TM 11–487A is published for the information and guidance of all concerned.

[AG 300.7 (1 Apr 48)]

By order of the Secretary of the Army:

Offcial:

EDWARD F. WITSELL
Major General, USA
The Adjutant General

J. LAWTON COLLINS
Chief of Staff, United States Army

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

This is the first of a series of nine separate manuals, each covering the standard, substitute standard, and limited standard Signal Corps equipments in a particular field. This manual covers radio communication equipment. Succeeding manuals will cover, respectively, wire communication equipment, ground radar and recognition equipment, radio direction finding equipment, power equipment, photographic equipment, meteorological equipment, test equipment, and miscellaneous equipment.

Items of equipment are presented in this manual in alpha-numerical sequence by type numbers. When the type number is known, use the Contents to find the page on which the equipment is illustrated and described. When the type number is unknown, it may be found in the Index, which is arranged alphabetically by nomenclature.

An illustration and the following information are given for each item of equipment listed: nomenclature, status, Signal Corps stock number, technical manual reference, description, technical characteristics, general application, principal components, and weight and volume.

The following abbreviations are used in this manual:

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>ac</td>
<td>alternating current</td>
</tr>
<tr>
<td>af</td>
<td>audio frequency</td>
</tr>
<tr>
<td>am</td>
<td>amplitude modulation</td>
</tr>
<tr>
<td>a-m</td>
<td>amplitude-modulated</td>
</tr>
<tr>
<td>amp</td>
<td>ampere</td>
</tr>
<tr>
<td>ave</td>
<td>automatic volume control</td>
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<tr>
<td>bfo</td>
<td>beat-frequency oscillator</td>
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<tr>
<td>coml</td>
<td>commercial</td>
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<td>cycles per second</td>
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<tr>
<td>cu ft</td>
<td>cubic foot</td>
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<tr>
<td>c-w</td>
<td>continuous-wave</td>
</tr>
<tr>
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<td>cycle</td>
</tr>
<tr>
<td>db</td>
<td>decibel</td>
</tr>
<tr>
<td>dc</td>
<td>direct current</td>
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<tr>
<td>FCC</td>
<td>Federal Communications Commission</td>
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<td>f-m</td>
<td>frequency-modulation</td>
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<tr>
<td>ft</td>
<td>foot</td>
</tr>
<tr>
<td>hf</td>
<td>high frequency</td>
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<tr>
<td>icw</td>
<td>interrupted continuous waves</td>
</tr>
<tr>
<td>ke</td>
<td>kilocycle</td>
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<tr>
<td>kva</td>
<td>kilovolt-ampere</td>
</tr>
<tr>
<td>kw</td>
<td>kilowatt</td>
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<tr>
<td>lb</td>
<td>pound</td>
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<td>lf</td>
<td>low frequency</td>
</tr>
<tr>
<td>lg</td>
<td>long</td>
</tr>
<tr>
<td>ma</td>
<td>milliampere</td>
</tr>
<tr>
<td>max</td>
<td>maximum</td>
</tr>
<tr>
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<td>megacycle</td>
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<tr>
<td>mw</td>
<td>milliwatt</td>
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<tr>
<td>r-f</td>
<td>radio-frequency</td>
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<tr>
<td>SOS</td>
<td>International distress signal</td>
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<tr>
<td>std</td>
<td>standard</td>
</tr>
<tr>
<td>v</td>
<td>volt</td>
</tr>
<tr>
<td>v-f</td>
<td>voice-frequency</td>
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<tr>
<td>v-h-f</td>
<td>very-high-frequency</td>
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<tr>
<td>w</td>
<td>watt</td>
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<td>T-5/FRC</td>
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<td>T-83/8R</td>
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<td>T-158(*)/FRT</td>
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<td>T-171(*)/FR</td>
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<td>T-172/FR</td>
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<td>T-175/FR</td>
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<td>T-177/FR</td>
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<tr>
<td>T-180/FR</td>
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Figure 1. Amplifier Assembly AN/FRA-1.


Amplifier Assembly AN/FRA-1 consists principally of a class C r-f power amplifier, a rectifier, the necessary transmission line materials, and an antenna tuning unit. It is used as final power amplifier for Radio Transmitter BC–365 or similar transmitting equipment.

The 6-kw, r-f amplifier is intended for fixed military radiotelegraph service as a 6- to 10-kw amplifying unit. It is used in conjunction with a nominal 350-watt, 0.15- to 0.55-mc radio transmitter as a source of r-f driving power.

A maximum keying speed of 200 words per minute may be utilized.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 0.15 to 0.55 me.
ANTENNA: Antenna with a capacitance of 750 to 3,000 mmf and a resistance of 6 to 12 ohms.
TYPE MODULATION: C-w.
FREQUENCY CONTROL: Controlled driver unit.
POWER SOURCE: A 3-phase, 3-wire, 60-cycle, 200-, 220-, 240-v power source is required, capable of supplying 22 kva at 90 percent power factor for full-load operation.
POWER OUTPUT: Minimum power output of 6 kw at 0.15 me is obtained when connected to an antenna of 750-mm capacitance and 6-ohm resistance. Output power up to 10 kw can be obtained when operating into antennas of higher capacitance and resistance, and at higher frequencies.
RANGE: Long.
NUMBER OF TUBES:
  Power amplifier: 3.
  Rectifier: 6.

GENERAL APPLICATION

USE: Fixed military radiotelegraph service.
TO COMMUNICATE WITH: Any long-range, 1f communication equipment.
INSTALLATION: Fixed station.
TYPE OF SIGNAL: C-w.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
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</thead>
<tbody>
<tr>
<td>Power amplifier</td>
<td>78 x 60 x 36</td>
<td>1,400</td>
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<tr>
<td>Rectifier</td>
<td>78 x 60 x 36</td>
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<tr>
<td>Antenna tuning unit</td>
<td>120 x 97 x 68</td>
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WEIGHT AND VOLUME

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<tr>
<th>Description</th>
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<tr>
<td>Total weight (Unpacked)</td>
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</tr>
<tr>
<td>Total volume (cu ft)</td>
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</tr>
<tr>
<td>Skip tons</td>
<td>91</td>
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</tbody>
</table>

Radio Set AN/FRC-6 is a complete operating f-m radio set, less primary power source, designed for fixed-station operation. It provides 2-way voice communication with similar fixed or mobile equipment over a range of not more than 20 miles of open country.

The set is operated by remote control over a pair of telephone wires up to a maximum distance of 10 miles.

The receiver is of the dual conversion superheterodyne type with two crystal oscillators.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 30 to 40 mc.
NUMBER OF CRYSTALS: 1 in transmitter, 2 in receiver.
PRESET FREQUENCIES: 1.
TYPE MODULATION: Frequency.

FREQUENCY CONTROL: Crystal.
POWER SOURCE: 115-v, 60-cyc, 325-w ac.
POWER OUTPUT: 50 w plus.

RANGE: 20 mi.
NUMBER OF TUBES: 10 in transmitter, 14 in receiver, and 4 in console unit.

GENERAL APPLICATION

USE: Military police fixed-station.

INSTALLATION: Fixed station.
TYPE OF SIGNAL: Voice.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
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<td>9 x 9 x 18½</td>
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<tr>
<td>Radio Receiver R-276A/FRC-6</td>
<td>9 x 9 x 18½</td>
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<tr>
<td>Radio Set Control C-560A/FRC-6</td>
<td>5½ x 6 x 18½</td>
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<td>Console C-599A/FRC-6</td>
<td>8¾ x 12 x 13</td>
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<tr>
<td>Rock MT-638A/FRC-6</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>completely assembled</td>
<td>68⅞ x 22½ x 15</td>
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WEIGHT AND VOLUME

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</tr>
<tr>
<td>Total volume (cu ft)</td>
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Status: Standard. Stock No.: 2C4570 (Radio Receiving equipment WECo D—150420); 2C6842 (Radio Transmitting Equipment WECo D—150415).

Radio Set AN/FRC-7 is a v-h-f radio communication link system for a-m reception and transmission. The receiver and transmitter are mounted in an outdoor metal cabinet or a standard 19-inch relay rack. This equipment is used as a radio link suitable for multichannel telegraph, using v-f tones and combination voice and telegraph with suitable carrier equipment.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 132 to 156 mc.
ANTENNA: Antenna equipment WECO D-151625.
TYPE MODULATION: Amplitude.
FREQUENCY CONTROL: Crystal.
POWER SOURCE: Power unit WECO D-150416, 50- to 60-
cycle, 115-v., 390-w. ae.
POWER OUTPUT: 12w.
RANGE: Line of sight.

GENERAL APPLICATION

USE: V-f and combination voice and telegraph when used
with proper equipment. A v-h-f communication system
for am. Used with, but not part of WECO 42Bl communica-
tion equipment, WECO model D-150415 radio transmit-
mittng equipment, and WECO D-150420 radio receiving
equipment.

TO COMMUNICATE WITH: Radio link for multichannel
telegraph.

INSTALLATION: Fixed station.

TYPE OF SIGNAL: V-f and combination voice-telegraph.

PRINCIPAL COMPONENTS

Radio receiving equipment WECO D-150420.
Radio transmitting equipment WECO D-150415.
**Status:** Limited standard. **Stock No.:** 2C5608.

Radio Set AN/FRC-9 (Galvin Motorola FSTR-250-BR) is a fixed-station f-m transmitting and receiving equipment for point-to-point radio communication, operating in the v-h-f range. It is designed to operate over the maximum distance in the v-h-f range, with provision for remote control over a two-way telephone line.

Radio Set AN/FRC-9 includes such features as automatic overload reset, motor-driven centrifugal blower, and a full complement of meters. All connections and terminals are fully visible, and the front and back doors contain interlock safety switches.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 30 to 40 mc.
NUMBER OF CRYSTALS: 1 in transmitter, 2 in receiver.
PRESET FREQUENCIES: 1.
ANTENNA: Whip coaxial or other v.h.f.
TYPE MODULATION: Frequency.
FREQUENCY CONTROL: Crystal.
POWER SOURCE: 115-v, 60-cyc, 1,160-w.
POWER OUTPUT: 250 w.
RANGE: 30 mi (approx).
TUBES: 10 in transmitter, 2 in power amplifier, 2 in power supply, 2 in control unit, 14 in receiver.

GENERAL APPLICATION

USE: Point-to-point communication.
TO COMMUNICATE WITH: Fm sets within frequency range.

INSTALLATION: Fixed.
TYPE OF SIGNAL: Voice.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cabinet containing all other components</td>
<td>22 1/2 x 15 x 68</td>
<td>350</td>
</tr>
<tr>
<td>Transmitter FST-250</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Receiver FST-13B-1 (PA8043)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remote Control P-3270Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Meter Panel Unit 1-FST-250</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Antenna Change-over Relay Unit 2FST-250</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RF-Amplifier Unit FST-250</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extended Local Control Unit 4FST-250</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power and Relay Panel Unit 5-FST-250</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cabinet Assembly 10-FST-250</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Radio Set AN/FRC-10 is a long-range, h-f, fixed-station, v-f carrier telegraph system designed for single side-band operation and used with v-f carrier telegraph equipment. Navy Type Single Side-Band Radio Receiving Equipment REA (WECO D-99945) is a h-f single side-band triple detection receiver designed to operate as a companion to Navy Type Radio Transmitting Equipment TEF (WECO D–156000). It is designed for transoceanic telephony in the frequency range of from 4.5 to 22 mc. It provides for the reception of either one or both of two telephone channels arranged as a twin-channel system.

Navy Type Radio Transmitting Equipment TEF is a short-wave transmitter designed for transoceanic telephony in the frequency range from 4.5 to 22 mc. The complete transmitter provides for transmission of two telephone channels in a twin-channel single side-band system or, alternatively, one conventional double side-band channel. It may also be used as an exciter for Press Wireless PW–40 transmitter arranged for operation as a linear amplifier. This is part of an entire terminal for single side-band reduced carrier radiotelephone system for twin-channel operation, giving six two-way telegraph circuits over one two-way radiotelephone circuit. The entire terminal consists of a radio transmitter, distortion measuring set, a single side-band receiver, including its associated testing and measuring equipment, and v-f carrier telegraph equipment.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 4.5 to 22 mc; (may be converted to 4 to 20 mc).

PRESET FREQUENCIES: 6.

ANTENNA: Rhombic or fixed-station type.

TYPE MODULATION: Amplitude. (Single side band.)

FREQUENCY CONTROL: Crystal.

POWER SOURCE:
- Navy Type Radio Transmitting Equipment TEF (WECO D-156000): 220-v. 50- to 60-eye. 3-phase, 5 kw.
- Navy Type Single Side-band Radio Receiving Equipment REA (WECO D-99945): 115-v. 50- to 60-eye. single-phase, 600 w.
- Carrier Terminals OA-63/FRC-10 and OA-64/FRC-10: 115-v. 50- to 60-eye. single-phase, 3 kw.

POWER OUTPUT: 2½ kw.

RANGE: Long.

GENERAL APPLICATION

USE: Transoceanic radio telegraphy and telephony.

TO COMMUNICATE WITH: Like equipment within frequency range.

INSTALLATION: Fixed station.

TYPE OF SIGNAL: Voice and telegraph.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Navy Type Single Side-band Radio Receiving Equipment REA (WECO D-99945) mounted in 3 cabinets</td>
<td>64⅛ x 84 x 15¼</td>
<td>1,436</td>
</tr>
<tr>
<td>Carrier Terminals OA-63/FRC-10 and OA-64/FRC-10 mounted together in 10 cabinets</td>
<td>64⅛ x 89 x 27</td>
<td>2,428</td>
</tr>
<tr>
<td>Carrier Terminal OA-63/ FRC-10*</td>
<td>220⅛ x 84 x 17</td>
<td>5,260</td>
</tr>
</tbody>
</table>

*OA-63/FRC-10 and OA-64/FRC-10 mounted together in 10 cabinets.

Diversity Receiving Equipment AN/FRR-3A is a fixed-plant set designed for use in a point-to-point radio teletypewriter system of communication and is intended to overcome fading effects.

Diversity Receiving Equipment AN/FRR-3A uses two identical superheterodyne receivers with a common h-f oscillator and has provisions for either separate or common ave. The output of the receivers is fed to Radioteletype Terminal Equipment AN/FGC-1.

The receiving equipment is provided with a local and a remote telephone dial which may be used to turn the equipment on or off and to select any of five pretuned frequencies and any dual combination of four antennas.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 2.4 to 23 mc in 5 bands as follows:
- Band 1: 2.4 to 4.2 mc.
- Band 2: 4.2 to 6.9 mc.
- Band 3: 6.9 to 11.2 mc.
- Band 4: 11.2 to 17.5 mc.
- Band 5: 15 to 23 mc.

(Band 5 can be modified to cover 17.5 to 26 mc.)

ANTENNA: Rhombic or equivalent.

SENSITIVITY: 3 microvolts or less for 50 mv output (any frequency with carrier 30% modulated at 400 cps).

SELECTIVITY: 5 ke bandwidth at 6 db down.

IMAGE RATIO: Better than 60 db at any frequency.

SIGNAL TO NOISE RATIO: Better than 10 db at any frequency.

POWER SOURCE: 100- to 130-v, 50- to 60-aye, or 200- to 250-v, 30- to 40-aye, 400 w. (Radioteletype Terminal Equipment AN/FGC-1 extra.)

NUMBER OF TUBES: 30.

GENERAL APPLICATION

USE: Point-to-point radioteletypewriter communication to overcome fading effects.

TO COMMUNICATE WITH:
- Radio Transmitter T-172/FR and Radio Transmitter T-177/FR.
- Radio Transmitter Assemblies OA-60A/FRT and OA-60B/FRT.
- Radio Sets AN/MRC-1 and AN/MRC-2, SCR-399-A, and SCR-499-A.

INSTALLATION: Fixed station.

TYPE OF SIGNAL: A-m and frequency shift (radioteletypewriter).

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metal cabinet, containing: antenna unit, receiver B, multiplier, oscillator unit, receiver A, remote control unit, power control unit, power filter unit, and power supply unit.</td>
<td>85 x 17 x 22½</td>
<td>366.5</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

<table>
<thead>
<tr>
<th>Type</th>
<th>Unpacked</th>
<th>Domestic pack</th>
<th>Export pack</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total weight (lb)</td>
<td>366.5</td>
<td>800</td>
<td>1,146</td>
</tr>
<tr>
<td>Total volume (cu ft)</td>
<td></td>
<td></td>
<td>53.8</td>
</tr>
<tr>
<td>Ship tons</td>
<td></td>
<td></td>
<td>1.35</td>
</tr>
</tbody>
</table>

Radio Receiving Set AN/FRR-12 consists of a standard Rack MT-660/FRR-12, two Radio Receivers R-270/FRR, and two Power Supply Units RA-74-D. It is a fixed-station set primarily designed for dual diversity reception of radio teletypewriter signals in order to avoid the effects of fading.

The two superheterodyne Radio Receivers R-270/FRR operate independently of each other from two separate antennas suitably spaced.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE:
- Band 1: 1.25 to 2.5 mc.
- Band 2: 2.25 to 5.0 mc.
- Band 3: 5.0 to 10.0 mc.
- Band 4: 10.0 to 20.0 mc.
- Band 5: 20.0 to 40.0 mc.

Operation above 30 mc under certain conditions only.

NUMBER OF CRYSTALS: 4 in each receiver.

PRESET FREQUENCIES: None.

ANTENNA: Rhombic or doublet receiving.

FREQUENCY CONTROL: Crystals in any 3 channels of the frequency range of L5 to 26 mc.


RANGE: Long.

NUMBER OF TUBES: 38. (17 in each receiver; 2 in each power supply unit.)

GENERAL APPLICATION

USE: Dual diversity reception of radioteletypewriter signals.

TO COMMUNICATE WITH:
- Radio Sets AN/MRC-2 and AN/MRC-2A.
- Radio Transmitting Assemblies OA-60/FRT, OA-60A/FRT, OA-60B/FRT, and other transmitting equipments within frequency range.

INSTALLATION: Fixed station.

TYPE OF SIGNAL: Frequency-shift radioteletypewriter.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Radio Receivers R-270/FRR</td>
<td>14½ x 16½ x 19</td>
<td>60½</td>
</tr>
<tr>
<td>2 Power Supply Units RA-74-D</td>
<td>10½ x 10½ x 19</td>
<td>60½</td>
</tr>
<tr>
<td>1 Raek MT-660/FRR-12</td>
<td>76 x 18 x 22</td>
<td>230</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

<table>
<thead>
<tr>
<th></th>
<th>Unpacked</th>
<th>Exportpack</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total weight (lb)</td>
<td>472</td>
<td>939</td>
</tr>
<tr>
<td>Total volume (cu ft)</td>
<td>23.9</td>
<td>44.6</td>
</tr>
<tr>
<td>Ship tons</td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

Radio Set AN/GRC-9 is a light-weight, man-transportable field radio set providing two-way radiotelephone and radiotelegraph service in the h.f. range. It is provided with mountings and power supply for vehicular service.

This set is the same as Radio Set SCR-694 except that it provides greater frequency coverage. It replaces Radio Sets SCR-284, SCR-288, and SCR-694.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 2.0 to 12 mc, in three bands:
- Band 1: 6.6 to 12 mc.
- Band 2: 3.6 to 6.6 mc.
- Band 3: 2.0 to 3.6 mc.

NUMBER OF CRYSTALS:
- Transmitter: 2 in each band, or total of 6.
- Receiver: 1 for calibration.

RESET FREQUENCIES: None.

ANTENNA: Long-wire for permanent or semipermanent installations. Vertical mast antenna for mobile vehicular installations, or when equipment must be moved rapidly and frequently from one location to another.

TYPE MODULATION: Amplitude, e-w, or m-c-w.

FREQUENCY CONTROL: TRANSMITTER: Mo operation and crystal.

POWER SOURCE:
- Vibrator Power Unit PE-237; 6-, 12-, or 24-v storage battery.
- Generator GN–58, hand-powered; Battery BA–48 (receiver operation only).

POWER OUTPUT:

<table>
<thead>
<tr>
<th>Power switch position</th>
<th>Vibrator Power Unit PE–237</th>
<th>Generator GN–58</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>7w</td>
<td>3.6w</td>
</tr>
<tr>
<td>Low</td>
<td>1w</td>
<td>1.2w</td>
</tr>
</tbody>
</table>

RANGE:

<table>
<thead>
<tr>
<th></th>
<th>Cw</th>
<th>Voice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stationary</td>
<td>75 mi</td>
<td>25 mi</td>
</tr>
<tr>
<td>Moving</td>
<td>30 mi</td>
<td>15 mi</td>
</tr>
</tbody>
</table>

NUMBER OF TUBES: 14 (plus one tube of each type as running spare).

GENERAL APPLICATION

USE: To provide two-way radiotelephone and radiotelegraph communication between moving or stationary vehicles. May also be used as a portable field set.


INSTALLATION: Installed and operated in vehicle or used as portable field set.

TYPE OF SIGNAL: Cw, m-c-w, and voice.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Receiver-Transmitter RT–77/</td>
<td>16 x 11 1/4 x 8 1/2</td>
<td>33</td>
</tr>
<tr>
<td>GRC–9 (complete)</td>
<td>10 x 7 1/2 x 7 1/4</td>
<td>29</td>
</tr>
<tr>
<td>Vhibrator Power Unit PE–237</td>
<td>12 x 8 1/2</td>
<td>2 1/4</td>
</tr>
<tr>
<td>Generator GN–58</td>
<td>8 x 2</td>
<td>2 1/4</td>
</tr>
<tr>
<td>Mounting MT–350/GRC–9</td>
<td>12 x 8 x 2</td>
<td>359</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

| Total weight (lb) | 359 |
| Total volume (cu ft) | 15.9 |

Radio Set AN/GRR-2 (Hallicrafters model SX-28) is a 15-tube superheterodyne receiver covering the frequency range of 0.55 mc to 42.0 mc in 6 bands. It is designed to receive a-m or keyed c-w signals. The set may be operated with the built-in internal power supply from an a-e source, or from an external d-c source.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: Six bands, covering the following frequencies:
- Band 1: 0.55 to 1.6 mc.
- Band 2: 1.6 to 3.0 mc.
- Band 3: 3.0 to 5.8 mc.
- Band 4: 5.8 to 11 mc.
- Band 5: 11 to 21 mc.
- Band 6: 21 to 42 mc.

All six bands calibrated on main tuning dial for direct reading.

NUMBER OF CRYSTALS: 1.

ANTENNA: Any receiving antenna.

FREQUENCY CONTROL: Continuous tuning.

POWER SOURCE:

For a-c operation, line voltage must be within limits of
110 to 125 volt at 50 to 60 cycle. A-c power consumption
is 138 watt for a 117 volt, 60 cycle supply.

For d-c operation, a 6 volt, 4.8 heater supply and a 270 volt,
150 microamp high voltage supply are needed. D-c power
consumption is 108 watt.

POWER OUTPUT: 8 watt.
RANGE: Dependent on frequency and atmospheric conditions.

NUMBER OF TUBES: 15.

GENERAL APPLICATION

USE: General purpose receiver.
TO COMMUNICATE WITH: Any radio transmitter operating
within frequency ranges of 0.55 to 42.0 mc.
INSTALLATION: Fixed station.
TYPE OF SIGNAL: A-m or keyed c-w signals.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio Receiver AN/GRR-2</td>
<td>10¾ x 20¼ x 16½</td>
<td>78</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

<table>
<thead>
<tr>
<th>Item</th>
<th>Unpacked</th>
<th>Export pack</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total weight (lb)</td>
<td>125</td>
<td></td>
</tr>
<tr>
<td>Total volume (cu ft)</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Ship tons</td>
<td>0.2</td>
<td></td>
</tr>
</tbody>
</table>

Radio Set AN/GRR-3 (National NC-100 ASC modified) is a semifixed receiving installation for the reception of air-to-ground and ground-to-ground communications and weather data.

This radio set is furnished with built-in power supply, and with external 8-inch diameter, permanent-magnet speaker. The equipment is installed in cabinets suitable for table mounting.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 0.2 to 0.4 mc and 1.3 to 30 mc.
NUMBER OF CRYSTALS: 1.
ANTENNA: Long-wire T-antenna, or double doublet.
TYPE MODULATION: Voice.
POWER SOURCE: 110-v, 60-cycle ac.
RANGE: Medium and long.

GENERAL APPLICATION

USE: Semifixed for air-to-ground and ground-to-ground communication.

TO COMMUNICATE WITH: Sets in same frequency range.
INSTALLATION: Fixed or portable.
TYPE OF SIGNAL: Voice.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Receiver NC-100 ASC</td>
<td>12 x 19 x 15</td>
<td>65</td>
</tr>
<tr>
<td>Loudspeaker</td>
<td>12 x 19 x 15</td>
<td>65</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

<table>
<thead>
<tr>
<th>Total weight (lb)</th>
<th>Unpacked Domestic pack</th>
</tr>
</thead>
<tbody>
<tr>
<td>71</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total volume (cu ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.8</td>
</tr>
</tbody>
</table>
Figure 11. Radio Set AN/MRC-1, components installed in shelter.


Radio Set AN/MRC-1 comprises a radio system which provides facilities for high-speed, high-power, c-w transmission and reception in addition to the normal functions of Radio Set SCR–399. It is intended primarily for fixed-station use, but is completely mobile, being installed in three 2½ ton, 6 x 6 cargo trucks.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: Transmitter: 2.0 to 13.0 mc. Receiver: 1.5 to 18 mc.

NUMBER OF CRYSTALS: 3 operating, (1 at a time)


ANTENNA: Normal operation (full power). Transmitting: doublet. Receiving: flattop. (Station uses whip antennas when mobile.)

TYPE MODULATION: Full power: e.w only. Medium power: a-m, c-w.

FREQUENCY CONTROL: Mo, crystal.

POWER SOURCE: A-c, 110-v, 60-eye, single-phase, 10 kw Power Unit PE-95.

POWER OUTPUT: Full power: c-w. 2 kw. Medium power: e-w, 275-400 w; a-m, 200 to 300 w.

RANGE: Medium and long, dependent upon antenna used, frequency and ionospheric conditions.


GENERAL APPLICATION

USE: Provides facilities for high-speed, high-power, e-w communication in addition to normal functions of Radio Set SCR-399.


INSTALLATION: Primarily intended for fixed station, but is installed and operated in trucks and is completely mobile.

TYPE OF SIGNAL: Voice, m-c-w. or c-w.

PRINCIPAL COMPONENTS

Name | Dimensions (in.) | Weight (lb)
--- | --- | ---
In Shelter HO-17-Transmitting | 158 x 90½ x 77 | 8,105
Power Amplifier | AM-35/MRC-1 | 
Radio Transmitter | T-62/MRC-1 | 
Radio Receiver BC-312 | 
Speech Amplifier BC-619 | 
(In Shelter HO-17-Operating) | 158 x 90½ x 77 | 7,365
3 Radio Receivers BC-342 | 
Rectifier power unit | 
Power Unit PE-95 (in Trailer K-52) | 76½ x 108 x 76½ | 4,965
Antenna System AS-94/MRC-1 | 
Antenna System AS-95/MRC-1 | 100 x 17 x 17 | 350

WEIGHT AND VOLUME

Total weight (lb) | 32,945
Total volume (cu ft) | 2,506
Ship tons | 62½

Radio Set AN/MRC-2 (*) represents Radio Sets AN/MRC-2 and AN/MRC-2A. Radio Set AN/MRC-2(*) is a high-powered, mobile, radioteletypewriter station for division, army, and corps levels and is used particularly in fluid stages of operations to replace normal fixed plant equipment for administrative circuits.

The complete set is entirely mobile, requiring three or four 2½ ton 6 x 6 cargo trucks.

This set partially replaces Radio Sets SCR-299 and SCR-399.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 1.5 to 18.0 mc in 6 bands.
ANTENNA: Two doublet antennas, coaxial fed, and spaced approximately 3 wavelengths (1,000 ft max) apart.
TYPE MODULATION: Frequency shift and amplitude (c-w, tone, or voice).
FREQUENCY CONTROL: No, crystal.
POWER SOURCE: 6.5 kw (approx). 115-v, 60-cyc, a-c.
POWER OUTPUT: 2 kw (approx).
RANGE: 1,000 mi or more.
NUMBER OF TUBES: 32.

GENERAL APPLICATION

USE: Provides teletypewriter communication in either net or long range operation; however, the equipment is so designed that the operating features of Radio Set SCR-399 may be restored by disconnecting Amplifier AM-141.
INSTALLATION: Installed and operated in mobile shelters.

TYPE OF SIGNAL:
Transmitted—Frequency shift teletypewriter signals. Emergency use: C-w, on full-power, or c-w and voice using Radio Transmitter BC-610-E alone.
Received—Frequency shift teletypewriter signals, dual space diversity reception. Receiver alone: C-w, tone and voice.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio Transmitter BC-610-E</td>
<td>158 x 90 1/2 x 77</td>
<td>8,800</td>
</tr>
<tr>
<td>Amplifier AM-141/MRC.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rectifier RA-63-C.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frequency Shift Exciter O-39/TRA-7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frequency Meter SCR-211.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Radio Receiver Assembly OA-65/MRC-2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dual Diversity Converter CV-31/TRA-7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power Unit PE-75.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teletypewriter 'TG-7-B.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control Unit C-292/TRA-7.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rectifier RA-87.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teletypewriter TG-7-B.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Typewriter MX-322/U.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power Units PE-93.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(3 supplied)</td>
<td>76 1/2 x 108 x 76 1/2</td>
<td>4,965</td>
</tr>
<tr>
<td>(installed in Trailer K-52)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

Total weight (lb) ............................................ 39,416
Total volume (cu ft) ........................................ 3,057
Ship tons ................................................................ 76.4

Radio Set AN/MRQ-2 is a modification of Radio Set SCR-399-A for use as a radio countermeasures unit. To facilitate its use as a mobile unit, Radio Set AN/MRQ-2 is shipped with the operating components and the power source installed in Shelter H0-17-A and Trailer K-52, respectively.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE:
Radio Transmitter T-55/MRQ-2: 0.95 to 18 mc (3 channels).
Radio Receiver BC-342: 1.5 to 18 mc (in 6 bands).
Radio Receiver BC-344: 0.15 to 1.5 mc (in 4 bands).

NUMBER OF CRYSTALS: 3 (operating).

PRESET FREQUENCIES: Transmitter channels selected by three sets of plug-in tuning units.

ANTENNA:
Radio Transmitter T-55/MRQ-2—4 types of antennas (Antenna Assembly AS-51/MRQ-2, and Auxiliary Antenna Assembly AS-93/MRQ 2), as follows:
Antenna A—Vertically polarized, half-rhombie, for transmitting or receiving radio signals between 0.95 and 8.0 mc. Balloon or kite supported.
Antenna B—Similar to Antenna A in design, but has smaller dimensions, designed for use at frequencies between 3 and 18 mc. Balloon or kite supported.
Antenna C—Single-wire and counterpoise combination, antenna supported 30 feet from ground by 4 lance poles PO-2 and suitably guyed by ropes.
Antenna D—5-section whip used with Radio Transmitter T-55/MRQ-2 and comprises Mast Sections MS-49, MS-50, MS-51, MS-52, and MS-53, supported by Mast Base MP-47.


TYPE MODULATION: Amplitude.

FREQUENCY CONTROL: Radio Transmitter T-55/MRQ-2: Crystal or no.

POWER SOURCE:
Radio Transmitter T-55/MRQ-2: Power Unit PE-95 or commercial.
Radio Receivers BC-342 and BC-344: 110-v., 50- to 60-cyc each (7.5 kw approx.)


NUMBER OF TUBES:
Radio Receivers BC-342 and BC-344: 10 each.

GENERAL APPLICATION
USE: Radio Set AN/MRQ-2 is a modification of Radio Set SCR-399-A for use as a radio countermeasures unit.


INSTALLATION: Installed and operated in Shelter HO-17-A, which should be mounted on a 2½-ton, 6 x 6 cargo truck for mobile use.

TYPE OF SIGNAL:
Radio Transmitter T-55/MRQ-2: C-w, voice, and jamming.
Radio Receivers BC-342 and BC-344: C-w, tone, and voice.

PRINCIPAL COMPONENTS
The following principal components are installed in Shelter HO-17-A:
Speech Amplifier BC-614-E.
Control Box C-110/MRQ-2.
Radio Set SCR-808-A.
Radio Receiver BC-342.
Radio Receiver BC-344.
Training Generator AN/URA-TI.
Antenna Switching Unit SA-24/MRQ-2.
Antenna Tuning Unit BC-939-A.
Antenna Coupling Unit CU-45/MRQ-2.
Antenna Control Box C-109/MRQ 2.
Antenna system.

The following component is installed in Trailer K-52:
Power Unit PE-95.

Shelter HO-17-A (operating components installed) 6 2/3 x 7 2/3 x 13 1/2 7,255
2 Teletypewriter TG-7-B.
Trailer K-52 (Power Unit PE-95 installed) 6 1/2 x 6 5/12 x 9 1/6 4,900
Antenna Assemblies AS-51/MRQ-2 and AS-93/MRQ-2 (consisting of 11 boxes and 12 gas cylinders) 3,765

WEIGHT AND VOLUME

Shipment tons 41
Status: Standard. Stock No.: 2C5700.

Radio Set AN/SRC-3 (RMCA ET-8007) is designed for installation and operation in lifeboats, and receives and transmits SOS signals.

The transmitter has a fixed frequency of 0.5 mc; the receiver has a fixed frequency of from 0.35 to 0.55 mc.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: Transmitter (fixed) 0.5 mc. Receiver 0.35 to 0.55 mc.
NUMBER OF CRYSTALS: 1 at 0.5 mc in the transmitter.
PRESET FREQUENCIES: 1.
ANTENNA: Any available lifeboat or installed antenna.
TYPE MODULATION:
   Transmitter: I-e-w.
   Receiver: Amplitude, i-e-w, and e-w.
POWER SOURCE: Two 12v storage batteries in parallel and one 4.5-v dry battery. Draws 25 amp at 12 v.
POWER INPUT: 50 w.

RANGE: Short.
NUMBER OF TUBES: 4.

GENERAL APPLICATION

USE: Transmitting and receiving signals from lifeboat.
TO COMMUNICATE WITH: Radio sets within frequency range, and mobile stations and ships on international distress frequency.
INSTALLATION: Marine mobile.
TYPE OF SIGNAL:
   Transmitter: I-e-w.
   Receiver: A-m, e-w.
Radio Receiving Set AN/SRR-2 (RMCA model AR-8600-X) comprises a complete automatic alarm system for use on shipboard, the components of which are mounted in the receiver-selector unit on a single panel which is hinged at the bottom to a metal cabinet. It is designed to "stand watch" on the distress frequency of 0.5 mc and to ring an alarm bell when properly coded distress signals are received (a series of 4-second dashes spaced at 1-second intervals). The alarm bells also ring to indicate a burnt-out tube, a blown fuse, and substantially low or high supply voltages. The auto-alarm also includes a warning light unit installed on the bridge. Warning lights on the front panel and on the bridge alarm unit indicate when static or other interference causes the selector relays to operate. Adjustments are provided to remedy such conditions.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 0.4875 to 0.5125 mc.
Preset FREQUENCY: 1.
ANTENNA: Ship's antenna.
TYPE MODULATION: C.w.
POWER SOURCE: 115-v d.c. 1.5 amp, 6-v storage battery, 0.4 amp; 3 amp when all bells are ringing.
RANGE: Short and medium.
NUMBER OF TUBES: 9.

