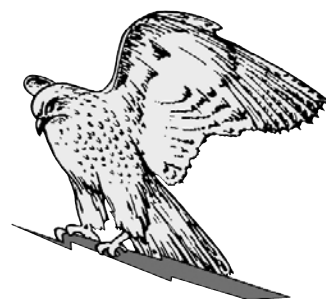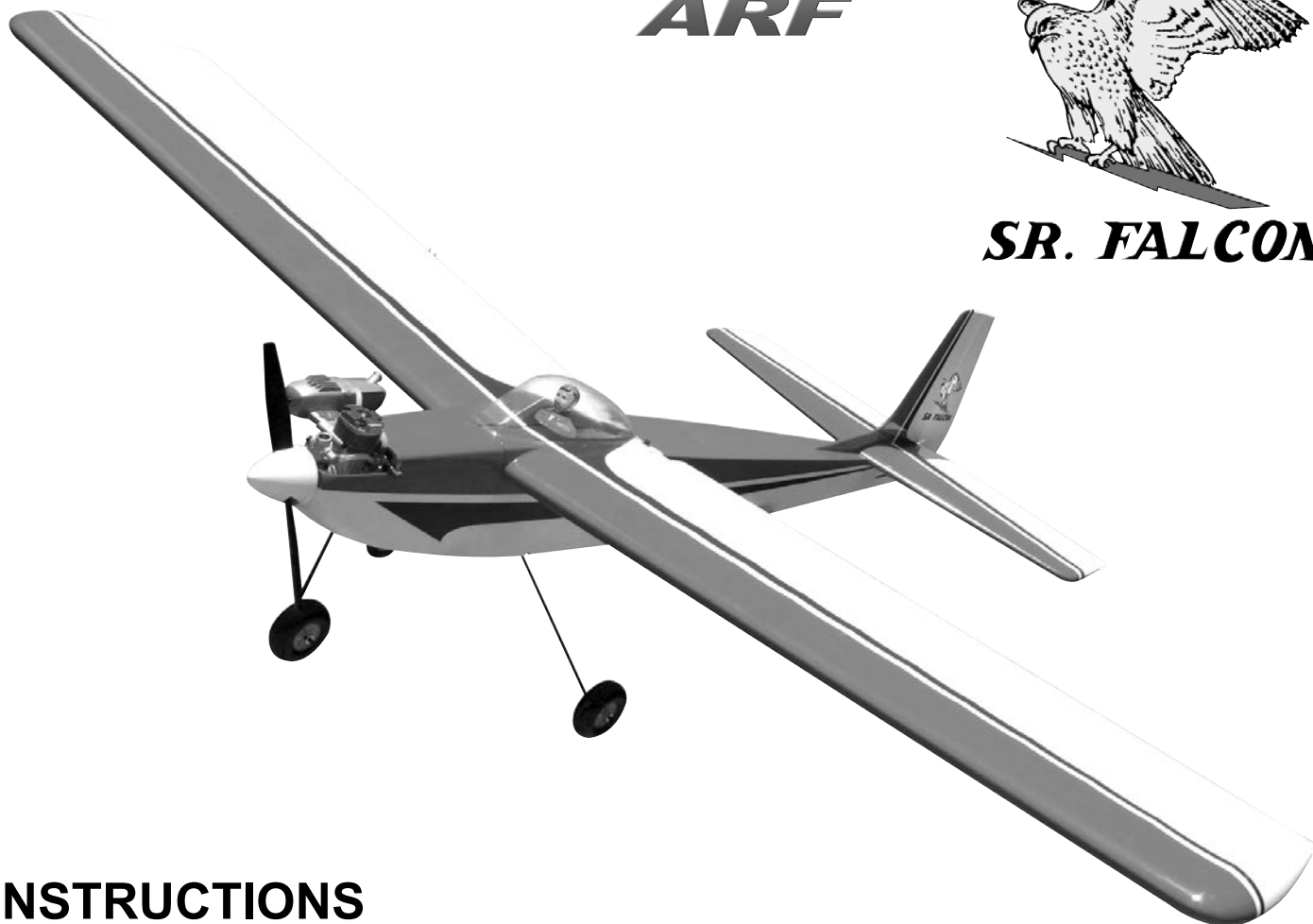# SR. FALCON
ARF

SR. FALCON

INSTRUCTIONS

WARNING

A radio-controlled model is not a toy and is not intended for persons under 16 years old. Keep this kit out of the reach of younger children, as it contains parts that could be dangerous. A radio-controlled model is capable of causing serious bodily injury and property damage. It is the buyer's responsibility to assemble this aircraft correctly and to properly install the motor, radio, and all other equipment. Test and fly the finished model only in the presence and with the assistance of another experienced R/C flyer. The model must always be operated and flown using great care and common sense, as well as in accordance with the Safety Code of the Academy of Model Aeronautics (www.modelaircraft.org). We suggest you join the AMA and become properly insured prior to flying this model. Also, consult with the AMA or your local hobby dealer to find an experienced instructor in your area. Per the Federal Communications Commission, you are required to use only those radio frequencies specified "for Model Aircraft."

LIMITED WARRANTY

CARL GOLDBERG PRODUCTS, LTD. ™

Parts List (Items Shown)	Hardware List (Not Shown)

1. Fuselage

2. Wings with Ailerons
3. Stab with Elevators
4. Fin
5. Rudder
6. Tank Hatch
7. Dihedral Brace
8. Fuel Tank with hardware
9. Main Landing Gear
10. Nose Gear
11. Clear Canopy
12. Wheels (3)
13. Pushrods

ITEMS NEEDED TO COMPLETE THIS AIRCRAFT

- ☐ 1 RADIO GUIDANCE SYSTEM (4 CHANNEL MINIMUM REQUIRED, 5 STANDARD SERVOS)
- ☐ 1 Y-HARNESS
- ☐ 1 ENGINE .40-.46 2-CYCLE
- ☐ 1 CA ACCELERATOR
- ☐ 1 2 OZ. BOTTLE MEDIUM CA GLUE
- ☐ 1 1/2 OZ. BOTTLE THIN CA GLUE
- ☐ 1 20 MIN EPOXY
- ☐ 1 1/2" FOAM RUBBER
- ☐ 1 SWITCH MOUNT
- ☐ 1 2-1/4" SPINNER

NOTE: The Sr. falcon Mark II ARF colors match Midnight Blue(885), Deep Red(871) and White (#870) UltraCote®.

TOOLS AND SUPPLIES FOR ASSEMBLY.

- ☐ MODELING OR UTILITY KNIFE
- ☐ WORK SURFACE (24" X70")
- ☐ ELECTRIC DRILL
- ☐ 1/16", 3/32",1/8", 5/32", 1/4" DRILL BITS
- ☐ SMALL STANDARD & PHILLIPS SCREWDRIVERS
- ☐ MASKING TAPE
- ☐ NEEDLE NOSE PLIERS
- ☐ 36" RULER OR TAPE MEASURE
- ☐ FLEXIBLE STRAIGHT-EDGE
- ☐ T-SQUARE
- ☐ 30-60-90° x 6" TRIANGLE
- ☐ SOFT PENCIL
- ☐ A FEW STRAIGHT OR "T" PINS
- ☐ ADJUSTABLE WRENCH
- ☐ WIRE CUTTER
- ☐ OPTIONAL HEAT GUN/COVERING IRON
- ☐ ACID BRUSH

Notice:
Before building, inspect all parts for shipping damage. Once assembly has been started, all warranty on parts are void.

USING THIS INSTRUCTION MANUAL

Before you begin assembling your **Sr. falcon Mark II ARF**, take some time to read through this entire instruction book. It is designed to take you step-by-step through the process and to give you added information on engine and radio selection and set-up, balancing your aircraft, and flying your model. The time you spend will speed the assembly process and help you avoid problems.

PREPARING FOR ASSEMBLY

You will need a work area of approximately 24 x 70" which has been covered to protect it from adhesive, as well as cuts and other damage. Many people cover their work area with a sheet of dry wall (sheet rock) and/or waxed paper to prevent CA Glue and Epoxy from ruining the work surface.

CONSTRUCTION TIPS

IMPORTANT: ALWAYS READ A FEW STEPS AHEAD. This will alert you to coming instructions and will help you plan accordingly.

Using the Parts Identification section, familiarize yourself with the various items included in your kit box.

As you work, CHECK OFF EACH STEP in the box provided, so that you are sure you do not forget anything.

Do not hesitate to ask questions. Your local hobby dealer and area flyers will most likely be happy to help, as they want you to have a successful flying experience. You may also receive technical assistance from Carl Goldberg Products, Ltd. via by telephone 1-678-450-0085.

ADHESIVES & GLUING TECHNIQUES

CA adhesives are specially formulated to firmly glue the plywood, hardwood, and balsa used in your model and to withstand the vibration and stresses of high performance flight. However, there are times, such as when you are installing the stabilizer and fin on the fuselage and want more set-up time for careful alignment and positioning, then you should use epoxy.. Occasionally, you also will want to use thin CA, which "wicks" into the surrounding areas. Aliphatic resin glue or similar water-based glues can also be used, but they will add to the assembly time because they dry so much more slowly than CA glue. Remember, when ever using any CA, you must be careful to read instructions thoroughly, as you will have only seconds for positioning of parts. Be sure to trial fit parts together before gluing. Also, never use watery THIN type CA glue for gluing plywood and hardwood parts. Thin CA's do not adequately bond these areas.

CAUTION

Some people may experience an allergic reaction when exposed to fumes from CA glue or epoxy. As with paints, thinners, and solvents, it is always important to use glues only where there is adequate ventilation to carry fumes away. A fan is recommended. Also, special care must be taken when using CA, as it will bond skin as well as other surfaces. Before using any CA, carefully read all label precautions. When using CA, protective eye-wear and care in keeping the glue away from the face is highly recommended. If CA does happen to get into the eye, hold lid open and flush with water only. Seek immediate medical attention.

COVERING

The **Sr.Falcon ARF** is covered in a premium polyester film chosen by many of the world's top flyers for its beauty, toughness, and ease of application and repair. It is not uncommon for ARF's to develop a few wrinkles in transit. If this is true of your model, the situation is easily corrected. Before you begin putting the pieces together, run over out side edges of the covering with an iron. This is to make sure that the surface of the edges are sealed and will not move when heat is applied to the center of the covering. Then go over the center of each section with the iron (either specially designed for airplane use or the more cumbersome household iron) or use a modeling heat gun. Apply the heat (set at about 350° F), following along with a soft cloth and pressing down on the covering as you go around. This will more firmly set the covering adhesive into the wood and keep your aircraft covering tight and smooth in the future.

