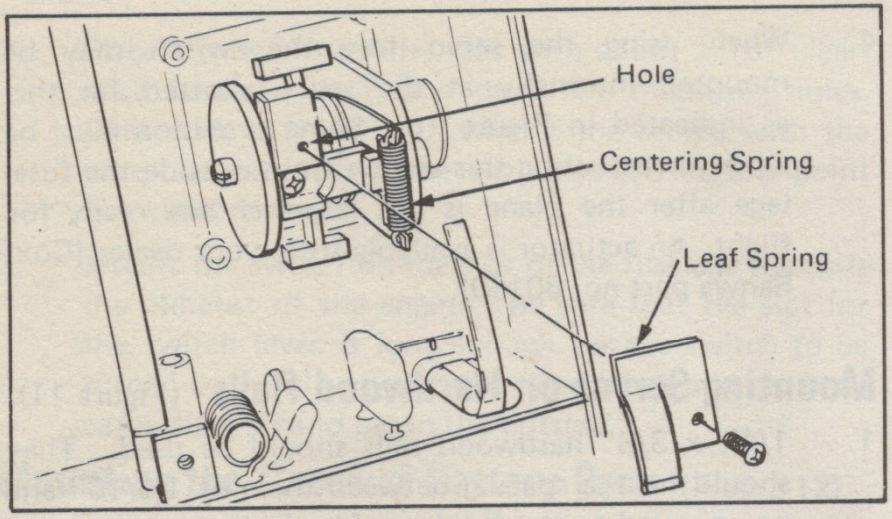


Figure 9.

3. Remove the normal centering spring and replace it with the fine spring provided with the leaf spring. This serves to keep the centering levers from moving around.
4. Move the stick up and down making sure it will remain in any position you place it.
5. Replace back of transmitter and secure with proper screws. Remember the silver one goes in the middle.
6. Save the spring you removed in case you wish to return to normal.

INSTALLATION INSTRUCTIONS

Part 1 (For Plane and Glider)

MOUNTING SERVOS, SWITCH AND RECEIVER BATTERY PACK

The two servos provided with the unit will travel in opposite directions for a given command. For instance: If servo No. 80322 is plugged into Function 1 and the right stick is moved to the right, the output wheel will travel in a clockwise direction when looking from the top. If No. 80321 is plugged into Function 1 and the right stick is moved to the right, the output wheel will travel in a counter-clockwise direction. The same statement also applies to Function 2 when the left stick is moved.

Mounting Servos and Switch

The servos may be mounted in one of two ways: Use of servo tray furnished or mounted on hardwood rails.

Mounting Servos in Tray (Figure 10)

1. The tray should be mounted on 1/4" x 3/8" hardwood rails. These rails should be mounted with epoxy across the width of the fuselage and at the rear of the radio compartment. These rails should be located before the top of the fuselage is glued in place so that the push rods may be placed in a straight line between the servo output direct to the control horns. Generally the kit manufacturer indicates the location of the servos and the push rods. There are any number of push rod materials available from your local hobby dealer.
2. Mount the tray to the hardwood rails using the No. 2 x 3/8" sheet metal screws (sharp point) provided. Be sure to drill 1/16" holes in the rails for these screws.

Don't drill smaller holes or the rails will split when putting in the screws, any larger, and the screws will not hold properly. Use the tray to mark the position of the holes in the rails

