DEPARTMENT OF THE ARMY TECHNICAL MANUAL

DEPARTMENT OF THE AIR FORCE TECHNICAL ORDER

RADIO RECEIVER R-388/URR

C 1, TM 11-854
TO 16-35R-388-5

DEPARTMENTS OF THE ARMY AND THE AIR FORCE
WASHINGTON 25, D. C., *30 March 1954*

TM 11-854/TO 16-35R-388-5, 23 April 1952, is changed as follows:

8. Additional Equipment Required

The following material * * * for its operation.

* * * * *

b. A 115- or 230-**volt** source of **alternating current (ac),** capable of providing at least 80 watts of power.

* * * * *

8.1 (Added) Differences in Models

The following changes and additions are made in Radio Receiver R-388/URR, serial numbers 1408 through 1447, on Order No. 3470-Phila-52:

a. The value of resistor R173 is changed from 2,200 ohms to 1,800 ohms.

b. The value of resistor R182 is changed from 1,000 ohms to 220 ohms.

c. The positive terminals of capacitors C214A and C214B are connected by a short bus wire. This bypasses the contacts of relay K101 so that B plus voltage is applied continuously to the IF amplifier stages when switch S113 is in the ON position.

18.1 (Added) Antijamming Procedures

When the radio receiver is being jammed by unwanted signals, the immediate superior officer must be notified promptly. However, the operator must not cease operating the equipment under any condition. One or more of the following procedures may be used for obtaining the maximum intelligibility from the desired signals during the jamming process.

a. Jammed AM Signals by CW, Pulse, or Other Sharp Noise Signals.

(1) Detune the receiver several degrees on either side of the desired signal by using the MEGACYCLES-KILOCYCLES tuning knob. This may cause some separation of the desired signal from the jamming signal.

(2) Operate the LIMITER switch to the ON position. Strong pulse signals may be reduced greatly. If not, operate the switch to the OFF position.

(3) Operate the CRYSTAL FILTER SELECTIVITY control to position 1. Adjust the CRYSTAL FILTER PHASING control for the best reception of the desired signals. Repeat the procedures given in (1) above. If the results are unfavorable, operate the SELECTIVITY control to each of the three other positions and adjust the PHASING control each time the SELECTIVITY control is operated. Again repeat the procedures given in (1) above. When the SELECTIVITY control is in position 4, the radio receiver is most selective. Selectivity may result in a greater separation of signals.

(4) Vary the RF GAIN control in both directions. This may reduce the jamming signal sufficiently to permit the comparatively weak wanted signal to be copied. When the radio frequency gain of the receiver is increased it is possible to saturate the jamming signal.

(5) Operate the AVC control to the OFF position. Position the CRYSTAL FILTER SELECTIVITY control either at position 1, 2, 3, or 4 for the best reception. The sensitivity of the radio receiver will be increased somewhat, and better separation of the wanted signals and the jamming signals may be obtained.

(6) Vary the AUDIO GAIN control in both directions. The level of the desired signal may be raised sufficiently to saturate

the jamming signals and provide perfect copy of the desired signals.

(7) If the above instructions fail to provide satisfactory separation of the desired signals from the jamming signals, try the following methods:

(*a*) Request a change in frequency and call letters.

(*b*) Request the use of cw signals if am methods fail.

(*c*) Install the antenna behind a tree, tank, or hill, and change the polarization of the antenna from horizontal to vertical, or vice versa.

(*d*) Change the direction, length, or height of the antenna.

(8) When the jamming action is so thorough that communication is impossible, make a report to the immediate superior but continue to operate the equipment.

b. Jammed AM Signals by FM and AM Signals, or Bagpipes. Use the methods outlined in *a* above to counteract these types of signals.

c. Jammed CW Signals by CW and Pulse Signals, or Other Type Sharp Noises.

(1) Repeat the procedures given in *a*(1) and (3) above.

(2) Vary the BFO PITCH control to separate the tone characteristics of the desired signal from that of the jamming signal.

(3) Operate the LIMITER control to the ON position to eliminate strong noise pulses.

(4) Repeat the procedures given in *a*(4), (5), (6), (7), and (8) above.

d. Jammed CW Signals by AM or FM Signals, or Bagpipes Either Separately, or in Combination. Repeat the procedures given in *a* and *c* above.

Figure 23. The following fixed capacitor is added in parallel with capacitor C214A: C214B, 1UF.

Figure 26. The following note is added:

Note. ON SERIAL NUMBERS 1408 THROUGH 1447, ORDER NO. 3470-PHILA-52, R173 IS 1,800 OHMS AND R182 IS 220 OHMS.

53. Power Supply

The receiver power * * * for 230-volt operation.

[AG 413.44 (2 Mar 54)]

a. The power transformer * * * and ON positions. Transformer T108 has * * * receiver tube filaments.

* * * * *

c. (Superseded) Voltage for the vfo unit and the a-f power tube, V115, is taken from the junction of chokes L122 and L123. The vfo unit voltage is regulated by current limiting resistor R181 and voltage regulator tube V116 type 0A2. If. amplifier tubes V107, V108, and V109, receive the B+ from terminal 2 of choke L123 through the ON position contacts of switch S113 and relay K101 contacts. Voltage for the remaining receiver circuits is supplied directly from terminal 2 to choke L123. Receivers with serial numbers 1 through 833, originally wired so that disabling relay K101 would remove the B+ from the if. amplifier stages during transmission, have been modified by MWO SIG–64. This modification consists of connecting a shorting wire (bus wire) across the positive terminals of capacitors C214A and C214B. Receivers so modified may be used to monitor nearby transmissions when the antenna input is disabled (as when used with Radio Set AN/GRC–26A). Receivers with serial numbers 1408 through 1447, Order No. 3470-Phila-52, have received this change at the factory.

54. Input-Output Meter

A O- to * * * the meter connections.

* * * * *

b. Output Meter. When the INPUT-OUTPUT * * * T107 secondary winding. **Meter loading resistor R182 is connected in parallel with meter M101.** The rectified voltage * * * across resistor R182.

APPENDIX II

INDENTIFICATION TABLE OF PARTS

Rescinded.

Figure 42. The following notes are added:

1. ON SERIAL NUMBERS 1408 THROUGH 1447, ORDER NO. 3470-PHILA-52, R173 IS 1,800 OHMS AND R182 IS 220 OHMS.
2. ON SERIAL NUMBERS 1408 THROUGH 1447, ORDER NO. 3470-PHILA-52, THE POSITIVE TERMINALS OF C214A AND C214B ARE CONNECTED BY A SHORT BUS WIRE.

BY ORDER OF THE SECRETARIES OF THE ARMY AND THE AIR FORCE:

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USAR: None.

For explanation of distribution formula, see SR 310-90-1.

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