

*Xtal Freq. should not exceed 8.0 mc.*

**CONFIDENTIAL**

**INSTRUCTION BOOK**

FOR

**RADIO STATION**

**(RS-6-XX)**

*RR-6  
RT-6  
RP-6  
RA-6*

DOCUMENT NO. 4  
NO CHANGE IN CLASS.   
 DECLASSIFIED  
CLASS. CHANGED TO: TS S (C) 2012  
NEXT REVIEW DATE: \_\_\_\_\_  
AUTH: HB 70-2  
DATE: 2012 REVIEWER: 010958

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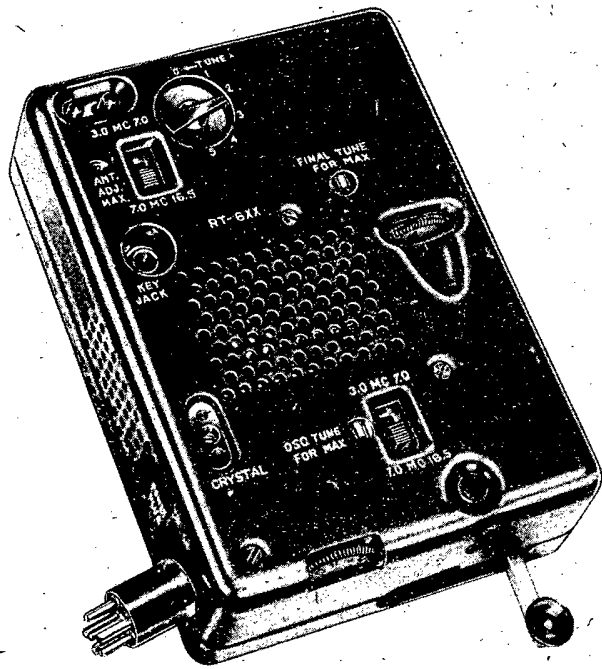
## TABLE OF CONTENTS

	Paragraph	Page
<b>CHAPTER 1. INTRODUCTION</b>		
Section I. Description & data		
General.....	1	1
Transmitter RT-6-XX .....	2	1
Receiver RR-6-XX .....	3	1
Power Supply RP-6-XX .....	4	1
Filter-Accessory Unit RA-6-XX .....	5	1
Additional accessories .....	6	1
<b>CHAPTER 2. OPERATING INSTRUCTIONS</b>		
Section I. Setting up equipment		
AC operation hook-up .....	1	3
Battery operation hook-up .....	2	3
Hand generator operation hook-up .....	3	5
Battery charging hook-up & operation .....	4	5
II. Transmitter RT-6-XX		
Controls & functions .....	1	6
Crystal selection .....	2	6
Antenna length and height .....	3	6
Ground connection .....	4	6
Tuning .....	5	7
Keying .....	6	8
III. Receiver RR-6-XX		
Controls & functions .....	1	8
Calibrating the tuning dial .....	2	8
Tuning (variable) .....	3	8
Tuning (crystal) .....	4	8
Log scale.....	5	9
<b>CHAPTER 3. MAINTENANCE</b>		
Section I. Receiver RR-6-XX		
Circuit description .....	1	10
Alignment.....	2	10
Disassembly & reassembly of dial scale mechanism.....	3	16
II. Transmitter RT-6-XX		
Circuit description.....	1	17

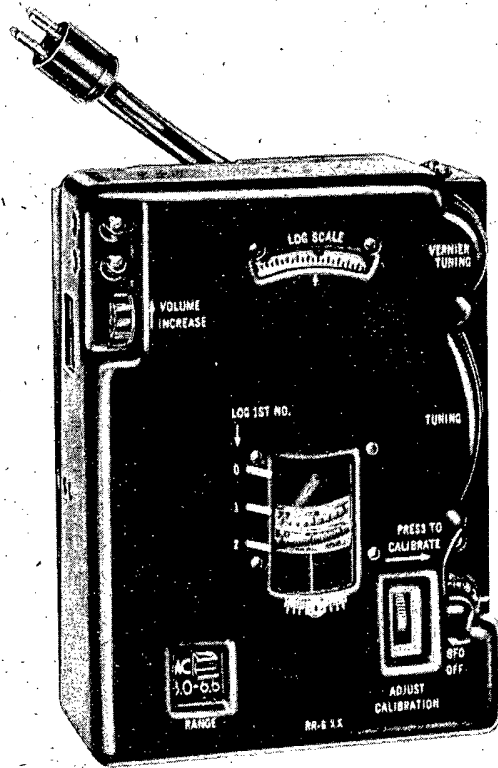
	Paragraph	Page
<b>III. Power Supply RP-6-XX</b>		
Circuit description.....	1	19
How to replace vibrator .....	2	19
How to replace power transformer.....	3	19
<b>IV. Filter-Accessory Unit RA-6-XX</b>		
Circuit description.....	1	20
How to disassemble.....	2	20
<b>V. Packaging</b>		
How to replace units in plastic pouch.....	1	22
<b>CHAPTER 4. PARTS LISTS</b>		
Section I. Receiver RR-6-XX.....		23
II. Transmitter RT-6-XX.....		27
III. Power Supply RP-6-XX.....		28
IV. Filter-Accessory Unit RA-6-XX.....		29

## LIST OF ILLUSTRATIONS

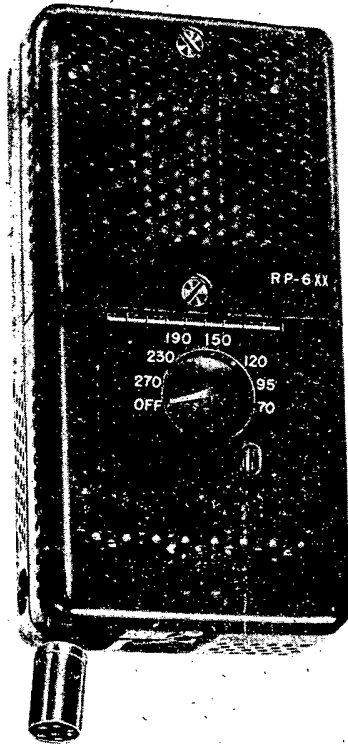
FIGURE	TITLE	PAGE
1	Radio Station RS-6-XX .....	
2	Filter-Accessory Unit RA-6-XX Opened, Showing Accessories .....	2
3	Additional Accessories .....	2
4	Power Supply RP-6-XX Showing Control Switch and Power Plug.....	3
5	Radio Station RS-6-XX A-C Operation Hook-Up .....	4
6	Radio Station RS-6-XX Battery Operation Hook-Up .....	4
7	Radio Station RS-6-XX Hand Generator Operation Hook-Up.....	5
8	Radio Station RS-6-XX Battery Charging Hook-Up.....	6
9	Transmitter RT-6-XX Showing Control Locations .....	7
10	Filter-Accessory Unit RA-6-XX Showing RECVR-TRANS Switch.....	7
11	Receiver RR-6-XX Showing Control Locations .....	9
12	Receiver RR-6-XX Schematic Diagram.....	11
13	Receiver RR-6-XX Top & Bottom Views Showing Alignment Adjustment Locations .....	12
14	Receiver RR-6-XX Showing Panel Assembly Parts Locations.....	14, 15
15	Receiver RR-6-XX Top Views Showing Parts Locations.....	16
16	Disassembly of Receiver RR-6-XX Dial Mechanism .....	16
17	Transmitter RT-6-XX Schematic Diagram .....	17
18	Transmitter RT-6-XX Parts Locations.....	18
19	Power Supply RP-6-XX Schematic Diagram .....	19
20	Power Supply RP-6-XX Vibrator Replacement .....	20
21	Power Supply RP-6-XX Parts Location .....	20
22	Filter-Accessory Unit RA-6-XX Schematic Diagram .....	21
23	Filter-Accessory Unit RA-6-XX Parts Location .....	21
24	Packaging Detail .....	22



TRANSMITTER RT-6-XX



RECEIVER RR-6-XX



POWER SUPPLY RP-6-XX



FILTER-ACCESSORY UNIT RA-6-XX

Figure 1. Radio Station RS-6-XX Components

V

## CHAPTER 1

### INTRODUCTION

#### Section I. DESCRIPTION & DATA

##### 1. GENERAL

Radio Station RS-6-XX is a compact four-unit set for transmitting cw and receiving cw or am. It operates from ac, storage battery, or hand generator, and consists of a Transmitter RT-6-XX, Receiver RR-6-XX, Power Supply RP-6-XX, and a Filter-Accessory Unit RA-6-XX. See Figure 1.

##### 2. TRANSMITTER RT-6-XX.

- a. Type: 2-stage, crystal controlled
- b. Frequency range (two bands):
  - (1) 3 to 7 mc
  - (2) 7 to 16.5 mc
- c. Power Output: 9 watts (nominal)
- d. Power Input:
  - (1) 400v dc at 75 ma
  - (2) 6.3v ac-dc at 1.2 amp
- e. Weight: 2 lb 14 oz
- f. Dimensions (inches): 6-3/4 x 5 x 2-3/32

##### 3. RECEIVER RR-6-XX.

- a. Type: Superheterodyne, variable tuning or crystal controlled
- b. Frequency range (two bands):
  - (1) 3 to 6.5 mc
  - (2) 6.5 to 15 mc
- c. Power Input:
  - (1) 90v dc at 50 ma -regulated
  - (2) 6.3v ac-dc at 1.2 amp
- d. Weight: 3 lb 2 oz
- e. Dimensions (inches): 6-3/4 x 5 x 2-1/4

##### 4. POWER SUPPLY RP-6-XX.

- a. Power Input:
  - (1) a-c 70 to 270v, 40 to 400 cps
  - (2) d-c 6.3v at 12 amp

b. Power Source: a-c line or 6-volt storage battery.

##### c. Power Output:

- (1) 400v dc at 75 ma
- (2) 90v dc at 25 ma regulated
- (3) 90v dc at 25 ma regulated
- (4) 6.3v dc at 2.4 amps

##### d. Fuses:

- (1) a-c - 1.5 amp
- (2) d-c - 15 amp

##### e. Power Factor:

- (1) 40 cps -
- (2) 60 cps - 86.7
- (3) 400 cps - 96.3

f. Weight: 5 lb 11 oz

g. Dimensions (inches): 8-1/16 x 4 x 2-3/16

##### 5. FILTER-ACCESSORY UNIT RA-6-XX.

##### a. Function:

- (1) Filters B+
- (2) Regulates receiver B+
- (3) Provides storage space for accessories and power cables. See Figure 2.

b. Weight: 3 lb 11 oz

c. Dimensions (inches): 8-1/16 x 4 x 2

##### d. Accessories:

- 1 Earset & cord
- 1 AC cable assembly
- 1 Battery cable assembly
- 1 Spare fuse - 1.5 amp
- 1 Spare fuse - 15 amp
- 1 Set Schematic Diagram & Parts List

##### 6. ADDITIONAL ACCESSORIES.

a. The following accessories are contained in a plastic pouch (see Figure 3):

- 1 Hank antenna (100 ft)
- 2 Antenna insulators
- 2 Battery clamps

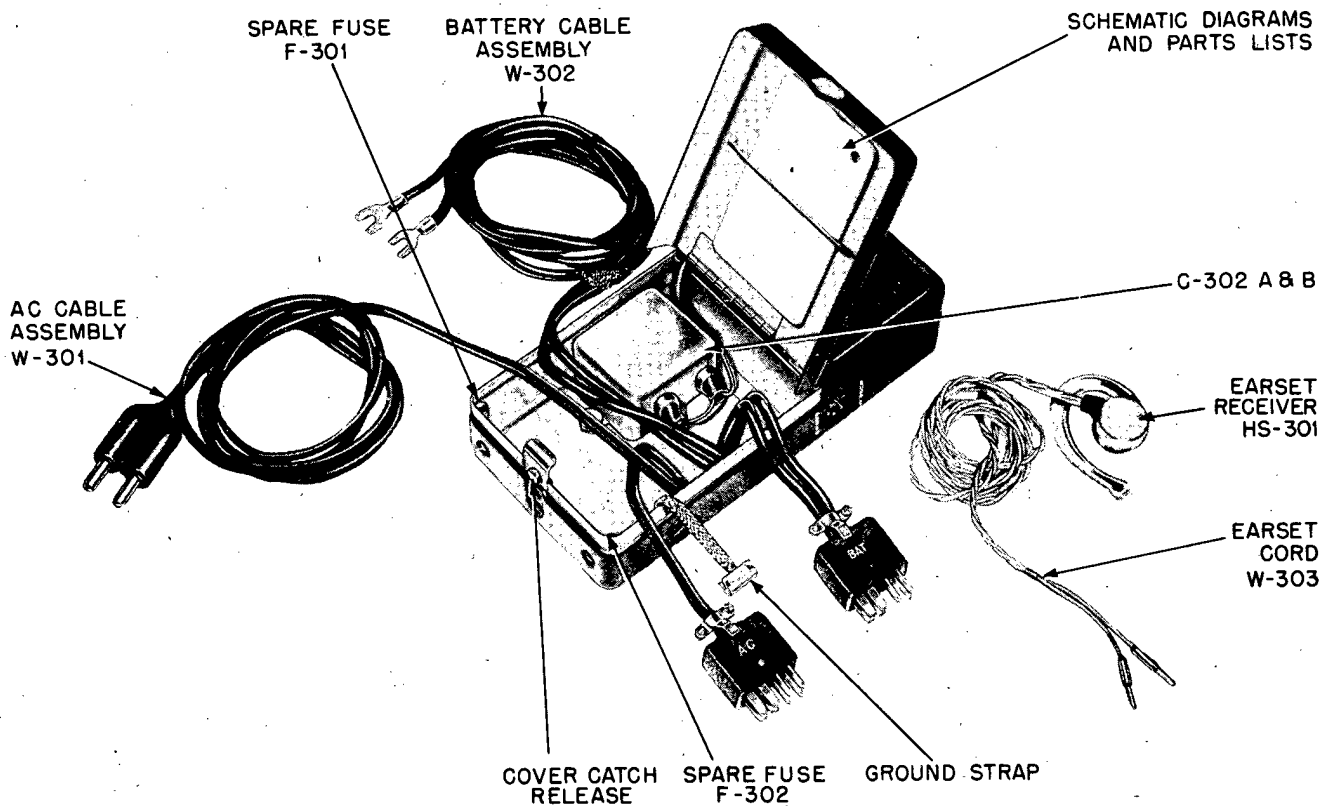


Figure 2. Filter-Accessory Unit RA-6-XX opened, showing accessories

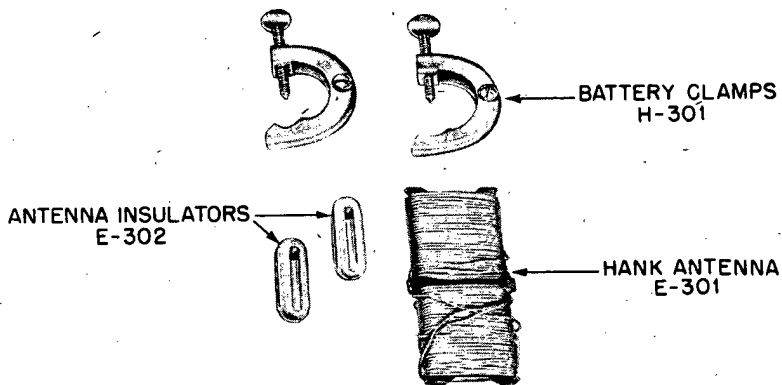


Figure 3. Additional accessories

## CHAPTER 2

### OPERATING INSTRUCTIONS

#### Section I. SETTING UP EQUIPMENT

##### 1. AC OPERATION HOOK-UP

a. Turn input voltage selector switch on Power Supply RP-6-XX (Figure 4) to OFF.

b. Pull sending key out of recess on Transmitter RT-6-XX.

c. Connect equipment as shown in Figure 5. (Receiver crystal shown is optional).

(1) The Jones plug marked AC must be inserted in the OPERATE receptacle on Power Supply RP-6 before the power plug is connected to an a-c power source, otherwise "hot" terminals will be exposed and a power line fuse may be blown.

(2) Connect the two-prong plug of the a-c cable assembly to any a-c power source whose voltage is between 70 and 270 volts, and frequency between 40 and 400 cycles. The two-prong a-c power plug can be adapted to various receptacles in the following ways:

(a) Vary the spacing between the prongs by compressing plug.

(b) Prongs can be unscrewed and reversed to provide any combination of small and large prongs as required to fit various power outlets.

d. Turn input voltage selector switch on Power Supply RP-6-XX clockwise to the first position at which the neon indicating light glows. The transmitter and receiver are now ready for operation.

e. Do not turn off the equipment by disconnecting Jones plug marked AC. This would expose "hot" terminals. Turn off equipment by pulling power plug from power source.

f. Refer to Sections II & III of this chapter for detailed transmitter and receiver operation.

##### 2. BATTERY OPERATION HOOK-UP.

a. Turn input voltage selector switch on Power Supply RP-6-XX (Figure 4) to OFF.

b. Pull sending key out of recess on Transmitter RT-6-XX.

c. Connect equipment as shown in Figure 6 (receiver crystal shown is optional).

(1) Use only a 6-volt storage battery source. If only an 8 or 12-volt storage battery is available, connect only across 6 volts (3 cells) of the battery. See Figure 6.

(2) The Jones plug marked BAT must be inserted in the OPERATE receptacle on Power Supply RP-6-XX before the battery clamps are connected to storage battery, otherwise "hot" terminals will be exposed and equipment may be damaged.