GENERAL APPLICATION

USE: Marine automatic alarm system.
TO COMMUNICATE WITH: Receives signals from other ships at distress frequency of 0.5 mc, operating warning signals in the operator's quarters and on the ship's bridge.
INSTALLATION: Fixed on ship's board.
TYPE OF SIGNAL: Bell and lamp.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Receiver-selector</td>
<td>26 1/2 x 13 1/2 x 11 1/2</td>
<td>63</td>
</tr>
<tr>
<td>Junction box</td>
<td>14 1/2 x 12 1/2 x 5 3/4</td>
<td>23</td>
</tr>
<tr>
<td>Master switch</td>
<td>6 x 8 1/2</td>
<td>6</td>
</tr>
<tr>
<td>Bridge bell and warning light</td>
<td>7 x 6 1/2 x 3 3/4</td>
<td>5 1/4</td>
</tr>
</tbody>
</table>

WEIGHT

Total weight (lb) 97 3/4
Radio Receiving Set AN/SRR-3 (Scott model SLR-F) is a superheterodyne receiver primarily intended for shipboard installation, but is also suitable for use at radio shore stations. It is adapted for the reception of radiotelephone or radiotelegraph signals (cw or mew) by either headphones or loudspeaker.

The equipment is designed for a-c operation, being equipped with a rectifier type power supply. It permits the use of one pair of head-telephones (either 600-ohm or 20,000-ohm impedance) separately or in conjunction with the local loudspeaker of the permanent magnet type.

Radio Receiving Set AN/SRR-3 is contained in a steel cabinet designed for installation on top of an operating table or bench by means of a cradle type shock mounting. The chassis is constructed so that it may be mounted in a cabinet type standard relay rack.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 0.08 to 24 mc in 5 bands as follows:
- Band 1: 0.08 to 0.22 mc.
- Band 2: 0.21 to 0.56 mc.
- Band 3: 1.9 to 5.1 mc.
- Band 4: 4.5 to 12 mc.
- Band 5: 8.8 to 24 mc.

NUMBER OF CRYSTALS: None.

ANTENNA: Balanced feed line or single wire.

TYPE MODULATION: C-w or m-e-w.

POWER SOURCE: 110/120-v, 60-eye at 85 w (0.75 amp).

RANGE: Medium and long.

NUMBER OF TUBES: 11.

GENERAL APPLICATION

USE: Marine communication.

TO COMMUNICATE WITH: Shipboard and shore stations within frequency range.

INSTALLATION: Fixed, shipboard, or shore station.

TYPE OF SIGNAL: C-w and m-e-w.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio Receiver (Scott model SLR-F)</td>
<td>21 x 20½ x 13½</td>
<td>106</td>
</tr>
<tr>
<td>Inverter (Scott model 262)</td>
<td>8 x 10½ x 8¼</td>
<td>28</td>
</tr>
<tr>
<td>Speaker (Scott model SPM-8)</td>
<td>10½ x 5 x 9½</td>
<td>6½</td>
</tr>
</tbody>
</table>

WEIGHT

Total weight (lb) ___________________________________________ 140½
**Status:** Standard. **Stock No.:** 2C6657. **Reference:** TM 11-830.

Radio Transmitting Set AN/SRT-1 (Radiomarine Corporation of America model ET-8026) is a portable, battery-operated, lifeboat transmitter. The set operates automatically for a period of 2 minutes each time the button is pressed, and automatically stops operating upon completion of the cycle for the purpose of conserving the battery.

During each 2-minute operating period, the SOS distress signal is sent 18 times; long-dashes are also sent 6 times, to enable rescuing ship to take bearings.

The sending of these signals does not require a radio operator, although the set is provided with a hand telegraph key which may be used by a radio operator for straight m-c-w transmitting.

The battery is good for 48 operating periods of 2 minutes each, or, for 48 hours if used on an hourly schedule as is recommended.

A battery charging panel (Radiomarine Corporation of America model RM-16) consisting of an ammeter and current limiting resistors is used to charge the transmitter power supply storage battery from the 115-volt, d-c ship mains.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 0.5 mc (International distress frequency).
NUMBER OF CRYSTALS: None.
PRESET FREQUENCIES: 1.
ANTENNA: Attached wire antenna for use in lifeboat.
TYPE MODULATION: M.c.w.
FREQUENCY CONTROL: Preset frequency only.
POWER SOURCE: 6 v storage battery contained in set.
POWER OUTPUT: 5 w.
RANGE: 50 to 100 mi over salt water.
NUMBER OF TURNS: 2.

GENERAL APPLICATION

USE: Lifeboat emergency transmitter.
TO COMMUNICATE WITH: Transmits signals which are received on International distress frequency.
INSTALLATION: Portable set to be installed and operated in lifeboat.
TYPE OF SIGNAL: M.c.w.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio transmitter</td>
<td>21¼ x 15¾ x 13½</td>
<td>60</td>
</tr>
<tr>
<td>Battery charging panel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(RMCA model RM-16)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Radio Transmitting Set AN/SRT-3 (RMCA model 8010-E) is a medium power, intermediate frequency radiotelegraph transmitter designed primarily for marine installation. It contains simplified controls for rapid selection of eight pretuned operating frequencies.

The complete transmitter is housed in an aluminum cabinet, the construction of which provides mechanical rigidity and adequate ventilation.

Radio Transmitting Set AN/SRT-3 may be used both as a main and emergency transmitter by the addition of an emergency power panel and a small dynamotor. It is designed as a companion installation for the RMCA model ET-8019-E h-f transmitter.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 0.35 to 0.515 me.
NUMBER OF CRYSTALS: 0 to 8 (each preset frequency may use no or a crystal).
PRESET FREQUENCIES: 8.
ANTENNA: Ship's antenna.
TYPE MODULATION: C-w, m-e-w.
FREQUENCY CONTROL: Mo or crystal.
POWER SOURCE:
D-e motor generator: 130-v or 230-v, approx 1300 w.
A-e motor generator: 220/440-v, 1½ amp, 3-phase, 60 cycle.
POWER OUTPUT: Mew: 300 w. Cw: 200 w.
RANGE: Medium.
NUMBER OF TUBES: 5.

GENERAL APPLICATION

USE: Transmitting signals from ship-to-ship or ship-to-shore.
TO COMMUNICATE WITH: Receiving sets within frequency on shipboard or shore.
INSTALLATION: Fixed on shipboard.
TYPE OF SIGNAL: C-w and m-e-w.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transmitter</td>
<td>44½ x 17⅛ x 23¾</td>
<td>200</td>
</tr>
<tr>
<td>Motor generator</td>
<td>14½ x 27¾ x 9¾</td>
<td>225</td>
</tr>
<tr>
<td>Motor starter type CR-4052Y1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Line filter unit (Wilcox-Gay)</td>
<td>25-2200</td>
<td></td>
</tr>
</tbody>
</table>
Figure 19. Radio Transmitting Set AN/SRT-4.


Radio Transmitting Set AN/SRT-4 (RMCA type ET-8019-A or equal) is a complete fixed installation for transmitting from shipboard. It is mounted in a metal cabinet. The cabinet contains the
transmitter, motor-generator set, motor starter, control panel, and 2 crystal units with crystals for operation on 4,105 and 4,255 ke.

TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 2 to 2214 mc.
NUMBER OF CRYSTALS: 10.
PRESET FREQUENCIES: 2.
ANTENNA: Ship.
TYPE MODULATION: C-w, m-e-w.
FREQUENCY CONTROL: Crystal or mo.
POWER SOURCE: Motor generator. Input 115-v de at 1,300 w.
POWER OUTPUT: 200 w up to 17 me; 15 w above 17 me.
RANGE: Medium and long.
NUMBER OF TUBES: 4.

GENERAL APPLICATION

USE: Transmitting from shipboard.
TO COMMUNICATE WITH: Shore or shipboard receiving sets within frequency range.
INSTALLATION: Fixed shipboard.
TYPE OF SIGNAL: C-w, m-e-w.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cabinet (overall)</td>
<td>45 7/8 x 13 1/4 x 20 1/2</td>
<td>135</td>
</tr>
<tr>
<td>Motor generator</td>
<td>14 1/8 x 27 3/4 x 8 3/4</td>
<td>225</td>
</tr>
<tr>
<td>Transmitter</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Amplifier Equipment AN/TRA-1(*) represents Amplifier Equipment AN/TRA-1, -1A, -1B, and -1C. Amplifier Equipment AN/TRA-1(*) consists of Amplifier AM-8A/TRA-1, Power Supply PP-13A/TRA-1, and accessory components and spare parts for maintenance.

This equipment is used in conjunction with Radio Transmitter T-14A/TRC-1 to increase the power output of the transmitter to 250 watts. It is used where more power is required to maintain good communication under adverse conditions, such as unfavorable terrain or long spans between stations.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: Amplifier AM-8/TRA-1: 70 to 100 mc.

ANTENNA: Use 3-element directional array supplied with AN/TRC-1 (*), -3 (*), and -4 (*) equipments.

TYPE MODULATION: Will handle the four voice channels provided by the transmitter of the AN/TRC-1, -3, and -4 equipments.

POWER SOURCE: Power Unit PE-75, or 115-v, 60-eye a-e commercial power.

POWER OUTPUT:
Amplifier AM-8/TRA-1: 2.30 w max.
Power Supply PP-13/TRA-1:
ac, 115 v, 50 to 60 cye, 175 w.
bia, 100 v dc.
dc, +450 v, 40 ma; +1,000 v, 250 ma.

NUMBER OF TUBES:
Amplifier AM-8/TRA-1: 5.
Power Supply PP-13/TRA-1: 3.

GENERAL APPLICATION

USE: This equipment is used in conjunction with Radio Transmitter T-14/TRC-1 to increase the power output of the transmitter to 2.70 w.

TO COMMUNICATE WITH: Radio Set AN/TRC-1 (*), Radio Terminal Set AN/TRC-3 (*), and Radio Relay Set AN/TRC-4 (*).

INSTALLATION: Transported in vehicle. Installed and operated on ground.

TYPE OF SIGNAL: Voice (f-m) as provided by Radio Transmitter T-14/TRC-1.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amplifier AM-8/TRA-1</td>
<td>10 1/4 x 13 1/4 x 19 1/4</td>
<td>48</td>
</tr>
<tr>
<td>Power Supply PP-13/TRA-1</td>
<td>9 1/2 x 14 x 25</td>
<td>130</td>
</tr>
<tr>
<td>Case CY-15/TRA-1 (for amplifier)</td>
<td>17 3/4 x 16 x 22 1/2</td>
<td>40</td>
</tr>
<tr>
<td>Case CY-16/TRA-1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cord CG-107/U</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

<table>
<thead>
<tr>
<th>Unpacked</th>
<th>Exported</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total weight (lb)</td>
<td>430</td>
</tr>
<tr>
<td>Total volume (cu ft)</td>
<td></td>
</tr>
</tbody>
</table>
Remote Control Equipment AN/TRA-2 consists of two major components, Remote Control Unit C-112/TRA-2 and Control Unit C-113/TRA-2. The remote control equipment is used with but is not a part of Radio Sets AN/TRC-1(§) and AN/TRC-8.

Control Unit C-113/TRA-2 is located at the transmitter, while Remote Control Unit C-112/TRA-2 is located at a remote point. This provides press-to-talk control of the radio set on a two- or four-wire basis; it limits the transmission input into the radio transmitter; it provides for listening at the remote station with either headphone or loudspeaker; it provides for intercommunication between attendants; it has automatic radio repeater operations and manual volume control at the remote station, with facilities for three attendants at the remote station.

When the radio receiver and transmitter are closely associated, two-wire operation is provided; when they are not located together or when two frequencies are used, four-wire operation is provided.
TECHNICAL CHARACTERISTICS

POWER SOURCE: 115- or 230-v, 50- to 60-cyc, ac.
RANGE: ½ mi (approx).
NUMBER OF TUBES: 0.

GENERAL APPLICATION

USE: Provides for remote control of Radio Set AN/TRC-1 or equivalent radio communication equipment.
INSTALLATION: Portable or fixed.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remote Control Unit C-112/TRA-2</td>
<td>9 x 12 x 12</td>
<td>20</td>
</tr>
<tr>
<td>Control Unit C-113/TRA-2</td>
<td>9 x 12 x 12</td>
<td>20</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

<table>
<thead>
<tr>
<th></th>
<th>Domestic pack</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total weight (lb)</td>
<td>98</td>
</tr>
<tr>
<td>Total volume (cu ft)</td>
<td>5</td>
</tr>
</tbody>
</table>

Radio Set AN/TRC-1(*) represents Radio Sets AN/TRC-1, -1A, -1B, -1C, -1D, -1E, -1F, and -1G. Radio Set AN/TRC-1(*) consists of Radio Receiver R-19/TRC-1(*), Radio Transmitter T-14/TRC-1(*), three Antenna Systems AS-19/TRC-1(*), (two in use, one spare), Power Unit PE-75, and accessory components.

Radio Set AN/TRC-1(*) is a ground transportable set, and is intended for either point-to-point or radio relay application. It provides single-channel communication in both directions simultaneously (duplex operation), or single-channel communication in one direction at a time (simplex operation).

Radio Set AN/TRC-1(*) may also be used with telephone carrier terminal equipment to provide multichannel communication when continuous service is not required.

Continuous 24-hour service is not intended for this radio set; therefore no spare transmitters or receivers are provided, and the maintenance equipment is limited in extent.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 70 to 100 mc (300 channels).
NUMBER OF CRYSTALS: Bank of 16 per set (in each transmitter and receiver).
PRESET FREQUENCIES: 1 receiving and 1 transmitting.
ANTENNA: 3-element directional array (included in Antenna System AS-19/TRC-1(*)),
TYPE MODULATION: Frequency (receiver and transmitter).
FREQUENCY CONTROL: Crystal (receiver and transmitter).
POWER SOURCE: 115-v, 60-cyc, a-c commercial power or Power Unit PE-75.
POWER OUTPUT: High power: 50 w. Low power: 10 w.
RANGE: 25 mi (line of sight).
NUMBER OF TUBES: 17 in receiver. 11 in transmitter.

GENERAL APPLICATION

USE: for either point-to-point or radio-relay application.
Used with Carrier Equipment CF-1 and CF-2 to provide multichannel service.

TO COMMUNICATE WITH: Radio Set AN/TRA-1(*), Radio Terminal Set AN/TRA-3(*), and Radio Relay Set AN/TRA-4(*).
INSTALLATION: Transported by vehicle. Installed and operated on ground.

TYPE OF SIGNAL: Voice (f-m):
Microphone channel: 250 to 2,500 cyc.
High fidelity channel: 2,500 to 12,000 cyc.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Radio Receiver R-19/TRC-1(*)</td>
<td>8 x 10 1/4 x 12 3/4</td>
<td>43</td>
</tr>
<tr>
<td>1 Radio Transmitter T-14/TRC-1(*)</td>
<td>10 1/4 x 19 3/4 x 12 3/4</td>
<td>66</td>
</tr>
<tr>
<td>1 Antenna System AS-19/TRC-1(<em>), packed in: 3 cases CY-29/TRC-1(</em>) (two in use, one spare)</td>
<td>13 3/4 x 7 1/2 x 17 1/2</td>
<td>380 ea</td>
</tr>
<tr>
<td>3 Cases CY-30/TRC-1(*) (two in use, one spare)</td>
<td>13 3/4 x 33 1/2 x 16</td>
<td>90 ea</td>
</tr>
<tr>
<td>(Radio Sets AN/TRC-1F and -1G use a redesigned antenna packed in Case CY-443/TRC-1(<em>), Bag BG-102, and Carrying Frame CY-445/TRC-1(</em>))</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>1 Antenna Extension Kit MX-141/TRC-1(*)</td>
<td>26 1/2 x 36 x 19 1/2</td>
<td>330</td>
</tr>
<tr>
<td>1 Power Unit PE-75</td>
<td>1,435</td>
<td>2,000</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

<table>
<thead>
<tr>
<th>Total weight (lb)</th>
<th>Unpacked</th>
<th>Export pack</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,435</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total volume (cu ft)</td>
<td></td>
<td>78</td>
</tr>
<tr>
<td>Ship tons</td>
<td>2.0</td>
<td></td>
</tr>
</tbody>
</table>

44
Radio Terminal Set AN/TRC-3(*) represents Radio Terminal Sets AN/TRC-3, -3A, -3B, -3C, -3D, -3E, -3F, and -3G.

Radio Terminal Set AN/TRC-3(*) consists of two Radio Receivers R-19/TRC-1(*) (one in use, one spare), two Radio Transmitters T-14/TRC-1(*) (one in use, one spare), three Antenna Systems AS-19/TRC-1(*) (two in use, one spare), four Power Units PE-75 (two in use, two spare), and accessory components and spare parts for maintenance.

The components of Radio Set AN/TRC-3(*), except in quantity, are identical with those used in Radio Sets AN/TRC-1, -1A, -1B, -1C, -1D, -1E, -1F, and -1G.

This equipment is intended for operation at the terminals of single or multichannel radio-relay systems when continuous operation is required.

Components not in use are running spares which are supplied to insure uninterrupted service in case of failure of a major component.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 70 to 100 mc (300 channels).
NUMBER OF CRYSTALS: 964. (Bank of 900 on 300
frequencies, plugs 64 crystals on 16 basic frequencies.)
PRESET FREQUENCIES: 1 receiving and 1 transmitting.
ANTENNA: 3-element directional array (included in Antenna System AS-19/TRC-1(*)). Normally mounted 40 ft
above ground.
TYPE MODULATION: Frequency.
FREQUENCY CONTROL: Crystal (receiver and transmitter).
POWER SOURCE: 115-v, 60-cycle a-c commercial power of Power Unit PE-75. Test Set I-56-K: 1 each Batteries
POWER OUTPUT: High power: .50 w. Low power: 10 w.
RANGE: 21 mi per link (line of sight).
NUMBER OF TUBES:
Radio Receiver R-19/TRC-1(*): 17 (in each).
Radio Transmitter T-14/TRC-1(*): 11 (in each).

GENERAL APPLICATION
USE: To provide a single or multichannel terminal of radio-relay system when continuous operation is required.
TO COMMUNICATE WITH: Radio Set AN/TRC-1(*),
Radio Terminal Set AN/TRC-3(*), Radio Relay Set
AN/TRC-4(*).
INSTALLATION: Transported by vehicle. Installed and operated on ground.
TYPE OF SIGNAL: Voice (f-m)

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Radio Receivers R-19/TRC-1(*)</td>
<td>8 x 19 1/8 x 12 3/4</td>
<td>43 ea</td>
</tr>
<tr>
<td>2 Radio Transmitters T-14/TRC-1(*)</td>
<td>10 1/4 x 19 1/8 x 12 3/4</td>
<td>66 ea</td>
</tr>
<tr>
<td>1 Antenna System AS-19/TRC-1(*)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Cases CY-29/TRC-1 (*) (2 in use, 1 spare)</td>
<td>13 1/4 x 7 1/2 x 17 1/2</td>
<td>380 ea</td>
</tr>
<tr>
<td>3 Cases CY-30/TRC-1 (*) (2 in use, 1 spare)</td>
<td>13 1/4 x 33 1/2 x 16</td>
<td>90 ea</td>
</tr>
<tr>
<td>Radio Terminal Sets AN/TRC-3F and AN/TRC-3G use a directional antenna packed in Case CY-445/TRC-1(<em>), Bag BG-102, and Carrying Frame CY-445/TRC-1(</em>).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 Power Units PE-75 (2 in use, 2 spare)</td>
<td>26 1/4 x 36 x 19 1/2</td>
<td>330 ea</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

<table>
<thead>
<tr>
<th>Total weight (lb)</th>
<th>Unpacked</th>
<th>Export packed</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,560</td>
<td>3,150</td>
<td></td>
</tr>
</tbody>
</table>

| Total volume (cu ft) | | |
|----------------------| | 132 |

| Ship tons | | 3.3 |
Figure 24. Radio Relay Set AN/TRC-4, components.


Radio Relay Set AN/TRC-4-(*)) represents Radio Relay Sets AN/TRC-4, -4A, -4B, -4C, -4D, and -4E.

Radio Relay Set AN/TRC-4-(*)) consists of three Radio Receivers R-19(*)/TRC-1 (two in use, one spare), three Radio Transmitters T-14(*)/TRC-1 (two in use, one spare), six Antenna Systems AS-19(*)/TRC-1 (four in use, two spare), four Power Units PE-75 (two in use, two spare), and accessory components and spare parts for maintenance.

This equipment is intended for operation as a relay station of a single or multichannel radio-relay communication system when continuous operation is required.

Running spares and maintenance equipment are furnished to insure uninterrupted service in case of failure of a major component.
TECHNICAL CHARACTERISTICS

INSTALLATION: Transported by vehicle. Installed and operated on ground.

NUMBER OF CRYSTALS: 96 with set, on 16 basic frequencies.

PRESET FREQUENCIES: 1 receiving and 1 transmitting.

ANTENNA: 3-element directional array.

TYPE MODULATION: Frequency.

FREQUENCY CONTROL: Crystal (receiver and transmitter).

POWER SOURCE: 115-v. a-c, 60-cycle single-phase, commercial power or Power Unit PE-75.

POWER OUTPUT: High power: 70 w. Low power: 10 w.

NUMBER OF CRYSTALS: 96 with set, on 16 basic frequencies.

FREQUENCY CONTROL: Crystal (receiver and transmitter).

POWER SOURCE: 115-v. a-c, 60-cycle single-phase, commercial power or Power Unit PE-75.

POWER OUTPUT: High power: 70 w. Low power: 10 w.

NUMBER OF CRYSTALS: 96 with set, on 16 basic frequencies.

GENERAL APPLICATION

USE: To provide an independent 3-way, 4-channel radio repeater station with sufficient spare equipment to insure 24-hour-a-day continuous service.

TO COMMUNICATE WITH: Radio Set AN/TRC-1(*), Radio Terminal Set AN/TRC-3(*), and Radio Relay Set AN/TRC-4(*).

INSTALLATION: Transported by vehicle. Installed and operated on ground.

NUMBER OF CRYSTALS: 96 with set, on 16 basic frequencies.

PRESET FREQUENCIES: 1 receiving and 1 transmitting.

ANTENNA: 3-element directional array.

TYPE MODULATION: Frequency.

FREQUENCY CONTROL: Crystal (receiver and transmitter).

POWER SOURCE: 115-v. a-c, 60-cycle single-phase, commercial power or Power Unit PE-75.

POWER OUTPUT: High power: 70 w. Low power: 10 w.

NUMBER OF CRYSTALS: 96 with set, on 16 basic frequencies.

FREQUENCY CONTROL: Crystal (receiver and transmitter).

POWER SOURCE: 115-v. a-c, 60-cycle single-phase, commercial power or Power Unit PE-75.

POWER OUTPUT: High power: 70 w. Low power: 10 w.

NUMBER OF CRYSTALS: 96 with set, on 16 basic frequencies.

GENERAL APPLICATION

USE: To provide an independent 3-way, 4-channel radio repeater station with sufficient spare equipment to insure 24-hour-a-day continuous service.

TO COMMUNICATE WITH: Radio Set AN/TRC-1(*), Radio Terminal Set AN/TRC-3(*), and Radio Relay Set AN/TRC-4(*).

INSTALLATION: Transported by vehicle. Installed and operated on ground.

NUMBER OF CRYSTALS: 96 with set, on 16 basic frequencies.

PRESET FREQUENCIES: 1 receiving and 1 transmitting.

ANTENNA: 3-element directional array.

TYPE MODULATION: Frequency.

FREQUENCY CONTROL: Crystal (receiver and transmitter).

POWER SOURCE: 115-v. a-c, 60-cycle single-phase, commercial power or Power Unit PE-75.

POWER OUTPUT: High power: 70 w. Low power: 10 w.

NUMBER OF CRYSTALS: 96 with set, on 16 basic frequencies.

FREQUENCY CONTROL: Crystal (receiver and transmitter).

POWER SOURCE: 115-v. a-c, 60-cycle single-phase, commercial power or Power Unit PE-75.

POWER OUTPUT: High power: 70 w. Low power: 10 w.

NUMBER OF CRYSTALS: 96 with set, on 16 basic frequencies.

GENERAL APPLICATION

USE: To provide an independent 3-way, 4-channel radio repeater station with sufficient spare equipment to insure 24-hour-a-day continuous service.

TO COMMUNICATE WITH: Radio Set AN/TRC-1(*), Radio Terminal Set AN/TRC-3(*), and Radio Relay Set AN/TRC-4(*).
Radio Set AN/TRC-6(XC-6) represents Radio Sets AN/TRC-6(XC-2), AN/TRC-6(XC-3), and modifications thereof which include Radio Set AN/TRC-6.

Radio Set AN/TRC-6(*) is a combined radio transmitter and radio receiver with facilities for providing eight two-way voice channels between two points over an unobstructed line of sight transmission path.

The radio sets are used in pairs and may be terminated in v-f (voice-frequency) wire lines, field switchboards, or telephone and telegraph carrier equipment. Since the distance between sets is limited by the curvature of the earth, two or more radio links may be connected back to back in a tandem arrangement to provide a longer radio circuit.

Radio Set AN/TRC-6(*) makes use of what is commonly called "pulse transmission." Multiplex Unit MX-106/TRC-6(*) translates the v-f signals of the eight channels into pulse-position-modulated time division signal for transmission over the radio link.

TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 4,350 to 4,800 mc in 4 bands.
RINGING ON CHANNELS: 20 eye into radio channel;
20 eye out of radio channel.
ANTENNA: Parabolic reflector, waveguide feed.
TYPE MODULATION: Pulse-position (multiplex).
FREQUENCY CONTROL: Automatic frequency control
in the receiver.
NUMBER OF VHF CHANNELS: 8.
NUMBER OF TELEGRAPH CHANNELS: 1 de
grounded telegraph circuit may connect to any v hf chan
nel. Any voice channel may be replaced by Telegraph
Carrier CF-1 or equivalent.
POWER SOURCE: 11.5v, 60-eye supply.
POWER OUTPUT: Rectifier Power Unit PP-70/TRC-
6(*) +300 w.
RANGE: Single link, 25 to 70 mi line of sight. Average
system (- radio links), 100 to 200 mi.
NUMBER OF TUBES: 154.

GENERAL APPLICATION

USE: Provides 8 two-way voice channels between two
points, line of sight radio transmission path.
TO COMMUNICATE WITH: Radio Set AN/TRC-6(*).
INSTALLATION: Transported in vehicles. Installed and
operated en ground as fixed station.
TYPE OF SIGNAL: Pulse transmission.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Radio Transmitters T-37/ TRC-6(*)</td>
<td>13½ x 18 x 17</td>
<td>45</td>
</tr>
<tr>
<td>1 Tower AB-19/TRC-6(*)</td>
<td>70 feet</td>
<td>530</td>
</tr>
<tr>
<td>3 Antennas AT-47/TRC-6 (*) (waveguide)</td>
<td>4½ x 2½ x 21½</td>
<td>1.5</td>
</tr>
</tbody>
</table>
| 2 Receiver Converter CV- 
210/TRC-6(*) | 12½ x 13 x 12½ | 20 |
| 1 Power Control Box MX- 
120/TRC-6(*) | 10½ x 10½ x 21½ | 153 |
| 1 Rectifier Power Unit PP- 
50/TRC-6(*) | 3½ x 7 x 19 | 7 |
| 2 Rectifier Power Unit PP- 
69/TRC-6(*) | 8½ x 9 x 19 | 52 |
| 4 Rectifier Power Unit PP- 
70/TRC-6(*) | 8½ x 9 x 19 | 53.5 |
| 2 i-F Amplifier AM-30/ 
TRC-6(*) | 19 x 13½ x 20 | 112 |
| 2 Video Amplifiers AM-31/ 
TRC-6(*) | 5½ x 4½ x 19 | 5.5 |
| 1 Video Repeater MX-107/ 
TRC-6(*) | 14½ x 9 x 19 | 55 |
| 1 Binding Post and Circuit 
Breaker P:nel J-34/TRC-
6(*) | 5½ x 7 x 19 | 16 |

WEIGHT

Total weight (lb) ........................................... 4,684


Radio Set AN/TRC–8 is intended for point-to-point or radio-relay application to provide either single-channel or multichannel communication in both directions simultaneously. Spare components are not included in Radio Set AN/TRC–8 because the set is not intended for continuous uninterrupted operation.

Reliable range is 25 miles over flat terrain. Satisfactory communication can be attained as far as 100 miles when advantage is taken of high points in terrain and when a line of sight path exists between transmitter and receiver.

This equipment is intended for use as a fixed field station and not for mobile operation, but all components are transportable in a standard military 3½-ton truck or 1-ton trailer.

This radio set may be installed by a crew of four men in approximately 1 hour after arrival at the operating site, if the equipment has previously been removed from packing cases.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 230 to 250 mc.
NUMBER OF CRYSTALS: None.
PRESET FREQUENCIES: None.

TYPE MODULATION: Receiver: frequency ±100 kc deviation. Transmitter: frequency ±100 kc deviation (100% modulation).
FREQUENCY CONTROL: Tunable resonant line.
POWER SOURCE: Power Unit PE-75, or 120-v, 60-cyc commercial power.
POWER OUTPUT: 12 w.
RANGE: 25 to 100 mi, line of sight.
NUMBER OF TUBES: 23.

GENERAL APPLICATION

USE: To provide four-channel carrier telephone and telegraph service, or, single-channel, point-to-point radio-relay service. Used to extend wire lines where speed of movement prohibits line construction, and to bridge water gaps.

TO COMMUNICATE WITH: Radio Set AN/TRC-8, Radio Terminal Set AN/TRC-11, and Radio Relay Set AN/TRC-12.

INSTALLATION: Transported by truck or trailer. Installed and operated as fixed field station.

TYPE OF SIGNAL: Voice or multichannel telephone, telegraph, or facsimile f-m.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Radio Receiver R-48/TRC-8, cased with tools and operating components</td>
<td>23 x 16 x 19</td>
<td>126</td>
</tr>
<tr>
<td>1 Radio Transmitter T-30/TRC-8, cased with Power Pack PP-115/TRC-8</td>
<td>17½ x 16 x 24½</td>
<td>135</td>
</tr>
<tr>
<td>2 Antenna Assemblies AS-52/TRC-8, cased</td>
<td>33½ x 14 x 24</td>
<td>110</td>
</tr>
<tr>
<td>1 Power Unit PE-75</td>
<td>36 x 19 x 27</td>
<td>325</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

<table>
<thead>
<tr>
<th></th>
<th>Unpacked</th>
<th>Domestic pack</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total weight (lb)</td>
<td>1,237</td>
<td>1,250</td>
</tr>
<tr>
<td>Total volume (cu ft)</td>
<td>48</td>
<td></td>
</tr>
<tr>
<td>Ship tons</td>
<td></td>
<td>1.8</td>
</tr>
</tbody>
</table>
Radio Terminal Set AN/TRA-11 consists of two Radio Receivers R-48/TRC-8 (one in use, one spare), two Radio Transmitters T-30/TRC-8 (one in use, one spare), two Power Packs PP-115/TRC-8 (one in use, one spare), two Antenna Assemblies AS-52/TRC-8, two 40-foot Antenna Supports AB-48/TRC-8, three Power Units PE-75 (two in use, one spare), and spare parts for maintenance.

Components are identical to those used in Radio Set AN/TRC-8.

Radio Terminal Set AN/TRA-11 is intended for operation at the terminals of single-channel or multichannel radio relay systems when continuous operation is required.

Components not in use are running spares of maintenance equipment supplied to insure uninterrupted service in the case of failure of a basic component.

Radio Terminal Set AN/TRA-11 can be installed in 1 hour by four men.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 230 to 2,000 mc.
NUMBER OF CRYSTALS: None.
PRESET FREQUENCIES: None.
TYPE MODULATION: Receiver: frequency ±100 kc deviation. Transmitter: frequency ±100 kc deviation. (100 percent modulation.)
FREQUENCY CONTROL: Tunable resonant line.
POWER SOURCE: Power Unit PE-75 or commercial power 120-v, 60-ycle.
POWER OUTPUT: 12 w.
RANGE: 27 to 100 mi, line of sight.
NUMBER OF TUBES: 23.

GENERAL APPLICATION

USE: To provide four-channel carrier telephone and telegraph service or single-channel point-to-point radio relay service. Used to extend wire lines where speed of movement prohibits line construction and to bridge water gaps.
TO COMMUNICATE WITH: Radio Set AN/TRC-8, Radio Terminal Set AN/TRC-11, and Radio Relay Set AN/TRC-12.
INSTALLATION: Transported by truck or trailer. Installed and operated as fixed field station.

TYPE OF SIGNAL: Voice, or multichannel telephone, telegraph or facsimile, fm.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Radio Receiver R-48/TRC-8, cased with tools and operating components</td>
<td>23 x 16 x 19</td>
<td>126</td>
</tr>
<tr>
<td>1 Radio Transmitter T-30/TRC-8, cased with Power Pack PP-115/TRC-8</td>
<td>17½ x 16 x 24½</td>
<td>135</td>
</tr>
<tr>
<td>2 Antenna Assemblies AS-52/TRC-8, cased</td>
<td>33½ x 14 x 24</td>
<td>110</td>
</tr>
<tr>
<td>1 Power Unit PE-75</td>
<td>36 x 19 x 27</td>
<td>325</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

<table>
<thead>
<tr>
<th>Total weight (lb)</th>
<th>Domestic pack</th>
<th>2,300</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total volume (cu ft)</td>
<td>76</td>
<td></td>
</tr>
<tr>
<td>Ship tons</td>
<td>1.9</td>
<td></td>
</tr>
</tbody>
</table>

Radio Relay Set AN/TRC-12 consists of three Radio Receivers R-48/TRC-8 (two in use, one spare), three Radio Transmitters T-30/TRC-8 (two in use, one spare), four Antenna Assemblies AS-52/TRC-8, four Antenna Supports AB-48/TRC-8, three Power Units PE-75 (two in use, one spare), and sufficient spare parts for maintenance.

This equipment is intended for operation as a relay station of a single-channel or multichannel radio relay communication system when continuous operation is important.

Running spares and maintenance equipment have been selected to insure uninterrupted service in case of failure of a basic component.

Radio Relay Set AN/TRC-12 can be installed in 2 hours by four men.

