

## FREQUENCY SHIFT CONVERTER-COMPARATOR GROUP AN/URA-6, -7

3 December 1958

Cognizant Serv: USN FSN: AN/URA-6: 5840-642-8362

AN/URA-7: 5840-644-4841

USA

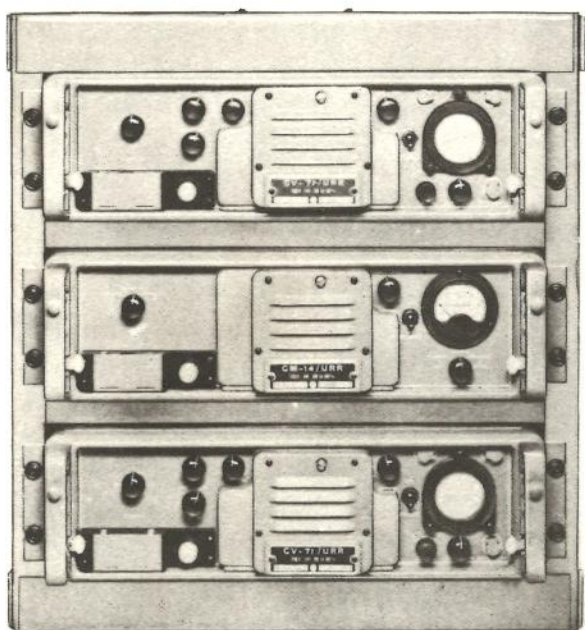
USN

USAF

TYPE CLASS:

STOCK NO:

Used by

AN/URA-6: F16-Q-  
123395-200AN/URA-7: F16-Q-  
123397-200

AN/URA-6

## FUNCTIONAL DESCRIPTION:

Frequency Shift Converter-Comparator Groups AN/URA-6 and AN/URA-7 are dual diversity equipments designed for demodulation of frequency-shift keyed radiotelegraph signals. These equipments thus provide keying facilities for teletype-writers, printers, or similar automatic recording devices. Keying speeds up to 100-dot cycles per second are possible.

This corresponds to four-channel multiplex at 100 words per minute for each channel.

Both equipments are intended for table mounting; however, the converter and comparator units may be removed and installed in a standard relay rack.

Basically, both equipments are similar. The AN/URA-6 is used with Radio Receiving Equipments RBB, RBC, and Diversity Radio Receiving Equipment of the RDM series. The AN/URA-7 is used with Diversity Radio Receiving Equipments RBP and RCP.

Two receiving channels are used in a diversity arrangement, Comparator CM-14/URR selecting the stronger signal to control the teletypewriter loop and the keyed tone.

## TECHNICAL CHARACTERISTICS:

*Frequency Range:*

AN/URA-6: 395 kc to 470 kc (dual channel)

AN/URA-7: 50 kc (dual channel)

*Type Modulation:* Fm*Type Reception:* Frequency-shift keying*Power Output:*

Electron Tube Keyer for Keying 60-ma Teletypewriter

Loop Tone: 12 mw into 600-ohm load

*Rf Input:*

Input Signal Level: 2,500 uv to 0.5 v

Frequency Shift: 10 to 200 cps for narrow-band operation  
and 200 to 1,000 cps for wide-band operation

Keying Speeds: To 100 dot cps

*Input Impedance:*

AN/URA-6: 70 ohms, unbalanced

AN/URA-7: 910 ohms, unbalanced

*Tone Signal Frequencies:* 595; 765; 935; 1,105; 1,275; 1,445;  
1,615; 1,785 cps*Power Requirements:* 240 w; 105-, 115-, or 125-v 60-cycle,  
1-phase ac

## AN/URA-6, -7 FREQUENCY SHIFT CONVERTER-COMPARATOR GROUP

## MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Cabinet	-----	21 3/4 x 20-1/4 x 17-5/32	
1	Comparator CM-14/URR	-----	5-1/8 x 19 x 15-1/4	
2	Frequency Shift Converter CV-57/URR (supplied with Frequency Shift Converter- Comparator Group AN/ URA-6)	-----	5-1/8 x 19 x 15-1/4	
	or			
	CV-71/URR (supplied with Frequency Shift Converter- Comparator Group AN/ URA-7)	-----	5-1/8 x 19 x 15-1/4	
2	Panoramic Coupling Kit CN- 10563 (supplied only with Frequency Shift Converter- Comparator Group AN/ URA-6)	-----	4-5/16 x 1-7/8 x 3-3/16	
1 set	Equipment spares (supplied with Frequency Shift Con- verter-Comparator Group AN/URA-6)	-----	12 x 12 x 6	
1 set	Equipment spares (supplied with Frequency Shift Con- verter-Comparator Group AN/URA-7)	-----	12 x 12 x 6	
1 set	Interconnecting cables			

## REFERENCE DATA AND LITERATURE:

NAVSHIPS 91355

## SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
	8.25	

## FREQUENCY SHIFT CONVERTER-COMPARATOR GROUP AN/URA-6, -7

## PROCUREMENT DATA

PROCURING SERVICE: USN  
SPEC &/or DWG: CS-730

DESIGN COG: USN, BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
RCA Victor Division, Radio	Camden, N. J.	NObsr-39421, 30 June 1947	AN/URA-6 \$2,774.00 AN/URA-7 \$2,656.00



## FREQUENCY SHIFT CONVERTER-COMPARATOR GROUP AN/URA-8, -8A

3 December 1958

Cognizant Serv: USN FSN: AN/URA-8: 5840-644-4842  
AN/URA-8A: 5840-642-8360

USA

USN

USAF

TYPE CLASS: --

Used by --

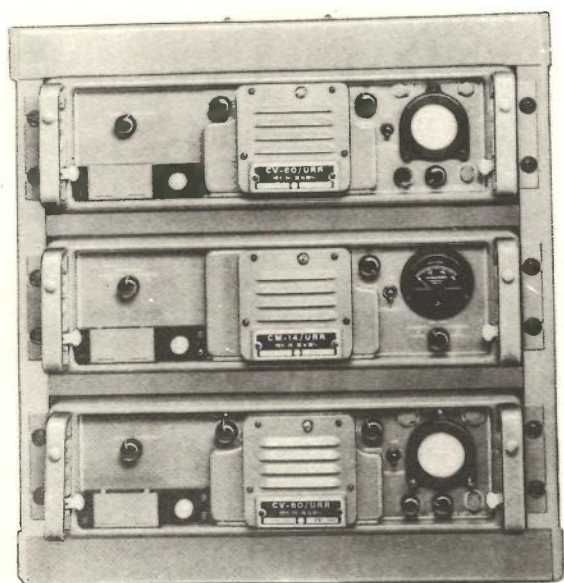
STOCK NO: --

AN/URA-8: F16-Q- --

123399-200

AN/URA-8A: F16-Q-

123390-200



AN/URA-8

**FUNCTIONAL DESCRIPTION:**

Frequency Shift Converter-Comparator Groups AN/URA-8 and AN/URA-8A are designed to operate on frequency-shift keyed radiotelegraph signals. These signals are derived from the audio frequency outputs of radio receivers and provide keying facilities for the operation of teletypewriter printers or other automatic recording devices.

Two receiving channels are used in a diversity arrangement but the frequency-shift converters may be used separately for single receiver reception. A comparator selects the stronger signal to control the teletypewriter loop and the keyed tone.

It is possible to obtain keying speeds of up to 60 words per minute for a single telegraph channel, or of 100 words per minute if external apparatus is used. These keying speeds are useable in the reception of four-channel, multiplex, telegraph signal, diversity, or single-unit operation.

The two equipments are used with two radio receivers and a standard or high-speed teletypewriter with loop power supply. Radio Receiving Equipments RBA, RBB, RBC, or equivalent may be used. The AN/URA-8 and AN/URA-8A are electrically and mechanically interchangeable and differ only in contractual data.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range:* Audio; with center frequency of either 1,000 cps or 2,550 cps

*Type Modulation:* Fm

*Type Reception:* Frequency-shift keying

*Power Output:*

Electron Tube Keyer: For keying 60-ma teletypewriter loop

Tone Signal: 12 mw into 600-ohm load

*Audio Input:*

Input Power: 60 uw to 60 mw

Frequency Shifts: 10 to 200 cps for 1,000-cps center frequency, narrow band; 200 to 1,000 cps for 2,500-cps center frequency, wide band

Impedance: 600 ohm, balanced or unbalanced

*Maximum Keying Speed:*

Single Telegraph Channel: 23 dot cps

Four-channel Multiplex

Telegraph Signals: 100 dot cps

*Tone Signals Frequencies:* 595; 765; 935; 1,105; 1,275; 1,445; 1,615; 1,785 cps

*Power Requirements:* 160 w or 220 w; 105-v, 115-v, or 125-v 50- to 60-cycle, 1-phase ac

**AN/URA-8, -8A** FREQUENCY SHIFT CONVERTER-COMPARATOR GROUP

## MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
<i>For Frequency Shift Converter-Comparator Group AN/URA-8:</i>				
1	Comparator CM-14/URR	-----	5-1/8 x 19 x 15-1/4	
2	Frequency Shift Converter CV-60/URR	-----	5-1/8 x 19 x 15-1/4	47
1	Rack	-----	21-3/4 x 20-1/4 x 17-5/32	
1 set	Equipment spares	-----	12 x 12 x 6	95
1 set	Interconnecting cables	-----		
<i>For Frequency Shift-Converter Comparator Group AN/URA-8A:</i>				
1	Comparator CM-22/URA-8A	-----	5 x 17 x 17	36
2	Frequency Shift Converter CV-89/URA-8A	-----	5-1/4 x 17 x 17	47
1	Rack MT-719/URA-8A	-----	18 x 19-9/16 x 14-3/4	15.25
1 set	Equipment spares	-----	12-1/2 x 25 x 16-1/2	
1 set	Interconnecting cables	-----		

## REFERENCE DATA AND LITERATURE:

NAVSHIPS 91339 (AN/URA-8)  
NAVSHIPS 91278 (AN/URA-8A)

## SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
AN/URA-8 3	15.8	321
AN/URA-8A 2	13.10	389

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 FREQUENCY SHIFT CONVERTER-COMPARATOR GROUP **AN/URA-8, -8A**


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 PROCUREMENT DATA
 

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PROCURING SERVICE: USN  
 SPEC &/or DWG: BUSHIPS Dwg RE67D2017 (AN/URA-8)  
                   BUSHIPS Dwg RE67F2013 (AN/URA-8A)

DESIGN COG: USN, BuShips

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CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
(AN/URA-8) Radio Corp. of America, RCA Victor Division	Camden, N. J.	NObsr-39421, 30 June 1947	\$3,745.00
(AN/URA-8A) Hoffman Radio Corp.	Los Angeles, Calif.	NObsr-42027, 8 October 1947	2,440.00

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## CODER-TIMER GROUP AN/URA-11

3 December 1958

Cognizant Serv: USN FSN:

USA

USN

USAF

TYPE CLASS: --  
STOCK NO: --

Used by

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(No Illustration Available)

## FUNCTIONAL DESCRIPTION:

Coder-Timer Group AN/URA-11 is designed for either shock mounting, on the bulkhead of a ship, or for rack mounting. It is used for the program control of a radio beacon.

This equipments consists of two coders, one being of fixed

code wheels and the other equipped with 80 push-button keys for setting any desired four letter code.

## TECHNICAL CHARACTERISTICS:

*Mount:* Shock*Major Materials:* Aluminum*Power Requirements:* 115-v 60-cycle 1-phase ac

## MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
2	Beacon Coder KY-64/UR			
1	Cabinet CY-867/URA-11	-----	18 x 24 x 24	
1	Electric Timer TD-48/UR			

## REFERENCE DATA AND LITERATURE:

## SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)

MIL-HDBK-161

**AN/URA-11** CODER-TIMER GROUP

PROCUREMENT DATA

PROCURING SERVICE: USN  
SPEC &/or DWG: CG-16427C

DESIGN COG: USN, BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Wallace and Tiernan Products Inc.	----	Teg-38070	

## COMPARATOR-CONVERTER GROUP AN/URA-17( )

3 December 1958

Cognizant Serv: USN FSN:

USA

USN

USAF

TYPE CLASS: --

Used by --

STOCK NO: --

(No Illustration Available)

**FUNCTIONAL DESCRIPTION:**

Comparator-Converter Group AN/URA-17( ) accepts audio signals from its associated receivers, separates the tones, compares and selects the better of two signals, and provides a direct current output for operation of an associated teletypewriter printer.

Audio is provided for headphone monitoring and transmission by way of wire or radio links to remote teletypewriter printers.

This equipment consists essentially of two frequency-shift converters housed in one cabinet. It is suitable for either table or standard 19-inch rack mounting. Shock mounting is utilized for shipboard and brackets for shore installations.

This group is similar to Frequency Shift Converter-

Comparator Group AN/URA-8B except for transistors use of external oscilloscope for tuning purposes, and different packaging.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range:* 772 cps to 3,650 cps

*Number of Bands:* 2

*Indication:* Tuning and cycle shift meters

*Impedance:*

Input: 600 ohms

Output: 600 ohms

*Mounting:*

Shock Mounted: For shipboard use

Bracket Mounted: For shore installations

*Power Requirements:* 115-v, 60-cps, 1-phase ac

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Electrical Equipment Cabinet CY-1862( )/URA-17			
2	Frequency Shift Converter CV-483/URA-17			

**REFERENCE DATA AND LITERATURE:****SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)

MIL-HDBK-161

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**AN/URA-17( )** COMPARATOR-CONVERTER GROUP

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PROCUREMENT DATA

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PROCURING SERVICE: USN  
SPEC &/or DWG: SHIPS-C-1975

DESIGN COG: USN, BuShips

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CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Hoffman Laboratories Inc.	Los Angeles, Calif.	NObsr-71119	

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RADIO SET CONTROL GROUP **AN/URA-19**

3 December 1958

Cognizant Serv: USN FSN:

	USA	USN	USAF
TYPE CLASS:	--	Used by	Tent-Std
STOCK NO:	--	--	--

(No Illustration Available)

**FUNCTIONAL DESCRIPTION:**

Radio Set Control Group AN/URA-19 provides facilities that permit the calling of individual aircraft by normal ground-to-air communication apparatus. The group utilizes existing types of ground-to-air transmitters and airborne receivers.

This equipment relieves the pilot of the continuous monitoring of voice circuits. Ultimately, it will provide an emergency calling feature as well as a limited message capability.

**TECHNICAL CHARACTERISTICS:**

No information available.