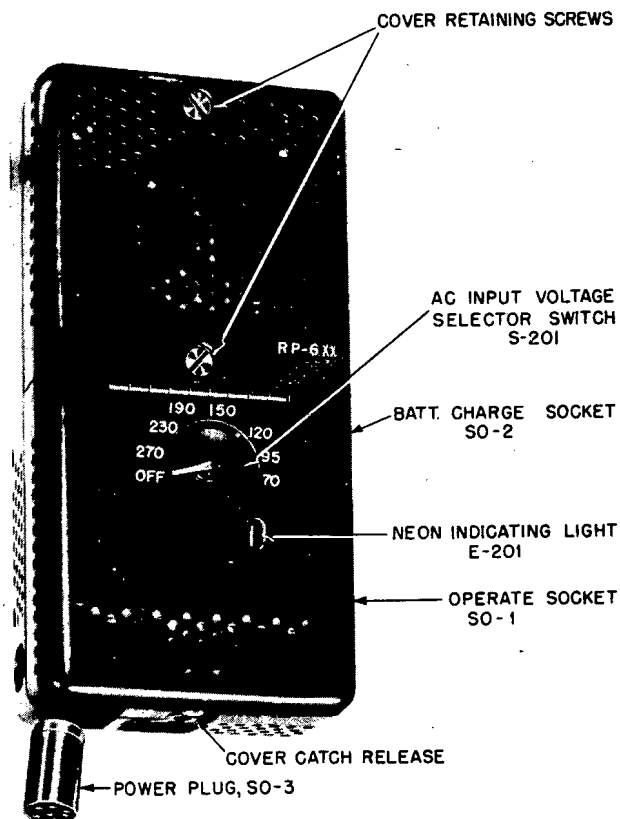


Figure 4. Power Supply RP-6-XX showing control switch and power plug



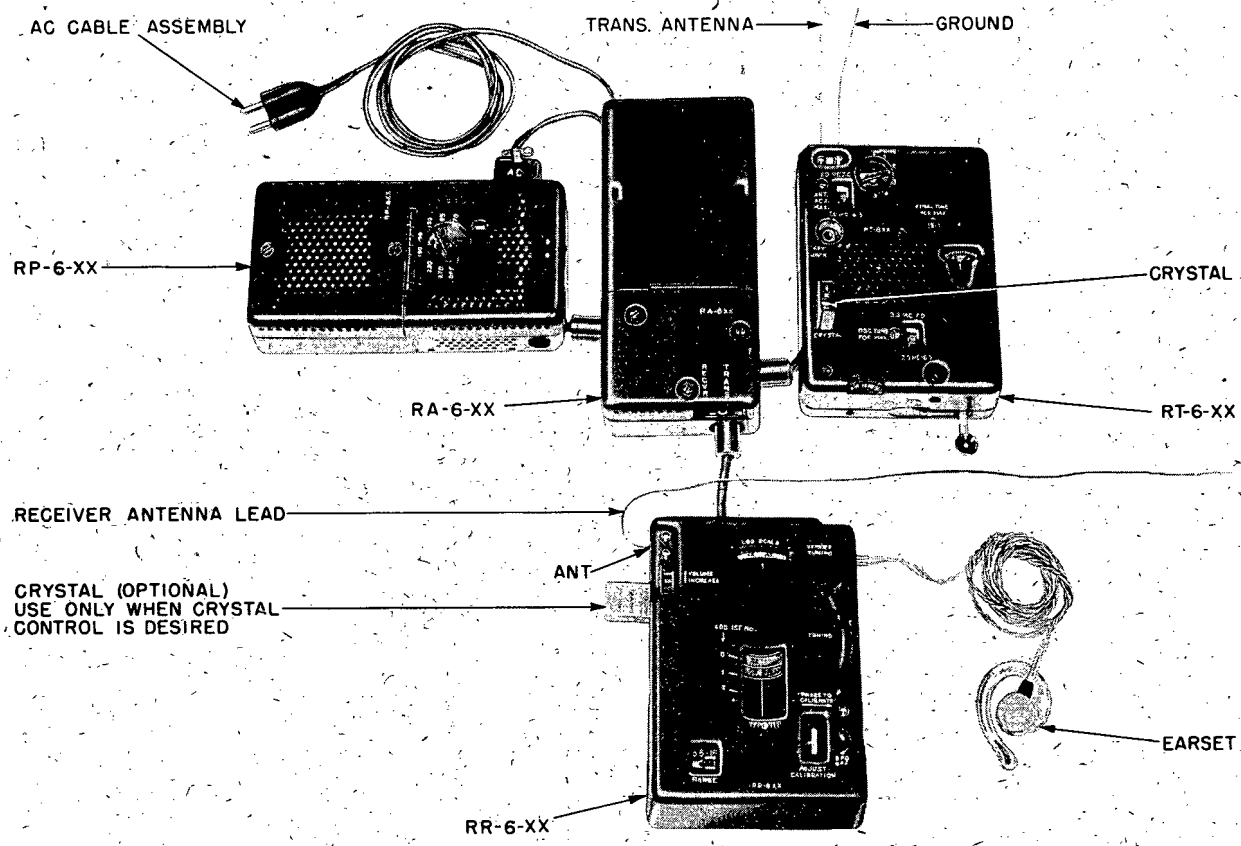


Figure 5. Radio Station RS-6-XX a-c operation hook-up

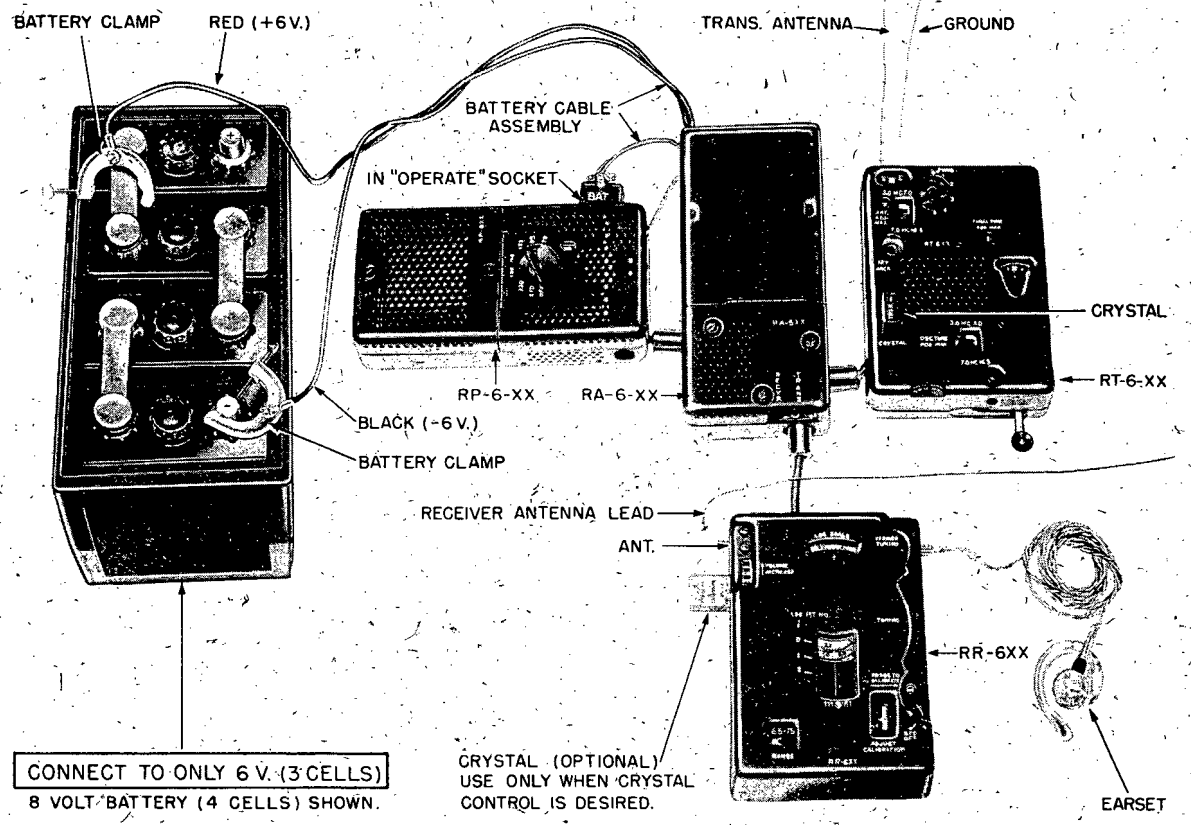


Figure 6. Radio Station RS-6-XX battery operation hook-up

(3) Connect red battery lead to the plus 6-volt side of the battery, and the black battery lead to the minus 6-volt side of the battery.

d. The transmitter and receiver are now ready for operation.

e. Do not turn equipment off by disconnecting Jones plug marked BAT. This would expose "hot" terminals. Turn off equipment by disconnecting clamp from either battery terminal.

f. Refer to Sections II & III of this chapter for detailed transmitter and receiver operation.

### 3. HAND GENERATOR OPERATION HOOK-UP

a. Pull sending key out of recess on Transmitter RT-6-XX.

b. Connect equipment as shown in Figure 7. (Receiver crystal shown is optional). Either Hand Generator GN-58 or SSP-11 may be used.

NOTE: Power Supply RP-6-XX is not used in this method of operation. The transmitter and receiver are now ready for operation.

c. Refer to Sections II & III of this chapter for detailed transmitter and receiver operation.

### 4. BATTERY CHARGING HOOK-UP & OPERATION

a. Only a 6-volt (3 cell) wet type storage battery can be charged.

(1) The charging rate is 3-1/2 amperes minimum.

(2) Battery should be charged only in a well ventilated room as dangerous gases are formed during charging process.

b. Connect equipment as follows: (See Figure 8).

(1) Turn the input voltage selector switch on Power Supply RP-6-XX to OFF. (Figure 4).

(2) Insert Jones plug marked BAT in receptacle marked BATT-CHARGE.

(3) Connect red battery lead to the plus 6-volt terminal of storage battery.

(4) Connect black battery lead to the minus 6-volt terminal of storage battery.

(5) Insert Jones plug marked AC in receptacle marked OPERATE.

(6) Do not connect Power Supply RP-6-XX power plug to Filter-Accessory Unit RA-6-XX or fuse will be blown.

(7) Connect the two-prong plug of the AC cable assembly to any a-c power source whose voltage is between 70 and 270 volts, and whose

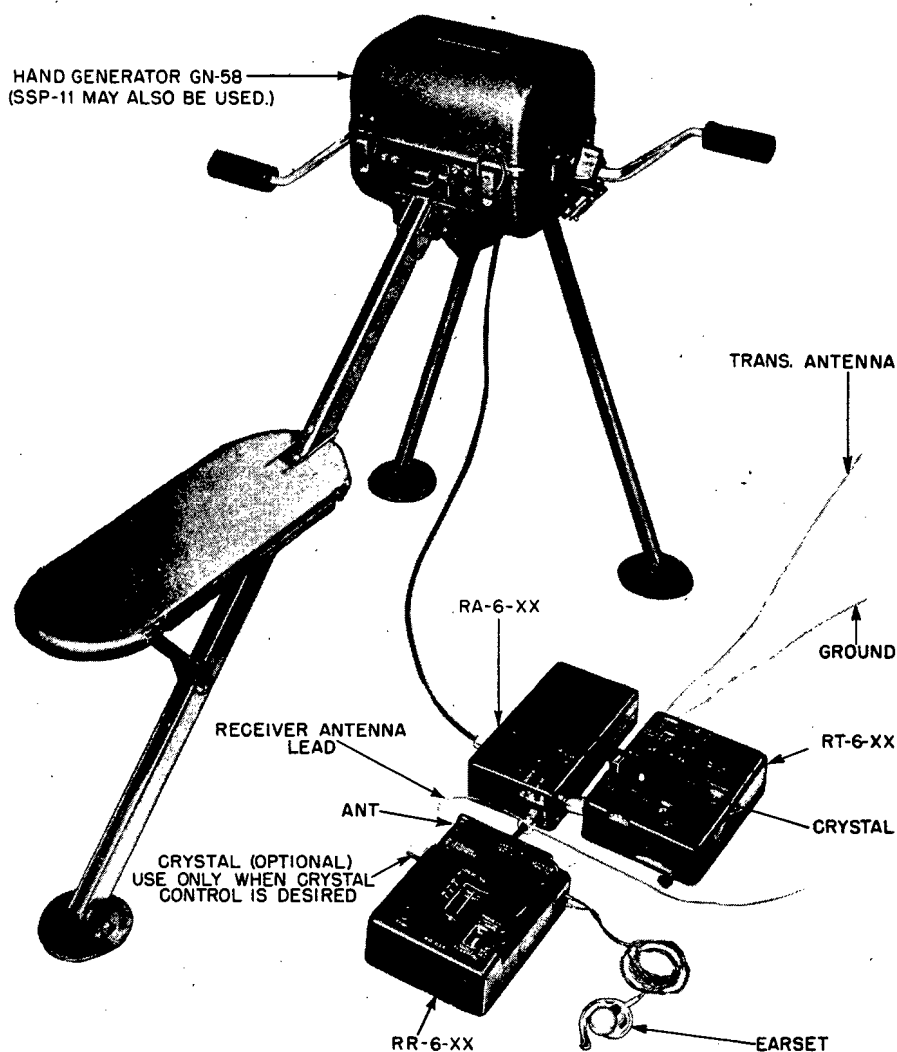


Figure 7. Radio Station RS-6-XX hand generator operation hook-up

frequency is between 40 and 400 cps. The two-prong a-c power plug can be adapted to various receptacles in the following ways:

(a) Vary the spacing between the prongs by compressing plug.

(b) Prongs can be unscrewed and reversed to provide any combination of small and large prongs as required to fit various power outlets.

c. Turn input voltage selector switch of Power Supply RP-6-XX clockwise to the first position at which the neon indicating light glows. Battery is now being charged.

d. To stop charging process proceed as follows:

(1) Turn the input voltage selector switch on Power Supply RP-6-XX to OFF.

(2) Disconnect two-prong a-c plug from power source.

(3) Remove battery leads from battery.

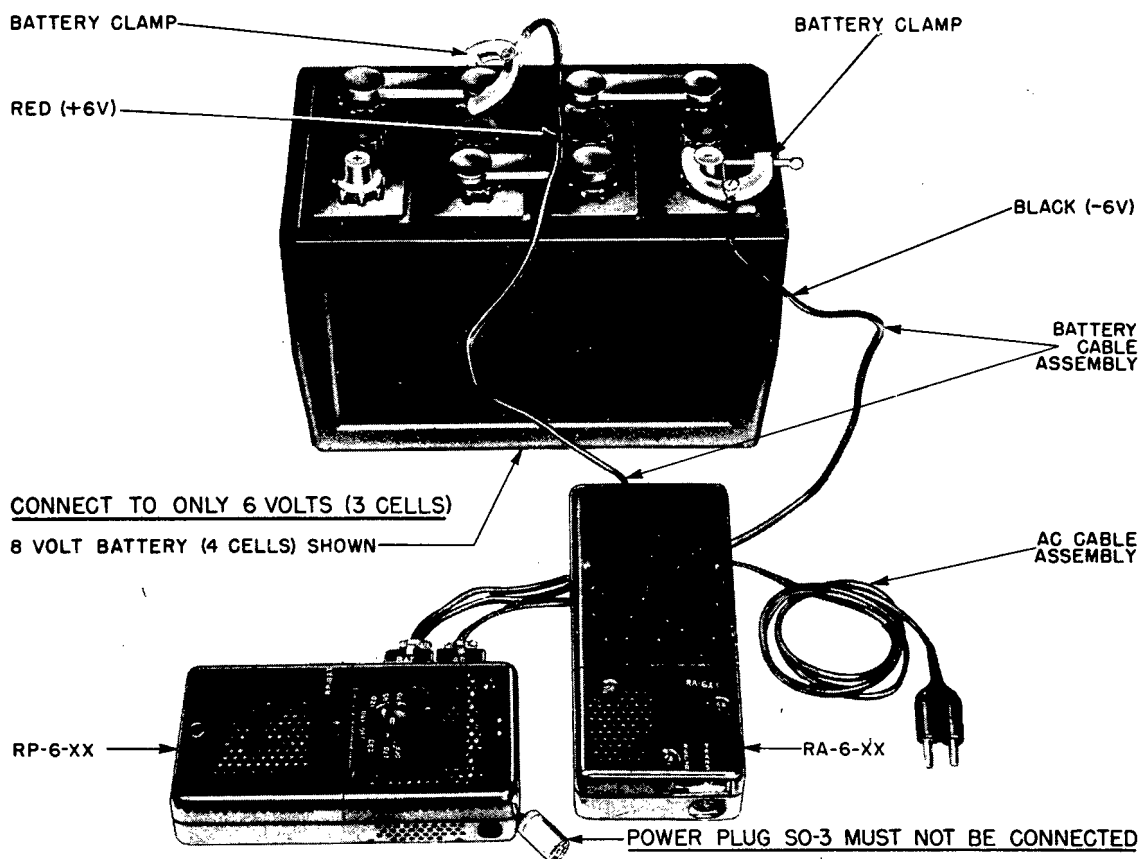


Figure 8. Radio Station RS-6-XX battery charging hook-up

## Section II. TRANSMITTER RT-6-XX

### 1. CONTROLS & FUNCTIONS (See Figure 9).

a. **OSC BANDSWITCH** - Selects desired band for oscillator.

- (1) Blue position - 3 to 7 mc.
- (2) Red position - 7 to 16.5 mc.

b. **FINAL BANDSWITCH** - Selects desired band for final amplifier.

- (1) Blue position - 3 to 7 mc.
- (2) Red position - 7 to 16.5 mc.

c. **OSCILLATOR TUNING** - Tunes oscillator tank to desired frequency.

- (1) Blue scale - 3 to 7 mc.
- (2) Red scale - 7 to 16.5 mc.

d. **FINAL AMPLIFIER TUNING** - Tunes final amplifier plate tank to desired frequency.

- (1) Blue scale - 3 to 7 mc.
- (2) Red scale - 7 to 16.5 mc.

e. **ANTENNA IMPEDANCE MATCHING SWITCH** - Matches the output impedance of the final amplifier to the antenna impedance.

f. **SENDING KEY** - Used for hand-keying transmitter.