Note. A complete radio relay system requires a Radio Terminal Set AN/TRC-11 at both ends, and from one to seven Radio Relay Sets AN/TRC-12 between them.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 230 to 250 mc.
NUMBER OF CRYSTALS: None.
PRESET FREQUENCIES: None.
TYPE MODULATION: Receiver: frequency ±100 kc deviation. Transmitter: frequency ±100 kc deviation (100 percent modulation).
FREQUENCY CONTROL: Tunable resonant line.
POWER SOURCE: Power Unit PE-75, or commercial power 120-v, 60-cyc.
POWER OUTPUT: 12 w.
RANGE: 25 to 100 mi, line of sight.
NUMBER OF TUBES: 23.

GENERAL APPLICATION

USE: To provide four-channel carrier telephone and telegraph carrier service or single-channel point-to-point radio relay service. Used to extend wire lines where speed of movement prohibits line construction, and to bridge water gaps.

TO COMMUNICATE WITH: Radio Set AN/TRC-8, Radio Terminal Set AN/TRC-11, and Radio Relay Set AN/TRC-12.
INSTALLATION: Transported by truck or trailer. Installed and operated as fixed field station.
TYPE OF SIGNAL: Voice or multichannel telephone, telegraph or facsimile, f.m.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Radio Receivers R-48/TRC-8,</td>
<td>23 x 16 x 19</td>
<td>126</td>
</tr>
<tr>
<td>eased with tools and operating</td>
<td></td>
<td></td>
</tr>
<tr>
<td>components</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Radio Transmitters T-30/</td>
<td>17½ x 16 x 24½</td>
<td>135</td>
</tr>
<tr>
<td>TRC-8, eased with Power</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pack PP-215/TRC-8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 Antenna Assemblies AS-52/</td>
<td>33½ x 14 x 24</td>
<td>110</td>
</tr>
<tr>
<td>TRC-8, eased</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Power Units PE-75</td>
<td>36 x 10 x 27</td>
<td>32½</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

<table>
<thead>
<tr>
<th></th>
<th>Domestic/</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total weight (lb)</td>
<td>3,150</td>
<td></td>
</tr>
<tr>
<td>Total volume (cu ft)</td>
<td>101</td>
<td></td>
</tr>
<tr>
<td>Ship tons</td>
<td>2.525</td>
<td></td>
</tr>
</tbody>
</table>
Radio Control Central AN/TRQ-1 is a four-position, radio-control and intercept station, and is intended to be used in conjunction with Radio Set AN/MRQ-2. The entire radio equipment is installed in Shelter II-O-17, which is usually mounted in a 2½ ton, 6 x 6 cargo truck. Power Unit PE-95 is installed in Trailer K-52-E.

The control central has four operating positions, each position having provision for wire communication with, and remote control of, the transmitting station. Radio Set AN/MRQ-2 is located within a mile radius of the control central. Three of the operating positions have as required equipment: two medium-frequency monitoring receivers, a remote-control unit, and a typewriter for maintaining a log of operations and for transcribing messages. The fourth position has two h-f monitoring receivers, a 12-position telephone switchboard with terminal facilities for 8 telephone circuits, a remote-control unit, a typewriter, a receiver-transmitter set for communication with other control centers, and a frequency meter for general utility use in all four positions. Other standard components are a 12-volt storage battery and charger, an antenna coupling unit for coupling three receivers to a single antenna, and an interphone control box for operation of Radio Set SCR-828 from the truck cab.

TECHNICAL CHARACTERISTICS

ANTENNA: Four antennas are provided: Three whip antennas and an auxiliary Antenna Assembly AS-93/-MRQ-2, which consists of a horizontal, mast-supported, single-wire antenna, and counterpoise combination.

TYPE MODULATION: Amplitude and frequency.

POWER SOURCE: 115-v, 60-eye, a-c, supplied by Power Unit PE-95 in Trailer K-52-E, or a 12-v storage battery, or self-contained battery.

POWER OUTPUT: 35 w, from Radio Set SCR-828.

RANGE: Dependent upon antenna used, frequency, and ionospheric conditions.

GENERAL APPLICATION

USE: Four-position, radio-control and intercept station.

TO COMMUNICATE WITH: Similar installations, or fan units in the 27 to 38.9 me band.

INSTALLATION: Usually mounted on a 2½-ton, 6 x 6 cargo truck. (Power Unit PE-95, installed in Trailer K-52-E.)

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 Radio Receivers BC-342</td>
<td>10 x 9 ¼ x 18 ½</td>
<td>61.5</td>
</tr>
<tr>
<td>3 Radio Receivers BC-344</td>
<td>10 x 9 ¼ x 18 ½</td>
<td>61.5</td>
</tr>
<tr>
<td>1 Radio Receiver R-137/G</td>
<td>9 ¼ x 21 ¼ x 14 ½</td>
<td>78</td>
</tr>
<tr>
<td>1 Radio Receiver BC-794</td>
<td>24 ¾ x 20 ½ x 15 ½</td>
<td>90</td>
</tr>
<tr>
<td>1 Radio Receiver BC-923-A</td>
<td>11 ¾ x 12 ¾ x 6 ¾</td>
<td>42</td>
</tr>
<tr>
<td>1 Radio Transmitter BC-924-A</td>
<td>11 ½ x 10 ½ x 18 ½</td>
<td>49</td>
</tr>
<tr>
<td>1 Power Supply Unit RA-84.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Dynamoter DM-64.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Dynamoter DM-65.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 Remote Control Units C-103/TRQ-1.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Antenna Coupling Unit CU-23/TRQ-1.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

<table>
<thead>
<tr>
<th>Description</th>
<th>Unpacked</th>
<th>Domestic pack</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total weight (lb)</td>
<td>3,785</td>
<td>4,500</td>
</tr>
<tr>
<td>Total volume (cu ft)</td>
<td>160</td>
<td>225</td>
</tr>
<tr>
<td>Ship tons</td>
<td>4</td>
<td>3.5</td>
</tr>
</tbody>
</table>
Figure 30. Radio Receiver BC-603, component of Radio AN/TRR-3.


Radio Set AN/TRR-3 provides frequency-modulated radiotelephone reception facilities for car, platoon, company, battalion, and regimental commanders and staff officers. This set may be installed and operated in combat vehicles such as tanks, half-track, scout, and command cars, or in any other authorized vehicle. It is used for monitoring Radio Sets SCR-506 and SCR-528.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 20 to 27.6 mc.
NUMBER OF CRYSTALS: None.
PRESET FREQUENCIES: 10.
ANTENNA: Whip.
TYPE MODULATION: Frequency.
POWER SOURCE: 12 or 24-v vehicular battery.
POWER OUTPUT: Speaker: 2 w; Headset: 0.2 w.
RANGE: Short and medium.
NUMBER OF TUBES: 10.

GENERAL APPLICATION

USE: Reception of signals and monitoring Radio Sets SCR-508 and SCR-523.
TO COMMUNICATE WITH: Receivers within frequency range 20 to 27.9 mc.

INSTALLATION: Vehicular.
TYPE OF SIGNAL: F-m, radiotelephone.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio Receiver RC-603</td>
<td>11 1/4 x 6 3/4 x 12 1/2</td>
<td>35</td>
</tr>
<tr>
<td>Dynamotor DM-34 (for 12-v operation)</td>
<td>4 1/2 x 3 x 6 1/2</td>
<td>4.7</td>
</tr>
<tr>
<td>Dynamotor DM-36 (for 24-v operation)</td>
<td>4 1/2 x 3 x 6 1/2</td>
<td>4.7</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

<table>
<thead>
<tr>
<th></th>
<th>Unpacked</th>
<th>Domestic pack</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total weight</td>
<td>39.7</td>
<td>45</td>
</tr>
<tr>
<td>Total volume (cu ft)</td>
<td>0.6</td>
<td>2</td>
</tr>
</tbody>
</table>
Figure 31. Radio Set AN/VRC-1, prepared for mobile operation.


Radio Set AN/VRC-1 is a combination h-f and v-h-f radio set designed for installation in truck, 1/4-ton, 4 x 4, and for operation from a 12-volt vehicular storage battery.

The h-f section uses Radio Set SCR-193; the v-h-f section uses Radio Set SCR-542. Both sections are mounted in Cabinet CH-217.

Radio Set AN/VRC-1 is designed for use by United States Air Force ground organizations in the control of tactical aircraft. The h-f section is normally used for communication within a ground point-to-point net, although use as a beacon for compass-equipped aircraft and for communication with h-f equipped aircraft is also practicable.

The v-h-f section is normally used for ground-air communication with aircraft fitted with v-h-f equipment.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 3.0 to 6.2 mc and 100 to 156 mc.
NUMBER OF CRYSTALS: Radio Set SCR-542: 8 crystals units DC-11.
PRESET FREQUENCIES:
- Radio Set SCR-193:
- Radio Set SCR-542:
ANTENNA: Vertical rod type, 15-ft whip MS-116 to MS-118 inclusive or Radio Transmitter BC-191 3-ft whip MS-118.

TYPE MODULATION: Amplitude.
FREQUENCY CONTROL: Radio Transmitter BC-191: Mo.
POWER SOURCE: 12-v vehicular storage batteries and dynamotors. H-f section—
- Radio Set SCR-542: Dynamotor PE-98.
RANGE: Variable, dependent upon frequency used and ionospheric conditions.
NUMBER OF TUBES:

GENERAL APPLICATION

USE: Ground-to-air and ground-to-ground communication.
INSTALLATION: Ground, mobile; installed and operated in vehicle.
TYPE OF SIGNAL: C-w, tone, voice.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio Set SCR-193</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Radio Transmitter BC-191</td>
<td>21⅔ x 23½ x 19⅓</td>
<td>55</td>
</tr>
<tr>
<td>Radio Receiver BC-312</td>
<td>10 x 9½ x 18⅕</td>
<td>58</td>
</tr>
<tr>
<td>Dynamotor BD-77</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Radio Set SCR-542</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Radio Transmitter BC-625</td>
<td>16⅔ x 10⅔ x 12⅔</td>
<td>7</td>
</tr>
<tr>
<td>Radio Receiver BC-624</td>
<td>8⅔ x 8⅔ x 15⅔</td>
<td>7</td>
</tr>
<tr>
<td>Dynamotor PE-98</td>
<td>6⅔ x 8½ x 12⅔</td>
<td>37</td>
</tr>
<tr>
<td>Radio Control Box BC-602</td>
<td>2½ x 5½ x 7½</td>
<td>2.5</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

<table>
<thead>
<tr>
<th></th>
<th>Unpacked</th>
<th>Domestic pack</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total weight (lb)</td>
<td>343</td>
<td>475</td>
</tr>
<tr>
<td>Total volume (cu ft)</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>Ship tons</td>
<td>0.6</td>
<td></td>
</tr>
</tbody>
</table>
**Status:** Standard. **Stock No.:** 2S4502–2. **Reference:** TM 11-607.

Radio Set AN/VRC–2 (Galvin type FMTR–25–VM) is a vehicular, voice-operated, f-m radio set used as a military police vehicular guard radio. It is capable of working with civil police equipment.

The receiver is crystal-controlled and pretuned to receive signals on one frequency. Power is obtained from a 6-volt storage battery through a vibrator power supply which is mounted on the receiver chassis. The transmitter is also pretuned to transmit signals on one frequency. Another crystal must be substituted and the transmitter must be retuned before signals at another frequency can be transmitted. A 6-volt vibrator power supply, mounted on the transmitter chassis, furnishes the voltage for the operation of the transmitter.

Both transmitter and receiver use a single antenna for transmitting and receiving. The antenna is switched by an antenna relay located in the transmitter. Control of the relay and of the power to the transmitter and receiver is accomplished at the control head located at the operator’s position.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 30 to 40 mc.


ANTENNA: ¼-wave telescopic whip.

TYPE MODULATION: Frequency resulting from phase modulation.

FREQUENCY CONTROL: Crystal-controlled oscillator.

POWER SOURCE: 6-v storage battery.

POWER OUTPUT: 25 w.

RANGE: Line of sight.

NUMBER OF TUBES:
- Radio receiver: 13, 2 in vibrator power supply.
- Radio transmitter: 7, 2 in vibrator power supply.

GENERAL APPLICATION

USE: Short distance voice communication between vehicle and stationary sets.


INSTALLATION: Installed and operated in vehicle.

TYPE OF SIGNAL: Voice.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio Transmitter R-237/VR</td>
<td>11 ½ x 10 x 15</td>
<td>41</td>
</tr>
<tr>
<td>Radio Receiver T-193/VRC-2</td>
<td>11 ½ x 10 x 15</td>
<td>35</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

<table>
<thead>
<tr>
<th>Total weight (lb)</th>
<th>Domestic pack</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>168</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total volume (cu ft)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>8</td>
</tr>
</tbody>
</table>

Radio Set AN/VRC-3 consists of an 18-tube, low-power, battery-operated radio receiver and transmitter and accessories. It is designed for f-m, two-way communication over short distances.

Primarily intended for installation in light and medium tanks to provide communication between tanks and supporting infantry, this set is now used in vehicles only.

The complete radio set weighs approximately 34 pounds in portable use.

Radio Set AN/VRC-3 is similar to Radio Set SCR-300, with the addition of special mounting brackets for tank installation.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE:
- Transmitter: 40 to 48 mc.
- Receiver: 40 to 48 mc.

NUMBER OF CRYSTALS: 2.

PRESET FREQUENCIES: None.

ANTENNA: Whip.

TYPE MODULATION: Frequency.

FREQUENCY CONTROL: Mo.

POWER SOURCE: Power Supply PP-114/VRC-3, BA-7, or loaded Battery Case CS-139.

POWER OUTPUT:
- Transmitter: 0.3 (r.f.).
- Receiver: 2 mw (a.f.).

RANGE: 3 mi approx.

NUMBER OF TUBES: 18.

GENERAL APPLICATION

USE: To provide communication between light and medium tanks, and other vehicles.

TO COMMUNICATE WITH: Radio Sets AN/VRC-3 and SCR-300.

INSTALLATION: Vehicular operates only from 6-, 12-, and 24-v vehicular supplies.

TYPE OF SIGNAL: F.m., or voice.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio Receiver and Transmitter BC-1000-A</td>
<td>5 3/4 x 11 1/4 x 7 1/2</td>
<td>13</td>
</tr>
<tr>
<td>Mast Section MS-117.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mast Section MS-118.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mast Base AB-15/GR.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

WEIGHT

Total weight (lb) .................................................... 35 1/2

Domestic pack

Radio Set AN/VRC-5 is designed for installation and operation in combat vehicles, such as tanks, scout cars, command cars, or any other authorized vehicles. The set provides f-m radiotelephone facilities, and consists, basically, of Radio Transmitter BC-604 and Radio Receiver BC-603.

Interphone Control Box BC-606 provides separate control and connection facilities for a microphone and a headset. Several control boxes may be connected in multiple, if desired.

Radio Set AN/VRC-5 and Radio Sets SCR-528-A, -C, -D, -AM, -CM, and -DM are identical except that Radio Set AN/VRC-5 has separate mountings for the transmitter and for the receiver.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 20.0 to 27.9 me (transmitter, 30 channels).
NUMBER OF CRYSTALS: 10 (operating).
PRESET FREQUENCIES: 10.
ANTENNA: Whip, 10 ft long. Consists of Mast Sections MS-116, MS-117, and MS-118 mounted on Mast Base AB-15/GR.
TYPE: MODULATION: Frequency.
FREQUENCY CONTROL: Crystal.

POWER SOURCE:
- Radio Transmitter BC-604: 12-v vehicular battery through Dynamotor DM-34, or 24-v vehicular battery through Dynamotor DM-35.
- Radio Receiver BC-603: 12-v vehicular battery through Dynamotor DM-34, or 24-v vehicular battery through Dynamotor DM-35.

POWER OUTPUT: 30 w.
RANGE: 10 to 15 mi (approx), depending upon terrain and atmospheric conditions.

GENERAL APPLICATION

USE: Used in vehicles and armored vehicles to provide tactical control.
INSTALLATION: Installed and operated in vehicles.
TYPE OF SIGNAL: Voice.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Radio Transmitter BC-604</td>
<td>11½ x 6½ x 18</td>
<td>67</td>
</tr>
<tr>
<td>1 Radio Receiver BC-603</td>
<td>11½ x 6½ x 12½</td>
<td>35</td>
</tr>
<tr>
<td>1 Dynamotor DM-34</td>
<td>4½ x 6½ x 12½</td>
<td>4.7</td>
</tr>
<tr>
<td>1 Dynamotor DM-35</td>
<td>5½ x 4½ x 8½</td>
<td>9.2</td>
</tr>
<tr>
<td>1 Mounting PT-346 (for receiver)</td>
<td>3½ x 7 x 11¾</td>
<td>6</td>
</tr>
<tr>
<td>1 Mounting PT-508 (for transmitter)</td>
<td>4½ x 9½ x 19½</td>
<td>14.7</td>
</tr>
<tr>
<td>2 Mast Sections MS-117</td>
<td>39½ x 2½</td>
<td>0.7 (ea)</td>
</tr>
<tr>
<td>2 Mast Sections MS-118</td>
<td>39½ x 2½</td>
<td>0.8 (ea)</td>
</tr>
<tr>
<td>1 Mast Base AB-15/GR</td>
<td>15</td>
<td>2</td>
</tr>
<tr>
<td>1 Interphone Control Box</td>
<td>4½ x 2½ x 4½</td>
<td>1.8</td>
</tr>
</tbody>
</table>

68
Radio Transmitting Set AN/VRT-1 (Kaar type PTS-22X) is an a-m transmitting set designed and constructed for mobile use in motor vehicles.

The transmitter chassis is mounted on a special shock-mounted cradle. Transmitter operation is controlled through a remote-control unit which is installed in the driver's compartment. The transmitter uses an oscillator, multiplier, plate-modulated, power-amplifier circuit.

TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 30 to 40 mc.
NUMBER OF CRYSTALS: 1 (operating).
PRESET FREQUENCIES: 1.
ANTENNA: Whip.
TYPE OF MODULATION: Amplitude.
FREQUENCY CONTROL: Crystal.
POWER SOURCE: 6-v vehicular battery. 38 amp on transmit, 0 amp on stand-by.
POWER OUTPUT: 22 w.
RANGE: Line of sight.
NUMBER OF TUBES: 5.

GENERAL APPLICATION

USE: For transmission of a-m voice signals.
TO COMMUNICATE WITH: Radio Receiving Set AN/VRR-3 (Kaar type PRS-9X), Radio Receiver BC-787-B, Radio Set AN/GRR-2 (Hallicrafters model SX-28-A), and Radio Receiver BC-794-B.
INSTALLATION: Installed and operated in vehicles.

TYPE OF SIGNAL: A-m, voice.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transmitter PTS-22X with 1 set of tubes (including 1 type E crystal when specified)</td>
<td>9 7/8 x 9 7/8 x 18 5/8</td>
<td>31</td>
</tr>
<tr>
<td>Antenna and base mounting assembly</td>
<td>8 1/4</td>
<td>3</td>
</tr>
<tr>
<td>Control unit K-TRI</td>
<td>2 x 2 1/2 x 4</td>
<td>1/2</td>
</tr>
<tr>
<td>Microphone 4-C with bracket</td>
<td></td>
<td>3/4</td>
</tr>
<tr>
<td>Coaxial cable, power cable, control cable, and kit of running spare parts</td>
<td></td>
<td>15 1/2</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

<table>
<thead>
<tr>
<th></th>
<th>Unpacked</th>
<th>Domestic pack</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total weight (lb)</td>
<td>50%</td>
<td>73</td>
</tr>
<tr>
<td>Total volume (cu ft)</td>
<td>3.7</td>
<td></td>
</tr>
</tbody>
</table>
Figure 36. Radio Receiver BC-312-N.

Status: Standard. Stock No.: 2C4312 (includes all suffix letters except models BC-312-HX (Stock No. 2C4312HX.1) and BC-312-NX (Stock No. 2C4312NX)). Reference: TM 11–850.

Radio Receiver BC-312-(*) represents Radio Receivers BC-312-A, -C, -D, -E, -F, -G, -J, -L, -M, -N, -HX, and -NX. Radio Receiver BC-312-(*) is a superheterodyne type receiver intended for general field usage. It is ruggedly built; suitable for vehicular, portable, or fixed operation; and battery operated. It is highly sensitive and selective, and is designed for the reception of either c-w, a-m, or tone signals.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE:
- Band A: 1.5 to 3.0 mc.
- Band B: 3.0 to 5.0 mc.
- Band C: 5.0 to 8.0 mc.
- Band D: 8.0 to 11.0 mc.
- Band E: 11.0 to 14.0 mc.
- Band F: 14.0 to 18.0 mc.


ANTENNA: Any suitable receiving antenna.

FREQUENCY CONTROL: Continuous tuning.

POWER SOURCE: 12· to 14-v dc, except Radio Receivers BC-312-HX and -NX, which require 24-v dc.

RANGE: Dependent upon antenna used, frequency, and ionospheric conditions.

NUMBER OF TUBES: 9.

GENERAL APPLICATION

USE: General field usage.


INSTALLATION: Suitable for vehicular, portable, or fixed operation.

TYPE OF SIGNAL: C-w, n-m, or tone.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio Receiver BC-312-*</td>
<td>10 x 9 1/2 x 18 1/2</td>
<td>50</td>
</tr>
<tr>
<td>Dynamotor DM-21 or equivalent</td>
<td>3 3/8 x 5 1/2 x 6</td>
<td>7</td>
</tr>
<tr>
<td>Mounting FT-162</td>
<td>1 3/4 x 6 1/8 x 18</td>
<td>3 3/4</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

| Total weight (lb) | 68 1/4 (approx) | 120 (approx) |
| Total volume (cu ft) | 5 (approx)    |             |

Radio Transmitter BC-339-(*) represents Radio Transmitters BC-339, BC-339-A, -B, -C, -E, -F, -G, -H, -J, -K, -L, and -M. Radio Transmitter BC-339-(*) is an h-f, fixed-ground, radiotelegraph transmitter usually used with doublet or rhombie antennas. The transmitter has been designed for c-w transmission. Self-contained rectifier power supplies furnish d-c voltage to all transmitter circuits. Three power supplies are operated from a commercial or auxiliary a-c power source. Provision is made for remotely starting, stopping and keying the transmitter through a 2-wire telephone cable and ground at distances as great as 6 miles, and at speeds as high as 300 words per minute. Models -K, -L, and -M, have provisions for radioteletypewriter excitation.

Radio Transmitter BC-339-(*) may be operated independently as a 1-kw transmitter or may be used as a driver for Power Amplifier BC-340-G, Rectifier RA-22, and Water Cooling Unit RU-2 to form a 10-kw transmitting station.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 4.0 to 26.5 mc.
NUMBER OF CRYSTALS: 6 operating.
PRESET FREQUENCIES: 6.
ANTENNA: In any resonant or wave-type antenna having a balanced 600-ohm input impedance. Normally, doublet or rhombic antennas are used but are supplied only as separate items.
TYPE MODULATION: Cw or frequency shift (radioteletypewriter).
FREQUENCY CONTROL: Crystal and mo.
POWER INPUT: From 220-v, 3-phase, 60-cycle line.
POWER OUTPUT: 1 kw.
RANGE: Dependent upon antenna used and operating frequency.
NUMBER OF TUBES: 15.

GENERAL APPLICATION

USE: May be operated independently as a 1-kw transmitter, or may be used as a driver for Power Amplifier Equipment AN/FRA-2 (Radio Power Amplifier BC-340-C), to form a 10-kw transmitting station.
INSTALLATION: Fixed station.
TYPE OF SIGNAL: Cw.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio Transmitter BC-339- (*) (in steel cabinet)</td>
<td>81 7/8 x 33 3/8 x 37 3/8</td>
<td>1,560</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

- Total weight (lb) (approx) ............ 2,355
- Total volume (cu ft) (approx) .......... 156.6
- Skip tons (approx) ..................... 0.4

Power Amplifier BC-340-G is an amplifier of r-f energy designed to amplify the output of a telegraph transmitter. The transmitter is modulated to conform with telegraph characters and this output will be duplicated in the output of the power amplifier at a much higher level of power.

The power amplifier is designed to operate with an output of 10,000 watts over a frequency range of from 4 to 26.5 mc into a balanced 600-ohm transmission line. The complete equipment is mounted in a large metal cabinet. Associated equipment includes Rectifier RA-2, Water Cooling Unit RU-2, and a 1-kw, r-f exciter, ordinarily Radio Transmitter BC-339. This makes up a complete 10,000-watt transmitter.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 4 to 26.5 me.
ANTENNA: Rhombic or other fixed antenna.
TYPE MODULATION: C-w only.
FREQUENCY CONTROL: Controlled in exciter transmitter.
POWER SOURCE: 220-v., 50- to 60-cy., 3-phase, 28.2-kw, 95% power factor.
POWER OUTPUT: 10,000 w.
RANGE: Long.
NUMBER OF TUBES: 4.

GENERAL APPLICATION

USE: Used with but not part of Radio Transmitter BC-339, Rectifier RA-22, and Water Cooling Unit RU-2.
TO COMMUNICATE WITH: Long-range, c-w, and radioteletypewriter stations.

INSTALLATION: Fixed station.
TYPE OF SIGNAL: C-w or frequency shift radioteletypewriter.

PRINCIPAL COMPONENTS

Name | Dimensions (in.) | Weight (lb)
--- | --- | ---
Power Amplifier BC-340-G | 83⅛ x 49⅛ x 42⅛ | 2,370

ASSOCIATED EQUIPMENT

Rectifier RA-2 | 79⅛ x 53⅛ x 39⅛ | 3,105
Water Cooling Unit RU-2 | 43⅜ x 42½ x 48 | 870
Surge tank | 29 x 14½ x 35 | 75

WEIGHT AND VOLUME

Total weight (lb) | Unpacked | Export
--- | --- | ---
6,520 | 8,486
Total volume (cu ft) | 143
Ship tons | 3.6


Radio Receiver BC-342-(*) is a superheterodyne type receiver intended for general field usage. It is ruggedly built, and it is suitable for vehicular, portable, or fixed operation. The receiver is highly sensitive and selective, and it is designed for the reception of either c-w or a-m voice or tone signals. Radio Receiver BC-342-(*) is an a-c operated receiver.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 1.5 to 18.0 in 6 bands.
NUMBER OF CRYSTALS: 1.
ANTENNA: Any suitable receiving antenna.
FREQUENCY CONTROL: Continuous tuning.
POWER SOURCE: 110- to 120-v ac.
RANGE: Dependent upon antenna used, operating frequency, and ionospheric conditions.
NUMBER OF TUBES: 10.

GENERAL APPLICATION

USE: General purpose receiver.
INSTALLATION: Suitable for vehicular, portable, or fixed operation.
TYPE OF SIGNAL: C-w, tone, and voice.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio Receiver BC-342</td>
<td>10 x 9½ x 18½</td>
<td>61.5</td>
</tr>
<tr>
<td>Rectifier RA-20</td>
<td>3½ x 6½ x 6½</td>
<td>10½</td>
</tr>
<tr>
<td>Mounting FT-162</td>
<td>1½ x 6½ x 18</td>
<td>3½</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

<table>
<thead>
<tr>
<th>Total weight (lb)</th>
<th>Unpacked 75%</th>
<th>Domestic pack 120 (approx)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Volume (cu ft)</td>
<td>1½ (approx)</td>
<td>5 (approx)</td>
</tr>
</tbody>
</table>
Figure 40. Radio Receiver BC-344, top view cover removed, (front view same as Radio Receivers BC-318-(*)) and BC-343-(*).


Radio Receiver BC-344-(*) represents Radio Receivers BC-344 and BC-344-D. Radio Receiver BC-344-(*) consists of a superheterodyne type receiver intended for general field usage. It is ruggedly built and is suitable for vehicular, portable, or field operation. The receiver is highly sensitive and selective, and is designed for the reception of either e-w, a-m, or tone signals.

Radio Receiver BC-344-(*) is a-c operated.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 0.15 to 1.3 me in 4-bands:
- Band A: 0.15 to 0.26 me.
- Band B: 0.25 to 0.45 me.
- Band C: 0.45 to 0.82 me.
- Band D: 0.82 to 1.3 me.

ANTENNA: Any suitable receiving antenna.

FREQUENCY CONTROL: Continuous tuning.

POWER SOURCE: 110- to 120-v ac.

RANGE: Dependent upon antenna used, frequency, and ionospheric conditions.

NUMBER OF TUBES: 10.

GENERAL APPLICATION

USE: General purpose receiver.


INSTALLATION: Suitable for vehicular, portable, or fixed operation.

TYPE OF SIGNAL: C-w, tone, and voice.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio Receiver BC-344- (*)</td>
<td>10 x 9 3/4 x 18 1/15</td>
<td>61.5</td>
</tr>
<tr>
<td>Rectifier RA-20</td>
<td>3 1/4 x 6 3/4 x 6 1/2</td>
<td>10.5</td>
</tr>
<tr>
<td>Mounting FT-162</td>
<td>1 1/4 x 6 3/4 x 18</td>
<td>8.75</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

<table>
<thead>
<tr>
<th>Total weight (lb)</th>
<th>Unpacked</th>
<th>Domestic pack</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>75%</td>
<td>120</td>
</tr>
<tr>
<td>Total volume (cu ft)</td>
<td>1 1/8</td>
<td>5</td>
</tr>
</tbody>
</table>

Radio Transmitter BC-365-F is a l-f, long-range communications transmitter designed for either c-w or radioteletypewriter operation, and is also used as an exciter for Amplifier Assembly AN/FRA-1. This transmitter is manually adjusted if master oscillator operated. It is designed for either local or remote control, and includes Remote Control Unit RM-10.

Oscillator O-73/URT is a suitable l-f frequency-shift keyer which can be used with Radio Transmitter BC-365-F.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 0.15 to 0.55 mc.
NUMBER OF CRYSTALS: None.
PRESET FREQUENCIES: 1.
ANTENNA: Intermediate flat top; Antenna Kit MX-765/FR, Tower AB-127/FR. (Any antenna having an effective resistance of 6 to 12 ohms and apparent capacity of 750 to 3,000 mmuf may be used.)
TYPE MODULATION: C-w or 1-f shift-keying (max shift 175 cps).
FREQUENCY CONTROL: Mo. crystal, or external oscillator.
POWER SOURCE: The entire transmitter operates from a single-phase, 50/60-cyc source of either 110- or 220-v.
The required input power is approximately, 1,800 w max at a power factor of 95 percent.
POWER OUTPUT: 350 w.
RANGE: Medium and long.
NUMBER OF TUBES: 12.

GENERAL APPLICATION

USE: Point-to-point transmission.
TO COMMUNICATE WITH: Aircraft and point-to-point stations.
INSTALLATION: Fixed station.
TYPE OF SIGNAL: C-w and 1-f shift keying.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio Transmitter BC-365-F</td>
<td>28 x 26 x 76</td>
<td>810</td>
</tr>
<tr>
<td>Remote Control Unit RM-10-F</td>
<td>19 x 13 x 13/4</td>
<td>2 1/4</td>
</tr>
<tr>
<td>Spare parts in box</td>
<td>:83/4 x 13/2 x 12/4</td>
<td>58</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

Total weight (lb) 870
Total volume (cu ft) 84
Ship tons 2.1
Status: Limited standard. Stock No.: 2C6381.

Radio Transmitter BC-401 is a fixed-station transmitter with full remote control facilities. It is mounted in a metal cabinet.

Rectifier and Modulation Unit RA-30, and Remote Control Unit RM-11 are used with, but are not part of Radio Transmitter BC-401.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 2.0 to 18.1 me.
NUMBER OF CRYSTALS: 10.
RESET FREQUENCIES: 10.
ANTENNA: Double cage.
TYPE MODULATION: Amplitude.
FREQUENCY CONTROL: Crystal.
POWER SOURCE: 220-v, 3-phase, 60-cycle at 3.7 kva.
POWER OUTPUT: 400 w.
RANGE: Medium and long.

GENERAL APPLICATION

USE: Point-to-point and ground-to-air communication.

TO COMMUNICATE WITH: Aircraft and fixed-station equipment.
INSTALLATION: Fixed station.
TYPE OF SIGNAL: Voice, e.v.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio Transmitter</td>
<td>78 x 48 x 24</td>
<td>1,640</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

Total weight (lb) 1,640

Unpacked
Figure 43. Radio Transmitter BC-447-F with Remote Control Unit RM-17-F.


Radio Transmitter BC-447-F with Remote Control Unit RM-17-F and associated equipment are used in land stations for e-w radiotelegraph transmission.

Using Remote Control Unit RM-17-F, this transmitter may be controlled from a remote point by means of a single telephone pair and ground return. Either one of the two channels may be selected from the remote point.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: Channel 1: 4.0 to 13.4 mc. Channel 2: 2.0 to 8.0 mc.
NUMBER OF CRYSTALS: 2.
PRESET FREQUENCIES: 2.
ANTENNA: Any suitable antenna using balanced 600-ohm transmission line.
TYPE MODULATION: C-w.
FREQUENCY CONTROL: Crystal controlled, or external, in both channels.
POWER SOURCE: Ac operated from a 50- or 60-cycle power source of either 115- or 230-v. Draws a load of approximately 1,200 w from the supply line at a power factor of 96 percent.
POWER OUTPUT: 300 w.

RANGE: Dependent upon antenna used, frequency, and ionospheric conditions.
NUMBER OF TUBES: 13.

GENERAL APPLICATION

USE: C-w radiotelegraph transmission.
TO COMMUNICATE WITH: C-w radiotelegraph sets.
INSTALLATION: Fixed station.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio Transmitter BC-447-F</td>
<td>72 x 35 27½</td>
<td>871</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

Unpacked  Export pack
---      ---       ---
Total weight (lb) 871 1,247
Total volume (cu ft) 92
Ship tons 2.3
Figure 44. Radio Transmitter BC-610-E with Antenna Tuning Unit BC-939-A.


Radio Transmitter BC-610-(*) represents Radio Transmitters BC-610-A, -B, -C, -D, -E, and -F. Radio Transmitter BC-610-(*) is designed for vehicular, portable, or fixed operation. These models are similar in appearance and identical in size.

Radio Transmitter BC-610-(*) is part of Radio Sets SCR-299, SCR-399, and SCR-499.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE:
Radio transmitters BC-610-E, -F: 2 to 18 mc.
NUMBER OF CRYSTALS: 3.
PRESET FREQUENCIES: 3.
ANTENNA: Any suitable antenna: whip, long-wire, etc.
TYPE MODULATION: C-w, or voice signals using amplitude.
FREQUENCY CONTROL: Mo or crystal.
POWER SOURCE: Power Unit PE-95 or commercial.
POWER OUTPUT: 400 w on c-w, and 300 w on voice, approx.
RANGE: Two-way voice—100 mi. C-w—Up to 250 mi, dependent upon antenna used, frequency, and ionospheric conditions.
NUMBER OF TUBES: 13.

