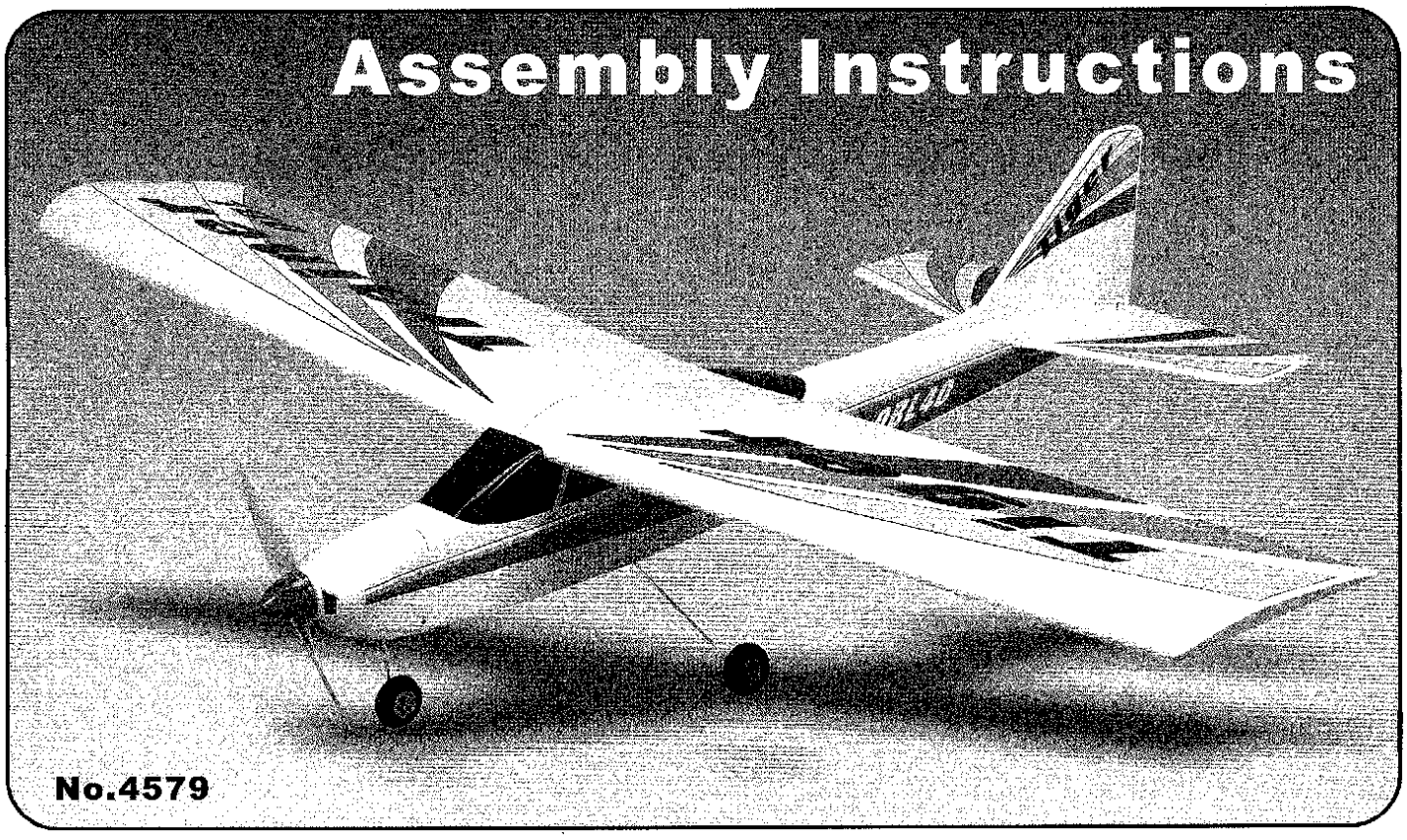
Thunder Tiger

Tiger Trainer OBL

Assembly Instructions



No.4579

Warranty

This kit is guaranteed to be free from defects in material and workmanship at the date of purchase. It does not cover any damage caused by use or modification. The warranty does not extend beyond the product itself and is limited only to the original cost of the kit. By the act of building this user-assembled kit, the user accepts all resulting in liability for damage caused by the final product. If the buyer is not prepared to accept this liability, it can be returned new and unused to the place of purchase for a refund. Neither your dealer nor Thunder Tiger Distributors, can accept kits for return if construction has begun.

Notice: Adult Super Vision Required

This is not a toy. Assembly and flying of this product requires adult supervision.

Read through this book completely and become familiar with the assembly and flight of this airplane. Inspect all parts for completeness and damage. Browse www. thundertiger. com for customer service if you encounter any problems.

JE6796

Introduction

All of us at Thunder Tiger want to thank you for choosing the best looking, easiest building and best flying ARF trainer available the...Tiger Trainer OBL. This kit features state-of-the-art engineering that provides quick and easy assembly of a strong, yet lightweight airplane that will give you an enjoyable and educational experience.

To gain the most from this airplane kit, it is important that you read the instructions thoroughly and then follow them exactly. This instruction manual has been written with a novice modeler in mind, but includes many hints and modeling tips that even experienced modelers can benefit from. We strongly suggest that you read through the instructions completely before beginning construction. This will give you a good idea of the construction sequence and eliminate many questions you might have if you did not read the manual prior to starting the actual construction.

The first thing you should do before beginning assembly is to check the contents of your kit against the parts list on pages 4 and 5. If any parts are missing, contact Thunder Tiger distributors immediately for replacement.

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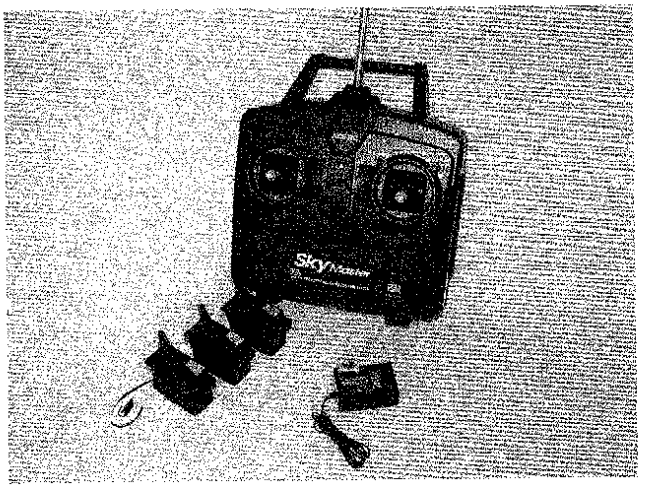
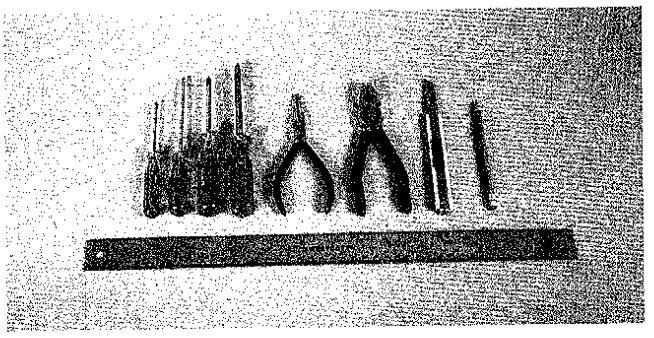
OTHER ITEMS REQUIRED FOR ASSEMBLY

A checklist is also provided on the next page which will make shopping for these items easier.



Radio - A 4-channel radio with 3 standard servos is required. Most lower priced 4-channel radios only come with three standard servos so you may need to purchase the fourth servo separately if you fly with a Nitro Power unit.

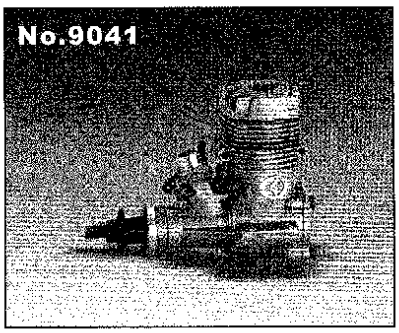
Adhesives- You will need two types of adhesives for the Tiger Trainer - Epoxy and Instant (cyanoacrylate) adhesives. We recommend that you purchase both 5-minute and 30-minute epoxy to cut down on assembly time, but you can get by with only 30-minute epoxy if time is no important. You will also need a small bottle of both "Thick" and "Thin" instant adhesive.

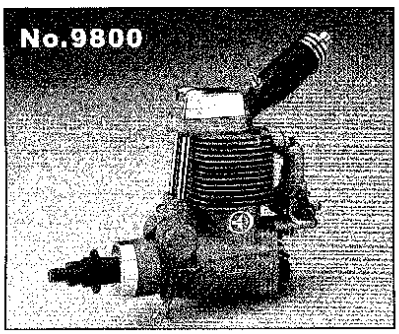


Tools-Model assembly can be much easier if the proper tools are used. Therefore we have included in our checklist to above, a complete listing of all the tools we used to assemble our prototype models. As you will notice, many household tools can be utilized during construction.

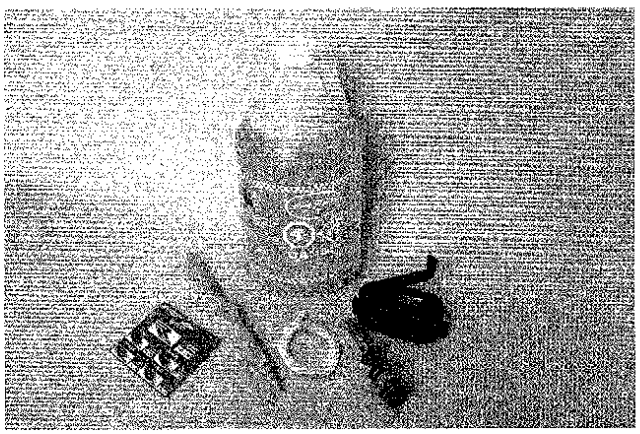
Power Unit Required

Nitro power





Engine The Thunder Tiger GP-42 and F-54S are the ideal engines for this airplane. These quiet running engines are easy to start, require no special break in periods, are very easy to maintain and will last for years.

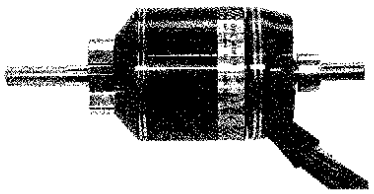


Flight Equipment There are several "support" items that you will need to purchase in order to get your engine running and your plane in the air. These are listed at the bottom.

Nitro Flight Equipment Needed Check List

- Foam Rubber Padding for the radio
- Stick on Lead Strip for balancing the plane
- 3 or 4 Props (see engine instructions)
- 10%-15% Glow Fuel
- Fuel Pump or Bulb
- Electric Starter or " Chicken Stick"
- Glow starter
- Extra Glow Plug(s)
- Silicon Tubing

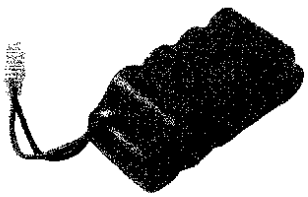
OBL Power



Brushless Motor: If you would use electric motor instead of a Nitro Engine then the OBL36/11-40A (No. 2368) is a perfect choice to install on Tiger Trainer OBL.

Controller: ACE BLC-40A (No. 8027) is a perfect controller that controlling OBL motor efficiently.

The No.4579-K11 version comes with above OBL Motor and Controller



Battery: Recommend the use of a 9-cell 10.8V 3600mAh NiMH battery (No.2925)

Charger: Select a quality field charger to charge the battery.

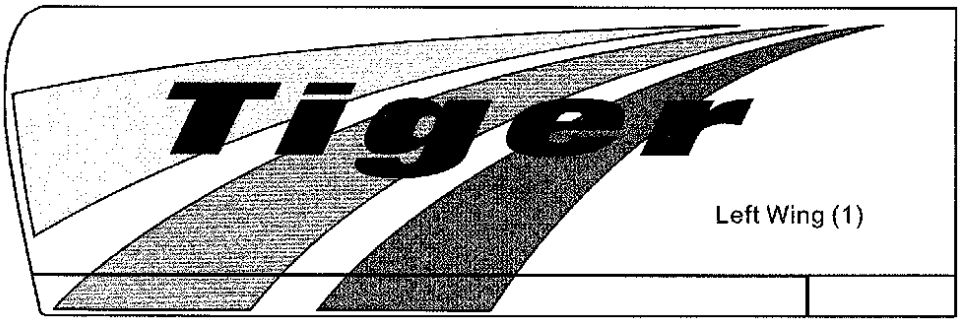
OBL Flight Equipment Needed Check List

- 2~3 APC 11x8.5E Propeller
- 9 cell 10.8V 3600mAh NiMH Battery Pack

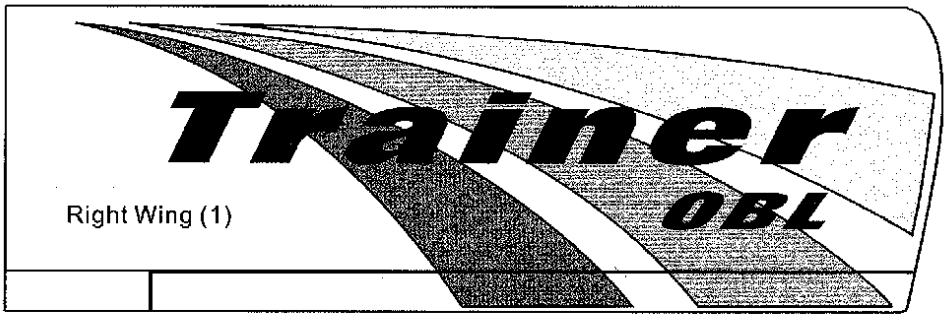
Comprehensive Items Needed Check List

- 4-Channel Radio with 4 Standard Servos
- 5-Minute Epoxy (4 ounces or so)
- 30-Minute Epoxy (4 ounces or so)
- "Thin" Instant Adhesive (1/2 ounce)
- "Thick" Instant Adhesive (1/2 ounce)
- Hobby Knife and Blades
- Epoxy Mixing Sticks and/or Brushes
- Sandpaper (150 grit)
- Masking Tape
- Rubbing Alcohol
- Paper Towels
- Ruler
- 90 Degree Triangle
- Waxed Paper
- Fine-Point, Felt-Tip Pen
- Misc. Household Tools
- Drill and Bits (1/16", 5/64", 3/32",1/8",9/32")

AS6460 Main Wing



Left Wing (1)



Right Wing (1)

Wing Center Tape(1)

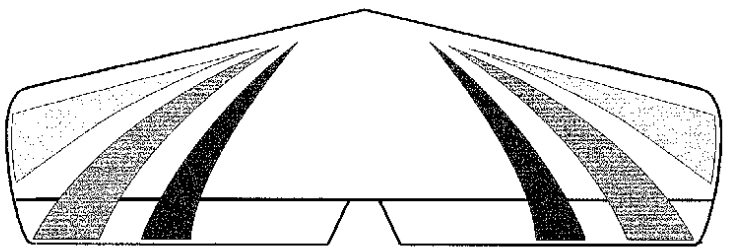
Aileron Servo Tray(1)

Wing Protector (1)

Plywood Wing Joiners (3)

Torque Rod Horn (2)

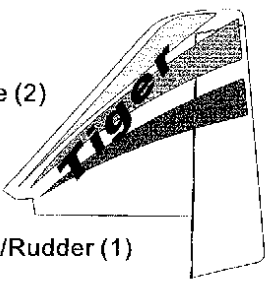
AS6461 Horizontal Tail



Stabilizer/Elevator (1)

AS6464 Vertical Tail

Balsa Fin Brace (2)



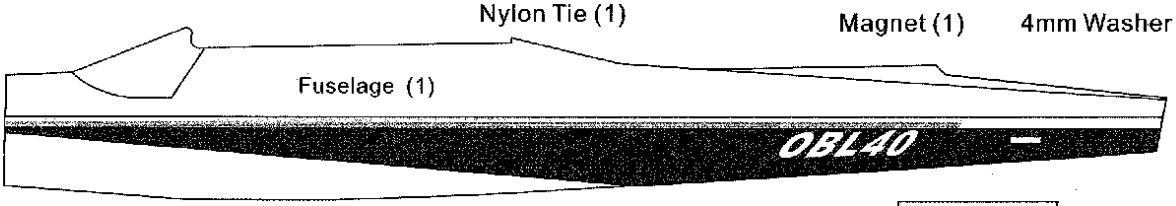
Vertical Fin/Rudder (1)

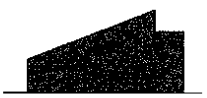
AS6462 Fuselage

Nylon Tie (1)

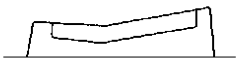
Magnet (1)

4mm Washer (1)



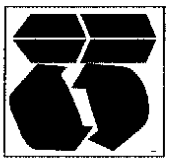


Wind Shield (1)



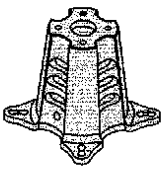
Kwik-Access Cover (1)

Wing Dowels (2)



Decal (1)

AS6458 OBL Motor Mount



OBL Motor Mount (1)

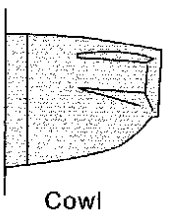
Sink Head Screw (4)

6/32X18mm Screw (4)

AS6459 Cowl

2X8mm
Wood Screw (4)

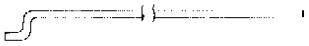
Decal (1)



Cowl

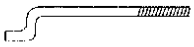
AS6463 Linkages

Straight Threaded End (2)

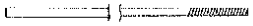


Throttle Pushrod (2)

Clevis (4)

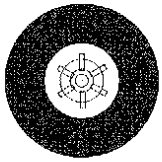


Z-Bend Threaded End (2)



Aileron Pushrod (2)

No.3296 Wheel



Wheel (3)

No.3151 Control Horn

Nut Plate (2)

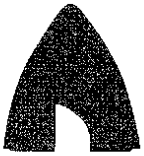
Control Horn (2)

2X15mm Screw (4)

No.3222R Spinner

Spinner Back Plate(1)

3X12mm self-Tapping screw (2)



Spinner (1)

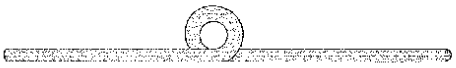
No.PE0001 Landing Gear

Wheel Collar (5)

Nose Gear Mount (1)

Steering Arm Collar (1)

Landing Gear Strap (2)

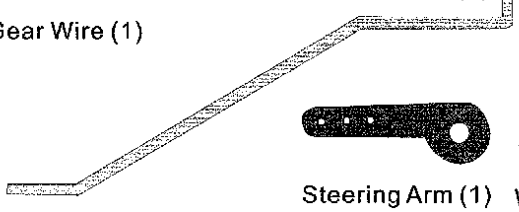


Nose Gear Wire (1)

Main Gear Wire (2)

3X5mm Screw (6)

6/32 X18mm Screw (2)



Steering Arm (1)

3X10mm Wood Screw (4)

PE0009 EZ Connector

2mm Washer (2)

2mm Hex Nut (2)

3X3mm Set Screw (2)

Push Rod Connector (2)

Allen Wrench (1)

Parts shown below are vary in K-10 and K-11 version.