### 2. CRYSTAL SELECTION.

a. By using the fundamental (the frequency stamped on the crystal), second harmonic (two times fundamental), or third harmonic (three times fundamental) of crystals of from 3 to 7 mc, the entire frequency range (3 to 16.5 mc) of the transmitter can be covered.

b. **DO NOT** use overmode crystals, nor operate crystals on fourth or higher harmonics.

### 3. ANTENNA LENGTH & HEIGHT.

a. The length of the quarter wave "L" antenna for a given frequency can be calculated from the following formulas:

$$L \text{ (feet)} = \frac{234}{\text{freq (megacycles)}}$$

$$L \text{ (meters)} = 0.238 \times \text{wavelength}$$

b. The antenna should be as high as possible.

### 4. GROUND CONNECTION

Connect the terminal marked GND to a metal member buried in moist earth (water pipe, gas

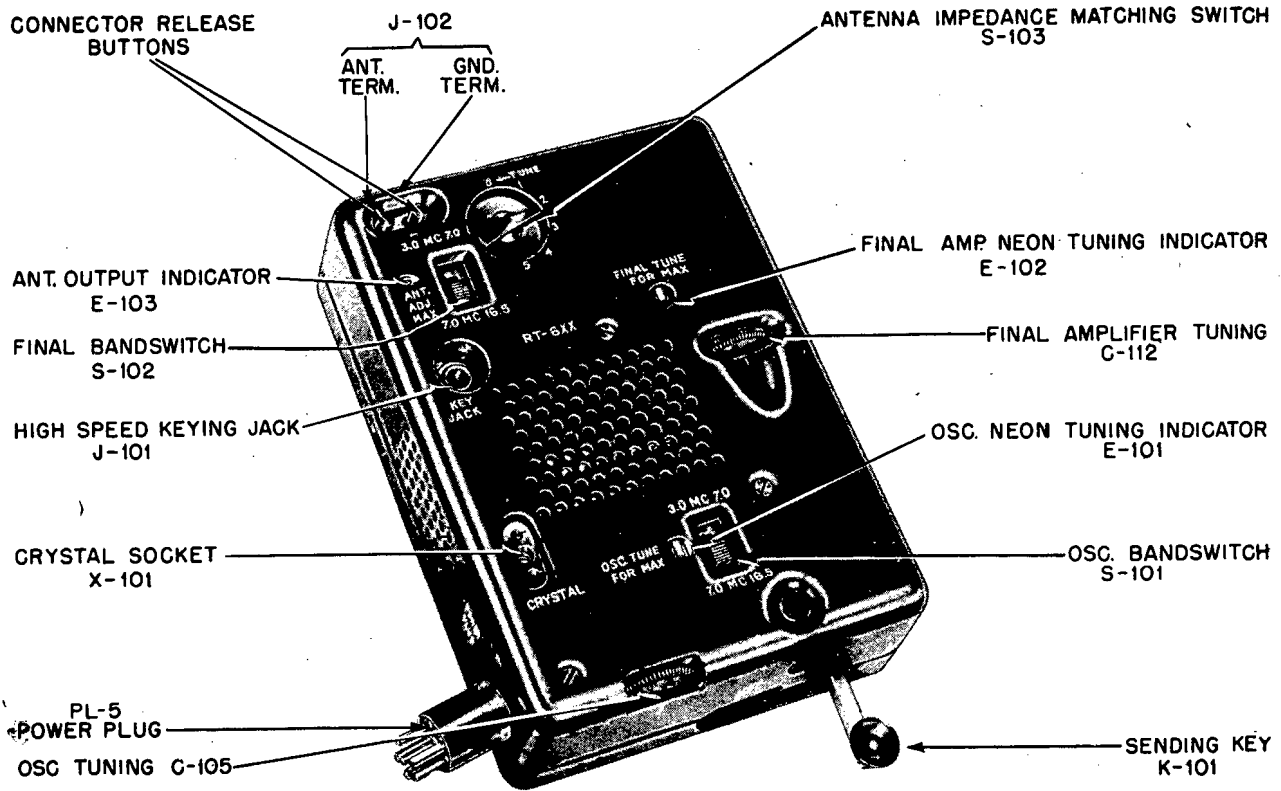


Figure 9. Transmitter RT-6-XX showing control locations

pipe, or ground stake).

5. TUNING (Refer to Figure 9).

a. Plug a crystal into the socket marked CRYSTAL. Its fundamental operating frequency must be either:

- (1) The same as the desired broadcast frequency (fundamental operation),
- (2) One-half the desired broadcast frequency (2nd harmonic operation), or
- (3) One-third the desired broadcast frequency (3rd harmonic operation).

b. Set the oscillator and final bandswitches to the desired broadcast frequency. Both switches must be set to the same color.

- (1) Blue position covers frequencies from 3 to 7 mc.
- (2) Red position covers frequencies from 7 to 16.5 mc.

c. Set oscillator and final amp tuning dials as closely as possible to the desired broadcast frequency. Both dials must be set to the same color scale.

- (1) The dials are calibrated in megacycles.
- (2) The 3 to 7 mc markings are in blue.
- (3) The 7 to 16.5 mc markings are in red.

d. Set RECVR-TRANS switch on the Filter Accessory Unit RA-6-XX to TRANS. (See Figure 10).

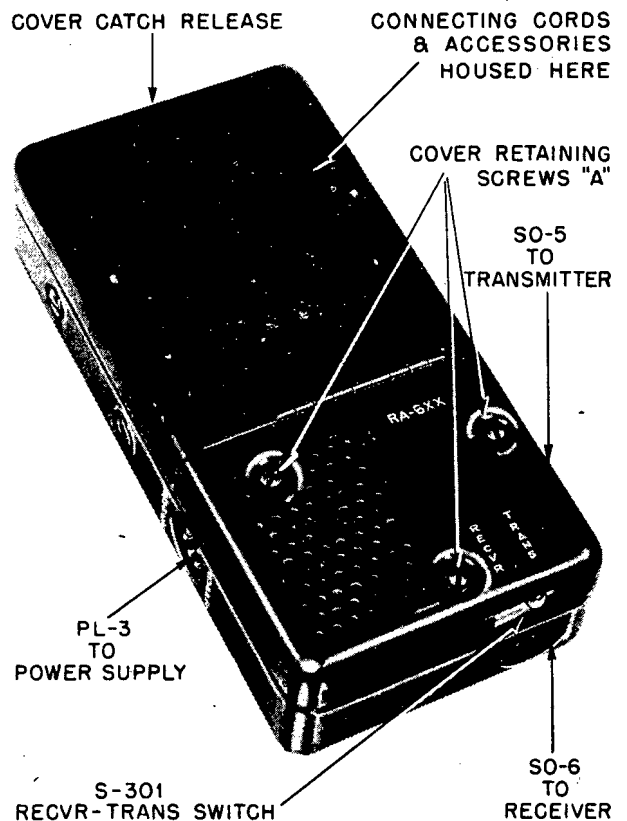


Figure 10. Filter-Accessory Unit RA-6-XX showing RECVR-TRANS switch

e. Turn antenna impedance matching switch to TUNE (zero). This disconnects the antenna and reduces radiation to a minimum while tuning up transmitter.

f. Press sending key and retune final amp tuning dial slightly to obtain distinct increase in brilliance of FINAL TUNE FOR MAX indicator. Release key.

g. Press sending key and retune osc tuning dial slightly to obtain distinct increase in brilliance of OSC TUNE FOR MAX indicator. If pronounced brilliance peak is not noted on indicator (as may be the case when using third harmonic of crystal) repeak oscillator tuning dial for peak brilliance of FINAL TUNE FOR MAX indicator. Release key.

h. Press sending key down and turn antenna impedance matching switch to position where ANT ADJ MAX indicator glows brightest. Release key.

i. Press sending key down and retune final amp tuning dial slightly for peak brilliance of ANT ADJ MAX indicator. Release key.

## 6. KEYING.

a. The transmitter is keyed:

- (1) by the sending key (Figure 9),
- (2) by plugging the automatic high-speed keyer in KEY JACK (Figure 9), or
- (3) by inserting frequency shift unit in the crystal socket for frequency shift operation.

b. The transmitter is ON when the sending key is folded into the recess on the front panel. The key must be in this position for automatic keying through the KEY JACK or for frequency shift operation.

## Section III. RECEIVER RR-6-XX

### 1. CONTROLS & FUNCTIONS (See Figure 11)

a. VOLUME - Controls volume of received signals.

b. RANGE - Selects proper frequency band.

(1) Blue position - 3 to 6.5 mc.

(2) Red position - 6.5 to 15 mc.

c. TUNING - Quickly sets oscillator and r-f tuned circuits to any point within receiver frequency range.

d. VERNIER TUNING - A finer control of the large TUNING dial.

e. PRESS TO CALIBRATE - Provides crystal-controlled frequency for dial calibration every 0.5 megacycle (500 kc).

f. ADJUST CALIBRATION - Corrects error in dial calibration by moving indicator hairline with respect to dial scale.

g. BFO - Turns 455 kc oscillator on & off and varies pitch of audio signal produced.

### 2. CALIBRATING THE TUNING DIAL

A signal generated by a crystal-controlled oscillator in the receiver offers a means of checking the accuracy of the frequency read on the dial. By means of harmonics, the 500 kc crystal provides signals in 500 kc steps throughout the dial. Thus, each megacycle mark and each half-megacycle mark become a calibration point. To calibrate dial, proceed as follows:

a. Set RECVR-TRANS switch (Figure 10) on Filter-Accessory Unit RA-6-XX to RECVR.

b. Hold down button marked PRESS TO CALIBRATE.

c. Turn the BFO dial until zero is aligned with the white mark on the housing.

d. Turn VERNIER TUNING until zero beat is heard. NOTE: Zero beat is the no sound point between the two sound peaks.

e. When setting the receiver to a desired frequency, first turn ADJUST CALIBRATION (Figure 11) until the hairline coincides with the closest calibration point.

### 3. TUNING (Variable)

a. Set RANGE switch (Figure 11) for proper frequency band - "red" for high band (6.5 to 15 mc) and "blue" for low band (3 to 6.5 mc).

b. The dial scale is calibrated directly in megacycles. Use the red scale for high band (6.5 to 15 mc) and blue scale for low band (3 to 6.5 mc).

c. Tune stations with the TUNING (coarse) control, or for more precise adjustment use VERNIER TUNING, always tuning in from the low frequency direction to eliminate any error from slack in the tuning system.

d. Calibrate dial on the nearest megacycle or half-megacycle calibration point as directed in previous paragraph. Turn BFO dial until zero is aligned with the white mark on the housing before calibrating dial. NOTE: For a-m (voice) reception, turn BFO clockwise to OFF.

e. Set dial to desired frequency and then retune slightly, if necessary, for best reception.

### 4. TUNING (Crystal)

a. Plug specified crystal in CRYSTAL CONTROL socket (Figure 11). NOTE: Oscillator frequency is 455 kc higher than the received frequency.

b. Tune receiver to working frequency and proceed as above.

5. LOG SCALE

a. Signals may be accurately logged to three figures through the use of the LOG SCALE.

(1) After station is accurately tuned in, note the position of the white horizontal line with respect to the numerals 0, 1, 2 located to the left of the dial scale opening. These numerals repre-

sent the first digit of the log scale.

(2) Read and record the numeral located immediately above the white horizontal line on the window for the first digit. Read the other two digits on LOG SCALE.

(3) Once a station is logged in, the tuning dial may be re-set by these numbers for future location of that station.

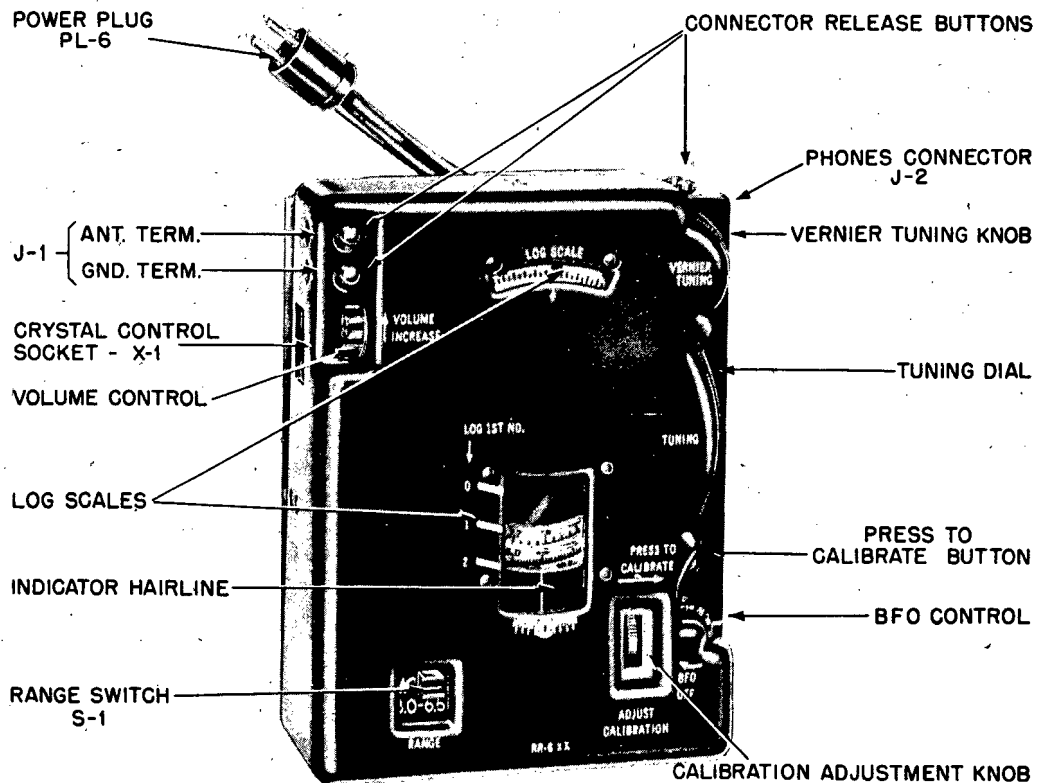


Figure 11. Receiver RR-6-XX showing control locations

## CHAPTER 3

### MAINTENANCE

#### Section I. RECEIVER RR-6-XX

##### 1. CIRCUIT DESCRIPTION (See schematic, Figure 12)

Receiver RR-6-XX is an eight-tube superheterodyne, two-band receiver. The incoming signal is amplified by a 5899 tuned r-f stage (V-1) and is transformer coupled to the mixer grid. The transformer has both mutual and capacity coupling. The 5899 local oscillator (V-2) is a tuned plate type when used as a variable oscillator and is a Pierce electron coupled type when used with crystal control. The plate tank then tunes to the desired harmonic. In the normal position, it is a variable oscillator. It is converted to crystal control by inserting the crystal into the socket (X-1). A switch in the socket automatically makes the necessary circuit changes.

Oscillator injection is accomplished inductively by small coupling loops on the oscillator and r-f transformer coil forms. Very loosely coupled double-tuned i-f transformers (T-7, 8, & 9) operating at 455 kc are used; the primaries of T-8 & T-9 are center-tapped to reduce plate loading and the combination results in a very narrowband receiver. The mixer i-f transformer (T-7) primary tap is not used because of the need for effective bypassing of the high frequencies. Two i-f stages (V-4 & 5) are used, not so much to achieve gain, but to obtain selectivity. Large unbypassed cathode resistors (R-13 & 18) are used in the i-f stages in order to reduce the gain to a usable value.

Plate detection is used in the 2nd detector (V-6) in order to reduce loading of the 3rd i-f transformer (T-9) and thereby maintain utmost selectivity. An i-f filter consisting of R-23 (56K), C-39 (.001), and C-40 (56 mmf), is in the plate of the 2nd detector to prevent i-f energy from getting into the audio amplifier. Capacitor C-40, in conjunction with C-51, also controls the feedback for the 500 kc crystal calibrator.

By means of a capacity probe, a signal from a Hartley BFO stage (V-8, 5718) is injected into the detector grid. This signal mixes with the 455 kc i-f frequency and produces an audio beat in the output of the second detector. The audio beat is applied to the audio amplifier (V-7, 5718) and reaches the headphone. When the BFO is turned off, C-49 is shorted out and the frequency of the tank is lowered to approximately 400 kc, which is far enough away in frequency to be rejected by the i-f amplifier. Any signal which does get to the detector produces a beat outside the audio range. With the BFO "off" the receiver can operate on a-m signals. The frequency of the BFO is changed rather than turning it off in order to provide the negative d-c voltage required by the volume control. A germanium crystal detector (CR-1) in the BFO stage rectifies part of the oscillator tank voltage and the rectified voltage developed across R-28, the VOLUME control, is used to vary the bias of the r-f and i-f stages.

The audio output stage, V-7, is also used as a 500 kc, crystal-controlled oscillator to provide an accurate signal for checking the calibration of the dial. Sufficient harmonics are generated to provide 500 kc check points throughout the two bands. The stage is converted to a Pierce-type oscillator by the PRESS TO CALIBRATE button, which connects the crystal (Y-2) between the grid and plate. The signal is fed back to the r-f end of the receiver by a capacity probe.