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
11	Digital-tone-code generator Digital-tone-decoder			

**REFERENCE DATA AND LITERATURE:****SHIPPING DATA**

PKGS	DIMENSIONS (Inches)	VOLUME (Cu Ft)	WEIGHT (Lbs)

MIL-HDBK-161

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**AN/URA-19** RADIO SET CONTROL GROUP

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PROCUREMENT DATA

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PROCURING SERVICE: USN  
SPEC &/or DWG: MIL-R-9542

DESIGN COG: USN, RCUE

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CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
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SPEECH INPUT EQUIPMENT **AN/URA-type**

12 November 1958

Cognizant Serv: **USN** FSN: 5820-253-0168  
5820-665-1488 (with equipment spares)

50254

**USA****USN****USAF**TYPE CLASS:  
STOCK NO:

Used by

(No Illustration Available)

**FUNCTIONAL DESCRIPTION:**

Speech-Input Equipment 50254 is designed to deliver amplified audio-frequency power to Transmitting Equipment TBL-2 and later TBL equipments. The speech-input equipment derives audio energy at a maximum input level of approximately 0.006 watt from a 35-ohm microphone or from 200- or 600-ohm audio lines and delivers the amplified energy to a 500-ohm load at levels up to 28 decibels.

The equipment can be used as a straight audio amplifier or with fixed compression and limiting characteristics. The normal output level is approximately 1.6 watts into a 500-ohm load. The input and output circuits are ungrounded.

Handset Assembly 51062 is included as part of the equipment.

**TECHNICAL CHARACTERISTICS:***Frequency Response:* 300 to 3,500 cps*Amplitude Distortion:* 5%*Power Output:* 5.5 w*Noise Level:* -50 db below 3.5 w output*Permitted Output Load Variation:* ±10%*Input Impedance:* 600 and 200 ohms*Power Requirements:* 125 w, 110-v 60-cycle 1-phase ac**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1 set	Equipment spares			
1	Speech Input Equipment 50254		12-3/8 x 14-1/4 x 16-1/2	
(Equipment consists of only one major component.)				

**REFERENCE DATA AND LITERATURE:**

NAVSHIPS 900,857

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)

MIL-HDBK-161

**AN/URA-type** SPEECH INPUT EQUIPMENT

PROCUREMENT DATA

PROCURING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG: USN, BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
RCA Victor Division of Radio Corp. of America	Camden, N. J.	NXsr-65279, 12 June 1944	



ANTENNA SYSTEM **AN/URA-type**

4 December 1958

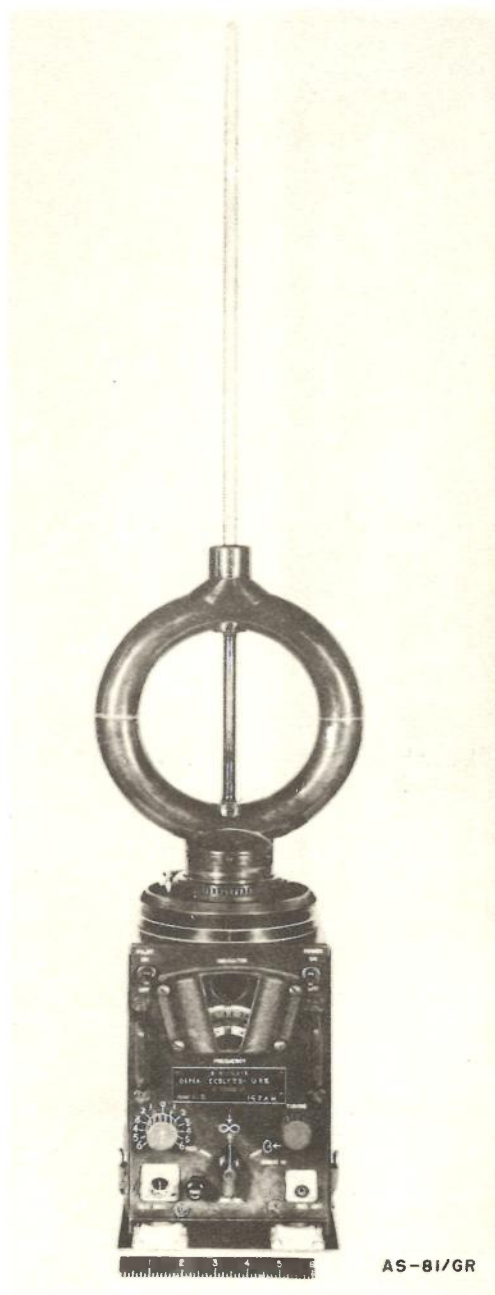
Cognizant Serv: USA FSN:

AS-81/GR

USA

USN

USAF

TYPE CLASS:  
STOCK NO:Used by  
--Used by  
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AS-81/GR

**FUNCTIONAL DESCRIPTION:**

Antenna System AS-81/GR is a one-tube directional antenna system designed as an additional to communication receivers. This system permits the operator to make use of unidirectional reception. Antijamming is the function of the equipment. By proper use, the pickup of any signal can be reduced greatly or completely. Satisfactory performance of the antenna system depends on the skill of the operator in adjusting it. Effective operation of the system will provide satisfactory communication and will eliminate the possibility of complete jamming by enemy or friendly station operating on the same frequency.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in Mc:* 1.1 to 16

*Power Requirements:* 12-v dc

**AN/URA-type** ANTENNA SYSTEM

## MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
(USA)				
1	Antenna AN-45-G	2A245G	16 lg (collapsed)	0.75
1	Antenna Mounting AB-9/GR	2A2571-9	7 x 8-3/8 x 8-1/2	4.25
1	Case CY-48/GR	2Z1891-48	14 x 15-1/2 x 20-1/2	26.25
1	Control Box C-98/GR con- sists of:	2C6666-98	7-1/2 x 9-1/2 x 10-1/2	18.75
3	Fuse 3AG	3Z1927		
4	Lamp GE53	2Z5933.1		
2	Spring and contact as- sembly	2Z8879-19, -20, or -21		
2	Tube JAN12J5GT	2J12J5GT		
3	Vibrator	3H4496-110/N1		
1	Cord CG-52/GR	3E6015-52	96 lg	.75
1	Cord CG-57/GR	3E6015-57	48 lg	.375
1	Cord CX-105/GR	3E6000-105	120 lg	1
1	Loop AT-27/GR	ZA1990-27	-----	3.75
1	Loop AT-28/GR	ZA1990-28	-----	3.75
1	Loop AT-29/GR	ZA1990-29	-----	3.75
1	Loop AT-30/GR	ZA1990-30	-----	3.75

## REFERENCE DATA AND LITERATURE:

TM 11-2608

## SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
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## PROCUREMENT DATA

PROCURING SERVICE: USA  
SPEC &/or DWG:

DESIGN COG: USA, Sig C

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
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## MODULATOR ASSEMBLY AN/URA-type

5 December 1958

Cognizant Serv: USN FSN:

CRV-50194

USA

USN

USAF

TYPE CLASS: --

Used by --

STOCK NO: --

F16-C-85601-1036 --

(No Illustration Available)

## FUNCTIONAL DESCRIPTION:

Modulator Assembly CRV-50194 is used for voice-modulating Radio Transmitting Equipment of the TBK series. The speech-amplifier unit of this equipment, with the telephone assembly, is interchangeable with Speech Input Equipment 1)RV-50064, that is used with Radio Transmitting Equipment TBL.

## TECHNICAL CHARACTERISTICS:

*Modulator Unit:*

Frequency Range: 250 to 3,500 cps

Type Modulation: Am

Type Emission: A1, A2

Modulation Obtainable: 100%

Input Impedance: 600 ohms

Power Output: 250 w into 12.5 ohm load

*Speech Amplifier:*

Frequency Range: 300 to 3,000 cps

Amplitude Distortion: Less than 10%

Input Impedance: 600 or 200 ohms

Power Output: 3 w into 500 ohm load

*Hand Telephone Assembly:*

Impedance of Earphones at 1,000 cps: 600 ohms

Impedance of Microphones: 35 to 45 ohms

Power Requirements: 755 w at 115-v, 60-cycle 1-phase ac

## MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1 set	Equipment spares		15 x 18 x 18	
1	Hand Telephone Assembly CRV-51008-A		5 x 11-3/4 x 3-3/8	4.75
1	Modification kit		24 x 23 x 17	75
1	Modulator Unit CRV-50193		14-1/2 x 24 x 17-1/2	120
1	Speech Amplifier CRV-50055		16 x 16 x 15-13/16	75

## REFERENCE DATA AND LITERATURE:

NAVSHIPS 900.778

## SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
3	22.7	480

MIL-HDBK-161

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**AN/URA-type** MODULATOR ASSEMBLY

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PROCUREMENT DATA

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PROCURING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG: USN, BuShips

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CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Radio Corp. of America	Camden, N. J.	NXsr-65285	\$987.00

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## FREQUENCY SHIFT CONVERTER AN/URA-type

1 July 1958

Cognizant Serv: USA FSN: 5815-337-7277

CV-62/U

USA

USN

USAF

TYPE CLASS: Std

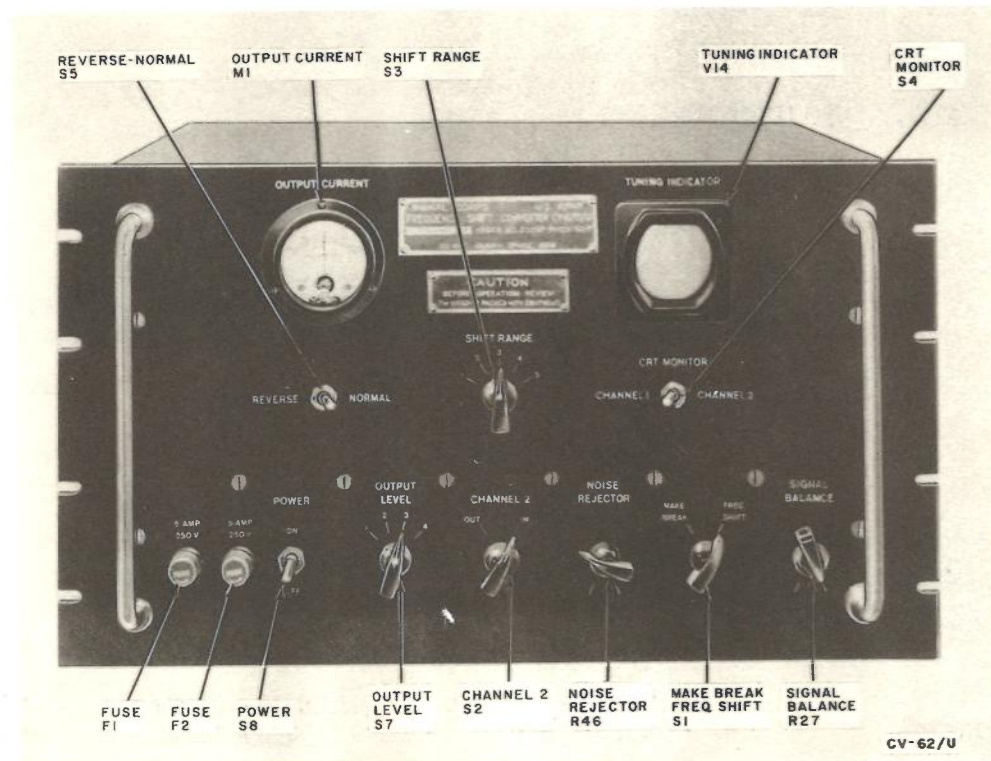
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STOCK NO: --

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**FUNCTIONAL DESCRIPTION:**

Frequency Shift Converter CV-62/U is used to convert AF, fsk signals or make-and-break teletypewriter signals into dc output pulses for the operation of a teletypewriter.

It is intended for use at the receiving terminal of a radio-teletype system and is arranged for rack-and-panel mounting.

**TECHNICAL CHARACTERISTICS:**

*Type of Communication Circuits:* Dual-diversity (or single

received signal) fsk, center frequency of 2,500 cycles with shifts of 100 to 1,100 cps or dual-diversity (or single received signal) for make-and-break signal in range of 500 to 5,000 cps or conversion of single received signal (using external discriminator) with center frequency between 850 and 5,000 cps

*Power Requirements:* 130 va, 115-v ( $\pm 10\%$ ) 50/60-cycle 1-phase ac

MIL-HDBK-161

**AN/URA-type** FREQUENCY SHIFT CONVERTER

MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Frequency Shift Converter CV-62/U	(FSN)5815-337-7277	10-1/2 x 13-1/2 x 19	60
(Equipment consists of only one major component.)				

REFERENCE DATA AND LITERATURE:

TM 11-5524

SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
1	12.1	155

PROCUREMENT DATA

PROCURING SERVICE: USA  
SPEC &/or DWG: MIL-C-10232

DESIGN COG: USA, Sig C

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Radio Frequency Labs, Inc.	Boonton, N. J.	31478-P-51-04	\$516.04

FREQUENCY SHIFT CONVERTER **AN/URA-type**

1 July 1958

Cognizant Serv: USA FSN: 5815-503-2601

CV-115( )/URR

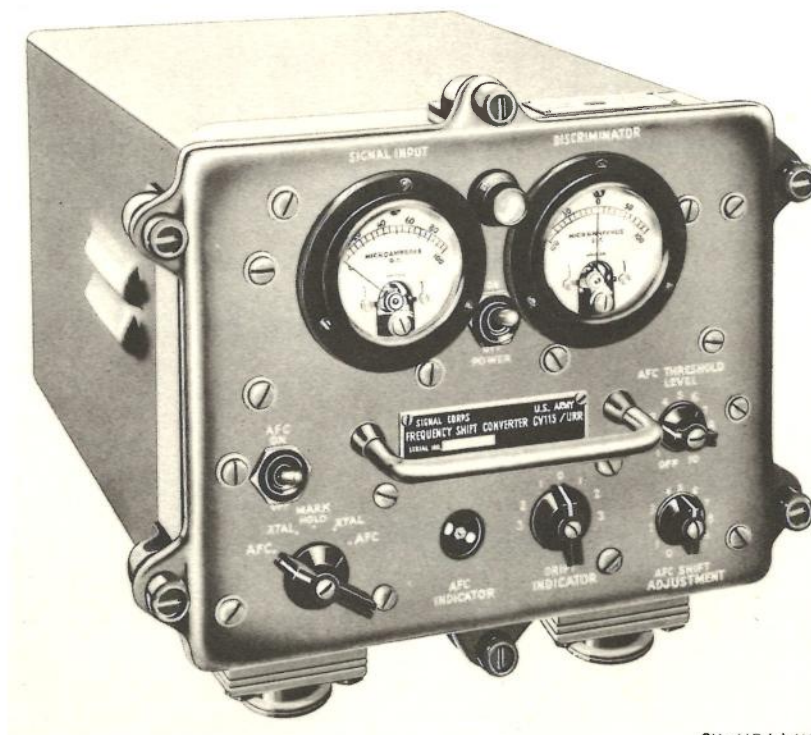
USA

USN

USAF

TYPE CLASS:

STOCK NO:

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2C716-4--  
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CV-115( )/URR

**FUNCTIONAL DESCRIPTION:**

Frequency Shift Converter CV-115( )/URR converts frequency-shift keyed signals into dc output pulses that key a receiving teletypewriter.