One of the great advantages of polyester film is that it can be applied over itself without causing gas bubbles. This allows you to repair your aircraft, as well as to customize it in a number of ways. If, due to a flight mishap, you get a hole or similar covering damage, simply trim away the ragged edges and then apply a patch, following the directions that come with your covering , which is available at your hobby dealer.

RADIO EQUIPMENT & CARE

There are many fine radio systems on the market. Your local hobby dealer and club members are good sources of information on equipment and its suitability for various projects. It is recommended that you speak to them before making a final choice.

Today's RC systems are very well engineered and constructed. However, they will remain only as good as the way in which they are USED. Always follow the rules of proper usage and all manufacturer's instructions for your particular piece of equipment.

TRANSMITTERS: Keep your transmitter clean and free from fuel residue and dirt. Battery condition and RF output should be monitored, and the system should be aligned and tuned annually. Do not transport under vibration (such as on the floor of a car) without cushioning.

RECEIVERS: Receivers must be vibration free. When installing in the aircraft, wrap them in a minimum of ¼" soft foam rubber (not plastic foam). Keep well clear of all cables and batteries. Tune annually (or as recommended by the manufacturer), as indicated below under "Check-Ups."

SERVOS: Servos are vibration prone. Be sure to mount them with grommet shock mounts in servo trays which are also shock mounted. Also be sure to keep them clean. If the neutral position "drifts," this is a sign of change which should not be ignored; find out WHY before flying again.

BATTERIES: Nicads also can suffer from vibration, so they too should be wrapped in soft foam rubber before installing. Check their condition periodically by measuring the voltage with a volt meter or battery tester. Charge the batteries before EVERY flying session. When not used for a period of time (such as during the winter months) the batteries should be charged every 30 days. Never store batteries in a discharged condition.

PUSHRODS: Obviously, pushrods should be installed to operate freely, so that they place no load on the servo. Using a servo's power to move a tight rod or heavy surface by force increases the battery drain, shortens the electronic life, and can cause neutralizing problems. In addition, it is important the pushrods do not flex or vibrate. Any vibration is transferred directly to the servo, and its gear, motor, and pot. To avoid flexing and vibration, use guides and fairleads on the rods.

CONNECTORS: In using connectors, never pull on the wires to disconnect; grasp the plugs instead. Clean them by dunking in a solvent, such as dope thinner. Tape the connectors together when installing and make sure there is no strain on the cables.

CHECK-UPS: A full check-up by the factory or an authorized service center should be done AT LEAST ONCE A YEAR, as well as any time something unusual occurs during usage. A malfunction or "glitch" is the first sign of an impending failure; it should not be ignored. The checkup should include tuning and alignment of the system, as well as battery testing.

Important Information

Covering coming loose is not COVERED UNDER WARRANTY. Due to temperature changes the plane may develop some wrinkles in the covering that you will need to remove with an iron. Be sure to seal the edges down first so that you do not cause the covering to shrink and leave exposed areas of wood. Please inspect the plane before beginning to assemble to make sure you are happy with it. After assembly has begun you cannot return the kit. If you find a problem before beginning to assemble the plane you must contact us, please do not return it to the dealer.

Caution:
Before starting, carefully go over all high stress areas with an epoxy or wood glue to confirm all areas are well glued.

WING ASSEMBLY & INSTALLATION

AILERON INSTALLATION
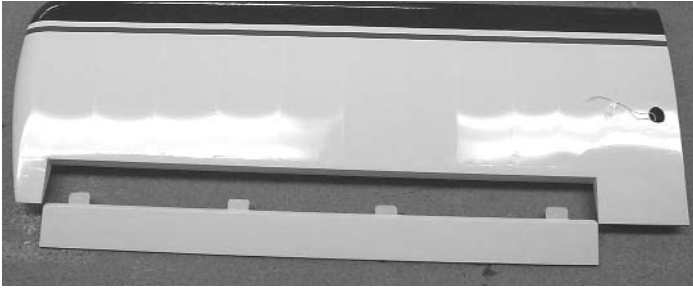
1.☐ Collect the following parts:

   (1)   Left wing
   (1)   Right wing
   (1)   Left aileron
   (1)   Right aileron
   (8)   CA hinge

1. ☐ Locate the pre-cut aileron hinge slots in both wing halves. Using a hobby knife (#11 blade), slide the blade into each slot to make sure it is cleanly cut.

   ☐ Repeat this process with the ailerons, making sure all hinge slots are clean.
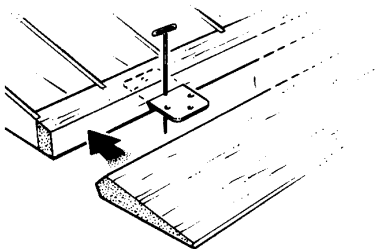
2. ☐ Place a straight pin into the center of each of the four CA hinges.

   ☐ Slide each hinge into the hinge slots on one of the wing halves. The pin will prevent the hinges from going in further than halfway into the wing.

3. ☐ Select the aileron for the wing on which you are working and insert the exposed half of each hinge into the aileron slots.

   ☐ Slide the aileron toward the wing until no gap remains between the aileron and the wing.

4. ☐ Carefully check the alignment of the aileron. There should be about 1/32" on both ends.

   ☐ When satisfied with the alignment, remove the straight pins, being sure to keep the aileron tight to the wing. You may wish to apply a few pieces of masking tape to keep the pieces in place.

5. ☐ Keeping the aileron and wing in position, flex the aileron to it full deflection and apply 3 or 4 drops of thin CA to the small exposed area of each hinge.

   ☐ Turn the assembly over and again apply 3 or 4 drops of thin CA to the exposed hinge surfaces.

   ☐ Allow to dry for 10 minutes before flexing the aileron.

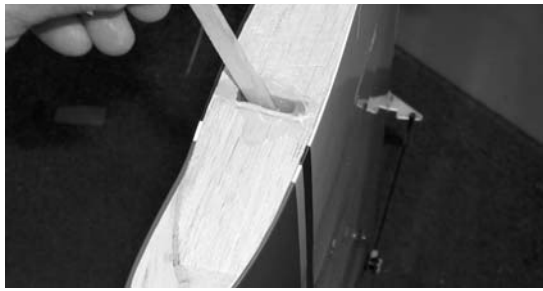**6.** ☐ Repeat the above steps for the other half of the wing.

JOINING THE WING
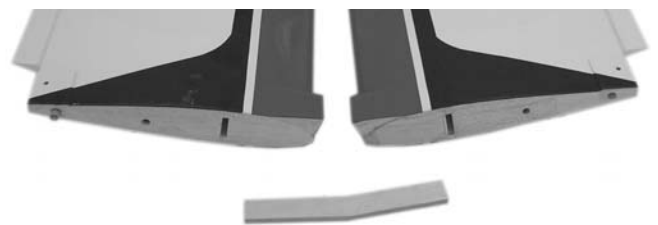
1. Collect the following items:

   (1)   Right wing
   (2)   Left wing
   (1)   Wing joiner

NOTE: If the covering on your wing has loosened in transit, refer to the covering section of the INTRODUCTION before continuing.

1. ☐ Holding the wing joiner with the angle cut facing up, insert them into the joiner pockets in both wing halves. The joiner should fit easily in the pockets and the wing halves should meet in the middle, with the wing dihedral forming a broad "V".

2. ☐ Working on a protected surface, and with a paper towel handy for cleaning fingers, **THOROUGHLY** mix 1-2 large (soup) spoons each from bottle A and bottle B of Epoxy. (Use equal amount of each part and mix with a stick in a plastic or paper cup, or on a sheet of waxed paper.)

☐ Spread epoxy on the joiner on all sides.

☐ Put additional epoxy in the joiner pockets and in the dowel hole and spread a thin layer of epoxy along one side of the entire center joint area. Immediately proceed to the next step.

3. ☐ Working rapidly, so that the epoxy does not set before you are finished, slide the laminated wing joiner into one wing pocket.

4. ☐ With masking tape, tape the wing halves together at the trailing edge and close to the leading edge, as shown. This will help keep the wing from twisting.

☐ Place additional tape at several locations across the center seam of the wing, so that the halves stay firmly together while the epoxy sets.

☐ Fit the wing on the fuselage and install the wing bolts to make sure the dowels on the front and the wing bolts at the rear align.
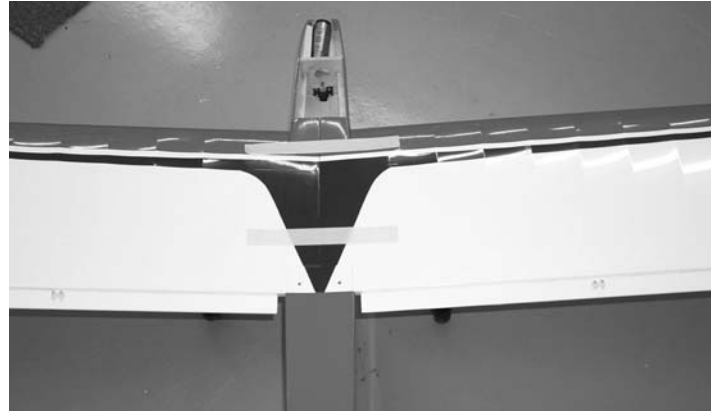

AILERON SERVO INSTALLATION

The following pictures may not exactly match the hardware you are using. Always check the radio manufacturer's instructions when installing radio equipment.


1. ☐ Collect the following items:
   (1) Wing
   (2) Servos with rubber grommets installed
   (8) Servo Mounting Screw (supplied with radio)
   (2) servo extensions 12"

2. ☐ Plug the servo extension wire into the servo.

   ☐ There is a string provided to pull the wire through the wing, it is inside the servo cut out.

IMPORTANT! To ensure that any connections located inside the wing will not come loose, when the wires are pulled, and during flying, always tape them securely together with electrical tape.

6
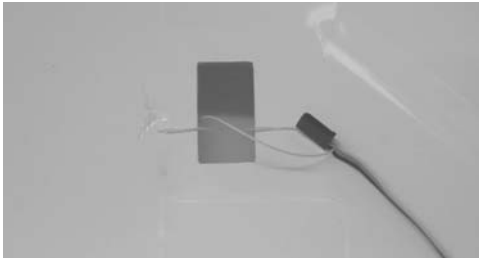
3. ☐ Gently pull the string out of the aileron servo hole and tie it or tape it to the servo wire.

