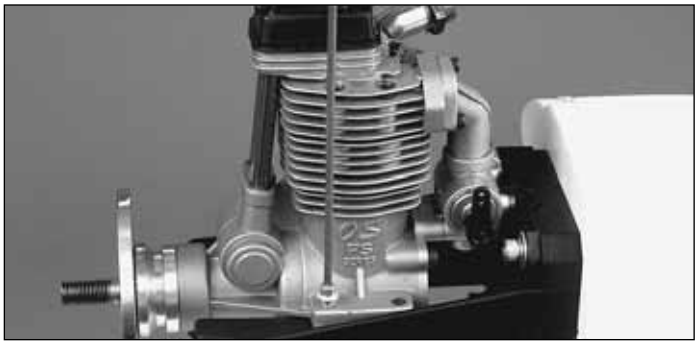
We are going to install the engine in the upright position first to prevent damaging other components of the plane while maneuvering the plane around.

❏ 1. Cut the “spreader bar” from the supplied Great Planes engine mount. Use a hobby knife to remove any flashing left over from the molding process so that the halves fit together well.

❏ 2. Temporarily attach the engine mount upright to the firewall using four 8-32 x 1" [4 x 25.4mm] socket-head cap screws, four #8 flat washers and four #8 lock washers.



❏ 3. Position the engine on the engine mount so that the front of the drive washer (or back of the spinner) is 5-1/8" [130mm] from the firewall. Also make sure the engine is centered on the engine mount.



❏ 4. Use a Great Planes Dead Center™ hole locator to mark on the engine mount the four engine mounting holes.

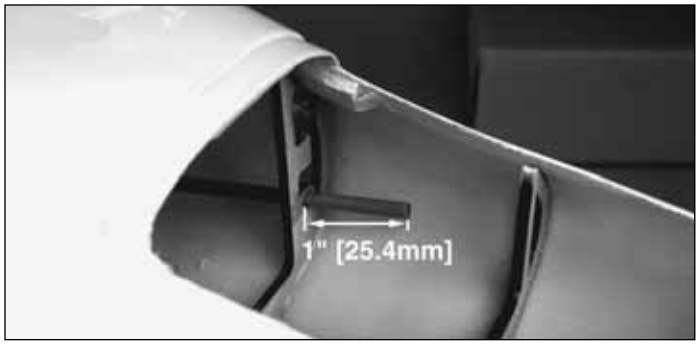
❏ 5. Remove the engine mount and use a drill press, if you have one, to drill a 9/64" [3.5mm] hole at each mark, perpendicular to the engine mount rails. Then, tap all four holes with an 8-32 [6mm] tap.

❏ 6. Using four 8-32 x 1" [6 x 25.4mm] socket-head cap screws, four #8 lock washers and four #8 flat washers, install the engine on the engine mount.

❏ 7. Remove the four 8-32 [4mm] socket-head cap screws from the engine mount and rotate the mount 180 degrees so that the engine is mounted inverted. Be sure to use thread-lock on the 8-32 [4mm] socket-head cap screws when reinstalling them.

Install the Throttle Pushrod

❏ 1. Insert the 11-3/4" [298mm] gray outer pushrod tube in the fuel tank compartment through the formers as shown. Note the location that the pushrod tube hits the back of the firewall. This will give you an idea where the pushrod must exit the firewall to allow smooth operation.

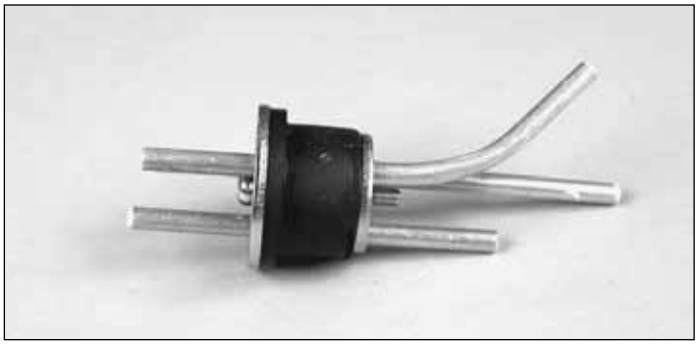


❏ 2. Drill a 3/16" [4.8mm] hole through the front of the firewall. Roughen the outer pushrod with sandpaper. Insert the outer pushrod tube through the firewall and the former so that it protrudes through the first former by approximately 1" [25.4mm]. Trim the excess flush with the front of the firewall.

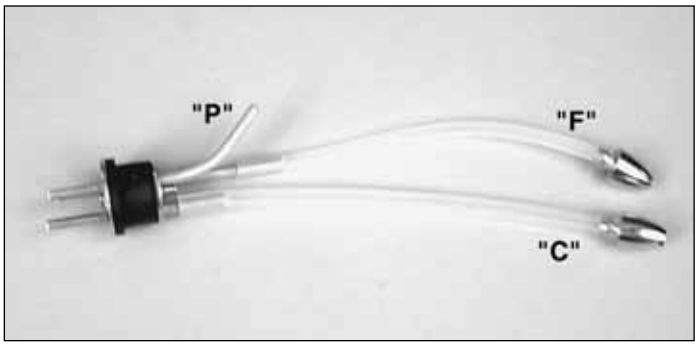
❏ 3. Install a screw-lock pushrod connector on the throttle arm and secure it with a nylon keeper.

Install the Fuel Tank

❏ 1. Remove the components from inside the fuel tank. Install the three aluminum tubes in the fuel tank stopper. You will need to use a hobby knife to open the third hole in the rubber stopper. Slide the small metal plate over the tubes and thread the screw into the plate until it makes contact with the back of the rubber stopper. **Do not** tighten the screw.



❏ 2. Carefully bend one of the long tubes so that it will angle up toward the top of the fuel tank when inserted. Do not kink the tube. Mark a “P” on the outside of the front plate to designate pressure.



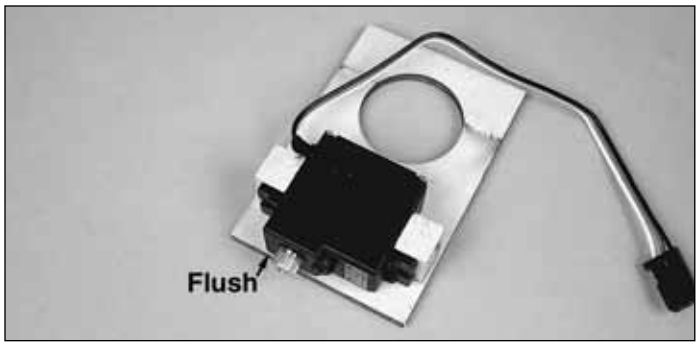
❏ 3. Install a piece of fuel tubing on each of the other two tubes. Attach a clunk on the ends of the tubes. Mark a “C” on the outside of the front plate by the short tube, designating carb, and an “F” by the remaining tube, designating fill.

❏ 4. Insert the tank stopper in the fuel tank. Check that the two clunks are able to move freely when the stopper is inserted completely. Then, tighten the screw in the stopper to seal the fuel tank. Write “top” on the side of the fuel tank where the pressure tube sticks up.

❏ 5. Install three pieces of fuel line on the three aluminum fuel tubes in the front of the fuel tank. Insert the fuel tank into the fuel tank compartment, routing the fuel line out of the firewall. Make sure the top of the tank faces upward.

❏ 6. Connect the correct fuel line to the carburetor and the fuel line plug to the fill line. The pressure line will be connected to the muffler once the cowl has been installed.

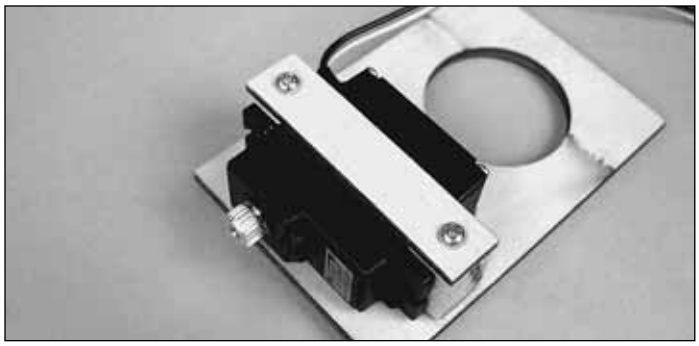
Install the Throttle Servo



❏ 1. Position the Micro servo with the top of the servo case flush and centered with the edge of the throttle servo tray. Use epoxy to glue the two hardwood servo tray blocks on each side of the servo against the servo mounting flanges.

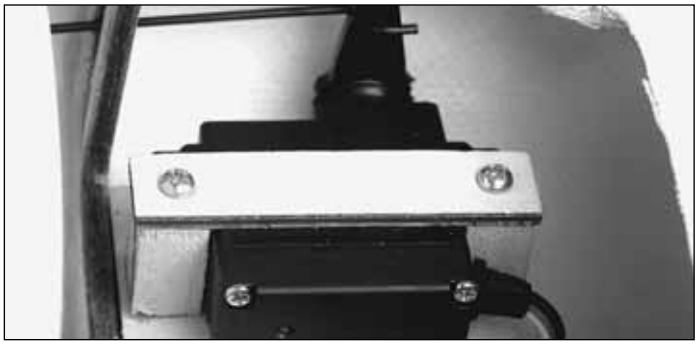
❏ 2. Once the glue has cured, remove the servo, turn the servo tray over and drill a 1/16" [1.6mm] pilot hole through the servo tray and into the servo tray blocks, centered in the blocks. Secure the servo tray blocks to the servo tray with two #2 x 3/8" [9.5mm] self-tapping screws.

❏ 3. Attach the 1" x 1" [25.4 x 25.4mm] double-sided tape to the servo tray, between the servo tray blocks. Then attach the throttle servo to the tape.



❏ 4. Position the plywood servo retainer over the servo and drill a 1/16" [1.6mm] pilot hole at each end through the retainer and into the servo tray block.

❏ 5. Connect a 36" [914mm] servo extension to the throttle servo. Tie the string in the fuel tank compartment to the end of the extension and pull the extension through the tube and into the fuselage. Tape or heat-shrink the leads together.



❏ 6. Insert the throttle pushrod in the pushrod tube. Insert the Z-Bend in the throttle servo horn. Position the throttle servo in the fuel tank compartment.

❏ 7. Use a pliers to bend the throttle pushrod so that it can be inserted in the screw-lock pushrod connector. Cut off the excess pushrod and secure the pushrod in the screw-lock pushrod connector with a 4-40 set screw.

❏ 8. Use epoxy to glue the throttle servo tray in the fuel tank compartment.

❏ 9. Temporarily plug the throttle servo and receiver battery into your receiver. Adjust the throttle pushrod so that the throttle operates correctly. We normally set up our throttle so that the engine can be stopped by moving a switch, causing the throttle to close completely.

INSTALL THE COWL

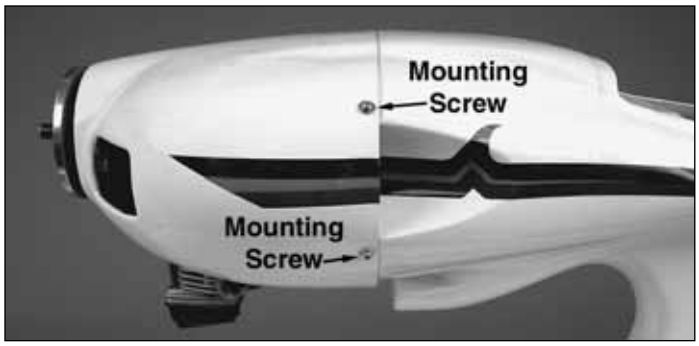
❏ 1. Use a piece of thin cardboard or plastic to make a template for the cutout in the cowl for the head of the engine. Tape the template to the fuselage, accurately indicating the position of the head.

