HANGAR 9®

FuntanaS™ 90

ASSEMBLY MANUAL

The new FuntanaS™ .90 3D ARF was designed exclusively for Hangar 9® by Italy's most famous aerobatic pilot, Sebastiano Silvestri. He based the FuntanaS on his highly successful KatanaS TOC design.

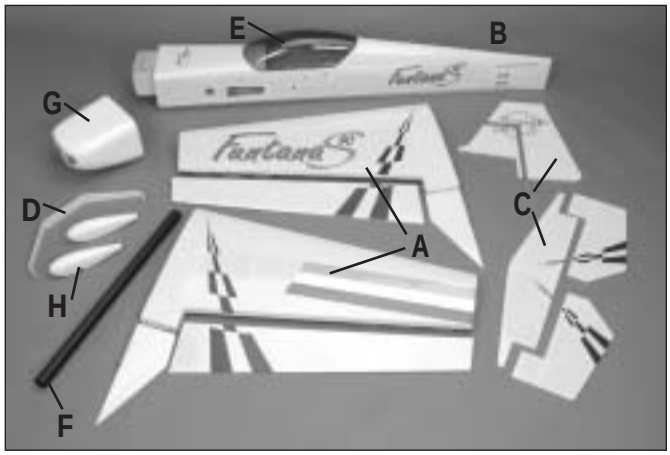
The FuntanaS can do it all—harriers, torque rolls, blenders, and almost anything else you can dream up. It's all possible, thanks to an extremely lightweight, all-wood airframe and big control surfaces that give the FuntanaS a very impressive thrust-to-weight ratio and crisp control authority at any airspeed. Sebastiano's signature UltraCote® trim scheme and factory-painted parts such as the cowl and wheel pants complement the performance perfectly.

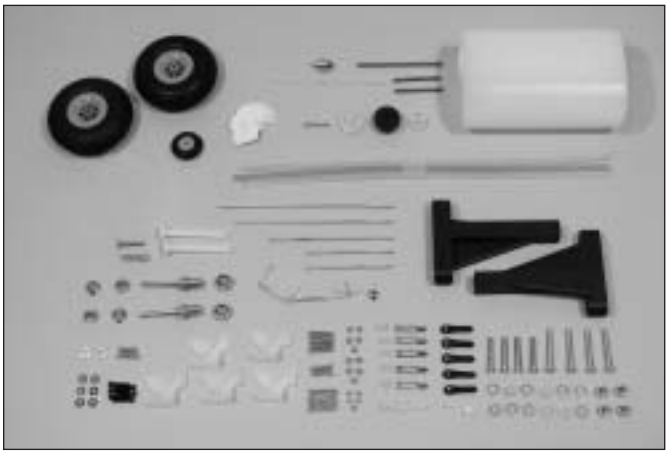
Specifications

Wingspan: ..... 69.5 in (1765.30 cm)
Length: ..... 68.5 in (1739.90 cm)
Wing Area: ..... 1107.80 sq in (71.47 sq dm)
Weight: ..... 8–8.5 lb (3.63 kg–4.03 kg)
Radio: ..... 4-channel w/6 servos
Engines: 91–1.00 4-stroke
.61–1.00 2-stroke

Table of Contents

Contents of Kit





Large Parts:

A. Wing Set	HAN2677
B. Fuselage w/Hatch	HAN2676
C. Tail Set	HAN2678
D. Landing Gear	HAN2685
E. Canopy	HAN2681
F. Aluminum Wing Tube	HAN2679
G. Cowling	HAN2682
H. Painted Wheel Pants	HAN2683

Small Parts:

1. 2 3/4" Wheels	HAN305
2. Fuel Tank	HAN1987
3. Engine Mount	HAN90M

Items Not Shown:

Decal Set	HAN2686
Hatch	HAN2680
Carbon Tail Supports	HAN2684

Required Radio and Engine

Radio Equipment

- 4-channel radio system (minimum)
- 6 Hi-Torque servos (JRPS811 recommended or equivalent)
- 12" Servo Extension (JRPA098) (2)
- 18" Servo Extension (JRPA099) (3)
- Large Servo Arm (JRPA215) (2)
- Radio Switch (JRPA003)

Recommended Engines

- .61 2-stroke
- 1.00 4-stroke

Evolution .61NT
EVOE0610

Recommended JR® Systems

- XF421EX
- XF631
- XP662
- X-378
- XP8103
- 10X

JR XF631

Saito 1.00 FA-AAC
SAIE100

JR XP8103

Covering Colors

• Bright Yellow	HANU872	• Transparent Blue	HANU954

Additional Required Equipment (not included)

The servos used for the control surfaces of the FuntanaS™ 90 must have a minimum of 50 ounce inch of servo torque. We used JR811 servos in the prototype Funtana.

JR811 Advanced Sport Digital Servo

Torque: 54 oz/in	Speed: .18 sec/60°
Weight: 1.44 oz	Size: 0.75" x 1.49" x 1.52"
Motor: Coreless	Ball Bearing: Dual

For optimum performance, we recommend the JR9411 Precision Digital Servos.

JR9411 Premium Digital Servo

Torque: 82 oz/in	Speed: .15 sec/60°
Weight: 1.36 oz	Size: 0.71" x 1.41" x 1.03"
Motor: Coreless	Ball Bearing: Dual

Additional Required Tools and Adhesives

Tools

- Canopy scissors
- Drill
- Drill bits: 1/16”, 3/32”, 1/8”, 5/32”, 11/64"
- Felt-tipped pen
- Flat blade screwdriver
- Foam: 1/2”
- Hobby knife
- Masking tape
- Paper towels
- Petroleum jelly
- Phillips screwdriver (large)
- Phillips screwdriver (small)
- Pliers
- Rubbing alcohol
- Sandpaper
- Soldering iron
- Square
- T-pins

Adhesives

- 6-Minute Epoxy (HAN8000)
- 30-Minute Epoxy (HAN8002)
- Thin CA (PAAPT07)
- Medium CA (PAAPT01)
- CA Remover/Debonder (PAAPT16)
- Masking Tape (MMM20901)
- CA Remover/Debonder (PAAPT16)
- Canopy glue (Formula 560)

Other Required Items

- Epoxy Brushes (DUB345)
- File
- Mixing Sticks for Epoxy (DUB346)
- Paper towels
- Rubbing alcohol
- Ruler
- Wax paper

Warning

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

Use the Correct Propeller!

The FuntanaS 90 was designed specifically for the 3D flight envelope, which favors thrust over speed. Flying your aircraft at high speeds may cause flutter due to the extremely large control surfaces. To keep the speed down and thrust up, use low-pitch propellers such as a 16x4 APC wide for engines such as the Saito™ 1.00.

Before Starting Assembly

Before beginning the assembly of your FuntanaS 90™, remove each part from its bag for inspection. Closely inspect the fuselage, wing panels, rudder, and stabilizer for damage. If you find any damaged or missing parts, contact the place of purchase.

If you find any wrinkles in the covering, use a heat gun or covering iron to remove them. Use caution while working around areas where the colors overlap to prevent separating the colors.

HAN100 – Heat Gun

HAN101 – Covering Iron

Using the Manual

This manual is divided into sections to help make assembly easier to understand and to provide breaks between each major section. In addition, check boxes have been placed next to each step to keep track of each step completed. Steps with two boxes indicate that the step will require repeating, such as for a right or left wing panel, two servos, etc. Remember to take your time and follow the directions.

Warranty Information

Horizon Hobby, Inc. guarantees this kit to be free from defects in both material and workmanship at the date of purchase. This warranty does not cover any parts damage by use or modification. In no case shall Horizon Hobby's liability exceed the original cost of the purchased kit. Further, Horizon Hobby reserves the right to change or modify this warranty without notice.

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

Once assembly of the model has been started, you must contact Horizon Hobby, Inc. directly regarding any warranty question that you have. Please do not contact your local hobby shop regarding warranty issues, even if that is where you purchased it. This will enable Horizon to better answer your questions and service you in the event that you may need any assistance.

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.

Horizon Hobby
4105 Fieldstone Road
Champaign, Illinois 61822
(877) 504-0233
www.horizonhobby.com

Section 1 – Aileron Servo Installation

Required Parts

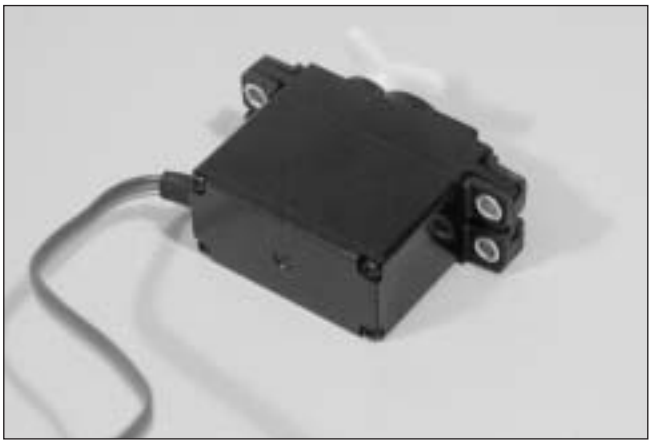
- Wing panel (right and left)

Required Tools and Adhesives

- Drill
- Drill bit: 1/16"
- Phillips screwdriver (small)
- 12" Servo Extension (JRPA098)

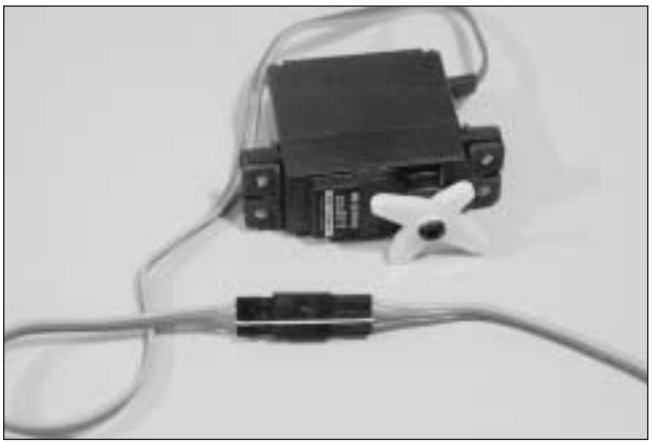
☐ ☐ **Step 1**

Install the servo hardware (grommets and eyelets) included with the servo.



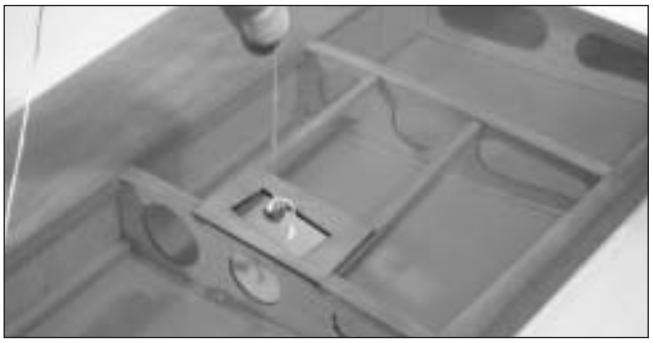
☐ ☐ **Step 2**

Plug a 12" servo extension onto servos. Either tie the servo leads together, using a commercially available connector, or use unwaxed dental floss to secure the extensions to prevent them from coming loose during flight.



☐ ☐ **Step 3**

Tie a weight to a piece of string. A wheel collar works great in this application. Lower the string into the wing from the aileron servo opening. Let the weight drop out through the wing root for the servo.



☐ ☐ **Step 4**

Insert the servo into the opening in the wing. Use the string to pull the servo lead through the wing. Make sure the servo lead exits the root of the wing as shown. Position the servo so the output shaft is towards the trailing edge of the wing. Use a 1/16” drill bit to drill the locations for the servo screws. Mount the servos using the hardware provided with them.

☐ **Step 5**

Repeat Steps 1 through 4 for the remaining wing panel.

Section 2 – Installing the Ailerons

Required Parts

- Wing (right and left)
- Aileron (left and right)
- CA hinge (10)

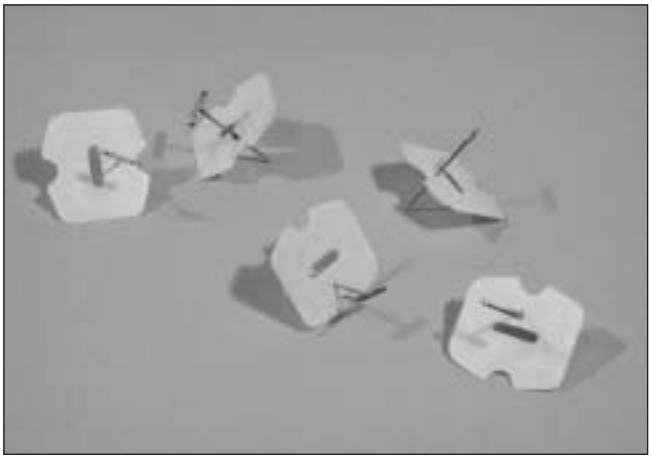
Required Tools and Adhesives

- Thin CA
- T-pins

We recommend that you use the hinges provided. They work extremely well when installed as described. Even though the ailerons are large, we had absolutely no problems.

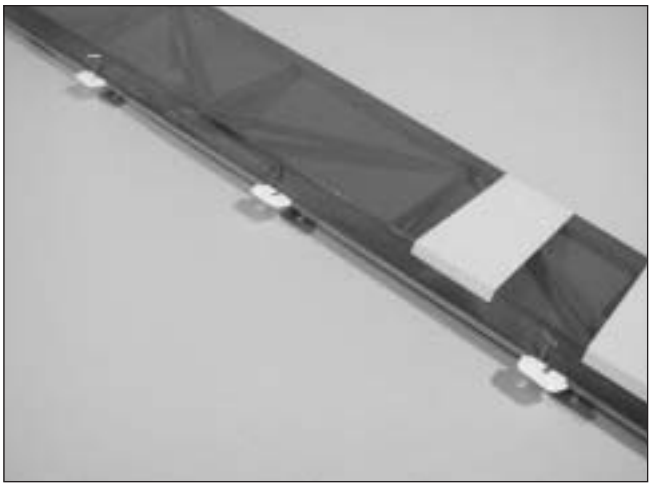
☐ ☐ **Step 1**

Locate 10 of the CA hinges. Place a T-pin in the center of five of the hinges.



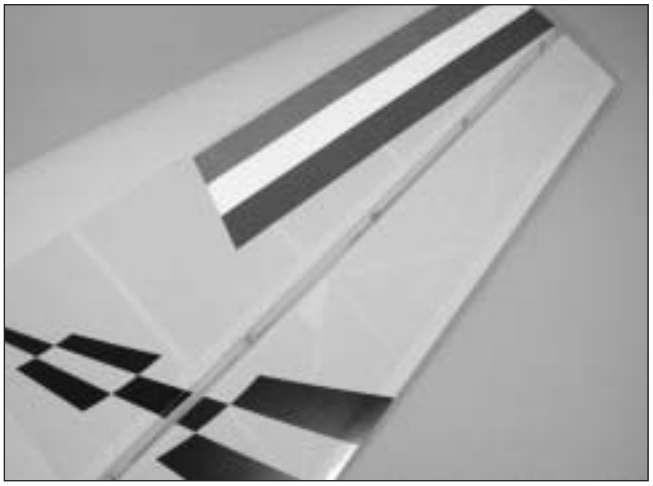
☐ ☐ **Step 2**

Place the hinges in the precut slots in the aileron (or wing if you prefer). Each T-pin will rest against the edge when installed correctly.