☐ From the bottom of the wing remove the covering over the hole that is next to the center rib.

☐ Pull the servo wire towards the center of the wing using the string inside the wing.

☐ When the servo plug exits the wing then tape the plug to the bottom of the wing.
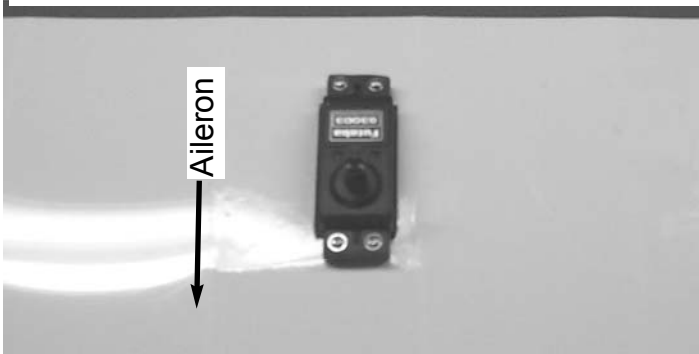
4. ☐ Slide the servo into the servo hole in the wing with the out put arm towards the aileron.

☐ Using the screws that come with your radio, mount the servo into the wing.

☐ Repeat these steps for the other half of the wing, so that both servo extensions are exiting the holes in the center of the wing and the servos are installed in the wing.

AILERON CONTROL HORN INSTALLATION
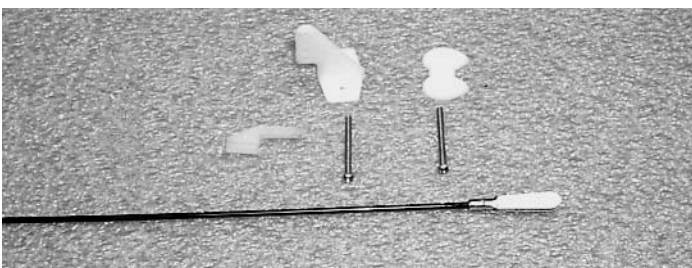
1. ☐   Collect the following items
   (2)   Large control horn with back plate
   (4)   3/4" screw
   (2)   Metal clevis
   (2)   10" threaded rod
   (2)   Swivel keepers
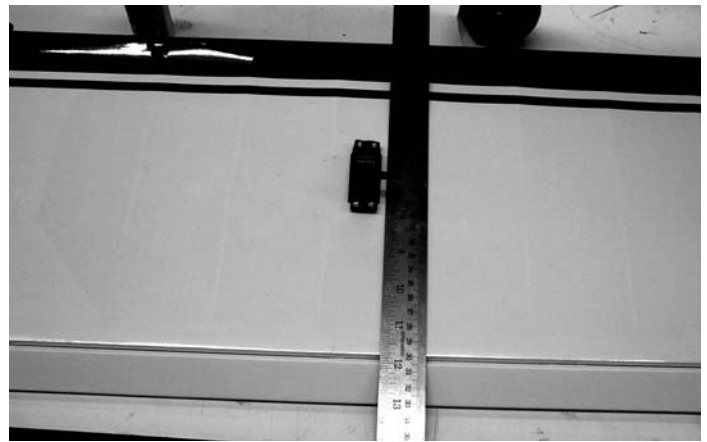
2. ☐ With the aileron servo arm in place, make a mark at a 90º degree angle to the trailing edge and in line with the servo arm.


Wing is upside down in this view
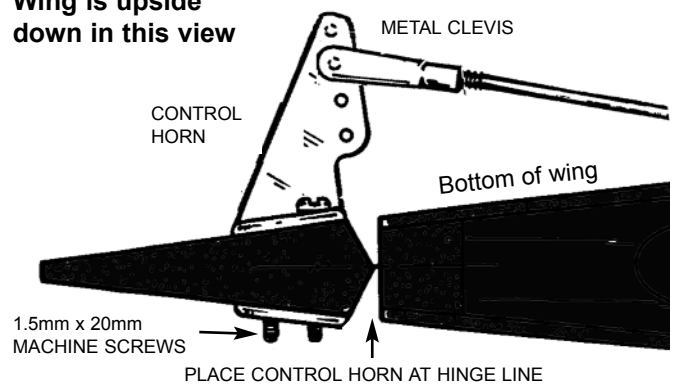
3. ☐ Position the control horn so that the clevis holes are right next to the hinge line, as shown.

4. ☐ Using a 3/32" drill bit, make a hole in each screw location.

☐ Mount the control horn with the 1.5mm x 20mm machine screws.
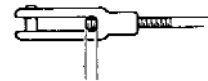
5. ☐ Thread the 10" rod onto the metal clevis. Make sure the rod shows in the center of the metal clevis.

☐ Place the metal clevis in the second hole from the top on the control horn.
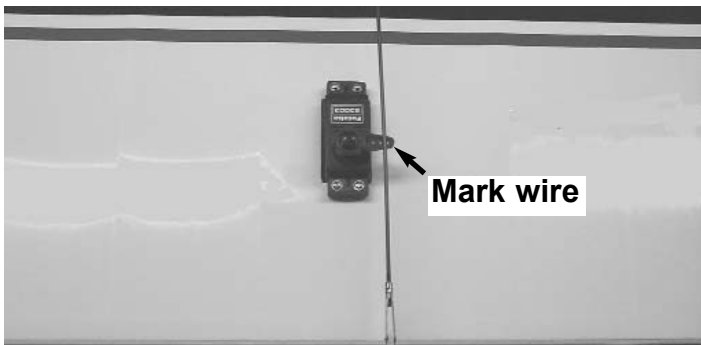
Mark wire

6. ☐ Make sure the aileron is in neutral (level) position, mark where the wire meets the hole on the servo arm.

☐ Remove the wire and cut it about 1/2" beyond the mark.
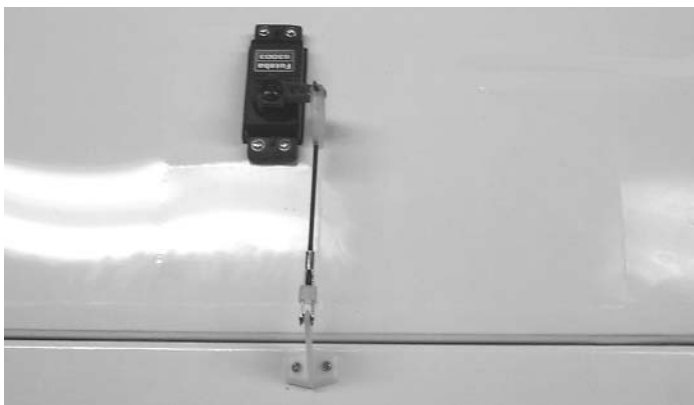
7. ☐ Bend the wire 90 degrees up at the mark you just made.

☐ Slide the swivel keeper over the wire and clip onto the pushrod.

☐ Slide the silicone keeper over the clevis.

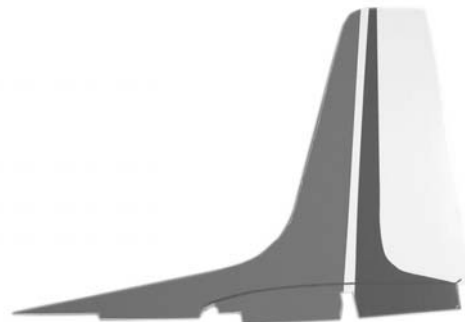**Repeat these steps for the other aileron servo.**

STAB & ELEVATOR INSTALLATION

1. ☐ Collect the following parts:

(1) Stabilizer
(2) Elevator
(1) Wing/fuse assembly
(6) Jet hinges
(1) Fin and Rudder
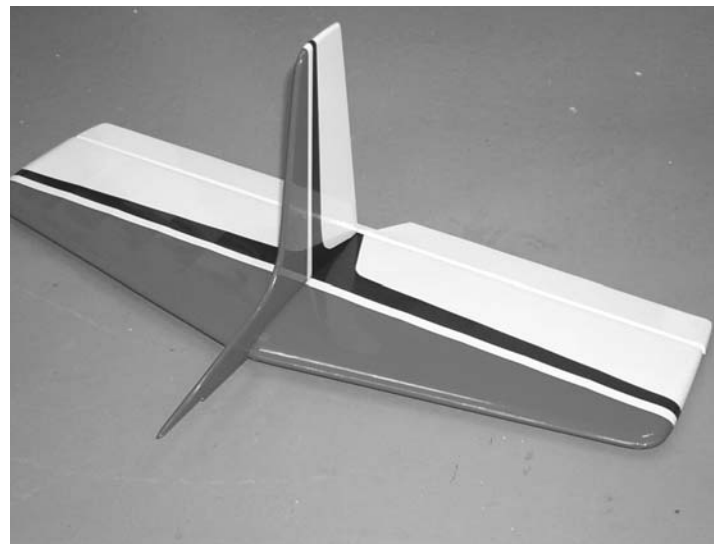
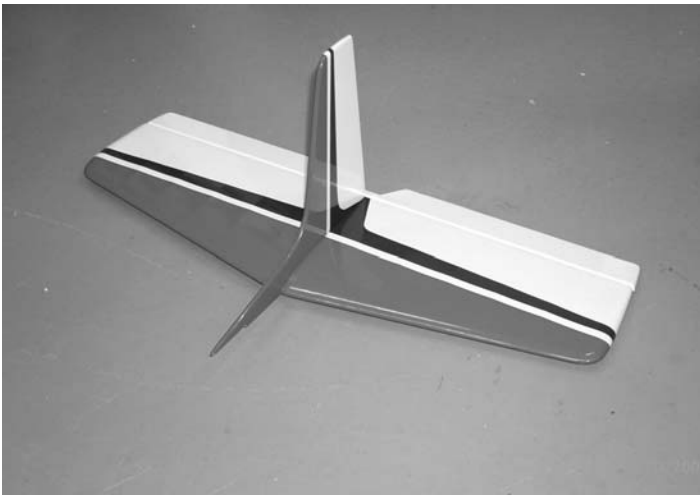2. ☐ Insert the fin in the slot in the top of the stab.