GENERAL APPLICATION

USE: To provide two-way voice and c-w communication.
TO COMMUNICATE WITH: Any n-m equipment within its range.
INSTALLATION: Mobile, fixed station.
TYPE OF SIGNAL: A-m, voice, and c-w.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio Transmitter BC-610—(*)</td>
<td>32 1/2 x 21 1/2 x 39 1/8</td>
<td>4.32</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

<table>
<thead>
<tr>
<th></th>
<th>Unpacked</th>
<th>Domestic pack</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total weight (lbs)</td>
<td>497</td>
<td>73.5</td>
</tr>
<tr>
<td>Total volume (en ft)</td>
<td>3.51</td>
<td></td>
</tr>
<tr>
<td>Ship tons</td>
<td></td>
<td>0.88</td>
</tr>
</tbody>
</table>

Radio Frequency Amplifier BC-642, mounted in a metal cabinet, is part of Signal Corps 3-kw radio telegraph and telephone equipment. It is used with, but is not part of Radio Modulator Unit BC-643, Rectifier Unit RA-44 and Transformer and Contactor Unit BC-644.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 4.0 to 20.0 mc.
PRESET FREQUENCIES: 10.
ANTENNA: Fixed-station rhombic or doublet.
TYPE MODULATION: C-w and amplitude.
POWER SOURCE: 220-v, 3-phase, 60-cye at 5 kva.
POWER OUTPUT: 3-kw.
RANGE: Long.
NUMBER OF TUBES: 12.

GENERAL APPLICATION

USE: Used with, but not part of Radio Modulator Unit BC-643, Rectifier Unit RA-44, Transformer and Contactor Unit BC-644.
TO COMMUNICATE WITH: Sets within frequency range.
INSTALLATION: Fixed.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio Frequency Amplifier BC-642, in metal cabinet</td>
<td>78 x 48 x 78</td>
<td>590</td>
</tr>
</tbody>
</table>
**Status:** Standard. **Stock No.:** 2C5380–669. **Reference:** TM 11–625.


Radio Receiver and Transmitter BC-669–(*) can be used as a vehicular radio set to provide radiotelephone communications for antiaircraft artillery regiments and brigades, or it can be used as a fixed station for a medium-range and short-range communication. The set can be used in a 1/2-ton pick-up truck or in a 3/4-ton command and reconnaissance car and other vehicles, if 110-volt a-c is available.


The transmitter of Radio Receivers and Transmitters BC-669–A, –B, and –C sends a-m signals for distances of 20 to 30 miles if operating as a fixed station, or 15 or more miles when operating from a moving vehicle. Radio Receiver and Transmitter BC-669–D, in addition, provides for transmission of c-w signals for distances of 50 miles if operating as a fixed station, or 25 miles when operating from a moving vehicle.

Radio Receiver and Transmitter BC-669–(*) is ordinarily used as a component of Radio Sets SCR-543–A, –B, and –C.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 1.68 to 4.45 me.
NUMBER OF CRYSTALS: 12.
PRESET FREQUENCIES: 6.


FREQUENCY CONTROL: Transmitter: crystal. Receiver: crystal or manual.

POWER SOURCE: 115-v, 60-cyc. single-phase ac. In stand-by periods, receiver operates from 12-v storage battery.

POWER OUTPUT: 45 w.

RANGE: Fixed: 20 to 30 mi. Moving: 1.5 or more mi, varying according to weather, height, location, and frequency used.

NUMBER OF TUBES: 15.

GENERAL APPLICATION

USE: Firing battery, barrage balloon, and antiaircraft units. Can be operated by means of remote control from limited distances.


INSTALLATION: Easily assembled portable components for use in ½-ton pick-up truck or ¾-ton command and reconnaissance car and other vehicles.

TYPE OF SIGNAL: BC-669-A, -B, -C: a.m. BC-669-D: a.m. and e.w.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio Receiver and Transmitter BC-669-A, -B, or -C in Chest CH-133</td>
<td>20½ x 29¾ x 28½</td>
<td>182</td>
</tr>
<tr>
<td>Radio Receiver and Transmitter BC-669-D in Chest CH-133-D</td>
<td>22½ x 28¾ x 27½</td>
<td>216</td>
</tr>
<tr>
<td>Power Units PE-108-A, -B, -C, and -D in Chest CH-131</td>
<td>24 x 23¾ x 28</td>
<td>265</td>
</tr>
<tr>
<td>Remote Control Units RM-21-A, -B, -C, and -D in Chest CH-73</td>
<td>4½ x 10½ x 16½</td>
<td>5</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

Total weight (lb) | 235.3
Total volume (cu ft) | 12.5
Figure 47. Amplifier BC-730.

**Status:** Limited standard. **Stock No.:** 2C330.

Amplifier BC-730 (Federal Telegraph model CA-421) is a compressor amplifier with a constant output. The frequency response is within 1 db from 100 to 4,000 cycles. Inputs from —40 to —25 db at a noise level of 0 db are allowed a distortion of 10 average value at full gain —40 db; for inputs of —60 to —35 db the gain is between 35 and 38 db. The gain varies inversely for inputs between —35 and —25 with the input level, giving an output level of 0 db constant within 1 db. The compression time is about 0.05 seconds and the release time about 2 seconds.
TECHNICAL CHARACTERISTICS

POWER SOURCE: 110- to 220-v, 60-ave at 80 w.
POWER OUTPUT: 0.06 w.
NUMBER OF TUBES: 5.

GENERAL APPLICATION

USE: Amplifier BC-730 is used as preamplifier to prevent overmodulation of transmitter.
INSTALLATION: Fixed.

TYPE OF SIGNAL: Voice.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amplifier BC-730</td>
<td>19 x 7 x 8 3/4</td>
<td>25</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

<table>
<thead>
<tr>
<th></th>
<th>Unpacked</th>
<th>Domestic pack</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total weight (lb)</td>
<td>25</td>
<td>28.5</td>
</tr>
<tr>
<td>Total volume (cu ft)</td>
<td>0.9</td>
<td>1.8</td>
</tr>
</tbody>
</table>

Radio Receiver BC-779-(*) represents Receiver BC-779-A and -B. Radio Receiver BC-779-(*) is a superheterodyne receiver intended primarily for fixed-station use, although mountings for vehicular installation may be provided.

The receiver uses a conventional superheterodyne circuit and is designed for the reception of either e-m or a-m voice or tone signals, with either manual or ave.

The receiver uses an external power supply, but in emergency, can be operated from batteries.

This equipment is the same as Radio Receivers BC-794-A, -B; BC-1004-B, -C, -D; and R-129/U, except in frequency coverage.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 0.01 to 20 me in 5 bands.
NUMBER OF CRYSTALS: 1 (i-f filter).
PRESET FREQUENCIES: None.
ANTENNA: Doublet antenna with balanced transmission line, or single wire and ground.
TYPE MODULATION: Amplitude or c.w.
POWER SOURCE: One of the following: Power Supply Units RA-74, RA-84, RA-84-A (95 to 260 v, 25/60 cyc ac, 180 w) or in an emergency one 6-v storage battery, five 45-v B batteries, and one 4.5-v C battery.
RANGE: Long.
NUMBER OF TUBES: 18.

APPLICATION

USE: General purpose communication receiver.


INSTALLATION: Fixed station, although mountings may be provided for vehicular installation.

TYPE OF SIGNAL: C-w, tone, and voice.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio Receiver RC-779-(*)</td>
<td>10(\frac{1}{4}) x 11(\frac{3}{8}) x 19</td>
<td>55</td>
</tr>
<tr>
<td>Power supply unit with dust cover</td>
<td>12(\frac{3}{4}) x 16(\frac{1}{4}) x 23</td>
<td>73</td>
</tr>
<tr>
<td>Power supply unit with dust cover (Above, with Cabinet CH-104-A instead of dust cover)</td>
<td>10(\frac{1}{4}) x 10 x 19</td>
<td>60</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

<table>
<thead>
<tr>
<th>Total weight (lb)</th>
<th>Total volume (cu ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>115</td>
<td>3.0</td>
</tr>
<tr>
<td>120</td>
<td>4.4</td>
</tr>
<tr>
<td>179</td>
<td>7.5</td>
</tr>
</tbody>
</table>

Radio Receiver BC-787-B is a three-band superheterodyne receiver for mobile or fixed-station use. It is designed for the reception of either a-m or f-m signals in the frequency range of 27.8 to 143 mc. It is also possible to receive c.w. signals by using the bfo. If desired, stand-by operation of the receiver can be controlled at some remote point. The receiver may be operated with the internal power supply or the external A and B batteries. This receiver is used as a component of Radio Set SCR-607.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 27.8 to 143 mc in 3 bands:
- Band 1: 27.8 to 47 mc.
- Band 2: 46 to 82 mc.
- Band 3: 82 to 143 mc.

NUMBER OF CRYSTALS: None.

ANTENNA: Single wire or double doublet.

TYPE Modulation: Amplitude and frequency.

POWER SOURCE: 115- or 230-v, 50- to 60-cycles ac or 6-v storage battery and 270-v B battery dc.

RANGE: Depend upon antenna used, frequency, and ionospheric conditions.

NUMBER OF TUBES: 15.

GENERAL APPLICATION

USE: For monitoring.

TO COMMUNICATE WITH: Sets within frequency.

INSTALLATION: Fixed or mobile station.

TYPE OF SIGNAL: Voice, a-m, f-m, or c-w.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio Receiver BC-737-B</td>
<td>9 x 21 1/4 x 14 1/2</td>
<td>78</td>
</tr>
<tr>
<td>Mounting FT-377-A</td>
<td>4 1/4 x 21 1/4 x 14 1/2</td>
<td>12</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

Total weight (lb) ___________________________ 90
Total volume (cu ft) ________________________ 1.6
Figure 50. Radio Receiver BC-794-B with associated power supply.


Radio Receiver BC-794-(*) represents Radio Receivers BC-794-A and -B. Radio Receiver BC-794-(*) is a superheterodyne receiver intended primarily for fixed-station use, although mounting for vehicular use may be provided.

The receiver uses a conventional superheterodyne circuit and is designed for the reception of either c-w or a-m voice or tone signals, with either manual or a/c.

This receiver uses an external power supply but in an emergency can be operated from batteries.


Radio Receivers BC-794-A and -B are components of Radio Set SUR-704.
TECHNICAL CHARACTERISTICS
FREQUENCY RANGE: 1.25 to 40 mc in 5 bands:
   Band 1: 1.25 to 2.5 mc.
   Band 2: 2.5 to 5 mc.
   Band 3: 5 to 10 mc.
   Band 4: 10 to 20 mc.
   Band 5: 20 to 40 mc.
NUMBER OF CRYSTALS: 1 (i.f filter).
PRESET FREQUENCIES: None.
ANTENNA: Doublet antenna with balanced transmission line or with single wire and ground.
TYPE MODULATION: Amplitude or c-w.
POWER SOURCE: One of the following: Power Supply Units RA-74, RA-84, RA-94-A (95 to 260 v, 25/60 eye ac, 180 w) or, in an emergency, one 6-v storage battery, five 45-v B batteries, and one 45-v C battery.
RANGE: Long.
NUMBER OF TUBES: 18.

GENERAL APPLICATION
USE: Used in Radio Set SCR-704, or as general purpose communication receiver.

INSTALLATION: Fixed station, although mountings may be provided for vehicular installation.
TYPE OF SIGNAL: C-w, tone, and voice.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio Receiver BC-794-(*), with power and battery cables and dust cover</td>
<td>10 1/2 x 15 1/2 x 19</td>
<td>55</td>
</tr>
<tr>
<td>(Above, with Cabinet CH-104-A instead of dust cover)</td>
<td>12 1/4 x 16 1/2 x 23</td>
<td>73</td>
</tr>
<tr>
<td>Power supply unit with dust cover</td>
<td>10 1/2 x 10 x 19</td>
<td>60</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

<table>
<thead>
<tr>
<th>Description</th>
<th>Unpacked</th>
<th>Domestic</th>
<th>Export</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total weight (lb)</td>
<td>115</td>
<td>120</td>
<td>175</td>
</tr>
<tr>
<td>Total volume (cu ft)</td>
<td>3.0</td>
<td>4.4</td>
<td>7.0</td>
</tr>
</tbody>
</table>

Radio Receiver BC-923-A is a basic component of Radio Sets SCR-808 and SCR-828-A. It is a double-superheterodyne, f-m radio receiver designed to operate within a temperature range of $-40^\circ$ C. to $+55^\circ$ C. The receiver operates into either its self-contained speaker or into headsets.

The receiver is provided with four sets of tuning controls. Included in the receiver is a crystal-controlled heterodyne frequency meter unit, which gives accurately determined reference signals every 100 ke across the entire frequency range of the receiver.

When in use, the receiver, with other components of the set, is mounted on Mounting FT-237-(#). All connections between the receiver and transmitter units and Mounting FT-237-(#) are made through multicontact plugs and receptacles, which are automatically engaged when the individual units are inserted in their proper positions on the mounting.
**TECHNICAL CHARACTERISTICS**

**FREQUENCY RANGE:** 27 to 38.9 mc.

**NUMBER OF CRYSTALS:** 1 (for calibration).

**PRESET FREQUENCIES:** 4.

**ANTENNA:** Uses same antenna as transmitter, usually whip.

**TYPE MODULATION:** Frequency.

**FREQUENCY CONTROL:** Built-in, crystal-frequency calibrator.

**POWER SOURCE:** 12- or 24-v battery supply, through Dynomotor DM-64-A (12-v); Dynomotor DM-66-A (24-v).

**RANGE:** Stationary: 1.5 mi. Moving: 10 mi.

**NUMBER OF TUBES:** Receiver chassis: 12. Crystal-frequency calibrator chassis: 3.

---

**GENERAL APPLICATION**

**USE:** General purpose vehicular receiver.

**TO COMMUNICATE WITH:** Fm sets with the same frequency range.

**INSTALLATION:** Installed and operated in vehicle or on ground.

**TYPE OF SIGNAL:** Voice.

**PRINCIPAL COMPONENTS**

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio Receiver BC-923</td>
<td>11 1/2 x 8 1/2 x 6 1/2</td>
<td>42</td>
</tr>
<tr>
<td>Mounting FT-337-(#)</td>
<td>5 1/2 x 13 x 33 3/8</td>
<td>44</td>
</tr>
<tr>
<td>Dynomotor DM-64-A</td>
<td>4 1/4 x 3 3/4 x 6 1/2</td>
<td>5 25</td>
</tr>
<tr>
<td>Dynomotor DM-66-A</td>
<td>5 1/2 x 4 1/2 x 8 1/4</td>
<td>13 25</td>
</tr>
</tbody>
</table>

**WEIGHT AND VOLUME**

<table>
<thead>
<tr>
<th>Total weight (lb)</th>
<th>42</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total volume (cu ft)</td>
<td>2.2</td>
</tr>
</tbody>
</table>

Radio Transmitter BC–924–A is a component of Radio Sets SCR–808–A and SCR–828–A. It is an F–m transmitter designed to provide line of sight, voice communication over distances of 10 to 15 miles, and is intended for use in mobile Coast Artillery batteries.

The transmitter has a frequency range of 27.0 to 38.9 mc, and can be preset to 4 predetermined channels. Connections are provided for either a carbon button or magnetic microphone.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 27.0 to 38.9 me in 126 channels.
NUMBER OF CRYSTALS: None.
PRESET FREQUENCIES: 4.
ANTENNA: Whip, 10 ft. (Consists of Mast Base AB-11/GR and Mast Sections MS-116, MS-117, and AB 24/GR.)

TYPE MODULATION: Frequency (resistance tube).

FREQUENCY CONTROL: Vacuum tube oscillator circuit which can be preset in four channels.

POWER SOURCE: 12-v storage battery through Dynamotor DM-65-A; 24-v storage battery through Dynamotor DM-47-A.

POWER OUTPUT: High, 30 to 35 w. Low: 2 w.

RANGE: 10 to 15 mi. line of sight.

NUMBER OF TUBES: 9.

GENERAL APPLICATION

USE: Short range voice communication.


INSTALLATION: Mobile; installed and operated in vehicle.

TYPE OF SIGNAL: Fm (voice).

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio Transmitter BC-924-A</td>
<td>11 1/2 x 18 x 10 1/2</td>
<td>49</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

<table>
<thead>
<tr>
<th>Unpacked</th>
<th>Domestic</th>
<th>Export</th>
</tr>
</thead>
<tbody>
<tr>
<td>weight (lb)</td>
<td>49</td>
<td></td>
</tr>
<tr>
<td>volume (cu ft)</td>
<td>3.75 (approx)</td>
<td>3.75 (approx)</td>
</tr>
</tbody>
</table>
Figure 53. Radio Receiver BC-969-A.


Radio Receiver BC-969-A is a superheterodyne, 1-f receiver, used for intercept purposes.

It is equipped with an ave, a noise limiter, a crystal filter, a beat oscillator, and an electron-ray tuning indicator.

Radio Receiver BC-969-A is the main component of Radio Set SCR-614, and may be used as a fixed or vehicular station.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 0.015 to 0.15, mc in three bands:
  Band 1: 0.015 to 0.030 mc.
  Band 2: 0.030 to 0.0675 mc.
  Band 3: 0.0675 to 0.15 mc.
NUMBER OF CRYSTALS: 1 in filter.
RESET FREQUENCIES: None.
ANTENNA: 30-ft whip, 100-ohm balanced antenna. Long-wire or beverage antennas also suitable.
TYPE MODULATION: Amplitude.
POWER SOURCE: Usually Power Supply Unit RA-61, but power may be supplied by Power Supply Unit PE-223, or by dry batteries.
RANGE: Dependent upon antenna used, frequency, and ionospheric conditions.
NUMBER OF TUBES: 12.

GENERAL APPLICATION

USE: L.f interception.
TO COMMUNICATE WITH: Any radio transmitter operating within frequency range of 0.015 to 0.15 mc.
INSTALLATION: Fixed or vehicular.
TYPE OF SIGNAL: C-w, tone, and voice.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio Receiver BC-069-A</td>
<td>19 x 10 1/2 x 13 3/4</td>
<td>49.3</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

<table>
<thead>
<tr>
<th></th>
<th>Unpacked</th>
<th>Domestic pack</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total weight (lb)</td>
<td>49.3</td>
<td>63</td>
</tr>
<tr>
<td>Total volume (cu ft)</td>
<td>1.34</td>
<td>2.75</td>
</tr>
</tbody>
</table>

Radio Receiver BC-1004-(*) represents Radio Receivers BC-1004-B, -C, and -D.

Radio Receiver BC-1004-(*) is a superheterodyne receiver intended primarily for fixed-station use, although mountings for vehicular installation may be provided.

The receiver uses a conventional superheterodyne circuit and is designed for the reception of either e-w or a-m voice or tone signals, with either manual or automatic volume control.

The receiver uses an external power supply, but in an emergency can be operated from batteries.

The equipment is the same as Radio Receivers BC-779-A, -B; BC-794-A, -B; and R-129/U, except in frequency coverage.

Radio Receiver BC-1004-(*) is a component of Radio Sets SCR-244-A and -B and Radio Set AN/FRR-4.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 0.54 to 20.0 in 5 bands:
   Band 1: 0.54 to 1.16 mc.
   Band 2: 1.16 to 2.5 mc.
   Band 3: 2.5 to 5 mc.
   Band 4: 5 to 10 mc.
   Band 5: 10 to 20 mc.
NUMBER OF CRYSTALS: 1 (i.f filter).
PRESET FREQUENCIES: None.
ANTENNA: Doublet antenna with balanced transmission
   line or single wire and ground.
TYPE MODULATION: Amplitude.
POWER SOURCE: One of the following: Power Supply
   Unit RA-74, RA-84, or RA-94-A, 95- to 260-v 25/60-cyc
   ac, 180 w, or battery; one 6-v storage battery; five 45-v
   A batteries; one 4.5-v C battery.
RANGE: Long.
NUMBER OF TUBES: 18.

GENERAL APPLICATION

USE: Radio Receiver BC-1004-(*) is a component of

Radio Sets SCR-244-A and -B and Radio Set AN/FRR-4.

TO COMMUNICATE WITH: Radio Sets SCR-177, AN/
   MRC-2A, SCR-188, SCR-193, SCR-399, SCR-499, AN/
   VRC-1, SCR-543, AN/GRC-9, SCR-536, and SCR-604.

INSTALLATION: Primarily designed for fixed-station
   use, but mountings for vehicular installation may be
   provided.

TYPE OF SIGNAL: C-w, tone, and voice.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Radio Receiver</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BC-1004-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(*) with power and battery cables and dust cover</td>
<td>10½ x 15½ x 19</td>
<td>55</td>
</tr>
</tbody>
</table>

Power Supply RA-74, RA-84, or RA-94-A with dust covers
|                   | 10½ x 10 x 19 | 60 |

WEIGHT AND VOLUME

<table>
<thead>
<tr>
<th>Total weight (lb)</th>
<th>178</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total volume (cu ft)</td>
<td>7.5</td>
</tr>
</tbody>
</table>

Remote Control Console CY–161/FRC (Wilcox Electric type CS212) and control equipment (Wilcox Electric type CS390) contains complete equipment for remote control of a group of transmitters and receivers. All necessary amplifiers, oscillators, control and selector switches are mounted within the console cabinet.

Several consoles are usually mounted together to form a parallel group of remote control positions. From these positions, a group of operators can select and control a number of radio transmitters and receiver channels. Either e–w or phone messages may be transmitted or received by any of the operators.

From each position it is possible to select and control any one of as many as nine Radio Transmitters T–158/FRT (Wilcox Electric type 96A), T–158A/FRT’ (Wilcox Electric type 96C), T–158B/FRT (Wilcox Electric type 96C3), or Radio Transmitters T–4/FRC. Provision is made at each console for the selection of any one of four modulators for the transmission of phone messages.
TECHNICAL CHARACTERISTICS

POWER SUPPLY: 110- to 120-v. 60-cyc.

POWER INPUT: 230 v per console.


SIGNAL INPUT: Key or microphone.

SIGNAL OUTPUT:

Keying oscillator (Wilcoxe Electric type 90A2): 0 db (0.006 w).

Volume limiting amplifier (Wilcoxe Electric type M57D1): 0 db (0.006 w).

Dual Channel Amplifier AM-43/FRC: 0 db (0.006 w).

NUMBER OF TUBES:


Dual Channel Amplifier AM-43/FRC: 5.

GENERAL APPLICATION

USE: Designed for use with Radio Transmitters T-4/FRC, and either T-158/FRT, T-158A/FRT, or T-158B/FRT. Remote Control Console CY-161/FRC contains complete equipment for remote control of a group of transmitters and receivers.

INSTALLATION: Fixed station.

TYPE OF SIGNAL: Controls are by means of grounding circuits, 1000 cyc. keying oscillator, and standard telephone type dial.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Cabinet, relay rack (Wilcoxe type 112A)</td>
<td>72 x 17 1/2 x 24</td>
<td>17</td>
</tr>
<tr>
<td>1 Speaker panel (Wilcoxe type 108A)</td>
<td>7 x 3 3/8 x 19</td>
<td>8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Control panel (Wilcoxe type 109B)</td>
<td>12 1/4 x 8 x 19</td>
<td>22 1/4</td>
</tr>
<tr>
<td>1 Blank panel (Wilcoxe type 112A-10)</td>
<td>10 1/2 x 11 1/2 x 19</td>
<td>7-14 oz</td>
</tr>
<tr>
<td>1 Blank panel (Wilcoxe type 112A-13)</td>
<td>8 1/2 x 11 1/2 x 19</td>
<td>2-3 oz</td>
</tr>
<tr>
<td>1 Blank panel (Wilcoxe type 112A-14)</td>
<td>8 1/4 x 11 1/2 x 19</td>
<td>6-7 oz</td>
</tr>
<tr>
<td>1 Dual Channel Amplifier AM-43/FRC</td>
<td>5 1/4 x 8 1/4 x 19</td>
<td>23</td>
</tr>
<tr>
<td>1 Volume limiting amplifier (Wilcoxe type M57D1)</td>
<td>5 1/4 x 7 1/2 x 19</td>
<td>23</td>
</tr>
<tr>
<td>1 Keying oscillator (Wilcoxe type 90A2)</td>
<td>3 1/2 x 6 3/4 x 19</td>
<td>12</td>
</tr>
<tr>
<td>1 Typewriter well (Wilcoxe type 116A)</td>
<td>10 1/2 x 15 3/4 x 24</td>
<td>20</td>
</tr>
<tr>
<td>1 Microphone assembly (Wilcoxe type 95468)</td>
<td>12 1/4 x 5 1/2 diam</td>
<td>3 1/2</td>
</tr>
<tr>
<td>1 Desk front (Wilcoxe type 117A)</td>
<td>11 1/4 x 25 x 20</td>
<td>21</td>
</tr>
<tr>
<td>1 Message rack (Wilcoxe type 111A)</td>
<td>33 1/4 x 8 1/2 x 9 1/2</td>
<td>23</td>
</tr>
<tr>
<td>2 Cables, approximately 18&quot; long terminating in Jones plugs. (With each group of 4 of these units a 10-foot, 33-conductor cable and wall terminal box (Wilcoxe type 118A) is provided.)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

Each Remote Control Equipment CY-161/FRC is packed in a wooden boxes with an aggregate weight of 850 pounds, an aggregate volume of .570 cubic feet, and approximately 14 ship tons.

Modulator MD-1/FRC is used in conjunction with Power Rectifier PP-1/FRC, Radio Transmitter T-4/FRC, and/or Radio Transmitter T-5/FRC for airport traffic control work, homing, and fixed point-to-point.

The dual modulator unit provides 2 complete speech-amplifier and modulator channels having a nominal power output of 300 watts each. The frequency response is such that amplification is constant within 2 db from 200 to 4,000 cps.
TECHNICAL CHARACTERISTICS


POWER OUTPUT: Each channel (2 available).
Response: Maximum variation of 2 db from 200 to 4,000 cps. (1,000 cps reference frequency.)
Nominal power output: 300 w.
Harmonic distortion at 300 w. Output: 10 percent max at 400 cps.
Input impedance: 500 ohms.
Output impedance: 2,300 and 4,600 ohms (to modulate 4 or 2 JAN-810 tubes).
Noise level: —40 db.
NUMBER OF TUBES: 22.

GENERAL APPLICATION

USE: Multichannel airport traffic control (when used in conjunction with associated equipment).
INSTALLATION: Fixed station.
TYPE OF SIGNAL: Audio.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modulator MD-1/FRC</td>
<td>61 x 24 x 12</td>
<td>510</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

<table>
<thead>
<tr>
<th></th>
<th>Unpacked</th>
<th>Domestic pack</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total weight (lb)</td>
<td>510</td>
<td>525</td>
</tr>
<tr>
<td>Total volume (cu ft)</td>
<td>10.2</td>
<td>17.5</td>
</tr>
</tbody>
</table>
Modulator MD-69/FRT (Wilcox Electric type 50A) is a single unit enclosed in a steel cabinet. In addition to the modulator component, the case contains a high-voltage filter section, a dialing unit, and an auxiliary unit.

The dialing and auxiliary relay units are used to permit dialing the modulator into the circuit of any one of 1 to 10 Radio Transmitters T-158/FRT (Wilcox Electric type 96C or 96C3) or Radio Transmitters T-171/FR (Wilcox Electric type 96-200B or 96-200C).

Dialing may be accomplished from the modulator panel or from Remote Control Console CY-161/FRC at a remote point.

Modulator MD-69/FRT and modulator (Wilcox Electric type 50A3) are identical except for terminal arrangement.

Power is supplied to Modulator MD-69/FRT and to the transmitters by Radio Power Supply PP-219/FRT (Wilcox Electric type 36A). Power is supplied to Modulator Wilcox Electric type 50A3, and to the transmitters by rectifier (Wilcox Electric type 36A4).

TECHNICAL CHARACTERISTICS

TYPE MODULATION: Audio input 0 to 3 db.
PPOWER SOURCE: Modulator plate supply 4,000-v dc at 400 ma; a-c power, 220 v single-phase at 15 amp; relay power, 12-v dc approx, 3 amp max.
POWER OUTPUT: 1,600 w.
NUMBER OF TUBES: 15.

GENERAL APPLICATION

USE: This equipment is intended primarily for point-to-point and ground-to-air communication.
INSTALLATION: Fixed station.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steel cabinet</td>
<td>72 x 24 1/2 x 20 1/2</td>
<td>963</td>
</tr>
<tr>
<td>Modulator type 30A-10</td>
<td>8 1/4 x 21 x 23</td>
<td>97.5</td>
</tr>
<tr>
<td>Drihling unit type 163C</td>
<td>11 1/4 x 3 1/2 x 19</td>
<td>10.25</td>
</tr>
<tr>
<td>Auxiliary control relay unit</td>
<td>8 1/4 x 8 1/2 x 19</td>
<td>10</td>
</tr>
<tr>
<td>Filter choke</td>
<td>8 1/4 x 10 1/4 x 15 1/4</td>
<td>183</td>
</tr>
<tr>
<td>Modulation transformer</td>
<td>9 1/4 x 10 1/2 x 20 1/4</td>
<td>178</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

<table>
<thead>
<tr>
<th>Total weight (lb)</th>
<th>Unpacked</th>
<th>Domestic pack</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,930.8</td>
<td>19,220</td>
<td></td>
</tr>
</tbody>
</table>

Ship tons

| 1.68 | 3.5 |
Figure 58. Radio Receiver Assembly OA-58/FRC.
Radio Receiver Assembly OA-58/FRC consists of a triple-diversity arrangement containing three superheterodyne receivers, a tone keyer unit, and a monitoring unit in a cabinet rack with all necessary power supplies, cords, and speaker. The tone keyer unit electronically selects the strongest signal of the three receivers suppressing the two weaker signals.

The receivers may be operated individually.

For diversity reception a space diversity arrangement of three antennas is used. Nominal input impedance of receivers is 200-ohms.

**TECHNICAL CHARACTERISTICS**

**FREQUENCY RANGE:** 0.54 to 32.0 mc in 6 bands:
- Band 1: 0.54 to 1.6 mc.
- Band 2: 1.57 to 4.55 mc.
- Band 3: 4.45 to 12.15 mc.
- Band 4: 11.9 to 16.6 mc.
- Band 5: 16.1 to 22.7 mc.
- Band 6: 22.0 to 32.0 mc.

**NUMBER OF CRYSTALS:** 1 in monitoring unit, and crystal l-f filter in each receiver.

**RESET FREQUENCIES:** None.

**ANTENNA:** 3 required, preferably 5 wavelengths apart; usually double doublet or rhombics.

**POWER SOURCE:** 100- to 160- or 190- to 260-v, 50- to 60-cycle ac at 450 w.

**POWER OUTPUT:** 12 mw.

**RANGE:** Long, dependent upon antenna used, frequency, and ionospheric conditions.

**NUMBER OF TUBES:**
- 14 in each receiver.
- 8 in tone keyer unit.

- 5 in monitoring unit.
- 2 in monitoring unit power supply.

**GENERAL APPLICATION**

**USE:** A complete diversity receiving unit for reception of e.w, m-e-w, or a.m signals to minimize fading effects.

**TO COMMUNICATE WITH:** Specifically designed for long range e.w.

**INSTALLATION:** Fixed.

**TYPE OF SIGNAL:** e.w, m-e-w, or a.m.

**PRINCIPAL COMPONENTS**

**Name**
Radio Receiver Assembly OA-58/FRC

**Dimensions (in.)**
22 x 84 x 21

**Weight (lb.)**
650

**WEIGHT AND VOLUME**

<table>
<thead>
<tr>
<th>Total weight (lb.)</th>
<th>Unpacked</th>
<th>Domestic pack</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1,122</td>
<td>78.74</td>
</tr>
</tbody>
</table>

Radio Receiver Assembly OA-59/FRC, dual-diversity receiving equipment, consisting of two receivers (Wilcox Electric type CW3-D) is used with Radiotelephone Terminal Equipment AX/FGC-1, to provide two identical fixed-frequency diversity receivers with common h-f and bfo.

The two Wilcox Electric type CW3-D receivers (A and B) are identical electrically, but differ slightly in tube arrangement, each diversity receiver being constructed by the conversion of two non-diversity receivers. An h-f oscillator and three arrangements of bfo are provided and are common to both diversity receivers. Two power supplies are required because of method of conversion.

These receivers are highly selective, crystal-controlled superheterodyne units, operative at any fixed frequency in the range of 1.9 to 24.0 mc. The total range is covered by means of six sets of plug-in coils.

Ordinarily 2 Radio Receiver Assemblies OA-59/FRC (4 Wilcox Electric type CW3-D receivers) are mounted in a metal cabinet (115 A-D Type Cabinet), 72 inches high, 24 inches wide, and 17 inches deep.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 1.9 to 24.0 mc with 6 sets of plug-in coils.
  Band 1: 1.9 to 3.6 mc.
  Band 2: 4.4 to 5.9 mc.
  Band 3: 5.8 to 9.4 mc.
  Band 4: 9.4 to 16.5 mc.
  Band 5: 16.5 to 20 mc.
  Band 6: 20 to 24 mc.

NUMBER OF CRYSTALS: 2 per receiver.

PRESET FREQUENCIES: 1.

ANTENNA: Two rhombic or two other matched antennas.

POWER SOURCE: 110-v, 60-cyc, single-phase ac, 1.3 amp.

RANGE: Long, dependent upon antenna used, frequency, and ionospheric conditions.

NUMBER OF TUBES: 16.

GENERAL APPLICATION

USE: Radioteletypewriter or other dual diversity use.

TO COMMUNICATE WITH: Long-range stations.

INSTALLATION: Fixed station.

TYPE OF SIGNAL: A-m or c-w.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio Receiver Assembly OA-59/FRC, consisting of 2 Wilcox type CW3-D receivers (ea)</td>
<td>10 1/2 x 19 x 11 1/2</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

<table>
<thead>
<tr>
<th>Export pack</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total weight (lb)</td>
</tr>
<tr>
<td>Total volume (cu ft)</td>
</tr>
<tr>
<td>Ship tons</td>
</tr>
</tbody>
</table>
Figure 60. Radio Transmitter Assembly OA-60(*)/FRT.


Radio Transmitter Assembly OA-60 (*)&/FRT represents Radio Transmitter Assembly OA-60A/FRT (Radio Telegraph Transmitter, Press Wireless type PW-40-B) and Radio Transmitter Assembly OA-60B/FRT (Radio Telegraph Transmitter, Press Wireless type PW-40-BA). The equipments are similar in design, but differ in the frequency range covered.

This high-powered transmitting assembly is designed for radiotelegraph operation over long distances. It is also used for single side-band transmission.

Radio Transmitter Assembly OA-60(*)/FRT is so designed that the carrier may be controlled automatically from a local or remote operating point, or controlled manually from a local point.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE:
Radio Transmitter Assembly OA-60A/FRT: 5.3 to 21 mc.
Radio Transmitter Assembly OA-60B/FRT: 4 to 21 mc.

NUMBER OF CRYSTALS: Receptacles for holding six different crystals are provided in the oven.

PRESET FREQUENCIES: 1.

ANTENNA: Transmitter usually functions with a rhombic or other long-distance antenna.