This equipment is designed for continuous duty and operates from the intermediate frequency (450 to 510 kc) output of a single radio receiver. It can convert fsk signals at speeds as high as 100 dot-cycles per second, and has facilities to reverse the polarity of the mark and space signals. It can generate mark output signals for adjustment purposes.

An intermediate unit is usually required between the converter and the teletypewriter to effect an impedance match between the two units.

**TECHNICAL CHARACTERISTICS:**

*If Input from Receiver:* 450 to 510 kc  
*Signal Input Voltage:* 100 microvolts (minimum)  
*Input Frequency Shift:* 150 to 1,000 cps  
*Input Impedance:* 50 ohms  
*Power Requirements:* 110 w, 115-v 50/60-cycle 1-phase ac

MIL-HDBK-161

**AN/URA-type** FREQUENCY SHIFT CONVERTER

MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
		(FSN)		
1	Frequency Shift Converter CV-115( )/URR (Equipment consists of only one major component.)	5815-503-2601	7-3/8 x 13-1/8 x 9	39

REFERENCE DATA AND LITERATURE:

TM 11-5085

SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
1	1.95	43

PROCUREMENT DATA

PROCURING SERVICE: USA  
SPEC &/or DWG: MIL-F-10610

DESIGN COG: USA, Sig C

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Hoffman Laboratories, Inc.	Los Angeles, Calif.	14222-P-51-93	\$2,180.00



FREQUENCY SHIFT CONVERTER **AN/URA-type**

1 July 1958

Cognizant Serv: USA FSN: 5815-503-2600

CV-116/URR

USA

USN

USAF

TYPE CLASS: Std  
 STOCK NO: 2C716-3



CV-116/URR

**FUNCTIONAL DESCRIPTION:**

Frequency Shift Converter CV-116/URR changes fsk signals into dc pulses to key the loop circuit of teletypewriters. It operates from the if output of one or two radio receivers arranged in either space or frequency diversity.

This equipment consists of the converter unit, cables, and accessories.

The converter unit is designed for continuous duty and is used in a radioteletype communication system. In addition to the CV-116/URR, a typical system consists of a teletype-

writer, a control unit, a frequency-shift keyer, a radio transmitter, two radio receivers, two or three antennas (one or two receiving and one transmitting), and another teletypewriter.

This equipment is used with such sets as Radio Receiving Set AN/FRR-38.

**TECHNICAL CHARACTERISTICS:**

*Operating Speed:* 100 dot-cycles per second

*Power Requirements:* 200 w, 115-v 50/60-cycle 1-phase ac

MIL-HDBK-161

**AN/URA-type** FREQUENCY SHIFT CONVERTER

MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Frequency-shift converter (Equipment consists of only one major component.)	-----	8-3/4 x 17 x 19	65

REFERENCE DATA AND LITERATURE:

TM 11-2241

SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
1	4.13	110

PROCUREMENT DATA

PROCURING SERVICE: USA  
SPEC &/or DWG: MIL-F-10532

DESIGN COG: USA, Sig C

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Hoffman Laboratories, Inc.	Los Angeles, Calif.	14222-P-51-93	\$2,166.24

SINGLE SIDEBAND CONVERTER **AN/URA-type**

1 July 1958

Cognizant Serv: USA FSN: 5820-503-2594

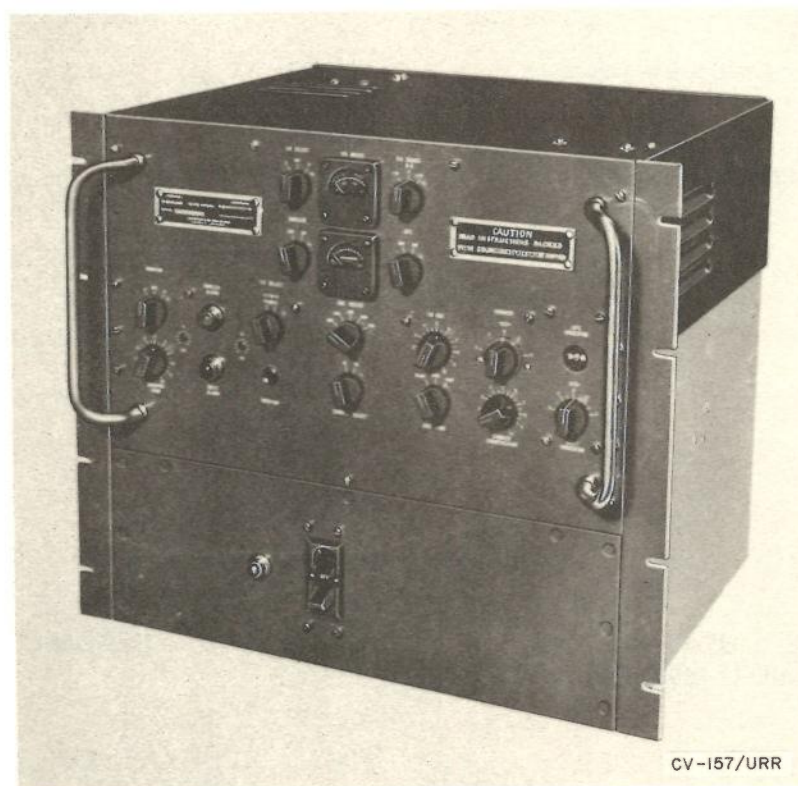
CV-157/URR

USA

USN

USAF

TYPE CLASS: Std  
 STOCK NO: 2C722-157



CV-157/URR

**FUNCTIONAL DESCRIPTION:**

Single Sideband Converter CV-157/URR is used at the receiving end of a radio communication system that operates in single-sideband reduced carrier transmission.

It may also be used as an aid in the reception of am double-sideband signals under severe atmospheric conditions.

This equipment consists of a single operating component arranged for rack-mounting and is intended for the handling of heavy traffic at fixed installations. In such applications,

operating with a receiver, it is used to feed carrier terminal equipment that handles several channels of telephone, teletypewriter, and facsimile.

**TECHNICAL CHARACTERISTICS:**

*Type Modulation:* Am

*Type of Signal:* Ssb or twin ssb

*Power Requirements:* 250 w, 105-125/210-250-v 50/60-cycle ac

MIL-HDBK-161

**AN/URA-type** SINGLE SIDEBAND CONVERTER

MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
		(FSN)		
1	Single Sideband Converter CV-157/URR (Equipment consists of only one major component.)	5820-503-2594	-----	104

REFERENCE DATA AND LITERATURE:

TM 11-266

SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
1	7.2	177

PROCUREMENT DATA

PROCURING SERVICE: USA  
SPEC &/or DWG: MIL-C-11957A

DESIGN COG: USA, Sig C

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Dubrow Development Co.	Burlington, N. J.	50964-P-57-55	\$2,391.00
Hoffman Laboratories, Inc.	Los Angeles, Calif.	08722-P-55-51	1,999.60
Munston Manufacturing & Service, Inc.	Islip, L. I., N. Y.	38706-P-56-55	3,366.53

EXPERIMENTAL ELECTRONIC RELAY EQUIPMENT **AN/URA-type**

5 December 1958

Cognizant Serv: USN FSN:

CXES

	USA	USN	USAF
TYPE CLASS:	--	Used by	--
STOCK NO:	--	--	--

(No Illustration Available)

**FUNCTIONAL DESCRIPTION:**

Electronic Relay Equipment CXES is a device which utilizes the intermediate-frequency output of an associated signal keyed in accordance with a continuous wave input to the receiver. This audio-frequency output is relatively noise-free, compared with reproduction of the telegraphic signal by conventional means, particularly under conditions of high-noise levels. Interchangeable coil assemblies permit operation of Experimental Electronic Relay Equipment CXES with

receivers having intermediate frequencies of 175, 400, or 460 kilocycles.

The following equipment is used, but is not supplied with, the Equipment: receiver (1), loudspeaker (1), earphones (1 pair), alternating current input plug (1).

**TECHNICAL CHARACTERISTICS:**

*Intermediate Frequencies:* 175 kc, 400 kc, and 460 kc

*Power Factor:* 0.9

*Power Requirements:* 70 va at 115-v, 60-cycle, 1-phase ac

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Audio-Output Plug AN3106-145-10S			
1	Electronic Relay CXES	-----	9-1/16 x 11-1/2 x 15-15/32	25
2	IF cable			
1	Phone plug			
8	Plug-in coil assembly			
1	Plug-in container			
1	Power cable			
1 set	Spare parts in container			

**REFERENCE DATA AND LITERATURE:**

NAVSHIPS 900,399

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
1	10.8	135

MIL-HDBK-161

---

**AN/URA-type** EXPERIMENTAL ELECTRONIC RELAY EQUIPMENT

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PROCUREMENT DATA

---

PROCURING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG: USN, BuShips

---

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Hoffman Radio Corp.	Los Angeles, Calif.	NXss-32200, 22 June 1943	

---

TUNING INDICATOR **AN/URA-type**

25 November 1958

Cognizant Serv: USN FSN:

IP-352(XN-1)/UR

USA

USN

USAF

TYPE CLASS: --

Used by --

STOCK NO: --

(No Illustration Available)

**FUNCTIONAL DESCRIPTION:**

Tuning Indicator IP-352(XN-1)/UR consists of a 2-inch cathode ray tube and its associated circuitry and controls. It is primarily intended for use as a remote monitor with Frequency Shift Converter CV-89A/URA-8A. However, the IP-352(XN-1)/UR can be used with any frequency shift converter that has the proper output characteristics and an external monitor jack. It provides means for the following procedures: observing the tuning of the frequency shift converter's associated receiver, indicating the output of the discriminator, checking the approximate amount of the frequency shift, observing the polarity of the mark-space characters, and observing other pertinent details of the signal such as noise, etc.

The unit is designed for table-top mounting with a swivel type mounting bracket to permit orientation within a 90-

degree arc in a horizontal plane, and within a 45-degree tilt from the horizontal position.

The following equipment is used with, but is not supplied with Tuning Indicator IP-352(XN-1)/UR: one or two Frequency Shift Converters CV-89A/URA-8A or equivalent.

**TECHNICAL CHARACTERISTICS:**

*Frequency Input:* Dc square waves 23 cps (usable to 100 cps)

*Frequency Response:* 0 to 500 cps on Y-axis

*Input Impedance:* 1 megohm

*Power Input:* 10 w

*Vertical Deflection Sensitivity:*

Through Amplifier: 2.5 v per inch

Direct Connection: 74 to 100 v per inch (to plate)

*Power Requirements:* 105- to 125-v  $\pm 10\%$  60-cycle  $\pm 5\%$  1-phase ac

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Tuning Indicator IP-352 (XN-1)/UR (Equipment consists of only one major component.)	-----	6 x 7-1/2 x 12	15

**REFERENCE DATA AND LITERATURE:****SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)

MIL-HDBK-161

---

**AN/URA-type** TUNING INDICATOR

---

PROCUREMENT DATA

---

PROCURING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG: USN, BuShips

---

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Hoffman Laboratories Inc.	Los Angeles, Calif.	NObsr-64744, 5 May 1955	

---



KEYER AN/URA-type

25 November 1958

Cognizant Serv: USN FSN: 5820-508-7335

KY-32/GRT

USA

USN

USAF

TYPE CLASS: --

Used by --

STOCK NO: --

F16-K-1404-2 --

(No Illustration Available)

**FUNCTIONAL DESCRIPTION:**

Keyer KY-32/GRT is an electronic unit that adapts Radio Transmitting TCK-series to frequency-shift emission as an alternate to its regular A1 type emission.

This equipment may be used on any transmitters in the TCK series without overloading the transmitter power supply.

**TECHNICAL CHARACTERISTICS:***Frequency:*

Comparison: 425 cps

Nominal Phase Modulation: 200 cps

Nominal Frequency Shift During Keying: 850 cps

*Output Impedance:* 600 ohms*Keying Input:***Neutral Keying:***Mark:* +30 to +120 v*Space:* Open circuit**Polar Keying:***Mark:* +30 to +120 v*Space:* -15 to -120 v*Keying Output:* Reactance-tube circuit to master oscillator tank*Mounting Data:* Mounted in side panel of associated TCK series transmitter, a 9-1/4- by 4-1/8-inch cutout is required**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSION (Inches)	WEIGHT (Lbs)
1 set	Accessories	-----		16
1	Keyer KY-32/GRT	-----	5-7/8 x 12-3/4 x 16-1/4	6

**REFERENCE DATA AND LITERATURE:**

NAVSHIPS 91109

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
1	2.45	46

MIL-HDBK-161

**AN/URA-type** KEYER

PROCUREMENT DATA

PROCURING SERVICE: USN  
SPEC &/or DWG: BuShips Specification CS-521

DESIGN COG: USN, BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Federal Telephone & Radio Corp.	Clifton, N. J.	NObsr-39150, 13 June 1947	\$240.00 with spares

KEYER **AN/URA-type**

25 November 1958

Cognizant Serv: USN FSN:

KY-43/URT

USA

USN

USAF

TYPE CLASS:

Used by

Ltd-Std

STOCK NO:

F16-M-83-151

(No Illustration Available)

**FUNCTIONAL DESCRIPTION:**

Keyer KY-43/URT is designed for use with appropriate transmitters to adapt them for frequency-shift operation. It is a reactance modulated amplifier used to shift the frequency of the transmitter master oscillator in accordance with direct current signals from a polar keyer which is, in turn, actuated by a standard teletypewriter.

This equipment is designed primarily for use with, Transmitting Equipment TAB-5, TAB-6, or TAB-7. Provision is made for mounting of the keyer on the TAB-series transmitter.

The KY-43/URT is basically identical with Keyer KY-43A/URT except for minor changes in circuitry.