3. ☐ Use a marker and draw a line around the base of the fin where it enters the stab.
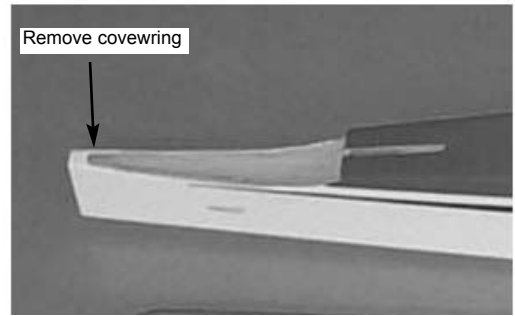

4. ☐ Using the mark as a guide, remove the covering inside the line. Use a sharp knife or razor blade and cut about 1/8" inside the line so no bare wood will show.

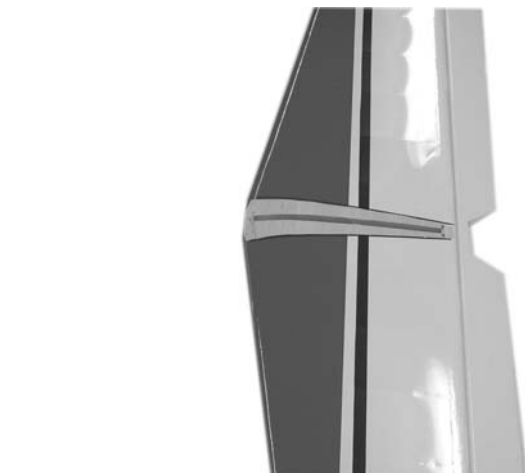**5.** ☐ Epoxy the fin to the stab making sure it is perpendicular.

6. ☐ Place the stab on the fuselage with the fin in the notch on top and center the stab at the rear of the fuselage. Mark the bottom of the stab next to the fuselage.
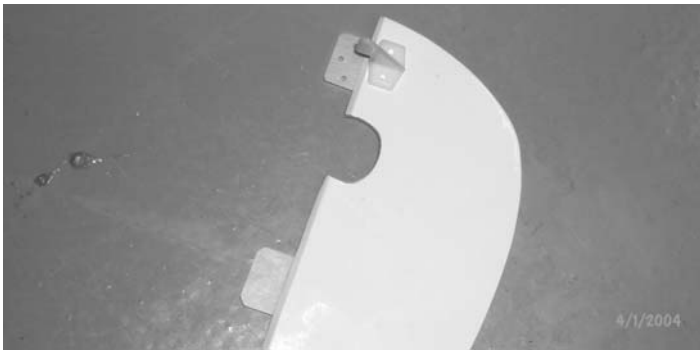

7. ☐ Remove the covering inside the line you drew on the stab also.

Remove covewring

8. ☐ Remove the covering on the stab saddle of the fuselage so the stab will glue to bare wood.

9. ☐ Bolt the wing in place and epoxy the stab-fin structure to the fuselage.
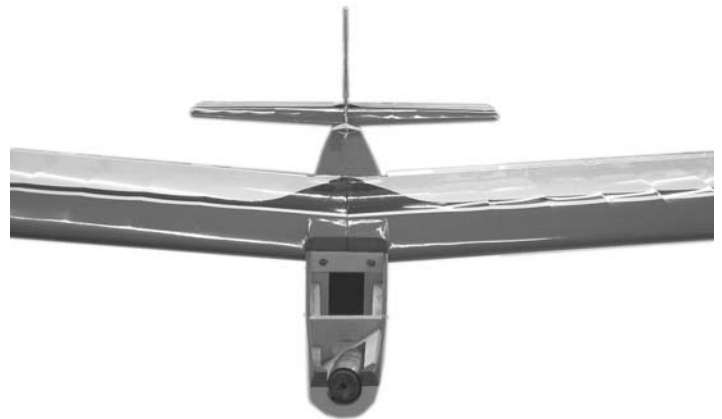
10. ☐ Check the alignment of the stab-fin with the wing and make sure it is parallel. Use masking tape to hold the structure in place till the epoxy set.
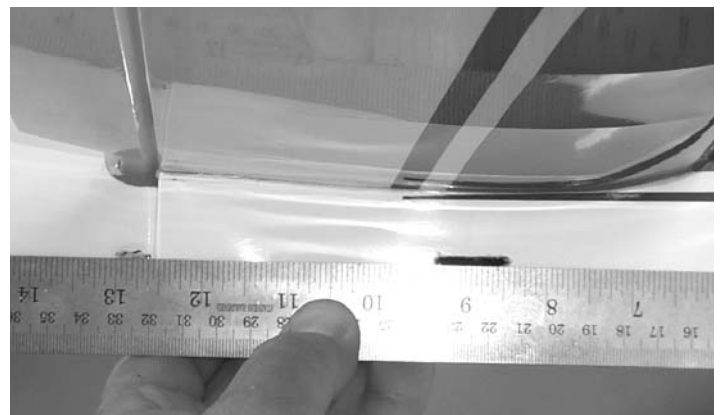
11. ☐ Install the rudder using the CA hinges and mark the location on the rudder horn in line with the slot on the right side of the fuselage. Do not glue yet.
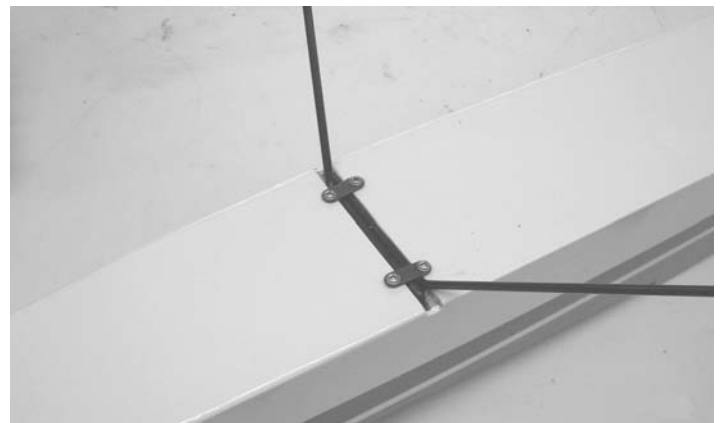
12. □ Remove the rudder and align the control horn on the mark you made. Make sure the holes for the clevis are over the hinge line.

□ Mount the control horn using the 1.5mm screws just as you did on the ailerons.

13. □ Use the same method for the CA hinges on the elevator and rudder that you did on the ailerons. Hinge the elevator first then the rudder.

□ Mount the elevator control horn on the inner portion of the elevator on the left side using the 1.5mm screws.

MAIN GEAR & WHEEL INSTALLATION

1. □ Collect the following items:
- (2) Landing gear wire
- (4) 2 x 5/16"screw
- (2 Landing gear strap
- (3) 2-1/2" wheel
- (4) Wheel collar
- (4) Allen head set screw

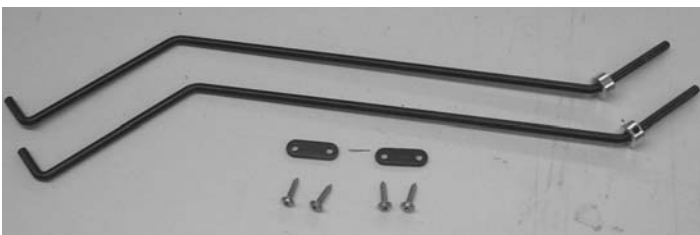**2.** □ Insert one gear leg in the hole in the bottom of the fuselage.

3. □ Insert the other gear leg in the hole on the other side of the fuselage. One hole is at the back of the slot and the other is at the front of the slot. The two wires will lie next to each other in the slot.

□ Use the two straps and four screws to retain the gear.
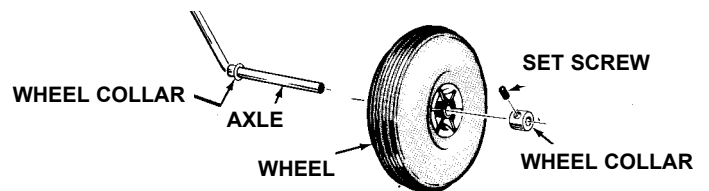
4. □ Install the wheels on the axles, as shown. First the wheel collar goes on, followed by the wheel, then the second wheel collar, and the set screw. Tighten the set screw.
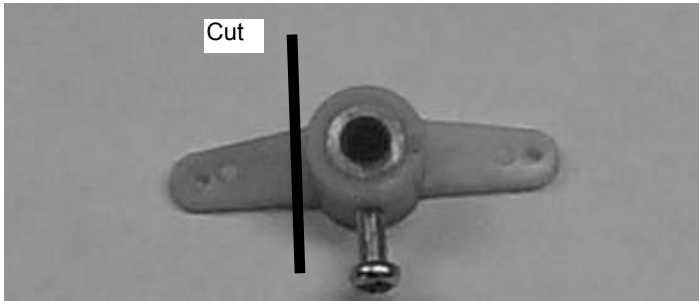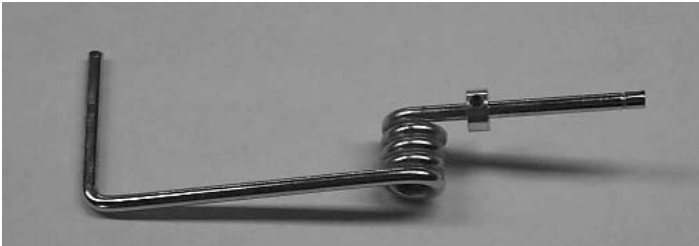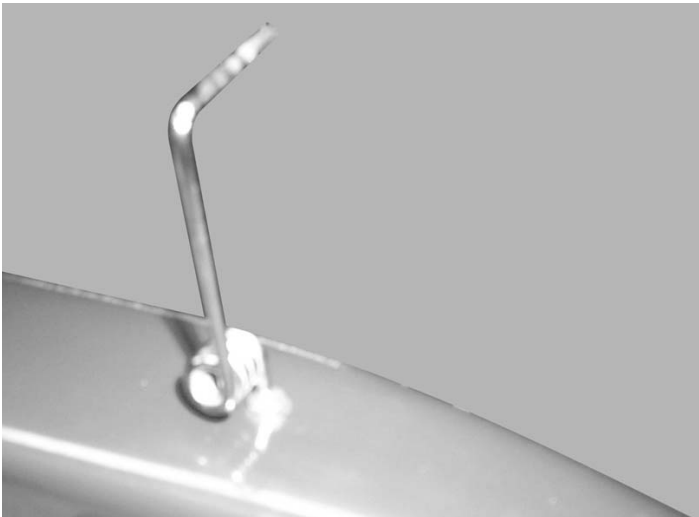
NOSEGEAR INSTALLATION

1. ☐ COLLECT THE FOLLOWING PARTS
(1)   Nosegear strut
(3) Wheel Collars and set screws
(1) Wheel
(1) Nosegear steering arm
(1) 1.5mm x 43 cm wire and tube
(1) EZ connector and screw
(1) Nylon Swivel Keeper

Cut

2. ☐ Cut one side off the steering arm.