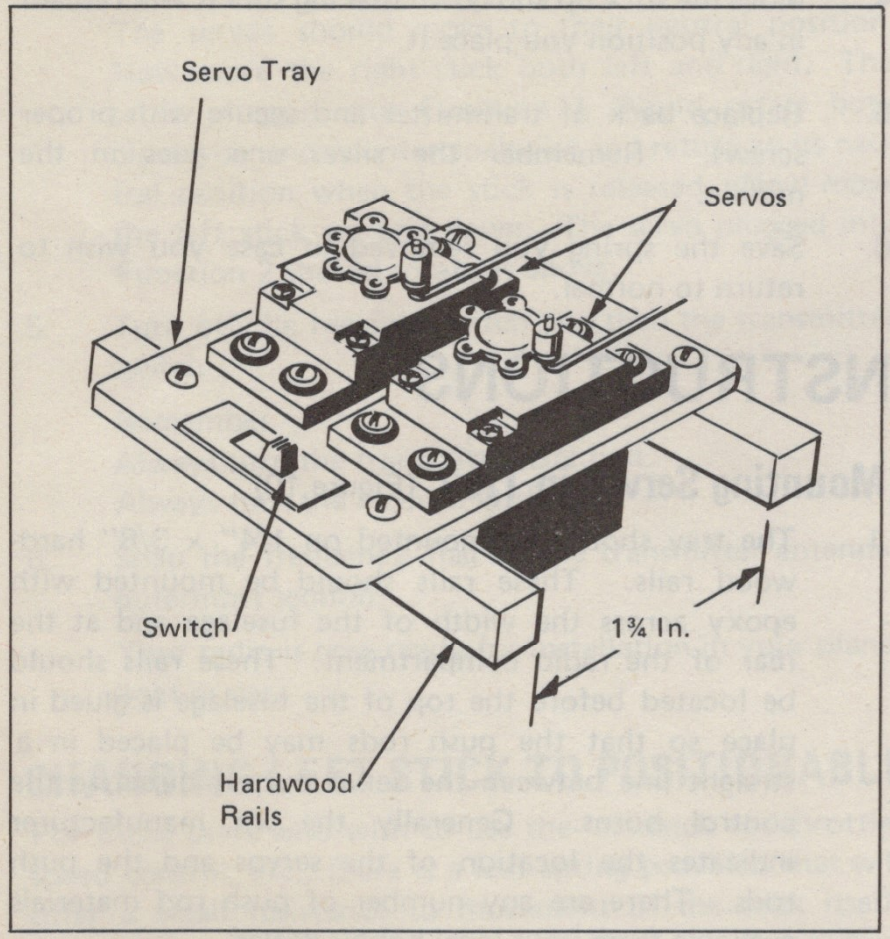


Figure 10.

3. Mount the servos to the tray using the No. 2 x 3/8" sheet metal screws (blunt end). The end of the servo where the wires exit should be mounted toward the front of the airplane or glider.

4. When using the servo tray the switch may be mounted internally at the space allotted for this as indicated in Figure 10. Some provision must be used for actuating this switch from outside the fuselage after the plane is put together and ready for flight. An actuator is available from your dealer (Cox/Sanwa part no. 80160).

Mounting Servos on Hardwood Rails (Figure 11)

1. 1/4" x 3/8" hardwood rails should be used. They should have a spacing between them of 1-5/16" and be epoxyed to the fuselage sides in the same manner as described for the tray type mounting. Again they should be located at the rear of the radio compartment. Basically the tray mounting instructions apply in all respects except that the rails are closer together.

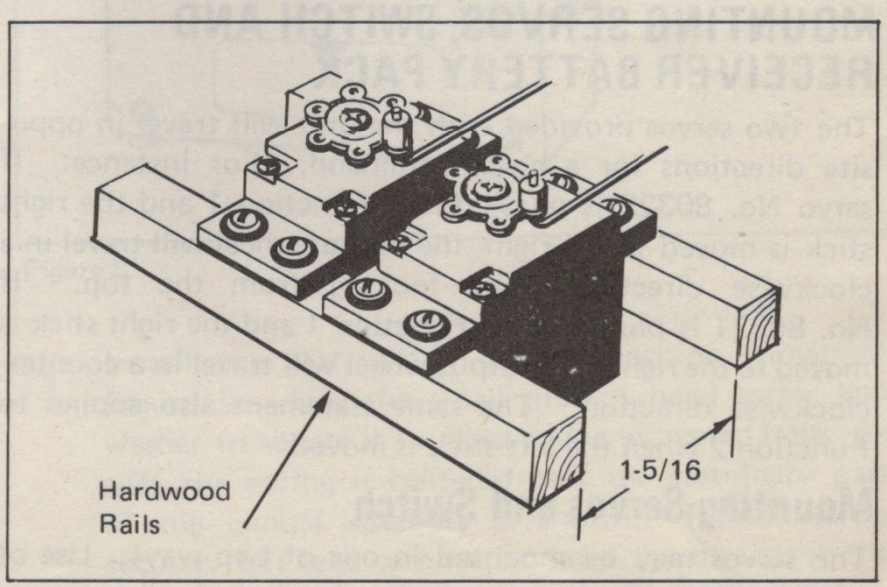


Figure 11.