##### 2. ALIGNMENT

###### a. Equipment Required

- (1) AM signal generator having:
  - (a) accurately calibrated, adjustable output
  - (b) 400 cycle, 30% modulation. NOTE: The generator should be checked against an accurate wavemeter for correct frequency.
- (2) Output power meter, GR type 583-A or equivalent.
- (3) Non-metallic screwdriver with 1/8" blade (for i-f transformers)

T<sub>1</sub> - 5.5mc - 6 C-10  
 T<sub>2</sub> - 7 mc - 14.5-C11

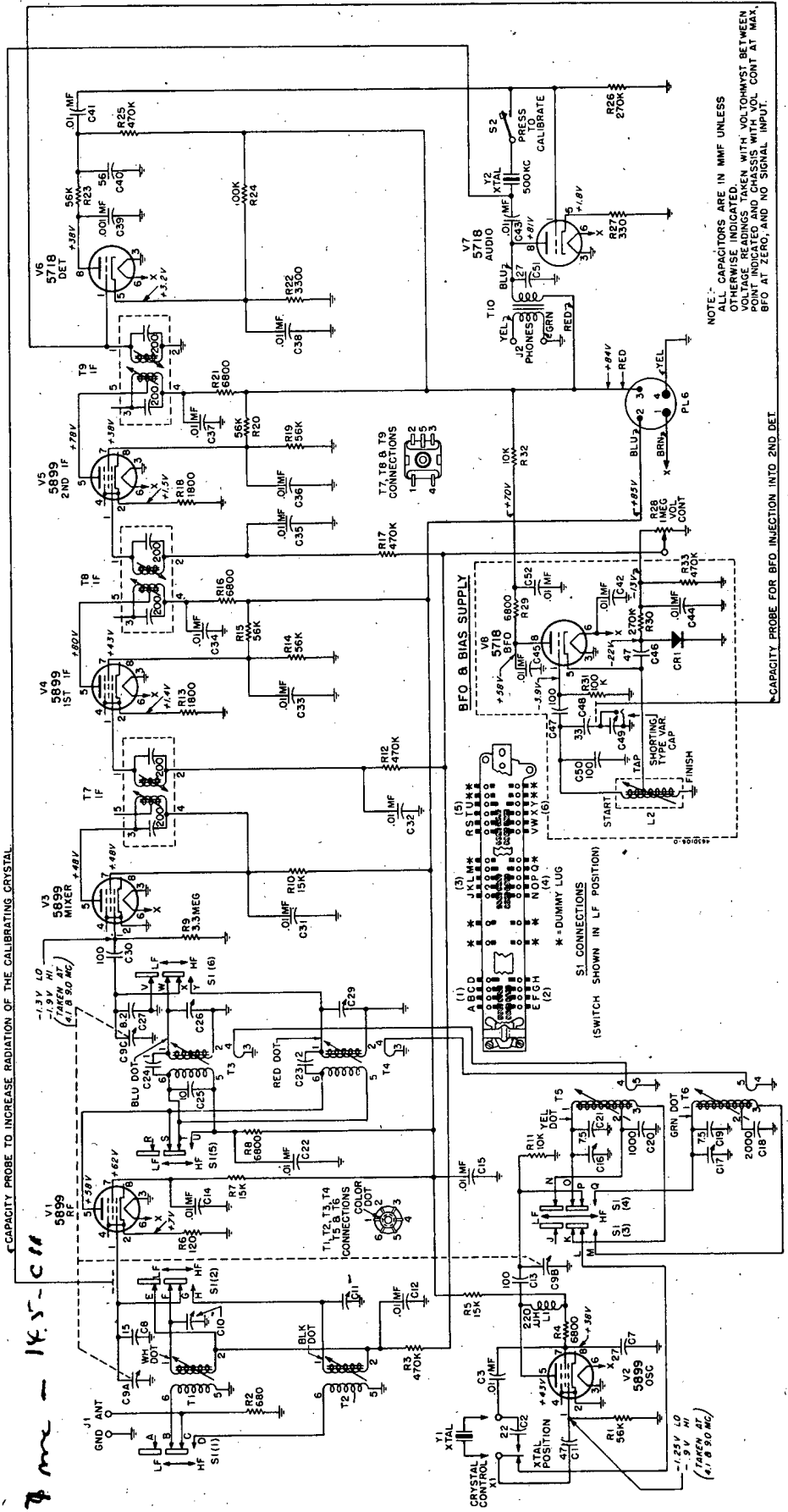


Figure 12. Receiver RR-6-XX schematic diagram



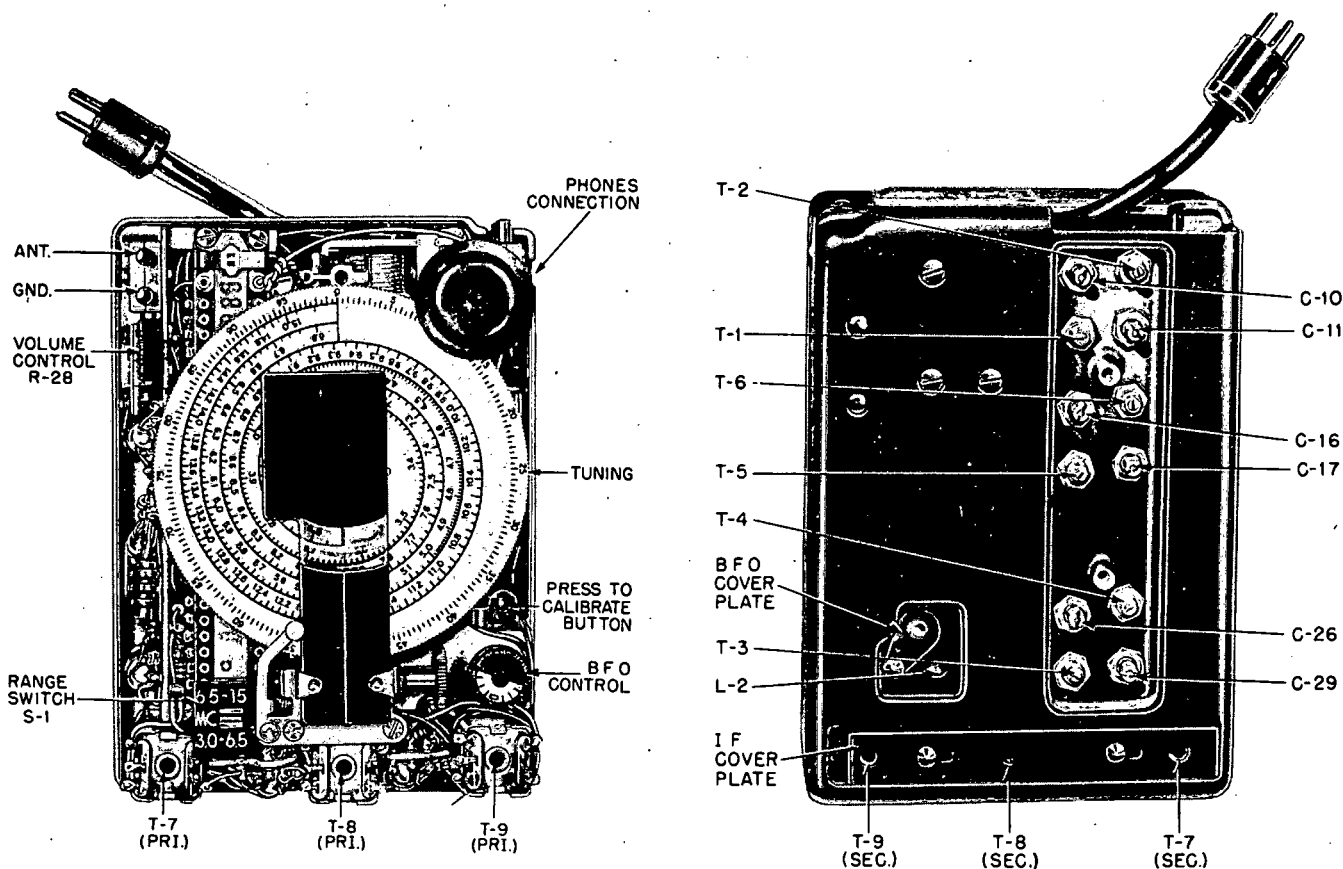


Figure 13. Receiver RR-6-XX top & bottom views showing alignment adjustment locations

(4) Small size screwdriver to fit antenna, r-f, and oscillator transformers.

(5) Medium size screwdriver with blade ground to fit trimmer slots without play. Blade should not ride in bottom of slot.

#### b. Procedure

(1) Connect the equipment, as directed in Chapter 2, Section I (do not connect phone, as the output impedance will be reduced by one-half).

(2) Set RECVR-TRANS switch on Filter-Accessory Unit RA-6-XX to RECVR.

(3) Expose bottom alignment adjustments as follows (see Figure 13):

(a) i-f - slide cover plate to right.

(b) bfo - turn cover plate counterclockwise.

(c) r-f - remove two screws and cover plate

(4) Connect the output meter across the phone terminals J-2. Set the "ohms" knob to 40 and the impedance multiplier to 100. Set the meter multiplier to 1.

NOTE: Throughout the alignment procedure, reduce the generator output to a level which produces about 5 mw output indication on the output meter to avoid overloading the receiver.

(5) Remove the top cover and turn VOLUME control to maximum volume.

(6) Refer to Figure 13 for adjustment loca-

tions.

(7) Remove glyptal from the cores and trimmers in the r-f section with thinner.

#### c. IF Alignment

(1) Connect the AM generator to the grid of the mixer (pin 1, V-3 - See Figure 14 -RF panel front view) and set it to 455 kc with 400 cycle, 30% modulation.

(2) Set generator output high enough to give about 5 mw output on the meter.

(3) Tune the primaries and secondaries of T-9, T-8, & T-7 for maximum output on meter. (See Figure 13).

(4) The i-f sensitivity is normal if a generator output of 50 microvolts or less produces 5 mw output.

#### d. BFO Alignment

(1) With equipment connected as above, turn off generator modulation, and set BFO dial to zero. (The zero on the dial should be at three o'clock when viewed as in Figure 13).

(2) Adjust bfo coil (L-2) for zero beat.

(3) After alignment of bfo, apply glyptal to the slug.

#### e. RF Alignment.

(1) Replace top cover which was removed during i-f alignment, and place receiver on side.

(2) Connect generator to the ANT-GND terminals (J-1). Use a 270 ohm carbon resistor (dummy antenna) in series with the antenna terminal.

NOTE: This value is for a 30-ohm generator. If generator output impedance is other than 30 ohms, subtract the generator impedance from 300 ohms for the correct value of dummy antenna.

(3) Turn BFO dial to OFF.

(4) Set low-band trimmers C-10, C-16, & C-26 so that screwdriver slots are parallel to the long edge of the compartment. This represents the mid-capacity positions.

(5) Turn the TUNING dial clockwise until it reaches the end stop (low frequency end). Then turn the VERNIER counterclockwise slightly to take up any motion in the drive.

(6) Turn ADJUST CALIBRATION knob until hairline passes through the approximate center of the circle at the bottom of the dial window.

(7) Set the generator frequency at 3.5 mc and the generator output at 100 microvolts, with 400 cycle, 30% modulation.

(8) Set RANGE switch to "blue" position (3 to 6.5 mc).

(9) Set the receiver tuning dial at 3.5 mc.

(10) Tune the oscillator slug in T-5 for maximum output on the meter.

CAUTION: Do not turn slug too far into the coil; when turning becomes difficult, do not force, as damage to terminal assembly may result.

NOTE: For final adjustment of slug, reduce the generator output until a receiver output of 5 mw is obtained.

(11) Tune the slugs in T-1 (antenna), T-3 (r-f), and T-5 (oscillator) for maximum output.

(12) Set receiver and generator dials at 6.0 mc.

CAUTION: There will be two generator frequencies which will produce an output indication. One will be near 6.0 mc and the other, the image frequency, will be 0.91 mc higher. The lower one is the correct alignment frequency.

(13) Adjust oscillator trimmer (C-16) and antenna trimmer (C-10) for maximum output.

(14) Since the r-f trimmer (C-26) has some pulling effect on the oscillator, it will be necessary to find the true resonant frequency of the r-f tank by a "rocking" procedure as follows:

(a) Note output reading on meter.

(b) Turn r-f trimmer (C-26) slightly counterclockwise until the output drops approximately one-third to one-half.

(c) Readjust oscillator trimmer (C-16) for maximum output.

(d) If maximum reading is higher than that in step (a), repeat steps (a), (b), & (c), until the highest output is obtained. Lower the generator output as required to keep the output around 5 mw.

(e) If in step (d) the maximum reading is lower than that in step (a), it indicates that the r-f resonance has been passed. In this case, re-

peat steps (a), (b), (c), & (d), turning r-f trimmer (C-26) clockwise instead of counterclockwise.

(15) After the true r-f resonance has been found, recheck the 3.5 mc alignment of T-1, T-3, & T-5.

(16) If, while rechecking the 3.5 mc alignment, it was necessary to move any of the slugs (T-1, T-3, T-5), recheck the 6.0 mc alignment.

NOTE: Due to the extreme accuracy desired in this receiver, it is well to recheck the 3.5 mc and 6.0 mc alignment three times. After the first alignment the r-f resonance should be close enough to the true resonance so that only the oscillator trimmer and slug need be re-adjusted.

(17) After the low band has been accurately aligned, apply glyptal to the low-band trimmers and slugs.

(18) Set RANGE switch to "red" position (6.5 - 15 mc).

(19) Set receiver & generator dials at 7.0 mc.

CAUTION: Check for image frequency as in step 12.

(20) Turn trimmers C-11, C-17 & C-29 so that slots are parallel to long edge of compartment.

(21) Tune oscillator slug in T-6 for maximum output.

CAUTION: Do not force slug into the coil.

(22) Tune T-2, T-4, & T-6 slugs for maximum output.

(23) Set the generator and receiver dials at 14.5 mc.

(24) Adjust oscillator trimmer (C-17) and antenna trimmer (C-11) for maximum output.

(25) Repeat "rocking" procedure as in step 14 to find the true resonant frequency of the r-f tank. In this case, however, adjust r-f trimmer C-29, and oscillator trimmer C-17.

(26) Repeat 7.0 & 14.5 mc alignment three times.

(27) Replace glyptal on trimmers and slugs.

(28) The set when properly aligned will have a sensitivity on both bands of less than 10 microvolts for 5 milliwatts output.

#### f. Alignment by Crystal

The receiver may be aligned in the field by replacing the a-m signal generator with the radiated signal from the calibrating crystal and by using the phone as an output indicator. The alignment procedure is the same as with the generator except that the bfo is turned on.

If aligned on the image, the dial calibration will be off, and large sensitivity variations will be noticed over the band. Aligning on an image or wrong harmonic of the crystal will result in an abnormal position of the coil slugs and trimmers. The slugs normally extend 1/16" to 3/16" beyond the end of the coil base. The slots in the trimmers are normally less than perpendicular to the long edge of the compartment. A slot perpendicular to the long edge would very likely indicate that the set is misaligned.