Extra parts come with No.4579-K10

No.3263 Fuel Tank

Clunk (1)

90°Nipple (1)

Silicone Tube (1)

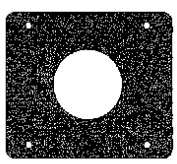
Straight Nipple (1)

Rubber Stopper (1)

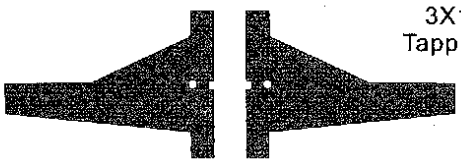
Cap (1)

300c.c Tank(1)

No.3102 Adjustable Engine Mount



Engine Mount Plate (1)



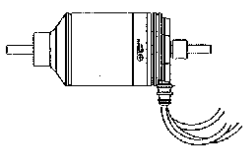
Left Mount Beam (1)

Right Mount Beam (1)

3X15mm Self-Tapping Screw (4)

Extra parts come with No.4579-K11

No.2368 OBL 36/11-40A



Outrunner (1)

No.8027 BLC-40A

Controller (1)

PRE-ASSEMBLY NOTES

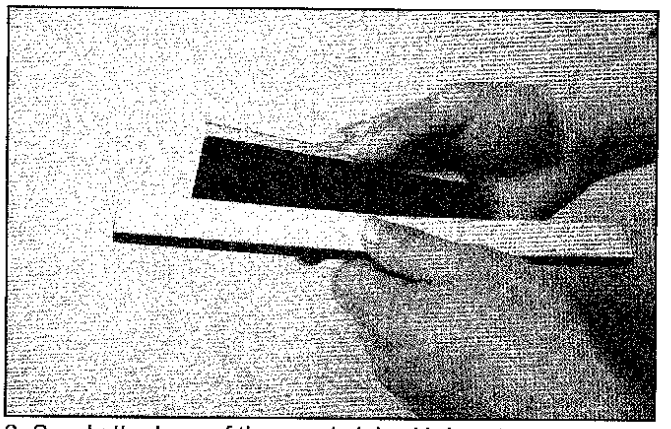
1. If you are not an experienced R/C pilot, plan to have a fully competent pilot check your completed model and help you with your first flights. Even though we have tried to provide you with a very thorough instruction manual, R/C models are rather complicated and an experienced modeler can quickly check over your model to make sure your first flights are successful.

2. Please assemble your model exactly according to these instructions. Do not attempt to modify or change the **Tiger Trainer OBL** in any way as doing so may adversely change its flying characteristics.

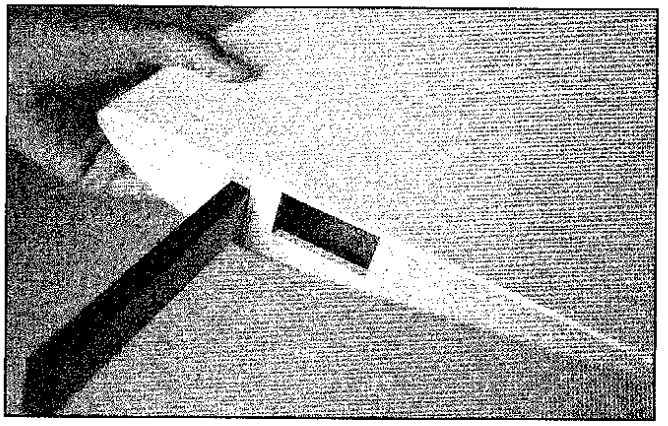
3. Before you begin, please check the entire contents of this kit against the parts drawing make sure that no parts are missing or damaged. This will also help you to become familiar with each component of your plane. If you find that any of the parts are either missing or damaged, please contact your dealer immediately for replacement.

Note: Your dealer cannot accept kits for return if construction has begun.

4. Trial fit each part before gluing it in place. Make sure you are using the correct part and that it fits well before assembling. No amount of glue can make up for a poor fitting part.

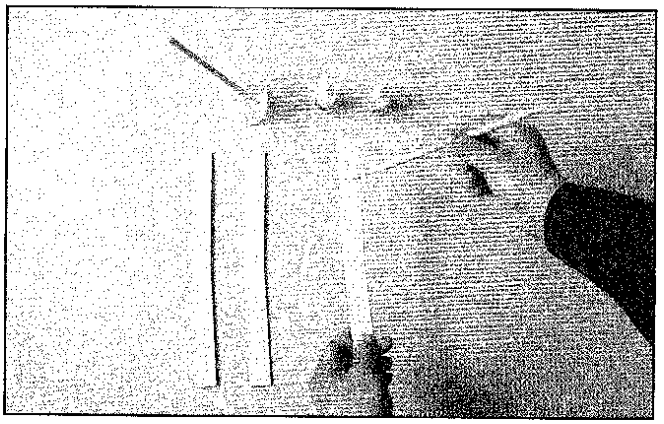


2. Sand all edges of the sandwiched joiner to remove any glue bumps, high spots and rough edges.

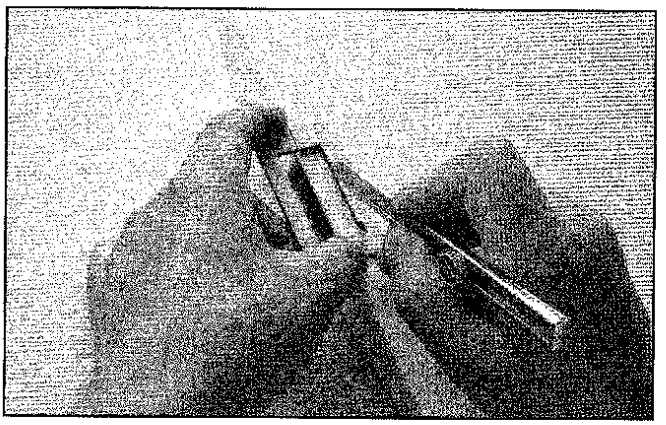


3. Test fit the wing panel together with the joiners in place and make sure they meet nicely. If the joiner is too snug to easily slide into the wing, sand it until it will.

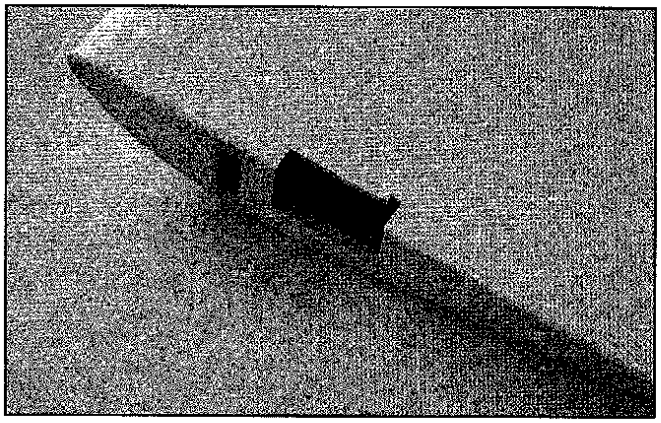
WING ASSEMBLY



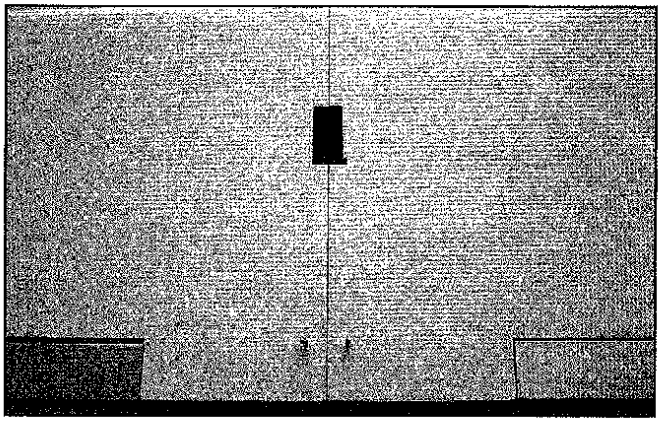
1. Locate three 1/8" plywood Wing Joiners. Sandwich these three plywood either with 5-min epoxy or CA.



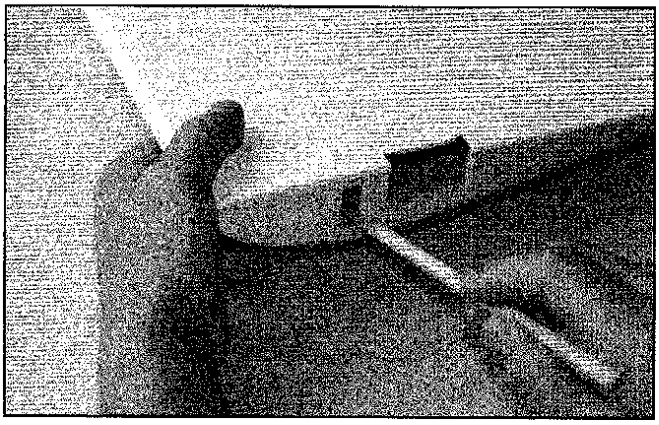
4. Locate he aileron servo tray and draw a center line. Place the servo tray on the bottom wing and make sure the center line is in line with wing root edge as well as the wing root cut-out. Then make marks along with the inside of servo tray.



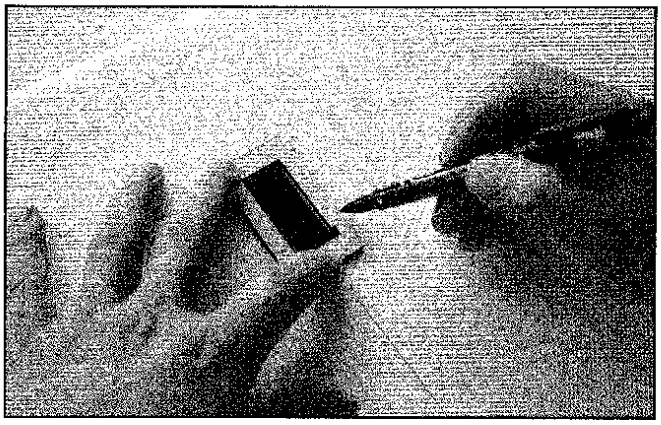
5. Carefully use the hobby knife to remove this portion as shown. Repeat the same procedure on the other wing half.



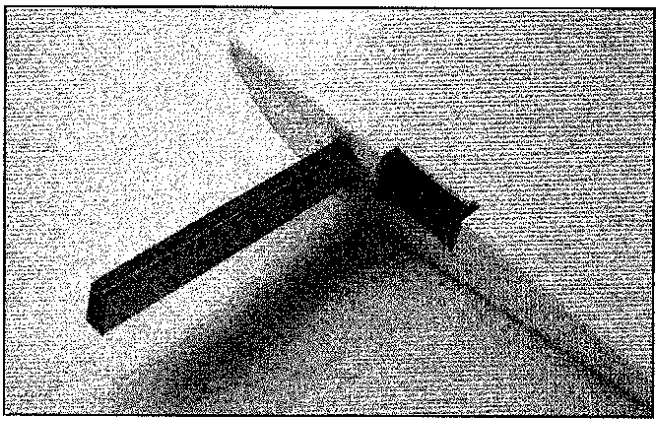
8. Next lightly coat the other side of the joiner with epoxy and slide the other wing panel up against the first panel. Firmly press the wing panel together and wipe off any excess epoxy with a paper towel and rubbing alcohol. Make sure the two panels are accurately aligned with each other and use masking tape to hold them in place while the epoxy cures.



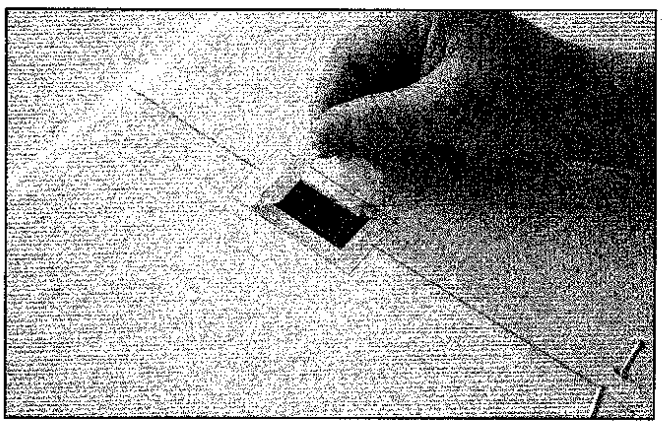
6. Mix up an ample amount of 30-minute epoxy and liberally coat the inside of joiner slot and wing root with adhesive.



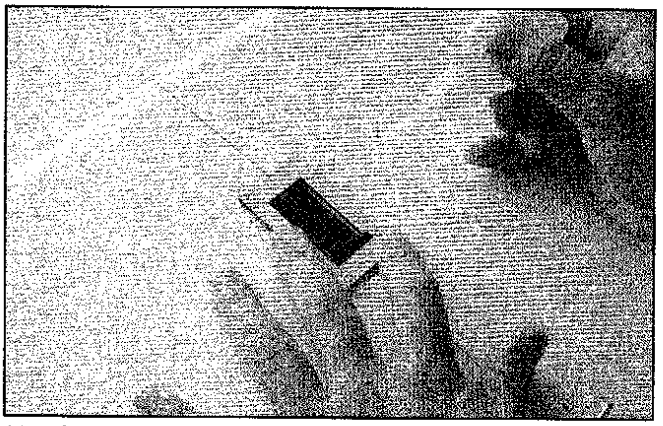
9. After the epoxy has fully cured, remove the masking tape and place the aileron servo tray in place, mark around the outside of the tray with a fine-point felt-tip marker.



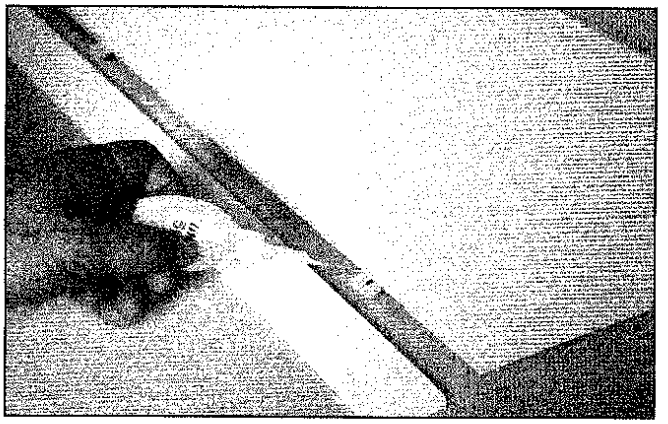
7. Lightly coat one half of joiner with epoxy and slide it into one wing panel.



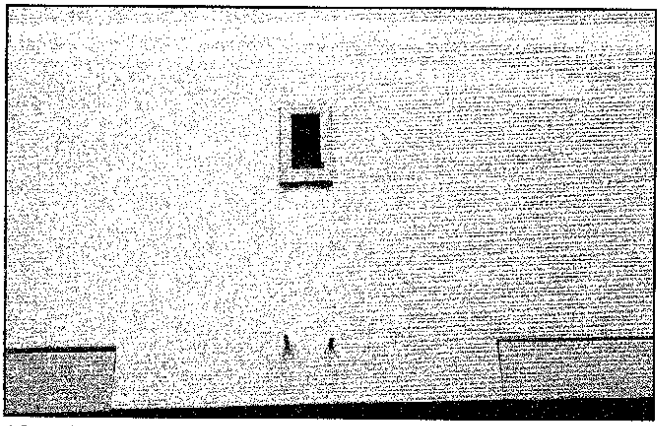
10. Now carefully cut the covering only, following the outside lines of the servo tray. Do not press hard enough to cut into the balsa sheeting. Peel away the covering as shown.



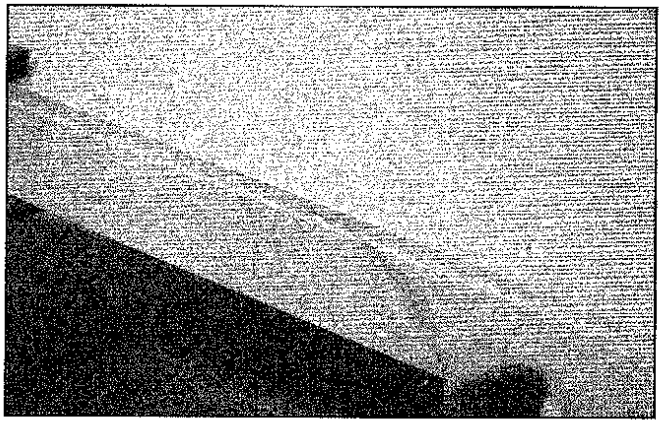
11. Glue the aileron servo tray in place with either epoxy or CA. If you use CA, you will have to bend the servo tray to conform with the dihedral point. If you use epoxy, just use enough epoxy to fill the gaps between the tray and the wing.



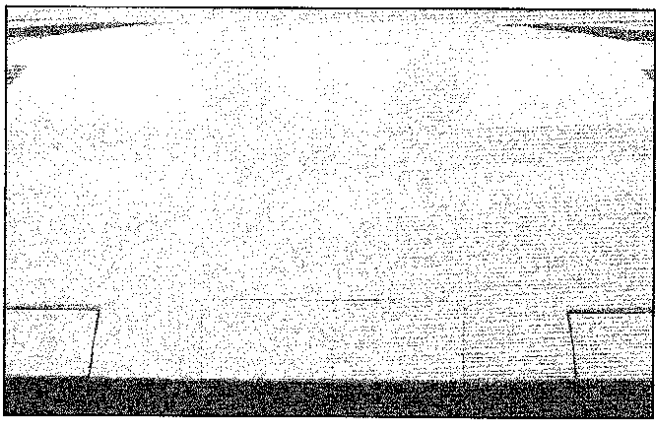
14. Remove the aileron then center all CA hinges at the trailing edge in place. Apply little amount of CA glue at the hinge slots. The CA hinge will be glued firmly in the hinge slot.



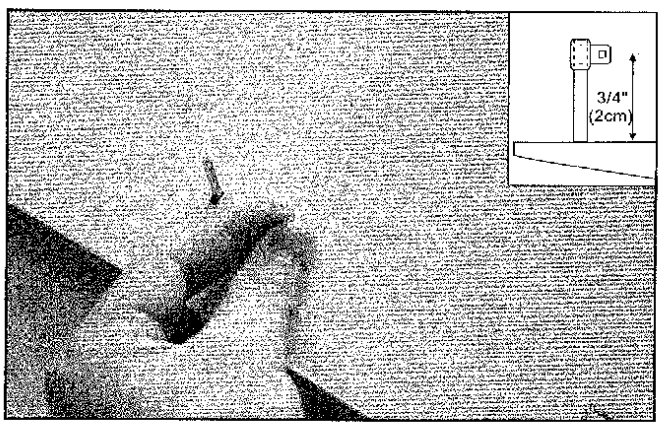
12. Apply the white trim tape to the center wing joint. Start at the servo tray and work on around the wing. Gently pull on the tape while pressing it down onto the wing to slightly stretch the tape into place and provide a smooth seam.



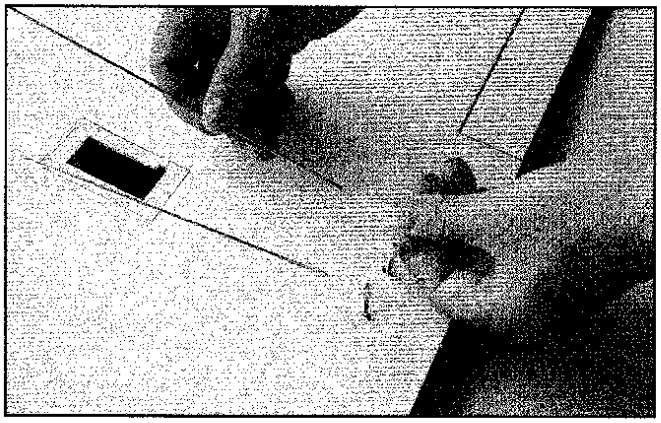
15. Next attach the aileron in place then apply CA to hinge line both at top and bottom side where CA hinges are located. Allow the CA glue to cure and then work the hinges back and forth a few times to make sure they are move freely and secured firmly. Repeat this procedure for the other aileron. Try to keep the gap between the aileron and the wing trailing edge as small as possible.