**TECHNICAL CHARACTERISTICS:***Frequency Range:* 100 to 555 kc*Frequency Shift Range:* 170 cps*Rf Source:* TAB-5, -6, -7 master oscillator*Output:* To TAB-5, -6, -7 master oscillator through coaxial cable*Keying Voltage:* Polar Keyer output of 40 to 120 v*Mounting Data:* Left-hand side of TAB-5, -6, -7 exciter*Power Requirements:* 110 w, 220-v, 60-cycle 1-phase ac**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1 set	Accessories			
1 set	Equipment spares		12-1/4 x 12-3/8 x 12-1/4	
1	Keyer KY-43/URT		22-1/2 x 8 x 15-1/2	34

**REFERENCE DATA AND LITERATURE:**

NAVSHIPS 91138

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
2	3.2	70

MIL-HDBK-161

**AN/URA-type** KEYER

PROCUREMENT DATA

PROCURING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG: USN, BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Munston Manufacturing and Service Inc.	New York, N. Y.	NObsr-42175, 19 March 1948	\$300.00 with spares

KEYER **AN/URA-type**

25 November 1958

Cognizant Serv: USN FSN: 5805-665-1514

KY-43A/URT

USA

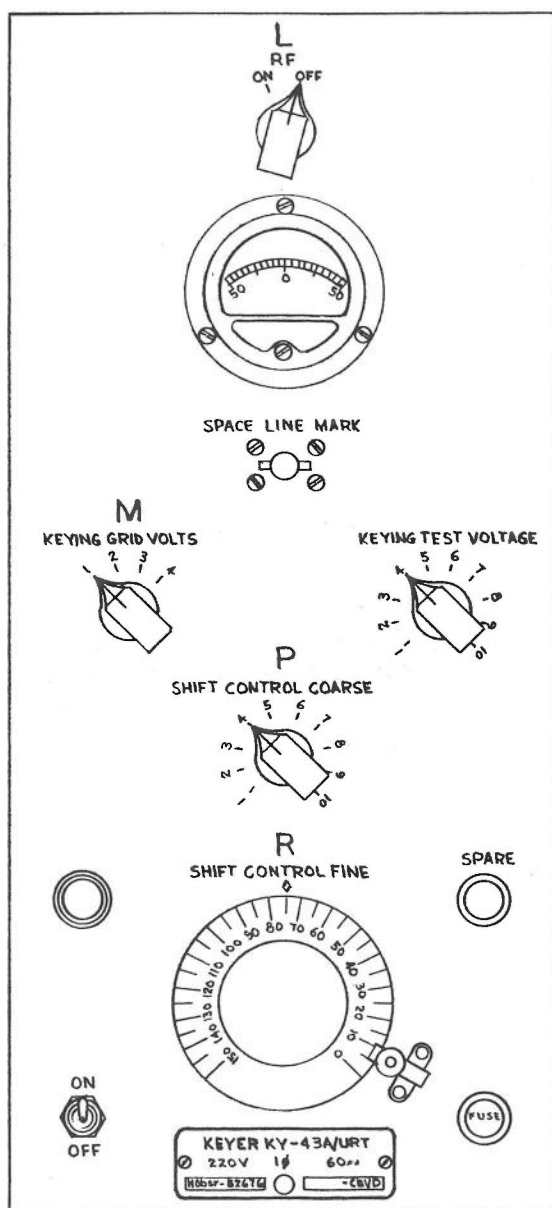
USN

USAF

TYPE CLASS: --  
STOCK NO: --

Used by

Std



KY-43A/URT

**FUNCTIONAL DESCRIPTION:**

Keyer KY-43A/URT is designed for use with appropriate transmitters to adapt them for frequency-shift operation. It permits the impression of intelligence on a radio frequency carrier by the frequency-shift method in order to minimize the effects of fading, noise interference, and static disturbances on the receiving equipment.

The KY-43A/URT is a reactance-modulated amplifier used to shift the frequency of the transmitter master oscillator in accordance with the direct current polar mark and space impulses from a teletypewriter keyer. It employs a reactance tube circuit to convert the polar direct current signals into a radio frequency carrier shift that is symmetrical with respect to the assigned frequency.

This equipment is designed primarily for use with Transmitting Equipment TAB-5, TAB-6, or TAB-7. The keyer consists of a rectangular chassis and front panel mounted on a plate for mounting of the unit on the side of the master oscillator section of the TAB-series transmitters. All controls for the keyer are located on the front panel.

The KY-43A/URT is basically identical with Keyer KY-43/URT except for minor changes in circuitry.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range:* 100 to 555 kc

*Frequency Shift Range:* 170 cps (nominal)

*Type Modulation:* FM (F1)

*Type Signal:* Fsk

*RF Source:* TAB-5, -6, -7 master oscillator

*Output:* To TAB-5, -6, -7, master oscillator through coaxial cable

*Keying Speed Maximum:* At least 60 wpm

*Keying Voltage:* Dc polar  $\pm 40$  to  $\pm 120$  v

*Keying Input Impedance:* 3,800 ohms

*Mounting Data:* Left-hand side of TAB-5, -6, -7 exciter

*Power Requirements:* 110 w, 220-v  $\pm 10\%$  60-cycle 1-phase ac

MIL-HDBK-161

**AN/URA-type** KEYER

MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1 set	Equipment spares	-----	6 x 12 x 6	14
1	Keyer KY-43A/URT	-----	22-1/2 x 8 x 15-1/2	34

REFERENCE DATA AND LITERATURE:

NAVSHIPS 91645

SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
1	3.6	66

PROCUREMENT DATA

PROCURING SERVICE: USN  
SPEC &/or DWG: MIL-K-15651

DESIGN COG: USN, BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Fidelity Amplifier Co.	Chicago, Ill.	NObsr-52676, 22 June 1953	

RADIO MODULATOR **AN/URA-type**

4 December 1958

Cognizant Serv: USN FSN: 5820-642-8492

MD-209/UC

USA

USN

USAF

TYPE CLASS: --  
STOCK NO: --

Used by --

(No Illustration Available)

## FUNCTIONAL DESCRIPTION:

Radio Modulator MD-209/UC is a device for electronically shifting the phase of a radio-frequency signal at an audio-frequency rate. Its use permits audio frequency transmission by an A-1 emission-type transmitter. Audio-frequency modulation signals used for this purpose must be in the frequency range of 250 to 6000 cycles per second.

This equipment is intended to be used with radio trans-

mitters whose output frequency is in the range of 4 to 20 megacycles.

## TECHNICAL CHARACTERISTICS:

*Frequency Range in Mc:* 2 to 5*Input Impedance:* 500 to 600 ohms*Input Frequency:* 250 to 6,000 cps*Power Requirements:* 115/230-v 50- to 70-cycle 1-phase ac

## MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Radio Modulator MD-209/UC (Equipment consists of only one major component.)		10-19/32 x 17-29/32 x 20-1/2	

## REFERENCE DATA AND LITERATURE:

NAVSHIPS 92459

## SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)

MIL-HDBK-161

**AN/URA-type** RADIO MODULATOR

PROCUREMENT DATA

PROCURING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG: USN, BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Schuttig & Co., Inc.	Washington, D. C.	NObsr-52566	\$1,490.00



## KEYING HEAD DRIVE AN/URA-type

5 December 1958

Cognizant Serv: USN FSN:

MX-439( )/U

USA

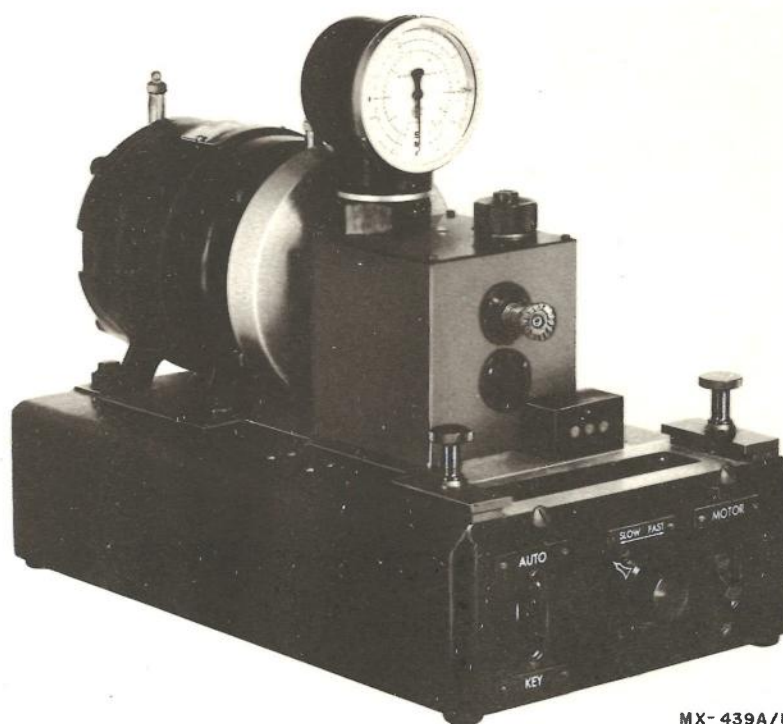
USN

USAF

TYPE CLASS: --

Used by --

STOCK NO: --



MX-439A/U

**FUNCTIONAL DESCRIPTION:**

Keying Head Drive MX-439( )/U is designed to drive an automatic keying head through its entire speed range. The MX-439( )/U is used in conjunction with an associated mechanical keying head to provide high speed automatic transmission of radiotelegraph signals in International Morse Code.

The MX-439( )/U is capable of driving the keying head at any desired speed between approximately 20 to 400 words per minute.

The MX-439/U is similar to and interchangeable with the MX-439A/U except for the noninterchangeable keying relay and omission of the remote hand key indicator light found on the MX-439/U.

**TECHNICAL CHARACTERISTICS:**

*Driving Range:* 20 to 400 wpm

*Power Requirements:*

MX-439/U: 150 w, 110-v dc

MX-439A/U: 150 w, 115-v dc

MIL-HDBK-161

**AN/URA-type** KEYING HEAD DRIVE

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Keying Head Drive MX-439( )/U (Equipment consists of only one major component.)			

**REFERENCE DATA AND LITERATURE:**

NAVSHIPS 92220

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
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**PROCUREMENT DATA**

PROCURING SERVICE: USN  
SPEC &/or DWG: DESIGN COG: USN, BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
H. O. Boehme Co.	New York, N. Y.	NObsr-63004	

RADIO FREQUENCY OSCILLATOR **AN/URA-type**

5 December 1958

Cognizant Serv: USN FSN:

O-406(XN-1)/URC

USA

USN

USAF

TYPE CLASS: --

Used by --

STOCK NO: --

(No Illustration Available)

**FUNCTIONAL DESCRIPTION:**

Radio Frequency Oscillator P-406(XN-1)/URC is a radio frequency crystal synthesizer. It is basically intended to serve as an exciter for a transmitter of a high-frequency oscillator for a receiver. In its functions as an exciter or high-frequency oscillator, it can replace a complete crystal kit numbering over 1,750 individual crystals.

It has both a mechanical and an electrical readout. The electrical readout is primarily designed as a memory box for a remote-control system. It can also serve as an easily read, exact indicator of frequency.

The O-406(XN-1)/URC may be used with transmitters of the AN/URT-7 or TED types and receivers of the AN/URR-13 or AN/URR-28 types.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in Mc:* 225 to 400

*Transmitter Setting:* 1/12 of the transmitter output

*Receiver Setting:* Incoming frequency  $\pm$  the if. frequency

*Warmup Time:* 15 minutes to stabilize

*Power Requirements:* 115/230-v 60-cycle 1-phase ac

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Radio Frequency Oscillator O-405(XN-1)/URC (Equipment consists of only one major component.)			

**REFERENCE DATA AND LITERATURE:****SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
1		

MIL-HDBK-161

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**AN/URA-type** RADIO FREQUENCY OSCILLATOR

---

PROCUREMENT DATA

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PROCURING SERVICE: USN  
SPEC &/or DWG: SHIPS-S-1807

DESIGN COG: USN, BuShips

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CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Manson Laboratories	Stamford, Conn.	NObsr-64716	\$3,826.32

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CODE PRACTICE EQUIPMENT **AN/URA-type**

5 December 1958

Cognizant Serv: USN FSN:

OAH, OAH-1, OAH-2

USA

USN

USAF

TYPE CLASS: --

Used by --

STOCK NO: --

OAH: F16-Q-116291-200 --

OAH-1: F16-Q-196292-100

OAH-2: F16-Q-196293-100

(No Illustration Available)

**FUNCTIONAL DESCRIPTION:**

Code Practice Equipment OAH, OAH-1 and OAH-2 are used for training purposes in telegraphic code, to maintain and increase the proficiency of personnel already trained as operators. For group instruction it is possible to train up to six students at one time. The equipment may also be used for practice in the receiving of an external signal.

The OAH, OAH-1, and OAH-2 are electrically and mechanically interchangeable and may be operated on either ac or dc.

**TECHNICAL CHARACTERISTICS:***Frequency Range:*

OAH, OAH-1: 100 to 1,000 cps

OAH-2: 460 to 1,500 cps

*Frequency Control:* Continuously variable*Output Impedance:*

OAH, OAH-1: 25 ohms

OAH-2: 100 ohms

*Power Output:* OAH, OAH-1: 1 w

OAH-2: 25 mw

*Send-Receive Circuits:* 7

*Power Requirements:* 20 w, 110-v 60-cycle 1-phase ac; or two 1.5-v batteries type CNC-19010, and two 45-v batteries type CNC-19005

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
<i>For OAH, OAH-1:</i>				
1	Oscillator Amplifier Unit COQ-35029	-----	7-5/8 x 7-3/8 x 9-1/4	
1	Distribution Unit COQ-62077	-----	78 long	
1	Accessories Box COQ-20170	-----	8-1/32 x 7-17/32 x 15-3/16	
1	Shipping Chest MCH-1	-----		
<i>For OAH-2:</i>				
1	Oscillator Amplifier Unit CUZ-35058	-----	7-3/8 x 8-7/8 x 7-7/8	15
1	Distribution Unit CUZ-62148	-----	78 long	
1	Accessories Box CUZ-10362	-----	8-3/4 x 15-1/2 x 8-1/4	13.5
1	Shipping Chest CUZ-10361	-----	9-1/2 x 19-3/4 x 17-3/8	25

**AN/URA-type** CODE PRACTICE EQUIPMENT

## REFERENCE DATA AND LITERATURE:

OAH, OAH-1: NAVSHIPS 95159  
 OAH-2: NAVSHIPS 900552

## SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
1	5.78	124

## PROCUREMENT DATA

PROCURING SERVICE: USN  
 DESIGN COG: USN, BuShips  
 SPEC &/or DWG: OAH, OAH-1: Spec SSD-1, RE9325, EN28/1397-43/Ships  
 OAH-2: Spec No. RE9325A

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Automatic Signal Corp.	East Norwalk, Conn.	NXss-29645	\$300.00
U.S. Television Manufacturing Corp.	New York, N. Y.	NXsr-49707	300.00

CODE PRACTICE EQUIPMENT **AN/URA-type**

5 December 1958

Cognizant Serv: USN FSN:

OW-2

USA

USN

USAF

TYPE CLASS:  
STOCK NO:

Used by

(No Illustration Available)

## FUNCTIONAL DESCRIPTION:

Code Practice Equipment OW-2 is used for the training of radio telegraph operators. It is designed to accommodate 40 positions.