☐ ☐ **Step 3**

Slide the aileron and wing together. The gap between the aileron and wing should be approximately 1/64".



☐ ☐ **Step 4**

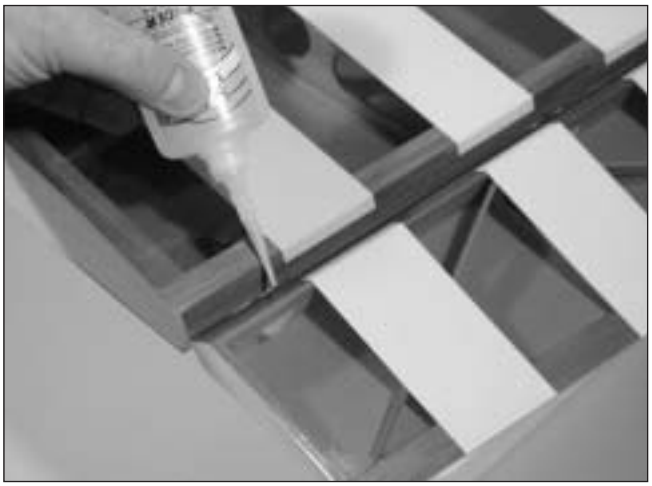
Use a ruler to align the end of the aileron to the wing. Also check the gap between the wing and aileron at the root, which should be about 1/32"–1/16".

Note: Do not use CA accelerator during the hinging process. The CA must be allowed to soak into the hinge to provide the best bond. Using accelerator will not provide enough time for this process.

Section 2 – Installing the Ailerons

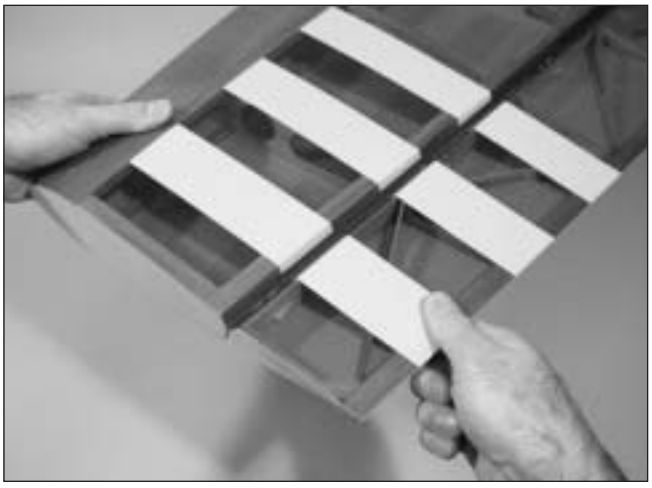
☐ ☐ **Step 5**

Remove the T-pins and apply Thin CA to each hinge. Make sure the hinge is fully saturated with CA. Use a paper towel and CA remover/debonder to clean up any excess CA from the wing and/or aileron.



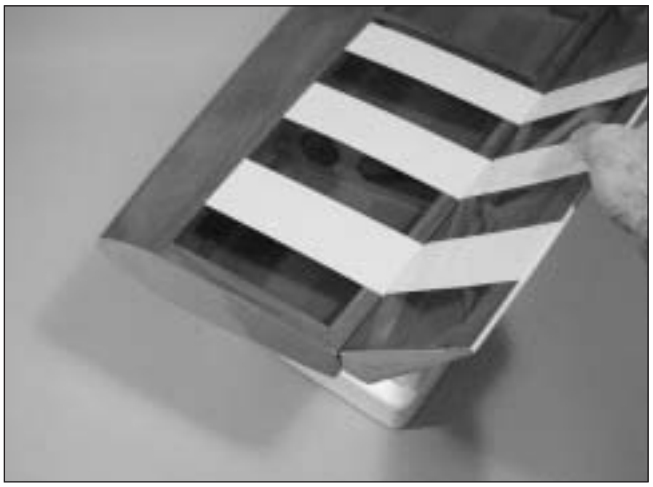
☐ ☐ **Step 6**

Firmly grasp the wing and aileron and gently pull on the aileron to ensure the hinges are secure and cannot be pulled apart. Use caution when gripping the wing and aileron to avoid crushing the structure.



☐ ☐ **Step 7**

Work the aileron up and down several times to work in the hinges and check for proper movement.



☐ **Step 8**

Repeat Steps 1 through 7 for the remaining aileron.

Section 3 – Aileron Control Horn Installation

Required Parts

- Wing panel (left and right)
- Aileron (left and right)
- 4-40 x 1/2" screw (2)
- 4-40 lock nut (2)
- Tapered standoff (2)
- Threaded metal clevis (2)
- Clevis retainer (2)
- Nylon ball link (2)
- 4-40 x 2 3/4" threaded rod (2)
- 4-40 nut (2)
- Nylon control horn (2)
- 2mm x 20mm self-tapping screw (6)

Required Tools and Adhesives

- Felt-tipped pen
- Drill
- Square
- Phillips screwdriver (small)
- Threadlock
- Drill bit: 1/16"
- Ruler

☐ ☐ **Step 1**

Locate the metal clevis 4-40 nut, clevis retainer and nylon ball link. Thread the 4-40 nut onto one end of a 4-40 x 2 3/4" threaded rod. Slice a clevis retainer onto a metal clevis and thread the clevis up against the nut. A small amount of the rod will be visible between the forks of the clevis. Tighten the nut against the clevis to prevent it from loosening. Thread the nylon ball end onto the other end of the threaded rod.

Note: It is suggested that threadlock be used on the nut and clevis to prevent them from loosening during flight.

☐ ☐ **Step 2**

Remove the backplate from one of the large control horns. Attach the ball end to the center hole of the control horn using a 4-40 x 1/2" screw, tapered standoff and 4-40 lock nut. The standoff is positioned between the ball end and control horn, which allows for smooth operation of the linkage.

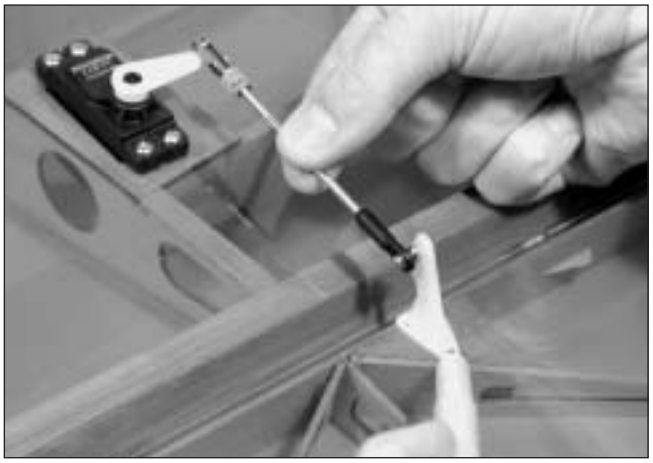
Note: Attach the ball end so it will be on the side of the control horn closest to the wing tip.

☐ ☐ **Step 3**

Attach a heavy-duty servo arm to the servo. Position the arm parallel to the aileron hinge line.

☐ ☐ **Step 4**

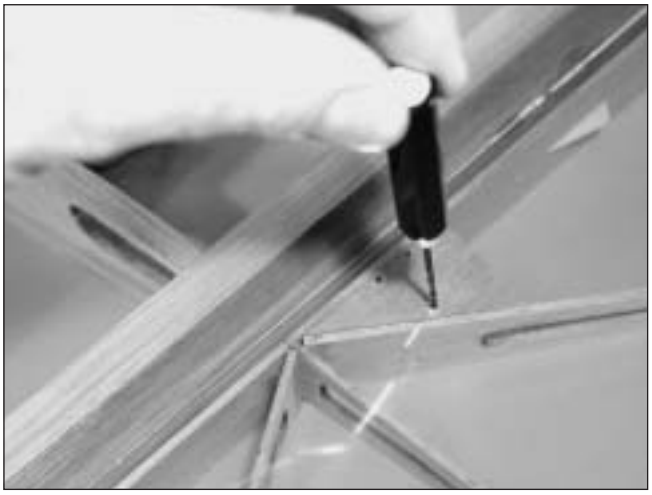
Position the control horn on the aileron so all three of the mounting holes are centered on the mounting block. Also check to make sure the linkage is at a 90-degree angle to the servo arm. Transfer the location of the control horn mounting holes onto the aileron.



Section 3 – Aileron Control Horn Installation

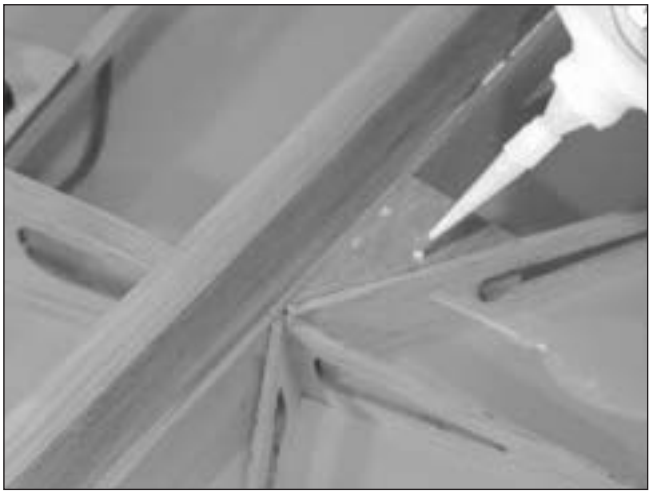
☐ ☐ **Step 5**

Using a 1/16" drill bit, carefully drill the holes for mounting the control horn.



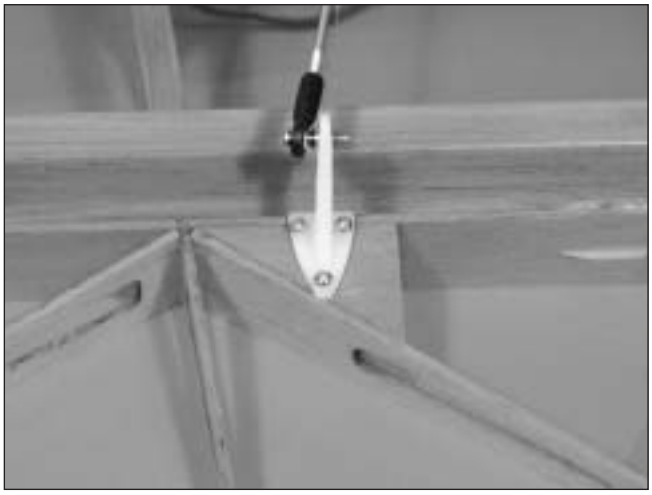
☐ ☐ **Step 6**

Apply 2-3 drops of Thin CA into each of the three holes. This will harden the wood and prevent the screws from pulling out during flight.



☐ ☐ **Step 7**

Attach the control horn to the aileron using three 2mm x 20mm self-tapping screws.



☐ ☐ **Step 8**

Adjust the aileron linkage so the aileron is centered when the linkage is connected to the servo.

☐ **Step 9**

Repeat Steps 1 through 8 for the remaining aileron.

Section 4 – Wing Tube Installation

Required Parts

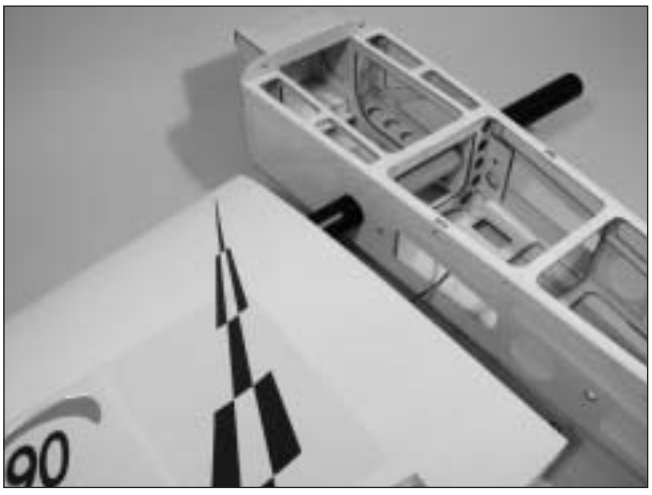
- Wing panels
- 1/4-20 x 2" nylon bolt (2)
- Fuselage
- Wing tube

Required Tools and Adhesives

- Flat screwdriver w/short handle

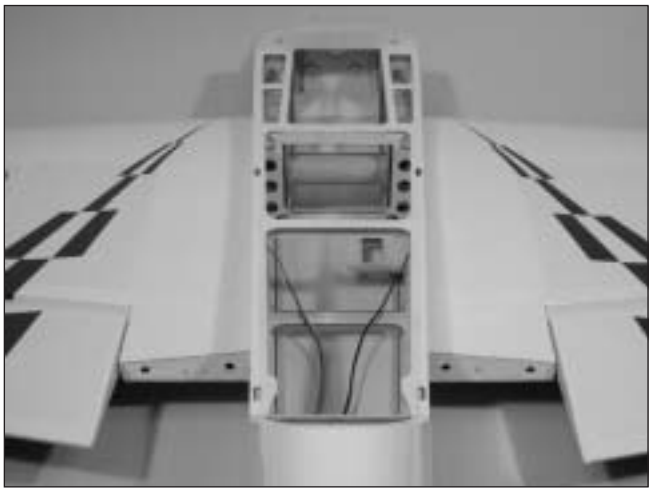
☐ **Step 1**

Locate the wing tube and carefully slide it into one wing panel. Slide the wing (with tube) into the wing tube opening in the fuselage. Make sure the wing panel alignment pins slide into the holes provided in the fuselage. Be sure the alignment pins are secure in the wing halves before installing the wings. If they are not, remove the pin and apply a small amount of thin CA into the tube socket and reinstall the alignment pin.



☐ **Step 2**

Carefully slide the remaining wing panel onto the wing tube that projects from the fuselage. The fit may be tight; use caution when inserting the wing panels onto the wing tube and fuselage.



☐ **Step 3**

Secure the wing panels using the 1/4-20 x 2" nylon wing bolts.

Section 5 – Wing Fillet Installation

Required Parts

- Fuselage
- Wing tube
- Wing (right and left)
- Wing fillet (right and left)

Required Tools and Adhesives

- Masking tape
- 30-minute epoxy
- Epoxy brush

☐ ☐ **Step 1**

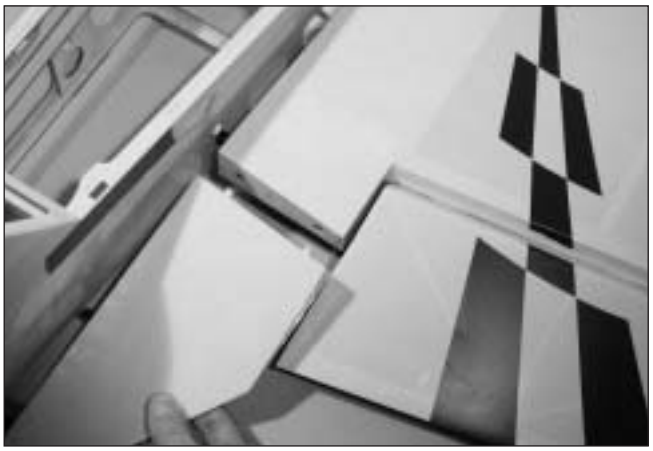
Locate the corresponding wing fillet to the wing. Both wing fillets are clearly marked so they can be attached to the correct wing panels.