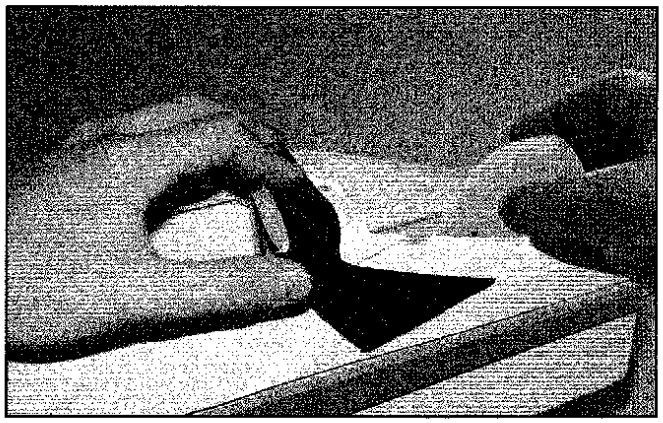
13. Lightly sand the edges and one side of the plastic wing protector to remove any roughness and help the glue stick to the plastic. Center Wing Protector over wing joint and align it with the wing trailing edge. Use thick CA to glue the wing protector to the top surface of the wing so it is centered over the wing joint and flush with the wing trailing edge.



16. Screw a nylon torque rod horn onto each aileron torque rod until there is 3/4" (2cm) between the hole in the horn and the surface of the wing.

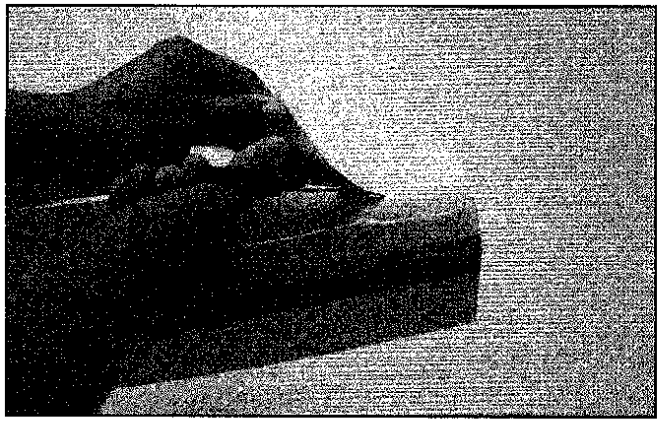


17. Thread a clevis onto each of the 12" threaded rods (the ones without a bend in them) until approximately 3/16" (5mm) of threads are inside the clevis. Snap the clevises onto the torque rod horns. This is all we will do to the wing until the section titled Radio Installation. Cut a piece of silicone ring and thread onto clevis.

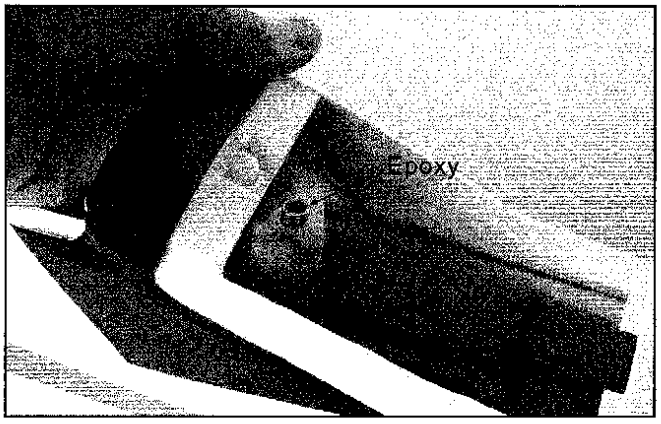


3. Install the trimmed windshield on the fuselage, securely hold them in place and carefully apply one drop at a time of thin CA around the edges of windshield. It is very important that you do not get in a hurry doing this or the excess glue will run down the fuselage. Hint- use a very fine applicator tip on your glue bottle during this step.

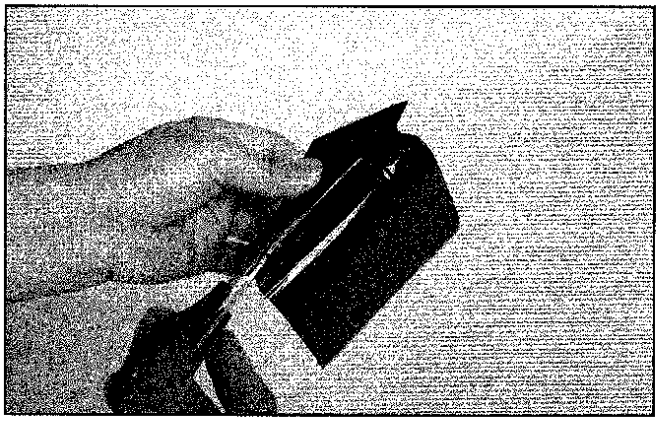
FUSELAGE ASSEMBLY



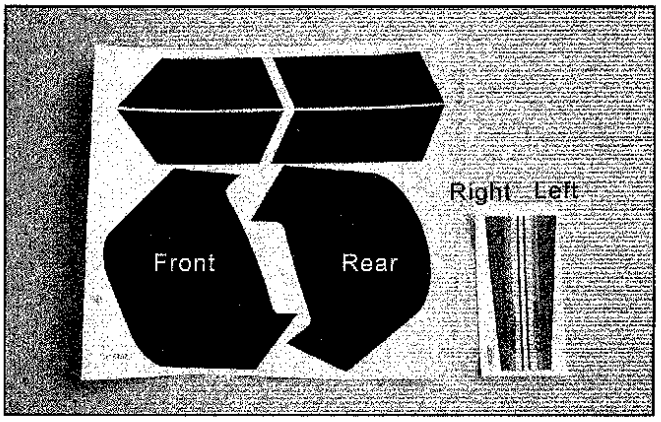
1. Carefully using the hobby knife or curved scissors to trim the front windshield from fuselage along the molded trim lines.



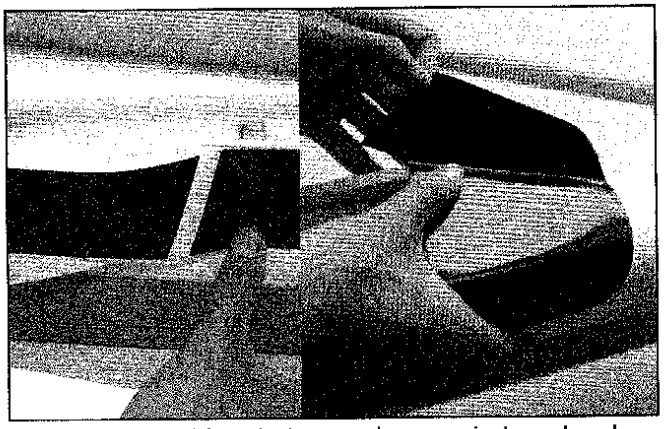
4. Locate the super magnet and secure it with tape at the bottom of windshield area. You may apply epoxy or thick CA on the contact area between super magnet and plastic then tape it in place.



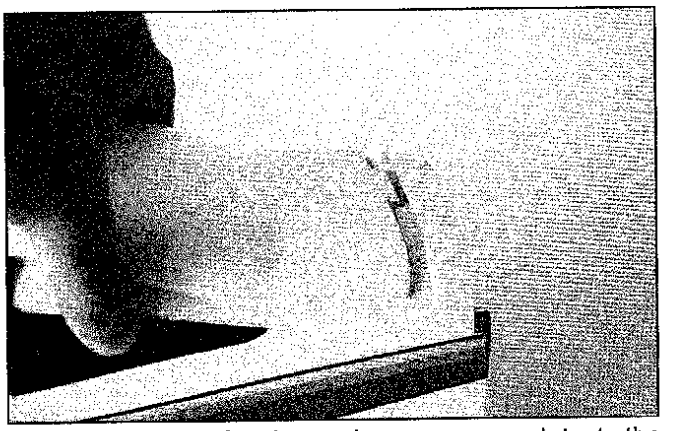
2. Locate the black windshield, carefully cut windshield along the molded in trim lines. Note that we will keep the rear portion of this vacuum parts. Lightly sand the edges of the windshield to remove any cutting nicks or unsmooth edges.



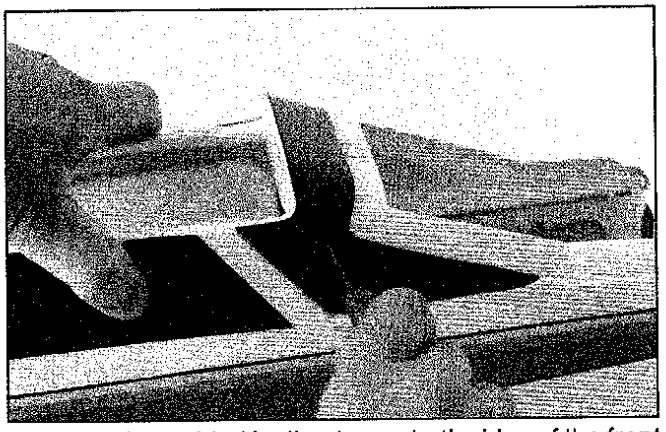
5. Locate and trim the decal, note that which is front or rear windshield decal.



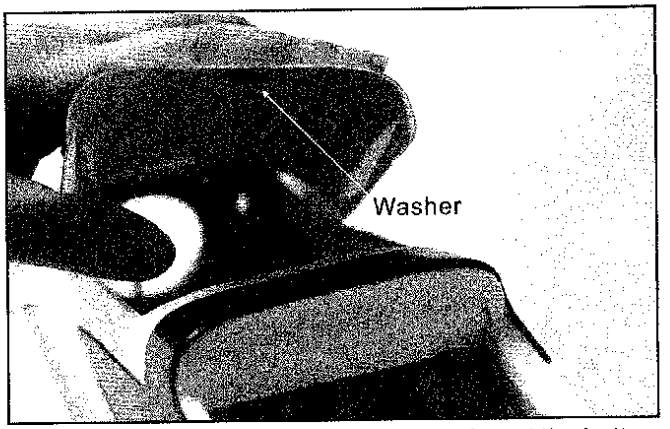
6. Apply the side window and rear window decal on fuselage. Take your time while applying the decal to avoid any bubbles between decal and fuselage.



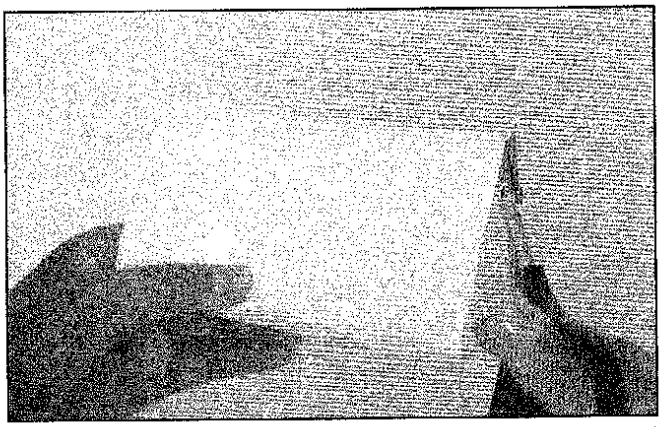
9. Cut a notch at fuselage where accommodate to the cover. Trial fit and trim the cover if necessary.



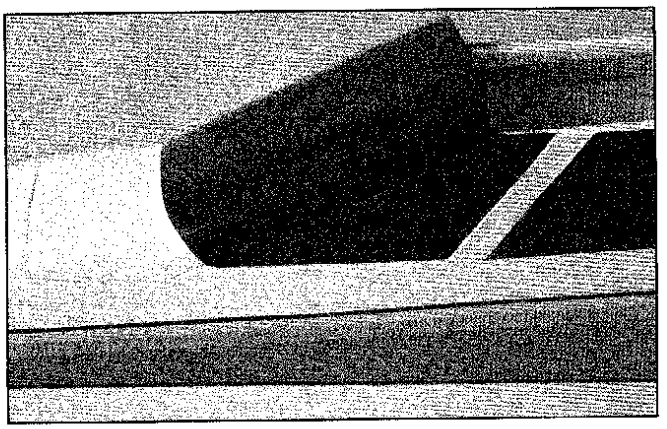
7. Locate the molded in dimples on both sides of the front and rear windshield. These are where the wing dowels go. Drill a 1/8" diameter "pilot" hole at each dimple and then go back and enlarge the four holes with a 9/32" drill bit. Trim off any rough edges with a hobby knife.



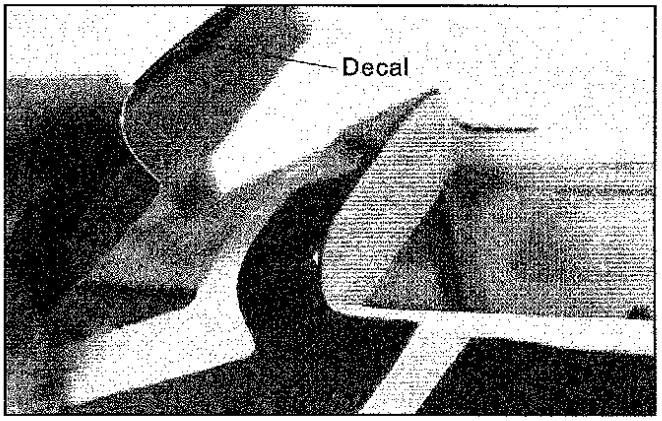
10. Locate a 3mm washer then glue washer at the bottom of Kwik-Access Cover where contacts the super magnet.



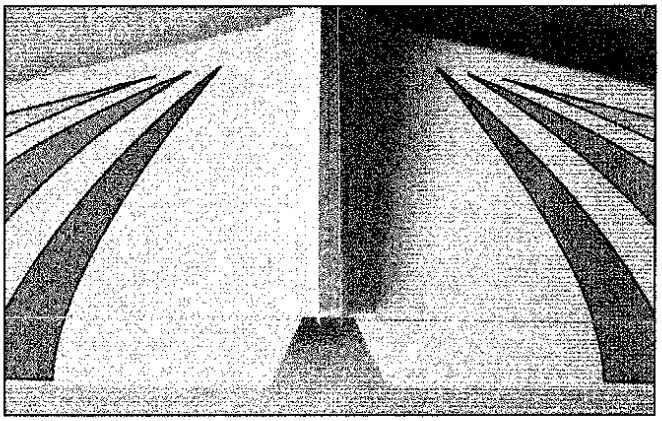
8. Trim the white Kwik-Access Cover along the molded line and sand to test fit onto the fuselage.



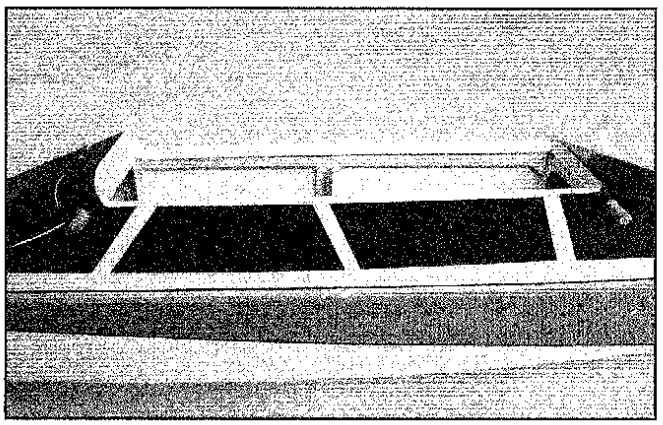
11. Apply the front windshield decal. Note the edge should be linked to Black Vacuumed windshield.



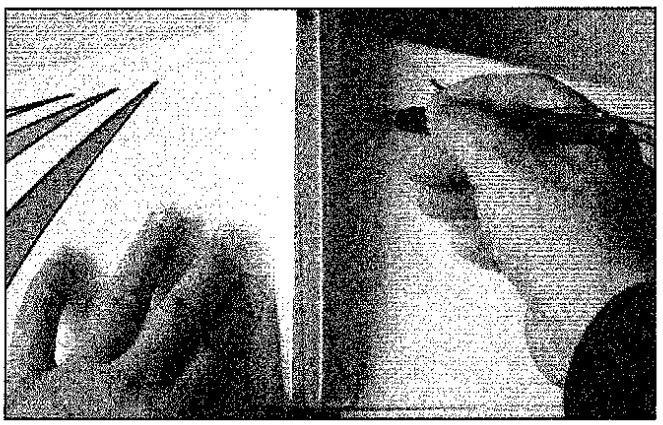
12. Leave enough decal then apply it to the bottom side to help secure washer in place.



2. Side the stabilizer into the fuselage and, look through the fin opening, align the stabilizer so that the line you drew in the last step is centered in the fin opening. Apply a couple of pieces of tape to hold the stab in place.

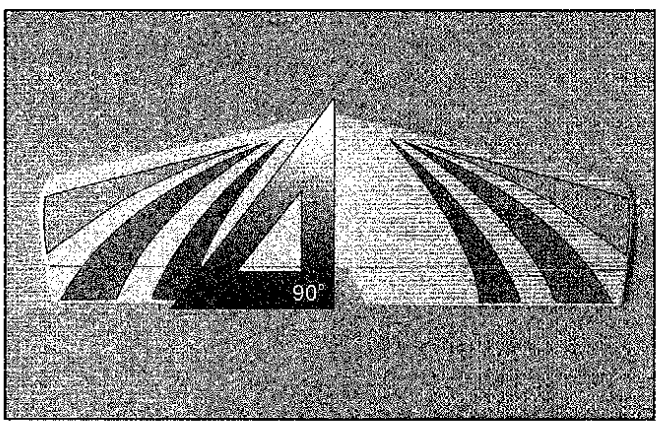


13. Round off both ends of the wing dowels using your sanding block and then slide them through the fuselage as shown in the photo. Adjust them until equal lengths of dowel extends from both sides of the fuselage and glue them in place with thin CA.

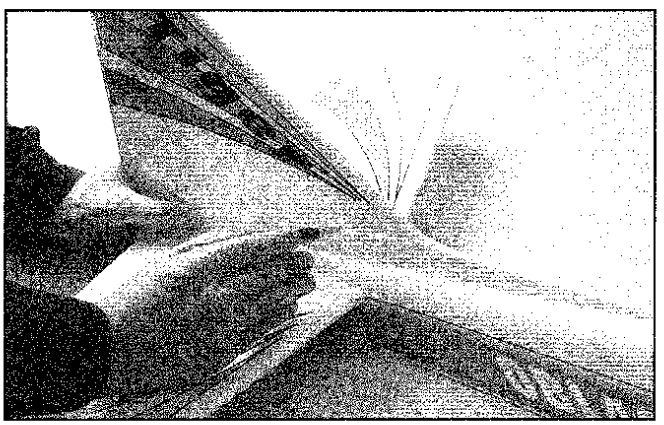


3. Use your fine-tip marker to draw lines on the top of the stab along the edges of the plastic stab fairing and also on the bottom of the stab along the fuselage sides.