2. Place the servos on the rails with about 1/16" clearance between them and mark the mounting holes. Drill with a 1/16" bit. Mount the servos with the wires forward using the No. 2 x 3/8" sharp point sheet metal screws.

3. Mount the switch on the side of the fuselage opposite the exhaust of the engine. Be sure that the slot for the switch lever is long enough for the switch to be turned both full on and off. The black and red indicator plate should be on the outside.

Mounting the Receiver Battery Pack (Figure 12)

The receiver battery pack must be wrapped in at least 1/4" soft foam rubber and then placed snuggly in the battery compartment which is usually located just forward of the radio compartment. In the case of powered planes this generally is directly under or over the fuel tank. For this reason the battery pack should be placed in a small plastic bag prior to wrapping it in foam rubber. Route the wires from the switch to the battery pack along the bottom of the fuselage so as to keep it as far from the receiver as possible.

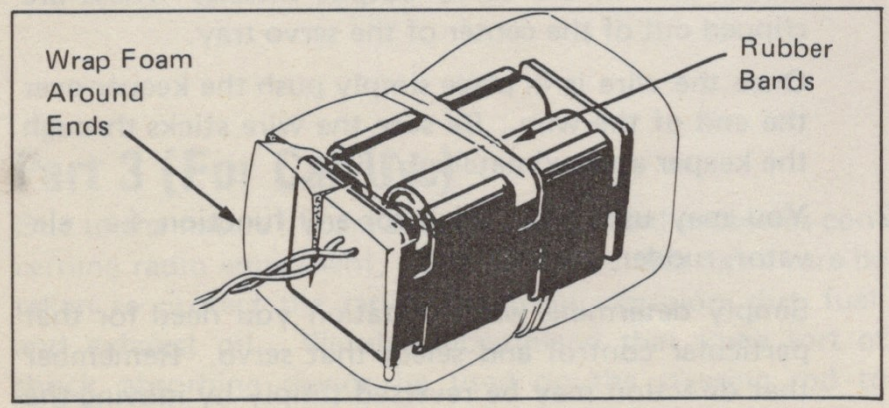


Figure 12.

INSTALLATION OF RECEIVER

The receiver is a fairly rugged device, however, it must be protected. To offer the most effective protection, we have found that soft rubber foam of at least 1/4" thickness should be used around it. The simplest method is to wrap the receiver with this foam much the same as the battery pack and gently push it into the radio compartment. Drill a small hole in the fuselage near the front of the receiver to allow the receiver antenna to be routed out of the fuselage and to the top of the vertical fin. Prior to running the antenna through the hole, install the strain relief on the antenna being sure there is a small amount of slack between the receiver and the side of the fuselage. See Figure 13.

