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## RR/D-11 Receiver

### A. INTRODUCTION

The RR/D-11 receiver will receive Morse code, tone, or voice signals in the short wave band from 100 to 10 meters (3000 to 30,000 kilocycles). The receiver is simple to operate and requires very little power. Although the receiver is not completely waterproof, it is water resistant.

### B. DESCRIPTION OF SWITCHES, CONTROLS, AND TERMINALS

#### 1. Function Switches Numbered 1 and 2 (FS1 and FS2).

Function switches numbered 1 and 2 are used to turn the following on and off: power, receiver calibration, manual control, and automatic gain control. As shown on the instruction plate placed alongside the switches, each switch is placed in the direction of the arrows to provide the desired operation. The power is always on when the switches are placed in the AGC, MAN, or CAL positions.

#### 2. Nine-pin Receptical (14).

When the receiver is operated with a compatible transmitter, the transmitter will supply a ground, antenna, and power through the nine-pin receptical. When the receiver is operated separately from the transmitter, power only is provided via the nine-pin receptical.

#### 3. Band Switch (3).

The frequency band switch is used to switch the receiver to either the 3 to 12 MC, or to the 12 to 30 MC band. Although the band switch is marked in megacycles (MC), the frequency dials are marked in kilocycles (KC). One megacycle is equal to 1000 kilocycles; therefore, 3-12 MC is 3000 to 12000 KC and 12-30 MC is 12000 to 30000 KC.

#### 4. Frequency Dial (8) and Tuning Control (9).

The tuning control (9) is rotated to read the frequency in kilocycles on the frequency dial (8). The band switch must be placed in the 3-12 MC position. **WARNING:** Do not rotate the tuning control to a dial reading below 02950 or above 12050, or the dial mechanism may be damaged.

5. Frequency Dial (10) and Tuning Control (11).

The tuning control (11) is rotated to read the frequency in kilocycles on the frequency dial (10). The band switch must be placed in the 12-30 MC position. **WARNING:** Do not rotate the tuning control to a dial reading below 11950 or above 30050, or the dial mechanism may be damaged.

6. Antenna Terminal (4).

When the receiver is operated separately from a compatible transmitter, the antenna lead-in wire is connected to the antenna terminal. No separate ground connection is used when the receiver is operated in this manner.

7. Volume Control (5).

The volume control is rotated clockwise to increase, and counterclockwise to decrease the sound.

8. Calibrate Control (6).

The calibrate control is used to adjust the receiver so that frequencies can be read accurately on the dials.

9. Phones Terminals (12 and 13).

Phones terminal (12) is grounded; phones terminal (13) is ungrounded. To receive signals, headphones are plugged to both terminals without regard to polarity.

C. CONNECTION TO A COMPATIBLE TRANSMITTER

If you are provided with a transmitter that has a nine-pin receiver socket, plug the RR/D-11 directly into the receiver socket on the transmitter. After power, ground, and antenna have been connected to the transmitter, the transmitter will supply all of these to the receiver.

D. SEPARATE CONNECTION

1. To Connect Power.

a. If you are provided with the small battery (16) shown in the illustration, plug the battery directly into the receiver.

b. If you desire to power the receiver by a twelve volt battery, make the following connections: first plug the 12 volt power connector (15) into the nine-pin receptical (14); then connect the red covered alligator clip to the positive (+) battery terminal, and the black covered alligator clip to the negative (-) battery terminal.

2. To Connect the Antenna.

Remove a small bit of insulation from the antenna lead-in wire, depress the top of the antenna terminal (4), and insert the wire in the small hole at the bottom of the terminal. A ground connection is not made and the receiver will operate satisfactorily without a ground. If using separate antennas for both the transmitter and receiver, never let the receiver antenna touch the transmitter antenna; try to keep both antennas separated from one another by 2 or 3 meters. Refer to separate instructions regarding antenna erection.

E. FREQUENCY CALIBRATION

1. The receiver should be calibrated at the 500 KC point nearest to the desired operating frequency. That is, if the desired frequency is 8275 KC, the receiver is calibrated at 8500 KC. For band 3-12 MC, calibration points begin at 4000 KC and are found at every 500 KC point to 12000 KC (4500, 5000, 5500, 6000, etc.). For band 12-30 MC, calibration points are found at every 500 kc from 12000 to 30000 KC.