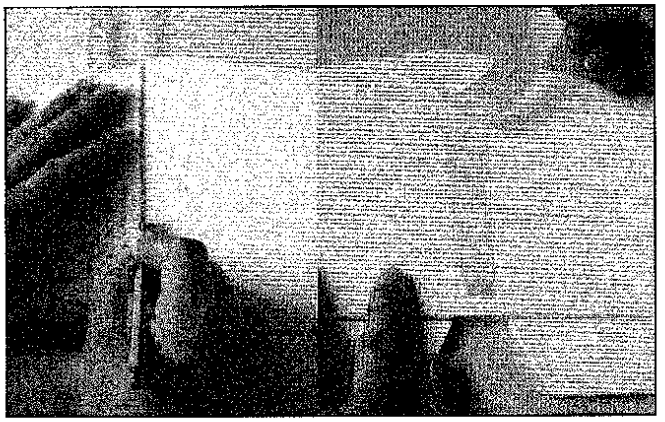
INSTALL THE TAIL FEATHERS



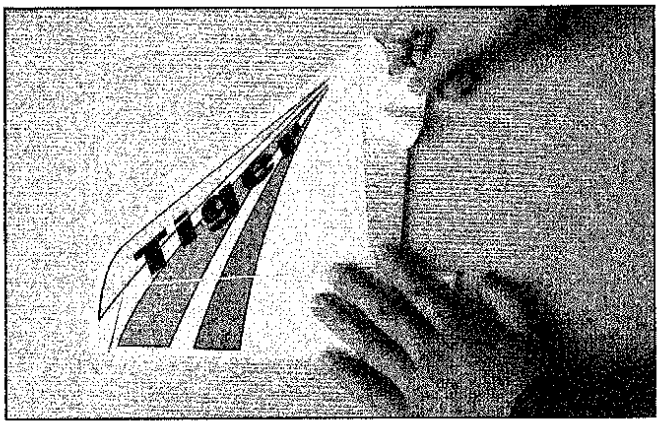
1. Use a 90 degree triangle as shown above to draw a line down the middle of the top of the stabilizer.



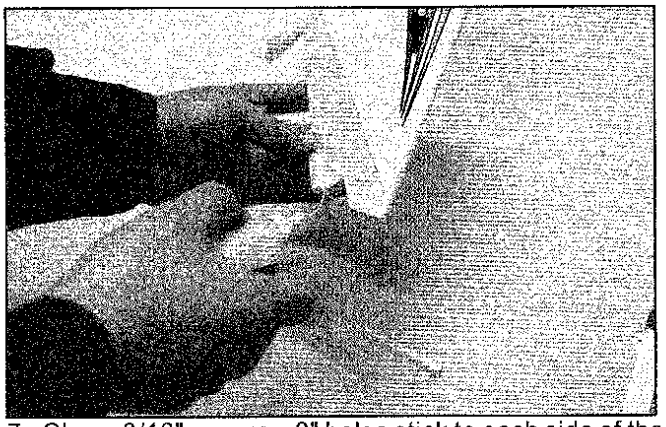
4. Use your fine-tip marker to draw a line on the two sides of the fin along the edges of the plastic fin fairing.



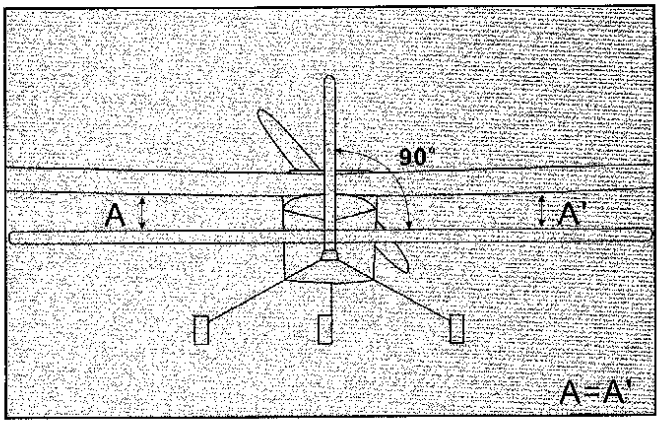
5. Remove the stab from the fuselage and use a straight edge to carefully cut the covering material only away from the stab. Make the cuts approximately 1/16" (1.5mm)inside the lines you drew. It is very important that you do not press hard enough to cut into the wood itself or the stabilizer may fail in flight. Just score the covering and it will peel away nicely. Do this on both side of the stab.



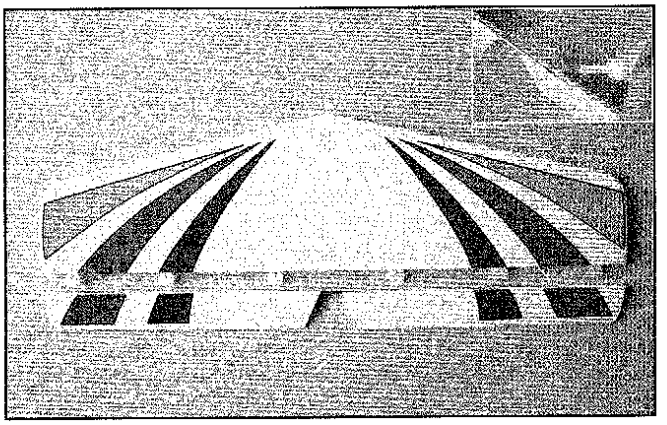
6. Remove the fin from the fuselage and carefully trim the covering away approximately 1/16" (1.5mm) below the lines using the same procedure outlined in the last step.



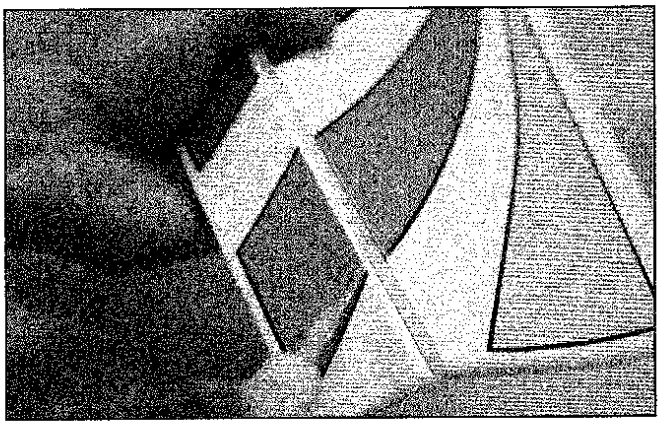
7. Glue a 3/16" square x 2" balsa stick to each side of the fin so the bottom surface of each is flush with the bottom edge of the fin and the front edge is flush with the notch in the fin.



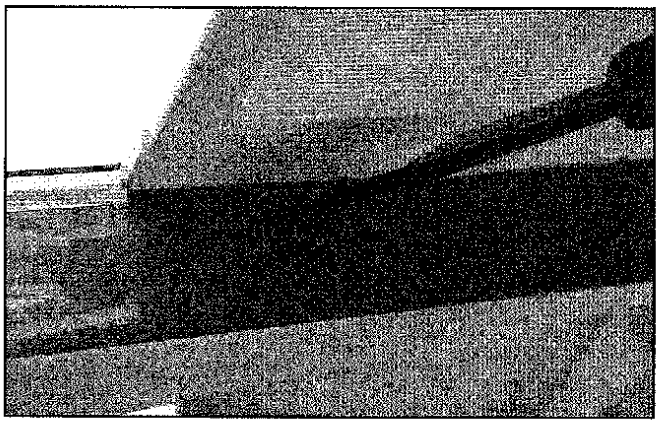
8. Temporarily secure the wing onto the fuselage with rubber bands. Apply a coating of 5-min epoxy to the stab bed and fuse sides in the fuselage and slide the stabilizer into place making sure it is centered. Do not glue the top fairing to the stab yet. Make sure the stab is positioned and allow the epoxy to cure. Apply thick CA or 5-min. epoxy to the bottom edge of the fin and then slide it into place on the top of the stab. Use a 90 degree triangle to make sure the fin is perpendicular to the stab and pointing directly forward. Press the plastic fairing against the fin and stab and apply thin CA along the joints.



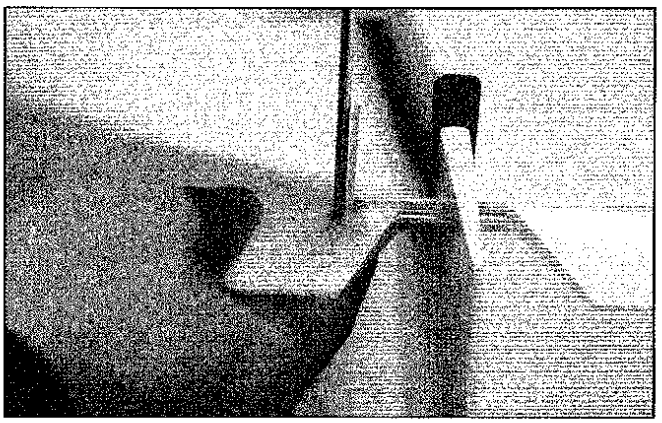
9. Remove the elevators from horizontal tail then glue the CA hinges on the horizontal tail first. Remove the linkage wire from elevators then either epoxy or CA the linkage wire in place. Make sure two elevators are level with the working surface and the hinge line is aligned.



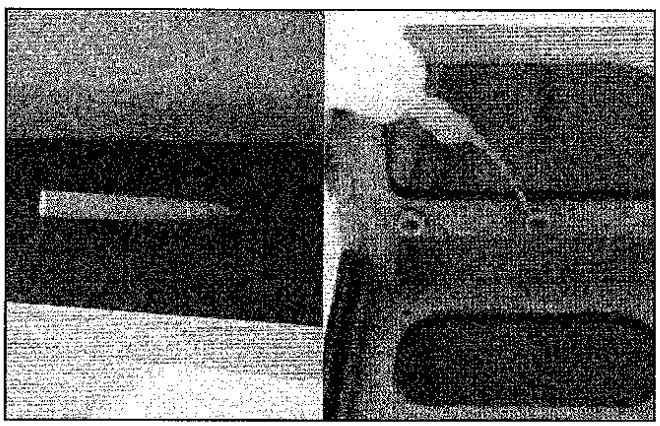
10. Next glue the two elevators with the linkage wire into the control surfaces using the same technique outlined for the ailerons. Do the same procedure on the rudder.



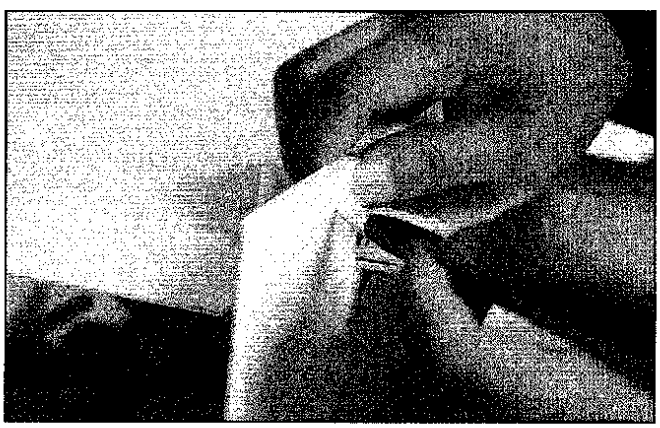
11. Locate and cut the elevator and rudder pushrod exit hole at the two side of the rear fuselage.



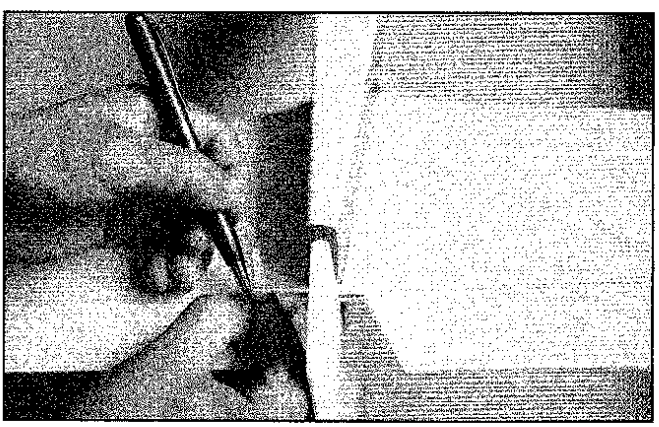
14. Drill 5/64" (2mm) holes at the marks and mount the control horn to the elevator using two 2x15mm screws and the nylon nutplate which was attached to the control horn. Make sure the screws are tightened securely, but do not crush the elevator.



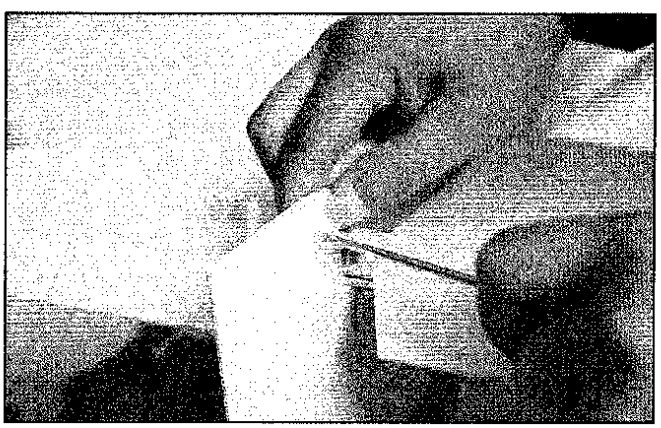
12. Thread the outer rod out though the fuselage then epoxy or CA the outer rod ends both at exit hole and bulkhead.



15. Hold the remaining control horn up to the left side of the rudder approximately 1/2"(12mm) to the bottom and 1/8"(3mm) behind the hinge line(so the holes in the control horn are in line with the hinge line). It should be toward to the pushrod exit hole of the fuselage. Mark where the mounting holes should be drilled and then remove the control horn and drill 5/64"(2mm) holes at the marks.

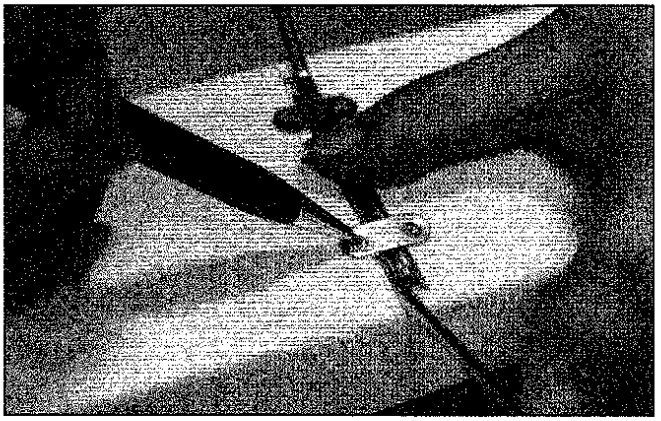


13. Locate the nylon control horns, cut them apart and remove any flashing. Hold one of the control horns against the bottom of the elevator so it is approximately 1/8"(3mm) behind the hinge line and slightly toward to the pushrod exit hole . Use your fine-tip marker to mark where the mounting holes go.

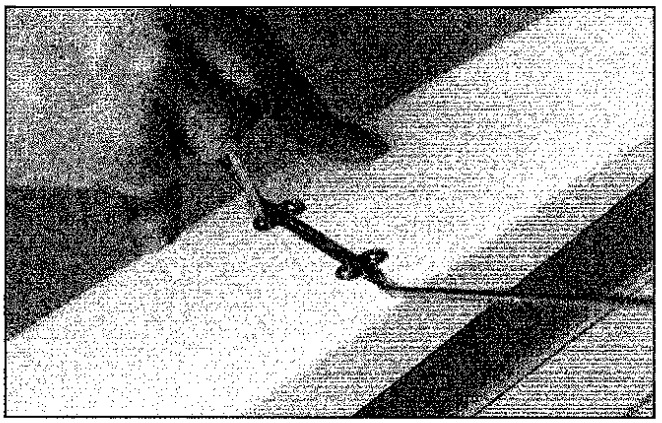


16. Mount the control horn to the rudder using the remaining two 2 x15mm screws and the nylon nut plate which was previously attached to the control horn.

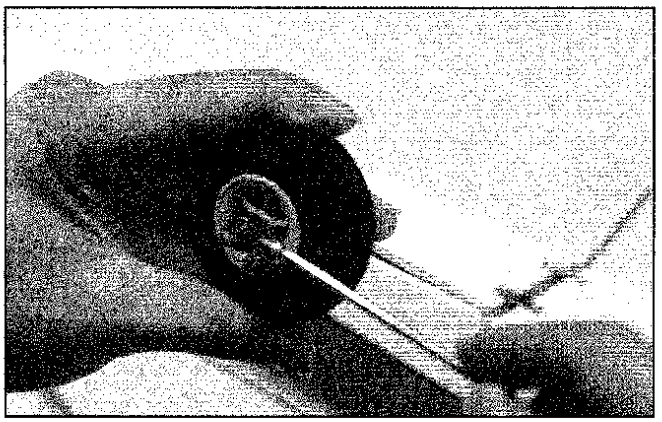
LANDING GEAR IN STALLATION



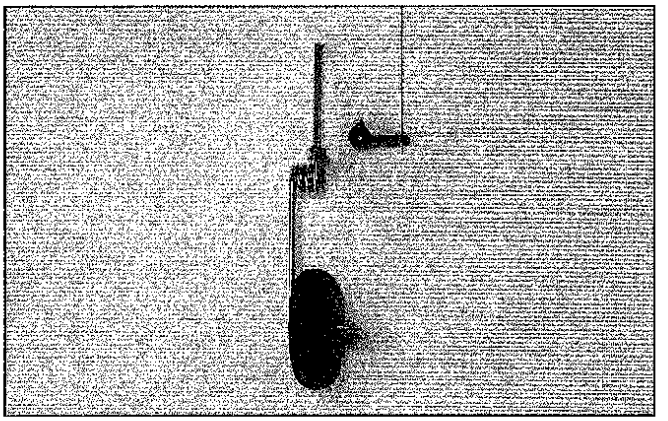
1. Insert the short vertical leg of the two main landing gear wires into the holes in the fuselage and twist them into place until they are flush with the fuselage bottom. Place the metal landing gear straps over the landing gear as shown in the photo and mark where to drill the mounting holes.



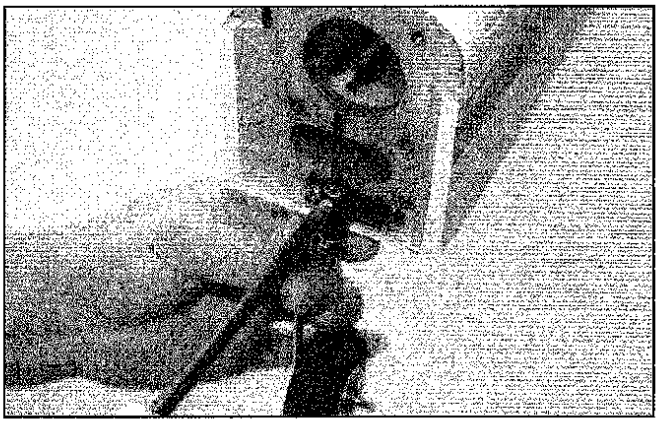
2. Remove the straps and drill 5/64"(2mm) holes at each mark. Mount the landing gear straps using the four 3x10mm wood screws provided.



3. Slides the two 2-1/4" dia. wheels onto the main gear axles and secure each one with a 5/32"(4mm) wheel collar and a 3x5mm screw. Position the wheel collar so the screw is towards the back of the plane. The wheel collar should be pressed up against the wheel to minimize "play" but not tightly enough to impede easy and smooth wheel rotation.