TYPE MODULATION: C-w or single side band.

FREQUENCY CONTROL: Crystal or no.

POWER SOURCE: Existing commercial power facilities or 100 kw power available from 240-v. a-c, 3-phase generating equipment. Power Unit PE-229, 100 kw, 240 v may be used to supply power to the transmitter.

POWER OUTPUT: 40,000 w.

RANGE: Long, dependent upon antenna used, frequency, and ionospheric conditions.

NUMBER OF TUBES: 33.

GENERAL APPLICATION

USE: Long-range, point-to-point, c-w, and radioteleprinter; used as 15,000 w, linear amplifier for the single side band transmitter of Radio Set AN/FRC-10.

TO COMMUNICATE WITH: Other long-range equipment.

INSTALLATION: Fixed station.

TYPE OF SIGNAL: C-w.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>High voltage rectifier</td>
<td>82 x 56 x 72</td>
<td>4,800</td>
</tr>
<tr>
<td>R-f exciter</td>
<td>82 x 56 x 72</td>
<td>3,090</td>
</tr>
<tr>
<td>R-f power amplifier</td>
<td>82 x 56 x 72</td>
<td>3,290</td>
</tr>
<tr>
<td>Water-cooling unit</td>
<td>66 x 66 x 60</td>
<td>1,093 (filled)</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

| Total weight (lb) | 25,588 |
| Total volume (cu ft) | 1,065.5 |
| Ship tons | 41.64 |
Status: Limited standard. Stock No. 2C7126B.

Rectifier-Modulator PP-260/FRT (Wilcox Electric model 26B Rectifier-Modulator Unit) is used with Radio Transmitters T-158/FRT and T-171/FRT and Control Console C-418/FRT. It is designed to furnish the necessary power and modulation of up to eight channels of the transmitters, and is controlled by an automatic dial system.
TECHNICAL CHARACTERISTICS

TYPE MODULATION: Amplitude.
POWER SOURCE: 20-kva, 3-phase, 220-v, 50- to 60-cy.
POWER OUTPUT: Rectifier output: 4,000-v, d-c. 3 amp;
2,000 v at 0.5 amp; 12-v. d-c. 4 amp filtered, 2 modu-
later channels of 1,250 w each; 3 supplies of 500 v at
0.35 amp each.
NUMBER OF TUBES: 39.

GENERAL APPLICATION

USE: Used with Radio Transmitters T-158/FRT and T-
171/FRT, and Control Console C-418/FRT.
INSTALLATION: Fixed.

PRINCIPAL COMPONENTS

None
Rectifier-Modulator PP-260/FRT, floor-
mounted. Dimensions (in.) 72 x 24½ x 52
Status: Substitute standard. Stock No.: 2C4180.

Radio Receiver R-62/PR (Hallicrafters Sky Ranger model S-29) is a complete portable, nine-tube, superheterodyne receiver.

The components are contained in a steel cabinet. The internal whip antenna has provisions for connection to an external antenna.

This receiver operates from either an a-c or d-c, 115-v power source or from batteries.

When operating from batteries, the 2 B batteries and 1 A battery should give approximately 100 hours of intermittent service.

This receiver is highly portable for miscellaneous monitoring.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 0.5 to 30.5 mc.
NUMBER OF CRYSTALS: None.
PRESET FREQUENCIES: None.
ANTENNA: Self-contained whip antenna, with connection provision to outside antenna.
POWER SOURCE: 115-v ac or dc, 40 w, or batteries contained in receiver (Two 45-v A batteries and one 6-v A battery.)
RANGE: Dependent upon power of signal, frequency used, and ionospheric conditions.
NUMBER OF TUBES: 9.

GENERAL APPLICATION

USE: General purpose portable receiver.
TO COMMUNICATE WITH: Receives signals from sets of like frequencies within short or medium range.
INSTALLATION: Portable or fixed.
TYPE OF SIGNAL: A-m and c-w.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio Receiver R-02/PR</td>
<td>7 x 8½ x 10¾</td>
<td>18</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

| Total weight (lb) | 18
| Total volume (cu ft) | 2

Unpacked  | Export pack
18       | 48

Radio Receiver R-80/PR (Hallercafters Sky Ranger model S-39) is a complete 4-band, portable superheterodyne receiver. All components, including the telescoping whip antenna, are self-contained in a steel cabinet fitted with a carrying handle.

This receiver operates from either an a-c or d-c, 110- to 117-volt power source, or from batteries. When operating on batteries, the 2 B batteries and the 1 A battery should give approximately 100 hours of intermittent service.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 0.50 to 30.5 m in 4 bands.
ANTENNA: Self-contained, telescoping rod, or long wire.
POWER SOURCE: 110- to 117-v ac or dc, 50 w, or batteries contained in receiver. (One 6-v A battery, and two 45-v B batteries.)
RANGE: Dependent upon power of signal, frequency, and ionospheric conditions.
NUMBER OF TUBES: 9.

GENERAL APPLICATION
USE: General purpose portable receiver.

TO COMMUNICATE WITH: Short-range to medium-range communication.
INSTALLATION: Portable or fixed.
TYPE OF SIGNAL: A-m and e-w.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio Receiver R-80-PR</td>
<td>9 x 9 x 15*</td>
<td>28</td>
</tr>
</tbody>
</table>

*Over-all height from bottom of receiver to top of telescoping antenna, when fully extended. 39½ inches.
Figure 64. Radio Receiver R-96/SR with spare parts box.

**Status**: Standard. **Stock No.**: 2C4180-96. **Reference**: TM 11-878.

Radio Receiver R-96/SR is intended for use in harbor and seagoing vessels where extreme conditions such as tropical climates and salt-sea atmosphere may be prevalent, and where severe vibrations and shock may be encountered. It is designed for operation alone or in combination with Radio Transmitter T-83/SR.

Terminals are provided in the receiver to accommodate the necessary interconnecting cables so that sending and receiving operations may be secured through the action of the push-to-talk handset and relays incorporated in the radio transmitter.

The receiver is provided with four crystal-controlled channels for operation in a frequency range of 1.700 to 8.700 mc and a fifth position for manual tuning over the frequency ranges of 0.135 to 0.260 mc, 0.255 to 0.510 mc, 1.485 to 3.030 mc, 2.870 to 6.060 mc, and 5.940 to 12.120 mc.

C-w, m-c-w, and voice-modulated signals (phone) may be received with either automatic or manual volume control.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 1.7 to 8.7 mc in four bands.
NUMBER OF CRYSTALS: 4.
PRESET FREQUENCIES: 4.
ANTENNA: Any suitable antenna.
TYPE MODULATION: l-e-w, m-e-w, and amplitude.
FREQUENCY CONTROL: Crystal and manual.
POWER SOURCE: 115-v, 50- to 60-eye a-e or 115-v d-e; requires approximately 0.4 amp or approximately 45 w.
RANGE: Dependent upon antenna used, frequency, and ionospheric conditions.

GENERAL APPLICATION

USE: General communication service with special reference to harbor and seagoing vessels.

TO COMMUNICATE WITH: Any radio transmitter within frequency range.
INSTALLATION: Shipboard.
TYPE OF SIGNAL: l-e-w, m-e-w, e-w, and a-m.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio Receiver (lb)</td>
<td>10 x 20½ x 17½</td>
<td>69.5</td>
</tr>
<tr>
<td>Spare parts box</td>
<td>9 x 11 x 14</td>
<td>18</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

<table>
<thead>
<tr>
<th>Weight (lb)</th>
<th>Domestic Unpacked</th>
<th>Domestic pack</th>
<th>Export Un packed</th>
<th>Export pack</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total weight</td>
<td>87.5</td>
<td>112</td>
<td>160.5</td>
<td>7.09</td>
</tr>
<tr>
<td>Total volume</td>
<td>100.5</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Status: Standard. Stock No.: 2C4180-100.

Radio Receiver R-100/URR, called the morale builder, is a portable multichannel, superheterodyne receiver designed for entertaining and maintaining morale of troops. It provides the reception of voice-modulated signals in the broadcast and h-f bands.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 0.54 to 19 mc in 3 bands.
   Band 1: 0.54 to 1.5 mc.
   Band 2: 3.6 to 8.5 mc.
   Band 3: 8.5 to 19 mc.

NUMBER OF CRYSTALS: None.

ANTENNA: Single wire provided.

POWER SOURCE: Battery or 115- to 220-v ac or dc.

RANGE: Medium and short.

NUMBER OF TUBES: 7.

GENERAL APPLICATION

USE: For reception of voice signals for entertainment purposes.

TO COMMUNICATE WITH: Receives signals from transmitters within frequency range.

INSTALLATION: Portable.

TYPE OF SIGNAL: Voice.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio Receiver R-100/URR</td>
<td>17 3/4 x 9 3/4 x 11 3/4</td>
</tr>
</tbody>
</table>

Radio Receiver R-129/U is a superheterodyne receiver intended primarily for fixed-station use, although mountings for vehicular installation may be utilized.

The receiver uses a conventional superheterodyne circuit and is designed for the reception of either e-w or a-m voice or tone signals, with either manual or automatic volume control.

This receiver uses an external power supply, but in an emergency can be operated from batteries.

TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 0.3 to 10 mc in 5 bands:
   Band 1: 0.3 to 0.54 mc.
   Band 2: 0.54 to 1.16 mc.
   Band 3: 1.16 to 2.5 mc.
   Band 4: 2.5 to 5 mc.
   Band 5: 5 to 10 mc.

NUMBER OF CRYSTALS: 1 (filter).

ANTENNA: Doublet antenna with balanced transmission line or single wire and ground.

TYPE MODULATION: Amplitude or c.w.

In an emergency, the following battery supply: one 6-v storage battery, five 45-v B batteries, and one 45-v C battery.

RANGE: Long.

NUMBER OF TUBES: 18.

GENERAL APPLICATION

USE: General purpose communication receiver.


INSTALLATION: Fixed station, although mountings may be provided for vehicular installation.

TYPE OF SIGNAL: C-w, tone, and voice.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio receiver with power and battery cables and dust cover</td>
<td>10 1/2 x 18 1/2 x 19</td>
<td>55</td>
</tr>
<tr>
<td>Radio receiver or with power and battery cables using Cabinet CIH-104-A instead of dust cover</td>
<td>12 1/2 x 16 1/2 x 23</td>
<td>73</td>
</tr>
<tr>
<td>Power supply unit with dust cover</td>
<td>10 1/2 x 10 x 19</td>
<td>60</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

<table>
<thead>
<tr>
<th>Total weight (lb)</th>
<th>Unpacked</th>
<th>Domestic</th>
<th>Export</th>
</tr>
</thead>
<tbody>
<tr>
<td>115</td>
<td>115</td>
<td>120</td>
<td>179</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total volume (cu ft)</th>
<th>Unpacked</th>
<th>Domestic</th>
<th>Export</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.0</td>
<td>3.0</td>
<td>4.4</td>
<td>7.5</td>
</tr>
</tbody>
</table>


**Status:** Limited standard. **Stock No.:** 2C4180-137.

Radio Receiver R-137/GR is a three-band, superheterodyne u-h-f receiver for mobile or fixed-station use. Although designed for the reception of a-m or f-m signals, e-w signals may also be received by using the bfo.

A jack for a headset and 500-ohm impedance output to feed a loudspeaker are provided. Stand-by operation may be controlled from a remote point. Either manual or ave may be used.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 27.8 to 143.0 mc in 3 bands, continuous frequency coverage.
NUMBER OF CRYSTALS: None.
PRESET FREQUENCIES: 3-band switch.
ANTENNA: 3 whip. Half-waves cut to misband frequency or a single-wire.
TYPE MODULATION: Amplitude, frequency, and e-w.
POWER SOURCE: 115- to 230-v, 50- to 60-cyc, or A battery, 6 v at 4.5 amp, B battery, 270 v at 145 ma.
RANGE: Dependent upon antenna used, frequency, and ionospheric conditions.
NUMBER OF TUBES: 15.

GENERAL APPLICATION

USE: Used in v-h-f intercept, ground-to-plane control, and v-h-f air warning systems.
TO COMMUNICATE WITH: Receives signals from transmitters within frequency range.
INSTALLATION: Mobile or fixed station.
TYPE OF SIGNAL: A-m, f-m, and e-w.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio Receiver R-137/GR</td>
<td>19 x 9 x 14</td>
<td>66</td>
</tr>
</tbody>
</table>

WEIGHT

Total weight (lb) —— Unpacked — 66

Radio Receiver R-203/SR (Radiomarine Corporation of America model AR-8506B) is a self-contained, cabinet type, 5-band, intermediate and h-f superheterodyne receiver designed for the reception of a-m and c-w communication signals, and complies with FCC rules governing ship service.

The receiver is provided with ave and bfo, electrical band-spread tuning control, built-in loudspeaker, and dual jacks for ether high- or low-impedance phones.

This receiver is designed for installation and operation on shipboard or inland stations.

Radio Receiver R-203/SR is similar to Radio Receiver R-213/SR except for the difference in frequency range.
TECHNICAL CHARACTERISTICS

**FREQUENCY RANGE:** 0.085 to 25.0 mc in 5 bands:
- Band 1: 0.085 to 0.22 mc.
- Band 2: 0.21 to 0.55 mc.
- Band 3: 1.9 to 5.4 mc.
- Band 4: 5.2 to 12 mc.
- Band 5: 11.5 to 25 mc.

**NUMBER OF CRYSTALS:** None.

**PRESET FREQUENCIES:** None.

**ANTENNA:** Doublet, or other suitable antenna.

**POWER SOURCE:**
- Direct line, 115-v ac or dc, 45 w.
- Direct line, 250-v ac or dc, with 323-ohm, 75-w external resistor unit, 90 w.

**RANGE:** Dependent upon antenna used, frequency, and ionospheric conditions.

**NUMBER OF TUBES:** 10 (also 1 voltage regulator tube).

---

GENERAL APPLICATION

**USE:** For service on shipboard or inland stations.

**TO COMMUNICATE WITH:** Medium-range and long-range stations within frequency range.

**INSTALLATION:** Installed and operated on shipboard and inland stations.

**TYPE OF SIGNALS:** A-m and c-w.

---

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio Receiver R-203/8R</td>
<td>11 3/8 x 21 x 13 1/2</td>
<td>63</td>
</tr>
<tr>
<td>Line filter unit</td>
<td></td>
<td>7 1/4 x 6 1/2 x 3 1/2</td>
</tr>
<tr>
<td>External resistor unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**WEIGHT AND VOLUME**

<table>
<thead>
<tr>
<th></th>
<th>Unpacked</th>
<th>Domestic pack</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total weight (lb)</td>
<td>68</td>
<td>100</td>
</tr>
<tr>
<td>Total volume (cu ft)</td>
<td>4.5</td>
<td></td>
</tr>
</tbody>
</table>
Radio Receiver R-205/U (Hallcrafters model SX-24) is a nine-tube superheterodyne receiver designed for the reception of a-m and c-w signals in fixed-station communications. It maintains frequency stability throughout a wide range of line voltage, humidity, and temperature variations.

This receiver is equipped with a d-c operation socket for battery or vibrapack and contains a noise-limiter circuit. It has six-point variable selectivity from c-w crystal to high-fidelity, and terminals are provided for break-in relay operation. A single-signal crystal filter is a part of the standard equipment.

The controls include an v-f gain, a selectivity switch, crystal phasing, audio gain, pitch control, main tuning control, band spread tuning control, an ANL switch, high-low tone, send-receive switch, and a bfo switch.

This receiver is table-mounted in a steel cabinet.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 0.054 to 43.5 mc in 4 bands as follows:
   Band 1: 0.054 to 1.73 mc.
   Band 2: 1.7 to 5.1 mc.
   Band 3: 5.0 to 15.7 mc.
   Band 4: 15.2 to 43.5 mc.
NUMBER OF CRYSTALS: 1.
PRESET FREQUENCIES: None.
ANTENNA: Standard receiving.
POWER SOURCE: 110-v, 50 - 60-cyc ac at 70 w, or 6-v, d-c No. 301 Electronic Converter.
RANGE: Medium, dependent upon antenna used, frequency, and ionospheric conditions.
NUMBER OF TUBES: 9.

GENERAL APPLICATION

USE: For reception of signals from sets in frequency range.
TO COMMUNICATE WITH: Receives signals from transmitters in frequency range.
INSTALLATION: Fixed.
TYPE OF SIGNAL: A-m, c-w, and m-e-w.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio Receiver R-205/U</td>
<td>19 1/2 x 9 1/2 x 10 3/8</td>
<td>56</td>
</tr>
</tbody>
</table>

WEIGHT

Total weight (lb) ____________________________ 56
Radio Receiver R-206A/PR is a portable, superheterodyne, a-m communications receiver covering three tuning ranges in three bands. It is designed to operate from a 105- to 125-volt, a-c, d-c power source, or from self-contained dry batteries. A collapsible whip antenna may be used on all three bands, or a self-contained loop antenna may be used on bands one and two. A built-in speaker or headset may be used for listening, a panel-mounted jack being provided for a headset. When a power output meter is connected to the meter jack and used as a level indicator, the receiver may be used for comparative measurement of field strength.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 0.185 to 6.2 mc in three bands:
  Band 1: 0.195 to 0.41 mc.
  Band 2: 0.54 to 1.56 mc.
  Band 3: 2.2 to 6.2 mc.
PRESET FREQUENCIES: None.

ANTENNA: Whip for Band Nos. 1, 2, and 3. Loop for Band Nos. 1 and 2 only.

POWER SOURCE: 10.5- to 125-v, 50- to 60-cycle, at 40-w a-c or 10.5- to 125-v, at 40-w d-c operation.

Battery operation: 1 each 7½-v A-battery—2 each 4½-v B-batteries. (Battery B A-63)

POWER OUTPUT: 50 mv on battery operation. 0.5 w on a-c or d-c operation.

RANGE: Short and medium.

NUMBER OF TUBES: 7.

GENERAL APPLICATION

USE: Receiving signals from sets within frequency range.

TO COMMUNICATE WITH: Other sets of like frequency range or to take field strength measurements.

INSTALLATION: Portable.

TYPE OF SIGNAL: A-m tone; a-m voice.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio receiver</td>
<td>8½ x 6 x 12</td>
<td>9½</td>
</tr>
<tr>
<td>Whip antenna:</td>
<td>(extended)</td>
<td>12½</td>
</tr>
<tr>
<td></td>
<td>(collapsed)</td>
<td>17½</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

Total weight (lb) .......................................................... 21½
Total volume (cu ft) ......................................................... 2½

Radio Receiver R-208/FR (Wilcox Electric type CW3) is a highly selective superheterodyne receiver designed for the reception of e-w signals. It is operated from ground station installations for point-to-point communication, or for the reception of signals from aircraft to ground.

Radio Receiver R-209/FR (Wilcox Electric type CW3) is designed for use with receiver bay (Wilcox Electric type 113A).
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 1.95 to 16.5 mc with 4 sets of plug-in coils:
   Set 1: 1.95 to 3.6 mc.
   Set 2: 3.5 to 6.1 mc.
   Set 3: 5.6 to 10 mc.
   Set 4: 9.4 to 16.5 mc.
NUMBER OF CRYSTALS: 1 (operating).
PRESET FREQUENCIES: 1 preset operation only.
ANTENNA: Doublet, rhombic, or other suitable type.
TYPE MODULATION: C-w only.
FREQUENCY CONTROL: Crystal.
POWER SOURCE: 115-v, 50- to 60-cyc. 70-w.
RANGE: Dependent upon antenna used, frequency, and ionospheric conditions.
NUMBER OF TUBES: 7.

GENERAL APPLICATION

USE: Point-to-point and air-to-ground. Designed for use in receiver bay (Wilcox Electric type 113A), with long-range remote control.
TO COMMUNICATE WITH: Long-range stations or aircraft.
INSTALLATION: Fixed station.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio Receiver R-208/FR</td>
<td>3 15/32 x 12 1/2 x 19</td>
<td>20.6</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

<table>
<thead>
<tr>
<th></th>
<th>Unpacked</th>
<th>Domestic</th>
<th>Export</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total weight (lb)</td>
<td>20.6</td>
<td>25.0</td>
<td>40.0</td>
</tr>
<tr>
<td>Total volume (cu ft)</td>
<td>0.95</td>
<td>2.5</td>
<td></td>
</tr>
</tbody>
</table>
Radio Receiver R-209/FR (Wilcox Electric type P3) is a highly selective superheterodyne receiver designed for the reception of voice a-m signals. It is operated from ground station installations for point-to-point communication or for the reception of signals from aircraft to ground.

Radio Receiver R-209/FR is similar in appearance and functioning to Radio Receiver R-208/FR. The receiver circuit of R-209/FR consists of an r-f amplifier stage, a mixer and an h-f oscillator stage, an i-f amplifier stage, detector, automatic volume-control stage, and an output and noise suppressor stage. This receiver also contains its own power supply circuit.

Radio Receiver R-209/FR is designed for use with receiver bay (Wilcox Electric type 113A).
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 1.95 to 16.50 mc with 4 sets of plug-in coils:
  Set 1: 1.95 to 3.6 mc.
  Set 2: 3.5 to 6.1 mc.
  Set 3: 5.6 to 10 mc.
  Set 4: 9.4 to 16.5 mc.

NUMBER OF CRYSTALS: 1 operating.

PRESET FREQUENCIES: 1 preset operation only.

ANTENNA: Any suitable antenna.

TYPE MODULATION: Voice and amplitude.

FREQUENCY CONTROL: Crystal.

POWER SOURCE: 110-v, 60-yea.

RANGE: Dependent upon terrain, weather conditions, anten-

نة, and frequency used.

NUMBER OF TUBES: 6.

GENERAL APPLICATION

USE: For use in receiver bay Wilcox Electric type 113A

as a fixed station, with long range remote control.

TO COMMUNICATE WITH: Long-range stations or air-

craft.

INSTALLATION: Fixed station.

TYPE OF SIGNAL: Voice and a-m.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio Receiver R-209/FR</td>
<td>3 1/2 x 12 1/4 x 19</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

<table>
<thead>
<tr>
<th>Total weight (lb)</th>
<th>Unpacked</th>
<th>Domestic pack</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>20</td>
<td>50</td>
</tr>
<tr>
<td>Total volume (cu ft)</td>
<td>0.467</td>
<td>2.39</td>
</tr>
</tbody>
</table>
Status: Limited standard. Stock No.: 2C4534.

Radio Receiver R-210/U (Hallicrafters model S-22-R) is an eight-tube superheterodyne receiver, table-mounted and encased in a metal cabinet. It has built-in speaker, and it is designed for the reception of a-m and c-w signals in fixed-station communication.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 0.11 to 18.0 mc in 4 bands.
NUMBER OF CRYSTALS: None.
PRESET FREQUENCIES: None.
ANTENNA: Long wire.
POWER SOURCE: 110- to 125-v de, or ac at 50-w.
RANGE: Medium and long.
NUMBER OF TUBES: 8.

GENERAL APPLICATION

USE: Point-to-point communication.

TO COMMUNICATE WITH: Receives signals from stations within frequency range.
INSTALLATION: Fixed.
TYPE OF SIGNAL: A.m or C.w.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Receiver R-210/U</td>
<td>18 x 8 1/2 x 9 1/4</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

<table>
<thead>
<tr>
<th></th>
<th>Domestic pack</th>
<th>Export pack</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total weight (lb)</td>
<td>31</td>
<td>55</td>
</tr>
<tr>
<td>Total volume (cu ft)</td>
<td></td>
<td>2</td>
</tr>
</tbody>
</table>

Radio Receiver R-211/U (National HRO Series of Receivers) is a nine-tube superheterodyne receiver. This equipment is designed for the reception of voice or tone, a-m and e-w signals, and can be used in fixed stations.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 0.05 to 30.0 mc in 9 coil sets (except from 0.430 to 0.480 mc) as follows:
- Type J: 0.05 to 0.1 mc.
- Type H: 0.1 to 0.2 mc.
- Type G: 0.18 to 0.43 mc.
- Type F: 0.48 to 0.96 mc.
- Type E: 0.90 to 2.05 mc.
- Type D: 1.7 to 4.0 mc.
- Type C: 3.5 to 7.3 mc.
- Type B: 7.0 to 14.4 mc.
- Type A: 14.0 to 30.0 mc.

NUMBER OF CRYSTALS: 1 filter band pass (built-in) 0.456 mc.

PRESET FREQUENCIES: None.

ANTENNA: Doublet 500-ohm input, or single wire.

POWER SOURCE: External: 115-v., 50- to 60-cycle ac, National type SPU-697; or, 6-v de, National type SPU-686-S.

POWER OUTPUT: 2 w.

NUMBER OF TUBES: 9 in receiver, 1 in power supply.

GENERAL APPLICATION

USE: In fixed station for reception of voice or tone a-m, or c-w signals.

TO COMMUNICATE WITH: Receives signals from medium and long-range stations.

INSTALLATION: Designed for fixed station.

TYPE OF SIGNAL: A-m, c-w, and m-c-w.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio Receiver R-140/FSM-1.8 x 19 x 12</td>
<td>37</td>
<td></td>
</tr>
<tr>
<td>Power supply SPU-697</td>
<td>5½ x 19 x 9¾</td>
<td>22</td>
</tr>
<tr>
<td>Coil box with 8 coil sets</td>
<td>4½ x 20½ x 11¾</td>
<td>22</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

<table>
<thead>
<tr>
<th></th>
<th>Packed</th>
<th>Unpacked</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total weight (lb)</td>
<td>81</td>
<td>211</td>
</tr>
<tr>
<td>Total volume (cubic ft)</td>
<td>2.4</td>
<td>9.1</td>
</tr>
</tbody>
</table>

Radio Receiver R-212/SR (Federal model Mackey 128-AV) is a self-contained cabinet type, tuned r-f regenerative-detector receiver designed for use on ships and also at fixed stations. It covers the intermediate and l-f bands, and can be used for the reception of both code and modulated signals.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 0.015 to 0.65 me in 4 bands:
   Band A: 0.015 to 0.041 me.
   Band B: 0.037 to 0.105 me.
   Band C: 0.095 to 0.26 me.
   Band D: 0.24 to 0.65 me.

NUMBER OF CRYSTALS: None.

ANTENNA: Long-wire.

POWER SOURCE: Any one of the following:
   A-c line—115-v, 60-cyc, 36-w.
   D-e line with A battery—115-v, 0.17 amp, A battery 6.3-v, 1.9 amp.
   Batteries—B Battery, 90-v, 7–12 ma, A battery 6.3-v, 1.9 amp.

RANGE: Medium, dependent upon antenna used, frequency, and ionospheric conditions.

NUMBER OF TUBES: 6.

GENERAL APPLICATION

USE: Marine or fixed-station service.

TO COMMUNICATE WITH: Any transmitter operating within frequency range.

INSTALLATION: Shipboard or fixed station.

TYPE OF SIGNAL: A-m and e-w.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio Receiver R-212/SR</td>
<td>9½ x 17 x 12½</td>
<td>43</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

<table>
<thead>
<tr>
<th></th>
<th>Export pack</th>
<th>Unpacked</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total weight (lb)</td>
<td>43</td>
<td>74</td>
</tr>
<tr>
<td>Total volume (cu ft)</td>
<td>0.2</td>
<td></td>
</tr>
</tbody>
</table>
Radio Receiver R–213/SR (Radiomarine Corporation of America model AR–8506BC) is a self-contained, cabinet type, 4-band intermediate and h-f superheterodyne receiver designed for the reception of a–m and c–w communication signals, and complies with FCC rules governing ship service.

This receiver is provided with avc and bfo, electrical band spread tuning control, built-in loudspeaker, and dual jacks for either high- or low-impedance phones.

This receiver is designed for installation and operation on shipboard or inland stations.

Radio Receiver R–213/SR is similar to Radio Receiver R–203/SR except for the difference in frequency range.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 0.21 to 25.0 mc, in 4 bands:
Band 1: 0.21 to 0.55 mc.
Band 2: 1.9 to 5.4 mc.
Band 3: 5.2 to 12 mc.
Band 4: 11.5 to 25 mc.

NUMBER OF CRYSTALS: None.

PRESET FREQUENCIES: None.

ANTENNA: Doublet, or other suitable antenna.

POWER SOURCE: Direct line, 115-v ac or dc, 45 w. Direct line, 250-v ac or dc, with 325-ohm, 75-w external resistor unit, 90 w.

RANGE: Dependent upon antenna used, frequency, and ionospheric conditions.

NUMBER OF TUBES: 10 (also 1 voltage regulator tube).

GENERAL APPLICATION

USE: For service on shipboard or inland stations.

TO COMMUNICATE WITH: Medium-range and long-range stations within frequency range.

INSTALLATION: Installed and operated on shipboard and inland stations.

TYPE OF SIGNAL: A.m and c.w.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio receiver</td>
<td>11(\frac{3}{4}) x 21 x 13(\frac{3}{8})</td>
<td>63</td>
</tr>
<tr>
<td>Line filter unit</td>
<td>7(\frac{1}{4}) x 6(\frac{1}{8}) x 3(\frac{3}{8})</td>
<td>5</td>
</tr>
<tr>
<td>External resistor unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

<table>
<thead>
<tr>
<th>Total weight (lb)</th>
<th>Domestic pack</th>
<th>Unpacked</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>68</td>
<td>100</td>
</tr>
</tbody>
</table>

| Total volume (cu ft) | |
|----------------------|--|---|
|                      | 4.5          |

Radio Receiver R-215/SR (RMCA model AR-8510) is designed for use on shipboard. Encased in a steel cabinet, it contains integral coils, a built-in 3-inch speaker, a charging panel, and headphones. This receiver is operated by external power supply batteries and is designed for reception of signals from stations on shore and shipboard.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 0.015 to 0.65 mc in 4 bands:
   Band 1: 0.015 to 0.038 mc.
   Band 2: 0.038 to 0.1 mc.
   Band 3: 0.1 to 0.25 mc.
   Band 4: 0.25 to 0.65 mc.

NUMBER OF CRYSTALS: None.
PRESET FREQUENCIES: None.
ANTENNA: Long-wire or shipboard.
POWER SOURCE: 6-v battery and 90-v battery only.
     110-v de or 115-v ac 60- cycle at 35 w.
RANGE: Short to medium.
NUMBER OF TUBES: 5.

GENERAL APPLICATION

USE: Ship-to-ship or shore-to-ship communication.
TO COMMUNICATE WITH: Receiver signals from stations within frequency range.
INSTALLATION: Fixed or shipboard.
TYPE OF SIGNAL: A-m, m-e-w, and e-w.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio receiver</td>
<td>8 1/2 x 22 x 13</td>
<td>39</td>
</tr>
<tr>
<td>Power supply</td>
<td>11 3/4 x 9 1/2 x 8 3/4</td>
<td>21 1/2</td>
</tr>
</tbody>
</table>

WEIGHT

Total weight (lb) ------------------------------------------- 50.5

Radio Transmitting Equipment RC-52 is a local or remote-controlled transmitting equipment, designed for point-to-point to communication. The equipment consists of Radio Transmitter BC-452 and Remote Control Unit RM-22 and it is designed to start and stop automatically by full remote control.

Either of two preset frequencies may be selected, as well as the type of emission.

Radio Transmitting Equipment RC-52 is operated as a fixed station.
**TECHNICAL CHARACTERISTICS**

**FREQUENCY RANGE:** 1.5 to 7.0 mc in 4 bands.
**NUMBER OF CRYSTALS:** 2.
**PRESET FREQUENCIES:** 2.
**ANTENNA:** Rhombic or doublet, fixed station.
**TYPE MODULATION:** Amplitude.
**FREQUENCY CONTROL:** Crystal.
**POWER SOURCE:** 115-v, 60-cyc, single-phase ac.
**POWER OUTPUT:** 300 w.
**RANGE:** Medium, dependent upon antenna used, frequency, and ionospheric conditions.
**NUMBER OF TUBES:** 25.

**GENERAL APPLICATION**

**USE:** Point to point and air warning.

**TO COMMUNICATE WITH:** Equipment within frequency range.
**INSTALLATION:** Fixed.
**TYPE OF SIGNAL:** A-m, e-w, and m-e-w.

**PRINCIPAL COMPONENTS**

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio Transmitter BC-452</td>
<td>29x24x72</td>
</tr>
<tr>
<td>Remote Control Unit RM-22</td>
<td></td>
</tr>
<tr>
<td>Microphone T-27-B</td>
<td></td>
</tr>
</tbody>
</table>

**WEIGHT AND VOLUME**

<table>
<thead>
<tr>
<th></th>
<th>Unpacked</th>
<th>Exportpack</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total weight (lb)</td>
<td>1,250</td>
<td>1,750</td>
</tr>
<tr>
<td>Total volume (cu ft)</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Ship tons</td>
<td>1.3</td>
<td></td>
</tr>
</tbody>
</table>

Remote Control Equipment RC-261 provides remote press-to-talk operation of voice radio sets when 1/2 mile of field wire is used. Wire communication between local and remote points is also provided without operation of the radio set.

Remote Control Unit RM-52 and Control Unit RM-53 are the major components of Remote Control Equipment RC-261. Additional components required are two Microphones T-17, two Headsets HHS-30/U with Cord CD-605 attached, and field wire.

A canvas carrying Bag BO-186 is provided. This bag holds one Remote Control Unit RM-52, one Control Unit RM-53, one Microphone T-17, and one Headset HS-30/U with Cord CD-605 attached.
TECHNICAL CHARACTERISTICS

POWER SOURCE:
Remote Control Unit RM-52 operates from 6-v dc supplied by four Batteries BA-30.
Control Unit RM-53 operates from 3-v dc supplied by two Batteries BA-30.

RANGE: ½ mi.
NUMBER OF TUBES: None.

GENERAL APPLICATION

USE: Provides for remote operation of, and voice communication over voice-operated sets on a preset frequency, with a preset adjustment of the volume control for distances up to ½ mile from radio set.

INSTALLATION: Portable or fixed.

TYPE OF SIGNAL: Audio.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remote Control Unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RM-52</td>
<td>7½ x 3½ x 5¼</td>
<td>3 ⅔</td>
</tr>
<tr>
<td>Control Unit RM-53</td>
<td>8½ x 4½ x 4¼</td>
<td>4½</td>
</tr>
<tr>
<td>Bag BG-186</td>
<td>15½ x 5 x 9½</td>
<td>2</td>
</tr>
<tr>
<td>Microphone T-17</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Headset HS-30/U</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

<table>
<thead>
<tr>
<th></th>
<th>Export pack</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total weight (lb)</td>
<td>7½</td>
</tr>
<tr>
<td>Total volume (cu ft)</td>
<td>4</td>
</tr>
</tbody>
</table>
Remote Control Equipment RC-289 provides for remote c-w and phone operation of radio sets such as Radio Set SCR-509 and Radio Set AN/GRC-9.
Control Unit RM-39 is the major component of Remote Control Equipment RC-289. One each of the following additional items are provided: Telephone EE-8, Headset IIS-30 or equivalent, Microphone T-17, Key J-47, a leg band mounting, and Cords CD-2134, CD-1255, and CD-1256. Case CS-76-J is provided for carrying Control Unit RM-39, cords, and accessories.
TECHNICAL CHARACTERISTICS

POWER SOURCE: One Battery BA-27, 4½-v and two Batteries BA-34, 7½-v each.
RANGE: Up to 3 mi of Wire WD-1/TT.
NUMBER OF TUBES: None.