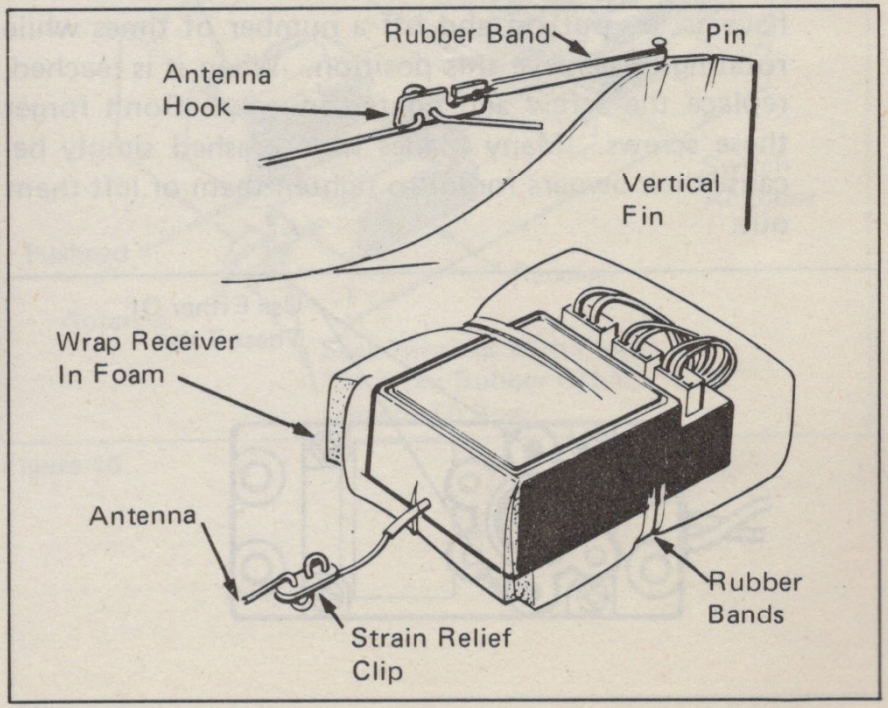


Figure 13.

Be sure not to pull antenna too tight. If the antenna is too long, let it trail behind the plane. NEVER CUT IT OFF OR FOLD IT BACK ON ITSELF.

Plug the proper servo leads into the receiver along with the power lead. Bundle the three wires together and wrap lightly with foam and push to the bottom of the fuselage.

ADJUSTING THE NEUTRAL POSITION OF THE SERVOS

1. With the transmitter and receiver turned on and the servos plugged in, remove the screw that holds the output wheel in place. Now lift the wheel off and rotate the wheel until it is in the position shown in Figure 14. The spline has 23 teeth and the wheel may have to be put on and off a number of times while rotating to achieve this position. When it is reached, replace the screw and tighten snuggly. Don't forget these screws. Many planes have crashed simply because their owners forgot to tighten them or left them out.

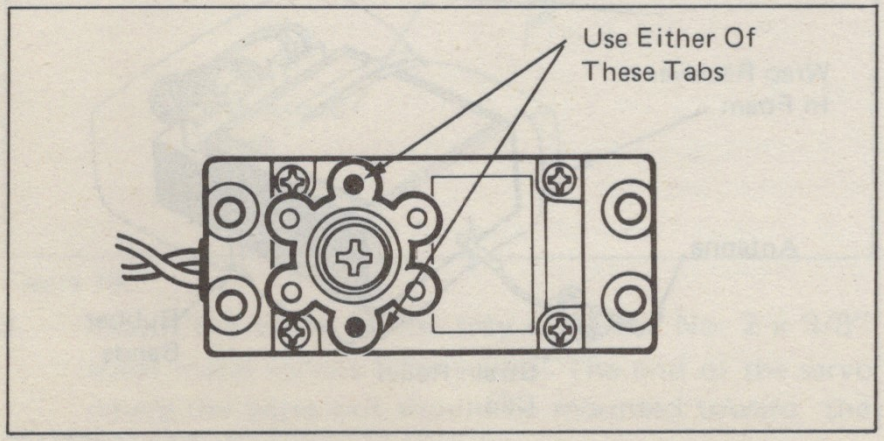


Figure 14.