☐ ☐ **Step 2**

Cut a piece of the plastic packaging and tape it to the side of the fuselage in the location of the wing fillet attachment. This will prevent getting epoxy on the fuselage in later steps, and gluing the wing and/or fillet to the fuselage by accident.

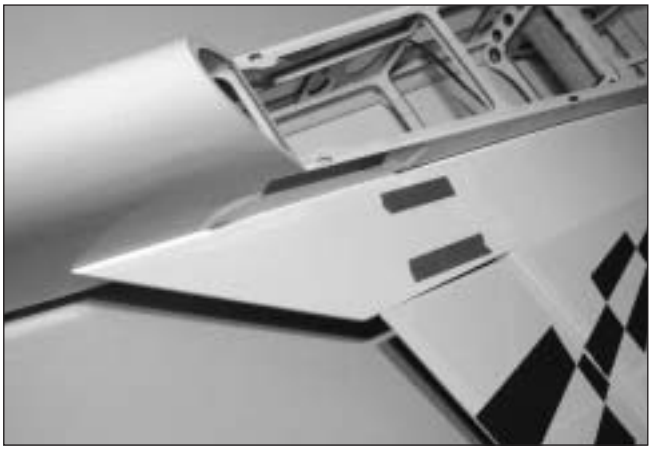
☐ ☐ **Step 3**

Test fit the fillet by pulling the wing slightly away from the fuselage and aligning the two dowels in the fillet with the corresponding holes in the wing. Slide the wing against the fuselage, guiding the alignment pin of the wing and fillet into the locations in the fuselage.



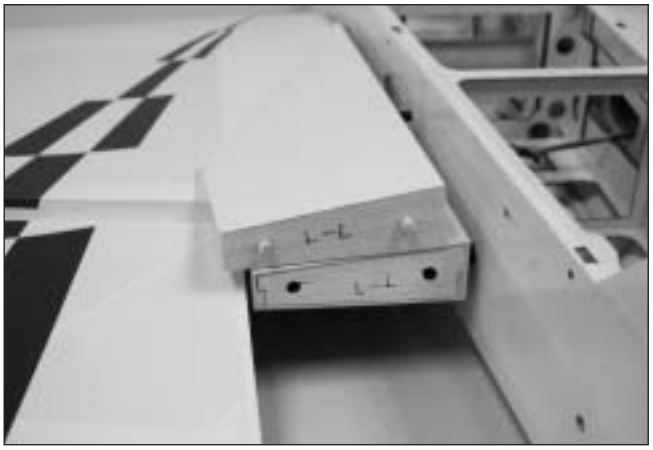
☐ ☐ **Step 4**

Once satisfied with the fit, glue the wing fillet to the wing using 30-minute epoxy. Secure the wing to the fuselage using a 1/4-20 x 2" bolt and use tape on the fillet to wing connection. This will keep everything in alignment until the epoxy fully cures.



☐ **Step 5**

Repeat Steps 1 through 4 for the remaining wing panel and wing fillet.



Section 6 – Installing the Horizontal Stabilizer

Required Parts

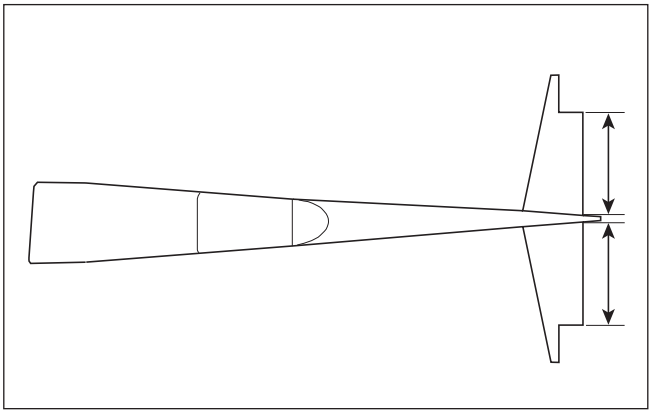
- Wing
- Fuselage
- Horizontal stabilizer
- Carbon fiber tail support rod (2)

Required Tools and Adhesives

- 30-minute epoxy
- Sandpaper
- Hobby knife
- Felt-tipped pen
- Flat blade screwdriver

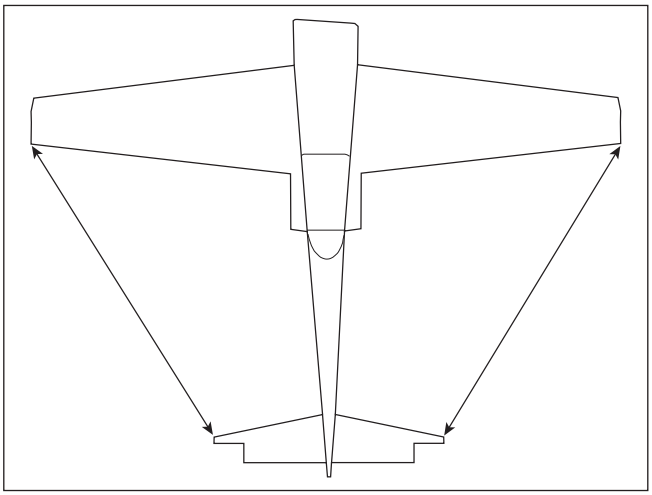
☐ **Step 1**

Slide the stab into the fuselage. Center the stab in the opening by measuring the distance from the fuselage to each tip. The stab is aligned when both measurements are identical.



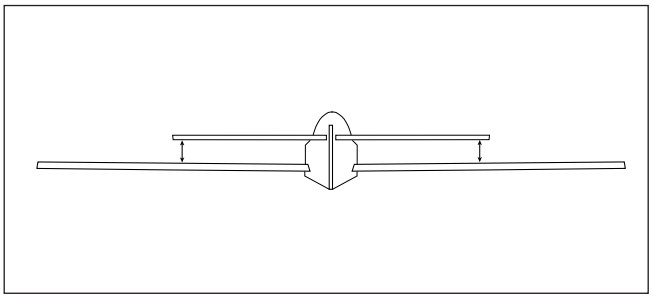
☐ **Step 2**

Check the distance from each stab tip to each wing tip. Remember to measure right-to-right, left-to-left. It won't work the other way around. These measurements must also be equal.



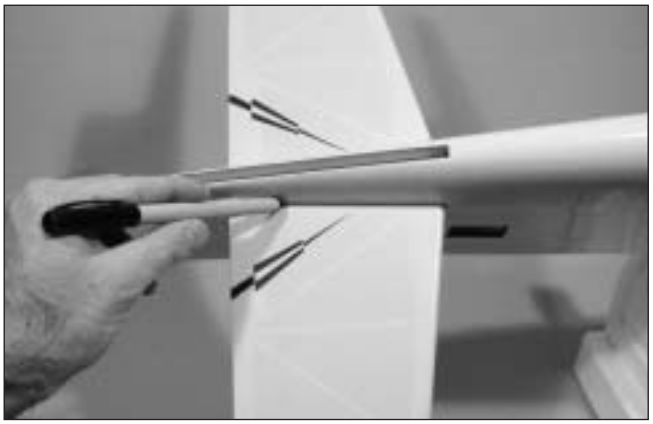
☐ **Step 3**

The last alignment step is making sure the wing and stabilizer are parallel. If they are not, sand the opening in the fuselage for the stab until the stab rests parallel to the wing.



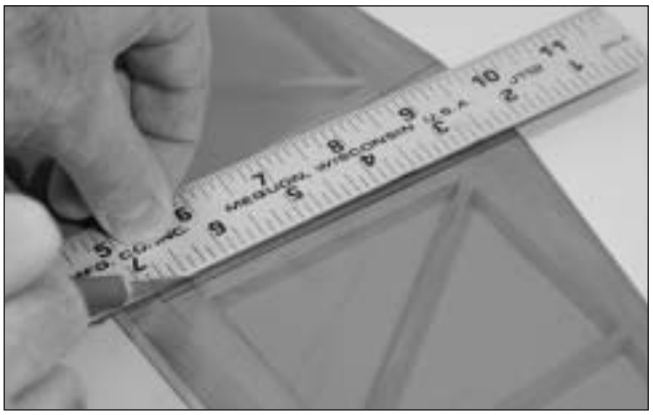
☐ **Step 4**

Use a felt-tipped pen to trace the outline of the fuselage on the stab.



☐ **Step 5**

Remove the stab and use a hobby knife with a brand new blade to remove the covering 1/16" inside the lines just drawn.



DO NOT cut into the underlying wood. Let the knife "float" across the covering. Cutting into the wood will weaken the stabilizer and may cause it to fail in flight.

You can use a soldering iron instead of a hobby knife to remove the covering. Doing so will eliminate accidentally cutting into the stabilizer.

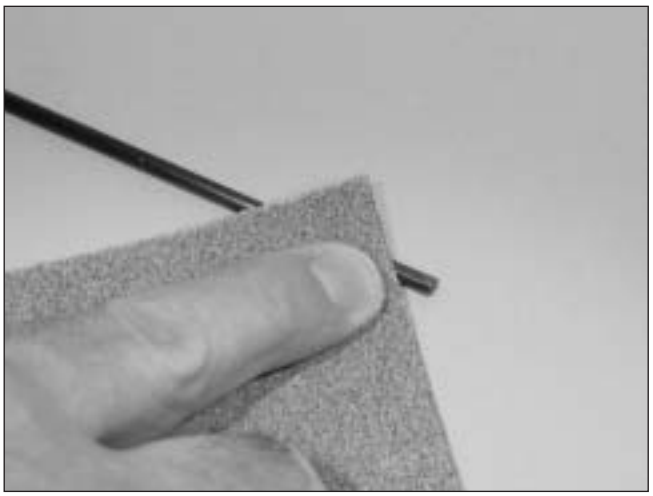
☐ Step 6

Mix 1/2 ounce of 30-minute epoxy. Apply epoxy to the top and bottom of the exposed wood of the stabilizer. Slide the stabilizer the rest of the way into the slot in the fuselage. Double-check the alignment to verify it is correct. Remove any excess epoxy using a paper towel and rubbing alcohol. Allow the epoxy to fully cure before continuing.

Note: Do not omit the following steps. The tail supports are required to assure the stabilizer will not break during high-stress maneuvers.

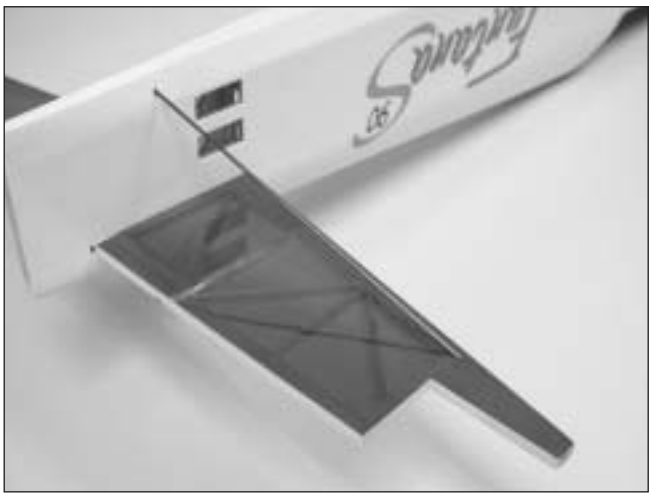
☐ ☐ Step 7

Locate one of the carbon fiber tail support rods. Test fit the carbon support rod on the fuse and stab. Trim the length of the rod as necessary to fit into the locations on the stab.



☐ ☐ Step 8

Lightly sand the ends of the rod using medium sandpaper. Use 30-minute epoxy to glue the rod into position.



☐ Step 9

Repeat Steps 7 and 8 for the remaining support rod.

Section 7 – Installing the Vertical Stabilizer

Required Parts

- Fuselage
- Vertical stabilizer

Required Tools and Adhesives

- 30-minute epoxy
- Sandpaper
- Square
- Ruler

☐ **Step 1**

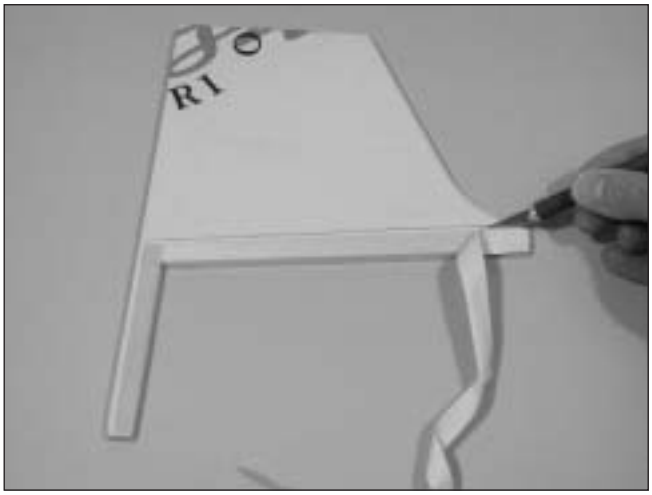
Locate the vertical stabilizer (fin) and slide it into position. Check the alignment between the fin and stab. The fin must be 90 degrees to the stab to be in alignment. Sand the opening in the fuselage if necessary to get the perfect alignment.

☐ **Step 2**

Trace the outline of the fuselage onto the fin.

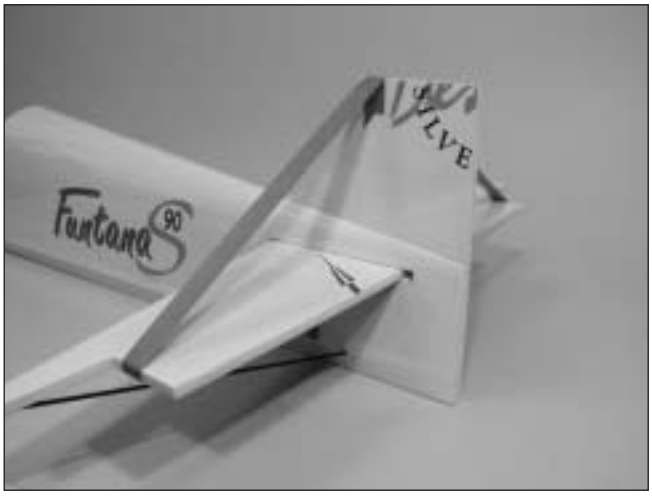
☐ **Step 3**

Remove the covering 1/16" below the line drawn in the last step.



☐ **Step 4**

Mix 1/2 ounce of 30-minute epoxy. Apply the epoxy to the fin where the covering was removed. Position the fin in the slot and check the alignment. Use masking tape to hold the fin in position until the epoxy fully cures.



Hint: Use rubbing alcohol and a paper towel to clean up any excess epoxy. Remember, this only works before the epoxy cures.

