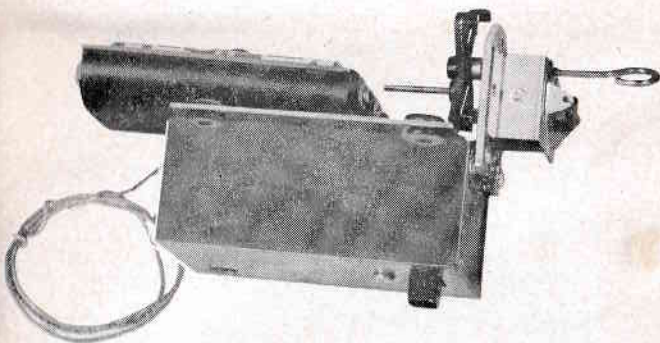


# INSTRUCTIONS FOR THE INSTALLATION AND OPERATION OF THE CG Model RX-1 RADIO CONTROL COMPACT



## INTRODUCTION

The CG Model RX-1 radio control compact was designed for remote control of models on one channel, featuring the utmost in simplicity. There is absolutely no electrical wiring to do. All one must do is install the receiver package, connect the escapement torque rod and rubber band, place two pen-cells in the battery holder, and string out the antenna. Thus, virtually anyone capable of constructing a model may now control it by radio.

**CG** *Electronics*

CORPORATION

15000 Central, S.E.

Albuquerque, N. M.

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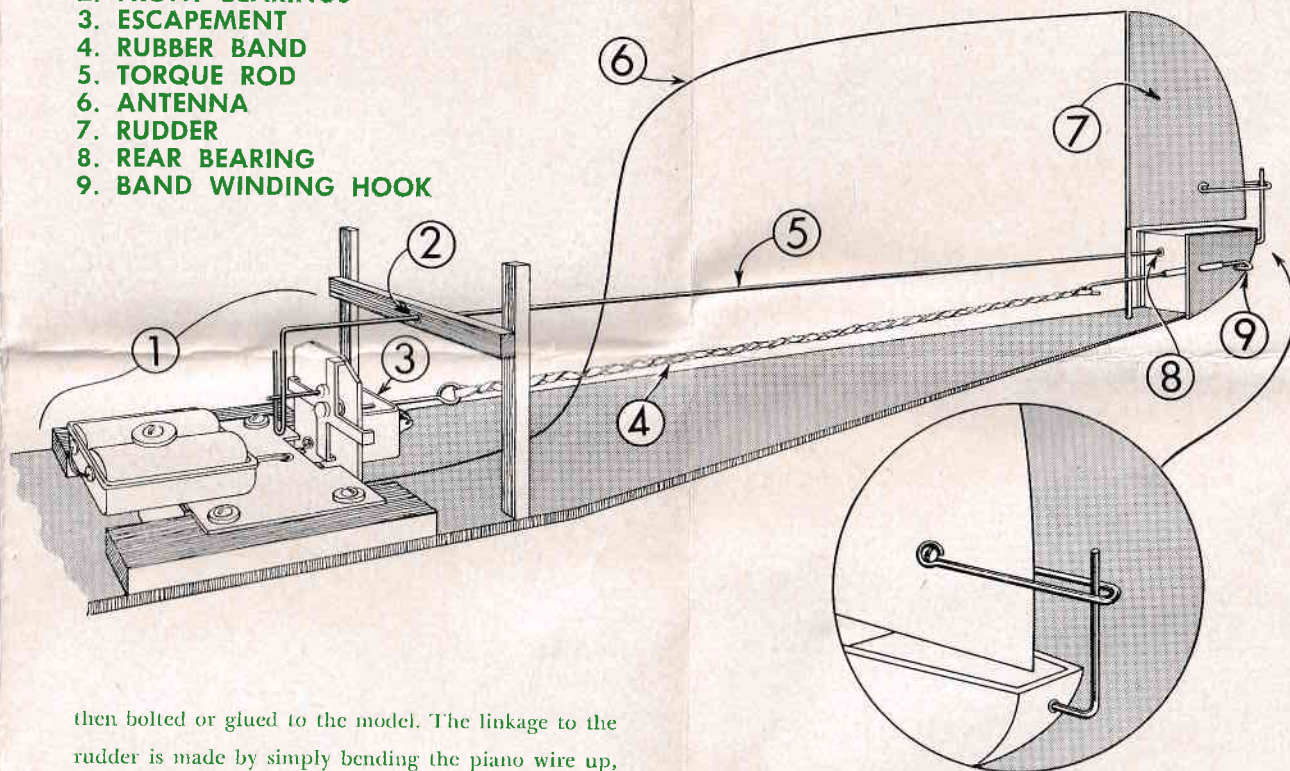
# INSTALLATION INSTRUCTIONS

The RX-1 Compact is designed to be installed on two hardwood bearers and secured with four small wood screws with flat washers. These screws are inserted through the rubber grommated mounting holes provided. No special shock mounting is required. The hardwood bearers should be positioned so that the bottom of the receiver barely clears the bottom of the model. This allows the "on-off" switch, located on the bottom of the receiver, to protrude through a slot cut in the model, thus providing accessibility.