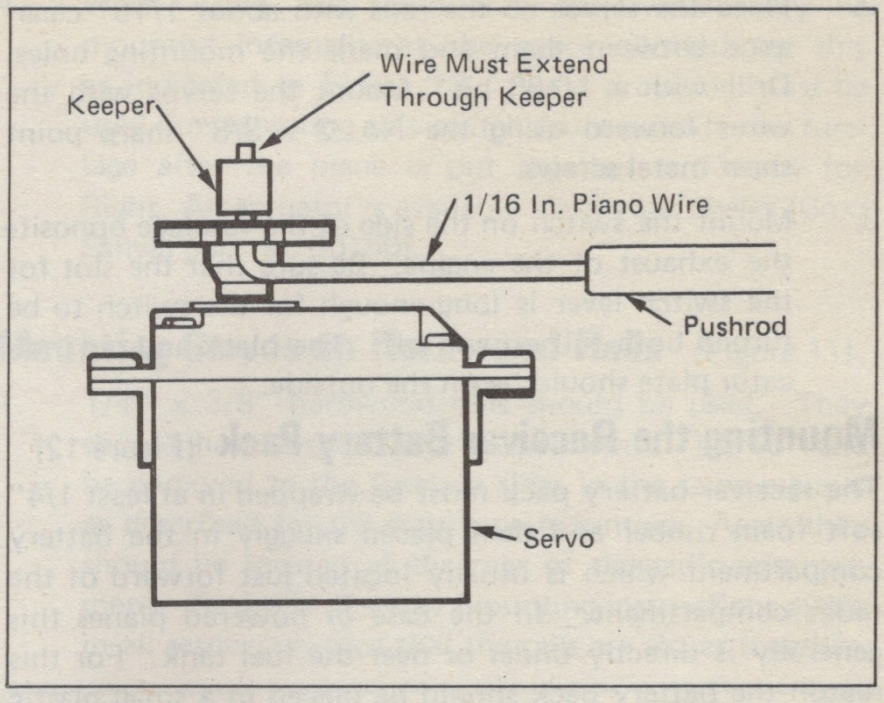


Figure 15.

If you use push rods of the type shown in Figure 15, we have provided small keepers to retain the 1/16" music wire in the servo output wheels. These are clipped out of the center of the servo tray.

Once the wire is in place simply push the keeper over the end of the wire. Be sure the wire sticks through the keeper approximately 1/16"

2. You may use either servo for any function, i.e., elevator, rudder, throttle, etc.

   Simply determine which rotation you need for that particular control and select that servo. Remember that direction may be reversed simply by moving the push rod to the other side of the servo output wheel.

INSTALLATION INSTRUCTIONS (CONT)

Part 2 (For Boat Use)

Basically the hookup for boats is the same as for planes. However, we do suggest the use of a waterproof compartment to house the radio equipment. This is illustrated in Figure 16.

The lid is made of 3/32" plywood and screwed in place. Screw blocks are 1/4" square hardwood.

The Gasket is formed from GE Silicone Rubber. Apply to edge of box, lay piece of Handi-Wrap over rubber, then put lid in place and screw down. When cured, remove lid and take out Handi-Wrap. You now have a waterproof box.

Entire box and lid should be coated with resin inside and out prior to making lid gasket.