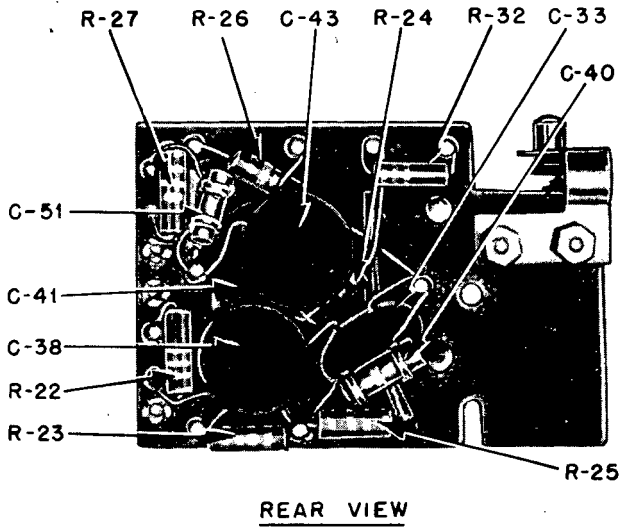
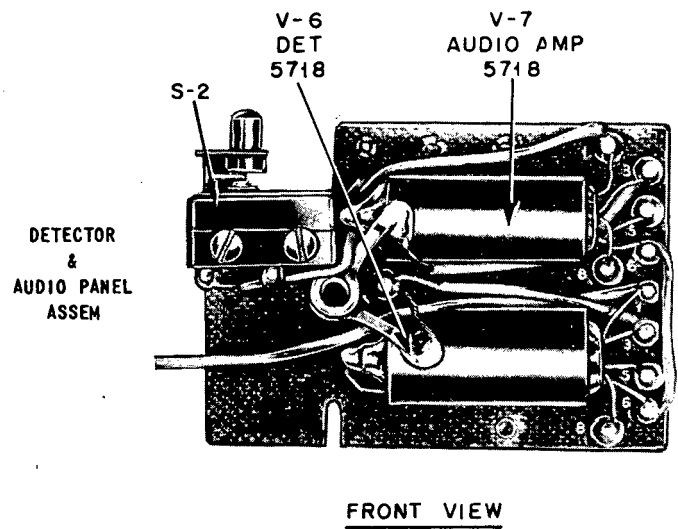
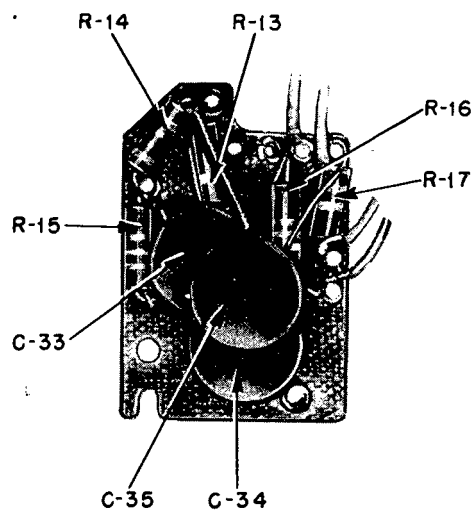
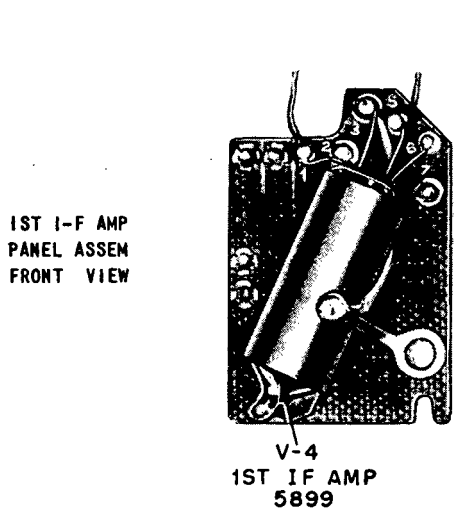
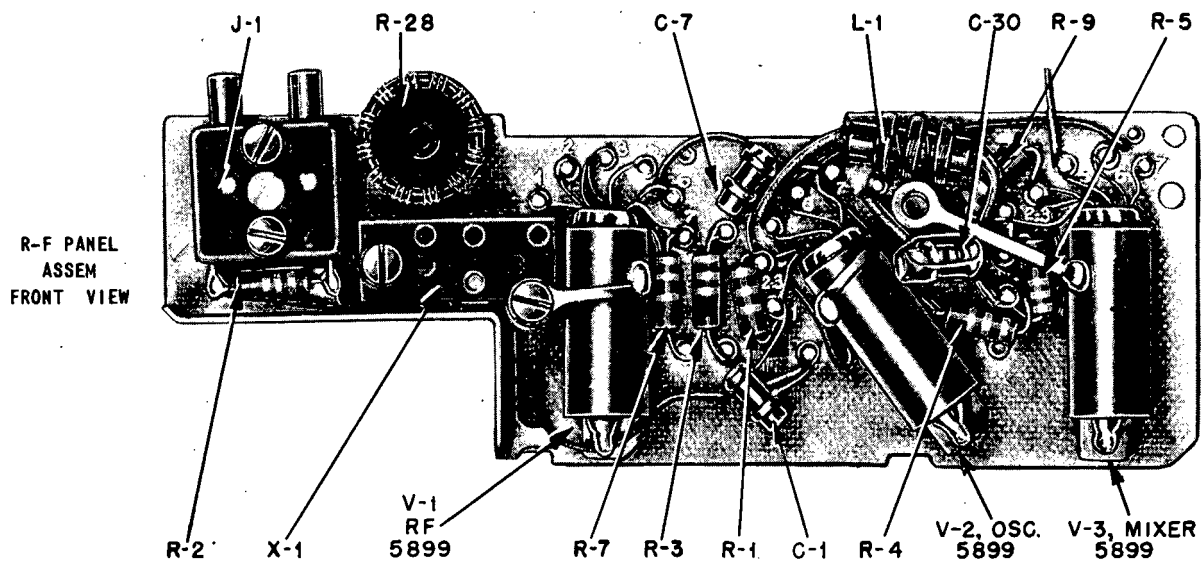
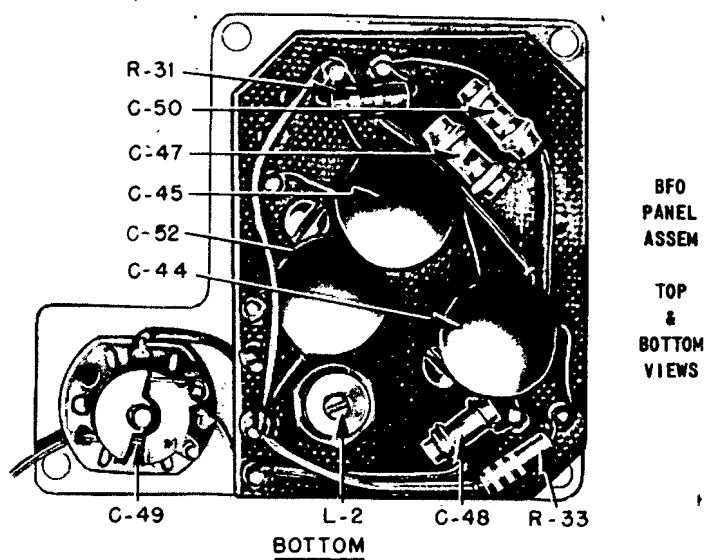
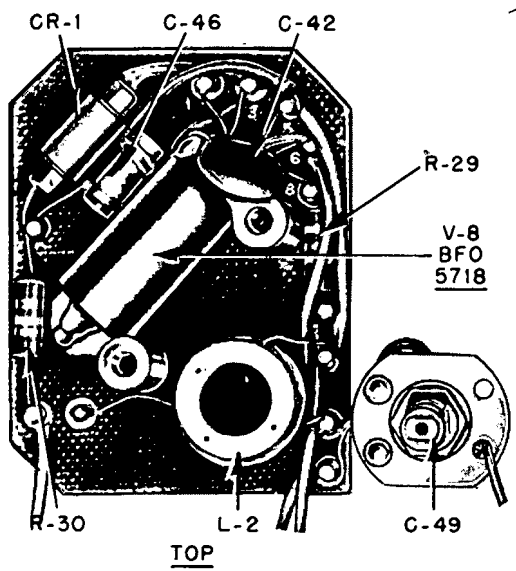
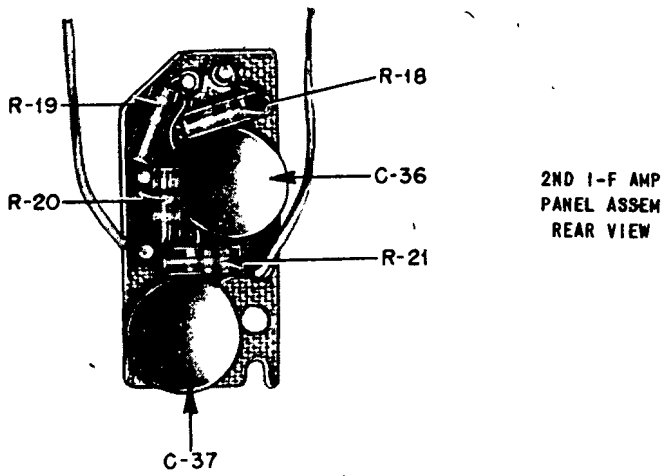
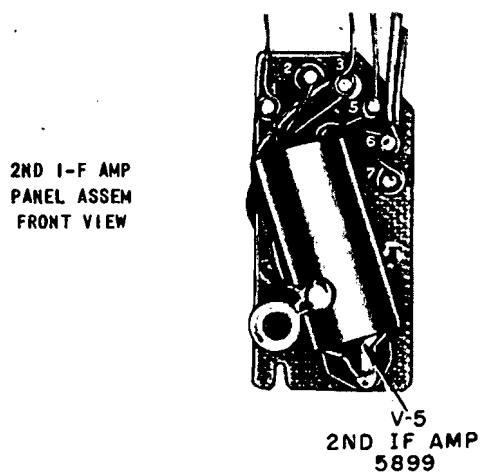
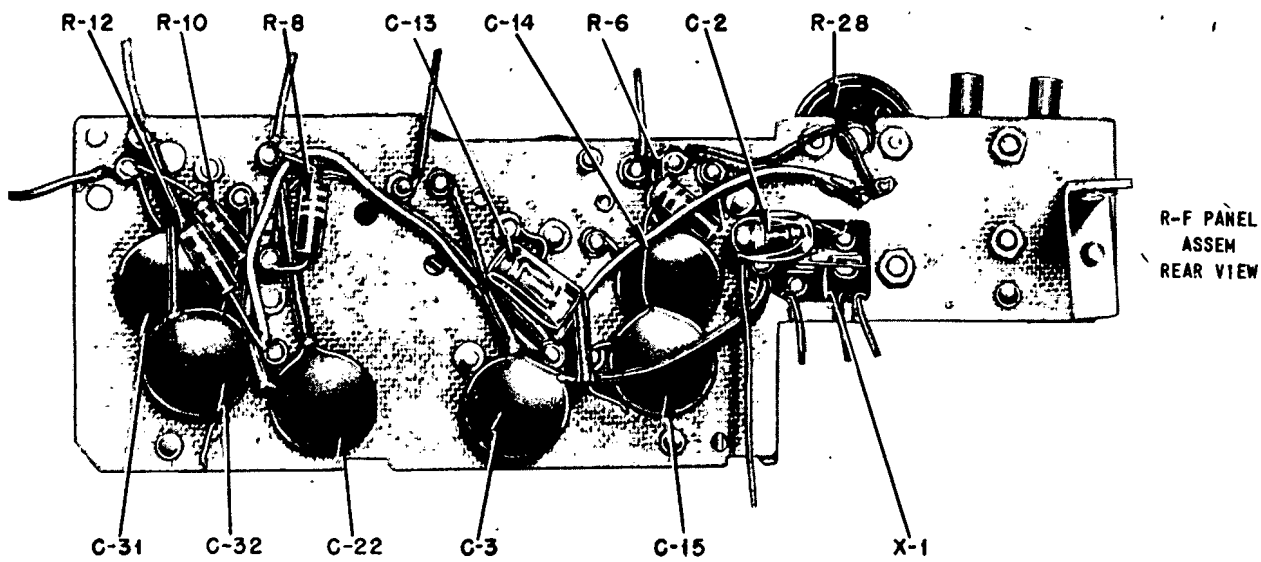


Figure 14. Receiver RR-6-XX showing



panel assembly parts locations

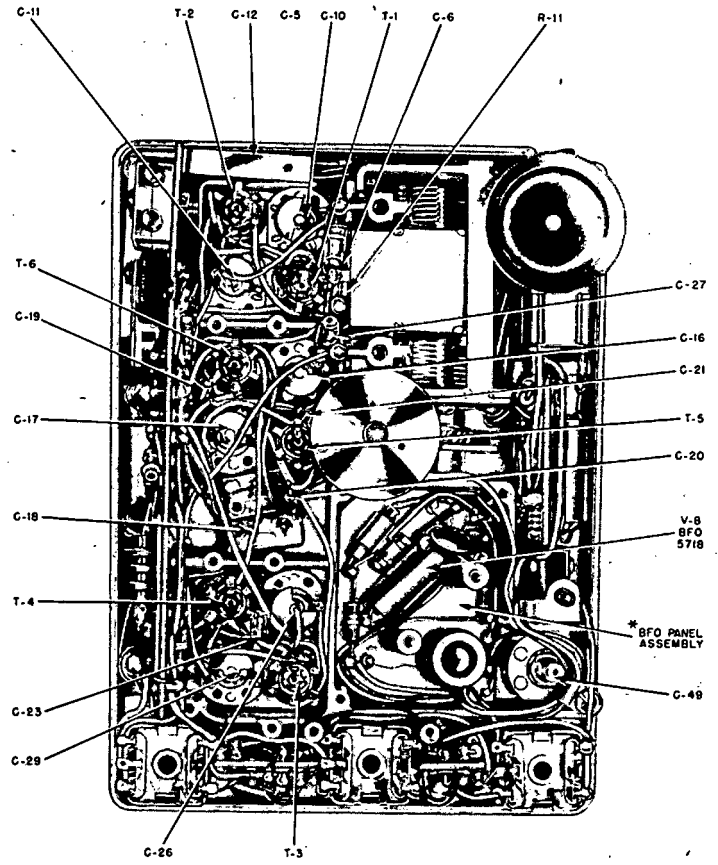
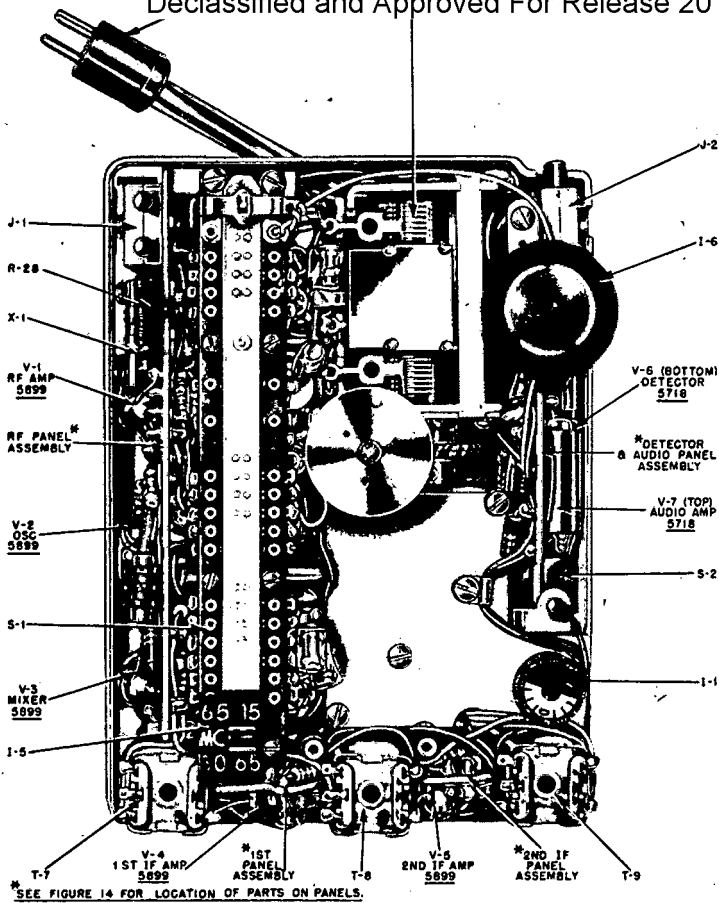


Figure 15. Receiver RR-6-XX top views showing parts locations

**3. DISASSEMBLY & REASSEMBLY OF DIAL SCALE MECHANISM (Refer to Figure 16)**

**a. DISASSEMBLY**

(1) Turn ADJUST CALIBRATION knob (C) in direction to move spring clamp (D) over as far as possible.

(2) Push arm (A) back, lift frequency channel indicator (B) up at large end, and slide out of spring clamp (D). Release arm (A) gently until it comes to rest against spring clamp (D).

(3) Remove screws (J) and remove assembly consisting of (A), (C), (D) & (L).

(4) Remove three screws (K).

(5) Push vernier (E) in direction indicated until it clears dial. Hold it in position until dial scale has been removed.

(6) As dial fits snugly on hub, remove it by lifting straight up.

(7) Allow vernier to swing gently counter-clockwise as far as it will go.

**b. REASSEMBLY**

(1) Swing vernier clockwise against its torsion spring and hold until dial is replaced.

(2) Replace dial, placing pin in hole (F).

(3) Release vernier gently until it rests against the dial.

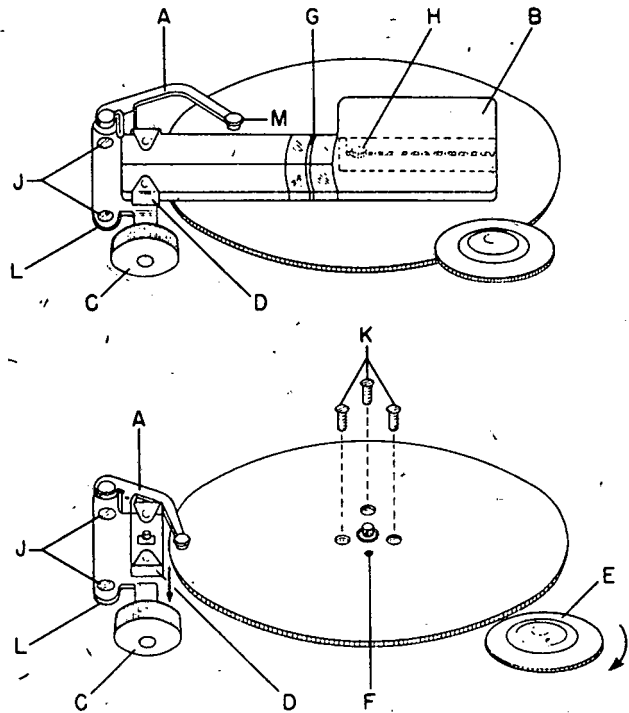


Figure 16. Disassembly of Receiver RR-6-XX dial mechanism

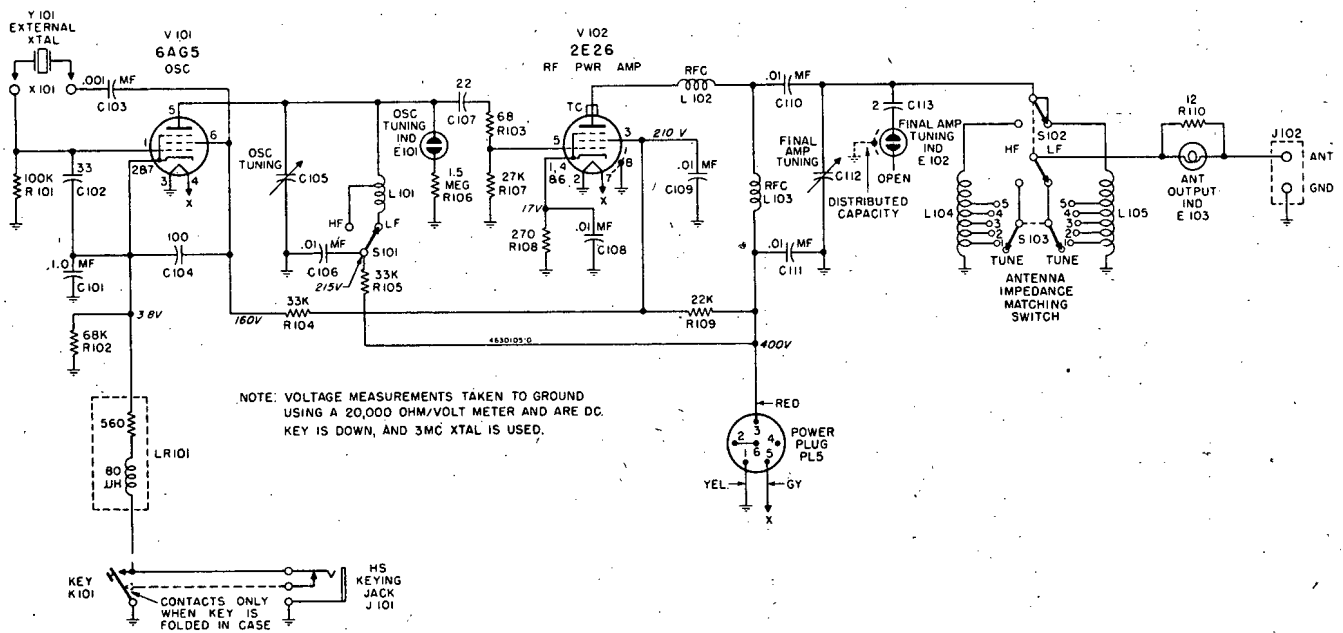


Figure 17. Transmitter RT-6-XX schematic diagram

- (4) Replace screws (K).
- (5) Replace assembly consisting of (A), (C), (D) and (K) and screws (J).
- (6) Turn dial until tuning capacitor is fully meshed.
- (7) Hold arm (A) back and insert end of frequency channel indicator (B) into spring clamp (D) and push it down until the white line (G) falls over the line between the top two scales on dial.
- (8) Engage pinion gear (H) with rack gear teeth on rear of frequency channel indicator (B).
- (9) Make sure rivet shoulder (M) rests on top of frequency channel indicator (B).