3. ☐ Slide a wheel collar with a set screw onto the top of the nosegear gear strut.


4. ☐ Insert the nosegear strut thru the hole on the bottom of the fuselage.

☐ Adjust the strut so that the coil is just off the bottom of the fuselage.

☐ When satisfied, tighten the wheel collar set screw.

☐ Holding the strut up inside the fuselage, turn the fuselage over.

5. ☐ Slide the steering arm on the top of the nosegear strut.

☐ Tighten the screw in the steering arm as shown above.

6. ☐ slide the push rod tube through the former and into the fuel tank compartment.

☐ Insert the 1.5mm wire into the tube.

☐ Make a 1/2" bend in the end of the wire and insert it through the hole in the steering arm.

☐ Install a swivel keeper over the nosegear pushrod.

☐ Mount the nosegear wheel just as you did earlier on the wing.

Screw
Pushrod
Connector
Broken View Through
Servo Wheel To Show
Installation
Nut
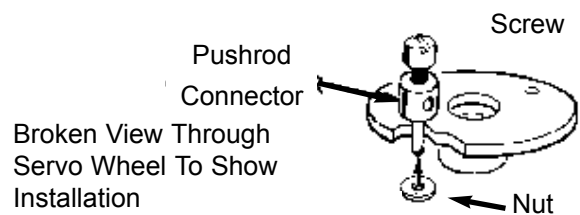
7. ☐ Remove the rudder servo arm.

☐ On the rudder servo arm install the EZ connector in the servo hole next to the center mounting screw.

11

8. ☐ Install the rudder servo as shown.

☐ Slide the nose gear wire into the hole in the EZ connector.

☐ Remount the servo arm and center the servo arm and the nosegear wheel.

☐ When satisified, tighten the set screw on the EZ connector.

ENGINE INSTALLATION

1. ☐COLLECT THE FOLLOWING PARTS
   (1)ENGINE
   (4) #6 X 3/4SHEET METAL SCREWS
   (1) MOTOR MOUNT PLATES
   (1) SPINNER
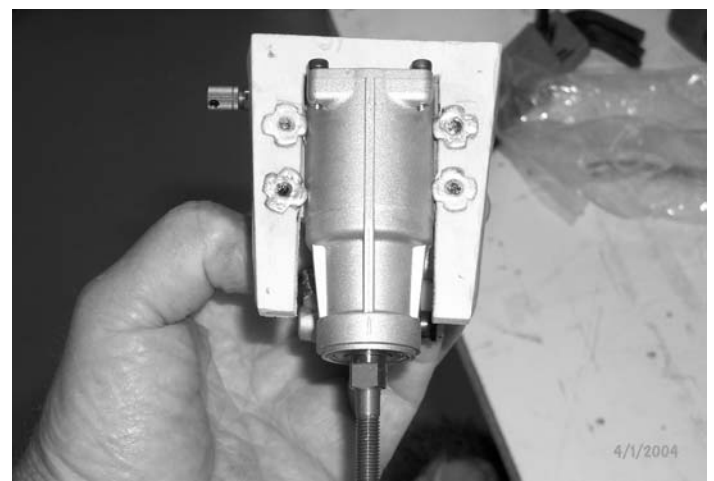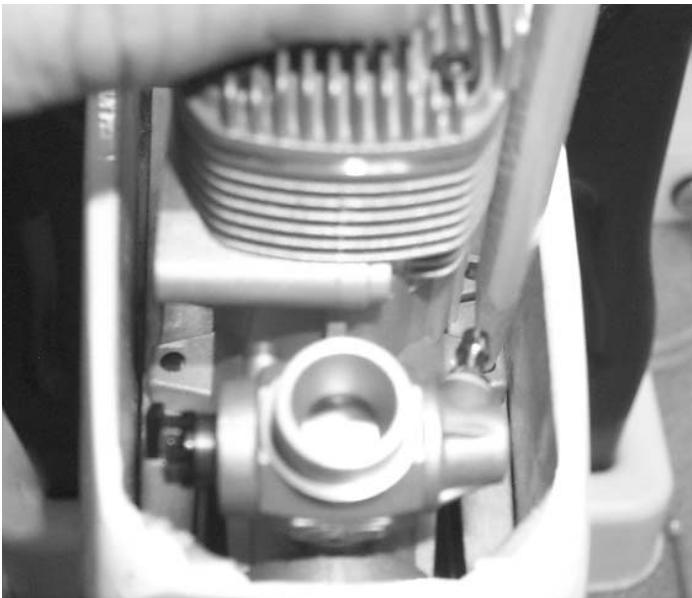

2. ☐ Find the Motor mount plate and fit your engine to it.

Left side of the fuselage
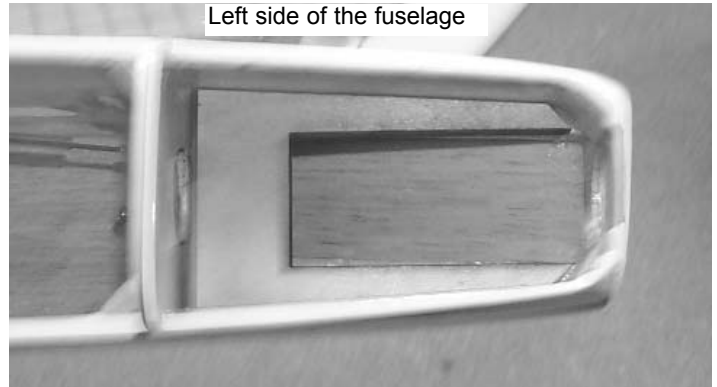
2. ☐ Once you have your motor mount then place the mount into the front of the fuselage.

☐ Make sure that the smaller side beam is on the left side of the fuselage.

☐ The motor mount should point a little to the right about 2 degrees. Mark the top of the plate.

Gap
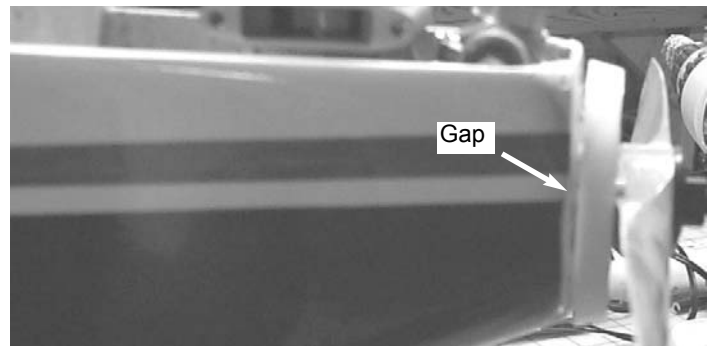
3. ☐ Slide the engine into the motor mount and through the front nose ring.

☐ Open the spinner and place the spinner back plate onto the engine. This will help to center the front of the engine to the fuselage

☐ Make sure that there is a clearance between the spinner back plate and the front of the fuselage .

4. ☐ Mark the location of the engine mounting holes.

☐ Also at this time mark the location of where the throttle pushrod should exit the firewall.

☐ Remove the engine and the motor mount plate.

5. ☐ Drill the engine mounting holes in the plate.

6. ☐ Drill the hole for the engine throttle pushrod.

7. ☐ Install the motor on the plate using the 4mm blind nuts and bolts.

8. ☐ Remove the motor and put the motor plate in the opening and mark the location of the blind nuts.
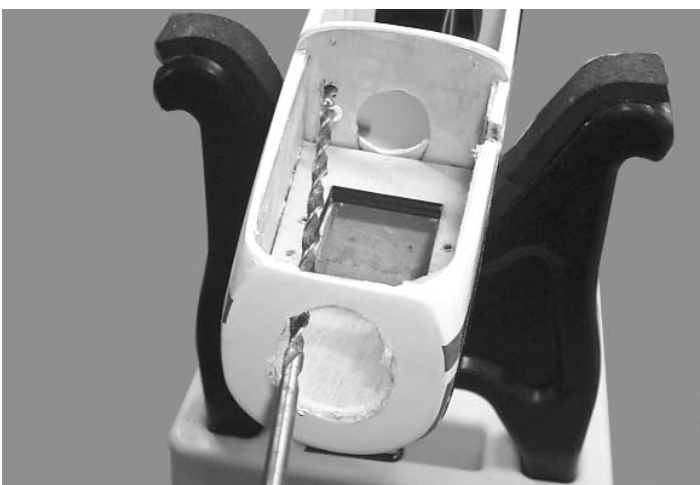
9. ☐ Mark the area of the beams that will be under the blind nuts and remove enough material to allow the plate to sit flush on the beams.
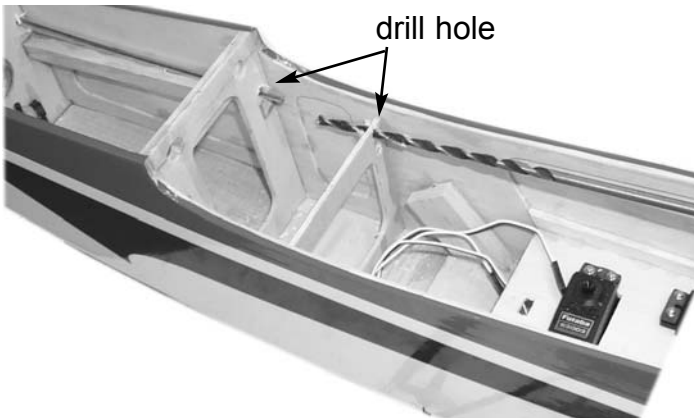
10. ☐ Remount the motor to the plate. If you wish to have a break away motor mount you can use four #6 X 3/4" sheet metal screws (not included) and screw the plate to the beams, if not, epoxy the plate in place.