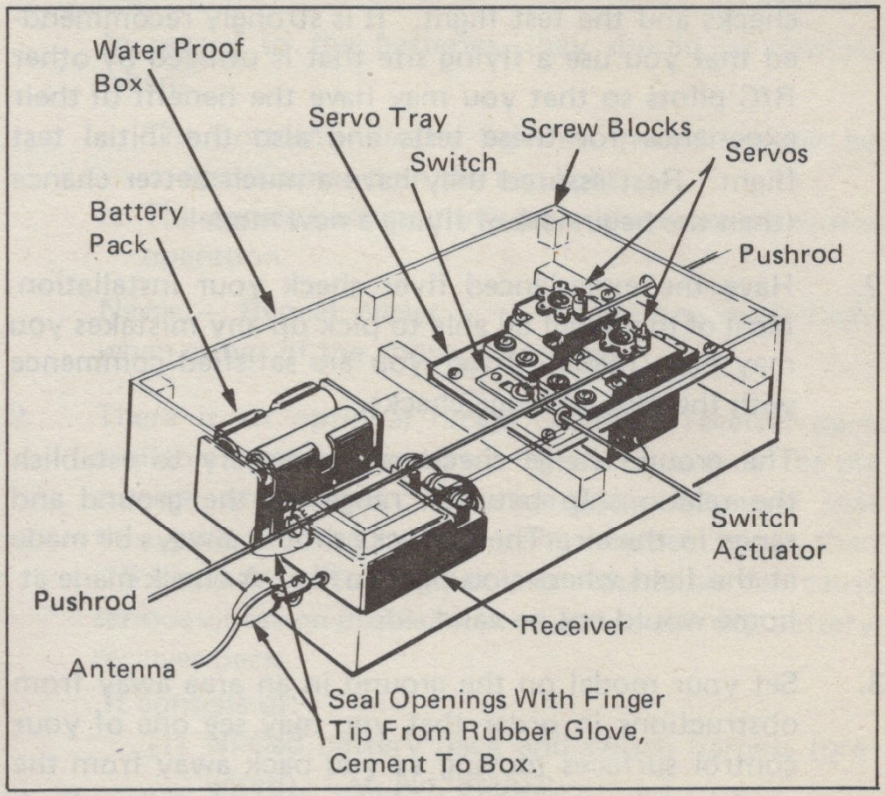


Figure 16.

Part 3 (For Car Use)

Due to the nature of cars and their associated problems concerning radio equipment, we recommend that extra care be taken to protect the radio gear from vibration, dirt, fuel, and exhaust oil. We also recommend that some sort of shock absorbing device be used on the steering rod to reduce the amount of shock applied to the servo gears.

Field Testing and Flight

1. After completing your plane and installation of the radio equipment, it is now ready for the few field checks and the test flight. It is strongly recommended that you use a flying site that is utilized by other R/C pilots so that you may have the benefit of their experience for these tests and also the initial test flight. Rest assured they have a much better chance (than the beginner) of flying a new model.

2. Have the experienced flyer check your installation. Most of them will be able to pick up any mistakes you may have made. After you are satisfied commence with the ground range checks.

   The ground range checks are necessary to establish the relationship between range on the ground and range in the air. These checks should always be made at the field where you plan to fly. A check made at home would not be valid.

3. Set your model on the ground in an area away from obstructions in order that you may see one of your control surfaces moving as you back away from the model while moving one of the control sticks. Rudder is usually the best since it is higher and you will be able to see it move from a greater distance.

   Disconnect your receiver antenna from the top of the vertical fin and coil it up in a small bundle and allow it to hang from the side of the fuselage. The idea here is to reduce the effective sensitivity of the receiver.

   With the transmitter antenna completely collapsed and both the transmitter and receiver switches turned on, start moving one of the control sticks noting which surface you are moving. Back away from the nose of the plane or glider while continuously moving the stick and carefully watching the moving surface. At some point you should note that the surface starts moving erratically and does not follow the movement of the stick as it did before. Try moving the transmitter around and holding it at different angles to achieve the greatest amount of controllable range. As you do this you may have to back even further away from the model. When this point is reached take careful note of the distance you are from the model. This is now your valid ground range.

   If you are flying a powered model repeat this check with the engine running at full throttle. You should achieve almost the same distance from the model. If not within 10 or 15 ft. of the distance with the engine off, chances are that you have a vibration problem and this should be investigated before attempting any flights.

   You should achieve a distance of 30 to 50 feet or more.

If the above check proves satisfactory you are now ready for your first flight. REMEMBER TO RE-INSTALL THE RECEIVER ANTENNA TO THE TOP OF THE VERTICAL FIN.

ALWAYS BE SURE TO CHECK THE CONTROLS FOR PROPER DIRECTION OF MOVEMENT AND PULL OUT THE TRANSMITTER ANTENNA TO ITS FULLEST LENGTH BEFORE FLIGHT.

Let your instructor test fly the model and trim it out for you. After the model is trimmed he can then start teaching you how to fly it and you can enjoy one of the greatest sports in the world.