## TECHNICAL CHARACTERISTICS:

*Audio Oscillator Frequency:* 100 to 1,000 cps  
*Power Requirements:* 110-v 60-cycle 1-phase ac

## MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Distribution Unit 49174			
40	Headphones 49016			
1	Mounting Rack		20 x 22 x 73-1/4	
1	Oscillator-Amplifier Unit 35009			
40	Patch Cords			
1	Storage Battery, 6-volt			
40	Telegraph Keys 26001			

## REFERENCE DATA AND LITERATURE:

NAVSHIPS 95196

## SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)

MIL-HDBK-161

**AN/URA-type** CODE PRACTICE EQUIPMENT

PROCUREMENT DATA

PROCURING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG: USN, BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
U.S. Navy Yard	Washington, D. C.	MB-381-43	



PANORAMIC RADIO ADAPTOR **AN/URA-type**

4 December 1958

Cognizant Serv: USN FSN: RBU, 5820-347-9186  
 RBU-1, 5820-665-1069  
 RBU-2, 5820-347-9186

RBU, RBU-1, RBU-2

USA

USN

USAF

TYPE CLASS: --

Used by

STOCK NO: ---

RBU: F16-Q-255899-200 --

RBU-1: F16-Q-255910-200

RBU-2:



RBU-2

**FUNCTIONAL DESCRIPTION:**

Panoramic Radio Adaptors RBU, RBU-1, and RBU-2 are cathode-ray-tube oscilloscopes used with radio receiving equipment to indicate simultaneously, as vertical deflections on the screen, all stations receivable within a band that extends approximately 25 kilocycles above and below the frequency to which the receiver is tuned. This permits quick interception of stations appearing on the air for short periods of time. The adaptor indicates the frequency of a signal with respect to the station to which the receiver is tuned, indicates roughly the strength of the signal, and reveals the character of the signal and type of modulation—continuous wave, voice, amplitude modulation, frequency modulation, pulse, etc.

The RBU-1, and RBU-2 are designed for use with Radio

Receiving Equipments RBB. They are essentially the same as the RBU except that they have greater sensitivity.

Equipment required for the operation of the panoramic radio adaptor are Coupling Kit 10563, and ac power cord with plug, and Radio Frequency Cable RG-11/U.

**TECHNICAL CHARACTERISTICS:**

*Presentation:* 3-inch cathode-ray tube

*Input Frequency:* 400 kc

*Maximum Sweep Width:* 50 kc

*Sweep Frequency:* 30 cps

*Sensitivity:* 50-uv input for deflection amplitude of more than 1/4 inch

*Type Input:* Cathode follower

*Power Requirements:* 60 w, 115/230-v to 60-cycle 1-phase ac

MIL-HDBK-161

**AN/URA-type PANORAMIC RADIO ADAPTOR**

MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1 set	Equipment spares			
4	Panoramic Adaptor 55185 (RBU-2)	-----	7-1/2 x 16 x 13	38
1	Panoramic Radio Adaptor:			
	55088 (RBU)	-----	5-1/2 x 11 x 11-7/8	40
	55088-A (RBU-1)	-----	8-3/4 x 16 x 13	44

REFERENCE DATA AND LITERATURE:

NAVSHIPS 900,288-1B  
 NAVSHIPS 900,717  
 NAVSHIPS 900,501-1B

SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
<i>For RBU:</i>		
1		
<i>For RBU-1:</i>		
1	10.4	151
<i>For RBU-2:</i>		
1	7.1	138

PROCUREMENT DATA

PROCURING SERVICE: USN  
 SPEC &/or DWG:

DESIGN COG: USN, BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
RCA Victor Division, Radio Corp. of America	Camden, N. J.	NXsr-43377 (RBU)	\$615 with equip- ment spares
Panoramic Radio Corp.	New York, N. Y.	NXss-33781, 9 July 1943 (RBUL1)	\$615 with equip- ment spares
Warwick Manufacturing Corp.	Chicago, Ill.	NXsr-90839, 20 Feb- ruary 1945 (RBU-2)	\$615 with equip- ment spares

## PANORAMIC RADIO ADAPTOR AN/URA-type

4 December 1958

Cognizant Serv: USN FSN: RBV, 5820-644-4816  
 RBV-1, 5820-665-2065  
 RBV-2, 5820-644-4816

RBV, RBV-1, RBV-2

	USA	USN	USAF
TYPE CLASS:	--	Used by	--
STOCK NO:	--	RBV: F16-Q-256280-200	--
		RBV-1: F16-Q-256300-200	
		RBV-2: F16-Q-256320-200	



RBV

**FUNCTIONAL DESCRIPTION:**

Panoramic Radio Adaptors RBV, RBV-1, and RBV-2 are cathode-ray-tube oscilloscopes used with radio receiving equipment to indicate simultaneously, as vertical deflections on the screen, all stations receivable within a band that extends approximately 50 kilocycles above and below the frequency to which the receiver is tuned. This permits quick interception of stations appearing on the air for short periods of time. The adaptor indicates the frequency of a signal with respect to the station to which the receiver is tuned, indicates roughly the strength of the signal, and reveals the character of the signal and type of modulation—continuous wave, modulated continuous wave, voice, amplitude modulation, frequency modulation, pulse, etc.

The RBV, RBV-1, and RBV-2 are designed for use with

Radio Receiving Equipments RBC. They are essentially identical; however, the RBV-2 has greater sensitivity.

Equipment required for the operation of the panoramic radio adaptor are Coupling Kit 10563, an ac power cord with plug, and Radio Frequency Cable RG-11/U.

**TECHNICAL CHARACTERISTICS:**

*Presentation:* 3-inch cathode-ray tube

*Input Frequency:* 400 kc ( $\pm 5$  kc only)

*Maximum Sweep Width:* 100 kc

*Sweep Frequency:* 30 cps

*Sensitivity:* 50-uv input for deflection amplitude or more than 1/4 inch

*Input Impedance:* 50 ohms

*Power Requirements:* 60 w, 115/230-v 50- to 70-cycle 1-phase ac

**AN/URA-type PANORAMIC RADIO ADAPTOR****MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1 set	Equipment spares			
1	Panoramic Adaptor			
	55089 (RBV)	-----	7-1/4 x 13 x 13-1/4	46
	55090-A (RBV-1)	-----	8-3/4 x 13-1/2 x 15	44
	55186 (RBV-2)	-----	7-1/2 x 16 x 13	38

**REFERENCE DATA AND LITERATURE:**

NAVSHIPS 900,288-1B  
 NAVSHIPS 900,501-1B  
 NAVSHIPS 900,717

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
<i>For RBV:</i> 1	10.4	151
<i>For RBV-1:</i> 1	7.1	138
<i>For RBV-2:</i>		

**PROCUREMENT DATA**

PROCURING SERVICE: USN  
 SPEC &/or DWG:

DESIGN COG: USN, BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
RCA Victor Division, Radio Corp. of America	Camden, N. J.	NXsr-43377, 8 December 1943 (RBV)	
Panoramic Radio Corp.	New York, N. Y.	NXss-33781, 9 July 1943 (RBV-1)	\$552 with equip- ment spares
Warwick Manufacturing Corp.	Chicago, Ill.	NXsr-90839, 20 February 1945 (RBV-2)	\$742 with equip- ment spares

PANORAMIC RADIO ADAPTOR **AN/URA-type**

4 December 1958

Cognizant Serv: USN FSN:

RCC

USA

USN

USAF

TYPE CLASS: --

Used by

STOCK NO: --

F16-Q-258126-200

(No Illustration Available)

**FUNCTIONAL DESCRIPTION:**

Panoramic Radio Adaptor RCC is a cathode-ray-tube oscilloscope designed to provide visual observation of radio-frequency signals, utilizing the intermediate-frequency signal from suitable radio receiving equipment. It is used primarily for the quick interception and identification of transmissions, including those which are on the air for a short period of time.

All signals of sufficient amplitude, within 100 kilocycles above and below the frequency to which the receiver is tuned, are included in the sweep across the screen. Graph lines on the

face of the tube permit a frequency check of any signal in the sweep and a relative signal strength indication. In addition, the shape of any signal deflection in the sweep reveals the character of the signal and the type of modulation.

**TECHNICAL CHARACTERISTICS:**

*Presentation:* 3-inch cathode-ray tube  
*Input Frequency:* 450 to 470 kc, adjusted to 455 kc at factory  
*Maximum Sweep Width:* 200 kc  
*Sweep Frequency:* 30 cps  
*Input Impedance:* 50,000 ohms  
*Power Requirements:* 105/115-v 25/60-cycle 1-phase ac

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Panoramic Radio Adapter RCC (Equipment consists of only one major component.)	-----	12-3/8 x 25-3/8 x 15-1/2	76

**REFERENCE DATA AND LITERATURE:**

Preliminary instruction book for Panoramic Radio Adaptor RCC

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)

MIL-HDBK-161

**AN/URA-type** PANORAMIC RADIO ADAPTOR

PROCUREMENT DATA

PROCURING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG: USN, BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Panoramic Radio Corp.	New York, N. Y.	NXss-18159, 24 November 1942	

RADIO RECEIVING EQUIPMENT **AN/URA-type**

20 November 1958

Cognizant Serv: USN FSN:

RDC-1

USA

USN

USAF

TYPE CLASS:  
STOCK NO:Used by  
F16-Q-265520-200

(No Illustration Available)

**FUNCTIONAL DESCRIPTION:**

Radio Receiving Equipment RDC-1, when used with a suitable panoramic display unit or recording device, is designed to detect radio and certain radar signals being transmitted within any one of three frequency bands. The selected frequency band is mechanically swept by a continuously rotating, motor driven, variable capacitor. A synchronizing switch is driven by the same motor.

This equipment is housed in a cabinet equipped with shock mounts for table or bench mounting. It may be removed from its cabinet and installed in a standard 19 inch rack.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in Mc:* 28 to 134 in three bands  
*Reception:* Cw, mcw, or pulse with repetition frequencies of the order of several hundred per second  
*Input Impedance:* 50 ohms  
*Sweep Frequency:* 15 cps  
*Output Impedance:* 50 to 70 ohms  
*Sensitivity:* (For signal deflection five times the average maximum noise deflection) Bands 1 and 2: 10 mv input, Band 3: 20 mv input  
*Antenna Requirements:* Any broadly tuned antenna suitable for the frequency range or band to be covered  
*Power Requirements:* 118 w,  $\pm 15\%$  power factor, 115-v 60-cycle 1-phase ac

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Panoramic Search Receiver CHL-46253 (Equipment consists of only one major component.)	-----	16 x 27 x 26-1/2	9 <sup>0</sup>

**REFERENCE DATA AND LITERATURE:**

NAVSHIPS 900,486

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
2	12.5	286

MIL-HDBK-161

**AN/URA-type** RADIO RECEIVING EQUIPMENT

PROCUREMENT DATA

PROCURING SERVICE: USN  
SPEC &/or DWG: RE13A1024A

DESIGN COG: USN, BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
The Hallicrafters Co.	Chicago, Ill.	NXsr-64110 NObsr-39300 NXsr-85057	\$1,000.00



PANORAMIC RADIO ADAPTOR **AN/URA-type**

20 November 1958

Cognizant Serv: USN FSN:

RDK

USA

USN

USAF

TYPE CLASS: --

Used by --

STOCK NO: --

F16-Q-269190-200 --

(No Illustration Available)

## FUNCTIONAL DESCRIPTION:

Panoramic Radio Adaptor RDK, when connected to a radio receiver, enables an operator to see on a cathode-ray tube all stations that are receivable within a 3-mc band of the frequency to which the receiver is tuned. This allows quick interception of stations appearing on the air for short periods of time, even if slightly off the assigned frequency.

This equipment must be used with a superheterodyne radio receiver having an intermediate frequency of 30 mc.

## TECHNICAL CHARACTERISTICS:

*Sensitivity:* 1/4-inch deflection at 200 uv input*Presentation:* 3-inch cathode-ray tube*Input Frequency in Mc:* 30*Maximum Sweep Width in Mc:* 3*Sweep Frequency:*

50-cycle power source: 25 cps

60-cycle power source: 30 cps

*Power Requirements:* 115/230-v 50-70-cycle 1-phase ac

## MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
		(USN)		
1	Panoramic Radio Adaptor CPN-55145	-----	8-3/4 x 13-1/2 x 15	43
	(This equipment consists of only one major component.)			

## REFERENCE DATA AND LITERATURE:

NAVSHIPS 95259

## SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)

MIL-HDBK-161

**AN/URA-type** PANORAMIC RADIO ADAPTOR

PROCUREMENT DATA

PROCURING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG: USN, BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Panoramie Radio Corp.	New York, N. Y.	NXss-33781	\$150.00

RADIO RECEIVING EQUIPMENT **AN/URA-type**

20 November 1958

Cognizant Serv: USN FSN:

RDO

USA

USN

USAF

TYPE CLASS: --

Used by --

STOCK NO: --

F16-Q-270690-200 --

(No Illustration Available)

**FUNCTIONAL DESCRIPTION:**

Radio Receiving Equipment RDO is a search receiver used to measure the frequency of radio signals within its frequency range. The frequency band of 38 to 1,000 mc is covered in three bands by plug-in tuning units. Tuning over the band is accomplished by manual or automatic means. This equipment is a superheterodyne receiver and is designed for RCM search applications on Naval vessels.

A panoramic adaptor and pulse analyzer equipments are required for visual presentation of received signals.

