

EMERGENCY POINT-TO-POINT RADIO

EC-1 SYSTEM (MOTOROLA)

EC-R1 RECEIVER

1. GENERAL

1.01 The EC-R1 radio receiver is a component of an EC emergency radio terminal. The unit is comprised of a Motorola WE-8476 radio receiver chassis, a primary power distribution panel, an audio and control circuit receiver power distribution panel, and a receiver antenna filter panel.

1.02 The EC-R1 radio receiver is a portable unit. Its aluminum cabinet is 22 inches wide, 17 inches high, and 13 inches deep, and is equipped with removable covers on the front and back.

2. DESCRIPTION AND OPERATING PRINCIPLES

2.01 The EC-R1 radio receiver includes a crystal controlled radio receiver chassis designed for the reception of frequency modulated signals in the frequency range of 152 to 174 megacycles. In this application, it is intended for use primarily in the range of 152 to 162 megacycles. Circuit arrangements of this unit are shown in Fig. 1.

2.02 The receiver is normally adjusted to deliver 0.25 watts of audio power into a 3.0 ohm load although its maximum rated power output is 1.25 watts.

2.03 The power distribution panel consists of the 117-volt ac input connector, J1; the 117-volt ac appliance outlet, J2; the 117-volt ac connector, J3, for the transmitter; the 117-volt ac connector, J4, for the control terminal; and the main ac switch and circuit breaker, CB1.

2.04 The audio control circuit and receiver power distribution panel consists of the transmitter audio and control circuit and receiver power connector, J6; the control terminal audio and control circuit connector, J5; the

transmitter and receiver frequency selector switch, S1; and a transmitter carrier keying switch, S2, used for test purposes.

Caution: When the radio terminal is put in operation, switch S2 must be in the OFF position. If left in the ON position, the transmitter carrier cannot be enabled or disabled at the control terminal.

2.05 The receiver antenna filter panel consists of a 552A filter and associated connecting cables. The filter is employed to reject the companion transmitter's carrier from the receiver input.

2.06 The 552A filter has a midband loss of approximately 1 db and a loss of about 20 db at frequencies 5 megacycles removed from the midband.

2.07 Refer to Section 404-524-ZZZ for complete information on the Motorola WE-8476 radio receiver chassis. For information covering the application of the EC-R1 radio receiver to the EC emergency radio terminal, refer to Section 403-800-100.

3. GENERAL SAFETY PRACTICES

3.01 Follow all general safety practices when working on the receiver. For a detailed discussion of safety precautions to be observed, refer to Section 010-110-001.

4. MAINTENANCE

4.01 Periodically inspect the wiring and connectors for loose or broken connections and remove any accumulation of dust or dirt.

4.02 For detailed maintenance instruction for the Motorola WE-8476 radio receiver chassis, see Section 404-524-500.

SECTION 403-802-102

5. PHOTOGRAPH AND PARTS LIST

A. Photograph

5.01

| DESIG-NATION | SUBJECT | PAGE |
|--------------|----------------------|------|
| A | EC-R1 Radio Receiver | 4 |

B. Parts List

5.02 The electrical component parts list is attached. This list does not cover Motorola parts which are listed in Section 404-524-100.

| REFERENCE SYMBOL | DESCRIPTION |
|------------------|---|
| CB1 | Circuit Breaker KS-15659, L5 |
| I1 | Indicator Light, Dialco No. 91408-93-1 with NE51 Neon Glow Lamp |
| J1 | Flush Base Hubbell No. 7556G |
| J2 | Receptacle Hubbell No. 5262 |

| REFERENCE SYMBOL | DESCRIPTION |
|------------------|---|
| J3 | Flush Base Hubbell No. 7487G |
| J4 | Flush Base Hubbell No. 7487G |
| J5 | Receptacle, AN-3102A-20-27S |
| J6 | Receptacle, AN-3102A-20-27PW |
| J11 | UG30/U Connector |
| J12 | Part of 552A Filter Assembly |
| J13 | Part of 552A Filter Assembly |
| P12 | Part of ED-45568-90, G10 Cable Assembly |
| P13 | Part of ED-45568-90, G5 Cable Assembly |
| P14 | Part of ED-45568-90, G5 Cable Assembly |
| P16 | Part of ED-45568-90, G10 Cable Assembly |
| S1 | Switch, Toggle, DPDT KS-13674, L12 |
| S2 | Switch, Toggle, SPST KS-13674, L1 |
| — | WEC0 552A Filter |