GENERAL APPLICATION

USE: Provides remote c-w and phone operation of radio sets such as Radio Set SCR-509 and Radio Set AN/GRC-9.
TO COMMUNICATE WITH: Telephone EE-8 at the remote control sight or various Signal Corps radio sets by means of the local radio set.
INSTALLATION: Portable or semifixed station.
TYPE OF SIGNAL: Voice or d-c.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control Unit RM-39</td>
<td>9½ x 6½ x 3</td>
<td>12.9</td>
</tr>
<tr>
<td>Telephone EE-8</td>
<td>9½ x 7½ x 3½</td>
<td>9.5</td>
</tr>
<tr>
<td>Case CS-76-J</td>
<td>9½ x 8½ x 6½</td>
<td>2.0</td>
</tr>
<tr>
<td>Cord CD-1254</td>
<td>60</td>
<td>0.5</td>
</tr>
<tr>
<td>Cord CD-1255</td>
<td>72</td>
<td>0.25</td>
</tr>
<tr>
<td>Cord CD-1256</td>
<td>32</td>
<td>0.3</td>
</tr>
<tr>
<td>Key J-47</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Leg band mounting.

WEIGHT AND VOLUME

| Total weight (lb) | 57 |
| Total volume (cu ft) | 2.6 |
Remote Control Equipment RC-290 provides local push-to-talk control and local or remote modulation of a radio transmitter.

Remote Control Equipment RC-290 consists of Remote Control Unit RM-29, Telephone EE-8, Case CS-76, Battery BA-27, and accessories.

Remote Control Equipment RC-290 is usually located adjacent to the radio set; however, it can be located at a distance from some types of radio sets under certain conditions. It has no remote push-to-talk control.

It can be used for connections between radio sets and wire lines. Two Remote Control Units RM-29 may be used back-to-back to interconnect two radio sets. In all cases, an attendant is required at the control unit to perform the push-to-talk control.

Remote Control Unit RM-29 operates in conjunction with Telephone EE-8 over a two-wire telephone line. Although the control may be used only at the remote control unit, the terminus for signals transmitted and received may be either Remote Control Unit RM-29 or Telephone EE-8.
TECHNICAL CHARACTERISTICS
POWER SOURCE: One Battery BA-27; two Batteries BA-30 in Telephone EE-8.
RANGE: 2 mi of Wire WD-1/TT.

GENERAL APPLICATION
USE: Local push-to-talk control of radio sets.
TO COMMUNICATE WITH: Remote control site.
INSTALLATION: Ground, semifixed.
TYPE OF SIGNAL: Voice.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remote Control Unit RM-29</td>
<td>9 7/8 x 6 3/4 x 5 1/4</td>
<td>13.5</td>
</tr>
<tr>
<td>Telephone EE-8</td>
<td>9 7/8 x 7 1/8 x 3 1/2</td>
<td>9.5</td>
</tr>
<tr>
<td>Case CS-76</td>
<td>10 1/2 x 9 1/4 x 7</td>
<td>2</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME
Total weight (lb) 85
Total volume (cu ft) 3
Status: Limited standard. Stock No.: 2S177A.

Radio Set SCR-177-A is a transportable ground set used between tactical field units. It is transported in vehicles or cargo aircraft. This set differs from Radio Set SCR-177-B in that only one receiver (Radio Receiver BC-189-A), with a frequency range from 0.4 to 4.5 mc, is used.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE:
Transmitter: 0.4 to 4.0 mc in 3 bands:
Band 1: 0.4 to 0.8 mc.
Band 2: 1.5 to 3.0 mc.
Band 3: 3.0 to 4.0 mc.
Receiver: 0.4 to 4.5 mc in 4 bands.
NUMBER OF CRYSTALS: None.
PRESET FREQUENCIES: None.
ANTENNA: Crowfoot, 0.4 to 0.8 mc, ¼-wave inverted L.
TYPE MODULATION: Amplitude.
FREQUENCY CONTROL: Mo.
POWER SOURCE: Power Unit PE-49; Dynamotor Unit RD-69; one 12-v storage Battery BB-30.
POWER OUTPUT: 75 w.
RANGE: C-w, 100 mi; tone, 70 mi; voice, 30 mi.
NUMBER OF TUBES:
5 in transmitter.
8 in receiver.

GENERAL APPLICATION

USE: Signal Corps, CAC, TD.
INSTALLATION: Ground, vehicle transported.
TYPE OF SIGNAL: C-w, tone, voice, a-m.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transmitter BC-191-A</td>
<td>21 1/2 x 23 1/2 x 9 3/4</td>
<td>55</td>
</tr>
<tr>
<td>Receiver BC-189-A</td>
<td>7 1/4 x 16 3/4 x 7 3/4</td>
<td>12.5</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

<table>
<thead>
<tr>
<th>Total weight (lb)</th>
<th>Total volume (cu ft)</th>
<th>Ship tons</th>
</tr>
</thead>
<tbody>
<tr>
<td>850</td>
<td>28</td>
<td>1</td>
</tr>
</tbody>
</table>

Unpacked Exportpack
Figure 83. Radio Set SCR-177-B principal components.


Radio Set SCR-177-B is a transportable field set used for communication between tactical field units and as a ground set in ground-to-plane communication. It is transported by vehicle or by cargo aircraft. Unlike Radio Set SCR-177-A, Radio Set SCR-177-B uses two receivers: one of lf and one of hf.

The receivers are of the superheterodyne type intended for general field use. They are ruggedly built and are highly sensitive and selective. They are identical in size and appearance, differing only in the frequency range.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE:
Transmitter: 0.4 to 0.8 mc in 3 bands.
Receiver (lf): 0.15 to 1.5 mc.
Receiver (hf): 1.5 to 18.0 mc.
NUMBER OF CRYSTALS: None.
PRESET FREQENCIES: None.
TYPE MODULATION: Amplitude.
POWER SOURCE: Power Unit PE-49-C; storage Battery BB-46.
POWER OUTPUT: 75 w.
RANGE: C-w, 100 mi; tone, 70 mi; voice, 20 mi.
NUMBER OF TUBES: 5 in transmitter; 9 in each receiver.

GENERAL APPLICATION
USE: Communication in two-way net communication with the same or other sets within the frequency range.

TO COMMUNICATE WITH: Radio Sets SCR-177-A, 188, 193, 399, 499, 506, 536, 543, 593, 694, and AN/VRC-1.
INSTALLATION: Ground, transported by vehicle or cargo aircraft.
TYPE OF SIGNAL: C-w, tone, voice.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio Transmitter BC-191-C</td>
<td>21½ x 32½ x 9½</td>
<td>55</td>
</tr>
<tr>
<td>Radio Receiver BC-312-C</td>
<td>10½ x 15¼ x 9</td>
<td>48.5</td>
</tr>
<tr>
<td>Radio Receiver BC-314-C</td>
<td>10½ x 15¼ x 9</td>
<td>47.5</td>
</tr>
<tr>
<td>Power Unit PE-49-C</td>
<td>22 ½ x 35 ½ x 22</td>
<td>260.00</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

<table>
<thead>
<tr>
<th></th>
<th>Unpacked</th>
<th>Domestic pack</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total weight (lb)</td>
<td>1,000</td>
<td>1,265</td>
</tr>
<tr>
<td>Total volume (cu ft)</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>Ship tons</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>
Status: Limited standard. Stock No.: 2S188.
Radio Set SCR-188 is a ground, transportable set, used for ground-to-ground or ground-to-air communication. It is transported by vehicle or cargo plane.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE:
Transmitter: 1.5 to 12.5 mc.
Receiver: 0.4 to 13.0 mc.

NUMBER OF CRYSTALS: 1.

PRESET FREQUENCIES: None.


TYPE MODULATION: Amplitude.

FREQUENCY CONTROL: Mo.

POWER SOURCE: Power Unit PE-49, Dynamotor Unit ED-69, with 12-v storage battery RB-50.

POWER OUTPUT: 75 w.

RANGE: C-w, 100 mi; tone, 70 mi; voice, 30 mi.

NUMBER OF TUBES: 13.

GENERAL APPLICATION

USE: Ground-to-ground or ground-to-air, medium-range command set used by Signal Corps and USAF.


INSTALLATION: Ground station.

TYPE OF SIGNAL: C-w, tone, voice, and a-m.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transmitter BC-AA-191</td>
<td>20½ x 21 x 9¼</td>
<td>32</td>
</tr>
<tr>
<td>Receiver Unit BC-189-A</td>
<td>7½ x 16½ x 7½</td>
<td>12.5</td>
</tr>
<tr>
<td>Power Unit PE-49</td>
<td>21 x 35 x 16</td>
<td>145</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

<table>
<thead>
<tr>
<th></th>
<th>Unpacked</th>
<th>Export pack</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total weight (lb.)</td>
<td>101</td>
<td></td>
</tr>
<tr>
<td>Total volume (cu ft)</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>Ship tons</td>
<td>2.5</td>
<td></td>
</tr>
</tbody>
</table>
Figure 85. Radio Set SCR-188-A showing components in operating position.


Radio Set SCR-188-A is a ground transportable set, used for ground-to-ground or ground-to-air communication. It is primarily intended for fixed or semifixed use inside building where commercial a-e power and suitable operating tables are available. However, in an emergency this set can be operated on Power Unit PE-75 (only the control units can be powered by batteries).

The transmitting units are provided with rugged operating chests and can be erected out-of-doors but the receiving units must be installed under adequate shelter.

Radio Set SCR-188-A can be remotely controlled up to a distance of 5 miles when Wire W-110-B is used or up to a distance of approximately 71/2 miles when commercial open wire line or cable is used.

This set is transported by vehicle or cargo plane.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE:
- Transmitter: 1.5 to 12.5 mc.
- Receiver: 1.5 to 18.0 mc.

NUMBER OF CRYSTALS: 1 in receiver.


TYPE MODULATION: Amplitude.

POWER SOURCE:
- Transmitter: 115-v or 230-v, 60-cyc commercial power or Power Unit PE-75 and Rectifier RA-34. Receiver: 115-v, 60-cyc commercial power if operated remote from transmitting site. Control units: 4 batteries BA-30.

POWER OUTPUT: 7.5 w (less at frequencies above 8 mc).

RANGE: C-w, 100 mi, tone, 70 mi, and voice, 30 mi.

NUMBER OF TUBES: 19.

GENERAL APPLICATION

USE: Ground-to-ground or ground-to-plane communications.


INSTALLATION: Operated on ground only. Transported in vehicle or plane.

TYPE OF SIGNAL: C-w, tone, and voice.

PRINCIPAL COMPONENTS

Name | Dimensions (in.) | Weight (lb)
--- | --- | ---
1 Transmitter BC-191-C (in Chest CH-27-A) | 21¾ x 23¾ x 9½ | 55
1 Receiver BC-342-C (in Chest CH-56) | 10 x 9½ x 15½ | 61.5
6 Transmitter Tuning Units: TU-5-A up to and including TU-10-A in 2 Chests CH-32-A (each) | 7¾ x 16¼ x 8½ | 12 approx (each)
1 Rectifier RA-34-B | | 240.0
1 Power Unit PE-75 | 36 x 19½ x 26½ | 290
1 Remote Control Equipment RC-47 | 3¾ x 3½ x 2½ | 0.418

WEIGHT AND VOLUME

Total weight (lb) | 1,385 | 2,018
Total volume (cu ft) | 100 | 2.5
Ship tons | | 2.5
Figure 86. Radio Set SCR-193-J in operation.


Radio Set SCR-193-(*) represents Radio Sets SCR-193-D, -G, -H, -J, -K, -KB, -KW, -L, -M, -P, -Q, -R, -S, -T, and -U. Radio Set SCR-193-(*) is a vehicular set designed for two-way communication between moving or stationary vehicles, using e-w, tone, and voice signals over distances ranging from approximately 15 to 30 miles moving, and approximately 20 to 60 miles stationary, depending upon type of signal used.

The various models of the sets listed above are adapted for installation and operation in different types of vehicles, including scout cars, combat cars, command trucks, etc.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE:
Radio Transmitter BC-181: 1.5 to 6.2 me (frequency range determined by plugging in tuning units as follows: Tuning Unit TU-5: 1.5 to 3.0 me. TU-6: 3.0 to 4.5. TU-7: 4.5 to 6.2)
Radio Receiver BC-312: 1.5 to 18 me.

NUMBER OF CRYSTALS: 1 in receiver.

PRESET FREQUENCIES: None.

ANTENNA: Fishpole type, 15½ ft on Mast Base MP-57 or MP-65.

TYPE MODULATION: Amplitude.

FREQUENCY CONTROL: Mo.

POWER SOURCE: 12-v vehicular storage battery.

POWER OUTPUT: Approx 75 w.

RANGE: Voice, 20 mi stationary, 15 mi moving; tone, 40 mi stationary, 20 mi moving; c-w, 60 mi stationary, 30 mi moving. Dependent upon terrain and atmospheric conditions.

NUMBER OF TUBES:
Transmitter: 5.
Receiver: 9.

GENERAL APPLICATION

USE: for two-way communication between moving or stationary vehicles, or between vehicle and air.


INSTALLATION: Installed and operated in vehicle.

TYPE OF SIGNAL: C-w, tone, and voice.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio Transmitter BC-181</td>
<td>20½ x 23½ x 9½</td>
<td>55.75</td>
</tr>
<tr>
<td>Radio Receiver BC-312</td>
<td>10¾ x 18 x 9</td>
<td>38</td>
</tr>
<tr>
<td>Dynamotor Unit BD-77</td>
<td>11 x 11 x 7½</td>
<td>37.3</td>
</tr>
<tr>
<td>Transmitter Tuning Unit TU-5</td>
<td>7½ x 16¾ x 8¼</td>
<td>14.43</td>
</tr>
<tr>
<td>Transmitter Tuning Unit TU-6</td>
<td>7¼ x 16¾ x 8¾</td>
<td>14.43</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

<table>
<thead>
<tr>
<th>Description</th>
<th>Domestic pack</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total weight (lb)</td>
<td>648</td>
</tr>
<tr>
<td>Total volume (cu ft)</td>
<td>20</td>
</tr>
<tr>
<td>Ship tons</td>
<td>½</td>
</tr>
</tbody>
</table>
Status: Standard. Stock No.: 2S244A (SCR-244-A) and 2S244B (SCR-244-B). Reference: TM 11-866.

Radio Set SCR-244-(*) represents Radio Sets SCR-244-A and -B.

Radio Set SCR-244-(*) consists of a superheterodyne receiver and an external power supply unit. The receiver uses a conventional circuit and is designed for the reception of e.w, a.m, or tone signals with either manual or automatic control.

The receiver has a jack for a headset and phone terminals so that it may be used as an audio amplifier.

This set uses an external power supply unit, but may also be operated from batteries in an emergency.

Radio Set SCR-244-(*) is primarily intended for fixed-station use, although mountings for vehicular installation may be utilized.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 0.54 to 20 mc, in 5 bands:
- Band 1: 0.54 to 1.16 mc.
- Band 2: 1.16 to 2.5 mc.
- Band 3: 2.5 to 5.0 mc.
- Band 4: 5.0 to 10.0 mc.
- Band 5: 10.00 to 20.0 mc.

NUMBER OF CRYSTALS: 1 built-in crystal filter (for signal selectivity).

PRESET FREQUENCIES: 5-position band switch.

ANTENNA: Single wire and ground, or doublet with balanced transmission line.

TYPE MODULATION: C-w, amplitude, or tone.

POWER SOURCE:
- Radio Set SCR-244-A: Power Supply Unit RA-84, 115, 115, 125-v, 50/60-cycle ac.
- Radio Set SCR-244-B: Power Supply Unit RA-84-A, 115 or 230-v, 50/60-cycle ac, or 6-v storage battery, 45-v B batteries.

RANGE: Long.

NUMBER OF TUBES: 16 in receiver; 2 in power supply unit.

GENERAL APPLICATION

USE: To receive c-w, a-m, or tone signals, or used as an audio amplifier.


INSTALLATION: Designed for fixed-station use, but mountings for vehicular installation may be utilized.

TYPE OF SIGNAL: C-w and a-m.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio Receiver BC-1004</td>
<td>10½ x 10 x 15½</td>
<td>55</td>
</tr>
<tr>
<td>Cabinet CH-104-A</td>
<td>12¼ x 23 x 16½</td>
<td>18</td>
</tr>
<tr>
<td>Power Supply Unit RA-84 or RA-94-A</td>
<td>10½ x 10 x 10</td>
<td>60</td>
</tr>
<tr>
<td>Transistor HS-30/U</td>
<td></td>
<td>1.7</td>
</tr>
<tr>
<td>Cords, wires, insulators, etc.</td>
<td></td>
<td>11.9</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

<table>
<thead>
<tr>
<th></th>
<th>Unpacked</th>
<th>Exposed pack</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total weight (lb)</td>
<td>146.6</td>
<td>175</td>
</tr>
<tr>
<td>Total volume (cu ft)</td>
<td>5.281</td>
<td>7.4</td>
</tr>
</tbody>
</table>

Radio Set SCR-281-(*) represents Radio Sets SCR-281-A, -B, and -D. Radio Set SCR-281-(*) consists of an a-m, radiotelephone transmitter and receiver designed for operation on coastal and harbor vessels or in land stations for communication with such vessels.

These sets cannot be used for radiotelegraph transmission or reception.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 1.7 to 2.75 me (both receiver and transmitter).
NUMBER OF CRYSTALS: 4 receiving, 4 transmitting.
PRESET FREQUENCIES: 4.
ANTENNA: Single-wire antenna and ground; or Antenna Tuning Unit BC-619-A, Antenna AN-44-A; or a 35 ft, whip-type antenna.
TYPE MODULATION: Amplitude.
FREQUENCY CONTROL: Crystal.
POWER SOURCE: 115-v, 60-cyc, single-phase ac. Transmitter 230 w, receiver 107 w.
POWER OUTPUT: Transmitter 25 w.
RANGE: 10 mi over land, 25 mi over water.
NUMBER OF TUBES: 13.

GENERAL APPLICATION

USE: Operation on coastal and harbor vessels or in land stations for communication with such vessels.

INSTALLATION: Shipboard installation and operation or fixed land installation for communication with shipboard stations.
TYPE OF SIGNAL: Transmitter: a.m., voice. Receiver: a.m., voice, m.e.w.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio Receiver and Transmitter BC-441-D</td>
<td>16 1/2 x 10 x 16</td>
<td>102</td>
</tr>
<tr>
<td>Radio Receiver and Transmitter BC-441-A or BC-441-B</td>
<td>16 1/2 x 10 x 16</td>
<td>93</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

<table>
<thead>
<tr>
<th>Total weight (lb)</th>
<th>Total volume (cu ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>143</td>
<td>6</td>
</tr>
</tbody>
</table>
Radio Set SCR-293-(*) represents Radio Sets SCR-293 and SCR-293-B. Radio Set SCR-293-(*) is a short-range vehicular set designed to provide two-way f-m voice communication between mobile units. This set was developed particularly for use in light tanks and scout cars.

Radio Receiver BC-499 used with this set is an 11-tube, crystal-controlled, 5-channel, f-m, superheterodyne receiver, and is designed for the reception of f-m signals of the type generated by Radio Receiver and Transmitter BC-500.

Mounting FT-239 is used for all installations involving either Radio Sets SCR-293-(*) or SCR-294. It consists of a welded steel framework designed to accommodate Radio Receiver BC-499 or Radio Receiver and Transmitter BC-500, or both.

This set has been replaced by Radio Sets SCR-508 and SCR-528.

By omitting Radio Receiver and Transmitter BC-500 this set is identical with Radio Set SCR-294. Radio Set SCR-294 has been replaced by Radio Set SCR-538.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 20 to 27.9 mc.
NUMBER OF CRYSTALS: 5 in transmitter; 5 in each receiver.

PRESET FREQUENCIES:
- Radio Receiver and Transmitter BC-500: 5.

ANTENNA: 9-ft flexible whip Antenna AN-42-A (2-ft extension for use on 20 to 23 mc).

TYPE MODULATION: Frequency.
FREQUENCY CONTROL: Crystal.

POWER SOURCE:
- 12-v vehicular battery for Radio Sets SCR-293 and SCR-294.
- 24- or 28-v vehicular battery for Radio Sets SCR-293-B and SCR-294-B.

POWER OUTPUT: High, 25 w; low, 1/2 w.
RANGE: 5 mi moving; 7 mi stationary (15 mi maximum).
NUMBER OF TUBES: 39.

GENERAL APPLICATION

USE: Short-range mobile communication between armored force units.


INSTALLATION: Installed and operated in vehicle.

TYPE OF SIGNAL: Voice.

PRINCIPAL COMPONENTS

Name | Dimensions (in.) | Mounted
---|---|---
Radio Receiver and Transmitter BC-500 | 12 x 14 1/2 x 34
Radio Receiver BC-499 | Mounting FT-239
Antenna AN-42-A |

WEIGHT AND VOLUME

<table>
<thead>
<tr>
<th>Description</th>
<th>Weight (lb)</th>
<th>Volume (cu ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>115</td>
<td>2.6</td>
</tr>
</tbody>
</table>
Status: Limited standard. Stock No.: 2S298.

Radio Set SCR-298 is an f-m, 25-watt set designed for installation and operation in a vehicle, and provides 2-way voice communication.

It is powered by a 6-watt vehicular storage battery.

The minimum range of this set is approximately 10 miles stationary, and approximately 7 miles moving, depending upon terrain and atmospheric conditions.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 20 to 28 mc.
NUMBER OF CRYSTALS: 1 in transmitter; 2 in receiver.
PRESET FREQUENCIES: 1.
ANTENNA: Whip.
TYPE MODULATION: Frequency.
FREQUENCY CONTROL: Crystal.
POWER SOURCE: 6-v vehicular storage battery (2.25 amp stand-by, 32 amp transmitting).
POWER OUTPUT: 25 w.
RANGE: Approximately 10 mi minimum stationary, approximately 7 mi minimum moving (depending upon terrain and atmospheric conditions).
NUMBER OF TUBES: 11 in receiver; 7 in transmitter.

GENERAL APPLICATION
USE: Two-way vehicular voice communication.

INSTALLATION: Installed and operated in vehicle.
TYPE OF SIGNAL: Voice.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio transmitter (Link 35-UFM)</td>
<td>9 x 17 x 8½</td>
<td>29</td>
</tr>
<tr>
<td>Radio receiver (Link 11-UF)</td>
<td>9 x 13 x 7½</td>
<td>17¾</td>
</tr>
<tr>
<td>Power unit</td>
<td>8½ x 4¼ x 5</td>
<td>7¾</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

<table>
<thead>
<tr>
<th>Name</th>
<th>Packed</th>
<th>Unpacked</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total weight (lb)</td>
<td>75</td>
<td>185</td>
</tr>
<tr>
<td>Total volume (cu ft)</td>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>

Radio Set SCR-300-A consists of an 18-tube, low-power, dry-battery-operated portable radio receiver and transmitter with accessories. It is designed for f-m, two-way communication over short distances. It is primarily intended as a walkie-talkie for foot combat troops. The complete radio installation weighs 38.23 pounds.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 40.0 to 48.0 mc.
NUMBER OF CRYSTALS: 2.
PRESET FREQUENCIES: None (continuously tunable).
ANTENNA: Whip, type AN-130-A, or AN-131-A, or
ground plane antenna types RC-291 and RC-296.
TYPE MODULATION: Frequency.
TYPE OF SIGNAL: Voice.
FREQUENCY CONTROL: Mo.
POWER SOURCE: Battery BA-80 (weight, 15 lb), or
loaded Battery Case C-139.
POWER OUTPUT: Transmitter 0.3 mw (rf). Receiver 2
mW (af).
RANGE: 3 mi approx.
NUMBER OF TUBES: 18.

GENERAL APPLICATION

USE: Combat Troop control, vehicle control, and small boat
control.

TO COMMUNICATE WITH: Radio Set SCR-300 and Ra-
dio Set AN/VRC-3.
INSTALLATION: Ground, pack, or portable.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
</table>
| Radio Receiver and Transmit-
ter BC-1000                   | 5½ x 11½ x 7½    | 13.00       |
| Antenna AN-130-A (2 secs).  | 33               | 0.39        |
| Antenna AN-131-A (8 secs).  | 128              | 0.93        |

WEIGHT AND VOLUME

<table>
<thead>
<tr>
<th>Total weight (lb)</th>
<th>Unpacked</th>
<th>Domestic pack</th>
<th>Export pack</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>23.23</td>
<td>26.50</td>
<td>44.57 (4 sets per case)</td>
</tr>
<tr>
<td>Total volume (cu ft)</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>
Radio Set SCR-399-A is a medium-power mobile station providing voice or e-w communication from mobile or stationary positions, for a distance of 100 miles under all conditions. Components are installed in Shelter HO-17-A, mounted on a 2 1/2-ton truck. Power Unit PE-75 is installed in Trailer K-52.

Radio Set SCR-399-A may be remotely controlled up to a distance of 1 mile by use of the two Telephones EE-8 and Wire W-110-B, which are supplied. The remote control equipment provides for remotely keying or voice modulating the transmitter, remotely listening to Radio Receivers BC-312 and BC-342, and communicating with the operator in the radio station, who assists in the operation. A typewriter is provided with the set. The half-wave doublet antenna kit included will improve the skywave transmission, increasing the range and reliability of operation.

Frequency Conversion Kit MC-509 is available to extend the transmitter frequency range down to 1.0 me.

Radio Set SCR-399-A is similar to Radio Set SCR-499-A except that it is not transportable by air.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE:
Radio Transmitter BC-610-E: 2 to 18 mc (3 channels).
Radio Receivers BC-312 and BC-342: 1.5 to 18 mc in 6 bands as follows:
- Band 1: 1.5 to 3 mc.
- Band 2: 3 to 5 mc.
- Band 3: 5 to 8 mc.
- Band 4: 8 to 11 mc.
- Band 5: 11 to 14 mc.
- Band 6: 14 to 18 mc.

NUMBER OF CRYSTALS: 3 in transmitter, 1 in each receiver.
PRESET FREQUENCIES: Radio Transmitter BC-610-E: 3 channels selected by plug in tuning units.
TYPE MODULATION: Radio Transmitter BC-610-E: Amplitude or c-w.
FREQUENCY CONTROL: Mo or crystal (Crystal Holder FT-171-B).
POWER OUTPUT: Radio Transmitter BC-610-E: C-w, 400 w approx. Voice, 300 w approx.
RANGE: C-w: stationary 250, moving 100 mi. Voice: stationary 100, moving 100 mi.

NUMBER OF TUBES:
Radio Transmitter BC-610-E: 16.

GENERAL APPLICATION
USE: Medium power, mobile point-to-point and tactical control.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Radio transmitter BC-610-E</td>
<td>32½ x 21½ x 39½</td>
<td>452</td>
</tr>
<tr>
<td>1 Radio Receiver BC-312</td>
<td>10 x 9½ x 18½</td>
<td>58</td>
</tr>
<tr>
<td>1 Radio Receiver BC-342</td>
<td>10 x 9½ x 18½</td>
<td>61.5</td>
</tr>
<tr>
<td>1 Speech Amplifier BC-614-E</td>
<td>16 x 9½ x 11</td>
<td></td>
</tr>
<tr>
<td>1 Antenna Tuning Unit BC-939-A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Telephones EE-8</td>
<td>9½ x 7⅛ x 3½</td>
<td></td>
</tr>
<tr>
<td>1 Power Unit PE-95</td>
<td>72½ x 28½ x 38½</td>
<td>1,545</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

<table>
<thead>
<tr>
<th>Total weight (lb)</th>
<th>Unpacked</th>
<th>Export pack</th>
</tr>
</thead>
<tbody>
<tr>
<td>6,595</td>
<td>10,025</td>
<td></td>
</tr>
<tr>
<td>Total volume (cu ft)</td>
<td>895</td>
<td></td>
</tr>
<tr>
<td>Ship tons</td>
<td>22.4</td>
<td></td>
</tr>
</tbody>
</table>

Radio Set SCR-499-A is a medium power radio station similar to Radio Set SCR-399-A, except that neither shelter nor trailer is provided, and the components, which are the same as those of Radio Set SCR-399-A, are packed for transportation by air.

This set can be quickly assembled and set up as a field station in a tent or shelter or in the open. The installed radio set can be easily dismantled into a number of component parts for air transportation to a new site. Canvas covers are issued to provide protection for components while they are in transit or when the station is set up in the open.

Radio Set SCR-499-A may also be installed for operation in any suitable covered vehicle, with trailer for Power Unit PE-75. When installed in a 1/4-ton, 4 x 4 truck, Antenna Equipment RC-293 (end fed 3/4 wave) is supplied, which together with Counterpoise CP-15 is used instead of a doublet kit.

Frequency Conversion Kit MC-509 is available to extend the transmitter frequency range down to 1.0 mc.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE:
Radio Transmitter BC-610-E: 2 to 18 mc in 3 channels.
Radio Receivers BC-312 and BC-342: 1.5 to 18 mc in 6 bands as follows:
   Band 1: 1.5 to 3 mc.
   Band 2: 3 to 5 mc.
   Band 3: 5 to 8 mc.
   Band 4: 8 to 11 mc.
   Band 5: 11 to 14 mc.
   Band 6: 14 to 18 mc.

NUMBER OF CRYSTALS: 3 in transmitter, 1 in each receiver.

PRESET FREQUENCIES: Radio Transmitter BC-610-E: Channels selected by 3 sets of plug-in tuning units.
ANTENNA: Radio Transmitter BC-610-E: 15 ft whip (Mast Section MS-49 to MS-53 inclusive). Optional to increase range: 21 ft whip (2 Mast Sections MS-54 added to above), or, auxiliary wire antenna 25 to 65 ft long, depending on the frequency. Radio Receivers BC-312 and BC-342: 5, 9 ft whips. Optional: Add 2, 15 ft whips (Mast Sections MS-49 and MS-50 to above).

TYPE MODULATION: Radio Transmitter BC-610-E: Amplitude or c.w.
FREQUENCY CONTROL: Me or crystal (Crystal Holder FT-171-B).


POWER OUTPUT: Radio Transmitter BC-610-E: C-w, 400 w approx. Voice, 300 w approx.

NUMBER OF TUBES:
Radio Transmitter BC-610-E: 16.

GENERAL APPLICATION
USE: Medium power, point-to-point, air-to-ground, and tactical control.
INSTALLATION: Fixed or mobile.


PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Radio Transmitter BC-610-E</td>
<td>32½ x 21½ x 39½</td>
<td>452</td>
</tr>
<tr>
<td>1 Radio Receiver BC-312</td>
<td>10 x 9½ x 18½</td>
<td>58</td>
</tr>
<tr>
<td>1 Radio Receiver BC-342</td>
<td>10 x 9½ x 18½</td>
<td>61.5</td>
</tr>
<tr>
<td>1 Speech Amplifier BC-614-E</td>
<td>16 x 9½ x 11</td>
<td></td>
</tr>
<tr>
<td>2 Telephones EE-8</td>
<td>9½ x 7½ x 3½</td>
<td></td>
</tr>
<tr>
<td>1 Antenna Tuning Unit BC-939-A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Power Unit PE-95</td>
<td>72½ x 28½ x 38½</td>
<td>1,545</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

Total weight (lbs) ........................................ 3,000 5,703
Total volume (cu ft) ................................. 272
Ship tons ............................................. 6.8

186

Radio Set SCR-506-A is a medium-power, a-m set consisting of Radio Receiver BC-652-A, Radio Transmitter BC-653-A, and certain operating components. It is designed for installation in tanks, amphibian trucks, personnel carriers, and other vehicles to provide c-w and voice communication from one vehicle to another or between these vehicles and airplanes or base stations.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: Transmitter 2.0 to 4.5 mc. Receiver continuously tunable in two bands: 2.0 to 3.5 mc and 3.5 to 6.0 mc.

NUMBER OF CRYSTALS: 1 (for calibration only).

PRESET FREQUENCIES: 4.

ANTENNA:
- Whip antenna: 15 ft long (Mast Sections MS-49 to MS-53).
- Extended whip antenna: 25 ft long (Mast Sections MS-49 to MS-53 plus 3 additional mast sections MS-54).
- Straight wire antenna: Antenna AN-24-A, 22½ ft long.

TYPE MODULATION: Amplitude.

FREQUENCY CONTROL: Mo.

POWER SOURCE:
- Transmitter: 12-v vehicular battery through Dynamotor DM-42-A, or 24-v vehicular battery through Dynamotor DM-43-A.
- Receiver: 12-v vehicular battery through Dynamotor DM-40-A or 24-v vehicular battery through Dynamotor DM-41-A.

POWER OUTPUT: Transmitter: C-w operation, 50 to 90 w. Voice operation, 10 to 25 w. Depending upon frequency.

RANGE: For c-w: stationary, 7.5 mi; moving, 35 mi. Voice: stationary, 25 mi; moving 15 mi.

NUMBER OF TUBES: 18.

GENERAL APPLICATION

USE: To provide c-w and voice communication from one vehicle to another or between these vehicles and airplanes or base stations.


INSTALLATION: Designed for installation in tanks, amphibian trucks, personnel carriers, and other vehicles.


PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio Transmitter BC-653</td>
<td>12½ x 5½ x 14%</td>
<td>143</td>
</tr>
<tr>
<td>Radio Receiver BC-652-A</td>
<td>12½ x 7½ x 14%</td>
<td>46.5</td>
</tr>
<tr>
<td>Mounting FT-253-A</td>
<td>2 x 33 x 12%</td>
<td>34</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

<table>
<thead>
<tr>
<th></th>
<th>Domestic pack</th>
<th>Export pack</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total weight (lb)</td>
<td>377</td>
<td>377</td>
</tr>
<tr>
<td>Total volume (cu ft)</td>
<td>16.1</td>
<td>16.1</td>
</tr>
</tbody>
</table>
Status: Standard. Stock No.: 2S508/12 for 12-volt operation; 2S508/24 for 24-volt operation.
Reference: TM II–600.

Radio Set SCR–508–(*) represents Radio Sets SCR–508–A, –C, –D, –AM, –CM, and –DM. Radio Set SCR–508–(*) is designed for installation and operation in combat vehicles, such as tanks, scout cars, half-tracks, command cars, or any other authorized vehicles.