## Section II. TRANSMITTER RT-6-XX

### 1. CIRCUIT DESCRIPTION (See Schematic, Figure 17)

Transmitter RT-6-XX is a two-stage, crystal-controlled, CW transmitter. It has two bands

with variable capacitors providing tank tuning.

Cathode keying is employed in the 6AG5 modified Pierce electron-coupled oscillator stage. In addition to hand keying, a high-speed keyer can be connected to the keying jack for transmission speeds up to sixty words per minute. C-101 (1 mf) and R-102 (68K) form a keying filter to properly shape the keyed character and eliminate "clicks".

L-102, in the plate of the power amplifier, and R-103 (68), in the grid of the oscillator, are parasitic suppressors.

A five-position rotary switch provides a range of output impedances for maximum antenna output. Each position doubles the impedance of the previous position from 75 ohms on 1 to 1200 ohms on 5. An incandescent bulb, E-103, serves as an output power indicator.

The resonant frequency of the oscillator and final amplifier plate tanks is indicated by the maximum glow of two neon bulbs, E-101 and E-102, respectively.

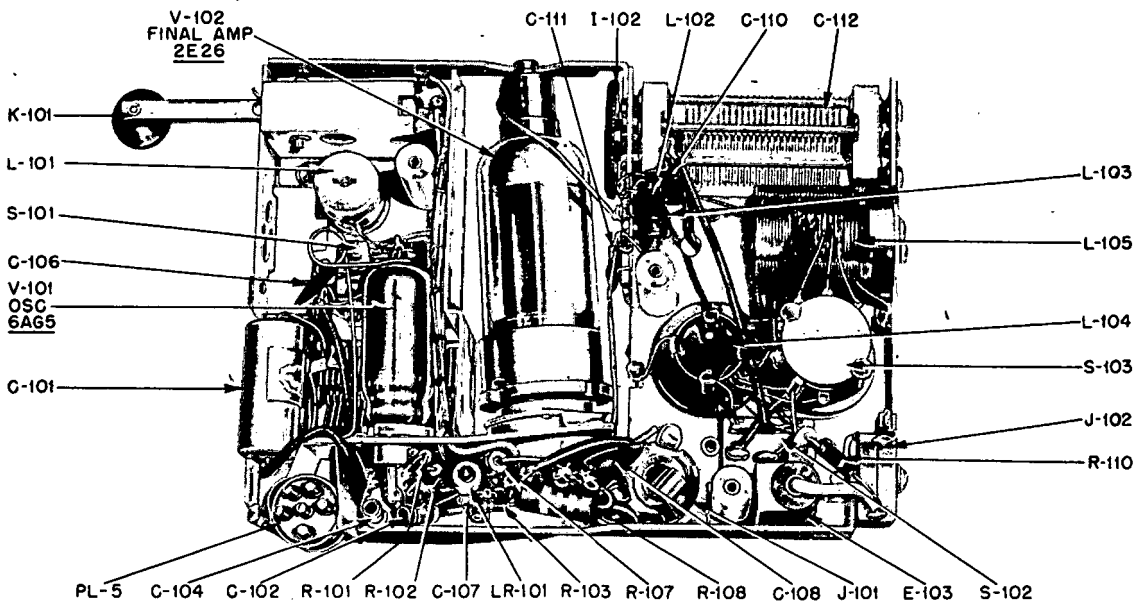
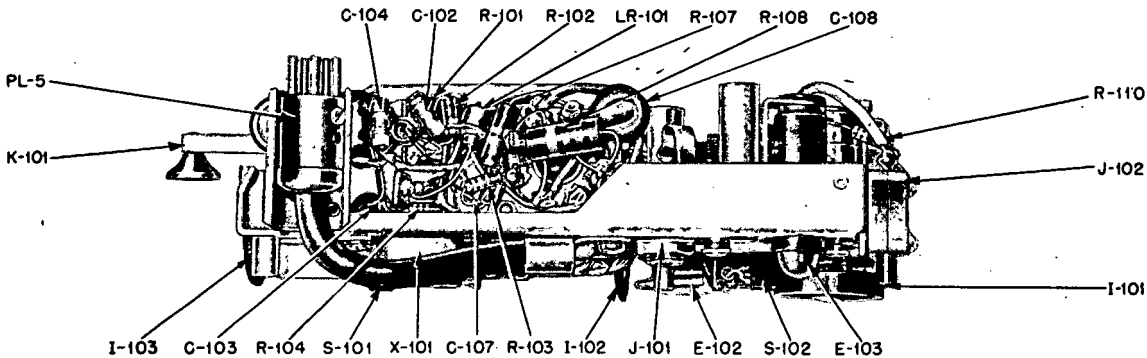
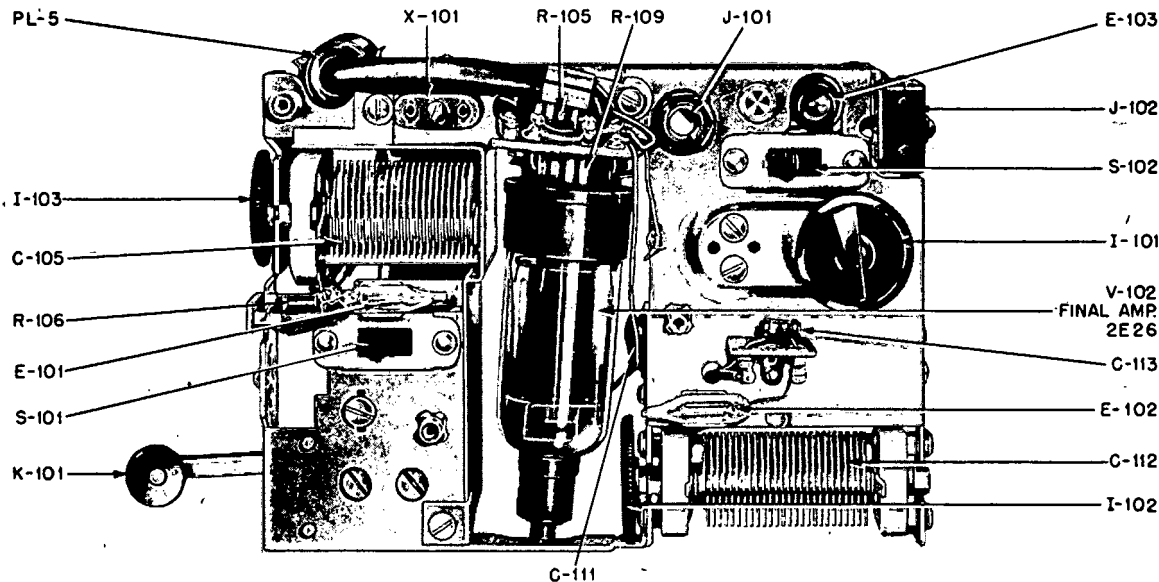
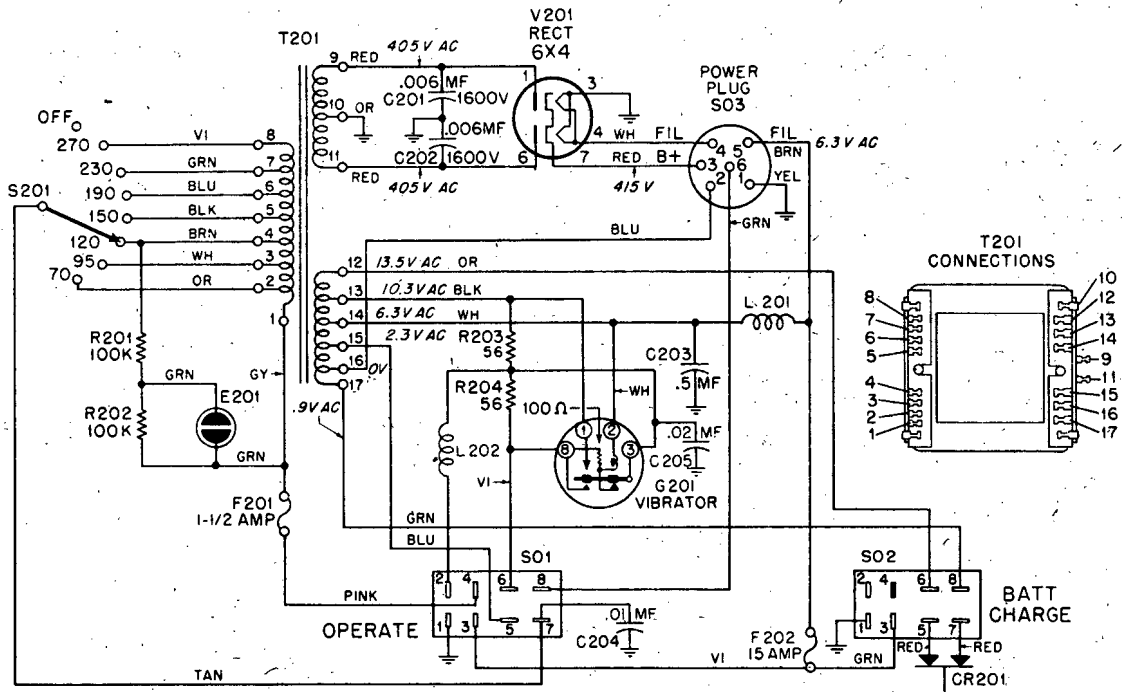


Figure 18. Transmitter RT-6-XX parts location



NOTE: VOLTAGE MEASUREMENTS TO GROUND USING A 20,000 OHM/VOLT METER AND ARE DC UNLESS OTHERWISE SPECIFIED. AC OPERATED.

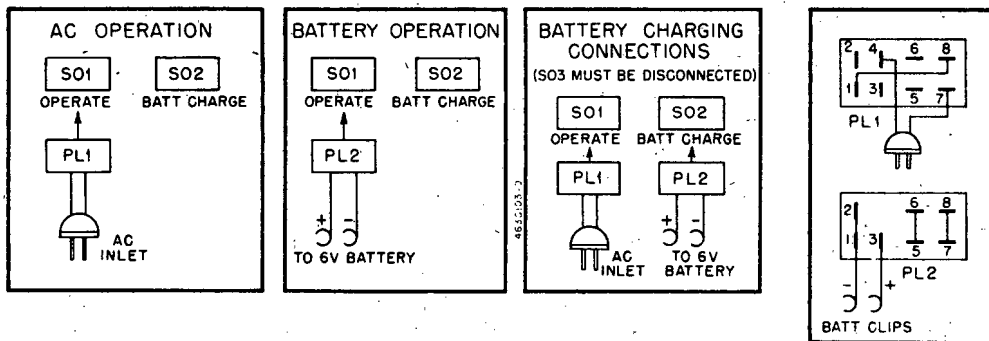


Figure 19. Power Supply RP-6-XX schematic diagram

### Section III. POWER SUPPLY RP-6-XX

#### 1. CIRCUIT DESCRIPTION (See Schematic Diagram, Figure 19)

a. AC - An eight-tap primary on the transformer provides for a wide range of input voltages at frequencies from 40 to 400 cps. The secondary voltage is rectified by a full-wave rectifier tube (6X4) and passed on to the Filter-Accessory Unit RA-6-XX.

b. Battery - The 6-volt dc is converted to ac and stepped up by the vibrator and transformer. It is rectified by a type 6X4 rectifier tube and passed on to Filter-Accessory Unit RA-6-XX. L-201, L-202, C-203, C-204, C-205 and the ground strap serve as hash suppressors.

c. Battery Charging - A tap on the low voltage

winding of the transformer provides a suitable voltage for charging a battery by means of a full-wave selenium rectifier (CR-201), which is contained in the unit. The charging rate is 3.5 amps minimum.

#### 2. HOW TO REPLACE VIBRATOR

- a. Loosen nut shown in Figure 20.
- b. Tilt chassis up as shown and remove vibrator.

#### 3. HOW TO REPLACE POWER TRANSFORMER (See Figure 21)

- a. Disconnect all leads from transformer terminal strips.
- b. Remove hex spacer nuts (A, Figure 21).
- c. Lift out transformer.



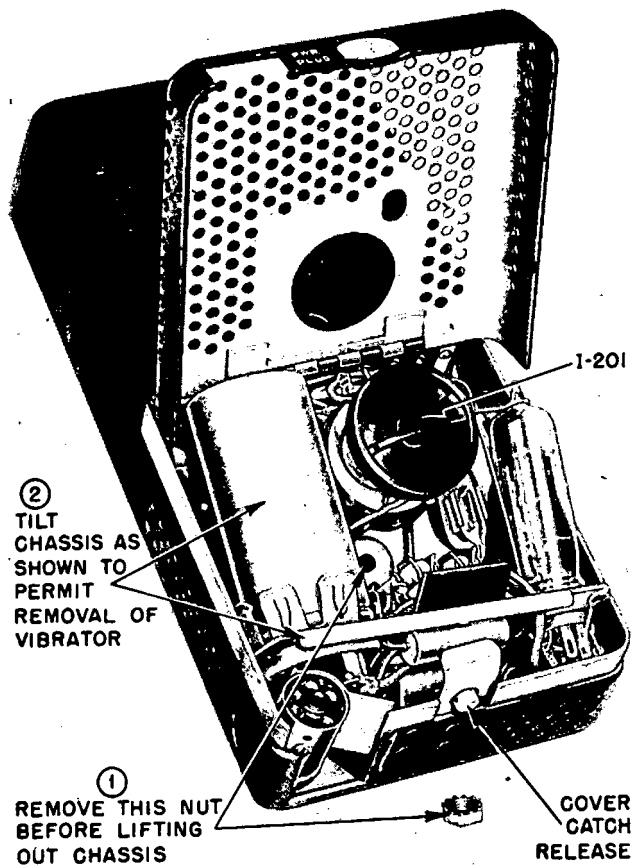


Figure 20. Power Supply RP-6-XX vibrator replacement

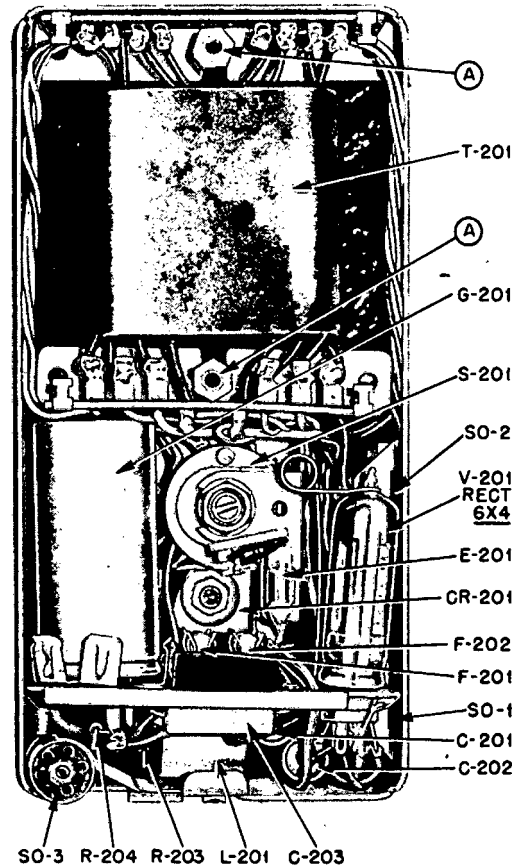


Figure 21. Power Supply RP-6-XX parts location

## Section IV. FILTER-ACCESSORY RA-6-XX

### 1. CIRCUIT DESCRIPTION (See Schematic Diagram, Figure 22)

a. **AC Operation** - The Filter-Accessory Unit RA-6-XX filters the dc from the power supply and delivers it to the transmitter and receiver. Two 5644 (or 5787) voltage regulator tubes provide regulation for the receiver supply. The filter unit provides four output voltages.

(1) 6.3v ac at 2.4 amps for filaments.

(2) 400v dc at 75 ma (unregulated) for the transmitter.

(3) two 90v dc at 25 ma (regulated) taps for the receiver.

The B supply for transmitter or receiver is chosen by a DPDT switch marked RECVR-TRANS.

b. **Battery Operation** - Filter-Accessory Unit RA-6-XX performs the same under battery operation as under ac. The output voltages are also the same except that the filament voltage is dc instead of ac and is furnished by the battery.

c. **Interlock** - An interlock is provided by the plug connections to avoid damage to the rectifier or input filter capacitor should the input power be applied when no load is connected to the power

supply output.

If the power is applied to Power Supply RP-6-XX alone, both the filaments and cathode of the rectifier are open due to SO-3 being disconnected.

If only Filter-Accessory Unit RA-6-XX is connected to the power supply, there are two conditions possible:

(1) With the toggle switch set at TRANS, the rectifier filaments are connected but the cathode is open due to SO-5 being disconnected.

(2) With the toggle switch set at RECVR, the rectifier cathode is connected to the input filter capacitor but the filter output is connected to the voltage regulator stages, and the load is sufficient to keep the voltage across the input capacitor at a safe value.