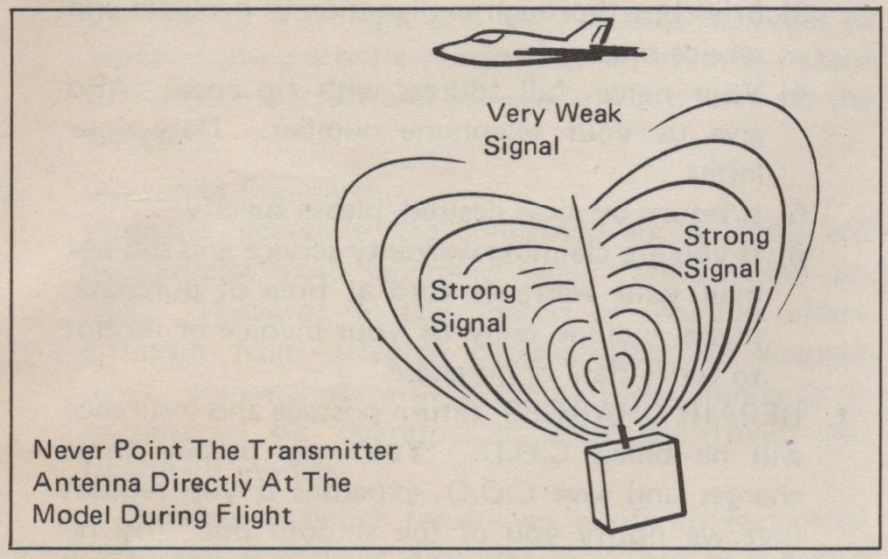


Figure 17.

Field Maintenance

1. The only maintenance that can be done by the modeler is changing the batteries in the transmitter and receiver packs which has already been described. Any other problems must be taken care of by the factory.

   In regard to the batteries, they should be changed when:

   a. The bottom indicator light on the transmitter becomes dimmer than the top light.
   b. The servos become noticeably slow moving during operation.

   Never – Repeat Never – try to get one more flight when either of the above is noticed.

2. There is an optional nickel cadmium receiver pack available from the factory. This is used only for the receiver and servos. We strongly recommend that this pack be used when using engines larger than .15 displacement. Engines larger than this can cause serious vibration problems in regard to the dry battery receiver pack.

   It consists of:

   (1) Ni-Cad battery pack and switch harness (prewired). Cat. No. 80001.
   (1) Single function battery charger for charging above. Cat. No. 80153.

In Case of Difficulty
Be sure that your batteries are okay.

(FACTORY REPAIR SERVICE)

All repair service for Cox/Sanwa sets will be handled at the Cox Airtronics factory in Santa Ana, California.

To return your equipment to the factory please follow these instructions:

a. Return the entire system (except for problems confined to individual servos). Use the foam box in which the set was originally packed.

b. Completely separate the set from your model or installation. Return the components in the same form you received them.

c. When returning a set with rechargeable batteries make sure the batteries are fully charged when you pack it for return.

d. Make sure switches are "off". Disconnect receiver battery pack.

e. You must enclose written instructions with the set. The instructions must include:

1) Serial number of the set.
2) A listing of all items returned.
3) Brief but thorough explanation of problem and service required.
4) Your name, full address with zip code. Also give us your telephone number. Date your letter.
5) If return by air is desired, please specify.
6) If you are claiming warranty service and did not mail your warranty card at time of purchase, please include copy of your invoice or receipt to verify date of purchase.

f. REPAIR CHARGES, return postage and insurance will be billed C.O.D. You may prepay these charges and save C.O.D. expenses if you request that we notify you of the amount due. All returns outside the United States must be returned prepaid.

F.A.A. ADVISORY CIRCULAR FOR

MODEL AIRCRAFT OPERATING STANDARDS

1. Purpose
   This advisory circular outlines safety standards for operators of model aircraft, and encourages voluntary compliance with these standards.