THROTTLE PUSH ROD INSTALLATION

1. ☐ COLLECT THE FOLLOWING PARTS
   (1) 1.5MM X 40CM PUSHROD
   (1) NYLON TUBE
   (1) PUSHROD CONNECTOR
   (1) NYLON SWIVEL KEEPER

drill hole

2. ☐ You will need to drill a hole for the throttle rod through the number 2 and 3 bulkheads.
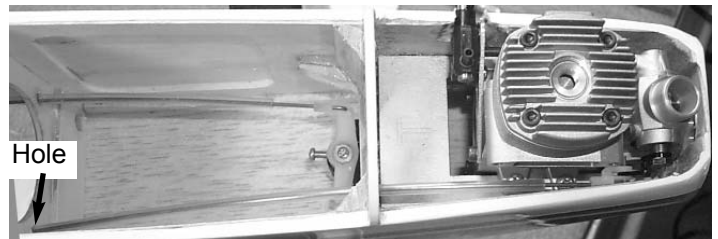
Hole

3. ☐ Slide the throttle pushrod tubing into the hole in the firewall that you drilled earlier.

☐ Push the tube through the fuel tank compartment and through the small hole on the side of the former.


4. ☐ Make a 1/4" bend at the end of the throttle pushrod and connect the push rod to the throttle arm on the motor.

☐ Slide a swivel keeper in place over the pushrod and snap in place.

☐ Move the throttle open and close to make sure you have clearance. If you do not have enough clearance then cut away some of the fuselage sides to make enough clearance.


5. ☐ Install the throttle servo as shown.

☐ Install the servo connector on the servo output arm as you did for the rudder.

☐ Adjust you throttle arm on the motor to open and set your servo to fully open. Tighten the screw on the servo connector.
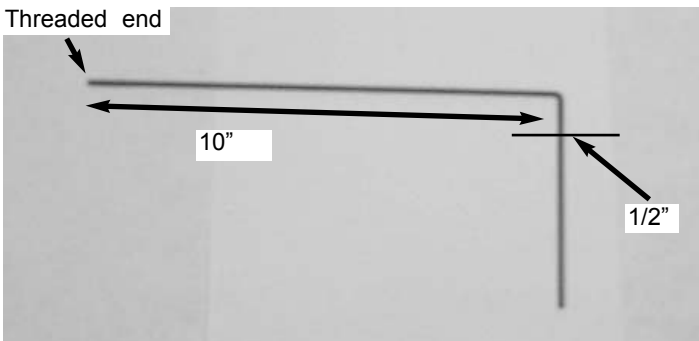
14

PUSH ROD INSTALLATION
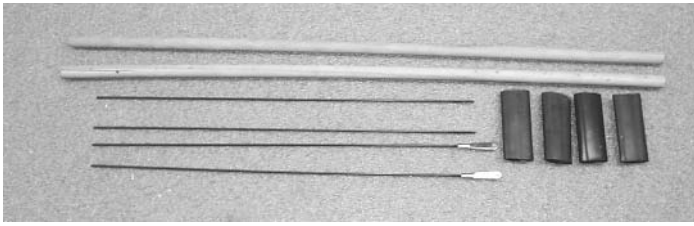
1. ☐ Collect the following parts
   (2) 19" Wood dowels
   (2) 1.5mm x 25cm wire
   (2) 1.5mm x 25cm threaded wire
   (2) Metal clevis
   (4) shrink tubing
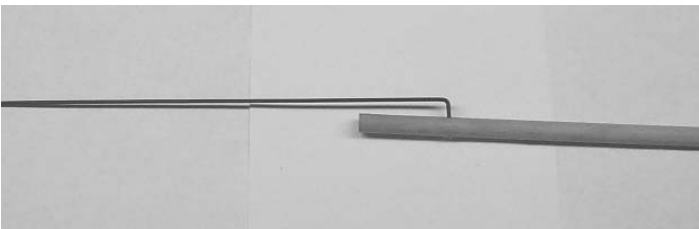
ELEVATOR PUSHROD
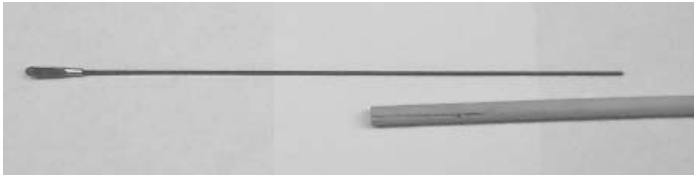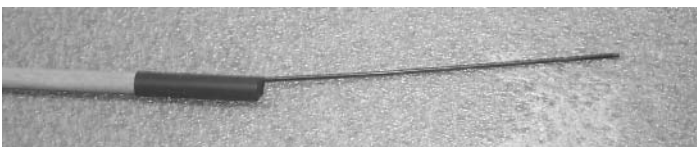

2. ☐ Remove the metal clevis from the end of a 1.5 x 25cm wire.
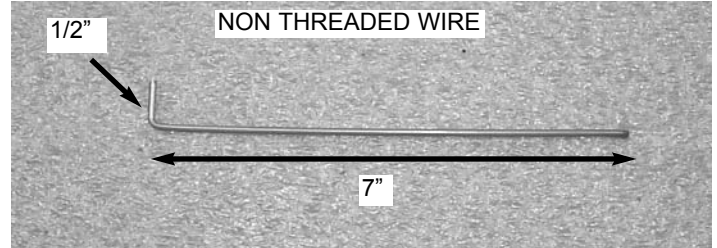
Threaded end

10"

1/2"

3. ☐ Measure, starting from the threaded end, back 10" and make a 90 degree bend.
   ☐ Cut the wire 1/2" past the bend.

4. ☐ Insert the wire into the hole in the wood pushrod and push down into the groove.
   ☐ Glue the wire to the wood pushrod using medium CA glue.

5. ☐ Slide the heat shrink tubing over the pushrod and shrink using a blow drier.
   ☐ Glue the tubing to the wood pushrod using thin CA glue.
   ☐ This finishes one end of the elevator pushrod.

1/2"   NON THREADED WIRE

7"

6. ☐ Starting at the non-threaded end of the 1.5mm x 25cm wire, bend the last 1/2" up at a 90 degree angle.
   ☐ Measure the length of the wire 7" from the bend and cut the wire.

7. ☐ Insert the wire into the hole in the wood pushrod and push down into the groove.
   ☐ Glue the wire to the wood pushrod using medium CA glue.

8. ☐ Slide the heat shrink tubing over the pushrod and shrink using a blow drier.
   ☐ Glue the tubing to the wood pushrod using thin CA glue.
   ☐ This finishes the elevator pushrod.

RUDDER PUSHROD

1. □ Remove the metal clevis from the end of a 1.5 x 25cm wire.

Threaded end

8"

1/2"

2. □ Measure, starting from the threaded end, back 8" and make a 90 degree bend.
   □ Cut the wire 1/2" past the bend.

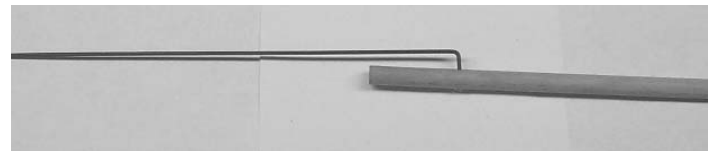3. □ Insert the wire into the hole in the wood pushrod and push down into the groove.
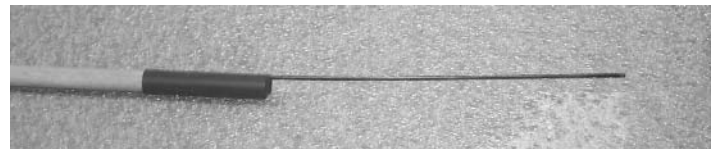   □ Glue the wire to the wood pushrod using medium CA glue.

4. □ Slide the heat shrink tubing over the pushrod and shrink using a blow drier.
   □ Glue the tubing to the wood pushrod using thin CA glue.
   □ This finishes one end of the rudder pushrod.

NON THREADED WIRE

1/2"

6"
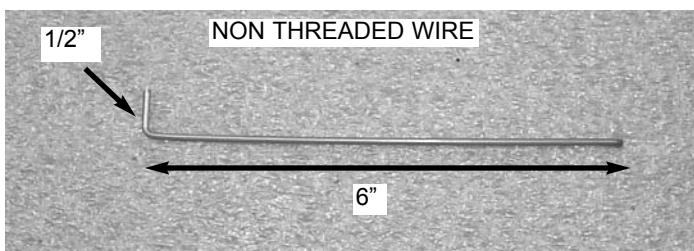
5. □ Starting at the unthreaded end of the 1.5mm x 25cm wire, bend the last 3/8" up at a 90 degree angle.
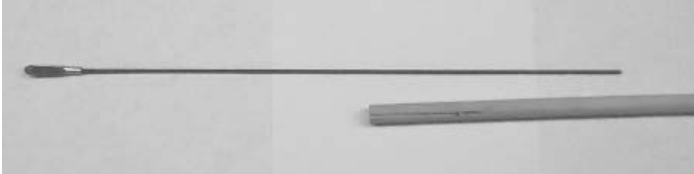   □ Measure the length of the wire 6" from the bend and cut the wire.
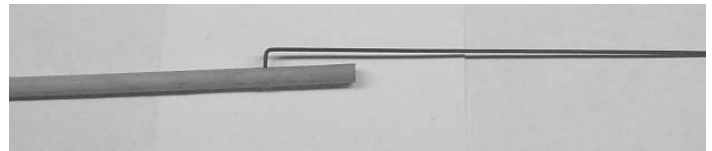
6. □ Insert the wire into the hole in the wood pushrod and push down into the groove.
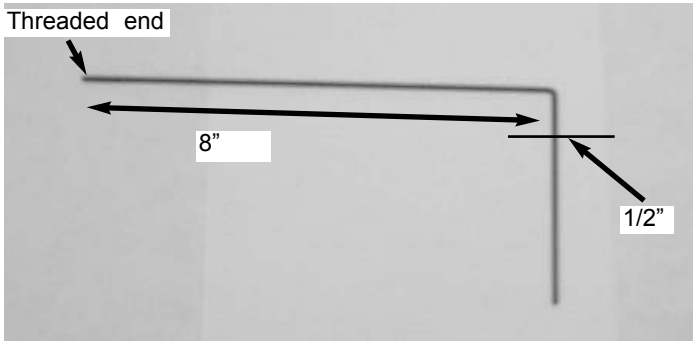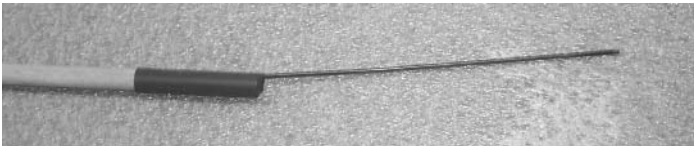   □ Glue the wire to the wood pushrod using medium CA glue.
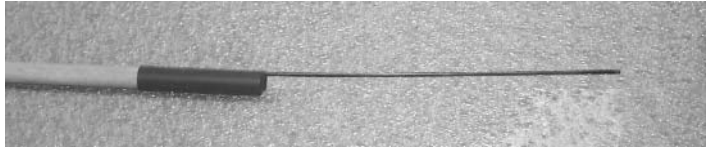
8. □ Slide the heat shrink tubing over the pushrod and shrink using a blow drier.
   □ Glue the tubing to the wood pushrod using thin CA glue.
   □ This finishes the rudder pushrod.