Interphone Control Box BC–606 provides separate control and connection facilities for a microphone and a headset. Several control boxes may be connected in multiple if desired.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 20.0 to 27.0 mc (transmitter, 80 channels).
NUMBER OF CRYSTALS: 10 operating.
PRESET FREQUENCIES: 10 transmitter, 10 on each receiver, plus manual tuning.
ANTENNA: Whip, 10 ft long. Consists of Mast Sections MS-116, MS-117, and MS-118 mounted on Mast Base AB-15/GR.
TYPE: MODULATION: Frequency.
FREQUENCY CONTROL: Crystal.
POWER SOURCE:
   Radio Transmitter BC-604: 12-v vehicular battery through Dynamotor DM-35, or 24-v vehicular battery through Dynamotor DM-37.
   Radio Receiver BC-603: 12-v vehicular battery through Dynamotor DM-34, or 24-v vehicular battery through Dynamotor DM-36.
POWER OUTPUT: 30 w.
RANGE: Approx 10 to 15 mi depending upon terrain and atmospheric conditions.
NUMBER OF TUBES:

GENERAL APPLICATION

USE: Particularly in armored units.

INSTALLATION: Installed and operated in vehicle.
TYPE OF SIGNAL: Voice.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Radio Transmitter BC-604</td>
<td>11 1/2 x 10 1/4 x 18</td>
<td>67</td>
</tr>
<tr>
<td>2 Radio Receivers BC-603</td>
<td>11 1/2 x 6 1/4 x 12 1/2</td>
<td>35 (ea)</td>
</tr>
<tr>
<td>2 Dynamotors DM-34</td>
<td>4 1/2 x 3 x 6 1/2</td>
<td>4.7 (ea)</td>
</tr>
<tr>
<td>1 Dynamotor DM-35</td>
<td>5 1/2 x 4 1/2 x 8 1/4</td>
<td>9.2</td>
</tr>
<tr>
<td>1 Mounting FT-237</td>
<td>5 1/2 x 13 x 33 3/8</td>
<td>44</td>
</tr>
<tr>
<td>1 Mounting FT-284</td>
<td>5 x 12 x 33 1/2</td>
<td>26</td>
</tr>
<tr>
<td>2 Mast Sections MS-117</td>
<td>30 1/2 x 0.7 (en)</td>
<td>0.7</td>
</tr>
<tr>
<td>2 Mast Sections MS-118</td>
<td>30 3/4 x 0.5</td>
<td>0.5</td>
</tr>
<tr>
<td>1 Mast Base AB-15/GR</td>
<td>15</td>
<td>2</td>
</tr>
<tr>
<td>1 Interphone Control</td>
<td>4 1/2 x 2 1/4 x 4 1/4</td>
<td>1.8</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

<table>
<thead>
<tr>
<th>Total weight (lb)</th>
<th>710</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total volume (en ft)</td>
<td>31.6</td>
</tr>
<tr>
<td>Ship tons</td>
<td>5 1/4</td>
</tr>
</tbody>
</table>

Radio Set SCR-509-(*) represents Radio Sets SCR-509-A and -B. Radio Set SCR-509-(*) is a low-power, dry battery-operated, f-m pack set designed for two-way voice communication over short ranges. This set uses an 8-foot telescoping antenna, and can be operated from ground or another stationary support.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 20 to 27 mc.
NUMBER OF CRYSTALS: 80.
PRESET FREQUENCIES: 2.
ANTENNA: Antenna AN-45 or 27 ft length of Wire W-129.
TYPE MODULATION: Frequency.
FREQUENCY CONTROL: Crystal.
POWER SOURCE: 1 Battery BA-39, 1 Battery BA-40,
and 1 Battery BA-41.
POWER OUTPUT: 1.8 w.
RANGE: Approximately 5 mi.
NUMBER OF TUBES: 13.

GENERAL APPLICATION

USE: Portable pack set for armored units, Field Artillery,
and Infantry.
TO COMMUNICATE WITH: Radio Sets SCR-510, SCR-528. SCR-608, SCR-690, SCR-610, SCR-628, SCR-808,
SCR-828.
INSTALLATION: Operated from ground or any other
stationary support.
TYPE OF SIGNAL: Voice.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio Receiver and Transmitter BC-620</td>
<td>6⅔ x 13⅓ x 14½</td>
<td>27.20</td>
</tr>
<tr>
<td>Case CS-79 (for batteries)</td>
<td>4⅓ x 13⅔ x 15½</td>
<td>10.00</td>
</tr>
<tr>
<td>Antenna AN-45:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(collapsed)</td>
<td>17½ h ½ diam</td>
<td>0.63</td>
</tr>
<tr>
<td>(extended)</td>
<td>98½ h</td>
<td></td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

Unpacked Exportpack

| Total weight (lb) | 50 | 210 |
| Total volume (cu ft) | 9 |      |
Radio Set SCR–510–(*) represents Radio Sets SCR–510–A and –B. Radio Set SCR–510–(*) is a pack and vehicular, low-power, f-m set designed for two-way voice communication over short ranges.
Radio Set SCR–510–(*) is the same as Radio Sets SCR–509–A and –B, with additional components for use with 6- or 12-volt vehicular storage battery and equipped with shock mounts for installation in vehicle.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 20.0 to 27.9 mc.
NUMBER OF CRYSTALS: 80.
PRESET FREQUENCIES: 2.
ANTENNA: Mast Base AB-15/GR, Mast Sections MS-117 and MS-118, Mast Base MP-48, or Mast Sections MS-52 and MS-53. Two 24-in. lengths of wire are used to connect the set to the vehicular antenna. The length of this connecting wire is critical.
TYPE MODULATION: Frequency.
FREQUENCY CONTROL: Crystal.
POWER SOURCE: For vehicular operation: 6- or 12-v vehicular storage battery, 1 Battery BA-41, and Power Supply Unit PE-9701-PE-120.
POWER OUTPUT: 1.8 w.
RANGE: Approximately 5 mi.
NUMBER OF TUBES: 13.

GENERAL APPLICATION

USE: Mobile command set.
INSTALLATION: Installed and operated in vehicle.
TYPE OF SIGNAL: Voice.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio Receiver and Transmitter BC-620</td>
<td>6 7/8 x 13 5/8 x 14 1/4</td>
<td>27.20</td>
</tr>
<tr>
<td>Power Supply Unit PE-120 Case CS-79</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

<table>
<thead>
<tr>
<th>Description</th>
<th>Unpacked</th>
<th>Exportpack</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total weight (lb)</td>
<td>96</td>
<td>235</td>
</tr>
<tr>
<td>Total Volume (cu ft)</td>
<td></td>
<td>12</td>
</tr>
</tbody>
</table>

Radio Set SCR-528-(*) represents Radio Sets SCR-528-A, -C, -D, -AM, -CM, and -DM. Radio Set SCR-528-(*) is designed for installation and operation in combat vehicles such as tanks, scout cars, half-tracks, command cars, or any other authorized vehicle.


Interphone Control Box BC-606 provides separate control and connection facilities for a microphone and a headset. Several control boxes may be connected in multiple, if desired.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 20.0 to 27.9 mc (transmitter, 80 channels).
NUMBER OF CRYSTALS: 10 operating.
PRESET FREQUENCIES: 10.
ANTENNA: Whip, 10 ft lg. (Mast Sections MS-116, MS-117, and MS-118 mounted on Mast Base AB-15/GR.)
TYPE MODULATION: Frequency.
FREQUENCY CONTROL: Crystal.

POWER SOURCE:
- Radio Receiver BC-603: 12-v vehicular battery and Dynamotor DM-34, or, 24-v vehicular battery and Dynamotor DM-36.

POWER OUTPUT: 30 w.
RANGE: Approximately 10 to 15 mi, depending upon terrain and atmospheric conditions.

GENERAL APPLICATION
USE: Designed particularly for use in tank units.


INSTALLATION: Installed and operated in vehicle.
TYPE OF SIGNAL: Voice.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio Transmitter BC-604</td>
<td>11½ x 10½ x 18</td>
<td>67</td>
</tr>
<tr>
<td>Radio Receiver BC-603</td>
<td>11½ x 6½ x 12½</td>
<td>35</td>
</tr>
<tr>
<td>Dynamotor DM-35 (or Dynamotor DM-37)</td>
<td>5½ x 4½ x 8½</td>
<td>9.2</td>
</tr>
<tr>
<td>Dynamotor DM-34 (or Dynamotor DM-36)</td>
<td>4½ x 3 x 6½</td>
<td>4.7</td>
</tr>
<tr>
<td>Mounting FT-237</td>
<td>5½ x 13 x 33½</td>
<td>44</td>
</tr>
<tr>
<td>Mounting FT-284</td>
<td>5½ x 12 x 33</td>
<td>26</td>
</tr>
<tr>
<td>Interphone Control Box</td>
<td>2½ x 2½ x 4½</td>
<td>1.8</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

| Total weight (lb) | 165 | 215 |
| Total volume (cu ft) | 12  |    |

Radio Set SCR-536 consists of a five-tube, low-power, dry-battery-operated radio receiver and transmitter with certain accessories. It is designed for a-m, two-way communication over short distances. The outstanding feature of its design and construction is its extreme portability. It is intended primarily as a handy-talkie for foot combat troops. All operating components are contained in one case.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 3.5 to 6.0 mc (any one of 50 channels).

NUMBER OF CRYSTALS: One transmitting and one receiving crystal required for each channel.

PRESET FREQUENCIES: One preset channel provided.

ANTENNA: 40-in. telescopic rod. Telescopes into set. Receiver is turned on when antenna is extended.

TYPE MODULATION: Amplitude

FREQUENCY CONTROL: Crystal

POWER SOURCE: Self-contained dry batteries (1 Battery BA-37, 1.5 v and 1 Battery BA-38, 10.5 v).

POWER OUTPUT: 0.02 w.

RANGE: Over land, approx 1 mi. Over salt water, approx 3 mi.

NUMBER OF TUBES: 5.

GENERAL APPLICATION

USE: Used by parachute troops, airborne troops, and antitank units of the infantry for short-range communication.


INSTALLATION: Man pack.


PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio Receiver and Transmitter BC-611 with coils, crystals, and tubes (without batteries).</td>
<td>15 3/4 x 3 3/8 x 5 1/4</td>
<td>3.85</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

| Total weight (lb) | Unpacked: 10.5 | Export pack: 17 |
| Total volume (cu ft) | 0.5 |

Radio Set SCR-543-(*) represents Radio Sets SCR-543-A, -B, and -C. Radio Set SCR-543-(*) is a medium range command set for use in vehicle or as a field station. It is equipped with its own gasoline-driven source of power. The receiver may be operated from a storage battery when the gasoline-driven generator is not operating. The transmitter and power unit may be controlled from a distance of 18 feet with Remote Control Unit RM-21.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 1.68 to 4.45 mc.
NUMBER OF CRYSTALS: 6.
PRESET FREQUENCIES: 6.
ANTENNA: 15-ft whip.
TYPE MODULATION: Amplitude.
FREQUENCY CONTROL: Transmitter: crystal. Receiver: crystal or variable.
POWER SOURCE: Power Unit PE-108, or storage battery.
POWER OUTPUT: 45 w.
RANGE: Moving 15 mi; stationary, 20 to 30 mi.
NUMBER OF TUBES: 21.

GENERAL APPLICATION

USE: Fixed or vehicular radiotelephone communication.
INSTALLATION: Vehicle. Can be dismounted quickly and operated with increased range as a field station.
TYPE OF SIGNAL: Voice only (am).

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio Receiver and Transmitter BC-669-D, in Chest CH-133-D</td>
<td>22½ x 28½ x 27½</td>
<td>216</td>
</tr>
<tr>
<td>Power Supply Unit PE-110-A, -B, -C, in Chest CH-132</td>
<td>1½ x 26½ x 22½</td>
<td>168</td>
</tr>
<tr>
<td>Power Supply Unit PE-110-D, in Chest CH-294</td>
<td>16½ x 28½ x 27½</td>
<td>143</td>
</tr>
<tr>
<td>Power Unit PE-108-A, -B, -C, -D in Chest CH-131</td>
<td>24 x 23½ x 28</td>
<td>265</td>
</tr>
<tr>
<td>Remote Control Unit RM-21-A, -B, -C, and -D, in Chest CH-73</td>
<td>4½ x 10½ x 16½</td>
<td>5</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

<table>
<thead>
<tr>
<th></th>
<th>Unpacked</th>
<th>Domestic Pack</th>
<th>Export Pack</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total weight (lb)</td>
<td>919</td>
<td>1,253</td>
<td>1,253</td>
</tr>
<tr>
<td>Total Volume (cu ft)</td>
<td>54</td>
<td>54</td>
<td></td>
</tr>
<tr>
<td>Slip tons</td>
<td></td>
<td>1.4</td>
<td>1.4</td>
</tr>
</tbody>
</table>
Radio Set SCR-593-A is a self-contained, push-button controlled radio receiver, designed for portable or vehicular operation and used for the reception of alert or warning messages.

TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 2 to 6 mc.

NUMBER OF CRYSTALS: None.

PRESET FREQUENCIES: 4.

ANT ENNA: Vertical rod (Antenna AN-75-A used for either portable or vehicular operation: extended 84 in.; collapsed 12 in.).

TYPE MODULATION: Amplitude.

POWER SOURCE: Battery BB-54-A. 2 v, 1.85 amp. (Battery charger: 6-v vehicular battery, 1.1 amp. 12-v vehicular battery 0.85 amp).

RANGE: Short.

NUMBER OF TUBES: 7.

GENERAL APPLICATION

USE: For reception of alert or warning messages.


INSTALLATION: One-man pack. Operated on ground or in vehicle.

TYPE OF SIGNAL: Voice.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio Receiver</td>
<td>11 3/4 x 8 3/4 x 5 3/4</td>
<td>15</td>
</tr>
<tr>
<td>Antenna AN-75-A:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(extended)</td>
<td>84 (lg)</td>
<td>4</td>
</tr>
<tr>
<td>(collapsed)</td>
<td>12 (lg)</td>
<td>4</td>
</tr>
<tr>
<td>Mounting FT-338-A and accessories</td>
<td></td>
<td>5.77</td>
</tr>
<tr>
<td>Vibrator VB-8-A</td>
<td>3 % diam 1 1/2</td>
<td>0.26</td>
</tr>
<tr>
<td>Vibrator VB-9-A</td>
<td>3 % diam 1 1/2</td>
<td>0.26</td>
</tr>
<tr>
<td>Battery BB-54-A</td>
<td>3 1/2 x 3 1/2 x 3</td>
<td>4.75</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

<table>
<thead>
<tr>
<th></th>
<th>Unpacked</th>
<th>Domestic Pack</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total weight (lb)</td>
<td>36.75</td>
<td>63</td>
</tr>
<tr>
<td>Total volume (cu ft)</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Radio Set SCR-607 consists of Radio Receiver BC-787-B (a three-band superheterodyne receiver designed for mobile or fixed-station use), Antenna RC-154, and Mounting FP-377-A.

This set is designed for intercept and monitoring use, and remote control may be used for stand-by reception.

In addition, to the reception of a-m and f-m, it is possible to receive c-w signals by using the bfo.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 27.8 to 143 mc, in 3 bands:
   Band 1: 27.8 to 47 mc.
   Band 2: 46 to 82 mc.
   Band 3: 82 to 143 mc.

NUMBER OF CRYSTALS: None.

PRESET FREQUENCIES: None.

ANTENNA: 3 tiers, horizontal dipoles (one for each of the 3 bands of the receiver) mounted on 21 1/2-foot mast.

TYPE MODULATION: Amplitude and frequency.

POWER SOURCE: 115 to 230-v, 50/60-cyc; or A battery, 6 v at 4.5 amp; B battery, 270 v at 145 ma.

NUMBER OF TUBES: 15.

GENERAL APPLICATION

USE: Intercept and monitoring.

INSTALLATION: Fixed or mobile.

TYPE OF SIGNAL: A-m, f-m; and by using bfo, e-w.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio Receiver BC-787-B</td>
<td>9% x 19 x 14</td>
<td>78</td>
</tr>
<tr>
<td>Mounting FT-377-A</td>
<td>4% x 21% x 14½</td>
<td>12</td>
</tr>
<tr>
<td>Antenna Equipment RC-154</td>
<td></td>
<td>200</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

<table>
<thead>
<tr>
<th>Total weight (lb)</th>
<th>Unpacked</th>
<th>Domestic pack</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total volume (cu ft)</td>
<td>290</td>
<td>300 (approx)</td>
</tr>
<tr>
<td></td>
<td>200</td>
<td>3 (approx)</td>
</tr>
</tbody>
</table>
Figure 103. Radio Set SCR-608-(*).


Radio Set SCR-608-(*) represents Radio Sets SCR-608-A and -B. Radio Set SCR-608-(*) is designed to provide f-m radiotelephone facilities. It may be installed and operated in combat vehicles such as tanks, scout cars, half-tracks, command cars, or any other authorized vehicles.

Radio Set SCR-608-(*) consists basically of Radio Transmitter BC-684-BM and two Radio Receivers BC-683-BM, and is arranged for control operation through interphone equipment. This set is similar to Radio Set SCR-508-(*) except in frequency.
TECHNICAL CHARACTERISTICS

**FREQUENCY RANGE:** 27.0 to 38.9 me in 120 channels.
**NUMBER OF CRYSTALS:** 120.

**PRESET FREQUENCIES:** 10 (push-button selection).

**ANTENNA:** Whip, 10 ft long, consisting of Mast Sections MS-116, MS-117, and MS-118, in some installations, mounted on Mast Base AB-16/GR.

**TYPE MODULATION:** Indirect frequency.

**FREQUENCY CONTROL:** Transmitter: Crystal.

**POWER SOURCE:**
- Transmitter: 12-v vehicular battery through Dynamotor DM-35, or 24-v vehicular battery through Dynamotor DM-37.
- Receiver: 12-v vehicular battery through Dynamotor DM-34, or 24-v vehicular battery through Dynamotor DM-36.

**POWER OUTPUT:** 20 w.

**RANGE:**
- Stationary, 15 mi; moving, 10 mi.

**NUMBER OF TUBES:** 18.

**GENERAL APPLICATION**

**USE:** Armored combat vehicles and tactical ground units.


**INSTALLATION:** Installed and operated in vehicle.

**TYPE OF SIGNAL:** Voice.

**PRINCIPAL COMPONENTS**

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Radio Transmitter BC-684-BM.</td>
<td>11 1/2 x 10 1/4 x 18</td>
<td>67</td>
</tr>
<tr>
<td>2 Radio Receivers BC-683-BM.</td>
<td>11 1/2 x 6 3/4 x 12 1/2</td>
<td>35</td>
</tr>
<tr>
<td>1 Mast Base AB-16/GR</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>1 Mast Section MS-116*</td>
<td>39 1/2</td>
<td>0.6</td>
</tr>
<tr>
<td>1 Mast Section MS-117*</td>
<td>39 1/4</td>
<td>0.7</td>
</tr>
<tr>
<td>1 Mast Section MS-118</td>
<td>39 1/4</td>
<td>0.8</td>
</tr>
<tr>
<td>2 Dynamotors DM-34</td>
<td>4 1/2 x 3 x 6 1/2</td>
<td>4.7</td>
</tr>
<tr>
<td>1 Dynamotor DM-35</td>
<td>5 1/2 x 4 1/2 x 8 1/2</td>
<td>9.2</td>
</tr>
<tr>
<td>1 Mounting FT-237</td>
<td>5 1/2 x 13 x 33 1/2</td>
<td>44</td>
</tr>
</tbody>
</table>

* Mast Section MS-116 or Mast Section MS-117 may be used as the bottom section of the antenna when Mast Base AB-15/GR is used.

**WEIGHT AND VOLUME**

<table>
<thead>
<tr>
<th></th>
<th>Unpacked</th>
<th>Export pack</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total weight (lb)</td>
<td>349.41</td>
<td>660</td>
</tr>
<tr>
<td>Total volume (cu ft)</td>
<td>14.58</td>
<td>31.6</td>
</tr>
<tr>
<td>Ship tons (approx)</td>
<td>15.58</td>
<td>0.75</td>
</tr>
</tbody>
</table>
**Status:** Substitute standard. **Stock No.:** 2S609. **Reference:** TM 11–615.

Radio Set SCR–609–(·) represents Radio Sets SCR–609–A and SCR–609–B. Radio Set SCR–609–(·) is a low-power, f-m set which is designed to provide two-way communication over short distances from a stationary ground position. Power for the operation of the units is supplied by dry batteries.

Radio Set SCR–609–(·) is a complete installation and is not intended or designed for use as part of any other system.

Radio Set SCR–609–(·) may be converted to Radio Sets SCR–610–A and SCR–610–B by adding the components necessary for vehicular mounting and operation.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 27.0 to 33.9 mc.
NUMBER OF CRYSTALS: 2 operating.
PRESET FREQUENCIES: 2.
ANTENNA: Telescopic (Antenna AN-29-C).
TYPE MODULATION: Frequency.
FREQUENCY CONTROL: Crystal.

POWER SOURCE:
Receiving: Batteries BA-40; A, 1.5 v and B, 90 v.
Transmitting: Batteries BA-39 and BA-40; A, 7.5 v and B, 130 v.
Internal bias Battery BA-41 is also required.

POWER OUTPUT: 1.3 w.
RANGE: 5 mi (approx).
NUMBER OF TUBES: 14.

GENERAL APPLICATION

USE: Battery fire control from observation posts or liaison planes. Also general communication between vehicles.

TO COMMUNICATE WITH: Radio Sets SCR-608-A, SCR-609, SCR-610, SCR-628-A, SCR-803-A, SCR-828-A, and the following if they are operating between 27 and 27.9 mc; SCR-509, SCR-510, and SCR-528.
INSTALLATION: Installed and operated on ground.
TYPE OF SIGNAL: F-m and voice.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio Receiver and Transmitter BC-659-J</td>
<td>11 3/8 x 16 1/2 x 21 1/2</td>
<td>35.13</td>
</tr>
<tr>
<td>Antenna AN-29-C</td>
<td>154 (extended), 151/2 (collapsed)</td>
<td>2.0</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

| Total weight (lb) | 137.5 |
| Total volume (cu ft) | 7.4 |

Radio Set SCR-610-(*) represents Radio Sets SCR-610-A and SCR-610-B. Radio Set SCR-610-(*) is a low-power, f-m set designed for installation and operation in vehicles and to provide two-way communication over short distances.

This set is intended to serve as a complete installation and is not designed for use as a part of any other system.

Radio Set SCR-610-(*) and Radio Sets SCR-609-A and SCR-609-B are identical, except that Radio Set SCR-610-(*) is provided with additional components necessary for vehicular installation.
**TECHNICAL CHARACTERISTICS**

**FREQUENCY RANGE:** 27.0 to 38.9 mc (receiver and transmitter).

**NUMBER OF CRYSTALS:** 2 (operating).

**PRESET FREQUENCIES:** 2.

**ANTENNA:** 3-section mast antenna.

**TYPE MODULATION:** Frequency.

**FREQUENCY CONTROL:** Crystal.

**POWER SOURCE:** Plate Supply Unit PE-117-C from 6 or 12-v storage battery, or Power Supply Unit PE-120-A from 6, 12, or 24-v storage battery.

**POWER OUTPUT:** 1.3 w.

**RANGE:** 5 mi (approx).

**NUMBER OF TUBES:** 14.

**GENERAL APPLICATION**

**USE:** Battery fire control from observation posts or liaison planes. Also general communication between vehicles.


**INSTALLATION:** Installed and operated in vehicles.

**TYPE OF SIGNAL:** F-m, voice.

**PRINCIPAL COMPONENTS**

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio Receiver and</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transmitter BC-659-J</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Power Supply Unit PE-120-A</td>
<td>8 5/8 x 16 1/2 x 18 5/8</td>
<td>33.8</td>
</tr>
<tr>
<td>1 Mounting FT-250</td>
<td>4 1/2 x 11 3/4 x 20</td>
<td>11.5</td>
</tr>
<tr>
<td>1 Antenna AN-29-C:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(collapsed)</td>
<td>13 1/4 (lg) 3/4 (diam)</td>
<td>2.0</td>
</tr>
<tr>
<td>(extended)</td>
<td>15 1/4 (lg) 3/4 (diam)</td>
<td>2.0</td>
</tr>
</tbody>
</table>

| Mast Sections MS-116      | 39 1/4 (lg) 7/8 (diam) |
| Mast Sections MS-117      | 39 1/4 (lg) 7/8 (diam) |
| Mast Sections MS-118      | 39 1/4 (lg) 7/8 (diam) |

**WEIGHT AND VOLUME**

<table>
<thead>
<tr>
<th>Unpacked</th>
<th>Domestic pack</th>
<th>Export pack</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total weight (lb)</td>
<td>176</td>
<td>248 1/2</td>
</tr>
<tr>
<td>Total volume (cu ft)</td>
<td>13.04</td>
<td>13.04</td>
</tr>
</tbody>
</table>


Radio Set SCR-614-A may be operated on ground as a fixed station or installed and operated in vehicles.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 0.015 to 0.15 mc in three bands:
- Band 1: 0.015 to 0.030 mc.
- Band 2: 0.030 to 0.0675 mc.
- Band 3: 0.0675 to 0.015 mc.

NUMBER OF CRYSTALS: 1 in filter.

PRESET FREQUENCIES: None.

ANTENNA: 30-ft whip, or 100-ohm balanced antenna.
- Long-wire or beverage type antennas also suitable.

TYPE MODULATION: Amplitude.

POWER SOURCE: Usually Power Supply Unit RA-61,
- but power may be supplied by Power Supply Unit PE-223 or dry batteries.

RANGE: Long.

NUMBER OF TUBES: 12.

GENERAL APPLICATION

USE: L-f.
TO COMMUNICATE WITH: Long-range, 1-f stations.
INSTALLATION: Fixed or vehicular.

TYPE OF SIGNAL: C-w, a-m, voice, or tone.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio Receiver BC-909-A</td>
<td>19 x 10½ x 12½</td>
<td>49.3</td>
</tr>
<tr>
<td>Case CS-109-A</td>
<td>20½ x 10½ x 12½</td>
<td>18.5</td>
</tr>
<tr>
<td>Mounting FT-414-A</td>
<td>21⅞ x 3½ x 13½</td>
<td>10.2</td>
</tr>
<tr>
<td>Power Supply Unit RA-61</td>
<td>19 x 4 x 13½</td>
<td>52.1</td>
</tr>
<tr>
<td>Mounting FT-414</td>
<td>18¼ x 3½ x 11½</td>
<td>9.5</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

Total weight of this equipment (lb) ____________ Unpacked 141.7

Radio Set SCR-616 consists of Radio Receiver BC-1269, Antenna Equipment RC-281, and Power Supply Unit RA-61-A. The radio receiver is a superheterodyne type. Separate antenna inputs and r-f sections for each band are incorporated in the receiver. The antenna consists of two biconical dipoles, one for each frequency band.
Technical Characteristics

Frequency Range: 145 to 600 mc in 2 bands:
  Band 1: 145 to 300 mc.
  Band 2: 300 to 600 mc.
Number of Crystals: None.
Antenna: Dipole antenna, 15 ft long. Consists of two biconical antennas, AN-169 and AN-170, and Mast Sections MS-122 to MS-125 inclusive.
Type Modulation: Amplitude, frequency, and c-w.
Power Source: Power Supply Unit RA-61-A; 115- or 230-v, 0.85- or 0.45-amp, 50- to 60-cyc ac.
Range: Line of sight.
Number of Tubes: 17.

General Application

Use: Interception and communication.
To Communicate With: Receives signals from any transmitter within frequency range and line of sight.
Installation: Installed and operated on ground.
Type of Signal: A-m, f-m, and c-w.

Principal Components

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio Receiver BC-1269</td>
<td>19 x 16 x 8 3/4</td>
<td>44</td>
</tr>
<tr>
<td>Antenna Equipment RC-281</td>
<td>19 x 13 3/4 x 4</td>
<td>40.5</td>
</tr>
<tr>
<td>Power Supply Unit RA-61-A</td>
<td>19 x 13 3/4 x 4</td>
<td>52.1</td>
</tr>
</tbody>
</table>

Weight and Volume

<table>
<thead>
<tr>
<th>Total weight (lb)</th>
<th>Domestic pack</th>
</tr>
</thead>
<tbody>
<tr>
<td>250</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total volume (cu ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
</tr>
</tbody>
</table>

Radio Set SCR-619 is a low-power, 18-tube, crystal-controlled, f-m set consisting of a single unit Receiver-Transmitter BC-1335, Battery Charger PR-219, and additional operating components.

Although designed for field operation, Radio Set SCR-619 may be operated from a 6-, 12-, or 24-volt vehicular supply system with modification in the use of components. The set may be operated by untrained personnel, may be quickly and easily changed to various types of operation, and is adaptable to emergency use in close combat areas.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 27.0 to 38.9 mc.
NUMBER OF CRYSTALS: 120.
PRESET FREQUENCIES: 2.

ANTENNA:
For combat: 56-in., impedance-matched by Mast Base MP-74 to the transmitter.
For vehicular: 9-ft. impedance-matched to transmitter by Terminal Box J-72/GR and Cord CG-67/MRQ-2 with Amphenol connector.
For field: 12-ft. requiring no impedance matching.

TYPE MODULATION: Frequency.
FREQUENCY CONTROL: Crystal.
POWER SOURCE: 6- or 12-v storage battery, rechargeable from 6-, 12-, or 24-v d-c source with Battery Charger PE-219.
POWER OUTPUT: 1.5 w.
RANGE: 5 mi (approx).
NUMBER OF TUBES: 18.

GENERAL APPLICATION
USE: Battery fire control from observation posts or liaison planes. Also, general communication between vehicles.


INSTALLATION: Pack and vehicular. Can be operated while being carried in man pack or operated while installed in vehicle.

TYPE OF SIGNAL: Voice.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Receiver and Transmitter BC-1335</td>
<td>6 1/4 x 12 1/2 x 13 1/8</td>
<td>22.75</td>
</tr>
<tr>
<td>1 Mounting FT-509</td>
<td>10 1/4 x 4 11/18 x 21 1/2</td>
<td>12.25</td>
</tr>
<tr>
<td>9 Batteries BB-54-A</td>
<td>5 1/2 x 3 3/4 x 3</td>
<td>4.3</td>
</tr>
<tr>
<td>1 Battery Charger PE-219</td>
<td>6 1/4 x 12 1/2 x 12 1/2</td>
<td>25.0</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

| Total weight (lb) | 333 |
| Total volume (cu ft) | 15.04 |

Export pack


This set is designed to provide f-m, radiotelephone facilities. It may be installed and operated in combat vehicles such as tanks, scout cars, half-tracks, command cars, or any other authorized vehicles. Radio Set SCR-628-A consists basically of one Radio Transmitter BC-684-BM and one Radio Receiver BC-683-BM.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 27.0 to 38.9 mc in 120 channels.
NUMBER OF CRYSTALS: 120.
PRESET FREQUENCIES: 10 (push-button selection).
ANTENNA: Whip, 10 ft long (consists of Mast Sections MS-116, MS-117, and MS-118 in some installation), mounted on Mast Base AB-15/GR. In half-track installation, Mast Section MS-116 is replaced by Mast Base Bracket MP-52.
TYPE MODULATION: Frequency.
FREQUENCY CONTROL: Crystal.
POWER SOURCE: Transmitter:
12-v vehicular battery through Dynamotor DM-35, or 24-v vehicular battery through Dynamotor DM-37.
Receiver: 12-v vehicular battery through Dynamotor DM-34, or 24-v vehicular battery through Dynamotor DM-36.
POWER OUTPUT: 20 w.
RANGE: Stationary, 15 mi. Moving, 10 mi.
NUMBER OF TUBES: 18.

GENERAL APPLICATION

USE: Armored-combat and other vehicles.
INSTALLATION: Installed and operated in vehicle.
TYPE OF SIGNAL: Voice.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Description</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio Transmitter BC-684-BM</td>
<td>11 1/2 x 10 1/4 x 18</td>
<td>67</td>
</tr>
<tr>
<td>Radio Receiver BC-683-BM</td>
<td>11 1/2 x 6 1/4 x 12 1/2</td>
<td>35</td>
</tr>
<tr>
<td>Mounting FT-237</td>
<td>5 1/2 x 13 x 33 3/4</td>
<td>44</td>
</tr>
<tr>
<td>Dynamotor DM-34</td>
<td>4 1/2 x 3 x 6 1/2</td>
<td>4.7</td>
</tr>
<tr>
<td>Dynamotor DM-35</td>
<td>5 1/2 x 4 1/2 x 8 1/4</td>
<td>9.2</td>
</tr>
<tr>
<td>Mast Base AB-15/GR</td>
<td>15 (lg)</td>
<td>2</td>
</tr>
<tr>
<td>Mast Section MS-117</td>
<td>30 1/2 (lg)</td>
<td>0.7</td>
</tr>
<tr>
<td>Mast Section MS-118</td>
<td>30 1/4 (lg)</td>
<td>0.8</td>
</tr>
<tr>
<td>Mast Base Bracket MP-52</td>
<td>26 (lg)</td>
<td>20</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

<table>
<thead>
<tr>
<th>Description</th>
<th>Unpacked</th>
<th>Domestic pack</th>
<th>Export pack</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total weight (lb)</td>
<td>349.41</td>
<td>595</td>
<td>660</td>
</tr>
<tr>
<td>Total volume (cu ft)</td>
<td>14.58</td>
<td>29.6</td>
<td>31.6</td>
</tr>
<tr>
<td>Ship tons (approx)</td>
<td>0.76</td>
<td>0.78</td>
<td></td>
</tr>
</tbody>
</table>

Radio Set SCR-678 is an f-m, general-purpose, vehicular radio receiving set, consisting of Radio Receiver BC-683-A, Dynamotor DM-34 or DM-36, and necessary mounting, cords, and antenna.

Radio Set SCR-678 is used for monitoring Radio Sets SCR-608 and SCR-628.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 27.0 to 38.9 mc.
NUMBER OF CRYSTALS: None.
PRESET FREQUENCIES: 10.
ANTENNA: Whip.
TYPE MODULATION: Frequency.
POWER SOURCE: 12-v dc at 4 amp or 24-v dc at 2 amp
if Dynamotor DM-34 is replaced by Dynamotor DM-36.
POWER OUTPUT: 2 w, audio.
RANGE: Radio Receiver BC-683 in communication with
Radio Set SCR-608, has a range of approximately 15
miles over average rolling terrain using whip antenna.
NUMBER OF TUBES: 10.