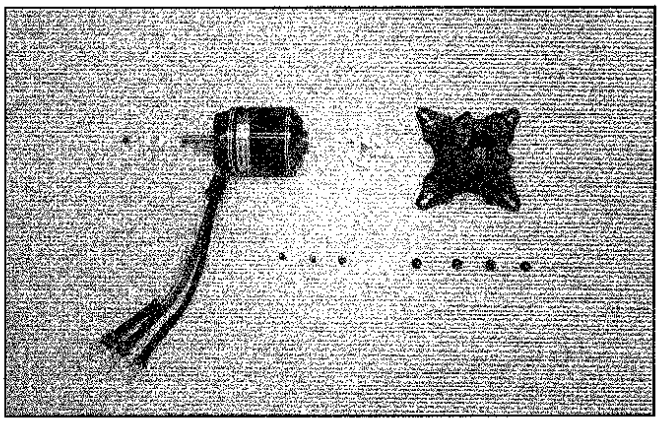


4. Slide the remaining wheel onto the nose gear wire and secure it with a 5/32" (4mm) wheel collar and a 3 x 5mm screw. Slide the other wheel collar onto the top of the nose gear wire so the screw hole in facing forwards. Insert the steering arm collar in the steering arm and use 3x5mm screw to hold the collar in place

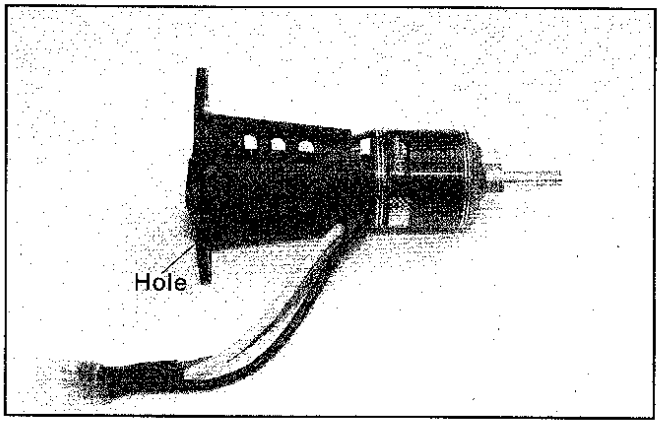


5. Secure the nose gear mount in place with two 6/32 x18mm screws. Attach the steering pushrod on the steering arm then insert the pushrod into the fuselage. Next slide the nose gear assembly up through the nose gear mount as well as the steering arm. Position the nose gear so the steering arm is parallel with the firewall when the nose gear is straight forward.

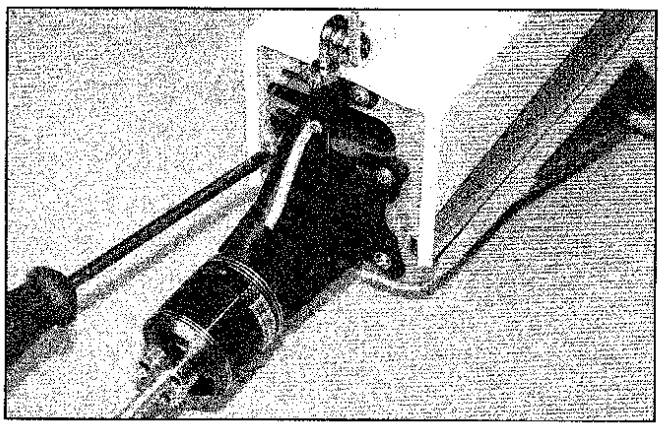
Power Unit Installation
OBL Power Unit



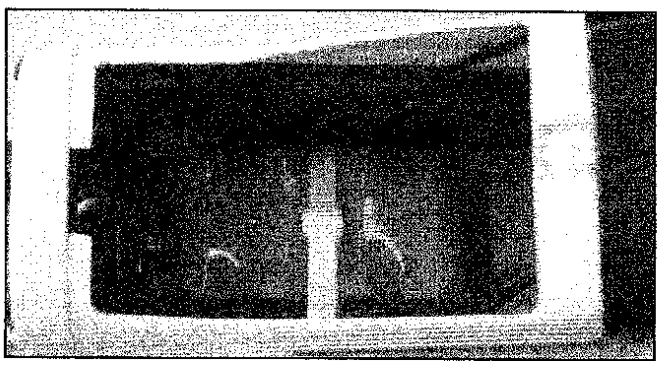
1. Locate OBL motor, motor mount, prop adaptor, collar, 3x6mm Sink Head Screws(4), 2.5x8mm machine screw (3) and 4x5mm set screw(1). The airplane kit only comes with motor mount and sink head screws. If you buy Thunder Tiger OBL motor then the collar , screws and prop adaptor are included in the motor package.



2. Refer to the brushless motor manual and secure the collar and prop shaft in place with the 4x5mm set screw and 2.5x8mm machine screws respectively. Next install the motor on the OBL motor mount with sink head screws. Note the orientation of the hole on base of motor mount and wires of the motor.

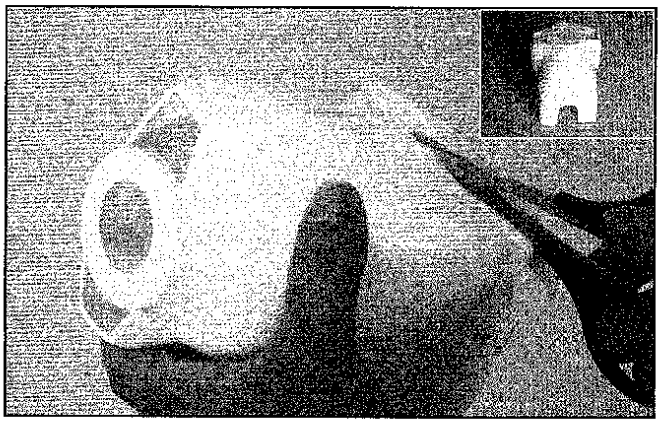


3. Attach the motor mount assembly on the fuselage firewall and secure the mount with 6/32 x 18mm screws. The nose gear wire should insert to the hole and make sure steering is free.

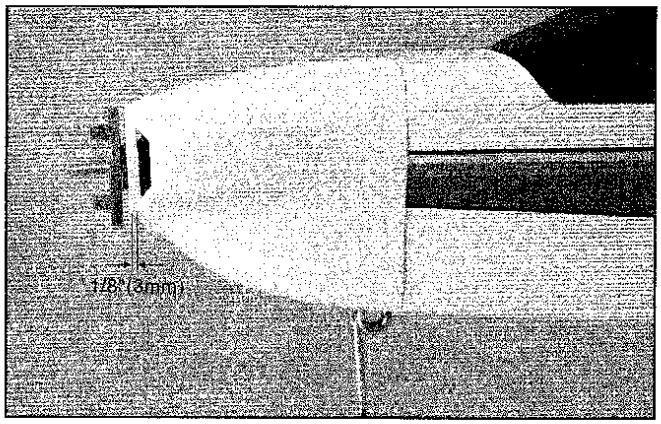


4. Install the battery (No. 2973 used shown) in the front compartment, use nylon tie and secure the battery in place as shown. Connect the OBL motor wires to the controller. The controller we use here is BLC-40A (No.8027). Refer to the controller manual and linkage to radio. Test drive the motor before you install the prop and make sure all the connection is correct and motor rotates counter clockwise.

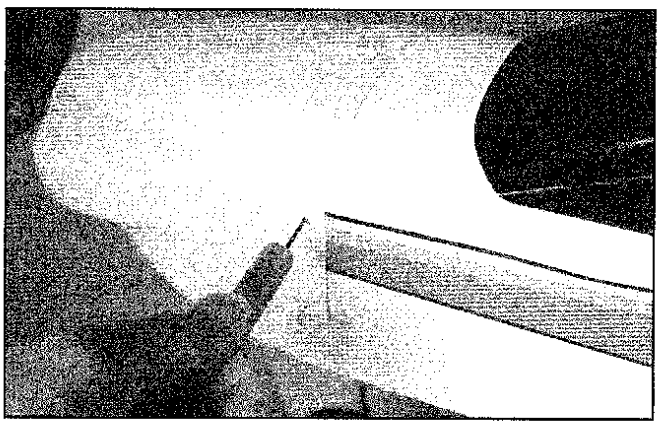
Note: Secure the battery tightly and place a foam or spacer to cover the screws on the backside of firewall as they might hurt the battery when heavy landing or crash. Use care to install battery in this step, specially those who would use Lipo Battery.



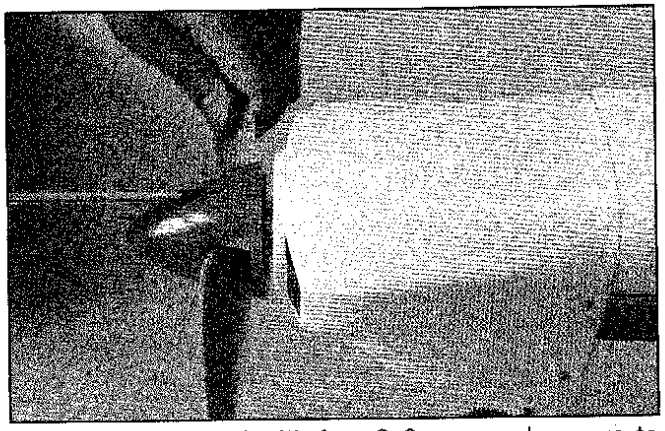
5. Trim the cowl along with the molded lines at the bottom of the cowl as well as in the air inlets, prop shaft and nose gear wire opening.



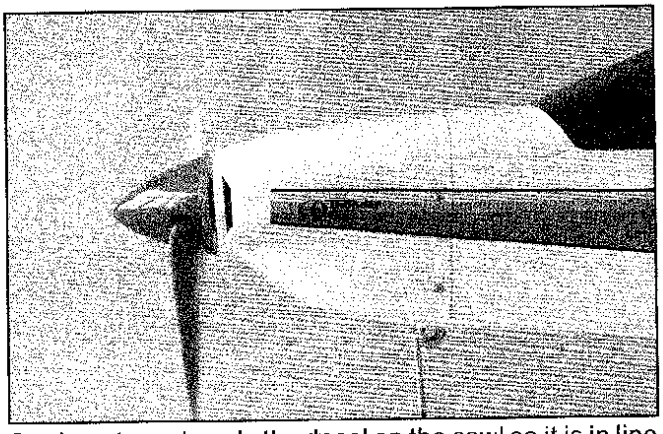
6. Test fit the cowl onto the fuselage, it should nicely fit to the fuselage. Install the spinner backplate on the prop shaft. Adjust the cowl until it is centered behind the spinner backplate with approximately 1/8" (3mm) of clearance between the backplate and the cowl. Use a few strips of tape to hold the cowl in place.



7. Drill two 1/16" (1.5mm) mounting holes on each side of the fuselage, approximately 3/16" (5mm) from the back edge of the cowl. The top hole should be 1/8"(3mm) below the top of the fuselage stripe and the bottom hole should be 1/2" (15mm) above the bottom of the fuselage. Do not vary these screw location much or they might not have sufficient wood to "grip" into.

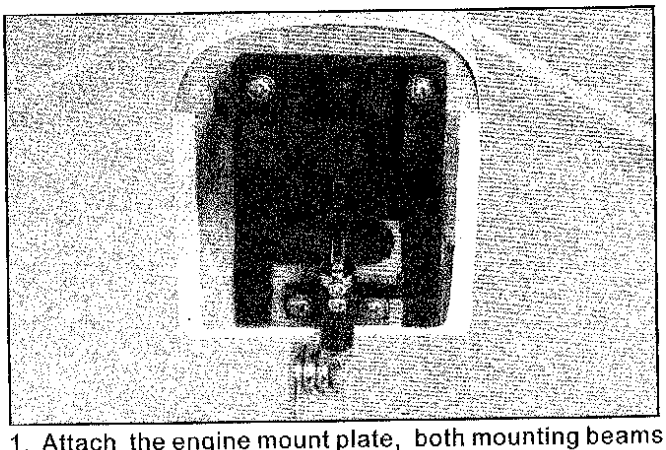


8. Secure the cowl with four 2x8mm wood screws to hold the cowl in place. Now remove the cowl and carefully apply a drop or two of thin CA to each of the four cowl mounting holes. Allow the CA to fully cure before replacing the cowl. This will harden the wood in the holes. Install the cowl again but do not screw the upper wood screw at this moment as cowl decal will be applied in next step. Secure the spinner with two 3x12mm self-tapping screws.

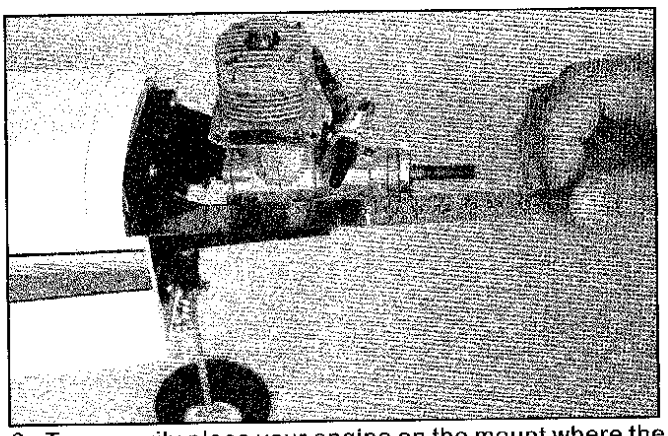


9. Locate and apply the decal on the cowl so it is in line with the trim scheme. Next screw the rest two 2x8mm wood screws at the same holes on fuselage.

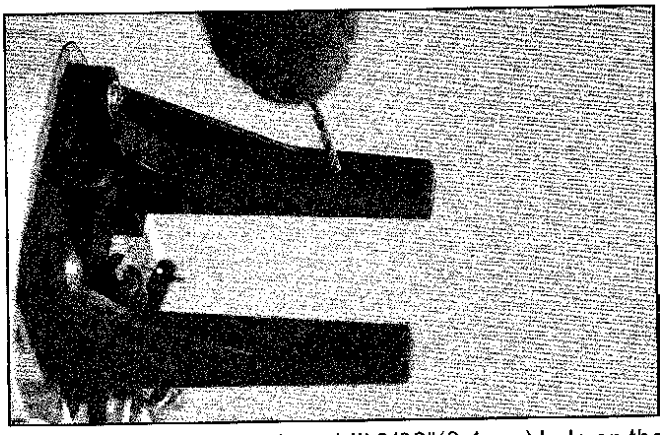
Nitro Power Unit



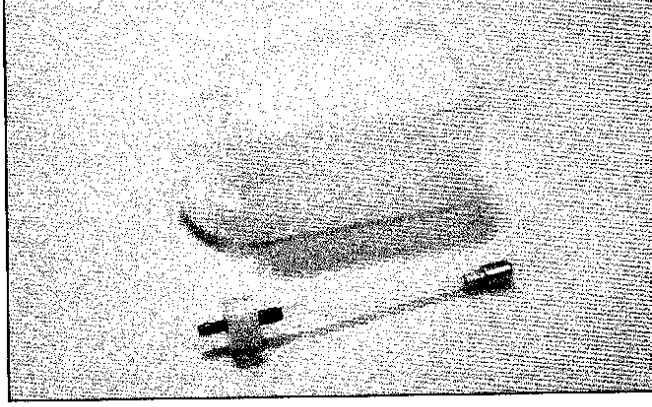
1. Attach the engine mount plate, both mounting beams to firewall and secure the engine mount in place with provided 6/32 x18mm screws.



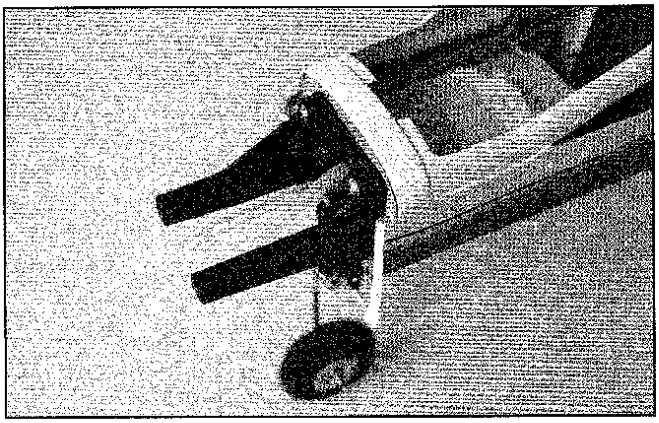
2. Temporarily place your engine on the mount where the drive washer is 4- 1/4" (108mm) away from the firewall. Make marks on the mount at the four engine mounting holes.



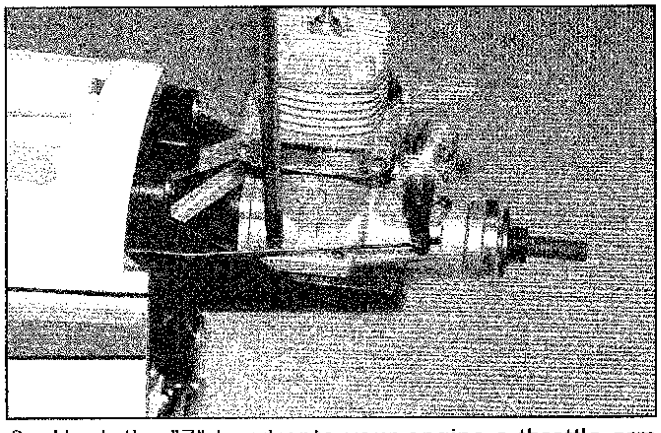
3. Remove the engine then drill 3/32"(2.4mm) hole on the four marks you made. "Break-in" the mounting holes by inserting a 3x15mm self-tapping screw into each hole without the engine in place. A drop of oil will help the screws thread in easier.



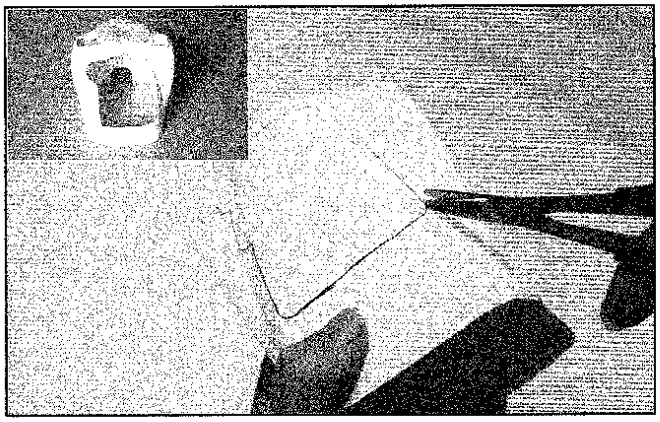
4. Assemble the fuel tank by first cutting the silicone tube to 3" in length. Press the straight plastic nipple (the 90 degree nipple is not used in this plane) into the rubber stopper until the molded in ring is against the stopper. Rubbing alcohol applied to the nipple will make it slip inside the stopper easier. Now slip the silicone tubing onto the nipple and insert the metal clunk in the other end of the tubing. Insert this assembly into the tank(clunk first) and screw the threaded cap on to hold everything together.