❏ 2. Carefully remove the engine. Slide the cowl in position and tape it to the fuselage. Use a felt-tip pen to transfer the hole in the template onto the cowl.

❏ 3. Remove the cowl and template, and then remount the engine. Cut out the hole in the cowl, test-fitting it over the engine as you go.

Hint: Cut the hole in the cowl undersize at first so you can make adjustments to its position.

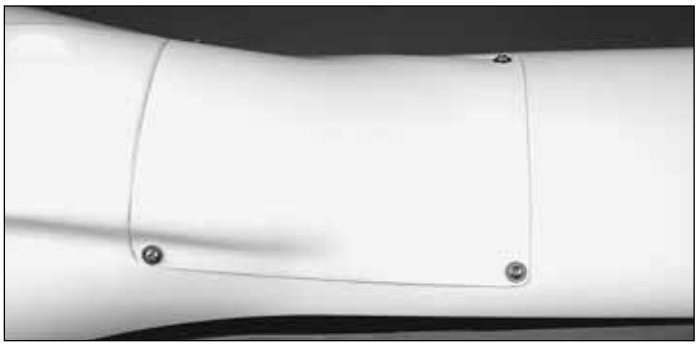
❏ 4. Once the cowl is trimmed to fit and positioned over the engine, install the spinner backplate on the engine. Adjust the cowl so that the spinner backplate aligns with the front of the cowl. Tape the cowl in position.



❏ 5. Drill a 1/16" [1.6mm] pilot hole, above and below the air exit indentation. Increase the hole in the cowl only to 3/32" [2.4mm]. Secure the cowl to the fuselage with four #2 x 3/8" [9.5mm] self-tapping screws and #2 flat washers.

❏ 6. Remove the spinner backplate and the cowl. Using the template method, locate and cut the hole for the needle valve. Connect the fuel line to the carburetor. Replace the cowl and install the muffler. Attach the pressure line to the muffler.

❏ 7. Use a sharp canopy scissors and sanding bar to trim the throttle servo hatch cover to fit the fuselage.



❏ 8. Note the four wood blocks, in each corner, under the throttle servo hatch opening. Position the hatch cover over the opening and drill a 1/16" [1.6mm] pilot hole in each corner. Remove the hatch cover and enlarge the holes in the cover to 3/32" [2.4mm]. Secure the hatch cover to the fuselage with four 2 x 8mm sheet metal screws and 2mm washers.

❏ 9. Install the spinner backplate and then the propeller on the engine. Secure the propeller with the prop washer and the propeller nut included with your engine.

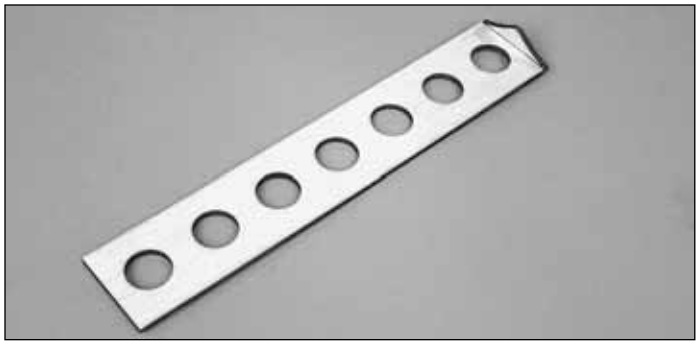
❏ 10. Install the spinner nut included with the Seawind ARF. Position the spinner over the propeller and use the included socket-head bolt to attach the spinner to the spinner nut. Depending on the thickness of the propeller, you may need to cut the socket-head bolt.

LANDING GEAR INSTALLATION OR NOT

Flying From Water Only

If the plane will be flown from water only, the nose gear cover plate can be permanently glued in the fuselage. If you think that in the future you may want to install landing gear in the plane, follow the instructions below, but do not glue the nose gear cover plate in the fuselage. Instead use clear box tape to secure the plate in position.

If landing gear will be installed, proceed to ***"Fixed Landing Gear or Retractable Landing Gear."***



❏ 1. Glue the plywood end plate to the nose gear cover plate.

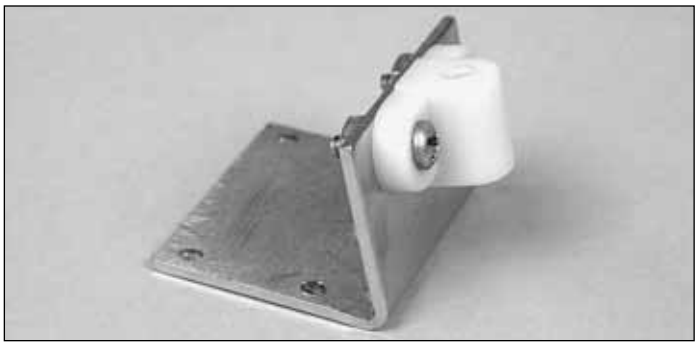
❏ 2. Use a canopy scissors or a Dremel® Rotary Tool and sandpaper to trim the fiberglass nose gear cover to fit on the nose gear cover plate and in the nose gear opening.

❏ 3. Once the cover and cover plate fit well in the nose gear opening, glue the fiberglass cover to the cover plate. Coat the plywood plate with epoxy, thinned with denatured alcohol, to prevent the wood from soaking up water.

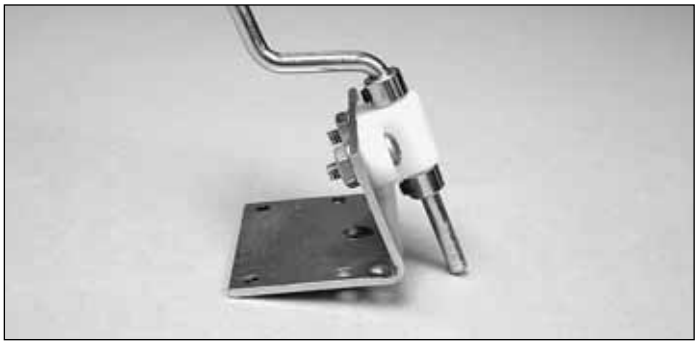
❏ 4. Use sandpaper to roughen the inside of the nose gear opening where the cover plate will be glued. Clean the area with denatured alcohol. Use epoxy to glue the nose gear cover in the nose gear opening, flush with the bottom of the fuselage. **Note:** Glue the cover on with silicone sealant if you plan to remove it later.

❏ 5. After the epoxy has cured, drill a 3/32" [2.4mm] hole at the aft edge of the fiberglass cover plate to allow water to drain out of the nose gear opening.

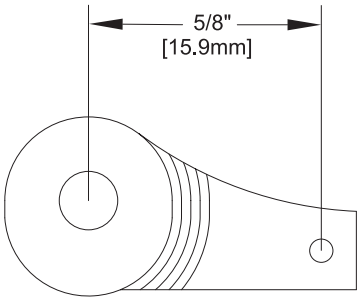
Fixed Landing Gear

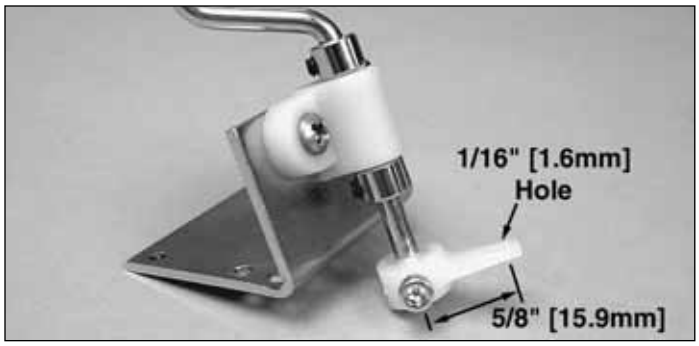


❏ 1. Attach the nylon nose gear bearing to the nose gear mounting plate using two 6-32 x 1/2" [4 x 12.7mm] machine screws, two 6-32 [4mm] nuts and #6 washers.

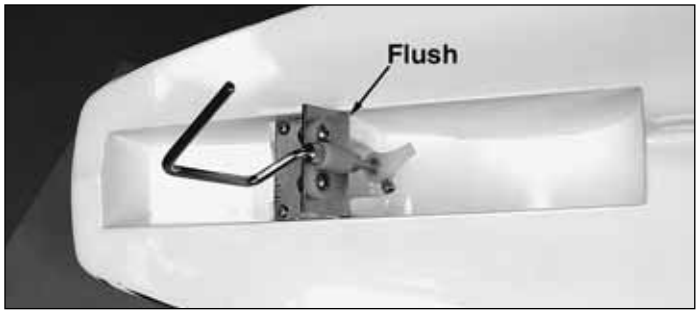


❏ 2. Slide a 5/32" [4mm] wheel collar on the nose gear wire. Insert the nose gear in the nose gear bearing and install a second 5/32" [4mm] wheel collar. Secure the wheel collars to the nose gear wire with a 6-32 [4mm] set screw.

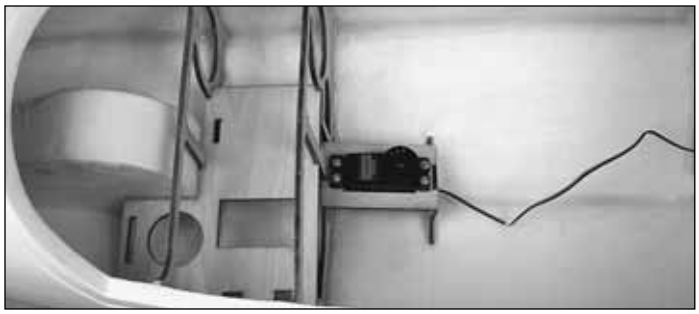




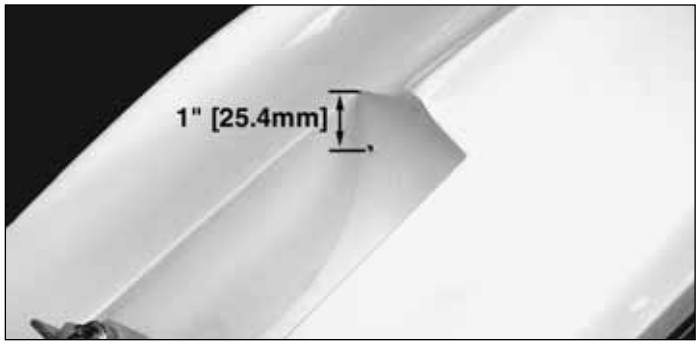
❏ 3. Drill a 1/16" [1.6mm] hole through the nylon steering arm 5/8" [15.9mm] from the center of the arm. Trim the steering arm so that only this hole remains. Insert a 5/32" [4mm] wheel collar in the steering arm and install a 6-32 x 1/4" [4 x 6.4mm] socket-head cap screw through the steering arm and into the wheel collar. Slide the steering arm on the nose gear wire. So that the arm is parallel to the axle of the nose gear, file a flat spot where the socket-head cap screw tightens on the nose gear. Apply thread-lock to the socket-head cap screw and tighten it on the nose gear.



❏ 4. Position the nose gear plate so that the aft edge of the plate is flush with the aft edge of the nose gear mount in the fuselage. Mark the four mounting holes and drill a 3/32" [2.4mm] pilot hole at each mark. Attach the nose gear plate to the fuselage with four #4 x 1/2" [12.7mm] sheet metal screws.