Section 8 – Tail Wheel Installation

Required Parts

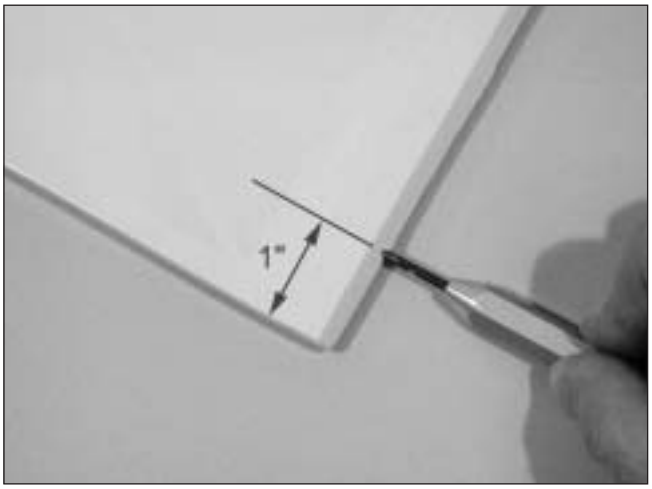
- Fuselage assembly
- Rudder
- Tail wheel assembly

Required Tools and Adhesives

- T-pins
- Hobby knife
- 6-minute epoxy
- Petroleum jelly
- Drill
- Drill bit: 1/8"
- Hex wrench (included in kit)

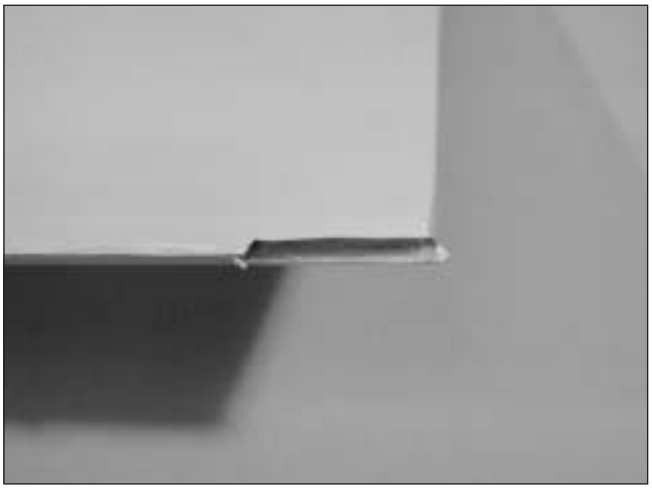
☐ **Step 1**

Locate the rudder and make a mark 1" from the bottom. Drill the location using a 1/8" drill bit. Make sure the drill is perpendicular to the hinge line of the rudder.



☐ **Step 2**

Cut a groove from the hole to the bottom of the rudder. This is necessary to provide clearance for the tail wheel bearing.



☐ **Step 3**

Test fit the tail wheel bracket into the rudder. Make sure there is plenty of clearance for the bracket bushing and the hole has been drilled deep enough to fit the tail wheel wire.

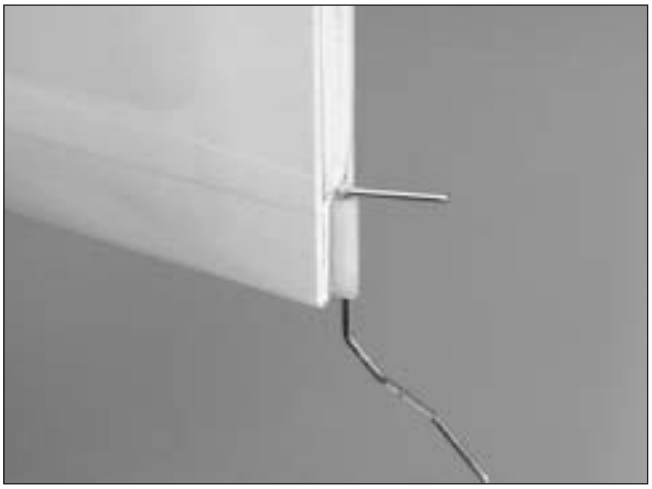
☐ **Step 4**

Cut a slot in the aft end of the fuselage for the tail wheel bearing using a hinging tool or hobby knife. Position the top of the slot 1" from the bottom of the fuselage. The slot should be 7/8" long, which is the length of the tail wheel bearing.

Section 8 – Tail Wheel Installation

☐ **Step 5**

Test fit the tail wheel bearing into the slot. Make the slot large enough that the bushing will fit without forcing the wood apart.



☐ **Step 6**

Apply a light coat of petroleum jelly onto the tail gear wire where the bearing will ride. This is done to prevent the epoxy from sticking to the wire and bearing, which would make it a little difficult to steer or even use the rudder.

☐ **Step 7**

Mix 1/2 ounce of 6-minute epoxy and apply it to both the tail gear bearing and the slot in the fuselage. Install the bearing. Use a paper towel and rubbing alcohol to remove any excess epoxy from the tail gear wire, bushing, and fuselage.

Section 9 – Rudder Installation

Required Parts

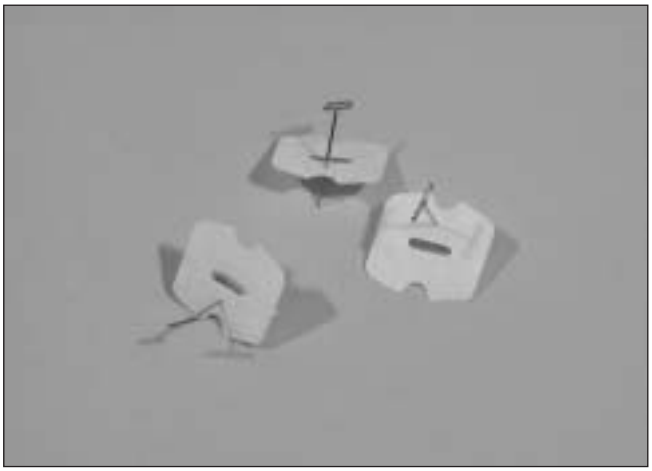
- Fuselage assembly
- Rudder
- CA hinge (3)

Required Tools and Adhesives

- Thin CA
- T-pins
- 6-minute epoxy

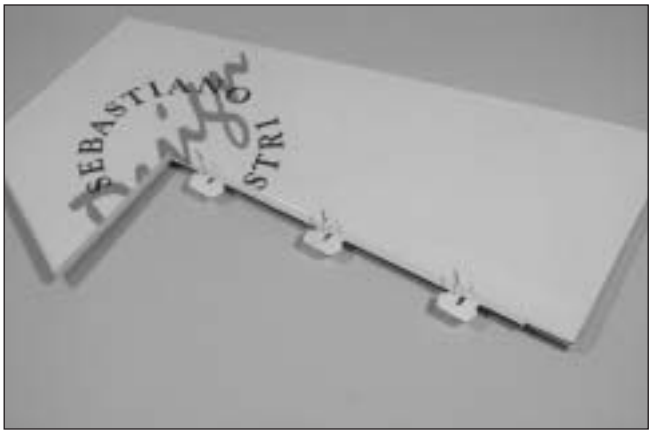
☐ **Step 1**

Locate the three CA hinges, and place T-pins in the center as shown.



☐ **Step 2**

Install the hinges in the rudder.



☐ **Step 3**

Test fit the rudder to the fuselage. Make sure the tail gear wire goes into the rudder, and that the rudder will rest tight against the fin and fuselage. The tail gear bearing should not interfere with the rudder.

☐ **Step 4**

Mix 1/2 ounce of 6-minute epoxy. Remove the rudder, and place the epoxy only in the hole, not in the groove. Epoxy in the groove will probably make it difficult to use the rudder. Install the rudder as described in the previous step.

> **Hint**: You can combine the previous step with the following step if you like. This will hold the rudder in position while the epoxy cures.

☐ **Step 5**

Check to make sure the rudder moves freely. It should not rub against the fin at the tip. Apply thin CA to both sides of the hinge. Make sure to saturate the hinge, and don't use accelerator. Use a paper towel and CA debonder/remover to clean up any excess CA.

☐ **Step 6**

Once the CA and epoxy has fully cured, give the rudder and fin the tug test to make sure the hinges are well glued. Flex the rudder a few times to break in the hinges.

Section 10 – Elevator Installation

Required Parts

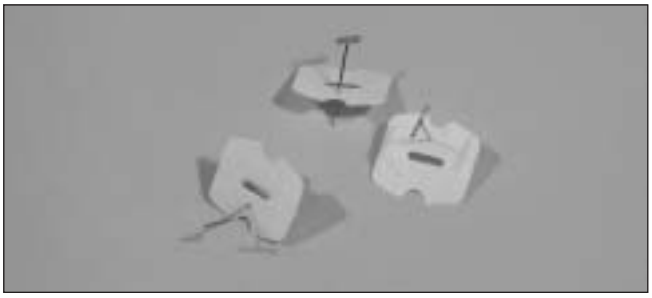
- Fuselage assembly
- Elevator (right and left)
- CA hinge (6)

Required Tools and Adhesives

- Thin CA
- T-pins

☐ ☐ **Step 1**

Locate the three CA hinges, and place T-pins in the center as shown.

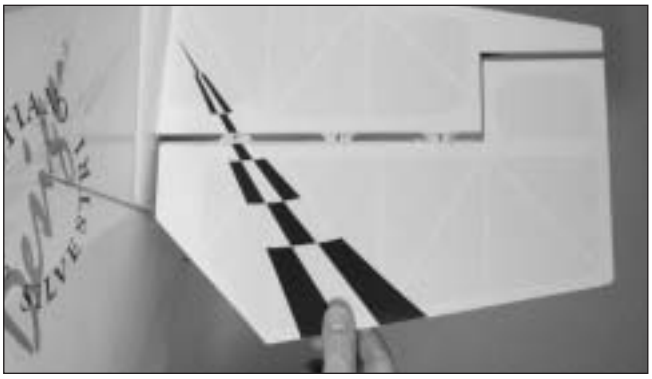


☐ ☐ **Step 2**

Install the hinges in one of the elevators.

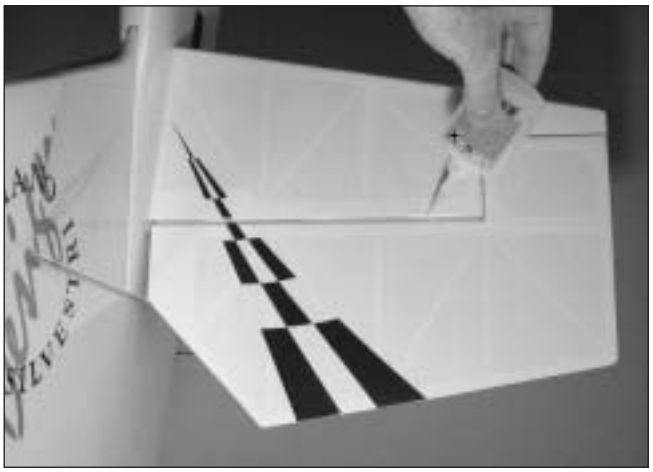
☐ ☐ **Step 3**

Test fit the elevator to the stabilizer. Make sure the elevator rests tight against the stabilizer.



☐ ☐ **Step 4**

Check to make sure the elevator moves freely. It should not rub against the stabilizer at the tip. Apply thin CA to both sides of the hinge. Make sure to saturate the hinge, and don't use accelerator. Use a paper towel and CA debonder/remover to clean up any excess CA.



☐ ☐ **Step 5**

Once the CA has fully cured, give the elevator and stabilizer the tug test to make sure the hinges are well glued. Flex the elevator a few times to break-in the hinges.

☐ **Step 6**

Repeat Steps 1 through 5 for the remaining elevator half.

Section 11 – Rudder and Elevator Servo Installation

Required Parts

- Fuselage

Required Tools and Adhesives

- Drill
- Drill bit: 1/16"
- Dental floss or string
- Y-Harness (JRPA133) (Optional)
- 18" Servo Extensions (JRPA099) (3)

☐ **Step 1**

Install three 18" servo extensions, one on each servo. Either tie the servo leads together, using a commercially available connector, or use unwaxed dental floss to secure the extensions to prevent them from coming loose during flight. Also install the servo hardware (grommets and eyelets) at this time.

☐ **Step 2**

Fasten the servos in place using the screws included with the servos.

Section 12 – Final Linkage Installation

Required Parts

- Fuselage

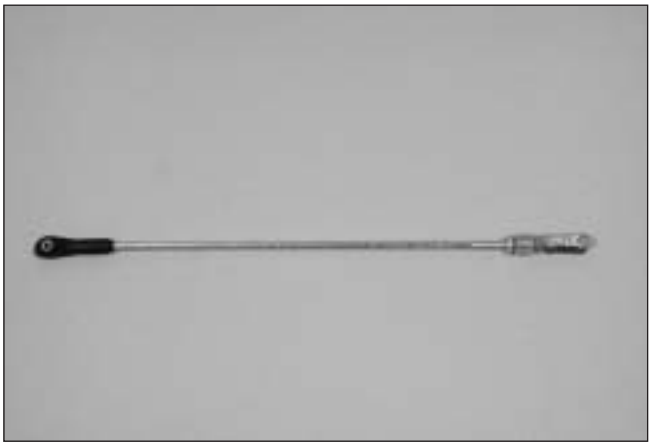
Required Tools and Adhesives

- 4-40 x 1/2" screw (3)
- Drill
- 4-40 x 5" threaded rod
- Clevis retainer (3)
- 4-40 x 5 1/2" threaded rod
- Nylon control horn (3)
- Threaded metal clevis (3)
- 4-40 x 3 7/8" threaded rod
- 4-40 lock nut (3)
- Drill bit: 3/32"
- Tapered standoff (3)
- Nylon ball link (3)
- 4-40 nut (3)
- 2mm x 16mm (9)

The technique for installing the control horns in the elevators and rudder are similar to the aileron control horn installation.

☐ ☐ ☐ **Step 1**

Locate the metal clevis 4-40 nut, clevis retainer and nylon ball link. Thread the 4-40 nut onto one end of a 4-40 x 5 1/2" threaded rod. Slice a clevis retainer onto a metal clevis and thread the clevis up against the nut. A small amount of the rod will be visible between the forks of the clevis. Tighten the nut against the clevis to prevent it from loosening. Thread the nylon ball end onto the other end of the threaded rod.



Note: It is suggested that threadlock be used on the nut and clevis to prevent them from loosening during flight.

☐ ☐ ☐ **Step 2**

Plug in the elevator servo and turn on the radio system to center the servo. Place a Heavy-Duty Servo Arm (JRPA215) on the elevator servo as shown. Trim the servo arm to resemble the arm shown in the photo.

☐ ☐ ☐ **Step 3**

Attach the ball end to the outside hole of the servo arm using a 4-40 x 1/2" screw, tapered standoff and 4-40 lock nut. The standoff is positioned between the ball end and control horn, which allows for smooth operation of the linkage.

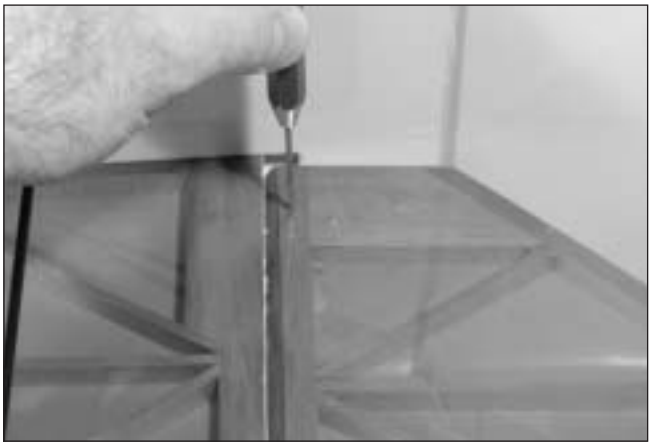
Note: Attach the ball end on so it will be on the outside of the control horn.

