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RR/E-11 RECEIVER

A. INTRODUCTION

1. The RR/E-11 is a small transistorized communications receiver capable of receiving voice, Morse code, and other radio signals within a frequency range of 3000 to 12000 kilocycles. Operation of the receiver is simple and tuning of any frequency within the frequency range is performed merely by rotating the tuning knob. The casing is constructed for rough handling, and although the receiver is not completely waterproof, it is water resistant.

2. The receiver is intended for use in mild or warm climates. When the temperature is either cold or very hot, the receiver dial reading may be off more than 25 kilocycles.

3. The RR/E-11 can be powered from only a 6 or a 12 volt direct current (battery) source. Do not attempt to connect the receiver directly to an alternating current (mains) power source.

B. CONNECTION TO A COMPATIBLE TRANSMITTER

You may be provided with a transmitter that has a nine-pin receiver socket. If so, plug the RR/E-11 directly into the receiver socket on the transmitter. After power, ground, and antenna have been connected to the transmitter, the transmitter will supply these connections to the receiver. Headphones are plugged to phones terminals (1).

C. SEPARATE CONNECTION

1. When the receiver is not plugged directly to a compatible transmitter, separate connections must be made for the power, ground, and antenna.

2. To Connect Power.

a. If you are provided with the small dry battery (6 volt) shown as figure 10 in the illustration, plug the battery directly to the receiver.

b. If you desire to power the receiver from any 12 volt battery, make the following connections: first plug power connector 11 to receiver plug 2; then connect the alligator clip of the red wire to the positive (+) battery terminal, and the alligator clip of the black wire to the negative (-) battery terminal.

The above connections provide only power to the receiver; separate connections must be made for the antenna and ground.

c. To operate from a 6 volt battery such as a storage battery, a 6 volt power connector (similar in appearance to connector 11) is required. If you are not provided with a 6 volt power connector, wiring changes may be made to connector 11. To the left of plug 2 is a pin number diagram describing input connections to the receiver. Unless you are instructed otherwise, power connector 11 is wired for 12 volt operation. To change the connection of connector 11 for 6 volt operation, proceed as follows:

(a). Obtain a soldering iron, solder, and screw driver.

(b). Remove the two screws and nuts from the top of the nine-pin plug of connector 11. Loosen the two bolts of the cable clamp. Pull the plug from the metal enclosure.

(c). Unsolder and remove the jumper wire from connections 5 and 6. Remove the red wire from connection 8 and solder the wire to connection 6.

(d). Power connector 11 will now operate the receiver from a 6 volt battery. Plug the connector to the receiver and connect the alligator clips to the battery as described in paragraph 2b above.

3. To Connect the Antenna and Ground. The antenna lead-in is connected to terminal 4 and the ground lead-in to terminal 5. After removing a small bit of insulation from the wire, depress the top of the terminal post and insert the wire in the small hole directly underneath the post. Refer to separate instructions regarding the erection of an antenna and installation of a ground.

4. To Connect the Headphones. Plug the headphones to phone terminals (1).

D. DESCRIPTION OF RR/E-11 CONTROLS AND SWITCHES

Refer to the illustration.

1. Power ON-OFF and ON-AGC Switch (3). This switch turns the power to the receiver on and off, and also turns on the receiver automatic gain. When the switch is turned to the ON position the receiver has power and will operate, but the AGC is OFF. When the switch is turned to the ON-AGC position, the receiver has power and the AGC circuit is also turned on.

2. Volume Control (6). This control regulates the volume level of the received signal. Rotate the control in a clockwise direction to increase the volume.

3. CW Control (7). This control is turned on (clockwise) to receive Morse code signals, and turned OFF to receive voice or tone modulated signals.

4. Tuning Dial (8) and Tuning Knob (9). The tuning knob is rotated to read the frequency as read on the tuning dial in kilocycles. Shown beneath the window, the printed numbers 3-12 MC mean that the frequency range is from 3000 to 12000 KC (1000 KC is 1 MC). Frequency is read on the dial every 10 KC and each dial segment is equal to 2 KC. Tuning is accomplished by rotating the tuning knob until the frequency is in line with the white indicator located to the right of the number dial.