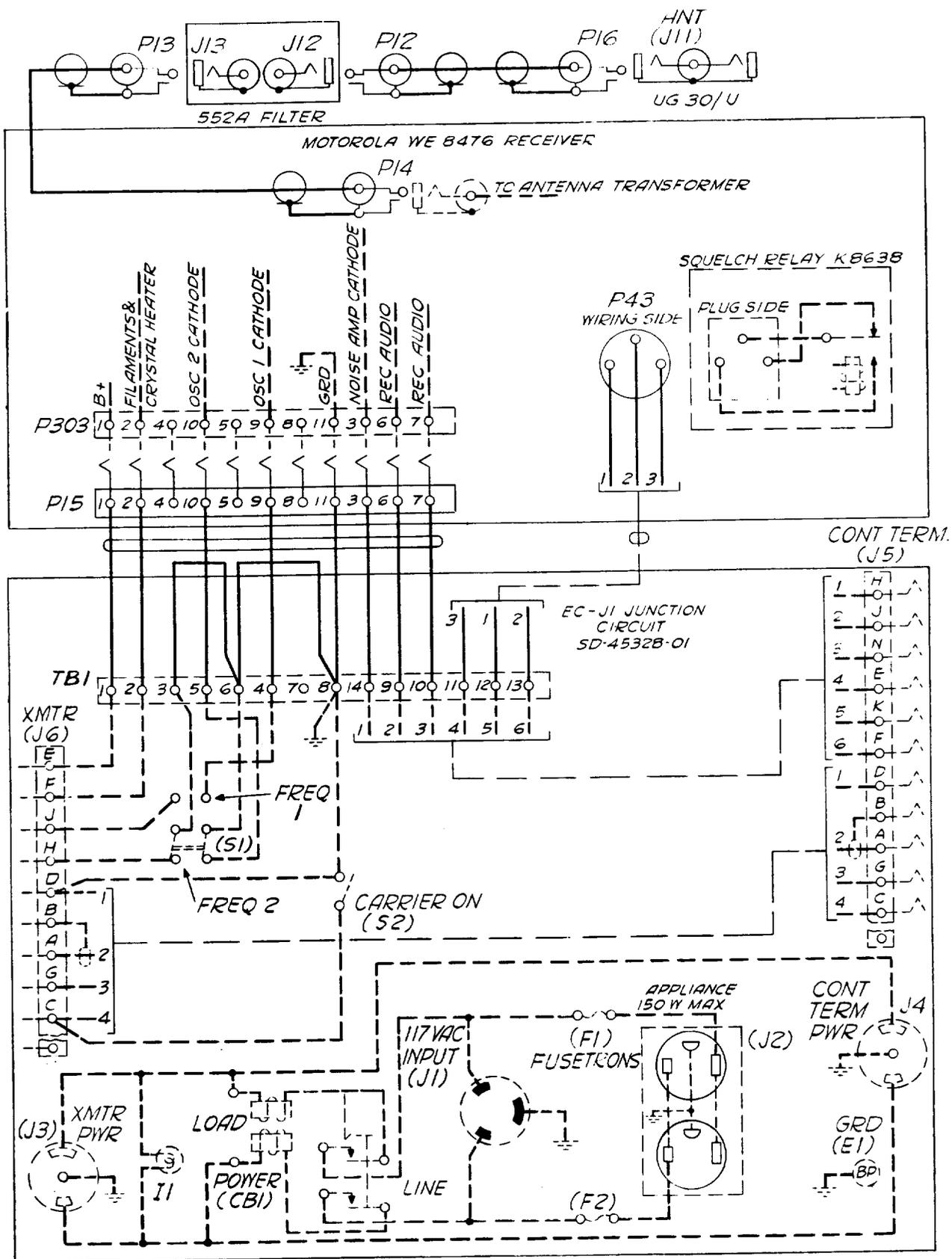


Fig. 1 - EC-R1 Radio Receiver Circuit