☐ ☐ ☐ **Step 4**

Attach the servo arm to the servo. Remove the back plate from one of the control horns and connect the clevis to the center hole. Position the control horn so the holes in the horn align with the hinge line. Having the linkage attached will self-position the control horn side-to-side for the best linkage geometry. Transfer the location of the control horn mounting holes onto the elevator using a felt-tipped pen.

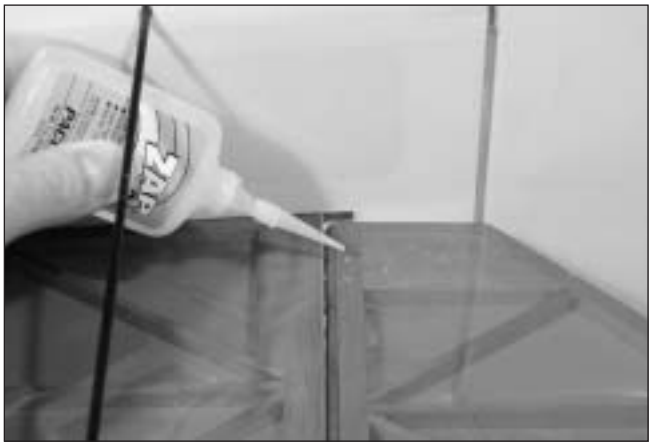
☐ ☐ ☐ **Step 5**

Use a drill and 3/32" drill bit to carefully drill the holes for mounting the control horn.



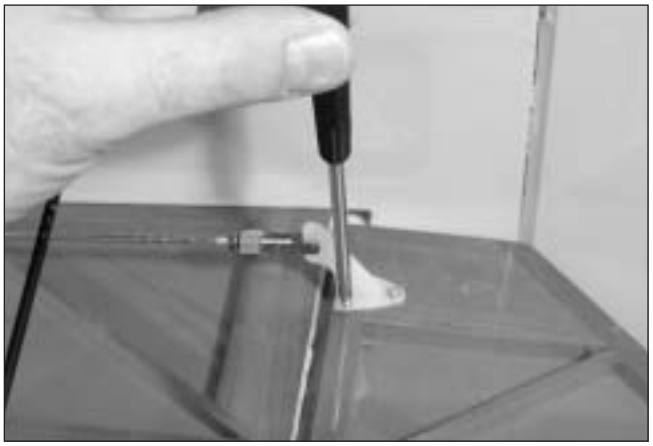
☐ ☐ ☐ **Step 6**

Apply 2-3 drops of Thin CA into each of the three holes. This will harden the wood and prevent the screws from pulling out during flight.



☐ ☐ ☐ **Step 7**

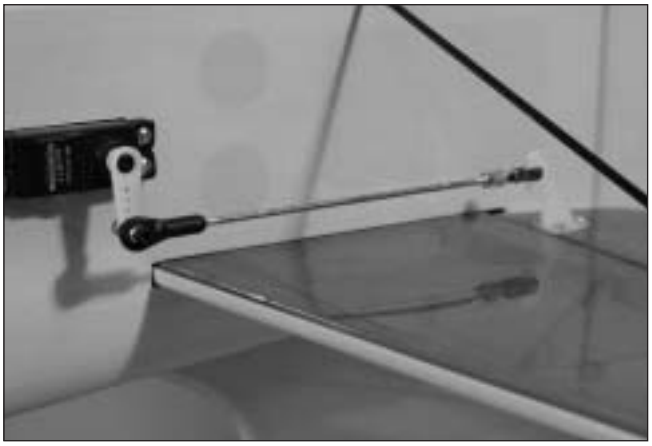
Attach the control horn to the elevator using three 2mm x 16mm screws and the control horn back plate.



Section 12 – Final Linkage Installation

☐ ☐ ☐ **Step 8**

Adjust the elevator linkage so the elevator is centered when the linkage is connected to the servo.

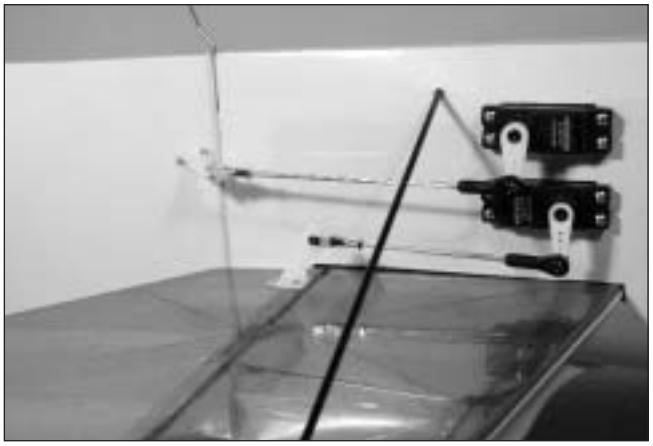


☐ **Step 9**

Repeat Steps 1 through 8 using the 3 7/8" linkage for the remaining elevator.

☐ **Step 10**

Repeat Steps 1 through 8 using the 5" linkage for the rudder.



Section 13 – Landing Gear and Wheel Installation

Required Parts

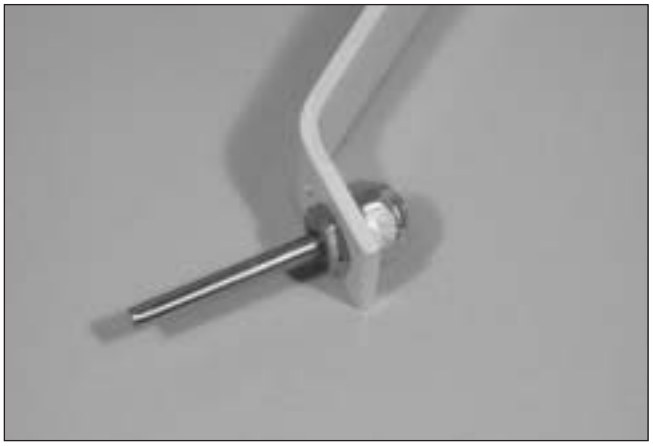
- Fuselage
- Landing gear
- 2 3/4" wheel (2)
- 1" wheel
- 1 1/4" axle w/nut (2)
- 4-40 blind nut (2)
- 8-32 x 3/4" screw (2)
- #4 washer (2)
- 4-40 x 1/2" socket head screw (2)
- 1/16" wheel collar w/set screw
- 5/32" wheel collar w/set screw (4)

Required Tools and Adhesives

- Phillips screwdriver
- Hobby knife
- 1/16" hex wrench
- 3/32" hex wrench
- Drill
- Drill bit: 5/32"
- Adjustable wrench (small)

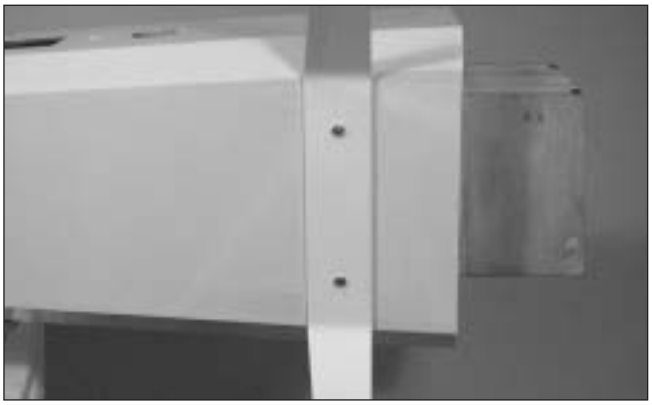
☐ **Step 1**

Install the axles in the landing gear. Secure the axles using an adjustable wrench and the nuts provided with the axles.



☐ **Step 2**

Install the landing gear using two 8-32 x 3/4" screws. Note that one edge of the gear is straight and the other at a slight angle. The straight side faces forward.



☐ ☐ **Step 3**

Hold the wheel pant so it is parallel to the bottom of the fuselage. Mark the location for the wheel pant screw.

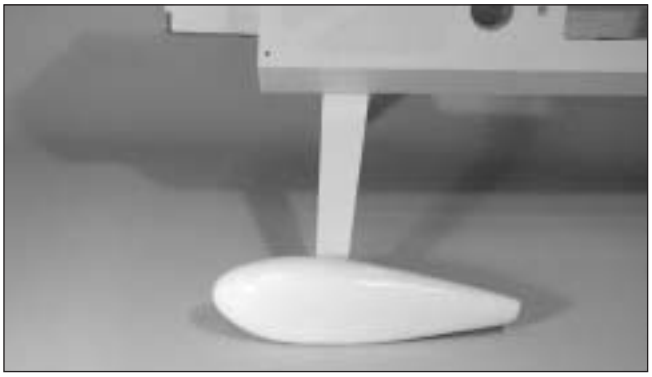
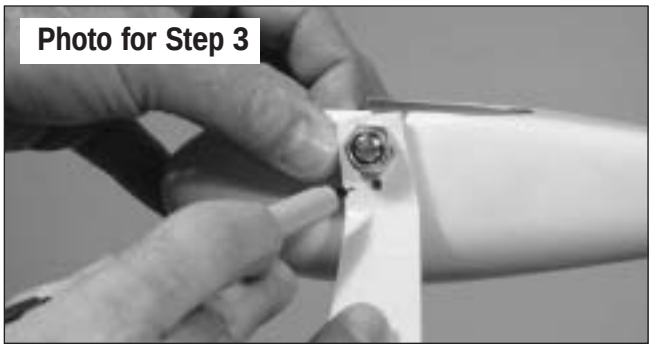


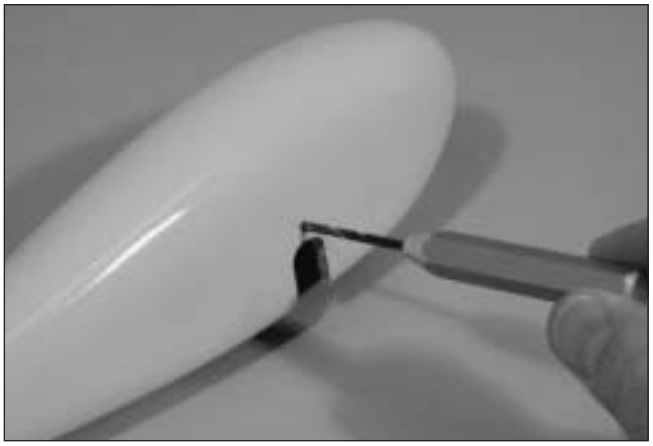
Photo for Step 3



Note: It may be necessary to open the notch in the wheel pant slightly to fit over the hex on the axle.

☐ ☐ **Step 4**

Drill the location for the pant screw using a 5/32" drill bit.



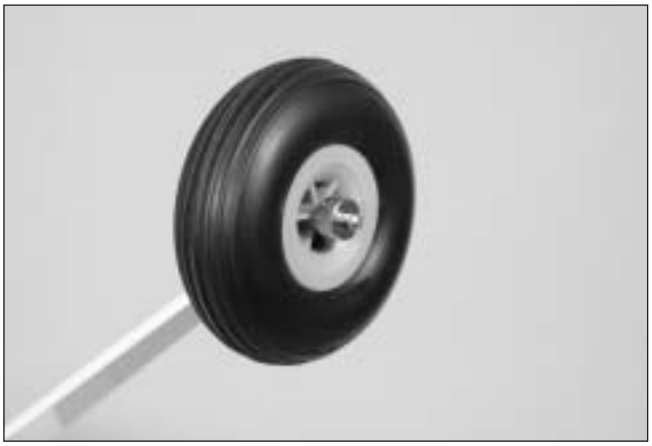
☐ ☐ **Step 5**

Insert a 4-40 blind nut into the hole from the inside of the wheel pant.

Section 13 – Landing Gear and Wheel Installation

☐ ☐ **Step 6**

Attach the wheel to the axle using two wheel collars and set screws. The exact position of the wheel will be determined after the wheel pant is installed.



Hint: Position the set screws on the wheel collars facing directly down. This way you can get to them later to position the wheel on the axle.

☐ ☐ **Step 7**

Attach the wheel pant to the landing gear using a 4-40 x 1/2" socket head screw.

☐ ☐ **Step 8**

Position the wheel so it is centered in the wheel pant. Tighten the collars once the wheel has been positioned.

☐ **Step 9**

Repeat Steps 2 through 8 for the other wheel pant.

☐ **Step 10**

Attach the tail wheel using a 5/32" wheel collar.

Section 14 – Fuel Tank Assembly

Required Parts

- Clunk (fuel pickup)
- Fuel tank
- M3x20 screw
- Fuel pickup tubing (long and short)
- Metal caps (2)
- Rubber stopper
- Metal tube (2)

Required Tools and Adhesives

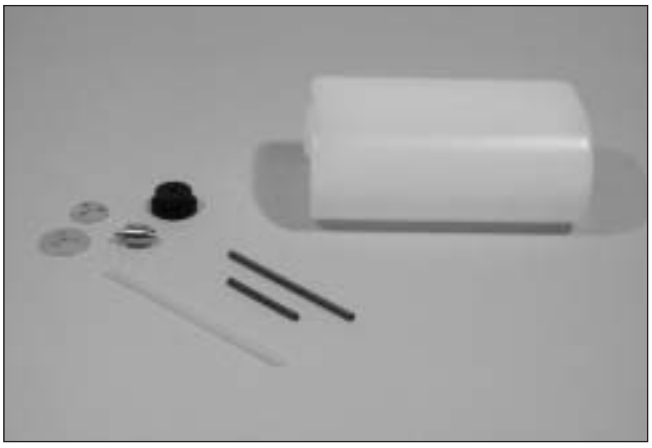
- Hobby knife
- Phillips screwdriver (small)

Note: The stopper provided with the FuntanaS™ 90 has three holes that are not bored completely through the stopper. The holes are for the fuel pickup, fill and vent lines. For these instructions, only two holes will be used: one for the fuel pickup and one for the fuel vent.
Only open the third hole if you are going to use a separate fill line.

Note: If you are installing an electric motor, skip to Section 18 – Electric Motor Installation.

☐ **Step 1**

Locate the fuel tank parts.



☐ **Step 2**

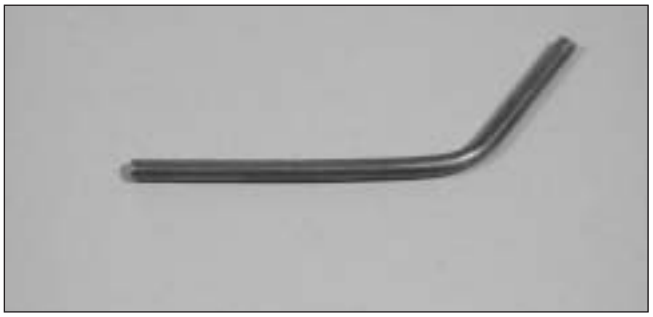
Locate the rubber stopper. Insert the short metal fuel tubes into one of the holes in the stopper so that an equal amount of tube extends from each side of the stopper. This tube will be the fuel tank pickup that provides fuel to the engine.

☐ **Step 3**

Slide the smaller cap over the tube on the smaller end of the rubber stopper. This end will be inserted into the fuel tank. The larger cap is placed on the side of the rubber stopper that makes the cap. Loosely install the M3 x 20 screw through the center of the stopper.