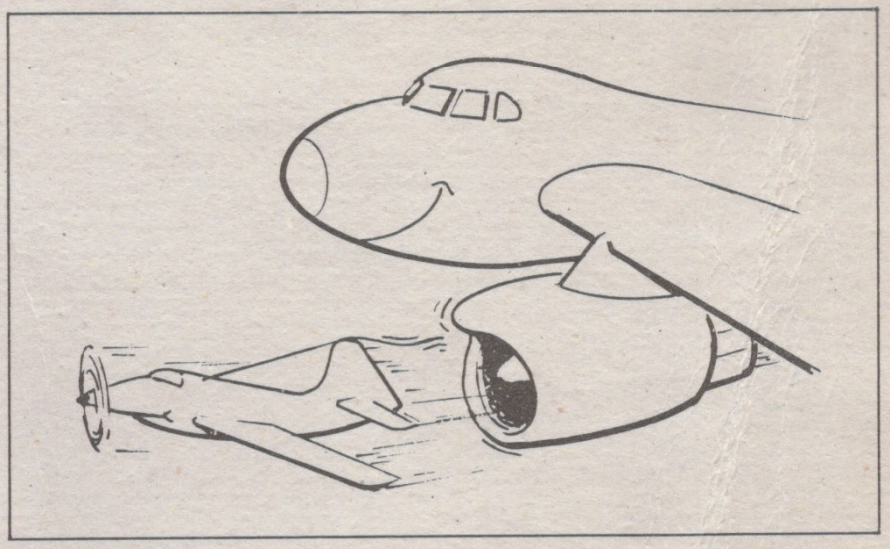
2. Background
   Attention has been drawn to the increase in model aircraft operations, and the need for added caution in the case of free-flight and radio controlled types to avoid creating a noise nuisance or a potential hazard to fullscale aircraft and persons and property on the surface.

3. Operating Standards
   Modelers, generally, are concerned about safety and do exercise good judgment when flying model aircraft. However, in the interest of avoiding undue criticism from affected communities and airspace users, compliance with the following standards is encouraged by operators of radio controlled and free-flight models.

   a. Exercise vigilance for full-scale aircraft (get other people to help if possible) so as not to create a collision hazard.

   b. Select an operating site at a sufficient distance from populated areas to avoid creating a noise problem or a potential hazard.

   c. Do not fly higher than 400 feet above the surface.



   d. Do not operate closer than three miles from the boundary of an airport unless permitted to do so by the appropriate air traffic control facility in the case of an airport for which a control zone has been designated, or by the airport manager in the case of other airports.

   e. Do not hesitate to ask for assistance in complying with these guidelines at the airport traffic control tower, or air route traffic control center nearest the site of the proposed operations.

Director, Air Traffic Service
Federal Aviation Administration
Washington, D.C.

WARRANTY

Our chief concern is your complete satisfaction with your Cox/Sanwa set. The following warranty is written to comply with the new Federal Warranty Law and describes the legal limitations to our warranty.

FULL SIX MONTH WARRANTY

COX/SANWA RADIO CONTROL SYSTEMS ARE WARRANTED TO THE ORIGINAL PURCHASER-CONSUMER ONLY, TO BE FREE FROM DEFECTS IN MATERIAL AND WORKMANSHIP FOR A PERIOD OF SIX MONTHS FROM THE DATE OF PURCHASE. DURING THIS TIME COX/SANWA WILL REPAIR OR REPLACE ANY DEFECTIVE PARTS WITHOUT CHARGE.

Liability under this Warranty is limited to the repair and/or replacement of the defect or defective part at the factory or by a factory-authorized service agent, and does not include shipping expenses.

This Warranty does not apply to damage or defects resulting from misuse, abnormal service, crash damage or damage sustained in shipment.

This Warranty does not apply to damage or defect caused or aggravated by any repair or attempted repair performed by any person or firm other than Cox/Sanwa or an authorized Cox/Sanwa factory representative or service agent.

This Warranty does not cover incidental or consequential damages caused by, or resulting from, a defect in material or workmanship or other equipment failure. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This Warranty gives you specific legal rights, and you may also have other rights, which vary from state to state.

Because this Warranty is valid only for six months from the date of purchase, to claim warranty service you must provide Cox/Sanwa with sufficient proof of the date of purchase. The best way to prove the date of purchase is to mail the enclosed Warranty Registration card within ten (10) days from the date of purchase to:

COX AIRTRONICS
1525 East Warner Avenue
Santa Ana, California 92702

To obtain warranty service, mail or ship the item, securely packaged and postage or shipping prepaid, to Cox Airtronics at the address shown above.

For Your Records: 00271696

DATE OF PURCHASE _____ SERIAL NO. _____

COX/SANWA MODEL NO. 802016

DEALER'S NAME _____

CITY _____

STATE _____

COX AIRTRONICS ◻ 1525 East Warner Avenue, Santa Ana, California 92702 ◻ a division of LEISURE DYNAMICS, INC.

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