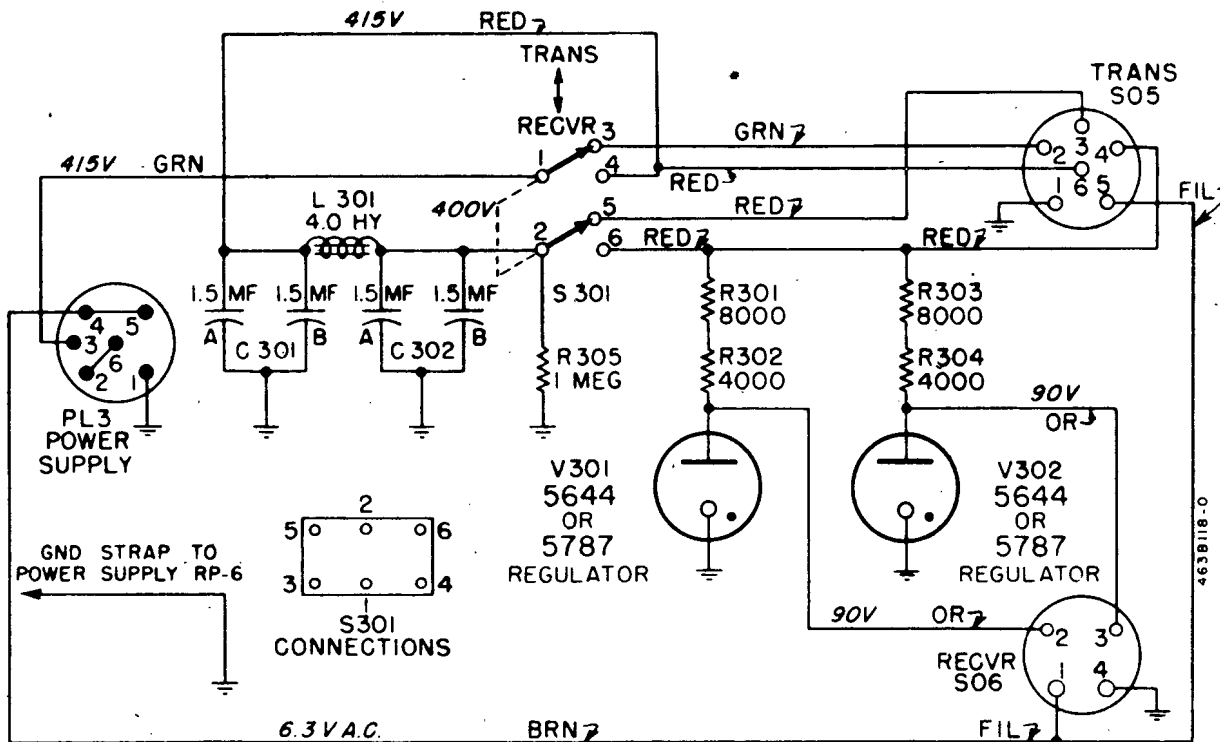
### 2. HOW TO DISASSEMBLE

a. Remove two flat head screws from bottom of housing.

b. Remove three screws on cover (A - Figure 10).

c. The chassis can then be lifted from the housing and serviced without disconnecting the choke leads.

d. To remove choke, remove two binderhead screws on bottom of housing, and lift out.



NOTE: VOLTAGE MEASUREMENTS TAKEN TO GROUND USING A 20,000 OHM/VOLT METER AND ARE DC.

Figure 22. Filter-Accessory Unit RA-6-XX schematic diagram

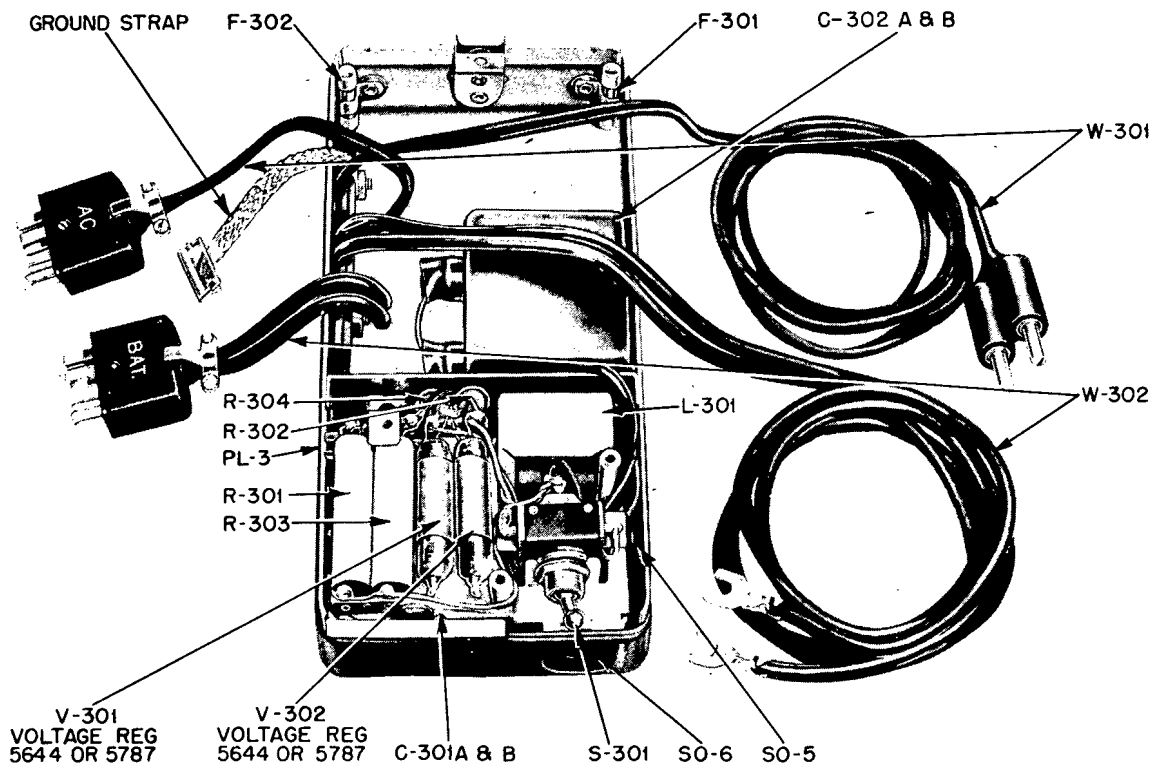


Figure 23. Filter-Accessory Unit RA-6-XX parts location

### Section V. PACKAGING

#### 1. HOW TO REPLACE UNITS IN PLASTIC POUCH

a. When not in use, or when transporting, the units should be kept in the plastic pouches pro-

vided, as shown in Figure 24. The pouches are waterproof if folded in the prescribed manner.

b. There are two sizes of pouches -two large ones for Transmitter RT-6-XX & Receiver RR-6-XX and two small ones for the Power Supply RP-6-XX and Filter-Accessory Unit RA-6-XX. All are used as shown in Figure 24.

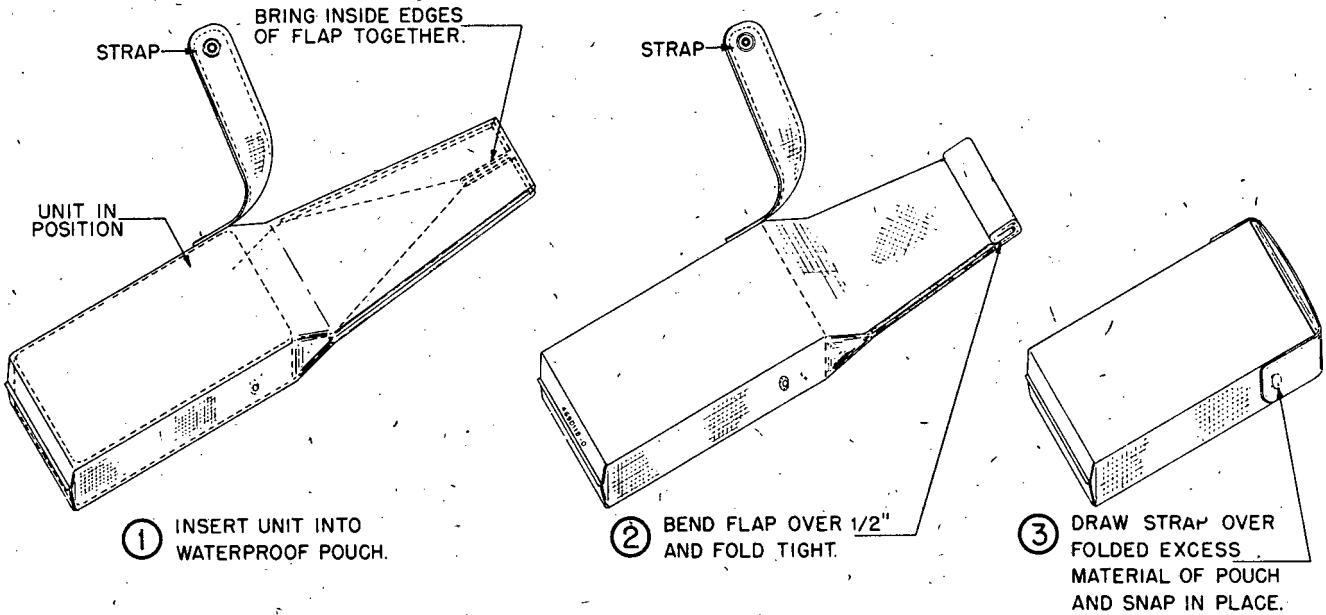


Figure 24. Packaging detail.

## CHAPTER 4

## REPLACEMENT PARTS LISTS

## Section I. RECEIVER RR-6-XX

<u>Ref. No.</u>	<u>Contractor's Drawing &amp; Part Number</u>	<u>Jan Type</u>	<u>Description</u>
C-1	921R121	CC30SL470K	CAPACITOR, FIXED, CERAMIC DIELECTRIC: tubular type; 47 mmf +10%; 500 vdcw
C-2	921R107	CC20SL220K	CAPACITOR, FIXED, CERAMIC DIELECTRIC: tubular type; 22 mmf +10% 500 vdcw
C-3	921R152		CAPACITOR, FIXED, CERAMIC DIELECTRIC: disc type; .01 mf -20% +80%; 450 vdcw
C-7	921R109	CC20SL270K	CAPACITOR, FIXED, CERAMIC DIELECTRIC: tubular type; 27 mmf +10%; 500 vdcw
C-8	921R104	CC20SL150K	CAPACITOR, FIXED, CERAMIC DIELECTRIC: 15 mmf +10%; 500 vdcw
C-9A, B, C	419D101		CAPACITOR, VARIABLE, AIR DIELECTRIC: plate meshing type; 3 sections; A & C- 10 to 186 mmf; B- 14 to 190 mmf; includes wormdrive
C-10	419A103		CAPACITOR, VARIABLE, AIR DIELECTRIC: plate meshing type; 1.7 to 8.7 mmf
C-11	419A103		CAPACITOR, VARIABLE, AIR DIELECTRIC: plate meshing type; 1.7 to 8.7 mmf
C-12	921R152		CAPACITOR, FIXED, CERAMIC DIELECTRIC: disc type; .01 mf -20% +80%; 450 vdcw
C-13	921R127	CC30SL101K	CAPACITOR, FIXED, CERAMIC DIELECTRIC: tubular type; 100 mmf +10%; 500 vdcw
C-14	921R152		CAPACITOR, FIXED, CERAMIC DIELECTRIC: disc type; .01 mf -20% +80%; 450 vdcw
C-15	921R152		CAPACITOR, FIXED, CERAMIC DIELECTRIC: disc type; .01 mf -20% +80%; 450 vdcw
C-16	419A103		CAPACITOR, VARIABLE, AIR DIELECTRIC: plate meshing type; 1.7 to 8.7 mmf
C-17	419A103		CAPACITOR, VARIABLE, AIR DIELECTRIC: plate meshing type; 1.7 to 8.7 mmf
C-18	921R328	CM20D202J	CAPACITOR, FIXED, MICA DIELECTRIC: 2000 mmf +5%; 300 vdcw
C-19	421A137		CAPACITOR, FIXED, CERAMIC DIELECTRIC: tubular type; 7.5 mmf +0.25 mmf; 500 vdcw
C-20	921R610		CAPACITOR, FIXED, MICA DIELECTRIC: 1000 mmf +10%; 300 vdcw
C-21	421A137		CAPACITOR, FIXED, CERAMIC DIELECTRIC: tubular type; 7.5 mmf +0.25 mmf; 500 vdcw
C-22	921R152		CAPACITOR, FIXED, CERAMIC DIELECTRIC: disc type; .01 mf -20% +80%; 450 vdcw

Ref. No.	Contractor's Drawing & Part Number	Jan Type	Description
C-23	921R463	CC20CJ020C	CAPACITOR, FIXED, CERAMIC DIELECTRIC: tubular type; 2 mmf +0.25 mmf; 500 vdcw
C-24	921R621	CC20CH010C	CAPACITOR, FIXED, CERAMIC DIELECTRIC: tubular type; 1 mmf +0.25 mmf; 500 vdcw
C-25	921R101	CC20SL100K	CAPACITOR, FIXED, CERAMIC DIELECTRIC: tubular type; 10 mmf +10%; 500 vdcw
C-26	419A103		CAPACITOR, VARIABLE, AIR DIELECTRIC: plate meshing type; 1.7 to 8.7 mmf
C-27	921R622		CAPACITOR, FIXED, CERAMIC DIELECTRIC: tubular type; 8.2 mmf +0.25 mmf; 500 vdcw
C-29	419A103		CAPACITOR, VARIABLE, AIR DIELECTRIC: plate meshing type; 1.7 to 8.7 mmf
C-30	921R127	CC30SL101K	CAPACITOR, FIXED, CERAMIC DIELECTRIC: tubular type; 100 mmf +10%; 500 vdcw
C-31	921R152		CAPACITOR, FIXED, CERAMIC DIELECTRIC: disc type; .01 mf -20% +80%; 450 vdcw
C-32	921R152		CAPACITOR, FIXED, CERAMIC DIELECTRIC: disc type; .01 mf -20% +80%; 450 vdcw
C-33	921R152		CAPACITOR, FIXED, CERAMIC DIELECTRIC: disc type; .01 mf -20% +80%; 450 vdcw
C-34	921R152		CAPACITOR, FIXED, CERAMIC DIELECTRIC: disc type; .01 mf -20% +80%; 450 vdcw
C-35	921R152		CAPACITOR, FIXED, CERAMIC DIELECTRIC: disc type; .01 mf -20% +80%; 450 vdcw
C-36	921R152		CAPACITOR, FIXED, CERAMIC DIELECTRIC: disc type; .01 mf -20% +80%; 450 vdcw
C-37	921R152		CAPACITOR, FIXED, CERAMIC DIELECTRIC: disc type; .01 mf -20% +80%; 450 vdcw
C-38	921R152		CAPACITOR, FIXED, CERAMIC DIELECTRIC: disc type; .01 mf -20% +80%; 450 vdcw
C-39	921R142		CAPACITOR, FIXED, CERAMIC DIELECTRIC: disc type; .001 mf 500 vdcw
C-40	921R123	CC30SL560K	CAPACITOR, FIXED, CERAMIC DIELECTRIC: tubular type; 56 mmf +10%; 500 vdcw
C-41	921R152		CAPACITOR, FIXED, CERAMIC DIELECTRIC: disc type; .01 mf -20% +80%; 450 vdcw
C-42	921R152		CAPACITOR, FIXED, CERAMIC DIELECTRIC: disc type; .01 mf -20% +80%; 450 vdcw
C-43	921R152		CAPACITOR, FIXED, CERAMIC DIELECTRIC: disc type; .01 mf -20% +80%; 450 vdcw
C-44	921R152		CAPACITOR, FIXED, CERAMIC DIELECTRIC: disc type; .01 mf -20% +80%; 450 vdcw
C-45	921R152		CAPACITOR, FIXED, CERAMIC DIELECTRIC: disc type; .01 mf -20% +80%; 450 vdcw
C-46	921R121	CC30SL470K	CAPACITOR, FIXED, CERAMIC DIELECTRIC: tubular type; 47 mmf +10%; 500 vdcw
C-47	921R127	CC30SL101K	CAPACITOR, FIXED, CERAMIC DIELECTRIC: tubular type; 100 mmf +10%; 500 vdcw
C-48	921R110	CC20SL330K	CAPACITOR, FIXED, CERAMIC DIELECTRIC: tubular type; 33 mmf +10%; 500 vdcw
C-49	419B102		CAPACITOR, VARIABLE, AIR DIELECTRIC: plate meshing type; 1.7 to 8.7 mmf; special shorting type
C-50	921R127	CC30SL101K	CAPACITOR, FIXED, CERAMIC DIELECTRIC: tubular type; 100 mmf +10%; 500 vdcw
C-51	921R109	CC20SL270K	CAPACITOR, FIXED, CERAMIC DIELECTRIC: tubular type; 27 mmf ±10%; 500 vdcw