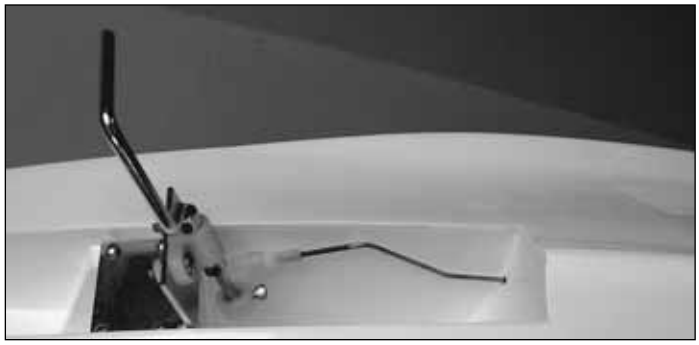


❏ 5. Drill 1/16" [1.6mm] pilot holes and mount the steering servo, using the hardware that came with your radio.

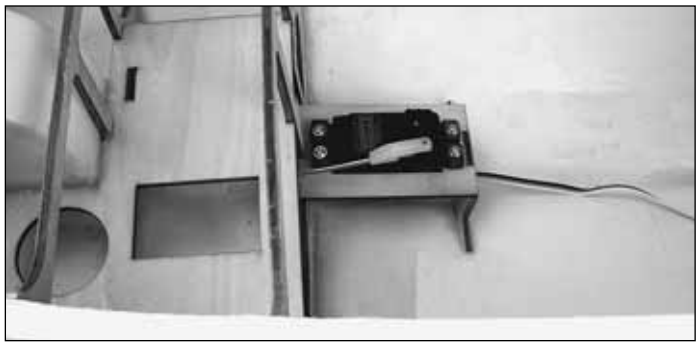


❏ 6. Drill a 3/32" [2.4mm] hole through the aft edge of the nose wheel recess, 1" [25.4mm] from the bottom of the fuselage. You will need to remove the nose gear to allow room for the drill. While the nose gear is removed, apply a couple of drops of thin CA to each of the screw mounting holes to harden the wood, before remounting the nose gear.

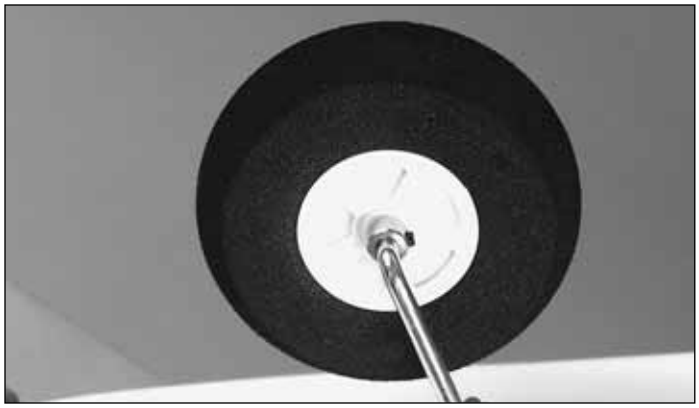
❏ 7. Thread a nylon clevis approximately 14 turns onto the 12" [304.8mm] metal pushrod. Slide a silicone clevis retainer over the clevis.



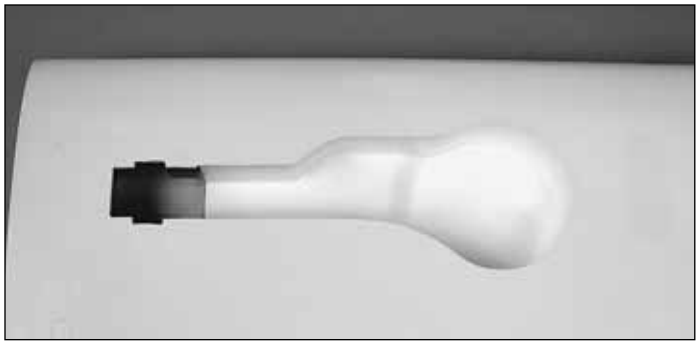
❏ 8. Insert the pushrod in the hole at the back of the nose wheel recess. The pushrod will require some bending so that the clevis can be attached to the steering arm.



❏ 9. Temporarily connect the steering servo to your receiver and center the servo arm. Position the nose gear wire so that it is perpendicular to the centerline of the fuselage. Mark the pushrod where it crosses the mounting holes in the servo arm. Make a 90° bend at the mark. Attach the pushrod to the servo arm using a nylon FasLink. Cut the excess pushrod wire so that it slightly protrudes out of the FasLink.

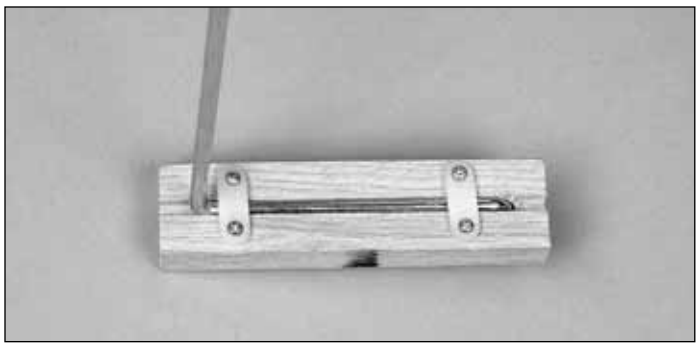


❏ 10. Install a 5/32" [4mm] wheel collar and 6-32 [4mm] set screw on the nose gear wire, followed by one of the foam wheels and a second wheel collar and set screw.



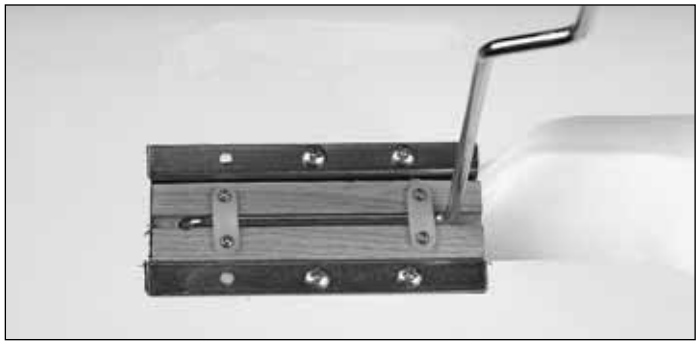
❏ ❏ 11. Use a sharp hobby knife to trim the covering from over the main landing gear opening in one of the wing halves.

❏ ❏ 12. Insert the main landing gear wire in the grooved hardwood landing gear block. Position two nylon landing gear straps over the landing gear wire and mark the four mounting hole locations.

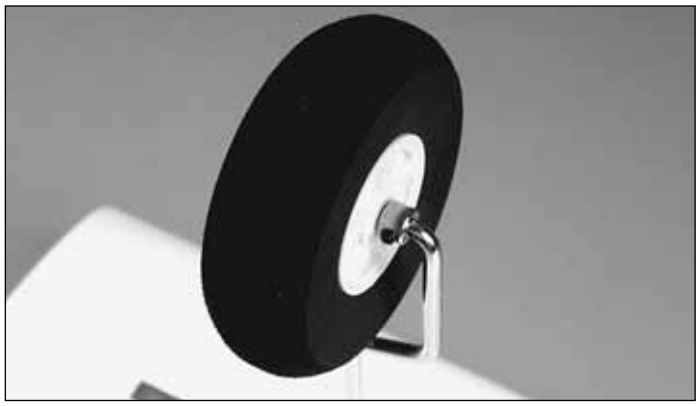


❏ ❏ 13. Drill a 1/16" [1.6mm] pilot hole into the landing gear block at each mark. Secure the landing gear straps to the block with four #2 x 3/8" [9.5mm] sheet metal screws.

❏ ❏ 14. Position the landing gear block in the metal main landing gear mount so that the landing gear wire goes through the mount. Drill a 7/64" [2.7mm] pilot hole at each mounting hole location and attach the landing gear block to the metal mount with four #6 x 1/2" [12.7mm] sheet metal screws.



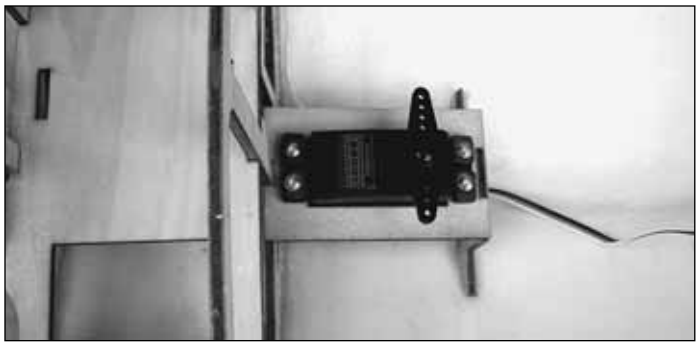
❏ ❏ 15. Insert the landing gear in the wing so that the landing gear wire is closest to the wheel recess. Mark and drill four 7/64" [2.7mm] pilot holes, in the mounting holes closest to the landing gear wire. Secure the landing gear to the wing with four #6 x 1/2" [12.7mm] sheet metal screws in the positions shown.



❏ ❏ 16. Install a 5/32" [4mm] wheel collar and 6-32 [4mm] set screw on the landing gear wire, followed by one of the foam wheels and a second wheel collar and set screw.

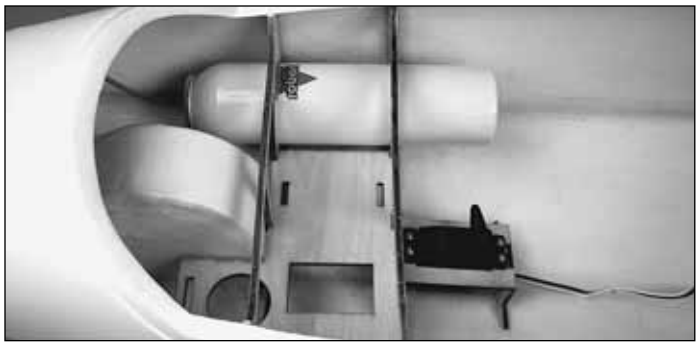
❏ 17. Go back to step 1 and install the fixed landing gear in the other wing half.

Retractable Landing Gear



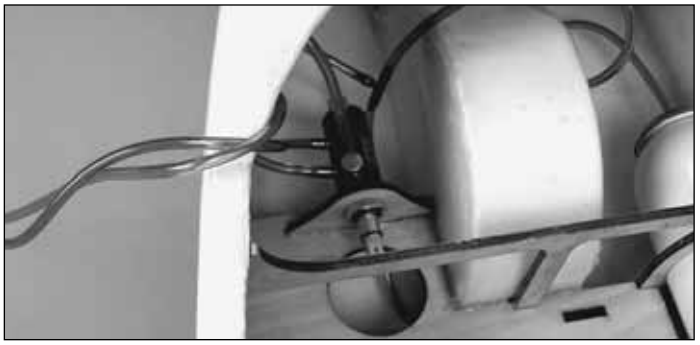
❏ 1. Drill 1/16" [1.6mm] pilot holes and mount the steering servo, using the hardware that came with your radio.

❏ 2. Connect the steering servo to your receiver and center the rudder trims on your transmitter. Install a two arm servo arm on the steering servo so that the arms are perpendicular to the centerline of the servo.



❏ 3. Install a piece of air line tubing on the retract air tank. Use silicone adhesive or epoxy to glue the retract air tank in the formers on the right side of the fuselage.

❏ 4. Drill a hole in the radio tray to fit your fill valve. Attach air line tubing between the air tank and fill valve.