☐ **Step 4**

Bend the remaining fuel tube carefully to a 45-degree angle using your fingers. This will be the fuel tank vent tube. Use care not to kink the tube while bending.



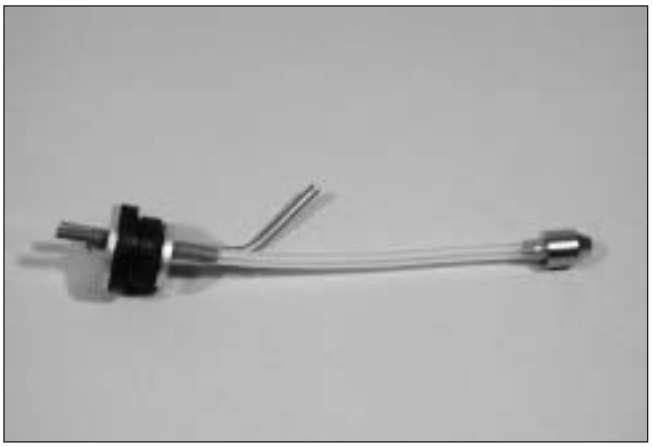
Section 14 – Fuel Tank Assembly

☐ **Step 5**

Slide the vent tube into one of the remaining two holes in the stopper from the tank (small cap) side.

☐ **Step 6**

Locate the short piece of silicone fuel tubing and the fuel tank clunk. Install the clunk onto one end of the silicone tubing. Slide the silicone tubing (end opposite the clunk) onto the fuel tank pickup tube (straight tube) in the stopper.

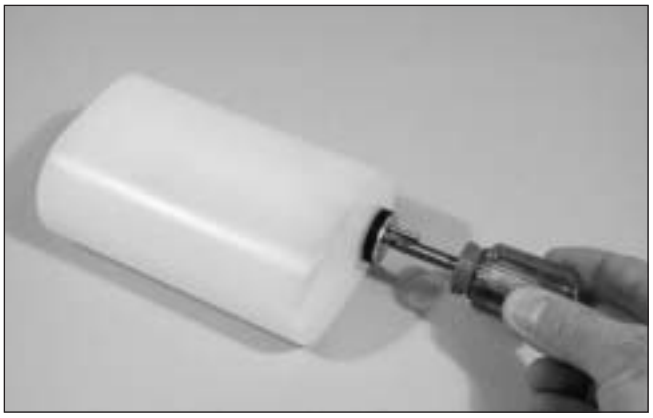


☐ **Step 7**

Carefully insert the stopper assembly into the fuel tank. Note the position of the vent tube; it must be up at the top portion of the fuel tank to function properly. (**Hint**: The fuel tank is taller than it is wide, with the stopper located towards the top.) Also, it may be necessary to shorten the length of the fuel pickup tubing to make sure the clunk does not rub against the back of the fuel tank. You should be able to turn the tank to any attitude and have the clunk fall to the lowest point (all directions, except for having the stopper facing down).

☐ **Step 8**

Tighten the M3 x 20 screw carefully—do not over-tighten. This allows the rubber stopper to form a seal by being slightly compressed, thus sealing the fuel tank opening.



Important: Be sure to differentiate between the vent and fuel pickup tube. Once the tank is mounted inside the fuselage, it will be difficult to tell the tubes apart.

Section 15 – Engine Installation

Required Parts

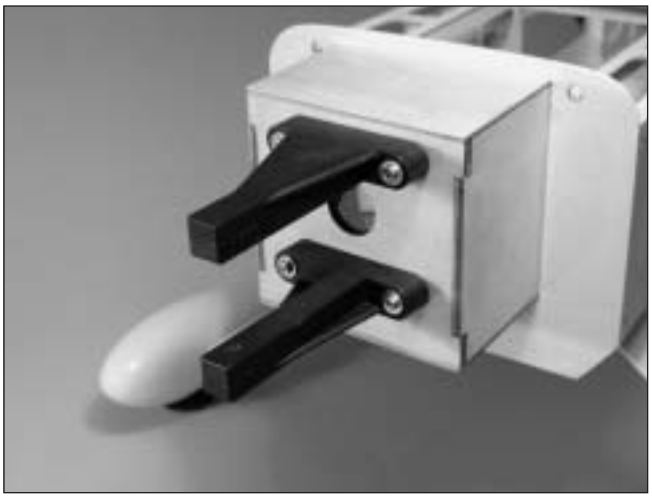
- Fuselage assembly
- 8-32 x 1¼" screw (4)
- 8-32 lock nut (4)
- Engine mount (2)
- 8-32 x 1" screw (4)
- #8 washer (12)

Required Tools and Adhesives

- Drill
- Pliers
- Phillips screwdriver (large)
- Drill bit: 11/64"
- Clamp
- Engine

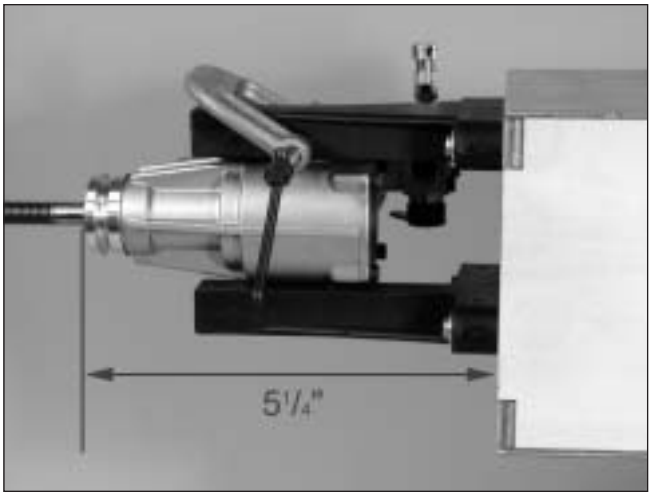
☐ **Step 1**

Attach the engine mount to the firewall using four 8-32 x 1" screws and four #8 washers.



☐ **Step 2**

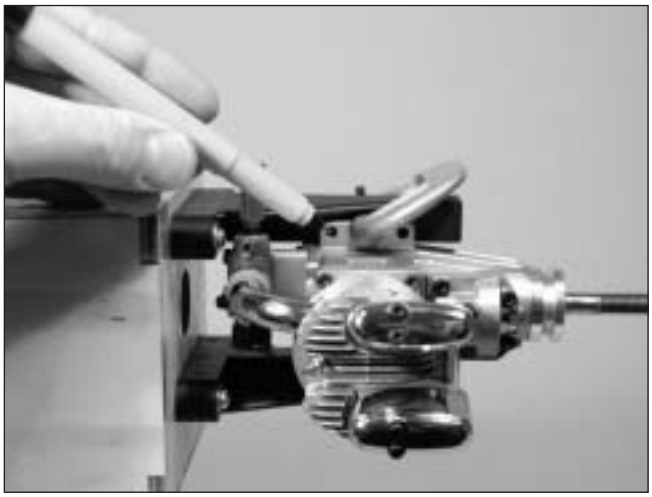
Position the engine on the mount. Adjust the engine so the distance from the firewall to the drive washer is 5¼". Use clamps to hold the engine in position.



Note: Check to see which direction the needle valve is pointing. It should point towards the top of the aircraft. Remove the carburetor and rotate the carburetor so it faces the top if necessary.

☐ **Step 3**

Mark the locations for the engine mounting bolts.



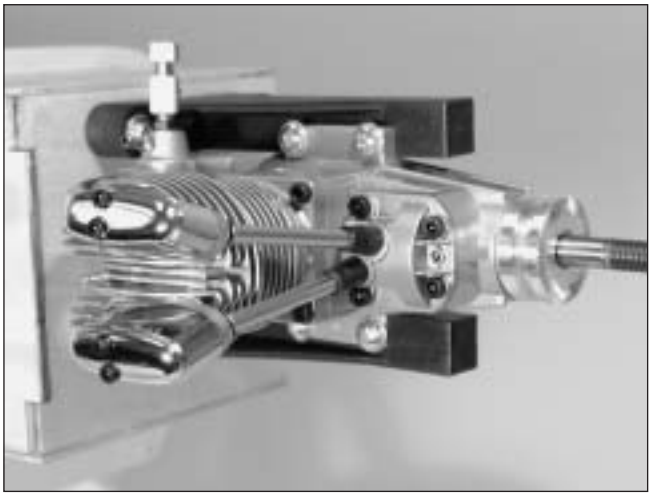
☐ **Step 4**

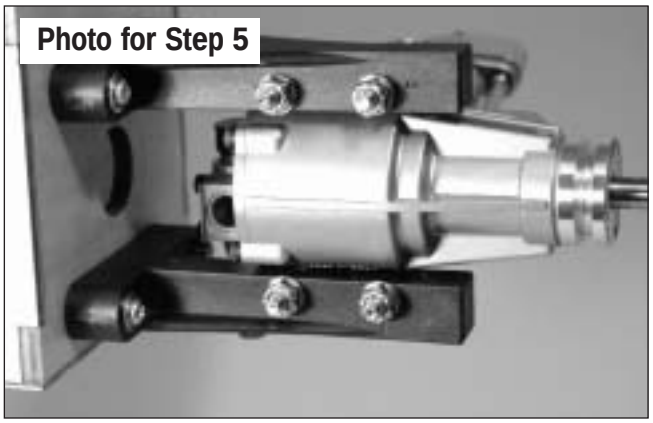
Remove the engine and drill the locations marked in the previous step using a 11/64" drill bit.

Hint: Use a drill press for the best results. This makes holes perfectly perpendicular (square) to the mount.

☐ **Step 5**

Attach the engine using four 8-32 x 1-1/4" socket head screws, eight #8 washers and four 8-32 lock nuts.





Section 16 – Throttle Pushrod Installation

Required Parts

- Clevis
- Clevis retainer
- Fuselage assembly
- 16 3/8" outer pushrod tube
- 18 5/8" pushrod wire

Required Tools and Adhesives

- Drill
- Drill bit: 5/32"
- Medium CA
- Sandpaper

☐ **Step 1**

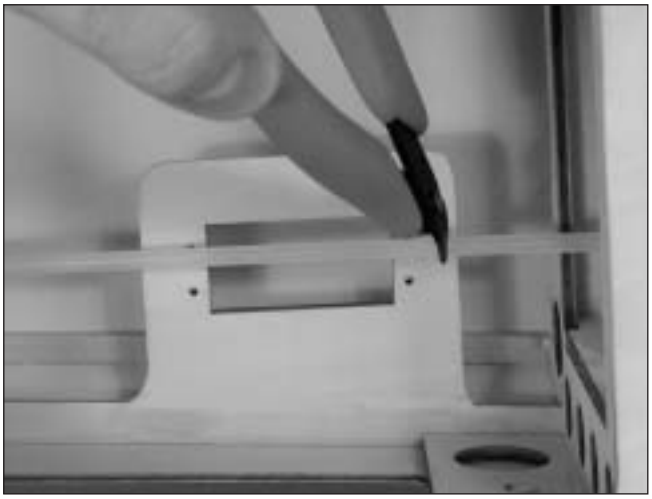
Determine the proper location for the throttle pushrod. Mark the location with a felt-tipped pen. Remove the engine and drill the firewall for the pushrod tube using a drill and 5/32" drill bit.

☐ **Step 2**

Test fit the throttle pushrod tube through the firewall and into the fuselage. Once satisfied with the fit, roughen the tube using sandpaper. Slide the tube back into position and use medium CA to glue it to the firewall. Allow 1/16" of the pushrod to extend forward of the firewall.

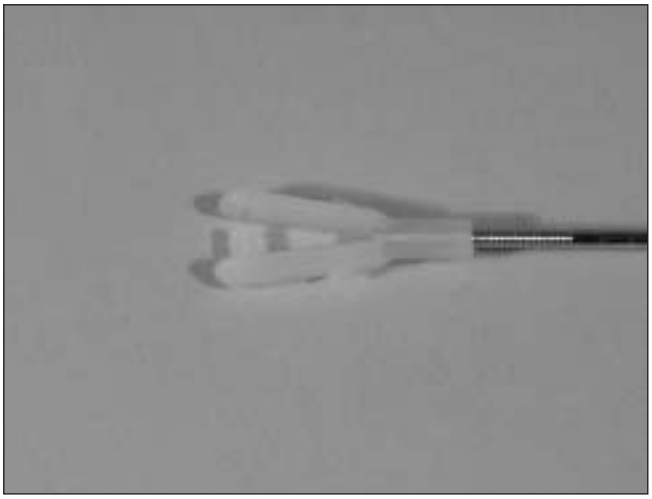
☐ **Step 3**

Trim the throttle pushrod at the front edge of the throttle servo tray.



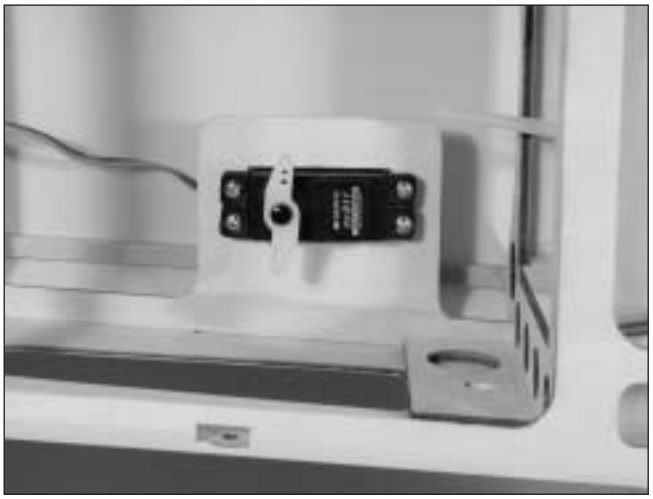
☐ **Step 4**

Slide a clevis retainer onto a nylon clevis. Thread a clevis onto an 18 5/8" wire a minimum of 10 turns.



☐ **Step 5**

Install the servo hardware (grommets and eyelets) included with the servo. Mount the throttle servo with the output shaft towards the rear of the fuselage.



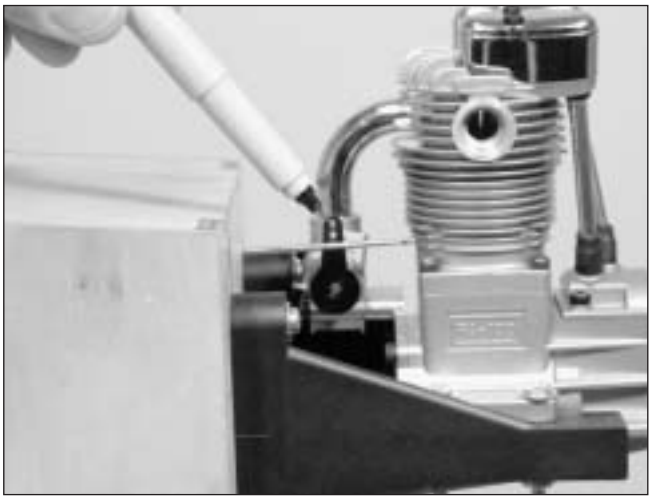
☐ **Step 6**

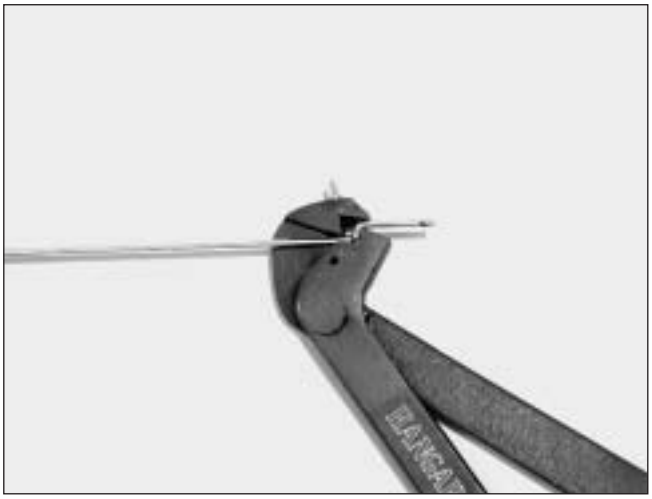
Slide the pushrod into place from inside the fuselage and attach the clevis to the servo arm.