The escapement linkage should be made as shown in the illustration. The front and rear bearings may be made from Micarta or  $\frac{1}{8}$ " plywood with a hole drilled (approximately .030") just larger than the torque rod piano wire. Fore and aft play in the torque rod (end play) should be eliminated. This can be accomplished by soldering a suitably sized metal grommet or washer to the torque rod music wire on each side of the forward bearing. Use rosin core solder for this operation and do not allow any of the rosin to get into the bearing surface. This can be prevented by inserting a piece of paper on the music wire between the grommet and the bearing. After soldering, the paper is removed.

The torque rod piano wire is linked to the escapement by first forming the wire into a narrow "U" and then bending the "U" down over the escapement crank-pin. The operations of bending the "U" and installing the forward bearing (with grommets) on the piano wire can be done outside the model. The straight wire on the other end of the torque rod may then be slid through the rear bearing, the "U" placed over the escapement crank, and the bearing surface

1. RX-1 PACKAGE
2. FRONT BEARINGS
3. ESCAPEMENT
4. RUBBER BAND
5. TORQUE ROD
6. ANTENNA
7. RUDDER
8. REAR BEARING
9. BAND WINDING HOOK



then bolted or glued to the model. The linkage to the rudder is made by simply bending the piano wire up, directly behind the rear bearing and bolting a "U" shaped piece of wire to the rudder over the wire from the torque rod. The height of the front bearing above the escapement and the height of the U-shaped rudder link above the rear bearing determine the rudder throw. The height of the front bearing should be kept to a minimum . . . the height of the U shaped rudder link may then be varied as desired. Above all, the linkage should not bind; it must be completely free .

The rubber band for the escapement power should be made from one loop of  $\frac{1}{8}$ " contest type rubber;  $\frac{3}{16}$ " or  $\frac{1}{4}$ " rubber should not be used. The length

of the loop (slack) should be slightly longer than the distance from the escapement hook to the rear winding hook. The rubber should be wound in a clockwise direction from the rear winding hook. Approximately 200 turns should be wound on the rubber.

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# SPECIFICATIONS

## RX-1 COMPACT

The RX-1 Compact is complete; there is nothing else to buy, except, of course, the transmitter. The tone receiver, escapement, battery box, and "on-off" switch are all conveniently mounted in the one complete package.

- Weight: less than four ounces including batteries
- Size: 2½" x 3" x 2¼" (will fit into an .02 powered model)
- Switch is positioned for access from bottom of model.
- Complete battery supply is two inexpensive pen-cell flashlight batteries (3V).
- Escapement: Bommer SN completely wired.
- Receiver: Tone operated, relayless, and operated by 3V.

## RX-1 RECEIVER

The RX-1 Compact is completely transistorized and is intended for use where the temperature will not exceed 130° F. or drop below 0° F. The receiver is designed to operate on 3 volts maximum, thus uses no voltage converters. The receiver will accept audio modulation that has a frequency no lower than 300 CPS and no higher than 1000 CPS. The transmitter must be capable of at least 90% modulation. The CG Model T-12 transmitter is recommended for use with the RX-1 Compact.

- Carrier Frequency: 27.255 MC
- Modulation Frequency: 300 to 1000 CPS
- Sensitivity: 4 Microvolts
- Relayless Operation: There is no relay operating the escapement; the receiver powers it directly. This eliminates relay adjustments and dirty contacts.

## BATTERIES

Insert two pen-cell flashlight batteries in the battery holder with the positive terminals of the batteries next to the red dots on the battery box. If the polarity is accidentally reversed, the receiver could be damaged. Do not exceed the rated receiver voltage of 3 volts by adding additional batteries in series. If this voltage is exceeded, the receiver could be damaged. The batteries should be replaced when their total voltage drops below 2 volts with the escapement energized. This voltage can be checked by connecting a voltmeter across the batteries with the receiver switch on and the transmitter momentarily keyed.

## ANTENNA

The correct length of antenna is furnished with RX-1 Compact and should not be shortened or lengthened. The receiver itself is not critical to antenna length providing the receiver is retuned. However, the receiver is pretuned at the factory and should never require tuning so long as the antenna length is not changed. Simply string the antenna out behind the wing of the model and attach it to the top of the rudder. If the distance is too great for the length of antenna wire, simply add a piece of string to make the required length.

## TESTING

Receiver tuning is factory set and should never require resetting providing the antenna length is not varied. Using the RX-1 in the field, the transmitter may block the receiver when it is used within 10 feet of the receiving antenna. Blocking will not damage the receiver, but usually produces erratic operation. Care should be exercised in hand-launching the model with the transmitter "on", since it is quite close to the receiver antenna during this operation.