GENERAL APPLICATION

USE: General purpose f-m reception and monitoring use.
Used in signal installation and maintenance units.
TO COMMUNICATE WITH: Radio Sets SCR-608 and
SCR-628.
INSTALLATION: Vehicular.
TYPE OF SIGNAL: Voice.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio Receiver BC-683</td>
<td>11½ x 6½ x 12½</td>
<td>3.5</td>
</tr>
<tr>
<td>Dynamotor DM-34</td>
<td></td>
<td>4.7</td>
</tr>
<tr>
<td>or Dynamotor DM-36</td>
<td>4½ x 3 x 6½</td>
<td>4.7</td>
</tr>
</tbody>
</table>

Necessary mountings, cords, and antenna.
Radio Set SCR-694-C is a light-weight, low-power, man-transportable, front-line command set which
provides two-way radio telephone and telegraph communication. It can be used as a portable field set or
installed and operated in vehicles.
Radio Set SCR-694-C is particularly adapted to amphibious or jungle operation.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 3.8 to 6.5 me.
NUMBER OF CRYSTALS: Transmitter: 2, Receiver: 1.
RESET FREQUENCIES: Transmitter: 2.
ANTENNA: Whip, when equipment must be moved quickly from one location to another. Long, half-wave horizontal antenna when used as field set.
TYPE MODULATION: Amplitude.
FREQUENCY CONTROL: Mo, crystal A, or crystal B.
POWER SOURCE: When operated in vehicle, vehicular 6-, 12-, or 24-v storage battery. When operated as a field set, Generator GN-58. Battery BA-48 may be used to operate receiver alone.
POWER OUTPUT (TRANSMITTER):

<table>
<thead>
<tr>
<th>POWER SWITCH</th>
<th>VIBRATOR POWER UNIT PE-237</th>
<th>GENERATOR GN-58</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position</td>
<td>Phone</td>
<td>Cw</td>
</tr>
<tr>
<td>High</td>
<td>8.5w</td>
<td>25w</td>
</tr>
<tr>
<td>Medium</td>
<td>4.5w</td>
<td>21w</td>
</tr>
<tr>
<td>Low</td>
<td>2.5w</td>
<td>13w</td>
</tr>
</tbody>
</table>

POWER OUTPUT (RECEIVER): The maximum output of the receiver exceeds 75 mw in normal operation from either the vehicular supply or the hand generator. When operated from Battery BA-48, slightly lower power is obtained.

RANGE: (Between moving vehicles) voice up to 15 mi, cw up to 30 mi.
NUMBER OF TUBES: 10.

GENERAL APPLICATION

USE: To provide two-way radio telephone and telegraph communication between moving or stationary vehicles. Can also be used as a portable field set.
INSTALLATION: Ground or vehicular.
TYPE OF SIGNAL: C-w and voice.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Receiver and Transmitter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DC-1306</td>
<td>14½ x 9 x 5</td>
<td>27</td>
</tr>
<tr>
<td>Vibrator Power Supply PE-237</td>
<td>11 x 20¼ x 9½</td>
<td></td>
</tr>
<tr>
<td>Generator GN-58</td>
<td>8 x 6 x 6</td>
<td>25.7</td>
</tr>
<tr>
<td>Antenna AN-160</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mast Base MP-65</td>
<td>16½ x 3 (diameter over-all)</td>
<td></td>
</tr>
<tr>
<td>Mast Bracket MP-50</td>
<td>8 x 5 x 5</td>
<td></td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

<table>
<thead>
<tr>
<th></th>
<th>Unpacked</th>
<th>Domestic pack</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total weight (lb)</td>
<td>191.5</td>
<td>250</td>
</tr>
<tr>
<td>Total volume (cu ft)</td>
<td>3</td>
<td>7.5</td>
</tr>
</tbody>
</table>
Radio Set SCR-704 consists of a superheterodyne receiver and an external power supply unit. The receiver uses a conventional circuit and is designed for the reception of c-w, a-m, or tone signals, with either manual or automatic control.

The receiver has facilities to enable it to be used as an audio amplifier.

This set uses an external power supply unit, but may also be operated from batteries in an emergency. Radio Set SCR-704 is primarily intended for fixed-station use. However, vehicular installation may be made.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE:
- Band 1: 1.250 to 2.500 mc.
- Band 2: 2.500 to 5.000 mc.
- Band 3: 5.000 to 10.000 mc.
- Band 4: 10.000 to 20.000 mc.
- Band 5: 20.000 to 40.000 mc.

NUMBER OF CRYSTALS: 1 built-in crystal filter.

PRESET FREQUENCIES: 5-position band switch.

ANTENNA: Doublet, with balanced transmission line or single wire and ground.

TYPE MODULATION: C-w, amplitude, or tone.

POWER SOURCE: External: Power Supply Unit RA-94-A, 115- or 230-v, 50- to 60-cyc ac, or batteries, as follows: one 6-v storage battery, five 45-v B batteries, and 45-v C battery.

RANGE: Long.

NUMBER OF TUBES: 16 in receiver; 2 in power supply unit.

GENERAL APPLICATION

USE: To receive c-w, a.m or tone signals or as an audio amplifier.


INSTALLATION: Primarily intended for fixed-station use, but mountings for vehicular installation may be provided.

TYPE OF SIGNAL: C-w, a-m, or tone.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Description</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio Receiver BC-794</td>
<td>10½ x 19 x 13½</td>
<td>35</td>
</tr>
<tr>
<td>Cabinet CH-104-A</td>
<td>12½ x 23 x 16½</td>
<td>18</td>
</tr>
<tr>
<td>Power Supply Unit RA-94-A</td>
<td>10½ x 19 x 10</td>
<td>60</td>
</tr>
<tr>
<td>Headset HS-30/U</td>
<td></td>
<td>1.7</td>
</tr>
<tr>
<td>Cords, wires, insulators, etc.</td>
<td></td>
<td>11.9</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

<table>
<thead>
<tr>
<th>Description</th>
<th>Weight (lb)</th>
<th>Total weight (lb)</th>
<th>Total volume (cu ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Packed</td>
<td>179</td>
<td>146.6</td>
<td>5.281</td>
</tr>
<tr>
<td>Export packed</td>
<td>179</td>
<td>146.6</td>
<td>7.5</td>
</tr>
</tbody>
</table>
Figure 113. Radio Set SCR-808-A, on Mounting FT-237-D.


Radio Set SCR-808-A is an f-m vehicular set intended for use in mobile Coast Artillery batteries and Military Police units. The set uses two Radio Receivers BC-923-A and one Radio Transmitter BC-924-A, and is provided with four sets of tuning controls and four preset channels.

The transmitter has a low-power output, providing line of sight communication. A crystal calibrator is provided in the receiver for calibration of both the transmitter and receiver.

This radio set operates from a 12- or 24-v storage battery, which, if possible, should be under charge during operation.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 27.0 to 38.9 mc in 20 channels.
NUMBER OF CRYSTALS: 1 per receiver.
PRESET FREQUENCIES: 4.
ANTENNA: Whip, 10-ft long (approx.), consisting of Mast Sections MS-117 and MS-118, mounted on Mast Base AB-15/GR.
TYPE MODULATION: Frequency.
FREQUENCY CONTROL: Crystal calibrated mo.
POWER SOURCE:
- Radio Receiver BC-923-A: With 12 v storage battery, uses Dynamotor 65-A. With 24 v storage battery, uses Dynamotor 47-A (max amp on 12 v, 7.2 per receiver).
POWER OUTPUT: High: 30 to 35 w. Low: 2 w.
RANGE: Line of sight.
NUMBER OF TUBES: Transmitter, 9. Receivers 15 each.

GENERAL APPLICATION
USE: For mobile communication in Coast Artillery batteries and Military Police units.

INSTALLATION: Installed and operated in vehicle.
TYPE OF SIGNAL: Voice.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio Transmitter BC-924-A</td>
<td>11 1/2 x 10 1/2 x 18</td>
<td>49</td>
</tr>
<tr>
<td>Radio Receivers BC-923-A</td>
<td>(complete with tubes, fuses, and lamps)</td>
<td>11 1/2 x 12 1/4 x 6 1/4</td>
</tr>
<tr>
<td>Mast Sections MS-117</td>
<td>5 1/2 x 13 x 35%</td>
<td>44</td>
</tr>
<tr>
<td>Mast Sections MS-118</td>
<td>39%</td>
<td>0.66</td>
</tr>
<tr>
<td>Mast Base AB-15/GR</td>
<td></td>
<td>0.81</td>
</tr>
<tr>
<td>Dynamotors DM-64</td>
<td>4 1/2 x 3 1/4 x 6 1/2</td>
<td>5.25</td>
</tr>
<tr>
<td>Dynamotor DM-65</td>
<td>5 1/2 x 4 1/2 x 8 1/4</td>
<td>13.25</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

<table>
<thead>
<tr>
<th></th>
<th>Unpacked</th>
<th>Domestic pack</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total weight (lb)</td>
<td>373</td>
<td>533 (approx)</td>
</tr>
<tr>
<td>Total volume (cu ft)</td>
<td>28 (approx)</td>
<td></td>
</tr>
</tbody>
</table>
Radio Set SCR-828-A (the same as Radio Set SCR-808-A except that it uses only one Radio Receiver BC-923-A and one Radio Transmitter BC-924-A) is designed for installation and operation in a vehicle, and provides line of sight communication.

This f-m set has four sets of tuning controls and can be preset to four predetermined channels by operating the channel selector switch.

The transmitter has a low-power output. A crystal calibrator is provided in the receiver for calibration of both the transmitter and the receiver.

This set is used for mobile communication in Coast Artillery batteries and by Military Police units.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 27.0 to 38.9 mc in 120-channels.
NUMBER OF CRYSTALS: 1 per receiver.
PRESET FREQUENCIES: 4.
ANTENNA: Whip, 10 ft long (approx) consisting of Mast Sections MS-117 and MS-118 mounted on Mast Base AB-15/GR.
TYPE MODULATION: Frequency.
FREQUENCY CONTROL: Crystal calibrated, master oscillator.
POWER SOURCE:
POWER OUTPUT: High: 30 to 35 w. Low: 2 w.
RANGE: Line of sight.
NUMBER OF TUBES: 24.

GENERAL APPLICATION

USE: For mobile communication in Coast Artillery batteries and Military Police units.

INSTALLATION: Installed and operated in vehicle.
TYPE OF SIGNAL: Voice.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Radio Transmitter BC-924-A</td>
<td>11½ x 10½ x 18</td>
<td>49</td>
</tr>
<tr>
<td>1 Radio Receiver BC-923-A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(complete with tubes, fuses, and lamps)</td>
<td>11½ x 12½ x 6½</td>
<td>42</td>
</tr>
<tr>
<td>1 Mounting FT-237</td>
<td>5½ x 13 x 33½</td>
<td>44</td>
</tr>
<tr>
<td>2 Mast Sections MS-117</td>
<td>39½</td>
<td>0.66</td>
</tr>
<tr>
<td>2 Mast Sections MS-118</td>
<td>39½</td>
<td>0.31</td>
</tr>
<tr>
<td>1 Mast Base AB-15/GR</td>
<td>15</td>
<td>2</td>
</tr>
<tr>
<td>1 Dynamotor DM-64</td>
<td>4½ x 3½ x 6½</td>
<td>5.25</td>
</tr>
<tr>
<td>1 Dynamotor DM-65</td>
<td>5½ x 4½ x 8½</td>
<td>13.25</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

<table>
<thead>
<tr>
<th></th>
<th>Domestic</th>
<th>pack</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total weight (lb)</td>
<td>373½ (approx)</td>
<td>373½ (approx)</td>
</tr>
<tr>
<td>Total volume (cu ft)</td>
<td>18 (approx)</td>
<td>18 (approx)</td>
</tr>
</tbody>
</table>
Figure 115. Radio Transmitter T-4/FRC and associated equipment, front view, units pulled out from rack.


Radio Transmitter T-4/FRC is designed for multichannel airport traffic control work. It is used in conjunction with Power Rectifier PP-1/FRC, Modulator MD-1/FRC, and Radio Transmitter T-5/FRC.

This high frequency h-f transmitter may provide a maximum output of 400 watts and may be used for e-w, m-e-w, frequency-shift-keying and voice-modulated emission.

It is intended for operation into a 400- to 600-ohm antenna transmission line and can be remotely controlled for all types of operation. A complete installation includes four Radio Transmitters T-4/FRC, one Radio Transmitter T-5/FRC, one Modulator MD-1/FRC, and one Power Rectifier PP-1/FRC.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 2 to 18 me.
NUMBER OF CRYSTALS: 1 per T/4 channel.
PRESET FREQUENCIES: 1 per T/4 channel.
ANTENNA: Delta match doublet or rhombic antenna, balanced 400- to 600-ohm transmission line.
TYPE MODULATION: C-w, m-c-w, frequency-shift keying, or voice.
FREQUENCY CONTROL: Crystal: master oscillator or external frequency-shift keyer.
POWER SOURCE: Single-phase, 220-v, ac.
POWER OUTPUT: Carrier power output, 400 w max.
RANGE: Dependent upon antenna used, frequency, and ionospheric conditions.

NUMBER OF TUBES: 15.

GENERAL APPLICATION

USE: Used for airport traffic control work. Point-to-point.
TO COMMUNICATE WITH: Long-range communication stations and aircraft.
INSTALLATION: Fixed station.
TYPE OF SIGNAL: C-w, m-c-w, frequency-shift keying, voice-modulated.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio Transmitter T-4/FRC...</td>
<td>61 x 24 x 12</td>
<td>330</td>
</tr>
</tbody>
</table>

Radio Transmitter T-5/FRC is designed for multichannel airport traffic control work and homing. It is used in conjunction with Power Rectifier P1-1/FRC, Modulator MD-1/FRC, and Radio Transmitter T-4/FRC.

This l-f transmitter may provide a nominal power output to antenna of 500 watts (power input to antenna tuning unit approximately 900 watts). (Antenna tuning unit efficiency 5 percent to 80 percent, dependent upon frequency and antenna used.)

Normally, a complete transmitter installation includes only one low r-f unit.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 0.15 to 0.55 mc.
NUMBER OF CRYSTALS: 1 per equipment.
PRESET FREQUENCIES: 1 per equipment.
ANTENNA: Tower AB-127A/FR, Tower AB-127B/FR, or other vertical radiator. Beverage antenna or Antenna Kit MX-765/FR. Uses tuning house supplied with Radio Transmitter T-5/FRC.
TYPE MODULATION: Cw, m-c-w, low-frequency shift-key, or amplitude.
FREQUENCY CONTROL: Crystal, mo, or external frequency shift.
POWER SOURCE: 220-v ac, single-phase.
POWER OUTPUT: 500 w nominal.
RANGE: Dependent upon frequency, antenna used, and ionospheric conditions.
NUMBER OF TUBES: 18.

GENERAL APPLICATION

USE: Airport traffic control and homing.
TO COMMUNICATE WITH: Airborne and fixed point-to-point lf equipment.
INSTALLATION: Fixed station.
TYPE OF SIGNAL: C-w, m-c-w, voice, or frequency shift radioteletypewriter.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio Transmitter T-5/FRC (less tuning house)</td>
<td>61 x 24 x 18</td>
<td>450</td>
</tr>
<tr>
<td>Antenna tuning house (old model)</td>
<td>42 x 42 x 250</td>
<td></td>
</tr>
</tbody>
</table>

Radio Transmitter T-62/MRC-1 (Hallcrest model HIT-4) is a high-powered transmitter providing for transmission of voice and high-speed, e.w signals. It is similar to Radio Transmitter BC-610-E, except for the addition of a variae to control the input voltages to the high-power supply transformer and a switch to change from oscillator keying to doubler keying. Both controls are located on the front panel of the transmitter.

Selection of any one of three frequencies in the exciter stages is provided by a switch on the front panel.

This transmitter is intended for use with Power Amplifier AM-35/MRC-1. (When using Power Amplifier AM-35/MRC-1, no voice transmission is possible).
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 2 to 18 mc.
NUMBER OF CRYSTALS: 3 crystal sockets provided.
PRESET FREQUENCIES: 3.
ANTENNA: Doublet or fixed-station antenna, Antenna System AS-95/MRC-1.
TYPE MODULATION: C-w and voice.
FREQUENCY CONTROL: Mo or crystal.
POWER SOURCE: 110-v, 50- to 60-cycle ac.
POWER OUTPUT: Phone: 325 w. C-w: 450 w.
RANGE: Medium and long.
NUMBER OF TUBES: 15.

GENERAL APPLICATION

USE: Used with, but not part of Power Amplifier AM-35/MRC-1.
TO COMMUNICATE WITH: Sets within frequency range.
INSTALLATION: Fixed or mobile.
TYPE OF SIGNAL: High speed c-w; voice.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio Transmitter T-62/MRC-1</td>
<td>29 x 19 x 37</td>
<td>420</td>
</tr>
</tbody>
</table>

WEIGHT

<table>
<thead>
<tr>
<th>Total weight (lb)</th>
<th>Unpacked</th>
<th>Domesticpack</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>420</td>
</tr>
<tr>
<td></td>
<td></td>
<td>550</td>
</tr>
</tbody>
</table>
Radio Transmitter T-83/SR is a 50-watt telephone and telegraph marine radio transmitter. Either e-w or phone transmission is available on any of 5 preset channels in the frequency range between 1,700 and 8,700 kc. Three separate units house the entire transmitter installation, the transmitter cabinet, converter starter box, and the power supply cabinet.

Provisions are made for remote-control operation of the radio transmitter.

Radio Transmitter T-83/SR, designed for operation from a 115-volt, 50- to 60-cycle, a-c power source requires approximately 400 watts at 100 percent modulation, or about 390 watts when used for telegraphy. During stand-by periods, the power required is approximately 162 watts.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 1.7 to 8.7 mc.
NUMBER OF CRYSTALS: 5 operating.
PRESET FREQUENCIES: 5.
ANTENNA: None supplied.
TYPE MODULATION: Amplitude.
FREQUENCY CONTROL: Crystal.
POWER SOURCE: 115-v, 50- to 60-cy ac, source capable of supplying approximately 460 w for telephony or about 390 w when used for telegraphy. During stand-by periods, the power required is approximately 162 w.
POWER OUTPUT: 75 w.
RANGE: Dependent upon antenna and operating frequency.
NUMBER OF TUBES: 10.

GENERAL APPLICATION

USE: Used for communication from shore-to-ship and ship-to-shore.

TO COMMUNICATE WITH: Medium- and long-range stations within its frequency range.
INSTALLATION: Ship or shore stations.
TYPE OF SIGNAL: C-w or phone.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio transmitter</td>
<td>13½ x 21 x 16</td>
<td>118</td>
</tr>
<tr>
<td>Power Supply</td>
<td>13¾ x 15½ x 18¾</td>
<td>127</td>
</tr>
<tr>
<td>Converter starter box</td>
<td>6 x 6¾ x 10½</td>
<td>8½</td>
</tr>
<tr>
<td>External antenna load inductor (applied only when required)</td>
<td>13 x 7¾ x 7½</td>
<td>11½</td>
</tr>
<tr>
<td>Spare parts box</td>
<td>9 x 20 x 11</td>
<td>26</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

<table>
<thead>
<tr>
<th>Total weight (lb)</th>
<th>Unpacked</th>
<th>Domestic pack</th>
<th>Unpacked</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total volume (cu ft)</td>
<td>6.6</td>
<td>17.06</td>
<td>17.06</td>
</tr>
</tbody>
</table>
Figure 119. Radio Transmitter T-158(*)/FRT.


Radio Transmitter T-158(*)/FRT represents Radio Transmitter T-158/FRT (Wilcox Electric type 96A), Radio Transmitter T-158A/FRT (Wilcox Electric type 96C), and Radio Transmitter T-158B/FRT (Wilcox Electric type 96C3). Radio Transmitter T-158(*)/FRT is designed to generate 2,500 watts of carrier power at any frequency from 2 to 18 mc. The transmitter is housed in a steel cabinet.
which contains all the transmitter equipment, but not the power supply nor the modulator. The rectifier and modulator are separate units.

In conjunction with its associated control and power equipment, Radio Transmitter T-158(*)/FRT may be used for c-w, m-c-w, voice-amplitude-modulated or frequency-shift radioteletypewriter transmissions.

This equipment is intended primarily for point-to-point and ground-to-air communications and is usually controlled by Remote Control Console CY-161/FRC.

**TECHNICAL CHARACTERISTICS**

**FREQUENCY RANGE:** 2 to 18 mc.
**NUMBER OF CRYSTALS:** 1.
**PRESET FREQUENCIES:** 1.
**ANTENNA:** Any suitable antenna having balanced 600-ohm input.
**TYPE MODULATION:** Amplitude, frequency-shift, and m-c-w.
**FREQUENCY CONTROL:** Crystal, external.
**POWER SOURCE:** Plate and bins supplies from Radio Power Supply PP-219/FRT (Wileox Electric type 36A) and rectifier (Wileox Electric type 36A4). For 3 channels, 15 kva maximum at 220-v, 3-phase 60 eye for simultaneous c-w operation.
**POWER OUTPUT:** C-w, m-c-w, or voice: 2,500 w.
**RANGE:** Long, dependent upon antenna used, frequency, and ionospheric conditions.

**NUMBER OF TUBES:**
- Radio Transmitter T-158/FRT, exciter stage: 8.
- Radio Transmitter T-158B/FRT, exciter stage: 9.
- Final amplifier: 2 (all models).

**GENERAL APPLICATION**

**USE:** Point-to-point and ground-to-air communications.
**INSTALLATION:** Fixed station.
**TYPE OF SIGNAL:** C-w, m-c-w, voice, or frequency-shift keying.

**PRINCIPAL COMPONENTS**

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio transmitter in steel</td>
<td>73 x 26 1/4 x 12 1/4</td>
<td>365</td>
</tr>
<tr>
<td>Excieter Unit Wileox Electric 96C3-10</td>
<td>8 1/4 x 8 1/2 x 17 1/4</td>
<td>67</td>
</tr>
<tr>
<td>Tube set, operating</td>
<td></td>
<td>11</td>
</tr>
<tr>
<td>Radio teletypewriter modification kit</td>
<td></td>
<td>6</td>
</tr>
</tbody>
</table>

**WEIGHT AND VOLUME**

<table>
<thead>
<tr>
<th>Ship tons</th>
<th>Domestic pack</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total weight (lb)</td>
<td>732</td>
</tr>
<tr>
<td>Total volume (cu ft)</td>
<td>51.6</td>
</tr>
</tbody>
</table>

Domestic pack: 1.25 (approx)


Radio Transmitter T-171(*)/FR transmits 2,000 to 2,400 watts of carrier power at any frequency 0.125 to 0.525 mc. The transmitter is assembled in a steel cabinet which contains all of the transmitter equipment except the antenna tuning unit, the power supplies, and the modulator. Power is supplied by adjacent rectifiers and modulators. In conjunction with its associated control and power equipments, the unit forms a complete station for the transmission of cw or voice-modulated message.

The equipment is intended primarily for homing and point-to-point communication.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 0.125 to 0.525 mc.
NUMBER OF CRYSTALS: 1.
PRESET FREQUENCIES: 1.

ANTENNA: Horizontal antenna system extending a minimum of 500 ft, or a 200-ft insulated tower; also, a radial ground system extending at least 100 ft in all directions from the transmitter.

TYPE MODULATION: Amplitude.
FREQUENCY CONTROL: Crystal or no.

POWER SOURCE:
Radio Transmitter T-171/FR: rectifier-modulator type 26B.
Radio Transmitter T-171A/FR and T-171B/FR: rectifier type 38A4 and modulator type 503B.

POWER OUTPUT:
Radio Transmitter T-171/FR and T-171A/FR: 2,000 w.
Radio Transmitter T-171B/FR: 2,400 w.

RANGE: Long.
NUMBER OF TUBES: 17.

GENERAL APPLICATION

USE: Low-frequency transmitter primarily for homing and point-to-point communication.

TO COMMUNICATE WITH: Any a.m. equipment tuned to this range.

INSTALLATION: Fixed station.

TYPE OF SIGNAL: C-w, voice, or tone.

PRINCIPAL COMPONENTS

Name
Radio Transmitter T-171 (*)/FR complete with electronic keying unit type 182A.

Dimensions (in.)
72 x 24 3/4 x 36 3/4

Weight (lb)
533.5

WEIGHT AND VOLUME

Total weight (lb)
724.87
1,342

Total volume (cu ft)
37.9
152.6

Ship tons
0.95
3.8

Radio Transmitter T-172/FR (Press Wireless type PW-15A) is designed for c-w operation, but may be used for radioteletypewriter operation with the necessary additional equipment. This transmitter is capable of c-w operation at a speed of 350 words per minute.

This transmitter is made up of two basic units, a rectifier and exciter unit and a power amplifier unit. These are mounted on a common base, and housed in two separate metal cabinets. The output circuits work into a balanced 2-wire transmission line of 550 to 650 ohms impedance. The set may be operated automatically from a remote or local point, or controlled manually from a local point.

Because of its size and weight this equipment is used primarily in fixed-station installations for point-to-point communication.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 4 to 21 mc.
NUMBER OF CRYSTALS: 6.
PRESET FREQUENCIES: None.
ANTENNA: Fixed-station directional types.
TYPE MODULATION: C-w.
FREQUENCY CONTROL: Crystal or external oscillator.
POWER SOURCE: 220-v, 60-cyc, 3-phase, 35-kw ac; plus 12-v storage battery.
POWER OUTPUT: 15 kw.
RANGE: Long, dependent upon antenna used, frequency, and ionospheric conditions.
NUMBER OF TUBES: 31.

GENERAL APPLICATION

USE: Point-to-point, c-w, and radioteletypewriter communication.

TO COMMUNICATE WITH: Radio Sets AN/MRC-1; AN/MRC-2; SCR-399-A; SCR-499-A; Radio Receiver BC-1004-C.

INSTALLATION: Fixed station.

TYPE OF SIGNAL: C-w, and radioteletypewriter.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio Transmitter T-172/FR</td>
<td>108 x 84½ x 56¾</td>
<td>6,948</td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

<table>
<thead>
<tr>
<th>Total weight (lb)</th>
<th>Unpacked</th>
<th>Expert pack</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>6,948</td>
<td>11,227</td>
</tr>
<tr>
<td>Total volume (cu ft)</td>
<td>294.2</td>
<td>885.4</td>
</tr>
<tr>
<td>Ship tons</td>
<td></td>
<td>22.1</td>
</tr>
</tbody>
</table>
**Radio Transmitter T-173/FR.**

**Status:** Limited standard. **Stock No.:** 2C6714.

Radio Transmitter T-173/FR (Hallie) after model JT-9) is a medium power transmitter. It is completely self-contained, requiring only a microphone or key antenna, and a source of a-c power to go on the air.

The transmitter is constructed on a heavy cadmium-plated steel chassis which is mounted on heavy rubber feet in a steel cabinet.

Five individual plug-in tuning units may be accommodated in the exciter section simultaneously. Band switching is accomplished by changing one coil in the final amplifier and selecting the desired frequency by means of a panel switch. Exciter units are pretuned, and the only additional operation needed is a slight adjustment of the final tank tuning capacitor.

Separate meters are provided for the power amplifier plate and grid circuits and a third meter may be switched either into the exciter or the modulator cathode circuits.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 1.5 to 30 mc in 5 bands.
NUMBER OF CRYSTALS: 5.
PRESET FREQUENCIES: 5.
ANTENNA: 10 to 600 ohms impedance.
TYPE MODULATION: Amplitude.
FREQUENCY CONTROL: Crystal.
POWER SOURCE: 105 to 125-v, 50- to 60-cyc, ac, 500 va.
POWER OUTPUT: 100 w on e-w, 75 w on phone.
RANGE: Medium and long, dependent upon antenna used, frequency, and ionospheric conditions.
NUMBER OF TUBES: 14.

GENERAL APPLICATION

USE: Medium-power, a-m transmitter.
TO COMMUNICATE WITH: Sets within frequency range.
INSTALLATION: Fixed or mobile.
TYPE OF SIGNAL: Voice, c-w, or radiotelegraph.

PRINCIPAL COMPONENTS

Name                      Dimensions (in.)  Weight (lb)
Radio Transmitter T-173/FR 29½ x 12½ x 20½  120

WEIGHT

Total weight (lb)  120  125
Radio Transmitter T-174/FR (Western Electric model 33A) is a two-channel, h-f, radiotelephone and radiotelegraph transmitter for point-to-point, aeronautical ground station, and similar applications. It delivers a carrier power of 350 watts into a suitable antenna in its frequency range (from 3 to 13 mc).

It can be modulated for voice transmission and provides facilities for c-w and two-tone telegraph transmission. Radio Transmitter T-175/FR is the same as this set, except for the a-f panel which is replaced by a panel containing necessary conversion circuit elements.

These transmitters are designed so that one can be converted to the other by interchanging the audio-
amplifier panel on Radio Transmitter T-174-FR with the voltage-divider panel on Radio Transmitter T-175/FR.

TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 3 to 13 mc in 4 bands:
   Band 1: 3 to 4.5 mc.
   Band 2: 4.5 to 6 mc.
   Band 3: 6 to 9 mc.
   Band 4: 9 to 13 mc.

NUMBER OF CRYSTALS: 2.

PRESET FREQUENCIES: 2.

ANTENNA: Any suitable antenna.

TYPE MODULATION: Amplitude, high level.

FREQUENCY CONTROL: Crystal.

POWER SOURCE: 200- to 250-v ac, 50- to 60-cyc, single-phase.

POWER OUTPUT: 350 w.

RANGE: Medium and long, dependent upon terrain, antenna used, and ionospheric conditions.

NUMBER OF TUBES: 10.

GENERAL APPLICATION

USE: Point-to-point, ground-to-air, and ground stations.

TO COMMUNICATE WITH: Long-range ground stations and aircraft.

INSTALLATION: Fixed station.

TYPE OF SIGNAL: Phone, c-w, and two-tone (frequency shift keying) telegraphy.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio transmitter</td>
<td>76 x 27 x 25</td>
<td>550</td>
</tr>
<tr>
<td>Fan and housing</td>
<td>27 x 21 x 14</td>
<td>64</td>
</tr>
<tr>
<td>Transformers</td>
<td>18 x 12 x 19</td>
<td>192</td>
</tr>
<tr>
<td>Relays (packed in vacuum tube box)</td>
<td>26 x 20 x 26</td>
<td>85</td>
</tr>
<tr>
<td>Power amplifier plate coils</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

WEIGHT AND VOLUME

Total weight (lb) .................................................................................. 1,700 (approx)
Total volume (cu ft) .............................................................................. 87 (approx)
Ship tons ................................................................................................ 2.2 (approx)

Radio Transmitter T-175/FR (Western Electric model 31A) is a two-channel, h-f radiotelephone and radiotelegraph transmitter for point-to-point, aeronautical ground station, and similar applications. It can be modulated for voice transmission, and provides facilities for e-w and two-tone telegraph transmission.

Radio Transmitter T-175/FR (Western Electric model 31A) is the same as Radio Transmitter T-174/FR (Western Electric model 33A) except for the a-f channel which is replaced by a panel containing necessary conversion circuit elements for transmission of e-w and two-tone signals. These transmitters
have been designed so that one can be converted to the other by interchanging the a-f panel on Radio Transmitter T-174/FR with the voltage-divider panel on Radio Transmitter T-175/FR.

TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 3 to 13 mc in 4 bands:
   Band 1: 3 to 4.5 mc.
   Band 2: 4.5 to 6 mc.
   Band 3: 6 to 9 mc.
   Band 4: 9 to 13 mc.

NUMBER OF CRYSTALS: 2.

PRESET FREQUENCIES: 2.

ANTENNA: Any suitable antenna.

TYPE MODULATION: Amplitude, high level.

FREQUENCY CONTROL: Crystal.

POWER SOURCE: 200- to 250-v ac, 50- to 60-cycle, single-phase.

POWER OUTPUT: 350 w.

RANGE: Medium and long, dependent upon antenna used, frequency, and ionospheric conditions.

NUMBER OF TUBES: 13.

GENERAL APPLICATION

USE: Point-to-point, aeronautic, and ground stations.

TO COMMunicATE WITH: Aircraft and long-range ground stations.

INSTALLATION: Fixed station.

TYPE OF SIGNAL: C-w and two-tone telegraphy.

PRINCIPAL COMPONENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio transmitter</td>
<td>76 x 27 x 25</td>
<td>515</td>
</tr>
<tr>
<td>Fan and housing</td>
<td>27 x 21 x 14</td>
<td>64</td>
</tr>
<tr>
<td>Transformers</td>
<td>15 x 12 x 21</td>
<td>166</td>
</tr>
<tr>
<td>Vacuum tubes</td>
<td>26 x 20 x 26</td>
<td>64</td>
</tr>
<tr>
<td>Relays (packed in vacuum tube box)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power amplifier plate coils</td>
<td></td>
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</table>

Note. Weights of components shown above are weights packed for shipment.

WEIGHT AND VOLUME

| Total weight (lb) | 809          |
| Total volume (cu ft) | 43\(\frac{3}{4}\) |
| Ship tons          | 1 (approx)   |

Radio Transmitter T-177/FR (Press Wireless type PW-981-A) is designed for radioteletypewriter and radiotelegraph operation over a frequency range of 2.5 to 23 mc. It is capable of being keyed at speeds up to 150 words per minute (5 characters per word, average). Power consumption is approximately 8 kw. The transmitter is provided with an internal frequency shifter capable of shifting the carrier 1,000
eps; however, an external frequency shifter may be used if desired. The transmitter has provision for remote control in turning the equipment on and off, and for remote keying.

**TECHNICAL CHARACTERISTICS**

**FREQUENCY RANGE:** 2.5 to 23.0 mc.
**NUMBER OF CRYSTALS:** 5.
**PRESET FREQUENCIES:** 5.
**ANTENNA:** Any suitable fixed-station antenna.
**TYPE MODULATION:** Frequency shift for radioteletype writer.
**FREQUENCY CONTROL:** Crystal or mo.
**POWER SOURCE:** 220- to 230-v, 50- to 60-cye, 3-phase.
**POWER OUTPUT:** 2,500 w.
**RANGE:** Long.
**NUMBER OF TUBES:** 30.

**GENERAL APPLICATION**

**USE:** C-w and radioteletypewriter fixed-station operation.

**TO COMMUNICATE WITH:** Long-range, point-to-point stations.
**INSTALLATION:** Fixed station.
**TYPE OF SIGNAL:** Radiotelegraph or radioteletype writer.

**WEIGHT AND VOLUME**

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimensions (in.)</th>
<th>Weight (lb)</th>
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<tr>
<td>Radio Transmitter 'T-177/FR'</td>
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**Unpacked** **Domestic pack**

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<td>Total volume (cu ft)</td>
<td>196.8</td>
<td>5 (approx)</td>
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Status: Standard. Stock No.: 2C6898.

Radio Transmitter T-180/FR (RCA type ET-4750) is a crystal controlled transmitter designed for point-to-point and ground-to-air transmission. It has high-level, Class-B modulation and Class-C final.
TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: 2 to 22 mc.
NUMBER OF CRYSTALS: 1.
TYPE MODULATION: Amplitude.
FREQUENCY CONTROL: Crystal.
POWER SOURCE: 220-v., 50- to 60-cyc, 3-phase ac.
POWER OUTPUT: 7.5 kw.
RANGE: Long.

GENERAL APPLICATION

USE: Point-to-point.
TO COMMUNICATE: Receivers within frequency range.
INSTALLATION: Fixed.
TYPE OF SIGNAL: Voice.

PRINCIPAL COMPONENTS

Name                  Dimensions (in.)
Transmitter T-150/FR   122 x 90 x 49
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