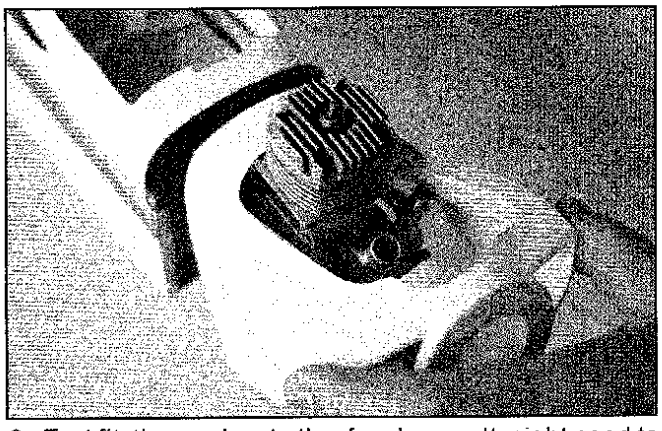
5. Cut Two 6" lengths of standard size Silicone Fuel Tubing and slip one onto the nipple extending out of the cap and the other onto the top vent of the fuel tank. Slide the fuel tank into the fuselage and route the two fuel tubes through the firewall. Before you slide the fuel tank, thread the nylon tie on the plywood support first and secure the fuel tank firmly in place later.



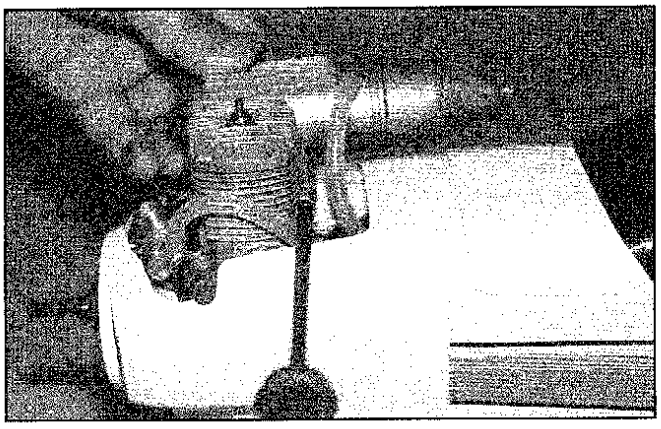
6. Hook the "Z" bend onto your engine s throttle arm and move the engine into position. You may have to bend some jogs in the wire to prevent binding of the linkage. Screw the engine in place on the mount with four 3x15mm self-tapping. The engine will have down and right thrust and this is to adjust the plane track straight forward during takeoff and nose-high maneuvers.



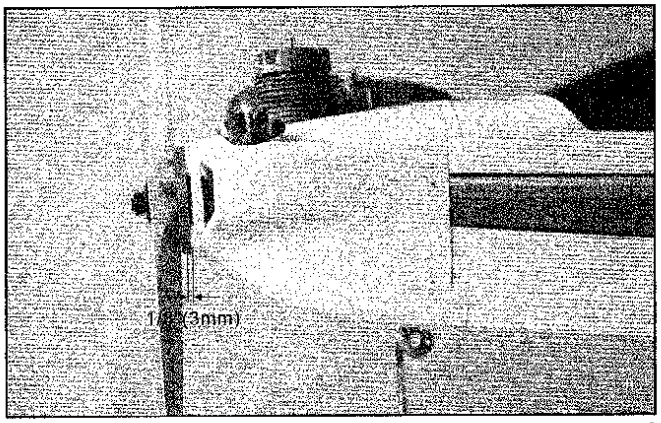
7. Apply a template (see page 25) on cowl about 8mm from the front end. Make marks along the template on the cowl then trim the cowl along with the line you drew. Also trim away air inlets , crankshaft opening as well as the nose gear wire opening.



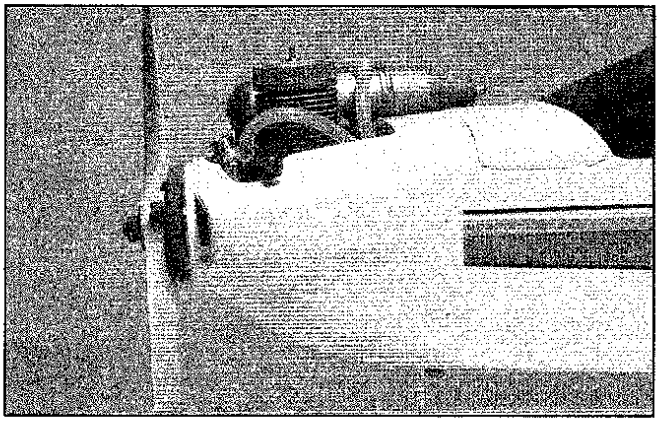
8. Test fit the cowl onto the fuselage. It might need to bend the cowl slight for easy installation.



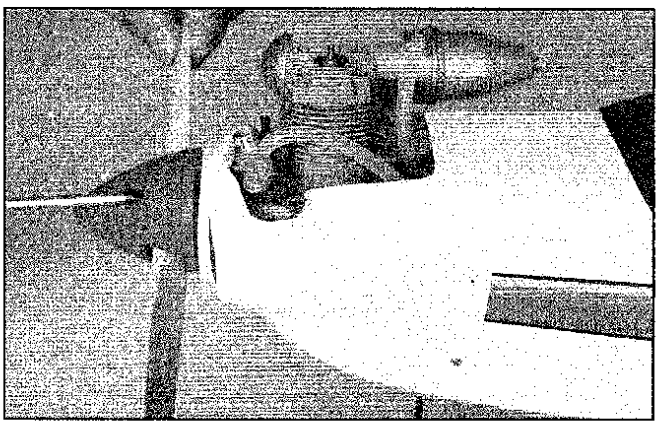
9. Install the muffler on to the engine to make sure the cowl will not interfere with it. You may have to trim the cowl to get the muffler to fit. There should be at least 1/8" of clearance all around the muffler or the heat created during running may melt that part of the cowl. Connect the fuel tubing to carb and muffler. The top line is the vent/pressure line and should go to the pressure tape on the muffler. The bottom line is fuel line and should go to the nipple on the carburetor. Cut off any excess tubing but allow enough extra tubing to keep the lines from kinking.



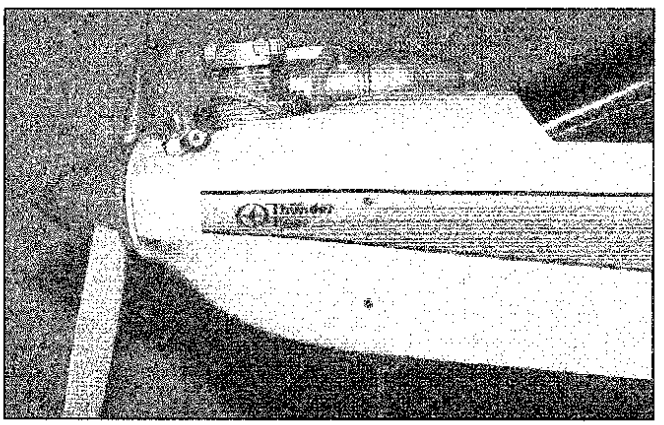
10. Install the spinner backplate on the engine prop shaft and temporarily secure it with the prop, propnut and washer. Adjust the cowl until it is centered behind the spinner backplate with approximately 1/8" (3mm) of clearance between the backplate and the cowl. Use a few strips of tape to hold the cowl in place.



11. Drill two 1/16"(1.5mm) mounting holes on each side of the fuselage, approximately 3/16"(5mm) from the back edge of the cowl. The top hole should be 1/8"(3mm) below the top of the fuselage stripe and the bottom hole should be 1/2" (15mm)above the bottom of the fuselage. Do not vary these screw location much or they might not have sufficient wood to "grip" into.

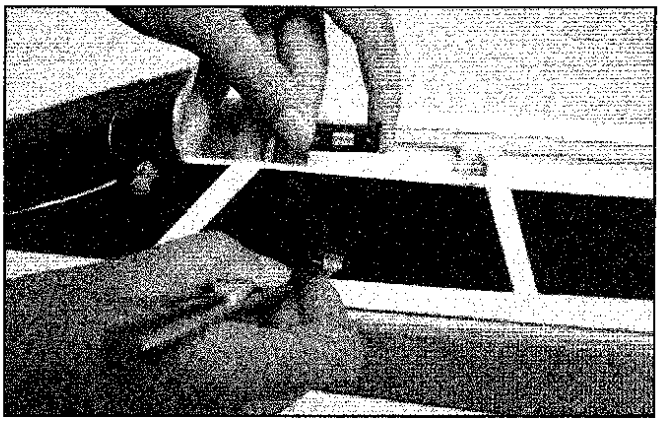


12. Secure the cowl with four 2x8mm wood screws to hold the cowl in place.Now remove the cowl and carefully apply a drop or two of thin CA to each of the four cowl mounting holes. Allow the CA to fully cure before replacing the cowl. This will harden the wood in the holes. Install the cowl again but do not screw the upper wood screw at this moment as cowl decal will be applied in next step. Secure the spinner with two 3x12mm self-tapping screws.

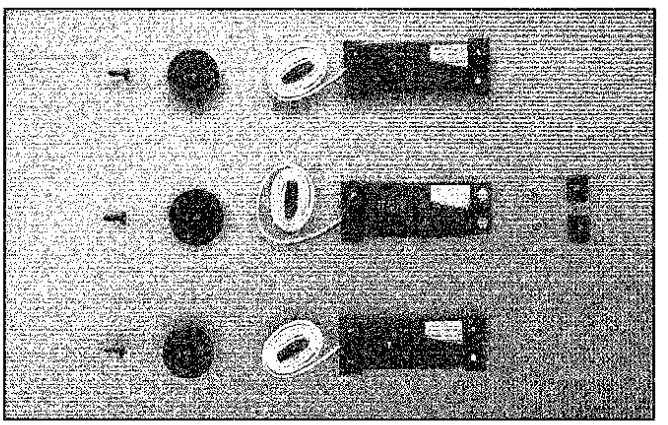


13. Locate and apply the decal on the cowl so it can in line with the trim scheme.

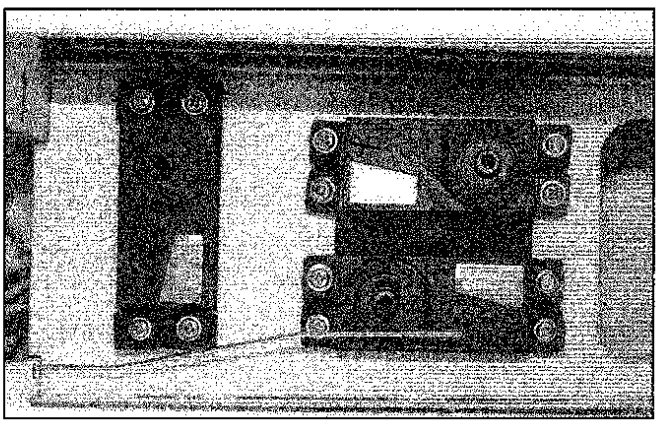
RADIO INSTALLATION



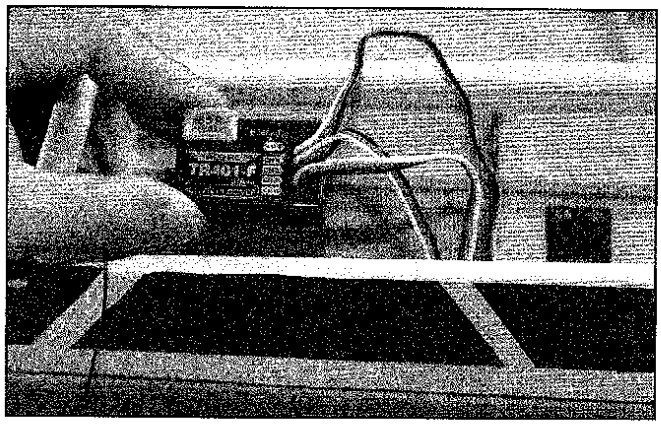
1. Using the switch cover as a template, cut an opening in the side of the fuselage to mount the switch in. It should be positioned approximately as shown in the photo. Drill two 5/64"(2mm) holes for the switch mounting screws and install the switch.



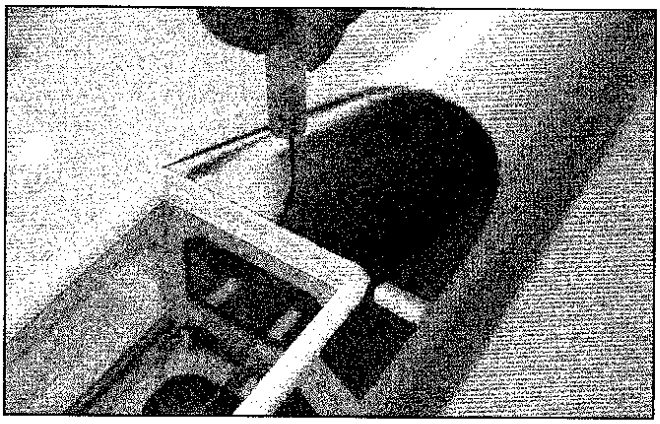
2. Assemble the servos by installing the rubber grommets following the instructions that came with the radio system. Remove the servo control horns(wheels).



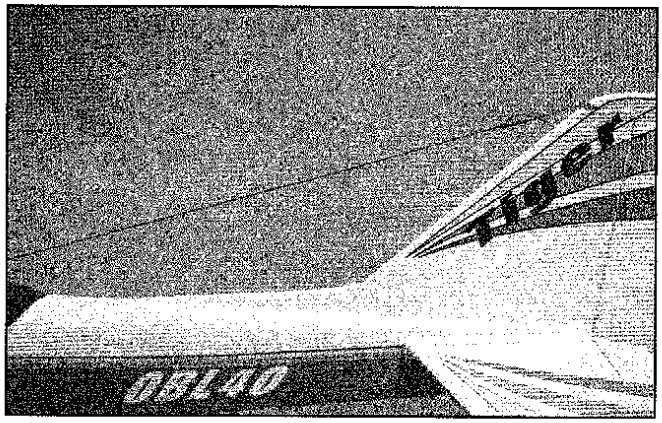
3. Install three servos in the fuselage servo tray using the mounting screws that came with your radio. The servos should be oriented as shown in the photo. You may skip the throttle servo if you install an electric power unit.



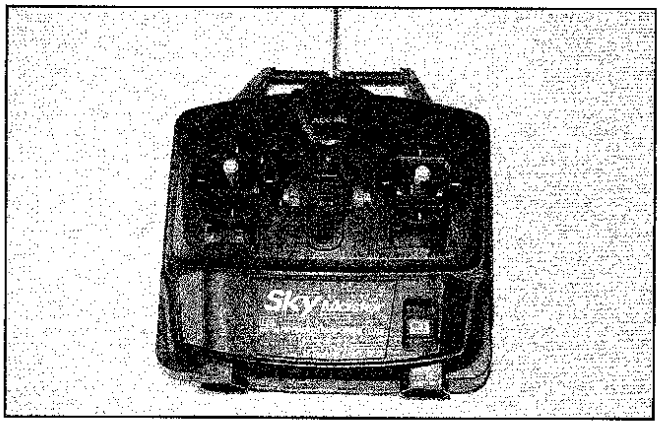
4. Wrap the receiver and battery pack in 1/4-1/2" thick foam rubber and use either rubber bands or masking tape to hold the foam in place. The foam rubber has been removed in the photo for visual clarity. Allow the antenna and battery lead to exit without wrapping or coiling the wires. Plug the battery pack lead into the switch harness and the switch harness into the proper slot in the receiver. Plug these servos into their correct slots and also plug an aileron servo extension into the aileron slot on the receiver. If you have any questions regarding this procedure, the radio instructions should give more detailed instructions. Now place receiver inside the fuselage, just in front of the radio tray, and place the battery in front of the receiver. Double sided foam tape(servo tape) can be used to help hold things in place. Note: If during balancing of the model you find you need to add nose weight then move the battery forward.



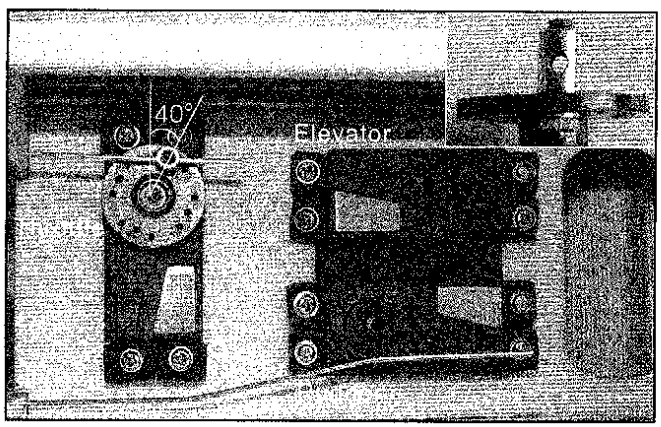
5. Drill a 5/64"(2mm) hole in the center of the rear window for the receiver antenna to exit. Route the antenna through the radio compartment and up through the exit hole. Use your felt tip marker to make a mark on the antenna where it exits the fuselage and then pull a few inches of the antenna back inside the radio compartment. Wrap a piece of tape(most any type will work) around the antenna where the mark is to act as a stop. This will help prevent the antenna from being pulled out of the receiver if the antenna get pulled on. IMPORT-Do not cut(or lengthen) the antenna wire or you may adversely affect the range of your radio system! It is also a good idea to route antenna as far away from the other radio equipment as is realistically feasible. Try not to route right next to other servo wires, etc.



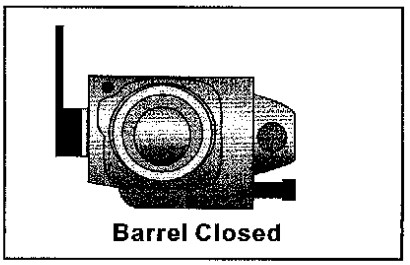
6. Insert either a straight pin or a T-pin in to the top of the fin and use a small(#10-#16) rubber band to attach the receiver antenna to the pin. To do this, simply lay the antenna on top of the rubber band and pull one half of the rubber band up through the other half of the rubber band. Pull the first half tight against the atntenna and up to the pin. When properly positioned the receiver antenna will have enough tension on it to keep it straight but not enough to damage the wire.



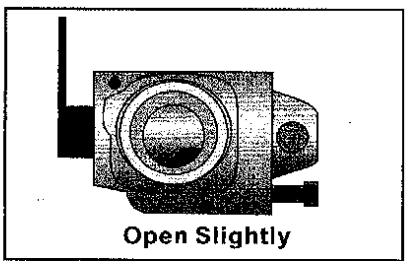
7. Install and/or charge the batteries in your radio system and turn on both the transmitter and the receiver. Adjust all of the trims on the transmitter to their neutral position. You should hear the servos in the fuselage move when you do this. Now move the throttle stick(left, positionable stick on mode 2 radios) all the way down to the idle position and move the throttle trim lever all the way down.

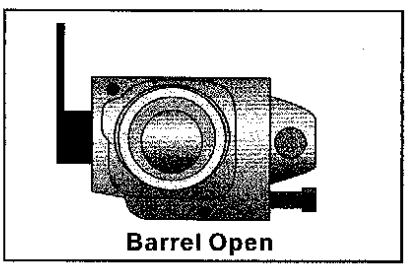


8. Install a pushrod EZ connector on the servo horn as shown. Slide the throttle pushrod through the EZ connector and then press the horn onto the throttle servo so it is positioned about 40 degrees to the rear of the plane as shown in the photo. With the radio system still on, move the throttle stick up and check to make sure the EZ connector rotates towards the front of the plane. If it does not, switch the servo reversing switch on the transmitter (see radio instructions) and re-adjust the throttle servo horn. Move the throttle stick back down to its "idle" position.