Ref. No.	Contractor's Drawing & Part Number	Jan Type	Description
C-52	921R152		CAPACITOR, FIXED, CERAMIC DIELECTRIC: disc type; .01 mf -20% +80%; 450 vdcw
CR-1	48K702303		CRYSTAL UNIT, RECTIFYING: germanium type; Sylvania type 1N60
or	48K710004		CRYSTAL UNIT, RECTIFYING: germanium type; G. E. type 1N64
I-1	436B102		DIAL, BFO CONTROL
I-2	434C101		DIAL, TUNING
I-3	401V489		INDICATOR, FREQUENCY CHANNEL: with red & blue windows & rack gear
I-4	401V484		KNOB ASSEMBLY, ADJUST CALIBRATION: with adjustment screw
I-5	438B101		KNOB, RANGE SWITCH
I-6	401V485		KNOB ASSEMBLY, VERNIER: complete with brackets, bushings, tension spring, J-2
J-1	409C153		CONNECTOR, 2 PIN (Antenna & Ground)
J-2	409K154		CONNECTOR, 2 PIN (Phones)
L-1	424A155		COIL, RADIO FREQUENCY CHOKE: 220 uh
L-2	424B164		COIL, RADIO FREQUENCY: 945 uh; tapped; adjustable iron core; beat frequency oscillator
PL-6	428A104		CONNECTOR, PLUG: 4 male contacts; plug only
or	401B518		CONNECTOR ASSEMBLY, PLUG: 4 male contacts; with cable
R-1	906R526	RC20BF563K	RESISTOR, FIXED, COMPOSITION: 56,000 ohms $\pm 10\%$ ; 1/2W; ins
R-2	906R445	RC20BF681K	RESISTOR, FIXED, COMPOSITION: 680 ohms $\pm 10\%$ ; 1/2W; ins
R-3	906R565	RC20BF474M	RESISTOR, FIXED, COMPOSITION: 470,000 ohms $\pm 20\%$ ; 1/2W ins.
R-4	906R488	RC20BF682M	RESISTOR, FIXED, COMPOSITION: 6800 ohms $\pm 20\%$ ; 1/2W; ins
R-5	906R502	RC20BF153M	RESISTOR, FIXED, COMPOSITION: 15,000 ohms $\pm 20\%$ ; 1/2W; ins
R-6	906R414	RC20BF121K	RESISTOR, FIXED, COMPOSITION: 120 ohms $\pm 10\%$ ; 1/2W; ins
R-7	906R502	RC20BF153M	RESISTOR, FIXED, COMPOSITION: 15,000 ohms $\pm 20\%$ ; 1/2W; ins
R-8	906R488	RC20BF682M	RESISTOR, FIXED, COMPOSITION: 6800 ohms $\pm 20\%$ ; 1/2W; ins
R-9	906R600	RC20BF335M	RESISTOR, FIXED, COMPOSITION: 3.3 megohms $\pm 20\%$ ; 1/2W; ins
R-10	906R502	RC20BF153M	RESISTOR, FIXED, COMPOSITION: 15,000 ohms $\pm 20\%$ ; 1/2W; ins
R-11	906R495	RC20BF103M	RESISTOR, FIXED, COMPOSITION: 10,000 ohms $\pm 20\%$ ; 1/2W; ins
R-12	906R565	RC20BF474M	RESISTOR, FIXED, COMPOSITION: 470,000 $\pm 20\%$ ; 1/2W; ins
R-13	906R463	RC20BF182K	RESISTOR, FIXED, COMPOSITION: 1800 ohms $\pm 10\%$ ; 1/2W; ins
R-14	906R526	RC20BF563K	RESISTOR, FIXED, COMPOSITION: 56,000 ohms $\pm 10\%$ ; 1/2W; ins
R-15	906R526	RC20BF563K	RESISTOR, FIXED, COMPOSITION: 56,000 ohms $\pm 10\%$ ; 1/2W; ins
R-16	906R488	RC20BF682M	RESISTOR, FIXED, COMPOSITION: 6800 ohms $\pm 20\%$ ; 1/2W; ins
R-17	906R565	RC20BF474M	RESISTOR, FIXED, COMPOSITION: 470,000 ohms $\pm 20\%$ ; 1/2W; ins
R-18	906R463	RC20BF182K	RESISTOR, FIXED, COMPOSITION: 1800 ohms $\pm 10\%$ ; 1/2W; ins
R-19	906R526	RC20BF563K	RESISTOR, FIXED, COMPOSITION: 56,000 ohms $\pm 10\%$ ; 1/2W; ins

Ref. No.	Contractor's Drawing & Part Number	Jan Type	Description
R-20	906R526	RC20BF563K	RESISTOR, FIXED, COMPOSITION: 56,000 ohms $\pm 10\%$ ; 1/2W; ins
R-21	906R488	RC20BF682M	RESISTOR, FIXED, COMPOSITION: 6800 ohms $\pm 20\%$ ; 1/2W; ins
R-22	906R474	RC20BF332M	RESISTOR, FIXED, COMPOSITION: 3300 ohms $\pm 20\%$ ; 1/2W; ins
R-23	906R526	RC20BF563K	RESISTOR, FIXED, COMPOSITION: 56,000 ohms $\pm 10\%$ ; 1/2W; ins
R-24	906R537	RC20BF104M	RESISTOR, FIXED, COMPOSITION: 100,000 ohms $\pm 20\%$ ; 1/2W; ins
R-25	906R565	RC20BF474M	RESISTOR, FIXED, COMPOSITION: 470,000 ohms $\pm 20\%$ ; 1/2W; ins
R-26	906R554	RC20BF274K	RESISTOR, FIXED, COMPOSITION: 270,000 ohms $\pm 10\%$ ; 1/2W; ins
R-27	906R431	RC20BF331K	RESISTOR, FIXED, COMPOSITION: 330 ohms $\pm 10\%$ ; 1/2W; ins
R-28	418B105		RESISTOR, VARIABLE: composition; 1 megohm $\pm 20\%$ ; 1/10W; includes knob
R-29	906R488	RC20BF682M	RESISTOR, FIXED, COMPOSITION: 6800 ohms $\pm 20\%$ ; 1/2W; ins
R-30	906R554	RC20BF274K	RESISTOR, FIXED, COMPOSITION: 270,000 ohms $\pm 10\%$ ; 1/2W; ins
R-31	906R537	RC20BF104M	RESISTOR, FIXED, COMPOSITION: 100,000 ohms $\pm 20\%$ ; 1/2W; ins
R-32	906R495	RC20BF103M	RESISTOR, FIXED, COMPOSITION: 10,000 ohms $\pm 20\%$ ; 1/2W; ins
R-33	906R565	RC20BF474M	RESISTOR, FIXED, COMPOSITION: 470,000 ohms $\pm 20\%$ ; 1/2W; ins
S-1	440C102		SWITCH, SLIDE: range switch; with knob
S-2	440A103		SWITCH, PUSH: single-pole, single-throw; momentary contact; normally open
T-1	424B162		TRANSFORMER, RADIO FREQUENCY: adjustable iron core; LF antenna
T-2	424B163		TRANSFORMER, RADIO FREQUENCY: adjustable iron core; HF antenna
T-3	424B158		TRANSFORMER, RADIO FREQUENCY: adjustable iron core; LF RF
T-4	424B159		TRANSFORMER, RADIO FREQUENCY: adjustable iron core; HF RF
T-5	424B160		TRANSFORMER, RADIO FREQUENCY: adjustable iron core; LF Osc
T-6	424B161		TRANSFORMER, RADIO FREQUENCY: adjustable iron core; HF Osc
T-7	424B121		TRANSFORMER, INTERMEDIATE FREQUENCY: 455 kc; input; iron core; double-tuned; with shield
T-8	424B121		TRANSFORMER, INTERMEDIATE FREQUENCY: 455 kc; inter-stage; iron core; double-tuned; with shield
T-9	424B121		TRANSFORMER, INTERMEDIATE FREQUENCY: 455 kc; output; iron core; double-tuned; with shield
T-10	425B121		TRANSFORMER, AUDIO FREQUENCY: plate-to-phone coupling type
V-1			ELECTRON TUBE: subminiature pentode; 8 term wire type; RMA type 5899
V-2			ELECTRON TUBE: subminiature pentode; 8 term wire type; RMA type 5899
V-3			ELECTRON TUBE: subminiature pentode; 8 term wire type; RMA type 5899

Ref. No.	Contractor's Drawing & Part Number	Jan Type	Description
V-4			ELECTRON TUBE: subminiature pentode; 8 term wire type; RMA type 5899
V-5			ELECTRON TUBE: subminiature pentode; 8 term wire type; RMA type 5899
V-6			ELECTRON TUBE: subminiature triode; 8 term wire type; RMA type 5718
V-7			ELECTRON TUBE: subminiature triode; 8 term wire type; RMA type 5718
V-8			ELECTRON TUBE: subminiature triode; 8 term wire type; RMA type 5718
X-1	409B118		SOCKET, CRYSTAL: with switch
Y-1			CRYSTAL UNIT, QUARTZ: plug-in type (not furnished with receiver)
Y-2	448A103		CRYSTAL UNIT, QUARTZ: 500 kc

## Section II. TRANSMITTER RT-6-XX

C-101	408A102		CAPACITOR, FIXED, METALLIZED PAPER: 1 mf +20%; 200 vdcw
C-102	921R110	CC20SL330K	CAPACITOR, FIXED, CERAMIC DIELECTRIC: tubular type; 33 mmf +10%; 500 vdcw
C-103	921R142		CAPACITOR, FIXED, CERAMIC DIELECTRIC: disc type; .001 mf; 500 vdcw
C-104	921R127	CC30SL101K	CAPACITOR, FIXED, CERAMIC DIELECTRIC: tubular type; 100 mmf +10%; 500 vdcw
C-105	419B121		CAPACITOR, VARIABLE, AIR DIELECTRIC: plate meshing type; 7.5 mmf to 176 mmf
C-106	921R152		CAPACITOR, FIXED, CERAMIC DIELECTRIC: disc type; .01 mf -20% +80%; 450 vdcw
C-107	921R107	CC20SL220K	CAPACITOR, FIXED, CERAMIC DIELECTRIC: tubular type; 22 mmf +10%; 500 vdcw
C-108	921R152		CAPACITOR, FIXED, CERAMIC DIELECTRIC: disc type; .01 mf -20% +80%; 450 vdcw
C-109	921R152		CAPACITOR, FIXED, CERAMIC DIELECTRIC: disc type; .01 mf -20% +80%; 450 vdcw
C-110	921R152		CAPACITOR, FIXED, CERAMIC DIELECTRIC: disc type; .01 mf -20% +80%; 450 vdcw
C-111	921R152		CAPACITOR, FIXED, CERAMIC DIELECTRIC: disc type; .01 mf -20% +80%; 450 vdcw
C-112	419B122		CAPACITOR, VARIABLE, AIR DIELECTRIC: plate meshing type; 11 mmf to 218 mmf
C-113	921R463	CC20CJ020C	CAPACITOR, FIXED, CERAMIC DIELECTRIC: tubular type; 2 mmf +0.25 mmf; 500 vdcw
E-101	465A121		LAMP, GLOW: neon; 1/4W
E-102	465A121		LAMP, GLOW: neon; 1/4W
E-103	65X77646		LAMP, INCANDESCENT: 2V; .06 amp; tubular; clear glass; bayonet base; RMA#49
I-101	436B125		KNOB, ANT IMPEDANCE MATCHING SWITCH
I-102	436B126		KNOB, FINAL AMP TUNING
I-103	436B127		KNOB, OSC TUNING
J-101	409A130		JACK, TELEPHONE: accommodates 2-conductor Army plug PL-55
J-102	409K154		CONNECTOR, 2-pin (Antenna & Ground)
K-101	401V471		KEY, TELEGRAPH
L-101	424A128		COIL, RADIO FREQUENCY: plate tank; 16.4 uh



Ref. No.	Contractor's Drawing & Part Number	Jan Type	Description
L-102	424A143		COIL, RADIO FREQUENCY CHOKE
L-103	424A155		COIL, RADIO FREQUENCY CHOKE: 220 uh
L-104	424B130		COIL, RADIO FREQUENCY: HF plate tank; 5 taps
L-105	424B129		COIL, RADIO FREQUENCY: LF plate tank; 5 taps
LR-101	424A156		COIL, RADIO FREQUENCY: 80 uh; wound on 560 ohm $\pm 10\%$ 1/2W fixed composition resistor
PL-5	428A122		CONNECTOR, PLUG: 6 male contacts
R-101	906R536	RC20BF104K	RESISTOR, FIXED, COMPOSITION: 100,000 ohms $\pm 10\%$ ; 1/2W; ins
R-102	906R529	RC20BF683K	RESISTOR, FIXED, COMPOSITION: 68,000 ohms $\pm 10\%$ ; 1/2W; ins
R-103	906R403	RC20BF680K	RESISTOR, FIXED, COMPOSITION: 68 ohms $\pm 10\%$ ; 1/2W; ins
R-104	906R515	RC20BF333K	RESISTOR, FIXED, COMPOSITION: 33,000 ohms $\pm 10\%$ ; 1/2W; ins
R-105	906R781	RC30BF333K	RESISTOR, FIXED, COMPOSITION: 33,000 ohms $\pm 10\%$ ; 1W; ins
R-106	906R585	RC20BF155K	RESISTOR, FIXED, COMPOSITION: 1.5 megohms $\pm 10\%$ ; 1/2W; ins
R-107	906R778	RC30BF273K	RESISTOR, FIXED, COMPOSITION: 27,000 ohms $\pm 10\%$ ; 1W; ins
R-108	906R960	RC42BE271K	RESISTOR, FIXED, COMPOSITION: 270 ohms $\pm 10\%$ 2W; ins
R-109	906R1040	RC42BE223K	RESISTOR, FIXED, COMPOSITION: 22,000 ohms $\pm 10\%$ ; 2W; ins
R-110	906R372	RC20BF120K	RESISTOR, FIXED, COMPOSITION: 12 ohms $\pm 10\%$ ; 1/2W; ins
S-101	440A123		SWITCH, SLIDE: single-pole, double-throw
S-102	440A122		SWITCH, SLIDE: double-pole, double-throw
S-103	440B104		SWITCH, ROTARY: special; 5-position with OFF; 2 pole
V-101			ELECTRON TUBE: miniature pentode; 7-pin; RMA type 6AG5
V-102			ELECTRON TUBE: pentode; octal; pin type; RMA type 2E26
X-101	409A131		SOCKET, CRYSTAL
Y-101			CRYSTAL UNIT, QUARTZ (not furnished with transmitter)

## Section III. POWER SUPPLY RP-6-XX

C-201	408A123		CAPACITOR, FIXED, PAPER DIELECTRIC: .006 mf 1600 vdcw
C-202	408A123		CAPACITOR, FIXED, PAPER DIELECTRIC: .006 mf 1600 vdcw
C-203	408A121		CAPACITOR, FIXED, PAPER DIELECTRIC: .5 mf 200 vdcw
C-204	921R165		CAPACITOR, FIXED, CERAMIC DIELECTRIC: disc type; .01 mf GMV: 500 vdcw
C-205	921R166		CAPACITOR, FIXED, CERAMIC DIELECTRIC: disc type; .02 mf; -20% +80%; 500 vdcw
CR-201	448C123		RECTIFIER, METALLIC: selenium, full-wave
E-201	465A121		LAMP, GLOW: neon; 1/4W
F-201	65K890033		FUSE, CARTRIDGE: 1.5 ampere, 250V
F-202	65K804906		FUSE, CARTRIDGE: 15 ampere, 32V
G-201	448B101		VIBRATOR, NON-SYNCHRONOUS: 115 cps, 6 vdc
I-201	436B121		KNOB, LINE VOLTAGE SELECTOR
L-201	424A157		COIL, RADIO FREQUENCY CHOKE: 6.0 uh
L-202			COIL, RADIO FREQUENCY CHOKE: not replaceable -formed by lead wire
R-201	906R536	RC20BF104K	RESISTOR, FIXED, COMPOSITION: 100,000 ohms $\pm 10\%$ ; 1/2W; ins
R-202	906R536	RC20BF104K	RESISTOR, FIXED, COMPOSITION: 100,000 ohms $\pm 10\%$ ; 1/2W; ins
R-203	906R400	RC20BF560K	RESISTOR, FIXED, COMPOSITION: 56 ohms $\pm 10\%$ ; 1/2W; ins
R-204	906R400	RC20BF560K	RESISTOR, FIXED, COMPOSITION: 56 ohms $\pm 10\%$ ; 1/2W; ins
S-201	440B108		SWITCH, ROTARY: 8-position; single-pole; shorting type

Ref. No.	Contractor's Drawing & Part Number	Jan Type	Description
SO-1, 2	409B121		CONNECTOR ASSEMBLY: consists of two Jones receptacles, one 8-prong (SO-1) and one 7-prong (SO-2)
SO-3	409A122		CONNECTOR, PLUG: 6 female contacts
T-201	425D137		TRANSFORMER, POWER
V-201			ELECTRON TUBE: miniature double diode; RMA type 6X4

## Section IV. FILTER-ACCESSORY UNIT RA-6-XX

C-301A, B	408B122		CAPACITOR, FIXED, PAPER DIELECTRIC: 2-section; 1.5 x 1.5 mf 600 vdcw
C-302A, B	408B122		CAPACITOR, FIXED, PAPER DIELECTRIC: 2-section; 1.5 x 1.5 mf 600 vdcw
F-301	65K890033		FUSE, CARTRIDGE: 1.5 ampere, 250V
F-302	65K804906		FUSE, CARTRIDGE: 15 ampere, 32V
HS-301	450B101		RECEIVER, EARSET: magnetic type; 2000 ohms impedance; with 2-terminal receptacle
L-301	401V375		REACTOR: filter choke; single winding; 4 hy; includes mtg nuts
O-301, 2, 3	442A162		RING, RETAINER (SO-6, SO-5 & PL-3)
PL-3	428A123		CONNECTOR, PLUG: 6 male contacts
R-301	418K128		RESISTOR, FIXED, WIREWOUND: 8000 ohms +5% 10W
R-302	418A127		RESISTOR, FIXED, WIREWOUND: 4000 ohms +5% 5W
R-303	418K128		RESISTOR, FIXED, WIREWOUND: 8000 ohms +5% 10W
R-304	418A127		RESISTOR, FIXED, WIREWOUND: 4000 ohms +5% 5W
R-305	906R313	RC10BF105M	RESISTOR, FIXED, COMPOSITION: 1 megohm +20%; 1/2W; ins
S-301	440A110		SWITCH, TOGGLE: double-pole, double-throw; 3 amp 250V
or	440K111		
SO-5	409A128		CONNECTOR, PLUG: 6 female contacts
SO-6	409A129		CONNECTOR, PLUG: 4 female contacts
V-301			ELECTRON TUBE: sub-miniature voltage regulator; JAN type 5644
or			ELECTRON TUBE: sub-miniature voltage regulator; JAN type 5787
V-302			ELECTRON TUBE: sub-miniature voltage regulator; JAN type 5644
or			ELECTRON TUBE: sub-miniature voltage regulator; JAN type 5787
W-301	401B363		CABLE ASSEMBLY, AC: 2-conductor; with universal line plug & Jones plug; 6 ft long
W-302	401B366		CABLE ASSEMBLY, BATTERY: 2-conductors; one red, one black; with spade lugs & Jones plug; 41 in. long
W-303	430B101		CORD, EARSET: 5 ft long; 2-conductor; with two .083 tips and 2-prong male plug

## ADDITIONAL ACCESSORIES

E-301	451B101	Hank, antenna
E-302	414A117	Insulator, antenna
H-301	401V376	Clamp, battery: with screw