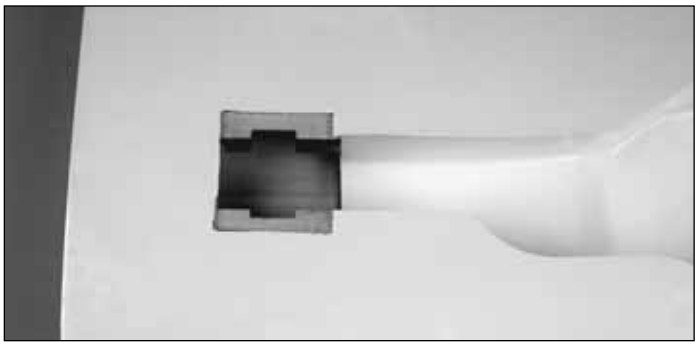


❏ 5. Attach the control valve to the plywood control valve mount. Attach the air line tubing to the control valve and glue the mount to the radio tray.

❏ 6. Install the control valve servo in the radio tray using the hardware supplied with the servo.

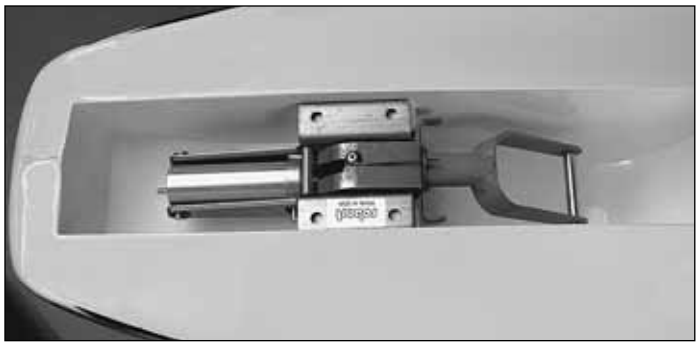
❏ 7. Thread a nylon clevis approximately 14 turns onto the end of a 6" [152mm] wire pushrod. Install a silicone clevis retainer on the clevis. Install the clevis on the control valve.

❏ ❏ 8. Use a sharp hobby knife to trim the covering from over the main landing gear opening in one of the wing halves.



❏ ❏ 9. Install a foam wheel on one of the main retracts following the retract manufacturer's instructions. Install the air

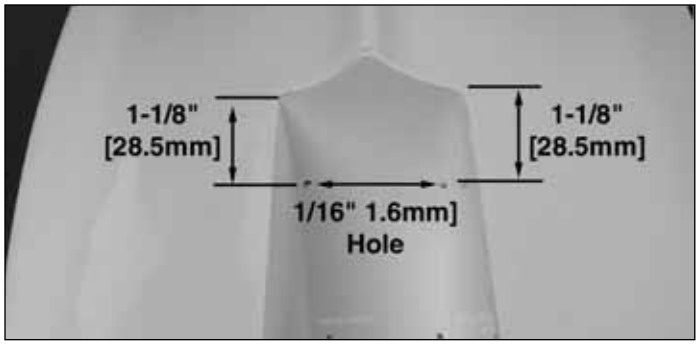
line tubing on the main retracts. Position the main retract in the wing so that the wheel is centered in the wheel well. Use a felt-tip pen to outline the mounting flanges of the main retracts. Use a sharp hobby knife to cut and remove balsa sheeting over the hardwood mounting rails. Reinstall the main retracts in the wing and secure them to the plywood rails with the screws included with the main retracts.



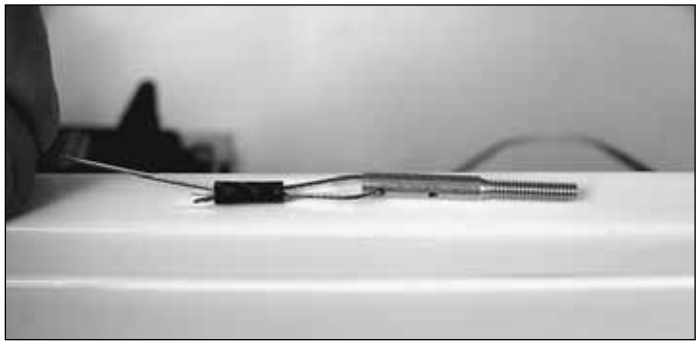
❏ ❏ 10. Position the nose gear retract on the landing gear rail.

❏ ❏ 11. Determine the best location for the air line tubing to come through the wheel well and drill a hole to route the air line tubing through. Connect the air line tubing to the retract and the control valve.

❏ ❏ 12. Mount the nose gear retract in the fuselage with the screws included with the main retract.



❏ 13. Drill a 1/16" [1.6mm] hole in both of the aft corners, 1-1/8" [28.5mm] from the bottom of the fuselage.



❏ ❏ 14. Put a piece of masking tape on the end of one of the metal cables. Insert the cable in one of the holes. The masking tape will prevent the cable from pulling through the hole. Slide a metal furl on the cable inside the fuselage. Then thread the cable through the bottom hole in the threaded coupler and then back through the furl. Use a pliers to crimp the furl on the cable.

❏ ❏ 15. Install a 2-56 nut half-way onto the threaded coupler. Install a silicone clevis retainer on a 2-56 threaded metal clevis. Install the clevis on the threaded coupler and tighten it against the 2-56 nut.

❏ ❏ 16. Attach the clevis in the outer hole of the steering servo arm.

❏ 17. Return to step 14 and repeat the process for the second steering cable.

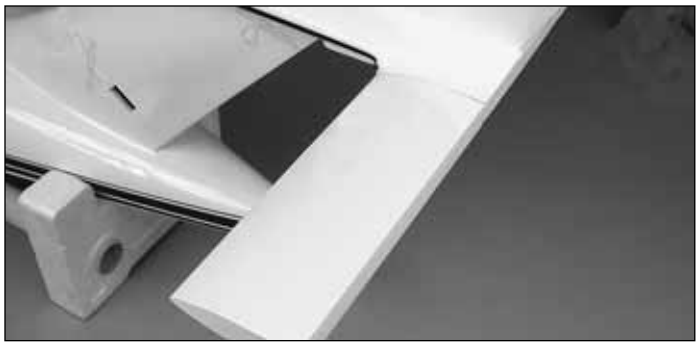
❏ 18. Lower the nose gear retract and slide a metal furl on each of the steering cables. Route the cables through the attachment arms on the nose gear and back through the furls. With the steering servo arm centered and the nose gear straight, pull the cable tight. Then, crimp the two furls on the cable. Cut off the excess cable.

❏ 19. Install a foam wheel on the nose gear retract following the manufacturer's instructions. If the foam wheel rubs slightly on the retract, lightly sand the foam with 320-grit sandpaper.

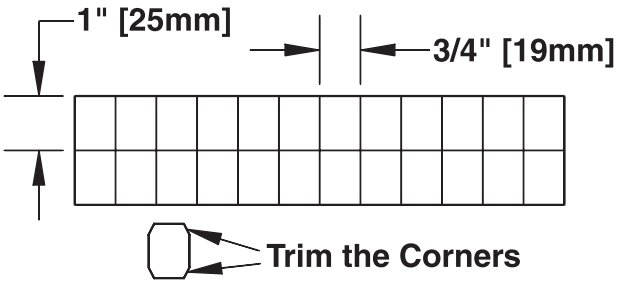
INSTALL THE STABILIZER

❏ 1. Install the horizontal stabilizer tubes in the tail. The short tube is installed in the forward hole.

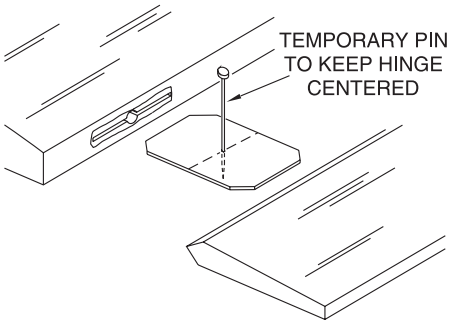
❏ 2. Test fit the two stabilizer halves on the tubes. Make sure the stabilizer halves fit tightly against the tail. Remove the stabilizer halves and the tubes. Use sandpaper to roughen the area where the stabilizer meets the tail and the two tubes. Clean the area with denatured alcohol.



❏ 3. Use 30-minute epoxy to glue the two stabilizer halves to the tail and the carbon tubes.

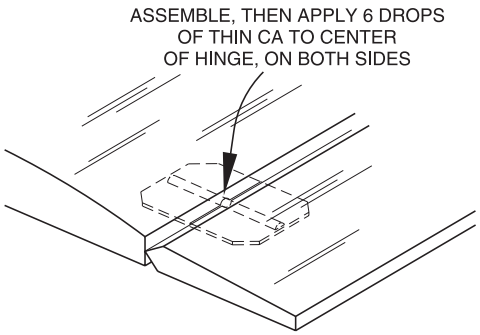


❏ 4. Cut the four 3/4" x 1" [19 x 25.4mm] hinges for the stabilizer from the supplied 2" x 9" [51 x 228mm] hinge material. Trim the corners of each hinge.



❏ 5. To keep the CA hinges centered in the control surfaces while installing them, insert a T-pin in the center of the hinge. Insert the hinges in the stabilizer and install the elevator. Remove the T-pins and adjust the control surface so that the leading edge of the elevator is against the trailing edge of the stabilizer.

Note: Make sure the hardwood block in the elevator is on the bottom in-line with the elevator servo opening.

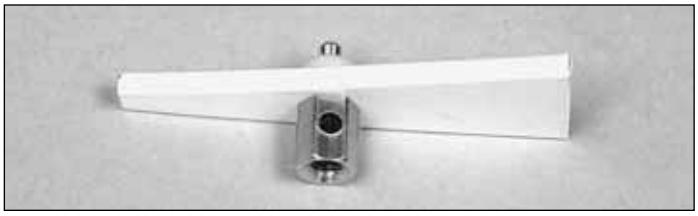


❏ 6. Add 6 drops of thin CA to the center of all the hinges on both the top and bottom.

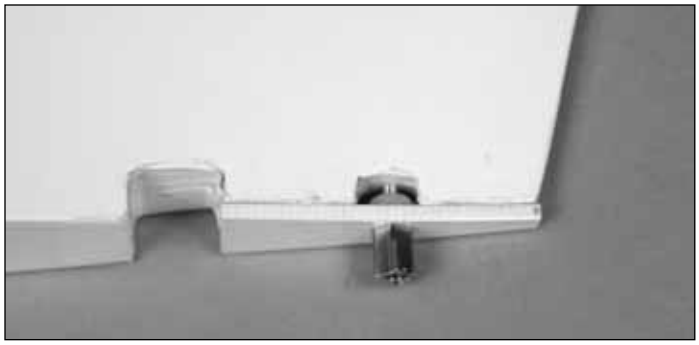
Caution: Do not use accelerator on any of the hinges. Do not glue the hinges with anything but thin CA and do not attempt to glue 1/2 of the hinge at a time with medium or thick CA. They will not be properly secured and the controls could separate while the model is in flight.

INSTALL THE RUDDER

Note: If you will be flying from land only, perform step 3 to install the rudder.

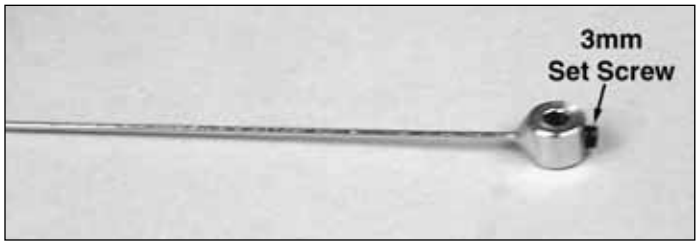


❏ 1. Use a nylon keeper to secure the screw-lock pushrod connector on the triangular rudder base.