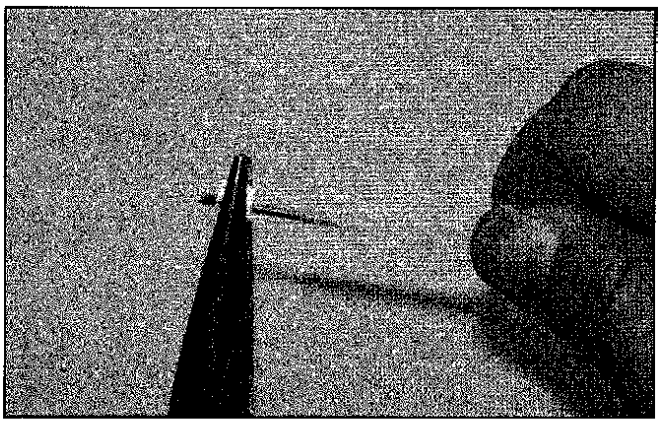

Barrel Closed

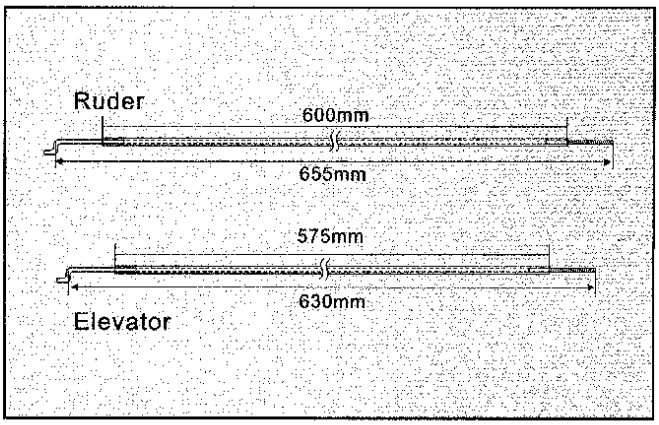
9. Grasp the throttle pushrod, and while looking at the opening in the top of the carburetor, adjust the pushrod until the throttle barrel(inside) is all the way closed. Tighten the setscrew in the pushrod connector to secure the pushrod in that postion. Cut off the excess throttle pushrod approximately 1/2" past the EZ connector.


Open Slightly

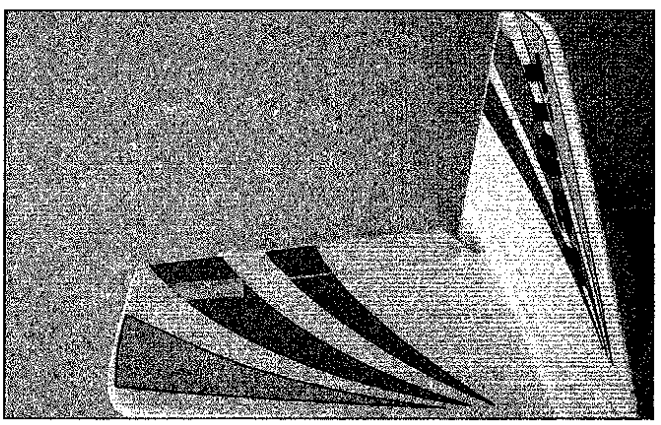

Barrel Open

10. With the radio system still on, move the throttle trim lever up the middle. This should open the carburetor barrel up slightly(1/32"-1/16") and allow the engine to idle satisfactorily. To shut the engine off from the transmitter, simply move the throttle stick and trim lever all the way down. Now move the throttle stick up and watch the carburetor barrel. It should reach full open at the same time the stick reaches it end point. If it does not follow the instructions below. If the barrel does not open all the way, move the pushrod in one hole in the carburetor throttle arm. If the carburetor barrel reaches full open and makes the servo " hum" very early in the transmitter sticks movement, move the pushrod connector in on the servo horn(to a hole that is closer to the center of horn).

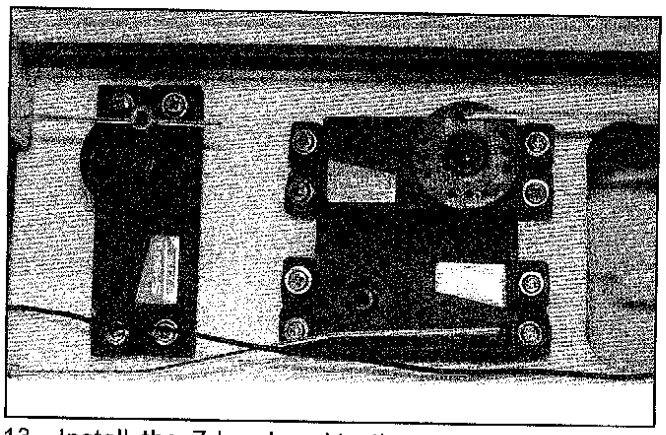




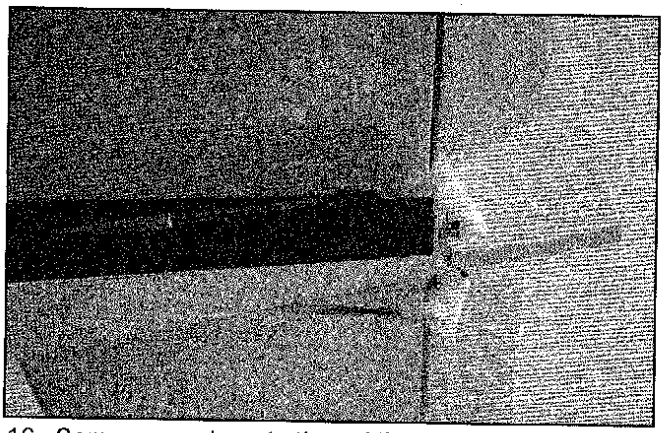
11. Locate the straight threaded ends , Z- bend threaded ends and the inner pushrods which are in fuselage. Assemble two pushrods as figures shown in length by threading two threaded ends into the inner rod. Use needle nose pliers to help thread the ends, it will be necessary to put a piece of paper or cloth on the threaded end at the clip area to protect the threads from damage.



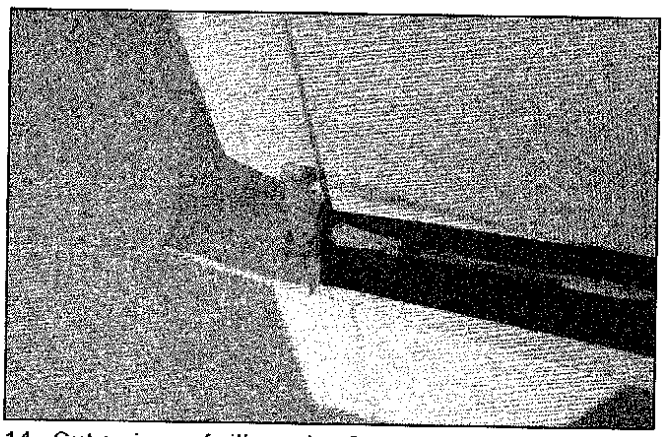
12. Tape the elevator and rudder in their neutral position applying a strip of masking tape over the gap between the control surface and the tip of each surface.



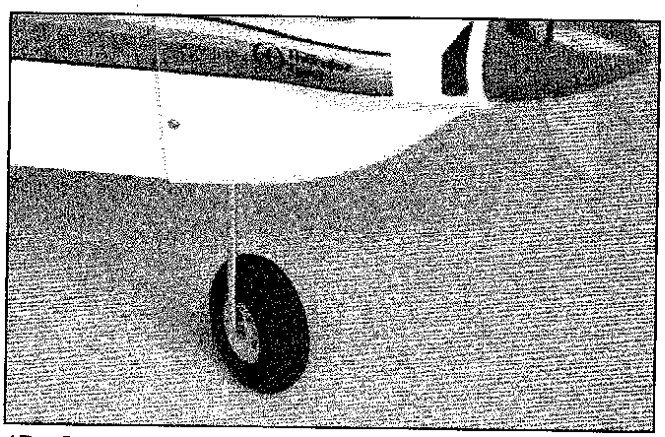
13. Install the Z-bend end to the servo then insert the pushrod assembly to the outer tube in the right side of fuselage and out the exit hole in the aft end of the fuselage. Press the elevator servo horn onto the servo when servo is in its neutral position and screw on the servo horn servo.



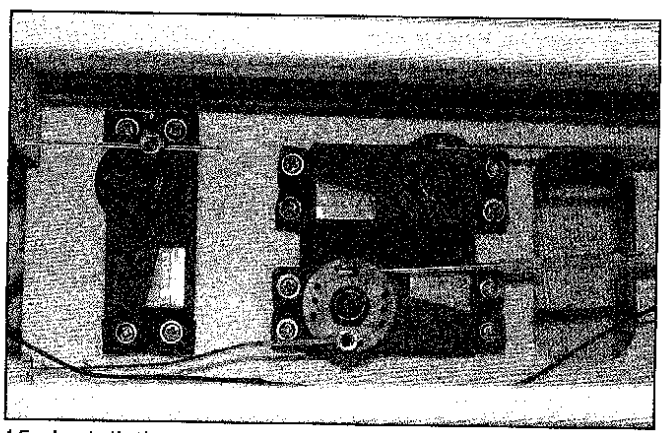
16. Same procedure to thread the clevis and snap onto the rudder control horn when rudder and rudder servo are in neutral position.



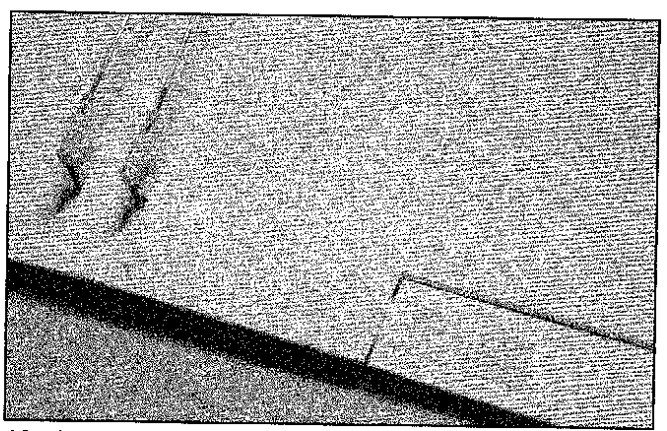
14. Cut a piece of silicon ring from the tubing and thread onto clevis. Next thread a clevis onto the elevator pushrod until approximately 10 threads are visible inside the clevis and snap the clevis into the third hole in the elevator control horn.



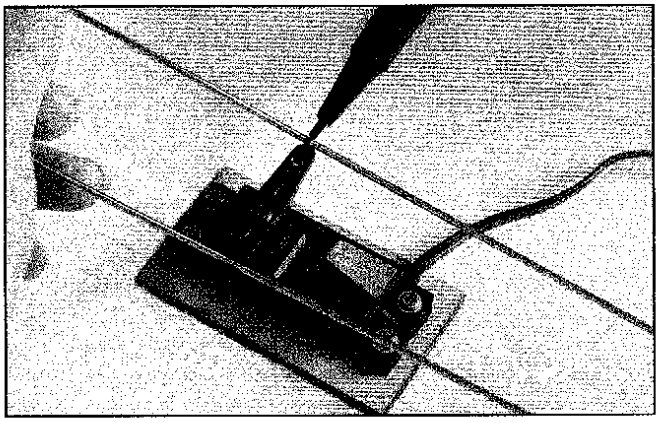
17. Secure the steering pushrod when rudder servo in neutral position and nose gear is forward straightly. Make sure the rudder and steering are in correct direction, if radio rudder stick to the right then wheel should turn right and rudder moves right. See page 24 for correct movement of steering.



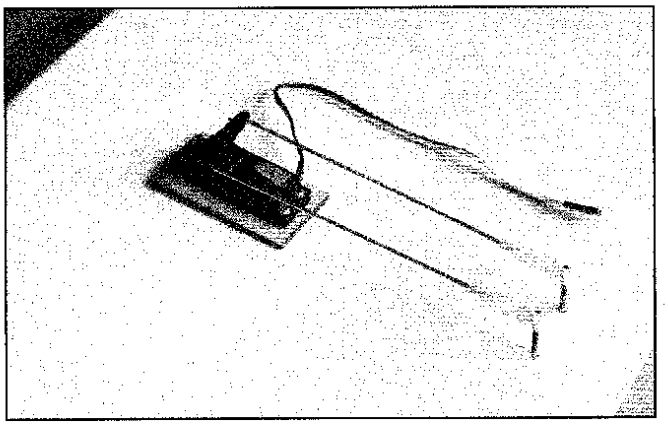
15. Install the other EZ connector on the rudder servo horn. Do the same procedure to install the rudder pushrod on the rudder servo and rudder control horn. The difference is you will have thread the steering pushrod to EZ connector then press the servo horn onto the rudder servo.



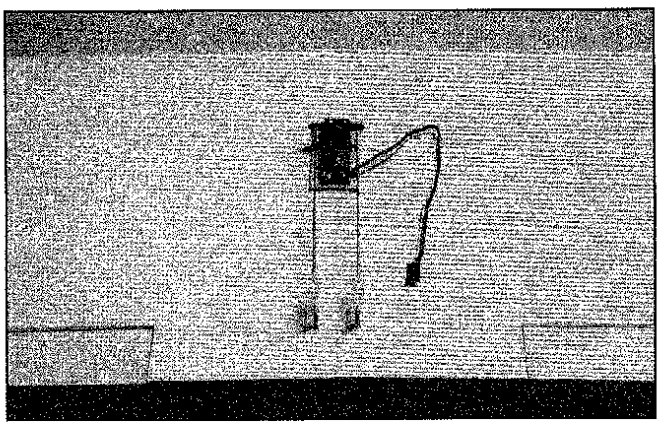
18. Apply masking tape to both ailerons to hold them in their neutral positions just as you did the rudder and elevator earlier.



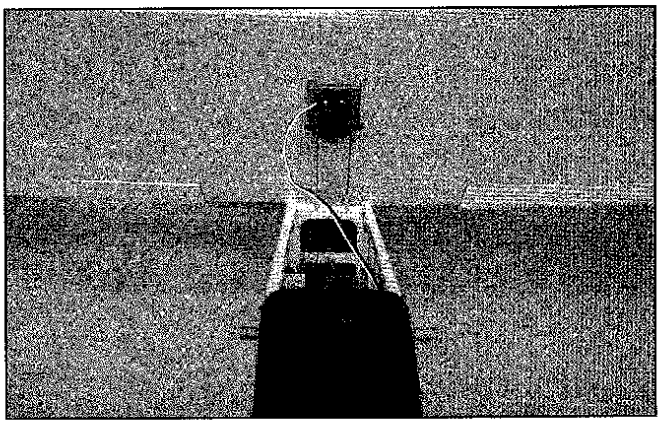
19. Install the rubber grommets that came with the aileron servo and then mount the servo into the aileron servo tray using the screws that came with the servo. Install a 2-arm type servo horn(or cut 2 opposite arms off a 4-arm horn) on the servo. With the aileron servo horn in its neutral position, lay the aileron pushrods over the servo horn holes. Make mark right on the hole.



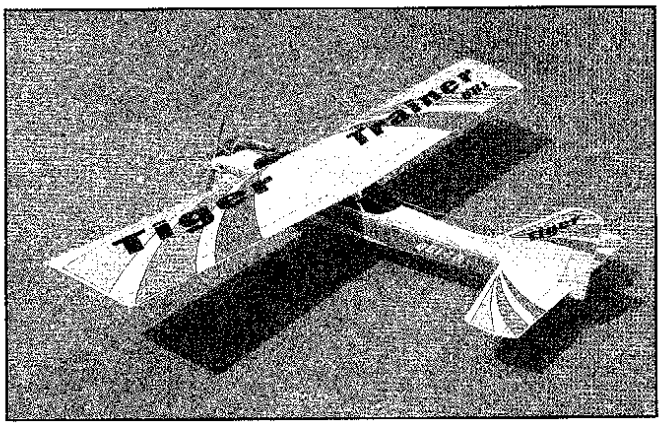
20. Make a Z-bend at the mark on each wire and then cut the excess wire off approximately 1/4" past the Z-bend.



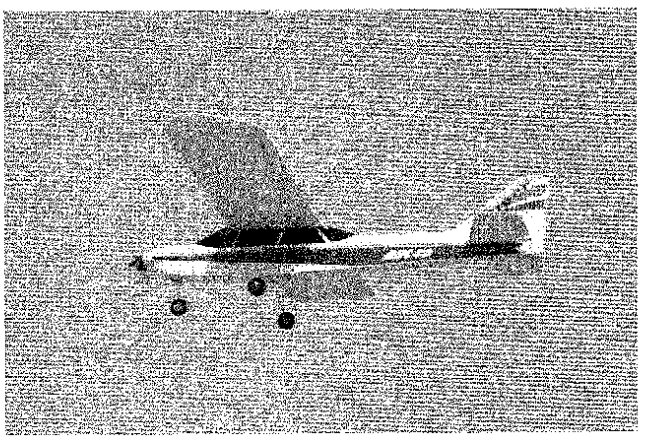
21. Remove the servo horn and insert the Z-bends into the 3rd holes in the servo horn. Press the servo horn on the servo and adjust the clevises if necessary to bring both ailerons into their neutral position when the servo horn is in neutral position.



22. Place the wing onto the fuselage and tuck the aileron extension into the radio compartment. Use at least 8(eight) #64 rubber bands to hold the wing in place. A good method of doing this to apply 2 rubber bands from the left front dowel to the left rear dowel, 2 from the right front dowel to the right real dowel . 2 from the right front dowel to the left rear dowel and the remaining 2 from the left front dowel to the right rear dowel .

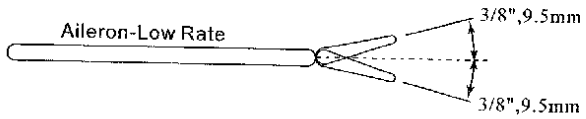


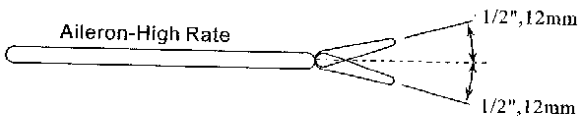
23. Congratulations ! Now your Tiger Trainer OBL is ready to fly. Please do the radio movement check as well as the balance and control throw before you go to fly. All Thunder Tiger staffs hope you enjoy flying your new Tiger Trainer OBL.

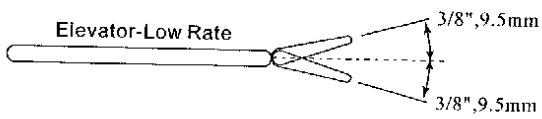


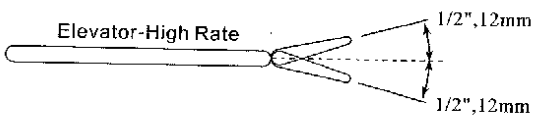
CONTROL THROWS

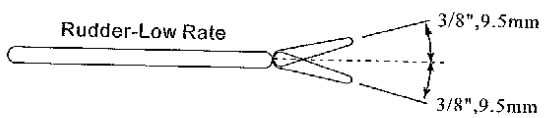
Make sure the direction of servo moves correctly. If not switch the reversing switch on the transmitter. If the control surface does not move far enough, either move the pushrod out farther on the servo horn or move the clevis in farther on the control horn. If the control surface moves too much, either move the pushrod in on the servo horn or move the clevis out farther on the control horn. Adjust the control throws as following suggested.