INSTALLING PUSHRODS

1. □ Collect the following parts
   (1) Elevator Pushrod
   (1) Rudder Pushrod
   (1) Fuselage
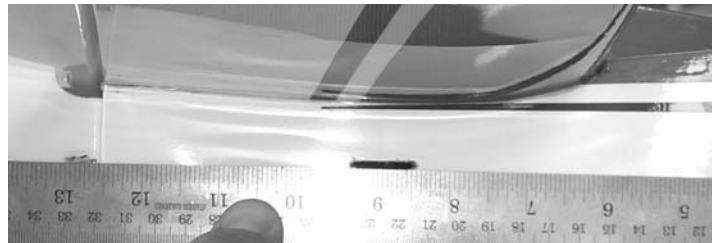
2. □ Find the hole under the stabilizer on both sides of the fuselage.
   □ Cut the covering over each of the push rod exit holes.
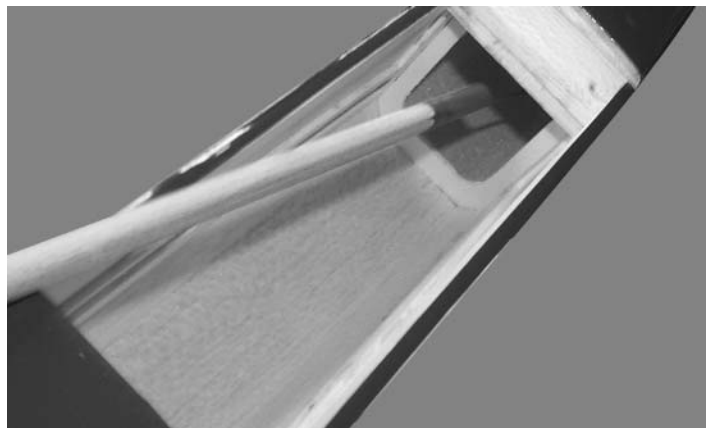
3. □ Insert the pushrods into the fuselage through the wing saddle area.

3. ☐ Bring the elevator pushrod out the right side and the rudder pushrod out the left side.

4. ☐ Put the clevis and the silicone keeper on the pushrod end and connect to the control horn.

☐ Repeat on the other side for the rudder.

5. ☐ Tape the rudder so that it stays in the neutral position.

☐ Align the servo arm so that it is sitting at 90 degrees to the servo.

☐ Mark the location where the pushrod wire meets the outer hole of the servo arm.

6. ☐ Bend the wire up 90 degrees at that mark.

☐ Slide the swivel keeper over the end of the pushrod and snap to the wire.

7. ☐ Repeat steps 1 thru 4 for the elevator servo.
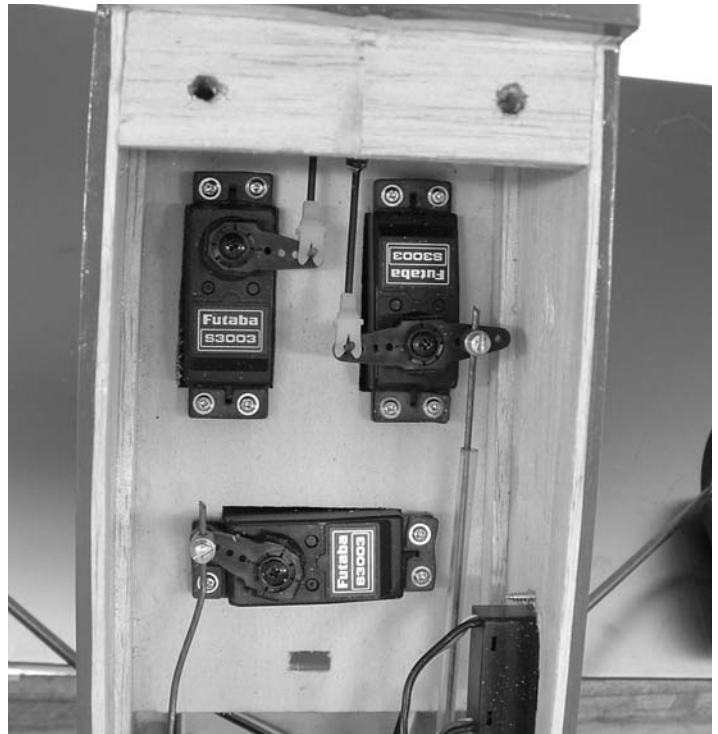
8 ☐ Finished pushrods.

FUEL TANK ASSEMBLY

1. ☐ GATHER THE FOLLOWING ITEMS
   (1) FUEL TANK
   (1) RUBBER TANK STOPPER
   (1) CLUNK
   (1) 3MM X 25MM SCREW
   (1) CAP WASHER LARGE
   (1) CAP WASHER SMALL
   (1) 3MM X 40MM BRASS TUBE
   (1) 3MM X 60MM BRASS TUBE
   (1) SILICONE TUBE 4MM X 80MM
   (2) SILICONE TUBE 5MM X 165MM
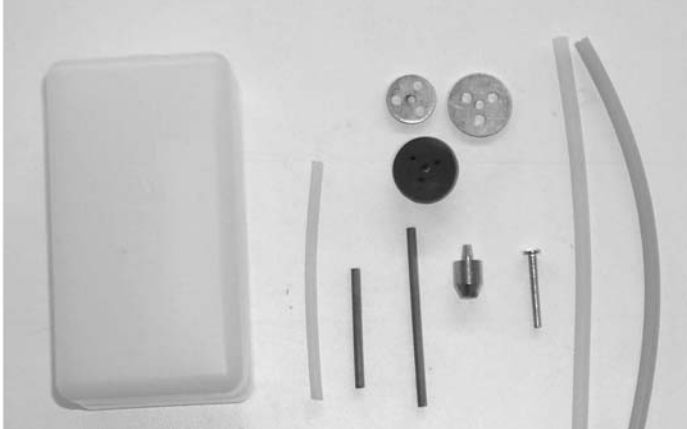
2. ☐ Insert the 3mm screw through the center hole in the large washer, through the center hole in the rubber washer against the large side, and screw the small washer on the back side.

3. ☐ Insert the brass tubes through two of the holes. They should be arranged so as the long one will be on the right side of the plane and the short one on the left side.

   ☐ The tubes should extend out the front of the cap 5/8". Bend the long tube up at about a 20 degree angle. This should be adjusted so the end of the tube almost touches the top of the tank when installed.
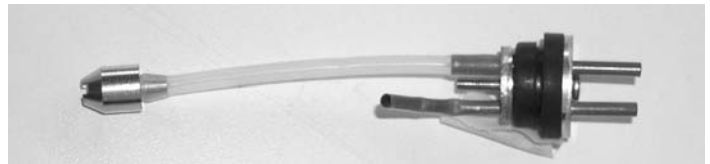
4, ☐ Install the 4mm silicone tube to the short brass tube and install the clunk to the other end of the silicone tube. This is the fuel pick-up and must be free to "flop" around in the tank so it can pick up fuel in any attitude.

5. ☐ Install the assembly into the tank so the vent tube is turned up to the top of the tank and is positioned on the right side of the tank. Tighten the screw to expand the rubber cap. Don't over tighten or you could split the tank.

6. ☐ Attach the two pieces of 5mm tubing to the two tank outlets. Make a note of which one you attach to which tube. The short brass with the clunk is the fuel pickup and must go to the carburetor. The long brass tube is the vent and should go to the pressure outlet on the muffler.

INSTALLING FUEL TANK
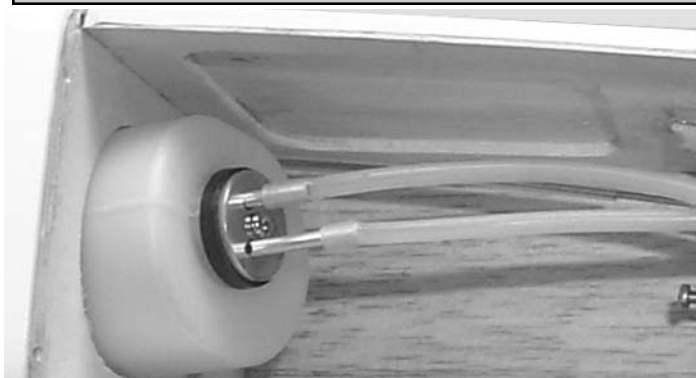
1. ☐ Insert the fuel tank through the wing saddle area and feed the fuel lines through the hole in the firewall.

   ☐ Slide the tank all the way forward till the brass tubes pass through the firewall hole.

   ☐ Attach the fuel lines to the motor.

   ☐ Place some foam (Not included) around the tank to prevent it from sliding back out of the fuel compartment.

1. ☐ install the fuel tank hatch on top of the fuselage with 2mm sheet metal screws on both sides of the fuselage.

RADIO SWITCH, RECEIVER, BATTERY
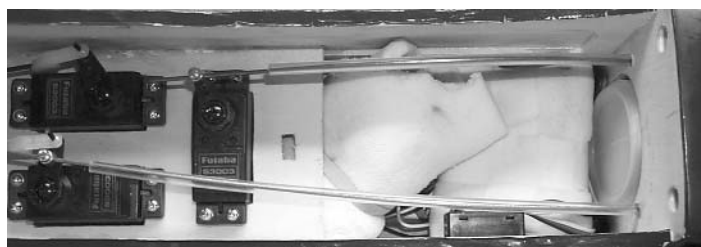
1. ☐ We mounted the receiver and battery in front of the servo tray. Depending on what engine you use, you might need to move the battery pack forward in to the fuel tank compartment.