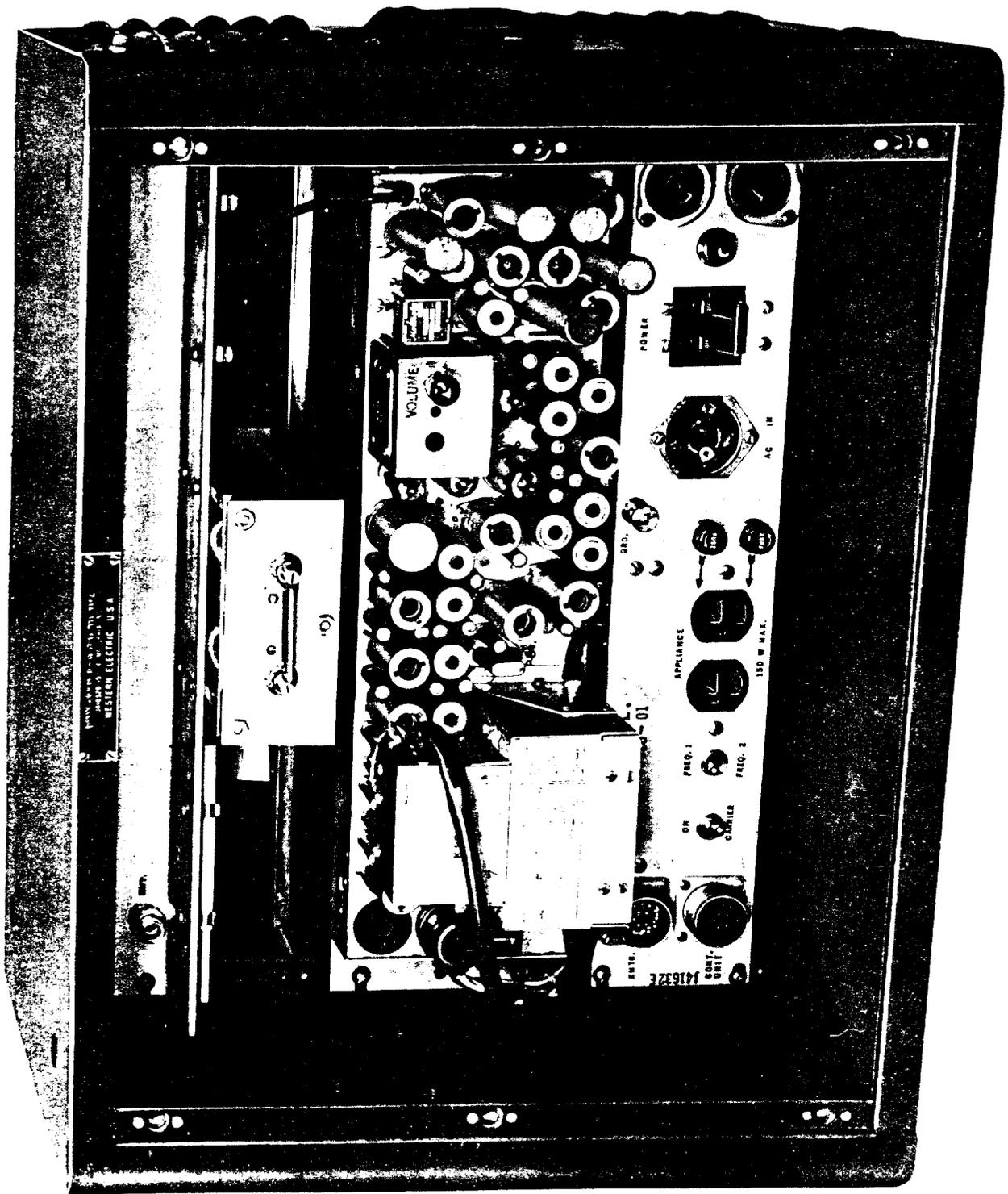


Photo A – EC-R1 Radio Receiver