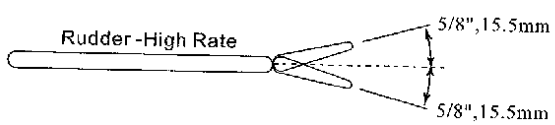


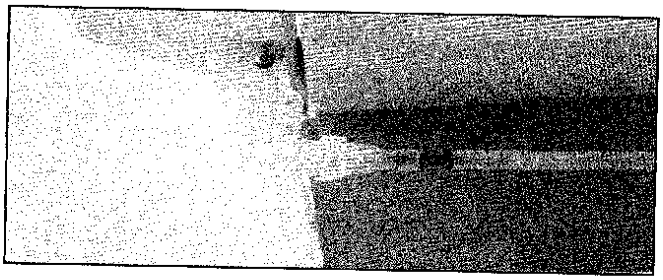












After adjusting all the control throws, thread on the silicon ring in place to hold the clevis from loosening when in flight.

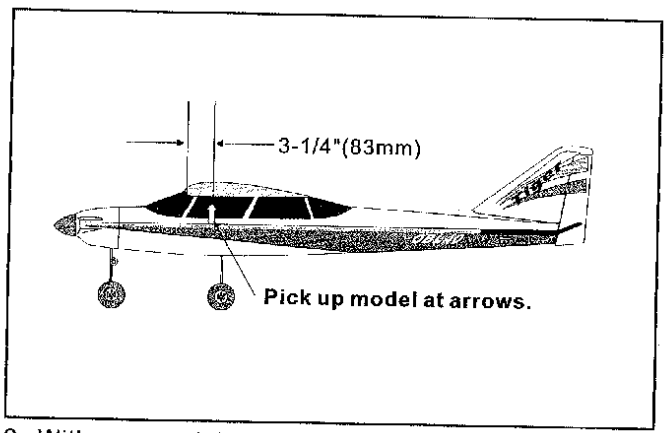
PRE-FLIGHT

Even though this plane is designed for beginners, we highly recommend that you find an experienced modeler to look over your model and help you with the fist flights.

BALANCING YOUR PLANE

IMPORTANT- Do not fly your model before completing this very important section. A model that is not properly balanced will be unstable could cause serious damage and/or injury.

1. Turn the wing (and plane if assembled) upside down and about where the center sheeting stops on each side of the wing, measure back 3-1/4" (83mm) from the Leading Edge of the wing and make a mark with your felt-tip pen. This is the balance point.



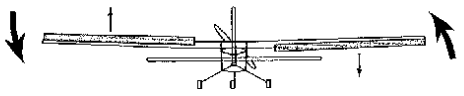
2. With your model fully assembled but without fuel, turn the model upright and pick it up with one finger at each of the balance marks you made earlier. If balanced properly the plane will hang horizontally.

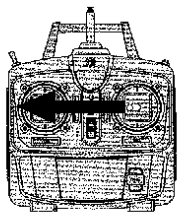
If the plane hangs with the tail down, then you need to add (or redistribute) some weight in the nose. Usually the plane will either balance or hang slightly tail heavy. The easiest cure for a tail heavy plane is to move the receiver battery forward and use some foam rubber to hold it in place. The receiver can also be moved forward as far as possible.

If the plane hangs nose down, then you need to add some weight to the tail. Stick-on lead weights are available from your hobby dealer that make adding weight a simple task.

THE DIRECTION OF MOVEMENT (AILERON, ELEVATOR AND RUDDER)
Radio shown is Mode II

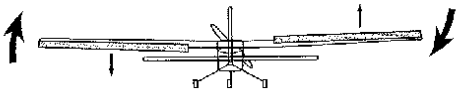
RIGHT ROLL

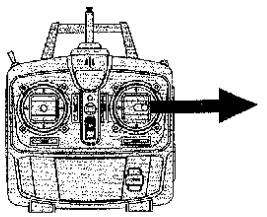




Move the stick to the right.

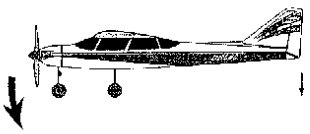
LEFT ROLL

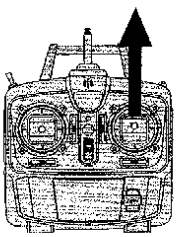




Move the stick to the left.

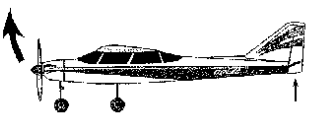
DOWN

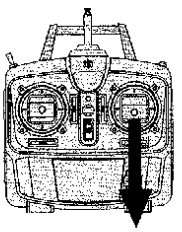




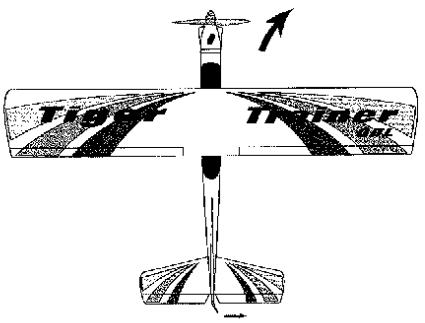
Move the stick up.

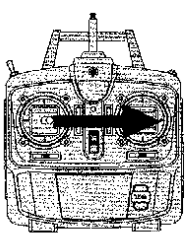
UP



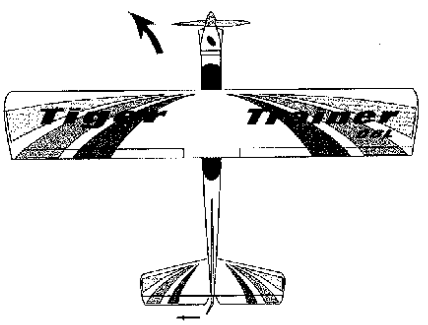


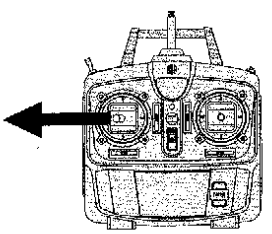
Move the stick down.





Move the stick to the right.





Move the stick to the left.

CHECK YOUR BATTERIES

Make sure you have fully charged batteries! With rechargeable batteries, follow the manufacturers instructions to make sure the batteries are fully charged, especially the first time the radio is used.

If your radio uses dry cells, make sure your batteries are in new condition. You have a lot of money invested in this project so it is not worth the risk of using old batteries.

LOCATE A GOOD FLYING SITE

Generally, the best place to fly your models is at a AMA (Academy of Model Aeronautics) or SFA (Sport Flyer Association) chartered club field. Your local hobby dealer can tell you if there is such a club in your area or write each organization at the address below for information. It is also a good idea to join one of these organizations before flying your model since they offer liability insurance that can protect you if your model causes damage or injury to others.

Academy of Model Aeronautics

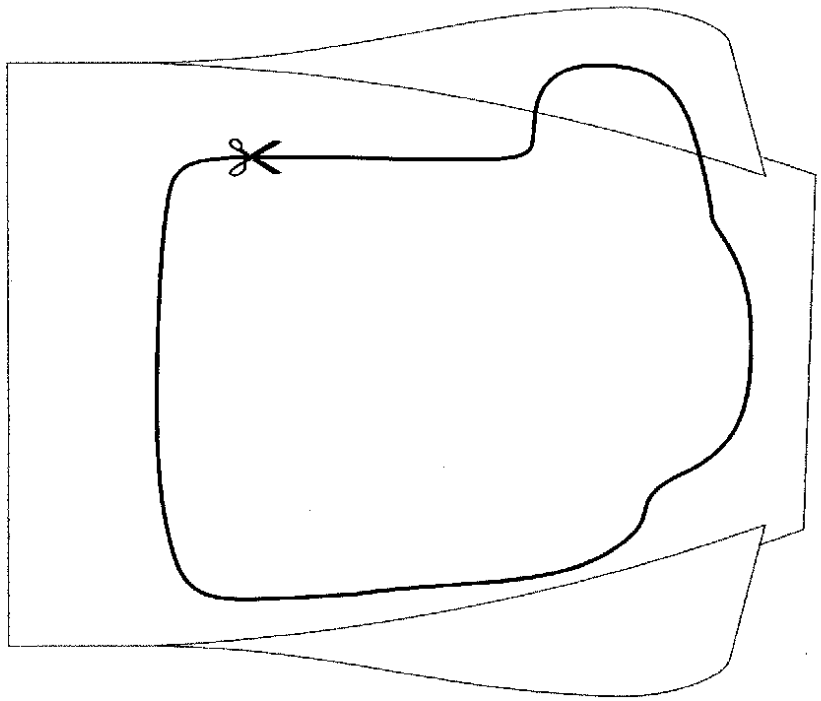
5151 East Memorial Dr.
Muncie, IN 47302-9252

Sport Fliers Association

4444 Westgrove, Suite 300
Dallas, TX 75248

If there is not a chartered club field in our area, you will need to find a large area, free of obstructions that has a smooth grass or asphalt surface to be used as a runway, For safety's sake, it should be located well away from houses, buildings, schools, power lines and airports. If you will be flying within 6 miles of an airport, you should check with the airport manager before flying your model,

Trim Template for Nitro Power Unit



PRE-FLIGHT CHECKS

OBL Power

You should perform these checks before each flying session.

1. Check all control surfaces for possible looseness or deterioration as well as screws, clevises, nuts, rubber bands and all other connectors to make sure they are securely fastened.

2. Refer to manual of controller and well connect all cables and check if battery is secured firmly before you switch on the radio.

3. Check which radio frequencies are being used. Do not turn on your radio until absolutely sure you are the only one operating on that frequency!

4. Check for proper operation of all control surfaces.

5. Check the level of charge in both the transmitter and receiver batteries before flying.

6. Range check the radio both with and without the engine/motor running! Follow the radio manufacturers instructions for this.

SAFETY PRECAUTIONS

1. Wear safety glasses when running the motor.

2. Always turn on the transmitter first then the receiver battery. Turn off the receiver battery first then the transmitter.

3. Though controller may have safe start function, always make sure radio stick is at low throttle before you switch on the receiver battery or connect the battery connectors. (if no switch).

4. Do not run motor around gravel, sand or other loose debris. These materials may be kicked up by the prop.

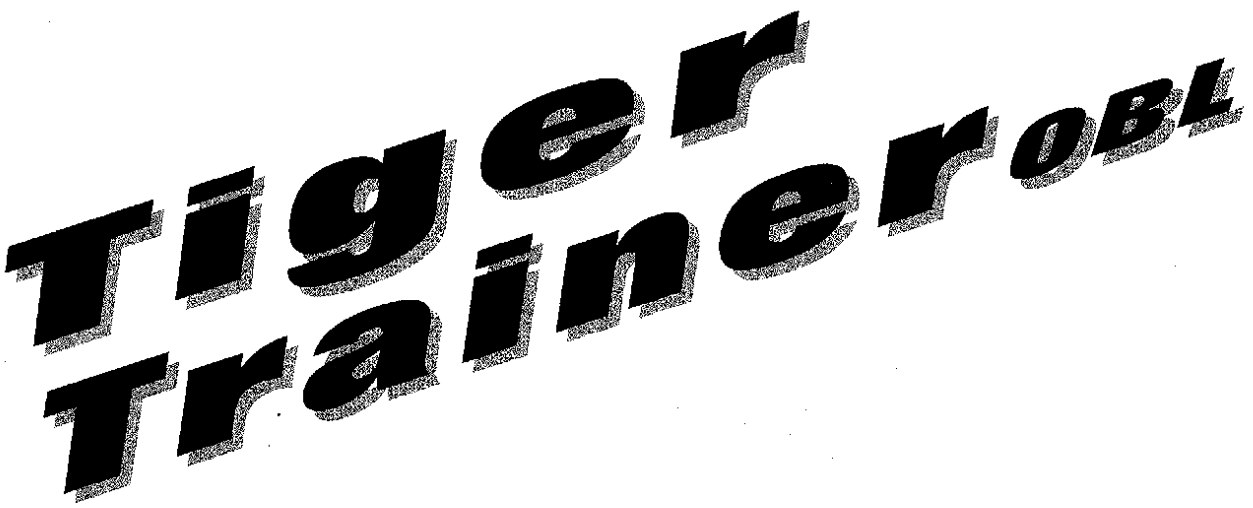
5. Always stay behind the propeller when the motor is running. Make all adjustments from behind the prop. Under no circumstances should you allow your face or body near the plane of rotation of the propeller when the motor is running.

6. Do not allow loose clothing or other loose objects close to the prop.

7. Refer to your controller manual and set up your controller.

8. Do not touch the motor, controller or battery during or right after it has been running-It gets very hot!

9. If you hear any unusual noises while your plane is flying. Land at once and determine the problem before returning to the air. Control surface flutter, which often emits a low pitched "buzz" can quickly destroy an airplane and should not be ignored, Flutter is usually caused by sloppy control surfaces and is generally relatively easy to cure.



Nitro Power

Please refer to OBL Power pre-flight checks as they are same.

SAFETY PRECAUTIONS

Please also refer the OBL power safety precautions and the following additional cautions.

1. Model engine fuel is very flammable and the flame is very dangerous because it is almost invisible!

2. Do not smoke or all ow sparks, high invisible! Do not smoke or allow sparks, high heat or other flames near the fuel.

3. Do not run model engines inside a garage or other closed room as they give off large amounts of deadly amounts of deadly carbon monoxide gas.

4. To stop an engine, cut off the fuel or air supply to the engine. Do not throw rags or other objects into the prop to stop the engine.

5. Do not touch the engine or muffler during or right after it has been running-It gets very hot!

FLYING

Learning to fly a radio control aircraft can be very exciting, but it is important that you thoroughly understand the basics of flight and controls before you attempt your first flights, Therefore, we highly recommend that you seek the expertise of an experienced modeler for these first few flights. He (or she) can get you in the air much more smoothly than trying everything yourself for the first time.

GETTING ORENTED

We recommend that you find a large smooth and clear surface to practice taxing your airplane around in before you try a take off. To taxi, you only need to use the rudder stick, At the slow speeds encountered during taxing, the elevator and ailerons will not be effective.

The first and most important thing to remember when controlling model aircraft is: the model controls are set up to operate as if you were sitting in the cockpit of the model. This means that when you pull back (down) on the Elevator stick the nose of the plane will go up. Moving the Rudder stick to the right will "yaw" the plane to the right and moving the Aileron stick to the right will "roll" the plane to the right. Pretty simple right? Well, not quite. Since you are really standing on the ground and not sitting in the plane, this is how the controls work when you are facing the same direction the plane is flying. The problem is that when the plane is flying towards you , the rudder and aileron controls seem reversed to the inexperienced pilot. This is the reason we recommend that you practice taxing around in a large open area to try and get used to the control reversal.

During your first few flights, try to face the direction that the plane is flying and looking over your shoulder as needed. This makes it a little easier to pretend that your sitting in the cockpit.

When you are comfortable with the controls, you should be ready for your first flight. Go over the Pre-Check List one more time for good measure and taxi out to the runway (hopefully with an experienced modeler by your side). Point the model directly into the wind and gradually increase the throttle to full throttle.

Once the plane reaches flying speed, it will probably try to fly by itself. If the grass seems to be impeding takeoff, a very slight amount of "UP" elevator can be applied, but it is very important that you do not apply too much up elevator too early or plane the will stall and roll over into the ground.

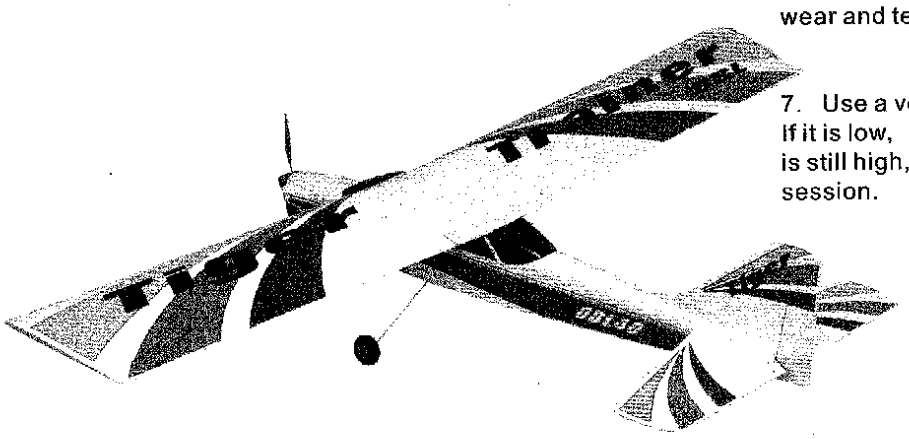
FIRST FLIGHT

As the plane becomes airborne, reduce the UP elevator and allow the plane to pick up flying speed while gently gaining altitude. Once a safe flying speed and altitude has been obtained, feel free to turn the airplane back towards the flying field. Make all control inputs smoothly and gradually so you can see the effect they have on the plane. A small amount of up elevator will need to be applied to keep the plane level during turns. You should be able to reduce the throttle to about 1/2 throttle for normal cruising flight which will reduce the flying speed and give you more time to think about what is going on. You will find that once airborne, you can fly the plane with only the aileron and elevator sticks. This is perfectly fine and will make it much easier for you to learn .

If the plane has a tendency to turn, roll, climb or dive, you can adjust the transmitter trims to correct this. On your first flights, it might be a good idea to have an experienced modeler make the adjustments for you while you fly the plane.

If you get disoriented or the plane gets out of control, simply take your hands off all the controls and allow the plane to stabilize. Clear your head and try to picture yourself sitting in the cockpit. Then input to the required control movements to get the plane back on the correct flight path. If you run out of time or flying space and realize the plane is going to hit something(gioundl, tree, etc,)pull the throttle back to idle pull the elevator stick down about half way. This will reduce the speed of the plane and minimize the damage sustained.

When you're ready to land, do a couple of slow flybys at a safe altitude to get familiar with the planes slow flying characteristics. An important factor to remember here is that you should regulate your altitude with the throttle, not the elevator as you might expect. Practice raising the nose of plane slightly with a touch of UP elevator and then using the throttle to regulate the planes altitude. When you're ready to land, fly downwind past the runway. When the plane is a hundred yards or so downwind, reduce the throttle to almost an idle and turn 90 degrees towards the runway. Fly straight for a second or two until the plane is almost even with the runway. Turn 90 degrees again and fly directly towards the runway using the throttle to govern how quickly the plane is descending. Keep the nose of the plane up slightly with the elevator and allow the plane to fly gently onto the runway. Do not try to stretch the glide path without increasing the throttle or the plane may stall.



POST-FLIGHT CHECK LIST

OBL POWER

1. Remove the Kwik-Access Cover then switch off or unplug the power cord from battery to controller. Next turn off the transmitter.

2. Inspect the entire plane for covering tears, new dings and dents, loose screws and connectors and any other wear and tear.

3. Inspect the prop and replace it if any chips or cracks are found.

4.Let battery cool down before you charge it.

5. Let OBL motor cool down before next flight if you change a new fully charged battery.

NITRO POWER

1.Be sure that both the transmitter and receiver switches are turned off.

2. Drain all excess fuel from the tank. Fuel left in the tank for extended periods can "gunk up" the tank, fittings and carburetor.

3. Clean the plane with paper towels and a light duty spray cleanser. Keeping your plane clean will make it last longer and keep it looking nice.

4.Put a few drops of after-run or light oil in the carburetor and turn the prop over a few times (without the glow plug ignited) to distribute the oil throughout engine.

5. Inspect the prop and replace it if any chips or cracks are found.

6. Inspect the entire plane for covering tears, new dings and dents, loose screws and connectors and any other wear and tear.

7. Use a voltmeter to check the receiver battery voltage. If it is low, you now know not to fly so long next time. If it is still high, you should be able to fly a little longer next session.