The receiver cabinet is equipped with shock mounts and is designed for table or bench mounting. A clearance of 6-1/4 inches is required in back of the receiver.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in Mc:* 38 to 1,000 in three bands:

Band 1: 28 to 105 mc (Tuning Unit TN-1B/APR-1)

Band 2: 75 to 300 mc (Tuning Unit TN-2B/APR-1)

Band 3: 300 to 1,000 mc (Tuning Unit TN-3B/APR-1)

*Reception:* Panoramic voice for audio output; pulses for scanning and analyzing

*Power Output:* 45 mw into a 600-ohm load

*Output Impedance:* 600-ohm phone; 30- to 600-ohm line

*Sensitivity:* Varies considerably over the frequency range

*Input Impedance:* 50-ohms unbalanced to ground; transmission line connects to coaxial connector

*Radiation:* Unsafe at all frequencies

*Power Requirements:*

Receiver: 126 w, 110/115/120-v 55-65-cycle 1-phase ac

Tuning Motor: 28-v dc

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Cabinet	-----	10-5/8 x 18-1/8 x 24-3/4	
1	IF-AF Amplifier CZC-50198	-----	9-13/16 x 12-23/32 x 10-13/16	16
1	Preselector Frame CZC-10369	-----	9-13/16 x 14-3/32 x 7-5/16	4
1	Rectifier Power Supply CZC-20314	-----	8-3/16 x 16-1/2 x 8	37
1	Tuning Unit TN-1B/APR-1	-----	7-3/4 x 6-1/2 x 13-5/8	
1	Tuning Unit TN-2B/APR-1	-----	7-3/4 x 6-1/2 x 13-5/8	
1	Tuning Unit TN-3B/APR-1	-----	7-3/4 x 6-1/2 x 13-5/8	

**REFERENCE DATA AND LITERATURE:**

NAVSHIPS 900,527

MIL-HDBK-161

**AN/URA-type** RADIO RECEIVING EQUIPMENT

SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
------	----------------	--------------

PROCUREMENT DATA

PROCURING SERVICE: USN  
SPEC &/or DWG: Spec. No. RE9424A

DESIGN COG: USN, BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Galvin Manufacturing Co.	Chicago, Ill.	NXss-48318	
E. H. Scott Radio Laboratories, Inc.	Chicago, Ill.	NXsr-48318	\$6,500.00

RADIO TELEPHONE SIMULATOR **AN/URA-type**

20 November 1958

Cognizant Serv: USN FSN:

**SM-40/UR**

USA

USN

USAF

TYPE CLASS: --

Used by --

STOCK NO: --

**(No Illustration Available)****FUNCTIONAL DESCRIPTION:**

Radio Telephone Simulator SM-40/UR provides simulated radio communication in Combat Information Center training. It permits a training activity to use the CIC and Helm Station communication equipments during a training exercise. (These

communication equipments normally are used aboard ship in the execution of an actual tactical problem.

**TECHNICAL CHARACTERISTICS:***Audio Output Impedance: 600 ohms**Heat Dissipation: 100 w**Power Requirements: 115-v 60-cycle 1-phase ac***MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Radio Telephone Simulator SM-40/UR (Equipment consists of only one major component.)	-----	15-3/4 x 22-3/4 x 28-1/4	98

**REFERENCE DATA AND LITERATURE:**

NAVSHIPS 91512

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
1	9.0	180

MIL-HDBK-161

---

**AN/URA-type** RADIO TELEPHONE SIMULATOR

---

PROCUREMENT DATA

---

PROCURING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG: USN, BuShips

---

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Mare Island Naval Shipyard	Vallejo, Calif.	46700/51	\$500.00

---

## RADIO SET AN/URC-4

3 December 1958

Cognizant Serv: USAF FSN:

	USA	USN	USAF
TYPE CLASS:	Std		Std
STOCK NO:	2S5509-4		1600-266509670 (Ref)



AN/URC-4

## FUNCTIONAL DESCRIPTION:

Radio Set AN/URC-4 is a portable, hand-operated, ultra-high frequency and very-high frequency unit designed to furnish two-way air-to-ground and point-to-point communication in emergency rescue situations. It is dropped from air-

craft in a watertight container which floats on the surface of the water.

The transmitter is crystal-controlled and, depending upon the crystal in use, operates on any preset frequency within the given bands. The receiver is of the superregenerative type and can be tuned independently of the transmitter to any frequency within the given range.

The antenna is located in the top of the radioset from where it can be quickly extended.

This equipment may be operated while in motion and will function continuously for 24 hours in cycles of 5 minutes for transmitting and 5 minutes for receiving.

The unit can also be used for emergency airdrome traffic control.

Radio Carrier Vest AN/URC-4 and Droppable Kit AN/URC-4 are part of the radio set and are supplied in addition to the basic components if required.

## TECHNICAL CHARACTERISTICS:

*Frequency Range:*

Preset Frequency in Mc: 120 to 130

Harmonic Operation: 240 mc to 260 mc

*Number of Crystal-controlled Preset Frequencies:* 1*Type Modulation:* Am*Type Emission and Reception:* Voice, tone, or mcrw*Power Output:*

Receiver: 75 mw

Transmitter: 35 mw

*Power Requirements:*

45 Ma Plate Supply: 125-v dc

520 Ma Filament Supply: 125-v dc

Battery Life: 24 hr when operated in cycles of 5 minutes transmitting and 5 minutes receiving

## MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Battery BA-1264/U	6135-164-8769	3-3/8 x 6-1/4 x 2-1/4	3
1	Droppable kit, aerial delivery consisting of: Parachute, Cargo G-7 and Container, Aerial Delivery A-20	2010-559570	22 x 13	20

**AN/URC-4 RADIO SET****MAJOR COMPONENTS—Continued**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Kit-survival radio extra large	2010-559560-4		
	or			
	large	2010-559560-3		
	or			
	medium	2010-559560-2		
	or			
	small	2010-559560-155		
1	Radio Receiver-Transmitter RT-159/URC-4	1600-218997008		
	or			
	RT-159A/URC-4	1600-218997024		
	or			
	RT-159B/URC-4	1600-013570005		
1	Special Purpose Cable Assembly CX-1093/U (2 ft 6 in.)	1600-324763581		
	or			
	CX-1093/U (5 ft 6 in.)	1600-324763582		
	or			
	CX-1093A/U (2 ft 6 in.)	1600-010732050		

**REFERENCE DATA AND LITERATURE:**

TO 16-30URC4-2  
 TO 12R2-2URC4-1  
 TO 12R2-2URC4-2  
 TO 12R2-2URC4-4

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
1	1.9	29.3



RADIO SET **AN/URC-4**

## PROCUREMENT DATA

PROCURING SERVICE: USAF, GFAE, AMC  
SPEC &/or DWG: MIL-R-6373, R-7240

DESIGN COG: USAF, ARDC (WCLN)

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Philharmonic Radio and Television Corp.	New Brunswick, N. J.	AF33(600)24751	\$200.00



RADIO SET **AN/URC-7Z**Cognizant Serv: **USN** FSN:**USA****USN****USAF**

TYPE CLASS: --

Used by --

STOCK NO: --

(No Illustration Available)

**FUNCTIONAL DESCRIPTION:**

Radio Set AN/URC-7Z is a pretuned radio-frequency transmitter and receiver designed for two-way general communication purposes.

This equipment is intended for deck or table mounting.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range:* 2,000 kc to 7,000 kc

*Number of Channels:* 2

*Type Reception and Emission:* A3

*Frequency Control:* Crystal

*Transmitter Power Output:* 25 w

*Power Requirements:* 115-v dc

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Cabinet CY-1027/URC-7			
2	Cable assembly			
1	Handset NT-51032			
1	Modulator-Power Supply MD-223/URC-7Z			
1	Radio Receiver R-413/URC-7			
1	Radio Transmitter T-298/URC-7			
1	Terminal Box J-442/URC-7			
1	Terminal Box J-612/URC-7			

**REFERENCE DATA AND LITERATURE:****SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)

MIL-HDBK-161

**AN/URC-7Z** RADIO SET

PROCUREMENT DATA

PROCURING SERVICE: USN  
SPEC &/or DWG: RTRS-350-A (USCG)

DESIGN COG: USN, BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Radiomarine Corp. of America	New York, N. Y.	TCG-39362	

3 December 1958

Cognizant Serv: USAF FSN:

USA

USN

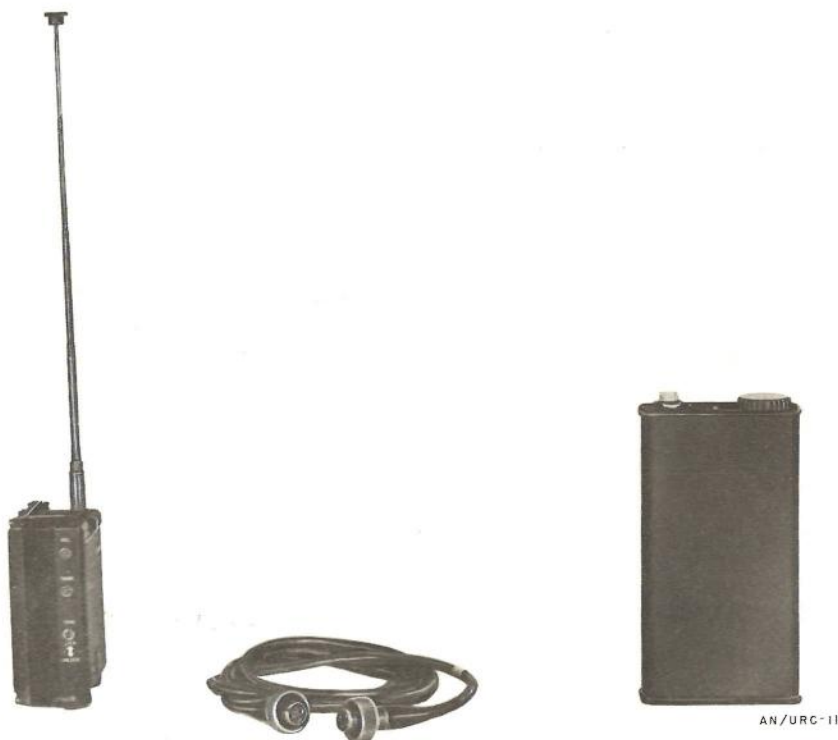
USAF

TYPE CLASS: --

Std

STOCK NO: --

1600-013388080

**FUNCTIONAL DESCRIPTION:**

Radio Set AN/URC-11 is a portable, subminiature, hand-operated, ultra-high frequency receiver-transmitter used for two-way communication between distressed personnel and searching aircraft.

This equipment can operate on any preset frequency within the band, and its receiver portion can be tuned, independently. This equipment can operate on any preset frequency within the band, and its receiver portion can be tuned, independently of the transmitter, to any frequency within the specified range.

The radio set uses a one-half wave length telescopic antenna that is collapsible and storable within the receiver-transmitter case.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in Mc:* 240 to 260

*Type Modulation:* AM

*Type Reception and Emission:* A3 (voice, tone)

*Power Output:*

Transmitter: 75 mw

Receiver: 25 mw

*Operational Range:* Line of sight

*Power Requirements:*

Power Source: Battery BA-1315/U

Battery Life: 24 hr of continuous operation in cycles of 5 minutes transmitting and 5 minutes receiving

*Data:* 1.25 v, 550 ma dc; 120 v, 35 ma dc (continuous operation) 550 ma at 1.25-v dc; 35 ma at 120-v dc for continuous operation

MIL-HDBK-161

**AN/URC-11** RADIO SET

MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Battery BA-1315/U			
1	Receiver-Transmitter, Radio RT-285/URC-11	1600-013388080		
1	Special Purpose Cable As- sembly CX-1093A/U	1600-012732050	30 or 66 lg	

REFERENCE DATA AND LITERATURE:

TO 12R2-2URC11-1  
TO 12R2-2URC11-2  
TO 12R2-2URC11-4

SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
------	----------------	--------------

PROCUREMENT DATA

PROCURING SERVICE: USAF, GFAE, AMC  
SPEC &/or DWG: MIL-R-8178 (USAF)

DESIGN COG: USAF, ARD, WCLN

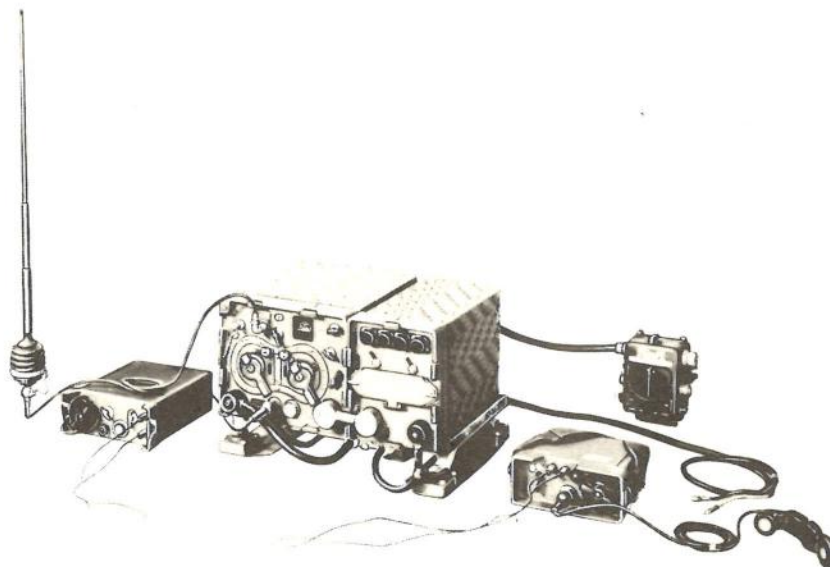
CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Philharmonic Radio and Television Corp.	New Brunswick, N. J.	AF33(600)27621	\$125.00

RADIO SET **AN/URC-16, -16X, -16Y,  
-17, -17X, -17Y, -18, -18X, -18Y**

3 December 1958

Cognizant Serv: USN FSN: AN/URC-16: 5820-665-3859  
 AN/URC-16X: 5820-665-3861  
 AN/URC-16Y: 5820-665-3851  
 AN/URC-17: 5820-644-4880  
 AN/URC-17X: 5820-644-4881  
 AN/URC-17Y: 5820-501-3059  
 AN/URC-18: 5820-665-3857  
 AN/URC-18X: 5820-665-3860  
 AN/URC-18Y: 5820-665-3858

	USA	USN	USAF
TYPE CLASS:	--	Used by	--
STOCK NO:	--	--	--



AN/URC-16

**FUNCTIONAL DESCRIPTION:**

Radio Sets AN/URC-16, AN/URC-16X, AN/URC-16Y, AN/URC-17, AN/URC-17X, AN/URC-17Y, AN/URC-18, AN/URC-18X, AN/URC-18Y are portable transmitting and receiving equipments designed to operate within the frequency range of 20 to 54.9 megacycles.

These equipments are similar to Radio Sets AN/SRC-10', AN/SRC-10X, AN/SRC-10Y, AN/SRC-11, AN/SRC-11X, AN/SRC-11Y, AN/SRC-12, AN/SRC-12X, AN/SRC-12Y, AN/SRC-13, AN/SRC-13X, AN/SRC-13Y, AN/SRC-14, AN/SRC-14X, AN/SRC-14Y, AN/SRC-15, AN/SRC-

# AN/URC-16, -16X, -16Y, RADIO SET

## -17, -17X, -17Y, -18, -18X, -18Y

15X, and AN/SRC-15Y except for some of the components used.