Section 16 – Throttle Pushrod Installation

☐ **Step 7**

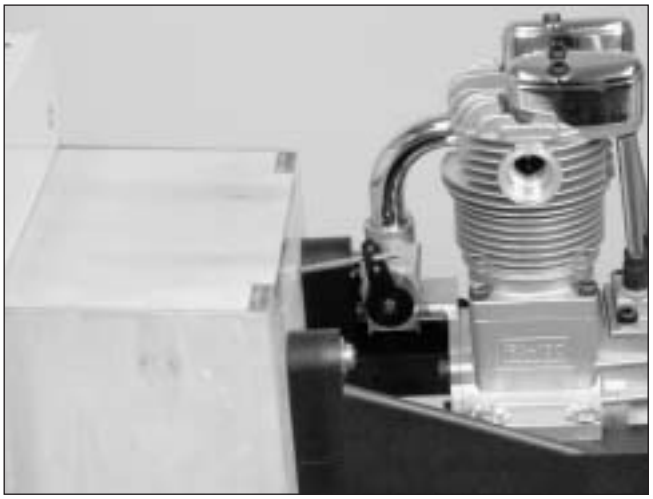
Move the carburetor to the half-throttle position. Mark the pushrod where it crosses the throttle arm using a felt-tipped pen. Remove the pushrod and make a "Z" bend in pushrod.





☐ **Step 8**

Remove the clevis from the pushrod. Slide the pushrod into the pushrod tube from the firewall. Attach the "Z" bend to throttle arm.



☐ **Step 9**

Thread the clevis onto pushrod. Attach the clevis to the throttle arm. Move the throttle to full throttle using the radio. Check the carburetor to make sure it is fully open. Adjust the clevis to correspond full throttle on the radio to full throttle on the carburetor. Use the radio to check low for idle and closed. Move the linkage at the carburetor arm and servo arm as necessary for full range of operation.

☐ **Step 10**

Build a support for the throttle pushrod near the servo.

Section 17 – Fuel Tank Installation

Required Parts

- Fuselage assembly
- Fuel tank assembly
- Fuel tubing (red and green)

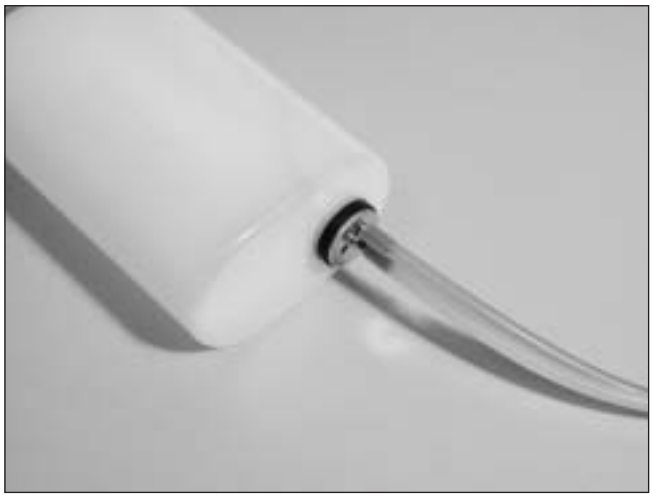
Required Tools and Adhesives

- Foam: 1/2"

☐ **Step 1**

Connect the two pieces of fuel tubing to the fuel tank's pickup and vent tubes.

> **Hint**: Connect the red tube to the vent, and the green tube to the pickup. If you forget, just come back to this paragraph to remind yourself.

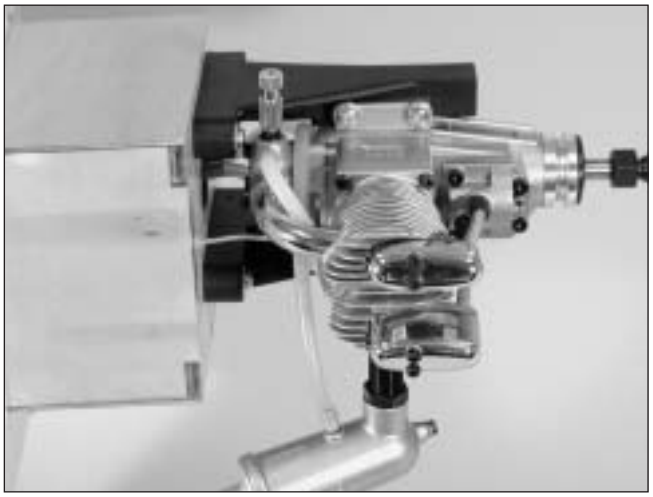


☐ **Step 2**

Install the fuel tank into the fuselage. Make any necessary supports to keep the tank from moving during flight.

☐ **Step 3**

Attach the muffler to the engine. Make the proper connections to the engine using the engine manufacturer's instructions.



Section 18 – Electric Motor Installation

Required Parts

- Fuselage

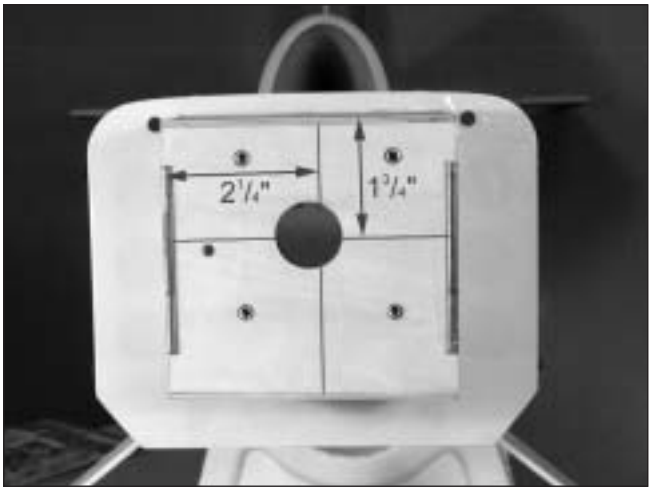
Required Tools and Adhesives

- Electric motor (Hacker recommended)
- Electronic speed control (Hacker master 70-3P)
- Electrical connectors
- Heat shrink
- Appropriate motor mount (Aero-Model)
- Propeller (APC 16x12E)
- Plywood (for battery mounting plate)

There are numerous possibilities available for converting your FuntanaS™ 90 to electric power. The following instructions cover the installation of a Hacker power system using Lithium Polymer batteries. A little creativity and ingenuity will be necessary to make the conversion, no matter what motor/battery combination you select.

☐ **Step 1**

Carefully measure and mark the centerline on the firewall using the measurements as shown.

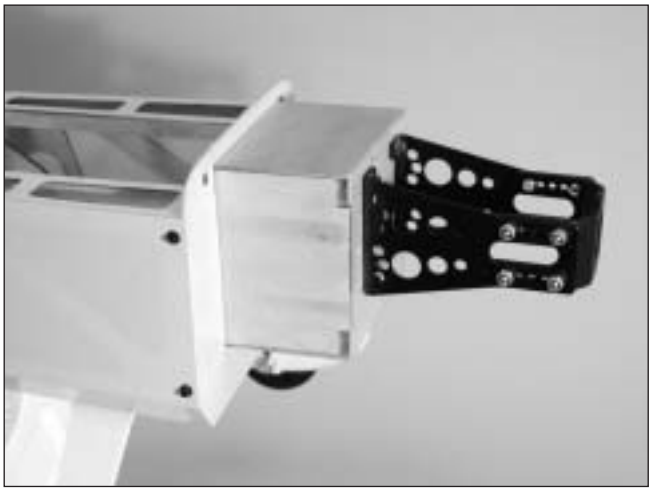


☐ **Step 2**

Check the location of your particular motor. It may be necessary to remove material from the firewall to allow for motor clearance.

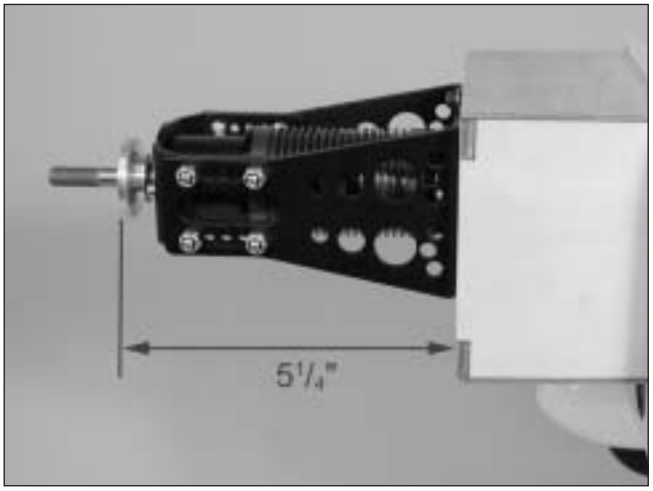
☐ **Step 3**

Install the motor mount of your choice. The Aero-Model mount is a perfect fit and uses the original engine mounting locations.



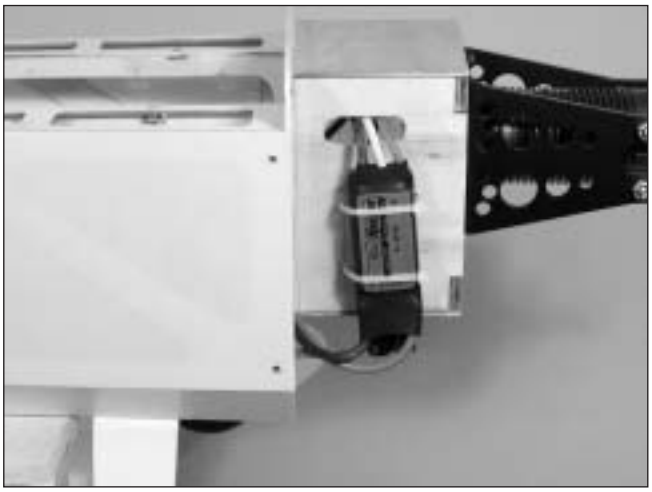
☐ **Step 4**

Attach your motor to the mount. Position the mount so the motor is 5⅛" from the drive washer to the firewall.



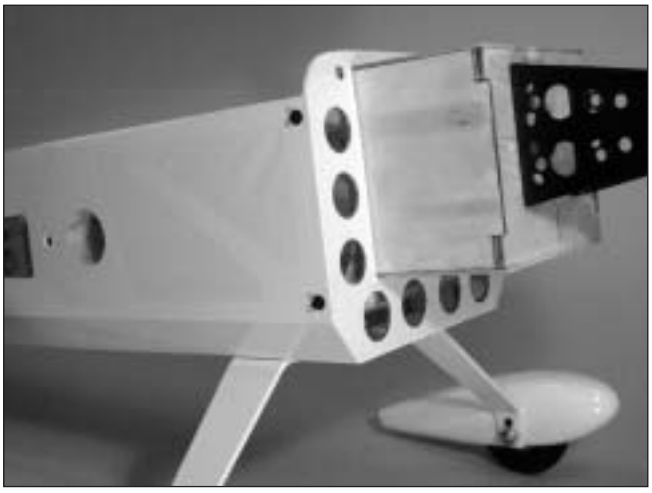
☐ **Step 5**

Use connectors or solder to make the connection between the electronic speed control and motor. Mount the speed controller to the side or bottom of the motor mounting box to provide adequate cooling.



☐ **Step 6**

Remove the covering from the openings in the sub-firewall. This will provide cooling through the fuselage for the battery.

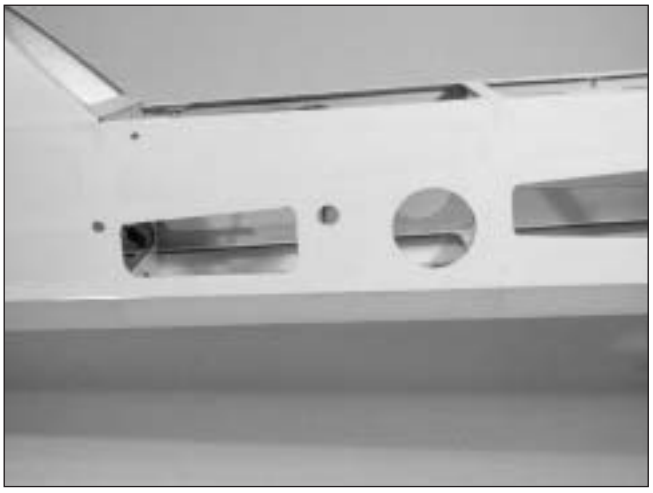


☐ **Step 7**

Construct a mount inside the fuselage for the battery. The mount should be sturdy enough to keep the battery packs secure during the most extreme flight maneuvers. Adjust the position of the batteries to obtain the correct CG.

☐ **Step 8**

Remove an area of covering from the sides of the fuselage as an air exit.



Section 19 – Cowling Installation

Required Parts

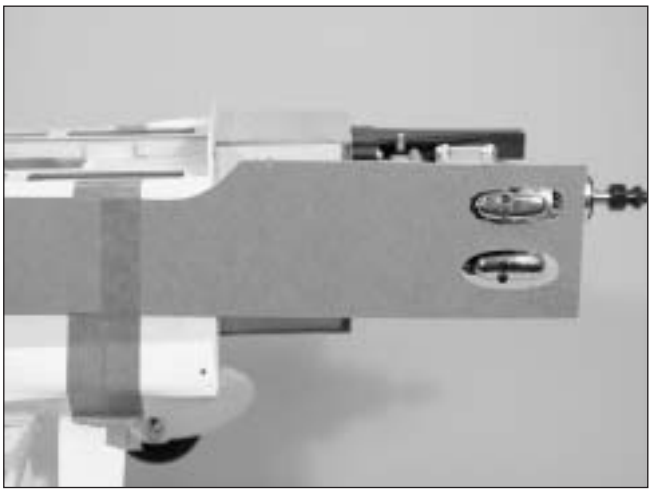
- Fuselage assembly
- Cowling
- #4 washer (4)
- 4-40 x 1/2" socket head screw (4)

Required Tools and Adhesives

- 3/32" hex wrench
- Hobby scissors
- Hobby knife

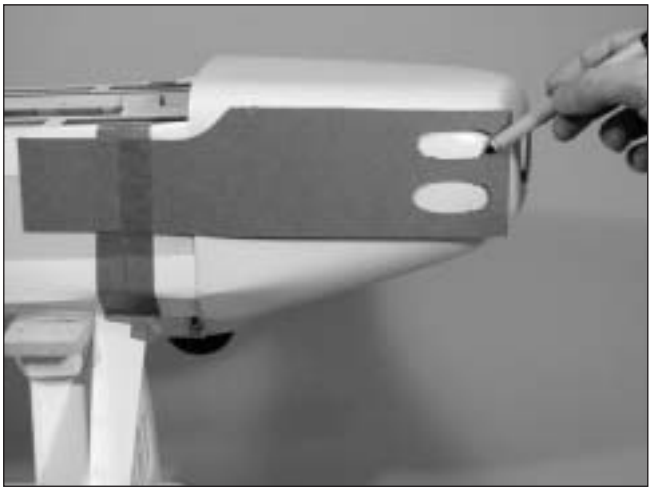
☐ **Step 1**

Use pieces of cardstock to indicate the location of the engine and screw locations for the cowling.