2. ☐ Mount the radio switch through the side of the fuselage opposite the engine exhaust.

COCKPIT, CANOPY AND PILOT

The pilot figure included with your airplane adds an extra touch of realism.

APPLY DABS OF GLUE AT JOINTS

WHEN DRY, REMOVE TAPE AND COMPLETE GLUING

Cut line
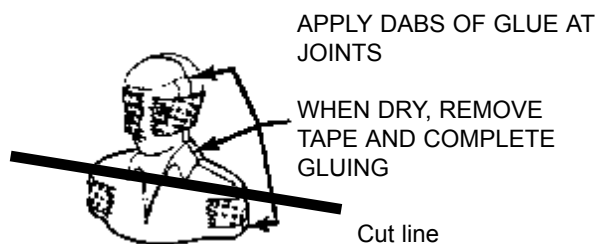
1. ☐ Cut pilot halves apart at the bottom and trim off scrap. Remove the bottom of the pilot just below his neck. Gently sand the edges of each half, so that they will be smooth for joining. Carefully align the front and back pieces and hold together with tape, as shown.

1. ☐ Tack glue the figure by applying a few drops of CA glue at key joint areas. When dry, remove tape and apply a small amount of glue all along the seam.

PAINT PILOT AS DESIRED

□ Using artist's acrylics or modeling enamels, paint the pilot to suit your fancy. WARNING: Do not use lacquer-based paints, which will destroy the plastic.

□ When dry, CA glue the pilot in place on the cockpit. You also may paint the cockpit, if added realism is desired.

> **HINT:** WHEN PAINTING THE PILOT'S FACE, LEAVE THE EYES WHITE. LATER, WHEN THE FACE HAS DRIED, CAREFULLY ADD EYE DETAILS WITH A FINE BUSH OR TOOTHPICK.

2. □ Sand the glue edge of the cockpit insert smooth, try to get the cockpit insert as flat as possible. Using canopy glue, glue the cockpit insert to the top of the fuselage and hold in place with tape.

□ When dry, remove the tape and glue the pilot in place.

□ Glue the canopy in place and hold with tape till dry.

APPLYING DECAL

1. □ Using glass cleaner and a soft cloth, clean model surface thoroughly before applying the decal.

□ Cut the decal sheets apart in sections, as needed. Fold the decal in half, front to rear. Open at the fold and lay the decal out straight. The protective backing will bubble away from the decal at the fold.

□ Using a scissors, cut the backing along the bubble, removing a strip of backing about 1" wide. Carefully position the decal on the model and stick it in place. Then, working from the center, rub the decal down while peeling off the remainder of the backing.

BALANCING

IMPORTANT: NEVER NEGLECT THIS STEP WITH ANY AIRPLANE. If you try to fly a plane with the balance point behind the recommended range, you run the risk of having an unstable aircraft and the strong likelihood of a crash. **TAKE THE TIME TO PROPERLY BALANCE YOUR MODEL!**

To determine the Center of Gravity, measure back on the fuselage **3-1/2"** from the leading edge of the wing.

The C.G. range for this aircraft is 3-1/4 to 3-3/4".

10"-12"   5"

CORRECT POSITION SLIGHT NOSE DOWN
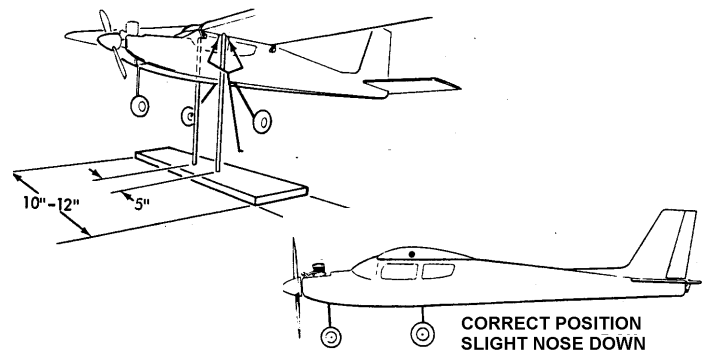
Place the fully assembled aircraft on a model balancing stand, as shown above. You can make this simple set-up with a couple of ¼" dowels with rounded tops, spaced 5" apart. Alternatively, lift the model under the wing near the fuse by your finger tips. (You may wish to get help from a friend if using the latter method.) Referring to the recommended balance range for your model, move the position of the plane on the balance stand until the model is level or the nose slightly down. If the is tail heavy, shift the R/C equipment away from the heavy end of the model and recheck until the model will balance within the acceptable range. If shifting the R/C gear still doesn't balance the model, add weight to the far end of the nose or tail, respectively, until the model is correctly balanced. The least weight is needed when added as far back or forward as possible. Fasten the weight permanently in place.

FLYING YOUR SR. FALCON ARF

GETTING READY TO FLY

Taking time here really pays off later. Rushing the set-up and testing frequently results in a model that never performs up to its full potential and may even lead to a crash.

CONTROL SURFACE SETTINGS. For the first few flights, even if you are an experienced flier, it is best to set the control surfaces at the GENTLE (LOW) settings. You can then work your way up to the higher settings. The settings for the SR. FALCON ARF are:

	LOW	HIGH
AILERONS	1/4"	3/8"
ELEVATOR	3/16"	5/16"
RUDDER	9/16"	same

RADIO CHECK. Many an experienced flier has rued the day he neglected to check EVERYTHING! After fully charging the batteries, turn on the receiver and transmitter and actuate all controls many times to make sure all responses are correct. Standing behind the model, the right aileron should go up when the stick is moved to the right. Moving the transmitter stick down should move the elevator up, and vice versa. Also check the wheel movement, which should move right with the right rudder movement. Check that the throttle opens to permit full power when the stick is moved up. Practice steering the model on the ground, with the throttle set at minimum, to keep model moving at a walking pace. **Before and after all tests**, make sure all gear is neatly and firmly in place - engine and servos fastened down, receiver and battery wrapped in foam and secured against shifting, propeller tight, and antenna extended.

Prior to the beginning of each day's flying, make a range check of your equipment in accordance with the manufacturer's instructions. With transmitter antenna collapsed to 6-8", you should have at least 100 feet range on the ground. Check this by turning on both the receiver and transmitter and with the model heading away from you, walk away while transmitting signals. Watch to see that no signals are missed until you are at least 100 feet away. **Remember not to use your transmitter when someone else is flying or testing on the same frequency. DO NOT ATTEMPT FLIGHTS UNLESS ALL THE EQUIPMENT WORKS PERFECTLY.**

After everything checks out, check it again! When you are satisfied with the performance of all equipment functions, point your planes nose into the wind and, gradually increasing to full power, take off for a short (2 to 3-minute) first flight.

Before the second flight, take off the wing and check all screws, radio equipment, engine mounting, muffler, etc. to make sure that nothing has come loose.

Spend the following flights getting familiar with your model and making sure it is properly trimmed for straight and level flight. When you feel comfortable with your model, it's time to try aerobatics.
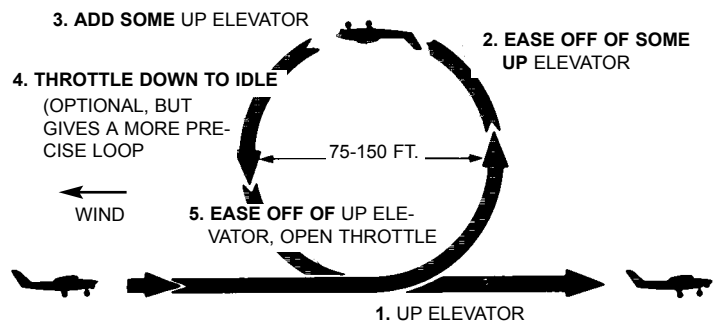
BEGINNING AEROBATICS

Almost all maneuvers are a combination of loops and rolls, so if you can do these two things, you're off to a good start! We highly recommend the book **Flight Training Course, Volume II**, published by **R/C Modeler Magazine.** Some of the following is taken from this manual, with the gracious permission of the magazine.
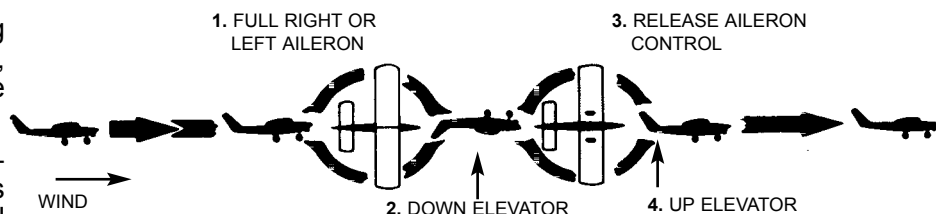
Above all, remember that top gun aerobatics are the result of practice. The crisp, graceful movements come from the pilot's willingness to do and do it again. Don't give up; practice really does make perfect!

Which side is up? Learning to recognize which side is up may sound foolish, but many a plane has bitten the dust because the pilot lost track of the plane's position. Other than learning to recognize the plane's silhouette at different angles and attitudes, the best insurance is to force yourself to concentrate on each thing that you do, i.e. making a left turn. If your mind strays and you forget what you're doing, coming back to it can cause a few new grey hairs!

THE LOOP. This is a good first stunt. The model starts flying straight and level into the wind, then pulls up into a smooth, round loop. The up and down portion should be straight, without the plane falling off to the right or left, and the speed should be constant. As the plane finishes the loop, it pulls out straight and level, at the same heading and altitude as when it entered the maneuver.

3. ADD SOME UP ELEVATOR

2. EASE OFF OF SOME UP ELEVATOR

4. THROTTLE DOWN TO IDLE (OPTIONAL, BUT GIVES A MORE PRECISE LOOP

75-150 FT.

WIND

5. EASE OFF OF UP ELEVATOR, OPEN THROTTLE

1. UP ELEVATOR

THE HORIZONTAL ROLL. *Important! Always remember that,* **when the plane is inverted, the elevator works backwards.** Therefore, when the plane is inverted, you give **down elevator.** Also, be sure to fly high enough to give a good margin for error, as your early attempts will probably end up in a 30º dive. We also recommend you practice with the plane in front of you, rather than overhead.

1. FULL RIGHT OR LEFT AILERON

3. RELEASE AILERON CONTROL

WIND

2. DOWN ELEVATOR

4. UP ELEVATOR

Good luck and happy flying!