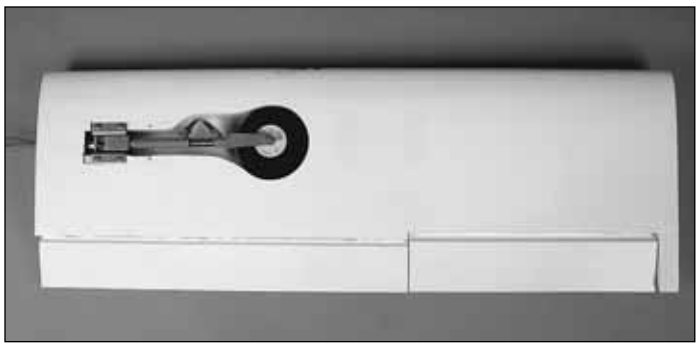
❏ 2. Use epoxy to glue the rudder base to the bottom of the rudder. Make sure the epoxy covers all of the bare wood surfaces.

❏ 3. Cut and install three hinges in the rudder. Install the rudder on the fuselage following the same procedure used to install the elevator.



❏ 4. Install a 1/8" [3mm] set screw in the water rudder control rod.

❏ 5. Insert the water rudder control rod in the quick connector on the bottom of the rudder. Insert the water rudder in the fuselage and connect the water rudder control rod to the water rudder. Do not trim off the excess control rod until after the rudder throws have been set.



❏ 6. Install the ailerons and flaps on both wing halves following the same procedure used to install the hinges in the rudder and elevator.

RADIO INSTALLATION

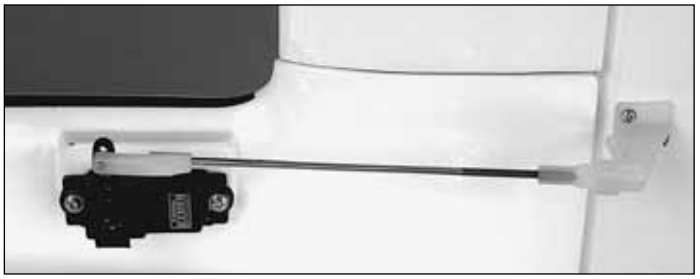
❏ 1. Install a 36" [914mm] servo extension on the elevator servo. Tie the end of the servo extension to the string and carefully pull the extension through the fuselage. Tape or heat-shrink the leads together.

❏ 2. Install the elevator servo in the fuselage using the hardware supplied with the servo.

❏ 3. Thread a nylon clevis approximately 14 turns onto one end of a 6" [152mm] pushrod. Remove the backing plate from one of the medium nylon control horns and connect the clevis to the outer hole.

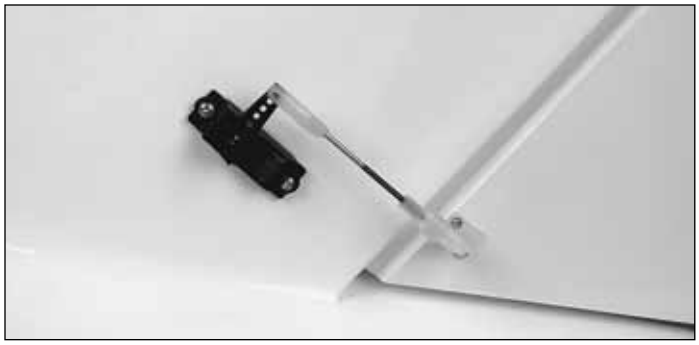
❏ 4. Position the control horn on the elevator so that the elevator pushrod is parallel to the centerline of the elevator servo and over the hardwood block. Mark the location of the control horn mounting holes and drill a 1/16" [1.6mm] pilot hole at each mark. Temporarily mount the control horn to the elevator with two #2 x 3/8" [9.5mm] sheet metal screws.

❏ 5. Remove the two screws and put a couple of drops of thin CA into both screw holes to harden the wood. After the CA has cured, reinstall the control horn.

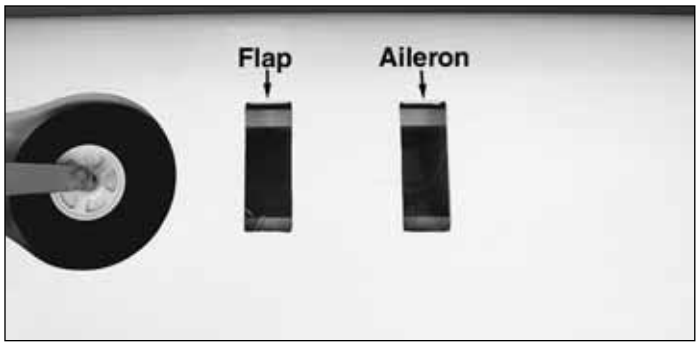


❏ 6. Slide a silicone clevis retainer over the clevis. Center the elevator servo arm and the elevator. Mark the pushrod where

it crosses the servo arm. Make a 90° bend at the mark and attach the pushrod to the servo arm with a FasLink. Cut off the excess pushrod.



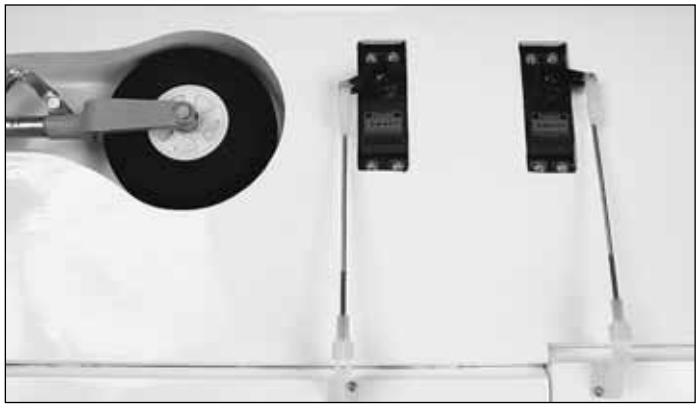
❏ 7. Follow the same procedure to install the rudder servo. Make sure the control horn is installed over the hardwood block.



❏ 8. Trim the covering from over the flap and aileron servo openings.

❏ 9. Connect 36" [914mm] servo extensions to the aileron and flap servos. Use tape or heat-shrink to secure the extension to the servo lead. Tie the strings in the wing to the servo extensions and pull the extensions through the wing and out of the wing root. Install the flap and aileron servos in the wing using the hardware supplied with the servos.

❏ 10. Install the aileron pushrod on the aileron and aileron servo arm following the same procedure used to install the elevator pushrod and control horn. Make sure the control horn is installed over the hardwood block.

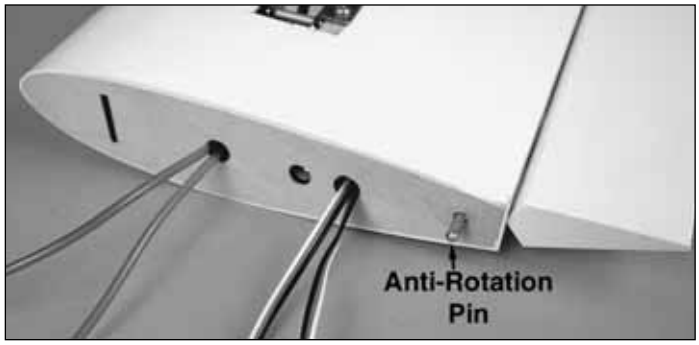


❏ 11. Install the flap pushrod on the flap servo arm following the same procedure used to install the aileron pushrod.

Note: If you will be using a Y-harness on both of the flap servos, you will need to install the servo arms on the same side of both flap servos so that they move in the same direction (both flaps move down at the same time),

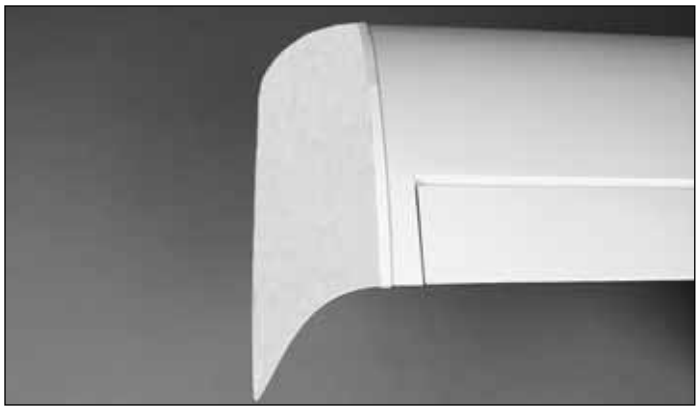
❏ 12. Once you have the aileron and flap servos installed, remove the horns and install the servo covers using two #2 x 3/8" [9.5mm] sheet metal screws. Remember to remove the screws and use thin CA to harden the screw holes. If you will be flying the Seawind ARF from water, we recommend that you apply a bead of silicone sealant between the servo covers and the wing to help seal the covers.

FINISH THE WING

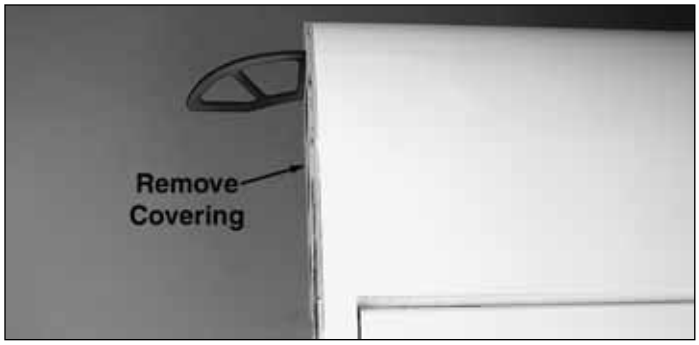


❏ 1. Use denatured alcohol to clean the 5/32" x 1" [4 x 25.4mm] metal anti-rotation pins. Then, use epoxy to glue the pins in both wing panels, in the aft hole of the root rib. Apply a thin film of epoxy on the rib to seal the wood.

❏ 2. Insert and glue the wing tip support in the tip rib of the left wing.



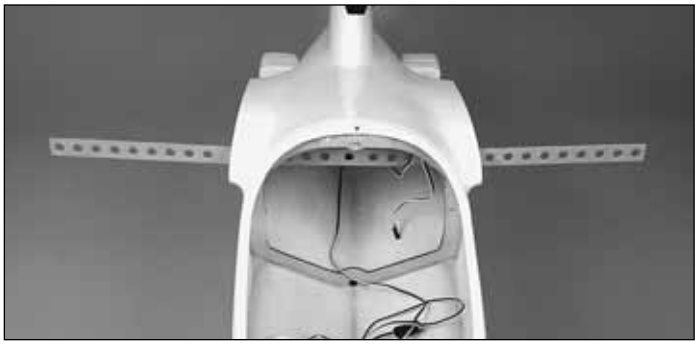
❏ 3. Test fit the left fiberglass wing tip on the left wing panel. The wing tip curves downward. Use a felt-tip pen to mark the outline of the wing tip on the wing.