☐ **Step 2**

Remove the engine. Position the cowl onto the fuselage so it is 5 1/8" from the firewall. Transfer the location for only the engine onto the cowl.



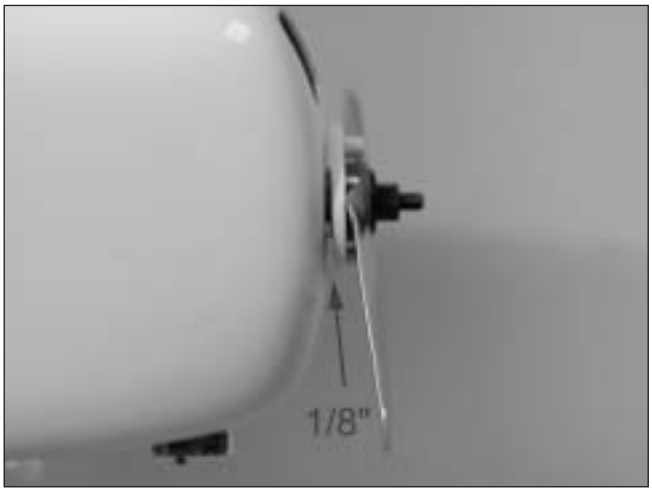
☐ **Step 3**

Remove the cowl and remove the necessary material to fit the cowl over the engine. Install the engine back onto the firewall, and test fit the cowl over the engine.

Hint: Start by removing only a little material at a time. You can always make the holes bigger, but you can't make them smaller. Work until the cowl fits nicely over the engine.

☐ **Step 4**

Slide the cowling onto the fuselage. Temporarily install the propeller and spinner back plate. Position the cowl so there is 1/8" gap between the back plate and the cowl.



☐ **Step 5**

Use the cardstock from Step 1 to locate the positions for the cowling screws. Drill the locations using a 1/8" drill bit.

☐ **Step 6**

Make any cutouts in the cowling to clear items such as the muffler, fueling valve, needle valve, etc.

☐ **Step 7**

Attach the cowl using four 4-40 x 1/2" socket head screws and four #4 washers.

Section 20 – Final Radio Installation

Required Parts

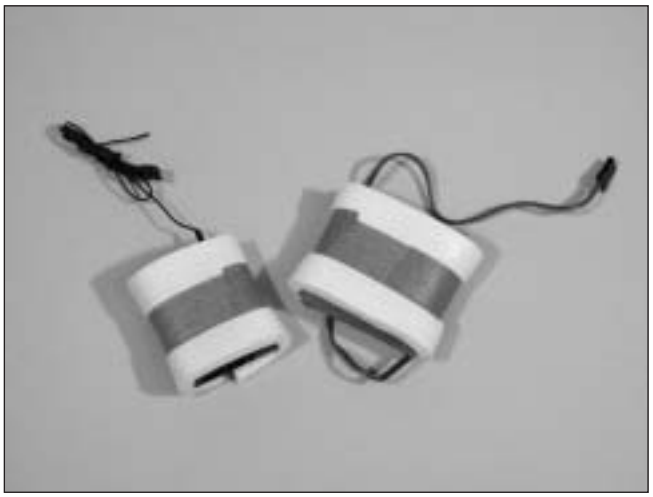
- Fuselage

Required Tools and Adhesives

- Plywood
- Hobby knife
- Radio switch harness
- Medium CA
- Receiver
- Receiver battery

☐ **Step 1**

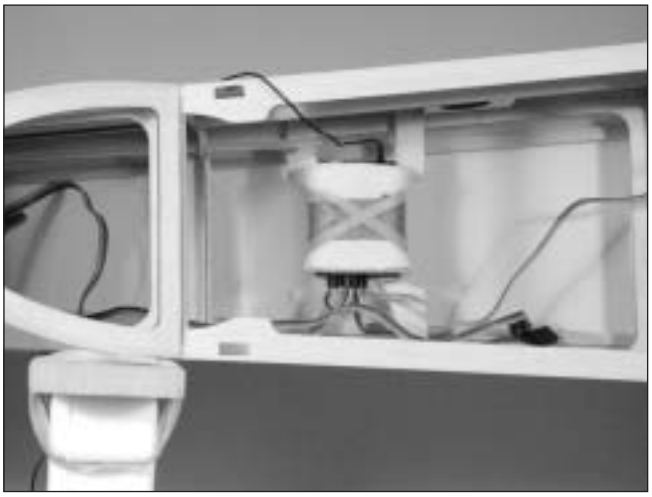
Wrap the receiver and receiver battery in protective foam to prevent damage that may be caused by engine vibration.



Section 20 – Final Radio Installation

☐ **Step 2**

Use plywood to build a tray for the receiver and battery. Temporarily mount the receiver near the aft edge of the hatch, and the battery near the fuel tank. It may be necessary to shift the battery forward or aft to balance the model as described in the section “Control Throws and Center of Gravity.” Plug in any servo leads or extensions at this time and connect any extensions necessary for the aileron servos.



☐ **Step 3**

Route the antenna out through the tube in the fuselage.

☐ **Step 4**

Mount the radio switch in the side of the fuselage.

Section 21 – Hatch Assembly

Required Parts

- Hatch
- 4-40 x 1/2" screw (4)
- Decals
- Canopy
- #4 washer (4)
- Pilot

Required Tools and Adhesives

- Shoo Goo
- Hex wrench: 3/32"
- Formula 560 canopy glue
- Masking tape

☐ **Step 1**

The FuntanaS™ hatch comes pre-installed on the fuselage and is held on with four 4-40 socket head cap screws. Remove these and lift the hatch from the fuselage.

☐ **Step 2**

Install a pilot figure to the hatch using Shoo Goo or similar adhesive that will remain flexible. Let the glue dry before securing the canopy in place. If you plan on extreme aerobatics, it is suggested to use a couple of screws to secure the pilot too.

☐ **Step 3**

Position the canopy onto the canopy hatch. Trace around the canopy and onto the hatch using a felt-tipped pen.

☐ **Step 4**

Lightly sand the inside edge of the canopy and slightly inside the line drawn on the hatch using medium sandpaper.

☐ **Step 5**

Apply a bead of RCZ56 Canopy Glue (ZINJ5007) around the inside edge of the canopy. Position the canopy onto the hatch. Use tape to hold the canopy secure until the glue fully cures. Don't get glue on the fuselage, accidentally gluing the canopy to the fuse.

☐ **Step 6**

Apply the decals using the photos on the box as a guide.

Preflight

For those of you who are veterans of large models, this is old news. But to you newcomers to the world of large models, this is very important information.

While many smaller models are very tolerant of improper control linkage setups and flying techniques, large models are not. Don't let that scare you away from large models; they are truly one of the best flying experiences in RC that money can buy. However, please pay particular attention to the following areas.

Seal the aileron and elevator hinge gaps.

This should be considered part of finishing the model, and is as important as installing the fuel tank or battery pack. On large aerobatic models, this is absolutely necessary.

Failure to do this can cause control surface flutter, and on a large model, this will most likely cause a crash.

Putting safety and model preservation to the side, there are several other reasons to do this on an aerobatic model. It will increase the effectiveness of the control surfaces, and the model will track more true and precise.

Maintain the proper mechanical advantage on all control surface linkages.

As with unsealed hinge gaps, this is often the cause of flutter. Please follow the control horn and servo arm lengths recommended in this manual. Shorter arms on the servo or longer control horns on the elevator and ailerons are fine, but do not try to go the other way to increase throw. It can cause flutter on the FuntanaS™. The recommended linkage setups are more than adequate to achieve full 3D throws.

Never attempt to make full throttle dives!

Large models perform much more like full-size aircraft than small models. If the airframe goes too fast, such as in a high throttle dive, it may fail. The FuntanaS should be flown like a full-scale Funtana. Throttle management is absolutely necessary.

Computer Radio Enhancements

A computer radio will allow you to do quite a bit of fine-tuning of the feel of the Funtana, which will make aerobatics even easier.

Control Throws

	Low rate	3D rate
Aileron		
	20° up	35° up
	19° down	34° down

	Low rate	3D rate
Elevator		
	13° up	45° up
	15° down	45° down
Rudder		
	25° right	40° right
	25° left	40° left

Rates and Expos

Use Expo to soften the feel of the model. On high 3D rates use quite a bit of expo. The goal on 3D rates is to get the model to feel the same around neutral as it does on low rates.

Use low rate settings for all flying except for 3D aerobatics. For precision flying or general sport hot-dogging, the low rate throws are perfect, even for snap rolls. The only exception is rudder rates. Use 3D rudder rate when doing stall turns and rolling circles, since the more rudder the better for these. When doing 3D aerobatics, flip to 3D rates just before the maneuver. As soon as the maneuver is done, flip back down to low rate to avoid over-controlling the model.

Radio Setup

A 7-channel or greater computer radio is highly recommended. This allows the following features:

- Mixing the right aileron to the left aileron (flaperon mix)
- Electronically adjustable aileron differential
- Mixing the right elevator to the left elevator (dual elevator mixing)
- Independent travel and trim adjustments of each elevator half

When using a 7-channel or greater computer radio, each servo is plugged into its own separate channel. Consult your radio manual for specific details on hookup and programming.

If using a 6-channel radio with flaperon mix, the aileron servos are each plugged into their own channels. The right aileron plugs into the aileron socket in the receiver, while the left aileron plugs into channel 6. With flaperon activated in the programming, this allows for independent travel adjustment of each aileron in each direction and electronic aileron differential. Consult your manual for more programming details.

With a 6-channel computer radio, it will be necessary to Y-harness the two elevator servos; a reversed elevator servo is needed to achieve the correct control direction. A servo reverser can be used here. Special attention must be taken with the rudder servos so that they don't fight each other throughout the rudder travel. This is caused by nonsymmetrical pushrod geometry from right to left. It may be necessary to rotate the arm on the servo one or two splines (most of the time toward the rear) and readjust the linkage length in order to prevent binding.

Using a non-computer radio will require that the aileron, elevator and rudder be Y-harnessed. Be sure to use a reversed servo (or a reverser) for one of the elevator servos. Special attention must be taken with the rudder servos so that they don't fight each other throughout the rudder travel. This is caused by non-symmetrical pushrod geometry from right to left. It may be necessary to rotate the arm on the servo one or two splines (most of the time toward the rear) and readjust the linkage length in order to prevent binding. If you've ever thought about purchasing a computer radio, now is a good time to do it!

Recommended CG

An important part of preparing the aircraft for flight is properly balancing the model. This is especially important when various engines are mounted.

Caution: Do not inadvertently skip this step!

The recommended Center of Gravity (CG) location for the FuntanaS™ is 7 1/8" behind the leading edge of the wing against the fuselage. If necessary, move the battery pack or add weight to either the nose or the tail until the correct balance is achieved. Stick-on weights are available at your local hobby shop and work well for this purpose.

Range Test Your Radio

Step 1

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

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

Step 2

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

Step 3

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

2004 Official AMA National Model Aircraft Safety Code

GENERAL

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

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

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

4) The maximum takeoff weight of a model is 55 pounds, except models flown under Experimental Aircraft rules.

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

6) I will not operate models with metal-bladed propellers or with gaseous boosts, in which gases other than air enter their internal combustion engine(s); nor will I operate models with extremely hazardous fuels such as those containing tetranitromethane or hydrazine.

7) I will not operate models with pyrotechnics (any device that explodes, burns, or propels a projectile of any kind) including, but not limited to, rockets, explosive bombs dropped from models, smoke bombs, all explosive gases (such as hydrogen-filled balloons), or ground mounted devices launching a projectile. The only exceptions permitted are rockets flown in accordance with the National Model Rocketry Safety Code or those permanently attached (as per JATO use); also those items authorized for Air Show Team use as defined by AST Advisory Committee (document available from AMA HQ). In any case, models using rocket motors as a primary means of propulsion are limited to a maximum weight of 3.3 pounds and a G series motor. (A model aircraft is defined as an aircraft with or without engine, not able to carry a human being.)

8) I will not consume alcoholic beverages prior to, nor during, participation in any model operations.

9) Children under 6 years old are only allowed on the flight line as a pilot or while under flight instruction.

RADIO CONTROL

1) I will have completed a successful radio equipment ground range check before the first flight of a new or repaired model.

2) I will not fly my model aircraft in the presence of spectators until I become a qualified flier, unless assisted by an experienced helper.

3) At all flying sites a straight or curved line(s) must be established in front of which all flying takes place with the other side for spectators. Only personnel involved with flying the aircraft are allowed at or in 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. (Only properly licensed Amateurs are authorized to operate

2004 Official AMA National Model Aircraft Safety Code

equipment on Amateur Band frequencies.)

5) Flying sites separated by three miles or more are considered safe from site-to site interference, even when both sites use the same frequencies. Any circumstances under three miles separation require a frequency management arrangement, which may be either an allocation of specific frequencies for each site or testing to determine that freedom from interference exists. Allocation plans or interference test reports shall be signed by the parties involved and provided to AMA Headquarters. Documents of agreement and reports may exist between (1) two or more AMA Chartered Clubs, (2) AMA clubs and individual AMA members not associated with AMA Clubs, or (3) two or more individual AMA members.

6) For Combat, distance between combat engagement line and spectator line will be 500 feet per cubic inch of engine displacement. (Example: .40 engine = 200 feet.); electric motors will be based on equivalent combustion engine size. Additional safety requirements will be per the RC Combat section of the current Competition Regulations.

7) At air shows or model flying demonstrations, a single straight line must be established, one side of which is for flying, with the other side for spectators.

8) With the exception of events flown under AMA Competition rules, after launch, except for pilots or helpers being used, no powered model may be flown closer than 25 feet to any person.

9) Under no circumstances may a pilot or other person touch a powered model in flight.

Organized RC Racing Event

10) An RC racing event, whether or not an AMA Rule Book event, is one in which model aircraft compete in flight over a prescribed course with the objective of finishing the course faster to determine the winner.

A. In every organized racing event in which contestants, callers and officials are on the course:

1. All officials, callers and contestants must properly wear helmets, which are OSHA, DOT, ANSI, SNELL or NOCSAE approved or comparable standard while on the racecourse.

2. All officials will be off the course except for the starter and their assistant.

3."On the course" is defined to mean any area beyond the pilot/staging area where actual flying takes place.

B. I will not fly my model aircraft in any organized racing event which does not comply with paragraph A above or which allows models over 20 pounds unless that competition event is AMA sanctioned.

C. Distance from the pylon to the nearest spectator (line) will be in accordance with the current Competition Regulations under the RC Pylon Racing section for the specific event pending two or three pylon course layout.

11) RC night flying is limited to low-performance models (less than 100 mph). The models must be equipped with a lighting system that clearly defines the aircraft's attitude at all times.

HANGAR 9®

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