E. OPERATING AND TUNING THE RECEIVER

1. Turn the PWR ON-OFF switch to OFF.
2. Connect power source, antenna, ground, and phones as instructed above. Turn the PWR ON-OFF switch to ON.
3. For voice or tone modulated signals, set the CW control to OFF. For Morse code signals, set the CW control somewhere close to the small white arrow.
4. Turn the volume control $2/3$ turns clockwise, or until a rushing noise is heard in the phones.
5. Rotate the tuning knob until the frequency in kilocycles is in line with the white indicator mark. SLOWLY rotate the tuning knob first in one direction, and then in the other direction until the desired signal is heard. The dial reading may be off as much as 25 KC and may be off more than this amount in cold or very hot climates.
6. After the signal is heard, carefully adjust the tuning knob until the signal is heard as clear and as loud as possible.
7. For reception of Morse code signals, adjust the CW control to the left or right to vary the tone of the signal.
8. Adjust the volume control to a level necessary to copy the signal. When other radio signals interfere, a lower volume level may help to copy through the interference. When the desired signal intensity increases or decreases, adjust the gain control for best listening at the lowest level of the signal.
9. If the signal appears to slowly move away from its frequency setting, it may be necessary to VERY SLIGHTLY readjust the tuning knob. During interference from other signals, a slight adjustment of the tuning knob, or adjustment of the CW control may improve reception.

F. CHECKING THE ACCURACY OF THE TUNING DIAL

1. Accuracy of the tuning dial may be checked by listening to a frequency standard transmission. Throughout the world many stations broadcast a continuous frequency standard signal on 5, 10, 15, and occasionally on 20 MCS (add three zeros to get KC). Signals can usually be heard with the CW control either OFF or ON. A tone signal can normally be heard, and most stations broadcast a voice transmission periodically. Some of the many stations transmitting are: Washington, USA (WWV); Honolulu, USA (WWVH); Tokyo, Japan (JJY); Peking, China (BPV); Moscow, USSR (RWM); Rugby, England (MSF); and Buenos Aires, Argentina (LOL).

2. The receiver can be tuned to one of the frequency standard stations to determine the accuracy of the receiver tuning dial. To hear weak standard signals, it may help to turn the CW control ON. To listen to the tone signals or voice transmissions, the CW control must be off.

3. The frequency standard stations also give the time checks. Normally, the tone leaves the air for about 20 seconds and returns to indicate the time every 10 or 20 minutes, on the half hour, or on the hour. Usually a voice transmission is made to give the local time.

G. MAINTENANCE

There are no component spare parts supplied with the RR/E-11, and repair and maintenance of the receiver is not recommended. Most of the circuits are on printed boards, and the set is fully transistorized. If the simple trouble checks given below do not clear a trouble, any repairs deemed necessary may be performed at your discretion.

H. CHECKING TROUBLES

1. No sound is heard in the headphones.

a. Check all connections at the battery. Check that power connections are properly made at the receiver. If possible, check the battery voltage at the transmitter.

b. Check the headphones by momentarily touching the phone cord tips to the terminals of a flashlight battery. Touching across one terminal of a 12 volt battery would not harm the phones, but do not touch the phones across the entire battery. When the phones are momentarily touched across the small battery, a click in the headphones indicates that the phones are not defective.

2. The receiver operates, but the signals are weak.

a. Check for a weak battery and charge the battery if necessary. If a dry battery is used, replace with another battery.

b. Check the complete antenna system to insure that no part of the antenna or lead-in is grounded. Grounded means making an electrical connection with the earth. Also, check to insure that all antenna connections are making a good electrical contact.

I. AUDIO CONNECTION FOR AUTOMATIC RECEIVING DEVICES

If you are provided with an automatic receiving device, the instructions for that device may refer to the grounded and ungrounded side of the receiver phone terminals (1). The upper terminal is the ungrounded phone connection, and the lower terminal (marked with the symbol ⏏) is the grounded phone connection.