### TECHNICAL CHARACTERISTICS:

#### Frequency Range in Mc:

AN/URC-16, -16X, -16Y: 20 to 27.9

AN/URC-17, -17X, -17Y: 27 to 38.9

AN/URC-18, -18X, -18Y: 38 to 54.9

Type Reception and Emission: F3 (voice, tone)

Type Modulation: Fm

Type Tuning: Choice of channels or continuous

Operational Range: 10 to 15 miles

Transmitter Power Output:

AN/URC-16, -16X, -17, -17X, -18, -18X:

On High: 16 w

On Low: 2 w

AN/URC-16Y, -17Y, -18Y: 13 w

#### Receiver Output:

At Speaker: 1 w

At Phones: 50 mw

At Fixed Level (Not Used): 30 mw

Microphone Input Impedance: 150 ohms

Audio Output Impedance: 600 ohms at all audio output terminals

Receiver Sensitivity: 30 dv signal-plus-noise to noise ratio with 0.5 uv input signal

#### Power Requirements:

AN/URC-16, -17, -18: 25.2-v dc

AN/URC-16X, -17X, -18X: 12.6-v dc

AN/URC-16Y, -17Y, -18Y: Hand cranked generator and dry batteries; five BA-403/U, one Ba-419/U

### MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
<i>For Radio Set AN/URC-16:</i>				
1	Antenna Cable CG-568/U	-----	50 lg	0.5
1	Bag CW-206/UR	-----	3 x 5 x 40	3.5
1	Cable Assembly CX-1211/U	-----	-----	.4
1	Coaxial Adapter UG-273/U	-----	-----	.34
1	Coaxial Adapter UG-306/U	-----	-----	.36
1	Control Box C-375/VRC	-----	4 x 7 x 7	3.5
2	Handset H-33( )/PT	-----	2-1/16 x 3 x 3	2
1	Loudspeaker LS-166/U	-----	-----	-----
1	Mast Base AB-15/GR	-----	-----	-----
1	Mast Section MS-116A	-----	39-1/2 lg	1.6
1	Mast Section MS-117A	-----	39-1/2 lg	1.4
1	Mast Section MS-118A	-----	39-1/2 lg	.5
1	Mounting MT-299/GR	-----	4 x 13 x 20	24
1	Power Supply PP-112/GR	-----	8 x 9 x 13	33
1	Receiver-Transmitter RT-66/ GRC	-----	9 x 11-1/4 x 13	35
<i>For Radio Set AN/URC-16X:</i>				
1	Antenna Cable CG-586/U	-----	50 lg	.5
1	Bag CW-206/GR	-----	3 x 5 x 40	3.5
1	Cable Assembly CX-1211/U	-----	-----	.4
1	Coaxial Adapter UG-273/U	-----	-----	.34
1	Coaxial Adapter UG-306/U	-----	-----	.36
1	Control Box C-375/VRC	-----	4 x 7 x 7	3.5
2	Handset H-33( )/PT	-----	2-1/16 x 3 x 3	2
1	Loudspeaker LS-166/U	-----	-----	-----
1	Mast Base AB-15/GR	-----	-----	-----
1	Mast Section MS-116A	-----	39-1/2 lg	1.6



**RADIO SET AN/URC-16, -16X, -16Y,  
-17, -17X, -17Y, -18, -18X, -18Y**

**MAJOR COMPONENTS—Continued**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Mast Section MS-117A	-----	39-1/2 lg	1.4
1	Mast Section MS-118A	-----	39-1/2 lg	.5
1	Mounting MT-299/GR	-----	4 x 13 x 20	24
1	Power Supply PP-109/GR	-----	8 x 9 x 13	33
1	Receiver-Transmitter RT-66/ GRC	-----	9 x 11-1/4 x 13	35
<i>For Radio Set AN/URC-16Y:</i>				
1	Bag CW-206/GR	-----	3 x 5 x 40	3.5
5	Battery BA-403/U	-----		
1	Battery BA-419/U	-----		
1	Loudspeaker LS-166/U	-----		
1	Modification Kit MX-898/GR	-----		
1	Receiver-Transmitter RT-66/ GRC	-----	9 x 11-1/4 x 13	35
<i>For Radio Set AN/URC-17:</i>				
1	Antenna Cable CG-530/U	-----	50 lg	.5
1	Bag CW-206/GR	-----	3 x 5 x 40	3.5
1	Cable Assembly CX-1211/U	-----		.4
1	Coaxial Adapter UG-273/U	-----		.34
1	Coaxial Adapter UG-306/U	-----		.36
1	Control Box C-375/VRC	-----	4 x 7 x 7	3.5
2	Handset H-33( )/PT	-----	2-1/16 x 3 x 3	2
1	Loudspeaker LS-166/U	-----		
1	Mast Base AB-15/GR	-----		
1	Mast Section MS-116A	-----	39-1/2 lg	1.6
1	Mast Section MS-117A	-----	39-1/2 lg	1.4
1	Mast Section MS-118A	-----	39-1/2 lg	.5
1	Mounting MT-299/GR	-----	4 x 13 x 20	24
1	Power Supply PP-112/GR	-----	8 x 9 x 13	33
1	Receiver-Transmitter RT-67/ GRC	-----	9 x 11-1/4 x 13	35
<i>For Radio Set AN/URC-17X:</i>				
1	Antenna Cable CG-530/U	-----	50 lg	.5
1	Bag CW-206/GR	-----	3 x 5 x 40	3.5
1	Cable Assembly CX-1211/U	-----		.4
1	Coaxial Adapter UG-273/U	-----		.34
1	Coaxial Adapter UG-306/U	-----		.36
1	Control Box C-375/VRC	-----	4 x 7 x 7	3.5
2	Handset H-33( )/PT	-----	2-1/16 x 3 x 3	2
1	Loudspeaker LS-166/U	-----		
1	Mast Base AB-15/GR	-----		
1	Mast Section MS-116A	-----	39-1/2 lg	1.6
1	Mast Section MS-117A	-----	39-1/2 lg	1.4

# AN/URC-16, -16X, -16Y, RADIO SET

## -17, -17X, -17Y, -18, -18X, -18Y

## MAJOR COMPONENTS—Continued

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Mast Section MS-118A	-----	39-1/2 lg	.5
1	Mounting MT-299/GR	-----	4 x 13 x 20	24
1	Power Supply PP-109/GR	-----	8 x 9 x 13	33
1	Receiver-Transmitter RT-67/ GRC	-----	9 x 11-1/4 x 13	35
<i>For Radio Set AN/URC-17Y:</i>				
1	Bag CW-206/GR	-----	3 x 5 x 40	3.5
5	Battery BA-403/U	-----		
1	Battery BA-419/U	-----		
1	Loudspeaker LS-166/U	-----		
1	Modification Kit MX-898/GR	-----		
1	Receiver-Transmitter RT-68/ GRC	-----	9 x 11-1/4 x 13	35
<i>For Radio Set AN/URC-18:</i>				
1	Antenna Cable CG-530/U	-----	50 lg	.5
1	Bag CW-206/GR	-----	3 x 5 x 40	3.5
1	Cable Assembly CX-1211/U	-----		.4
1	Coaxial Adapter UG-273/U	-----		.34
1	Coaxial Adapter UG-306/U	-----		.36
1	Control Box C-375/VRC	-----	4 x 7 x 7	3.5
2	Handset H-33( )/PT	-----	2-1/16 x 3 x 3	2
1	Loudspeaker LS-166/U	-----		
1	Mast Base AB-15/GR	-----		
1	Mast Section AB-24/GR	-----	23-1/2 lg	.13
1	Mast Section MS-117A	-----	39-1/2 lg	1.4
1	Mounting MT-299/GR	-----	4 x 13 x 20	24
1	Power Supply PP-109/GR	-----	8 x 9 x 13	33
1	Receiver-Transmitter RT-68/ GRC	-----	9 x 11-1/4 x 13	35
<i>For Radio Set AN/URC-18X:</i>				
1	Antenna Cable CG-530/U	-----	50 lg	.5
1	Bag CW-206/GR	-----	3 x 5 x 40	3.5
1	Cable Assembly CX-1211/U	-----		.4
1	Coaxial Adapter UG-273/U	-----		.34
1	Coaxial Adapter UG-306/U	-----		.36
1	Control Box C-375/VRC	-----	4 x 7 x 7	3.5
2	Handset H-33( )/PT	-----	2-1/16 x 3 x 3	2
1	Loudspeaker LS-166/U	-----		
1	Mast Base AB-15/GR	-----		
1	Mast Section AB-24/GR	-----	23-1/2 lg	.13
1	Mast Section MS-117A	-----	39-1/2 lg	1.4
1	Mounting MT-299/GR	-----	4 x 13 x 20	24
1	Power Supply PP-109/GR	-----	8 x 9 x 13	33
1	Receiver-Transmitter RT-68/ GRC	-----	9 x 11-1/4 x 13	35

RADIO SET AN/URC-15, -16X, -16Y,  
-17, -17X, -17Y, -18, -18X, -18Y

## MAJOR COMPONENTS—Continued

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
<i>For Radio Set AN/URC-18Y:</i>				
1	Bag CW-206/GR	-----	3 x 5 x 40	3.5
5	Battery BA-403/U			
1	Battery BA-419/U			
1	Loudspeaker LS-166/U			
1	Modification Kit MX-898/GR			
1	Receiver-Transmitter RT-68/ GRC	-----	9 x 11-1/4 x 13	35

## REFERENCE DATA AND LITERATURE:

TM 11-286  
BuShips Ltr S67/1-7 Ser 881E-1-3528, 1 September 1955

## SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
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## PROCUREMENT DATA

PROCURING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG: USA Sig C

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
		AN/URC-16, -16X, -17, -17X, -18, -18X MIPR-800-29092, MIPR-800-29094, MIPR-800-29500	\$1,500.00
		AN/URC-16Y, -17Y, -18Y MIPR-800-39406	1,500.00



## RADIO SET AN/URC-22

3 December 1958

Cognizant Serv: USN FSN:

	USA	USN	USAF
--	-----	-----	------

TYPE CLASS:	--	Used by	--
STOCK NO:	--	--	--

(No Illustration Available)

## FUNCTIONAL DESCRIPTION:

Radio Set AN/URC-22 is designed for general purpose communication use. It permits vehicular or ground application.

This equipment is similar to Radio Set AN/URC-18Y except that it includes different mounting provisions.

## TECHNICAL CHARACTERISTICS:

Frequency Range in Mc: 38 to 54.9

Number of Bands: 1

Type Reception and Emission: F3 (voice, tone)

Type Modulation: Fm

Number of Frequency Channels: 170

Separation Between Channels: 100 kc

Type Tuning: Choice of channels or continuous

Operational Range: 10 to 15 miles

Transmitter Power Output: 13 w

Receiver Output:

At Speaker: 1 w

At Phones: 50 mw

At Fixed Level (Not Used): 30 mw

Microphone Input Impedance: 150 ohms

Audio Input Impedance: 600 ohms at all audio output terminals

Receiver Sensitivity: 30 dv signal-plus-noise to noise ratio with 0.5 uv input signal

Power Requirements: Supplied by Hand Generator G-8/GRC

## MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Adapter UG-273/U			
1	Adapter UG-306/U			
1	Bag CW-187/GR			
1	Bag CW-188/GR			
1	Bag CW-189/GR			
1	Bag CW-206/GR			
1	Cable, Special Purpose, Assembly CX-1211/U			0.4
1	Cable Special Purpose UM-46/U			
1	Case CY-590/GR			
1	Case CX-684/GR			
1	Connector and bond nut			
1	Control Box C-374/VRC			
1	Generator G-8/GRC			
2	Handset H-33/PT		2-1/16 x 3 x 3	2
1	Local Control C-434/GRC			
1	Mast Base AB-15/GR			
1	Mast Section AB-22/GR			
1	Mast Section AB-23/GR			
2	Mast Section AB-24/GR			
1	Mast Section AB-25/GR			
2	Mast Sections MS-117-A			
1	Mounting MT-299/GR		4 x 13 x 20	24
1	Mounting MT-652/GR			

MIL-HDBK-161

**AN/URC-22** RADIO SET

MAJOR COMPONENTS—Continued

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Power Cable Assembly CX- 1209/U			
1	Power Cable Assembly CX- 1210/U			
1	Power Supply PP-112/GR			
1	Receiver-Transmitter RT-68/ GRC	-----	9 x 11-1/4 x 13	35
1	Remote Control C-433/GRC			
1	RF Cable Assembly CG-530/U			

REFERENCE DATA AND LITERATURE:

TM 11-286

SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
------	----------------	--------------

PROCUREMENT DATA

PROCURING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG: USA, Sig C

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
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## VHF RADIO TRANSMITTING AND RECEIVING EQUIPMENT AN/URC-type

4 December 1958

Cognizant Serv: USN FSN: 5820-665-3816

MAR

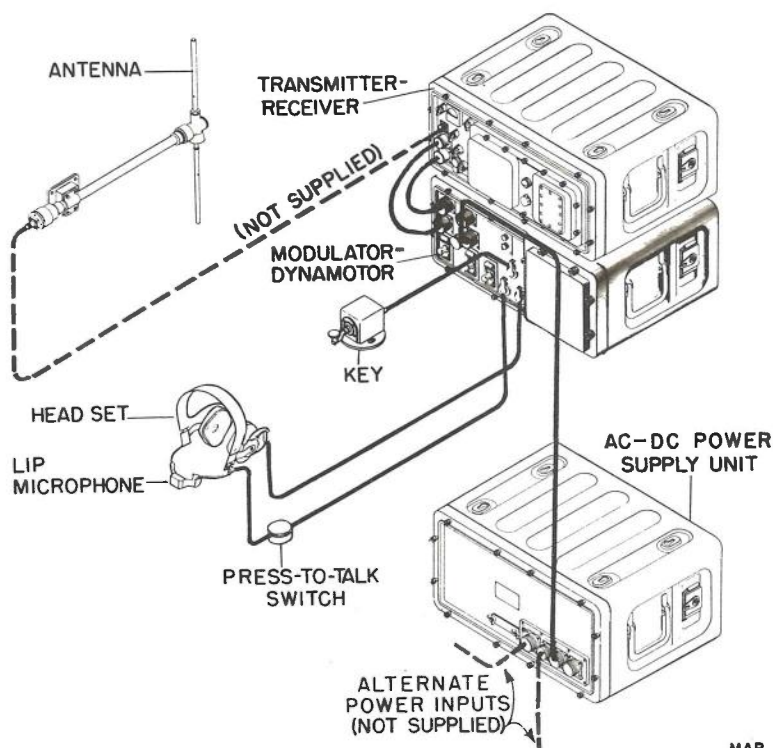
USA

USN

USAF

TYPE CLASS: --  
STOCK NO: --

Used by



## FUNCTIONAL DESCRIPTION:

VHF Radio Transmitting and Receiving Equipment MAR is a general purpose, amplitude-modulated (Modulated continuous wave, voice) transportable communication set that uses a motor-driven selector mechanism for automatic selection of 10 preset crystal-controlled frequencies within the very-high-frequency band.