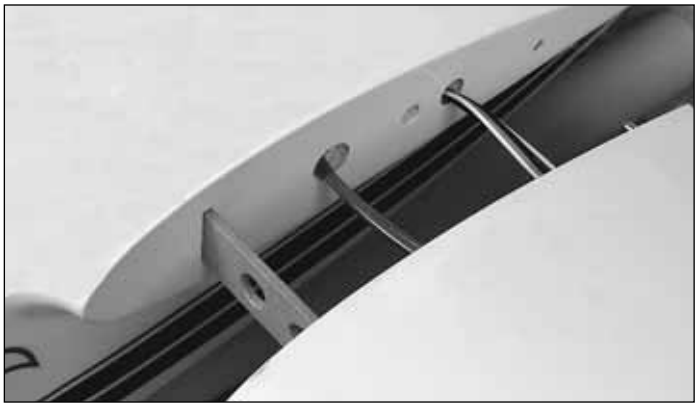
❏ 4. Remove the wing tip and use a sharp hobby knife to trim the covering from inside the wing tip outline.

❏ 5. Use epoxy to glue the wing tip to the wing. Make sure that the tips are well sealed to the wing to prevent any water from getting in. You may want to apply clear tape or silicone sealant around the edges of the wing tips to seal them.

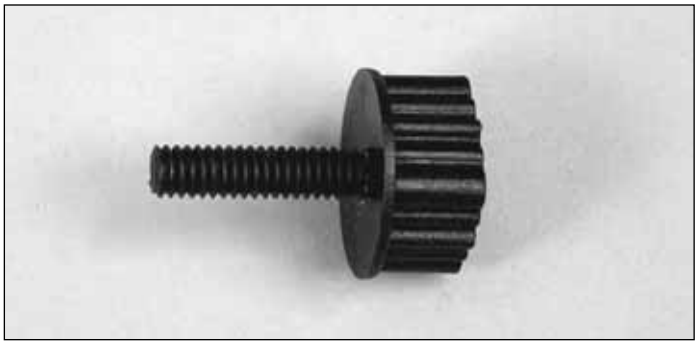
FINISH THE RADIO INSTALLATION



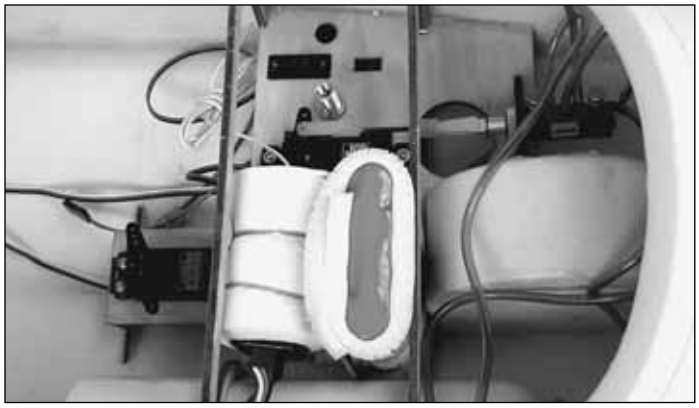
❏ 1. Insert the aluminum wing joiner in the fuselage. Space it evenly on both sides of the fuselage.



❏ 2. Route the servo wires and air line tubing, if retracts are installed, through the holes in the fuselage.

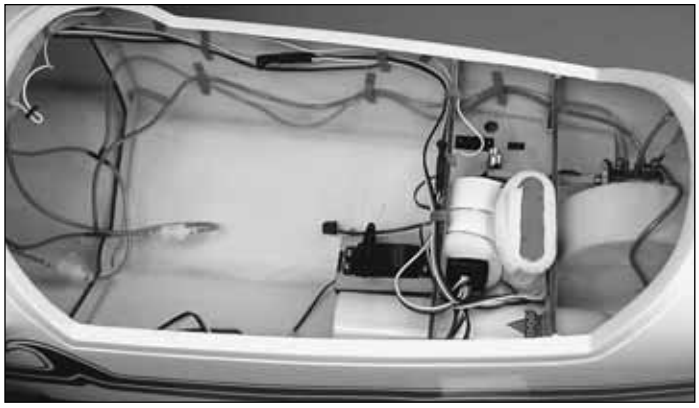


❏ 3. Secure the wing panels to the fuselage with two black finger bolts. If you will be flying off of water, we recommend that clear tape be used to seal the joint between the wing panels and fuselage.



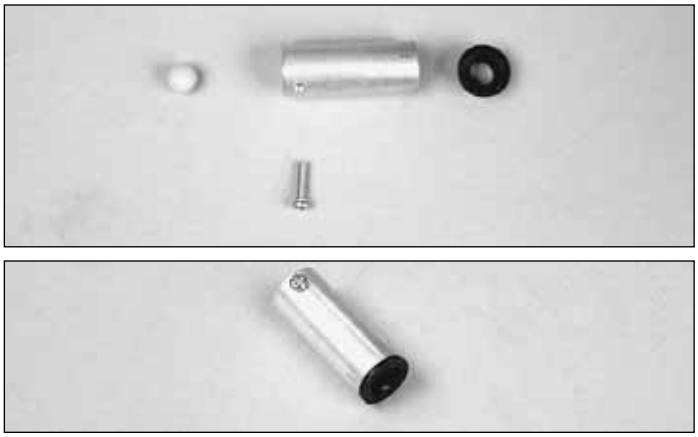
❏ 4. Install the receiver on/off switch on the left side of the radio tray. Wrap the receiver and receiver battery in foam and place them on the radio tray. If flying from the water, we recommend placing the receiver and battery in a plastic bag.

❏ 5. At this point you should have a lot of wires loose in the fuselage. If you are like most modelers, you probably have a few #64 rubber bands that are not fuel soaked. Using these rubber bands, we are going to show you how to make harnesses to hold the servo wires, receiver antenna and air lines. This will protect them from any water that might get inside the fuselage.

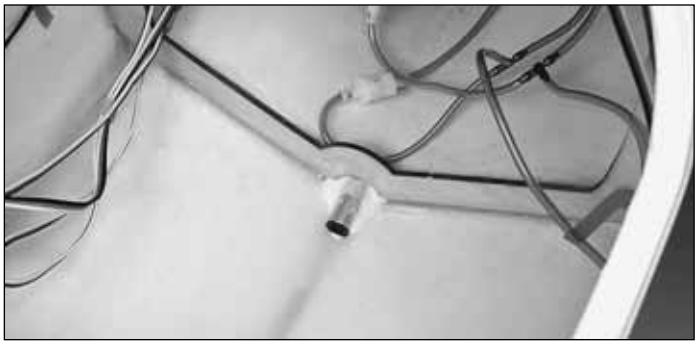


❏ 6. Cut a piece of rubber band 3/4" to 1" [19 to 25.4mm] long. Position the rubber band where needed. If you have long servo wires you may need several harnesses. The harnesses can easily be glued to the side of the fuselage with CA. For best adhesion, roughen the area with sandpaper before applying CA.

FINISH THE FUSELAGE

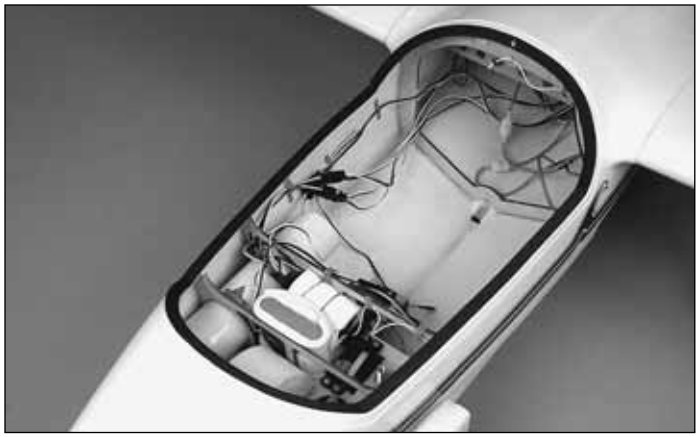


❏ 1. Glue the rubber bushing in the end of the aluminum bailing tube, opposite the end for the machine screw. Insert the ball in the aluminum bailing tube and thread the 3-56 x 3/8" [9.5mm] machine screw into the aluminum bailing tube.



❏ 2. Use epoxy to glue the aluminum bailing tube in the hole in the bottom of the fuselage. The rubber bushing goes to the inside of the fuselage. The aluminum bailing tube should be flush with the outside of the fuselage. Do not get epoxy in the tube. The ball must be able to move freely. The ball will float in the water and seal against the rubber bushing. In flight, the ball will roll back and allow water to escape from the fuselage.

❏ 3. Round one end of the 5/32" x 1-3/16" [4 x 30mm] wood dowel rod. Glue the dowel in the aft end of the cabin top. The end of the dowel should be flush with the edge of the cabin.



❏ 4. Remove the backing from the foam tape and apply it to the cabin area of the fuselage.

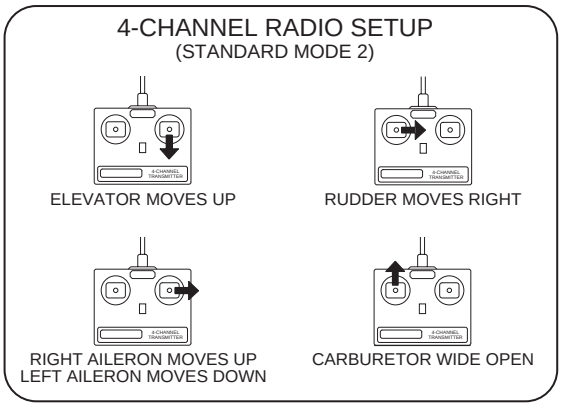
❏ 5. Position the cabin on the fuselage by first inserting the wood dowel in the hole at the top of the cabin opening. With the cabin top in position, drill a 1/16" [1.6mm] pilot hole in the front center of the cabin top and into the fuselage. Enlarge the hole in the cabin top to 3/32" [2.4mm]. Secure the cabin top to the fuselage with a #2 x 3/8" [9.5mm] sheet metal screw and #2 flat washer.

GET THE MODEL READY TO FLY

Check the Control Directions

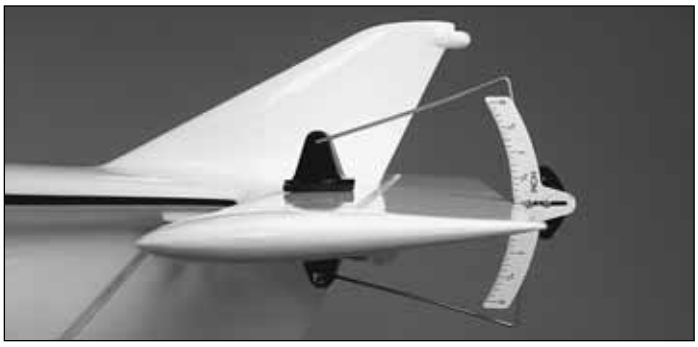
❏ 1. Turn on the transmitter and receiver and center the trims. If necessary, remove the servo arms from the servos and reposition them so they are centered. Reinstall the screws that hold on the servo arms.

❏ 2. With the transmitter and receiver still on, check all the control surfaces to see if they are centered. If necessary, adjust the clevises on the pushrods to center the control surfaces.



❏ 3. Make certain that the control surfaces and the carburetor respond in the correct direction as shown in the diagram. If any of the controls respond in the wrong direction, use the servo reversing in the transmitter to reverse the servos connected to those controls. Be certain the control surfaces have remained centered. Adjust if necessary.

Set the Control Throws



Use a Great Planes AccuThrow (or a ruler) to accurately measure and set the control throw of each control surface as indicated in the chart that follows. If your radio does not have dual rates, we recommend setting the throws at a rate in-between the high and low rates.

Note: The throws are measured at the **widest part** of the elevators, rudder and ailerons.