2. Connect power to the receiver, connect headphones to the phones terminals, disconnect the antenna, and place FS1 and FS2 switches in the direction of the CAL arrows.

3. Set the band switch to the proper band. Adjust the tuning control (corresponding to the band selected) to the nearest 500 kc point. Example: For 16784 KC, the band switch is set to 12-30 and the tuning control is adjusted exactly to 17000.

4. Adjust the volume control to about the mid position. Set the CW control (7) to the arrow.

5. Rotate the calibrate control (6) until a tone is heard. Two tones will be heard; one tone one-half turn of calibrate control from the other tone. If more than two tones are heard, lower the receiver volume. Either of the two tones may be used to calibrate the receiver. After one of the tones is heard, SLOWLY rotate the CAL control until the sound disappears, but may be heard if the calibration control is moved slightly to the right or left. It is not necessary to eliminate the sound completely; a low pitched, pulsating (beating) sound will provide accurate calibration.

6. Note. If the antenna is not removed from the receiver, radio signals may interfere with the calibration signal. If the receiver is operated with a compatible transmitter, remove the antenna at the transmitter.

#### F. OPERATING AND TUNING THE RECEIVER

1. Place switches FS1 and FS2 in the OFF position.
2. Plug the receiver to the transmitter, or connect a power source.
3. Calibrate the receiver as described above.
4. After calibration is accomplished, the band switch will be set in the proper position and the frequency dial will be set close to the desired frequency. If a separate power source is being used, connect the antenna to the receiver. Increase the setting of the volume control.
5. Set switches FS1 and FS2 in the AGC position for voice or tone signals, and in the MAN position for Morse code signals. Set the CW control to OFF for reception of voice or tone signals.
6. Rotate the tuning control until the desired frequency is shown in the frequency dial window. SLOWLY rotate the tuning control to the right and to the left until the desired signal is heard as clear and as loud as possible. For Morse code signals, adjust the CW control to the right or left to vary the pitch of the signal.

7. Adjust the volume control to a level necessary to copy the signal. When other radio signals interfere, a lower volume level may help to receive through the interference. When the desired signal intensity increases or decreases, adjust the volume control for best listening at the lowest level of the signal.

8. If the signal appears to slowly move away from its frequency setting, it may be necessary to VERY SLIGHTLY readjust the tuning control. During interference from other signals, slight adjustment of the tuning control, or adjustment of the CW control (for Morse code signals) may improve reception.

#### G. MAINTENANCE

There are no spare parts supplied with, nor is there any maintenance to be performed on the RR/D-11. 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.

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 a small battery, a click in the headphones indicates that the phones are not defective.

2. The receiver operates, but signals are weak.

a. Check for a weak battery and charge the battery if necessary. If a plug-in 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 good electrical contact.

#### H. OPERATION FROM A 6 VOLT STORAGE BATTERY

To operate from a 6 volt storage battery, a 6 volt power connector is required. However, wiring changes may be made to the 12 volt power connector (15) so that a 6 volt battery can be used. To make these changes:

- 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 15. 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 15 will now operate the receiver from a 6 volt battery. **WARNING:** Do not use the rewired 6 volt power connector to power the receiver from a 12 volt battery unless the connections are changed back to their original positions.

RR/D-11 Receiver

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|--------------------------------|---|
| 1. Function Switch No. 1 (FS1) | 9. Tuning Control for 3-12MC            |
| 2. Function Switch No. 2 (FS2) | 10. Frequency Dial for 12-30MC          |
| 3. Band Switch                 | 11. Tuning Control for 12-30MC          |
| 4. Antenna Terminal            | 12. Grounded Phones Terminal            |
| 5. Volume Control              | 13. Ungrounded Phones Terminal          |
| 6. Calibrate Control           | 14. Nine-pin Receptical                 |
| 7. CW Control                  | 15. Power Connector for 12 volt Battery |
| 8. Frequency Dial for 3-12MC   | 16. Plug-in 6 volt Battery              |