These are the recommended control surface throws:

	High Rate	Low Rate
ELEVATOR:	5/8" [16mm] up 5/8" [16mm] down	7/16" [11mm] up 7/16" [11mm] down
RUDDER:	2" [51mm] right 2" [51mm] left	1-1/8" [29mm] right 1-1/8" [29mm] left
AILERONS:	1/2" [13mm] up 1/2" [13mm] down	3/8" [10mm] up 3/8" [10mm] down
FLAPS:	1-1/8" [29mm] down	1/2" [13mm] down

IMPORTANT: The Seawind ARF has been **extensively** flown and tested to arrive at the throws at which it flies best. Flying your model at these throws will provide you with the greatest chance for successful first flights. If, after you have become accustomed to the way the Seawind ARF flies, you would like to change the throws to suit your taste, that is fine. However, too much control throw could make the model difficult to control, so remember, “more is not always better.”

Note: If you will be flying the Seawind ARF off of water using the water rudder, once you have the rudder throws set, cut the excess water rudder control rod when the rudder is at its maximum throw.

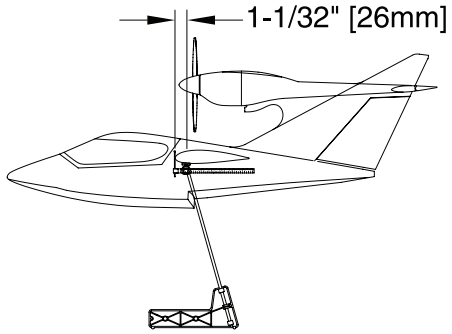
Balance the Model (C.G.)

More than any other factor, the **C.G.** (balance point) can have the **greatest** effect on how a model flies, and may determine whether or not your first flight will be successful. If you value this model and wish to enjoy it for many flights, **DO NOT OVERLOOK THIS IMPORTANT PROCEDURE.** A model that is not properly balanced will be unstable and possibly unflyable.

At this stage the model should be in ready-to-fly condition with all of the systems in place including the engine, landing gear and the radio system.

❏ 1. **Very Important:** Use a felt-tip pen or 1/8" [3mm]-wide tape to accurately mark the C.G. on the top of the wing on both sides of the fuselage. The C.G. is located **1-1/32" [26mm]** back from the leading edge of the wing.

IMPORTANT: The stated C.G. is where your model must be balanced. The Seawind ARF **does not** have a C.G. range like most R/C planes. **Do not** move the C.G. forward or aft. Doing so will cause the plane to become difficult to control. This C.G. point has been extensively tested and you should not deviate from it.



❏ 2. With the wing attached to the fuselage, all parts of the model installed (ready to fly) and an empty fuel tank, place the model right-side up on a Great Planes CG Machine, or lift it right-side up at the balance point you marked.

❏ 3. If the tail drops, the model is "tail heavy" and the battery pack and/or receiver must be shifted forward or weight must be added to the nose to balance. If the nose drops, the model is "nose heavy" and the battery pack and/or receiver must be shifted aft or weight must be added to the tail to balance. If possible, relocate the battery pack and receiver to minimize or eliminate any additional ballast required. If additional weight is required, nose weight may be easily added by using Great Planes (GPMQ4485) "stick-on" lead. Begin by placing incrementally increasing amounts of weight in the nose of the fuselage until the model balances. Once you have determined the amount of weight required, it can be permanently attached.

Note: Do not rely upon the adhesive on the back of the lead weight to permanently hold it in place. Over time, fuel and water may soften the adhesive and cause the weight to fall off. Use RTV silicone or epoxy to permanently hold the weight in place.

❏ 4. **IMPORTANT:** If you found it necessary to add any weight, recheck the C.G. after the weight has been installed.

Balance the Model Laterally

❏ 1. With the wing level, have an assistant help you lift the model by the nose of the fuselage and the bottom of the fuse under the TE of the rudder. Do this several times.

❏ 2. If one wing always drops when you lift the model, it means that side is heavy. Balance the airplane by adding weight to the other wing tip. **An airplane that has been laterally balanced will track better in loops and other maneuvers.**

PREFLIGHT

Identify Your Model

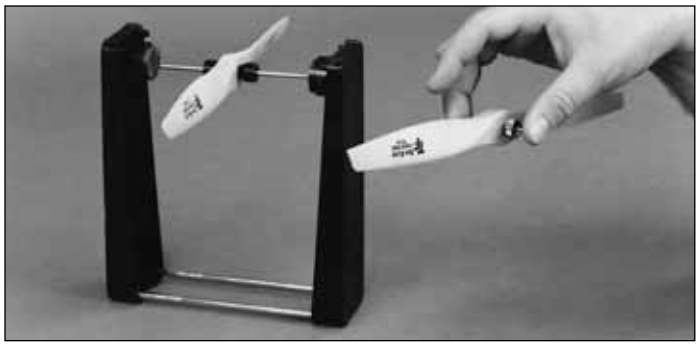
No matter if you fly at an AMA sanctioned R/C club site or if you fly somewhere on your own, you should always have your name, address, telephone number and AMA number on or inside your model. It is **required** at all AMA R/C club flying sites and AMA sanctioned flying events. Fill out the identification tag on page 26 and place it on or inside your model.

Charge the Batteries

Follow the battery charging instructions that came with your radio control system to charge the batteries. You should always charge your transmitter and receiver batteries the night before you go flying, and at other times as recommended by the radio manufacturer.

CAUTION: Unless the instructions that came with your radio system state differently, the **initial** charge on **new** transmitter and receiver batteries should be done for 15 hours **using the slow-charger that came with the radio system**. This will "condition" the batteries so that the next charge may be done using the fast-charger of your choice. If the initial charge is done with a fast-charger the batteries may not reach their full capacity and you may be flying with batteries that are only partially charged.

Balance the Propellers



Carefully balance your propeller and spare propellers before you fly. An unbalanced prop can be the single most significant cause of vibration that can damage your model. Not only will engine mounting screws and bolts loosen, possibly with disastrous effect, but vibration may also damage your radio receiver and battery. Vibration can also cause your fuel to foam, which will, in turn, cause your engine to run hot or quit.

We use a Top Flite Precision Magnetic Prop Balancer™ (TOPQ5700) in the workshop and keep a Great Planes Fingertip Prop Balancer (GPMQ5000) in our flight box.

Ground Check

If the engine is new, follow the engine manufacturer's instructions to break-in the engine. After break-in, confirm that the engine idles reliably, transitions smoothly and rapidly to full power and maintains full power–indefinitely. After you run the engine on the model, inspect the model closely to make sure all screws remained tight, the hinges are secure, the prop is secure and all pushrods and connectors are secure.

Range Check

Ground check the operational range of your radio before the first flight of the day. With the transmitter antenna collapsed and the receiver and transmitter on, you should be able to walk at least 100 feet away from the model and still have control. Have an assistant stand by your model and, while you work the controls, tell you what the control surfaces are doing. Repeat this test **with the engine running** at various speeds with an assistant holding the model, using hand signals to show you what is happening. If the control surfaces do not respond correctly, **do not fly!** Find and correct the problem first. Look for loose servo connections or broken wires, corroded wires on old servo connectors, poor solder joints in your battery pack or a defective cell, or a damaged receiver crystal from a previous crash.

ENGINE SAFETY PRECAUTIONS

Failure to follow these safety precautions may result in severe injury to yourself and others.

Keep all engine fuel in a safe place, away from high heat, sparks or flames, as fuel is very flammable. Do not smoke near the engine or fuel; and remember that engine exhaust gives off a great deal of deadly carbon monoxide. Therefore, **do not run the engine in a closed room or garage**.

Get help from an experienced pilot when learning to operate engines.

Use safety glasses when starting or running engines.

Do not run the engine in an area of loose gravel or sand; the propeller may throw such material in your face or eyes.

Keep your face and body as well as all spectators away from the plane of rotation of the propeller as you start and run the engine.

Keep these items away from the prop: loose clothing, shirt sleeves, ties, scarfs, long hair or loose objects such as pencils or screwdrivers that may fall out of shirt or jacket pockets into the prop.
Use a "chicken stick" or electric starter to start the engine. Do not use your fingers to flip the propeller. Make certain the glow plug clip or connector is secure so that it will not pop off or otherwise get into the running propeller.

Make all engine adjustments from behind the rotating propeller.

The engine gets hot! Do not touch it during or right after operation. Make sure fuel lines are in good condition so fuel will not leak onto a hot engine, causing a fire.

To stop a glow engine, cut off the fuel supply by closing off the fuel line or following the engine manufacturer's recommendations. Do not use hands, fingers or any other body part to try to stop the engine. To stop a gasoline powered engine, an on/off switch should be connected to the engine coil. Do not throw anything into the propeller of a running engine.

AMA SAFETY CODE (excerpts)

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

General

1) I will not fly my model aircraft in sanctioned events, air shows, or model flying demonstrations until it has been proven to be airworthy by having been previously, successfully flight tested.

2) I will not fly my model aircraft higher than approximately 400 feet within 3 miles of an airport without notifying the airport operator. I will give right-of-way to and avoid flying in the proximity of full-scale aircraft. Where necessary, an observer shall be utilized to supervise flying to avoid having models fly in the proximity of full-scale aircraft.

3) Where established, I will abide by the safety rules for the flying site I use, and I will not willfully and deliberately fly my models in a careless, reckless and/or dangerous manner.

5) I will not fly my model unless it is identified with my name and address or AMA number, on or in the model. **Note:** This does not apply to models while being flown indoors.

7) I will not operate models with pyrotechnics (any device that explodes, burns, or propels a projectile of any kind).

Radio Control

1) I will have completed a successful radio equipment ground check before the first flight of a new or repaired model.
2) I will not fly my model aircraft in the presence of spectators until I become a qualified flier, unless assisted by an experienced helper.

3) At all flying sites a straight or curved line(s) must be established in front of which all flying takes place with the other side for spectators. Only personnel involved with flying the aircraft are allowed at or in the front of the flight line. Intentional flying behind the flight line is prohibited.

4) I will operate my model using only radio control frequencies currently allowed by the Federal Communications Commission.

5) **I will not knowingly operate my model within three miles of any pre-existing flying site except in accordance with the frequency sharing agreement listed** [in the complete AMA Safety Code].

9) Under no circumstances may a pilot or other person touch a powered model in flight; **nor should any part of the model other than the landing gear, intentionally touch the ground, except while landing**.

CHECK LIST

During the last few moments of preparation your mind may be elsewhere anticipating the excitement of the first flight. Because of this, you may be more likely to overlook certain checks and procedures that should be performed before the model is flown. To help avoid this, a check list is provided to make sure these important areas are not overlooked. Many are covered in the instruction manual, so where appropriate, refer to the manual for complete instructions. Be sure to check the items off as they are completed.

- ❏ 1. Fuelproof all areas exposed to fuel or exhaust residue such as the cowl ring, cowl mounting blocks, wing saddle area, etc. If you will be flying off of water check all the joints where water may enter and seal them with clear tape or silicone sealant.
- ❏ 2. Check the C.G. according to the measurements provided in the manual.
- ❏ 3. Be certain the battery and receiver are securely mounted in the fuse. Simply stuffing them into place with foam rubber is not sufficient.
- ❏ 4. Extend your receiver antenna and make sure it has a strain relief inside the fuselage to keep tension off the solder joint inside the receiver.
- ❏ 5. Balance your model *laterally* as explained in the instructions.
- ❏ 6. Use thread-locking compound to secure critical fasteners such as the set screws that hold the wheel axles to the struts, screws that hold the carburetor arm (if applicable), screw-lock pushrod connectors, etc.
- ❏ 7. Add a drop of oil to the axles so the wheels will turn freely.
- ❏ 8. Make sure all hinges are **securely** glued in place.
- ❏ 9. Reinforce holes for wood screws with thin CA where appropriate (servo mounting screws, cowl mounting screws, etc.).
- ❏ 10. Confirm that all controls operate in the correct direction and the throws are set up according to the manual.
- ❏ 11. Make sure there are silicone clevis retainers on all the clevises and that all servo arms are secured to the servos with the screws included with your radio.
- ❏ 12. Secure connections between servo wires and Y-connectors or servo extensions, and the connection between your battery pack and the on/off switch with vinyl tape, heat-shrink tubing or special clips suitable for that purpose.
- ❏ 13. Make sure any servo extension cords you may have used do not interfere with other systems (servo arms, pushrods, etc.).
- ❏ 14. Secure the pressure tap (if used) to the muffler with high temp RTV silicone, thread-locking compound or J.B. Weld.
- ❏ 15. Make sure the fuel lines are connected and are not kinked.
- ❏ 16. Balance your propeller (and spare propellers).
- ❏ 17. Tighten the propeller nut and spinner.

❏ 18. Place your name, address, AMA number and telephone number on or inside your model.
❏ 19. Cycle your receiver battery pack (if necessary) and make sure it is fully charged.
❏ 20. If you wish to photograph your model, do so before your first flight.
❏ 21. Range check your radio when you get to the flying field.

FLYING

The Seawind ARF is a great-flying model that flies smoothly and predictably. The Seawind ARF does not, however, possess the self-recovery characteristics of a primary R/C trainer and should be flown only by experienced R/C pilots.

Fuel Mixture Adjustments

A fully cowled engine may run at a higher temperature than an un-cowled engine. For this reason, the fuel mixture should be richened so the engine runs at about 200 RPM below peak speed. By running the engine slightly rich, you will help prevent dead-stick landings caused by overheating.

CAUTION (THIS APPLIES TO ALL R/C AIRPLANES): If, while flying, you notice an alarming or unusual sound such as a low-pitched "buzz," this may indicate control surface *flutter*. Flutter occurs when a control surface (such as an aileron or elevator) or a flying surface (such as a wing or stab) rapidly vibrates up and down (thus causing the noise). In extreme cases, if not detected immediately, flutter can actually cause the control surface to detach or the flying surface to fail, thus causing loss of control followed by an impending crash. The best thing to do when flutter is detected is to slow the model **immediately** by reducing power, then land as soon as safely possible. Identify which surface fluttered (so the problem may be resolved) by checking all the servo grommets for deterioration or signs of vibration. Make certain all pushrod linkages are secure and free of play. If it fluttered once, under similar circumstances it will probably flutter again unless the problem is fixed. Some things which can cause flutter are; Excessive hinge gap; Not mounting control horns solidly; Poor fit of clevis pin in horn; Side-play of wire pushrods caused by large bends; Excessive free play in servo gears; Insecure servo mounting; and one of the most prevalent causes of flutter; Flying an over-powered model at excessive speeds.

Taking Off from the Ground

The Seawind ARF takes off from the ground similar to any other tricycle landing gear airplane. It is recommended that no flaps be used during take off until the pilot becomes familiar with how the plane handles with flaps.

Before the model is ready for takeoff, it must first be set up to roll straight down the runway. With the engine running at a low idle, place the plane on the runway and, if your flying field permits, stand behind the model. Advance the throttle just enough to allow the model to roll. If the model does not roll straight down the runway, shut the engine off and adjust the nose gear pushrod as necessary. Do not use the rudder trim to correct the nose wheel because this will also affect the rudder. **Note:** Crosswinds may affect the direction the model rolls, so this test should be done in calm conditions, or with the model facing directly into the wind.

If possible, takeoff directly into the wind. If you are an experienced pilot, taking off in a crosswind is permissible (and sometimes necessary–depending upon the prevailing wind conditions and runway heading).Taking off into the wind will help the model roll straight and also reduces ground speed for takeoff. Taxi the model onto the runway or have an assistant carry it out and set it down, pointing down the runway into the wind. When ready, gradually advance the throttle while simultaneously using the left stick (rudder/nose wheel) to steer the model. Gain as much speed as the runway and flying site will practically allow before gently applying up elevator, lifting the model into the air. Be ready to make immediate corrections with the ailerons to keep the wings level, and be smooth on the elevator stick, allowing the model to establish a gentle climb to a safe altitude before making the first turn (away from yourself). Do not "yank" back the elevator stick, forcing the plane into too steep of a climb which could cause the model to quit flying and stall.

Taking Off from the Water

Do a few taxi runs on the water before attempting to take off. Get used to how the model handles in water. As you use the water rudder to turn, you will notice that the Seawind ARF has a tendency to dip a wing tip float. This is normal as the CG of the airplane causes the airplane to shift balance on the main hull. It is possible that at low speeds part of the wing might also dip slightly under water. This is the reason all the wing tips and servo bays need to be sealed.

As you get ready to take off, align the airplane into the wind and then add throttle slowly. Concentrate on keeping the wings level using the ailerons while controlling heading with the rudder. The model should get up on the step within 50 feet. Let the plane pick up speed and gently pull up on the elevator to take off. The take off run length will vary depending on the engine used. If the water is perfectly calm, add about 1/2 flaps

to increase the wing lift and help the airplane get on the step quicker. This will not be necessary when taking off from choppy water.

Flight

For reassurance and to keep an eye on other traffic, it is a good idea to have an assistant on the flight line with you. Tell him to remind you to throttle back once the plane gets to a comfortable altitude. While full throttle is usually desirable for takeoff, most models fly more smoothly at reduced speeds.

Take it easy with the Seawind ARF for the first few flights, gradually getting acquainted with it as you gain confidence. Adjust the trims to maintain straight and level flight. After flying around for a while, and while still at a safe altitude with plenty of fuel, practice slow flight and execute practice landing approaches by reducing the throttle to see how the model handles at slower speeds. Add power to see how she climbs as well. Continue to fly around, executing various maneuvers and making mental notes (or having your assistant write them down) of what trim changes may be required to fine tune the model so it flies the way you like. Mind your fuel level, but use this first flight to become familiar with your model before landing.

Landing

To initiate a landing approach, lower the throttle while on the downwind leg. Allow the nose of the model to pitch downward to gradually bleed off altitude. Slowly apply the flaps. Continue to lose altitude, but maintain airspeed by keeping the nose down as you turn onto the crosswind leg. Make your final turn toward the runway (into the wind), keeping the nose down to maintain airspeed and control. Level the attitude when the model reaches the runway threshold, modulating the throttle as necessary to maintain your glide path and airspeed. If you are going to overshoot, smoothly advance the throttle (always ready on the right rudder to counteract torque) and climb out to make another attempt. When you're ready to make your landing flare and the model is a foot or so off the deck, smoothly increase up elevator until it gently touches down.

One final note about flying your model. Have a goal or flight plan in mind for **every** flight. This can be learning a new maneuver(s), improving a maneuver(s) you already know, or learning how the model behaves in certain conditions (such as on high or low rates). This is not necessarily to improve your skills *(though it is never a bad idea!)*, but more importantly so you do not surprise yourself by impulsively attempting a maneuver and suddenly finding that you've run out of time, altitude or airspeed. Every maneuver should be deliberate, not impulsive. For example, if you're going to do a loop, check your altitude, mind the wind direction (anticipating rudder corrections that will be required to maintain heading), remember to throttle back at the top, and make certain you are on the desired rates (high/low rates). A flight plan greatly reduces the chances of crashing your model just because of poor planning and impulsive moves. ***Remember to think.***

Have a ball! But always stay in control and fly in a safe manner.

GOOD LUCK AND GREAT FLYING!

This model belongs to:

_____
Name

_____
Address

_____
City, State Zip

_____
Phone number

_____
AMA number

Fill in and place on or inside your model.

OTHER ITEMS AVAILABLE FROM GREAT PLANES

Great Planes Giant Super Chipmunk 1.20 ARF
Art Scholl performed airshow magic with his Super Chipmunk for over 25 years. And with the help of Great Planes' magic, you can have this scale replica ready to perform in just 12-15 hours. The trim scheme is authentic, provided by MonoKote on the built-up wings and stab and paint on the fiberglass fuselage, cowl, wheel pants and landing gear fairings. Instrument panel decals and a pilot figure provide extra "eye candy" without extra work. Routing tubes for pushrods, a 3-piece wing and a steerable tail wheel offer added ease on the ground. Dual servos on each flap, aileron and elevator half put the power to dazzle a crowd at your fingertips. **GPMA1303**

Great Planes Ultimate Biplane ARF
The Ultimate Bipe 1.60 ARF's polished look comes from precision-fitting parts made of select woods, surrounded by MonoKote covering and topped off with a painted fiberglass cowl and wheel pants. You'll have it assembled and ready for flight in about 20 hours. The lightweight construction – achieved in part through strategic use of lightening holes – provides an excellent power-to-weight ratio for outstanding 3D performance. Individual servos for each of the four ailerons supply maximum maneuvering muscle. Airfoil-shaped landing gear resists spreading even under this IMAA/IMAC-legal model's weight. **GPMA1307**

Great Planes Lancair ES .60 ARF
The original Lancairs were high-performance homebuilts. Great Planes' version is high-performance too, but it's also factory-built for ease. A painted fiberglass fuselage and wings covered in MonoKote offer speedy assembly and spectacular looks. Upswept wing tips, installed windows, molded-in panel lines and painted fiberglass fairings and wheel pants add realistic detail. An aluminum spar joins the stabs, speeding installation and removal. Performance makes it as ideal for the eager intermediate as the time-pressed pro. Ask for speed, and it hustles. Ask for agility, and dual aileron servos deliver. Ask for easy landings, and dual flap servos slow you for soft touchdowns on wide-stance, ES-style trike gear. **GPMA1347**

Great Planes Little Toni ARF
A fierce competitor for decades, the Little Toni is the inspiration for this exciting ARF model. The wing halves and tail surfaces are balsa-sheeted, built-up – and factory-covered in genuine MonoKote. The fiberglass fuselage, cowl, wheel pants and aluminum landing gear arrive painted to match. A clear canopy, scale shaped aluminum spinner, decals and Great Planes hardware are also supplied. In as little as 12-15 hours, the Little Toni can be turning heads at the field. And she flies as great as she looks – tracking solidly, turning quickly, and slowing gently for smooth, easy landings. Capable of most all aerobatic maneuvers, a .91-equipped Little Toni is most at home rocketing around pylons at breathtaking speeds! **GPMA1320**

O.S. Engines® FS-91 Surpass™ II
It's the power that lasts! CAD-assisted engineering and CNC-machined parts ensure the FS-91 Surpass II's fit and finish; a permanently lubricated, rubber-sealed rear bearing and corrosion-resistant plating on the crankshaft, camshaft and piston help minimize wear and maximize performance. Bolt in this powerhouse, and a large-scale plane can go from a short roll–out to rocketing vertical to out-of-sight in the span of a few seconds. And along with the power you'll enjoy improved fuel economy and a mellower, more scale-like sound. The needle valve and mixture control screw are on the same side of a reversible carb to offer maximum installation and access ease. **OSMG0896**

GREAT PLANES®
MODEL MANUFACTURING COMPANY

BUILDING NOTES

Kit Purchased Date: _____

Where Purchased:_____

Date Construction Started: _____

Date Construction Finished: _____

Finished Weight: _____

Date of First Flight: _____

FLIGHT LOG