This equipment is comprised of two units of the same form and size—one case containing the transmitter-receiver; the other, the modulator-dynamotor sections. In addition to these basic units, modification kits for shipboard, vehicular, and field adaptations are supplied.

The use of these kits provides for widely varying power supply inputs and operating environments.

Remote Control Unit 23485 provides for remote control

up to distances of one mile. Communication between a remote and local operator, without resultant radio emission, is controlled by a panel switch on the modulator-dynamotor unit.

## TECHNICAL CHARACTERISTICS:

*Frequency Range in Mc:* 225 to 390 on 10 preset frequencies

*Frequency Control:* Crystal

*Type Modulation:* Am

*Type of Signal:* Mcw, voice

*Power Output:*

Transmitter: 8 w

Receiver: 1 w into 600-ohm load

*Power Requirements:* 430-w 13/24/115/230-v dc; or 430 w, 115/230-v 50/60-cycle 1-phase ac

MIL-HDBK-161

**AN/URC-type VHF RADIO TRANSMITTING AND RECEIVING EQUIPMENT**

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Ac-dc Power Supply Unit 20379	-----	10-7/8 x 21-1/4 x 16-1/4	100
1	Antenna Assembly 66147	-----	22 x 2-1/2 x 25	3.5
1	Field application kit			
1	Modulator-Dynamotor Unit 50248	-----	9-1/2 x 21-1/4 x 16-1/4	45
1	Shipboard installation kit			
1	Transmitter-Receiver 43067	-----	9-1/2 x 21-1/4 x 16-1/4	45

**REFERENCE DATA AND LITERATURE:**

NAVSHIPS 900719(A)

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
5	32.4	788

**PROCUREMENT DATA**

PROCURING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG: USN, BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
RECA Victor Division, Radio Corp. of America	Camden, N. J.	NXsr-60008	\$7,000.00



RADIO TELEPHONE TRANSMITTING AND RECEIVING EQUIPMENT **AN/URC-type**

4 December 1958

Cognizant Serv: USN FSN: 5820-642-8382

MO-1

USA

USN

USAF

TYPE CLASS: --

Used by

STOCK NO: --

F16-Q-173744-200

(No Illustration Available)

## FUNCTIONAL DESCRIPTION:

Radio Transmitting and Receiving Equipment MO-1 is a mobile transmitter-receiver for use in naval craft, combat vehicles, and for other applications where space is at a premium.

Provision is made for remote-control operation of the set, with the exception of channel switching and emission selection. The set provides sidetone and interphone facilities.

## TECHNICAL CHARACTERISTICS:

*Frequency Range in Mc:* 3 to 8 (4 channels)*Frequency Control:* Crystal*Type of Signal:* A2, A3*Power Output:* 25 w*Output Impedance:* 600 ohms*Power Requirements:* 6/12-v dc (storage battery)

## MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Control Unit 23343	-----	3 x 3-1/2 x 10	5
1	Dynamotor 21983 or Dynamotor 21984	-----	5 x 4-1/2 x 8-1/2	11.5
1	Radio Transmitter-Receiver 43043	-----	9-1/2 x 17 x 10-1/2	27.5
1	Vibrator Power Assembly 20190			
	or			
	Vibrator Power Assembly 20193	-----	11 x 10-1/8 x 17	36.5

## REFERENCE DATA AND LITERATURE:

## SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
------	----------------	--------------

MIL-HDBK-161

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**AN/URC-type** RADIO TELEPHONE TRANSMITTING AND RECEIVING EQUIPMENT

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PROCUREMENT DATA

---

PROCURING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG: USN, BuShips

---

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Communications Co., Inc.	Coral Gables, Fla.	NXs-5884	

---

KEYER **AN/URN-type**

3 December 1958

Cognizant Serv: USN FSN: 5825-644-4434

KY-122/URN

	USA	USN	USAF
TYPE CLASS:	--	Used by	--
STOCK NO:	--	--	--

(No Illustration Available)

**FUNCTIONAL DESCRIPTION:**

Keyer KY-122/URN is used in navigation applications to automatically key any of several radio transmitters with a selectable identification code group.

This equipment has a magnetic circuit breaker for stopping and starting the keyer motor. A green indicator lamp lights when the keyer motor is energized. The KY-122/URN also has a momentary "on-off" push button switch and a red in-

dicator lamp for use in remote-control operation of the radio transmitter.

Keyer KY-122/URN is identical with Keyer KY-123/URN except that the KY-123/URN does not have the provisions for remote-control operation of the radio transmitter.

**TECHNICAL CHARACTERISTICS:**

*Speed Range:* 24 letters per minute

*Power Requirements:* 20 w, 110-v 60-cycle 1-phase ac

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Keyer KY-122/URN (Equipment consists of only one major component.)	-----	6 x 7 x 13-7/16	17

**REFERENCE DATA AND LITERATURE:**

NAVSHIPS 92003

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
1	0.5	20

MIL-HDBK-161

**AN/URN-type** KEYER

PROCUREMENT DATA

PROCURING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG: USN, BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
National Electrical Machine Shops, Inc.	Silver Springs, Md.	NObsr-63112	\$200.00

KEYER AN/URN-type

3 December 1958

Cognizant Serv: USN FSN: 5825-665-2067

KY-123/URN

USA

USN

USAF

TYPE CLASS: --

Used by --

STOCK NO: --

(No Illustration Available)

**FUNCTIONAL DESCRIPTION:**

Keyer KY-123/URN is used in navigation applications to automatically key any of several radio transmitters with a selectable identification code group.

This equipment has a magnetic circuit breaker for stopping and starting the keyer motor. A green indicator lamp lights when the keyer motor is energized.

The KY-123/URN is identical with Keyer KY-122/URN

except that the KY-122/URN also has provisions for remote-control operation of the radio transmitter. The KY-123/URN and the KY-123A/URN are electrically and mechanically interchangeable.

**TECHNICAL CHARACTERISTICS:**

*Speed Range:* 24 letters per minute

*Power Requirements:* 20 w, 110-v 60-cycle 1-phase ac

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Keyer KY-123/URN (Equipment consists of only one major component.)	-----	6 x 6-3/4 x 11-1/2	15

**REFERENCE DATA AND LITERATURE:**

NAVSHIPS 92003

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
1	0.3	18

MIL-HDBK-161

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**AN/URN-type** KEYER

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PROCUREMENT DATA

---

PROCURING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG: USN, BuShips

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CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Thiebolt Aircraft Co., Inc.	Washington, D. C.	NObsr-64575	\$200.00

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KEYER **AN/URN-type**

3 December 1958

Cognizant Serv: USN FSN:

KY-123A/URN

USA

USN

USAF

TYPE CLASS: --

Used by --

STOCK NO: --

(No Illustration Available)

**FUNCTIONAL DESCRIPTION:**

Keyer KY-123/URN is a coding keyer for ultra high frequency homing facility.

It is electrically and mechanically interchangeable with Keyer KY-123/URN.

**TECHNICAL CHARACTERISTICS:**

*Speed Range:* 24 letters per minute

*Power Requirements:* 20 w, 110-v 60-cycle 1-phase ac

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Keyer KY-123A/URN (Equipment consists of only one major component.)	-----	6 x 6-3/4 x 11-1/2	

**REFERENCE DATA AND LITERATURE:****SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
1		

MIL-HDBK-161

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**AN/URN-type** KEYER

PROCUREMENT DATA

---

PROCURING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG: USN, BuShips

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CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Nems-Clark Inc.	Silver Springs, Md.	NObsr-71173	

---



3 December 1958

Cognizant Serv: USN FSN: 5820-665-1244

	USA	USN	USAF
TYPE CLASS:	--	Used by	--
STOCK NO:	--	F16-Q-123870-200	--



AN/URR-9

### FUNCTIONAL DESCRIPTION:

Radio Receiving Set AN/URR-9 is a general purpose voice communication unit for either shipboard or shore installations. It has automatic control for local or remote operation; manual tuning is provided only for local operation. To increase selectivity, the superheterodyne receiver provides double conversion for variable bandwidths. Connections to and from the receiver are filtered to eliminate possible interference. Terminals are provided for a scan output to be connected to a panoramic viewer.

This equipment operates with a vertically polarized, unbalanced broadband, coaxial stub antenna, such as Antenna Assembly AS-390/SRC, or with a broad-band dipole antenna, such as Antenna AT-150/SRC.

The set is similar to Radio Receiving Equipment RDZ except that continuous manual tuning, double conversion, and other improvements have been added. It is intended for use with Radio Transmitting Equipment TDZ. However, it will also net with Radio Transmitters AN/URT-9 and TED, and with Radio Sets AN/GRC-27, AN/GRC-32, AN/ARC-27, and MAR.

### TECHNICAL CHARACTERISTICS:

*Frequency Range in Mc:* 225 to 400  
*Number of Preset Channels:* 10  
*Frequency Control:*  
 Automatic: Crystal  
 Manual: Self-excited  
*Type Receiver:* Double conversion superheterodyne  
*Type Modulation:* Am  
*Type Reception:* A3 (voice)  
*Output Impedance:*  
 Audio Channel: 600 ohms  
 Phone Jack: 600 ohms  
 Video Channel: 1,000 ohms  
 Scan Channel: 50 ohms  
*Input Impedance:* 50 ohms (nominal)  
*Sensitivity:*  
 225 to 240 Mc: 10 uv  
 240 to 400 Mc: 5 uv  
*Intermediate Frequency:*  
 Double Conversion: 3.85 mc  
 Single Conversion: 18.6 mc  
*Antenna Characteristics:* Half-wave, center takeoff, dipole type of approximately 50 ohms impedance  
*Power Requirements:* 150 w or 230 w; 115- to 120-v, 50- to 60-cycle, 1-phase ac

MIL-HDBK-161

**AN/URR-9** RADIO RECEIVING SET

MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Radio Receiver R-289/URR-9	-----	13-1/8 x 22 x 23	150
3	Set of equipment spares			

REFERENCE DATA AND LITERATURE:

NAVSHIPS 91201

SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
4	20.3	477

PROCUREMENT DATA

PROCURING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG: USN, BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
National Co., Inc.	Malden, Mass.	NObsr-39298, 16 June 1949	

## RADIO RECEIVING SET AN/URR-13, -13A, -13B, -13C

3 December 1958

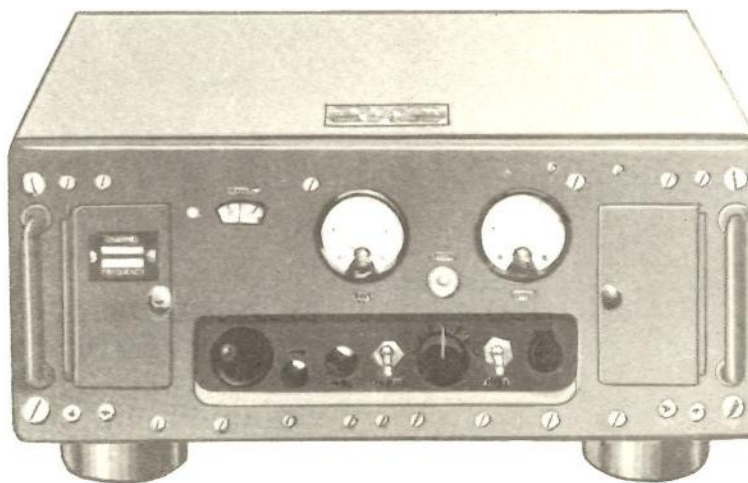
Cognizant Serv: USN FSN: AN/URR-13: 5820-644-4777  
 AN/URR-13A: 5820-642-8244  
 AN/URR-13B: 5820-665-2374  
 AN/URR-13C: 5820-644-3395

USA

USN

USAF

TYPE CLASS:	--	Used by	Std
STOCK NO:	--	AN/URR-13: F16-Q-123880-200	--
		AN/URR-13A: F16-Q-123881-200	
		AN/URR-13B: F16-Q-123882-200	
		AN/URR-13C: F16-C-123883-200	



AN/URR-13

**FUNCTIONAL DESCRIPTION:**

Radio Receiving Sets AN/URR-13, AN/URR-13A, AN/URR-13B, and AN/URR-13C are general purpose, compact communication units designed to provide ultra-high frequency reception on naval vessels at naval air and shore stations or at other military establishments.

These equipments are used on conjunction with Radio Transmission Equipment TED. They replace Radio Receiving Equipment RED.

Each set consists of a panel, frame, and chassis assembly housed in a cabinet equipped with shockmounts for shipboard installation. For shore installation the set may be mounted in a standard 19-inch relay rack.

The circuit components are grouped on a functional basis into five major sections within the cabinet and consist of the

preselector, intermediate frequency/audio frequency, power supply, cable filtering, and front panel sections.

The sets may be operated on a single crystal-controlled channel, or, through the self-excited conversion oscillator, on continuously variable manual tuning. Provision is made for connecting a panoramic type radio receiver to provide a visual image of the received signal.

All of the equipments are mechanically and electrically interchangeable but have minor differences in components. The AN/URR-13C has two additional test cables not supplied with the previous models. These sets are also similar to Radio Receiving Equipment RDZ and RCN.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in Mc:* 225 to 400

*Type Modulation:* Am

*Type Reception:* A2, A3 (voice, mcw)

**AN/URR-13, -13A, -13B, -13C RADIO RECEIVING SET***Number of Channels:* Single*Type Control:* Crystal or continuously variable*Type Receiver:* Double conversion superheterodyne*Intermediate Frequency:* 18.6 mc (center frequency  $\pm 2$  kc)*Sensitivity:* Better than 8 uv for a 10 db signal-to-signal plus noise ratio*Audio Output:*

60 mw maximum into a 600-ohm load, 7% maximum dis-

tortion or 600 mc into a 60-ohm load, 7% maximum distortion

*Scanning Channel Bandwidth:* 600 kc, flat to within 6 db*Heat Dissipation:* 120 w*Antenna:* Quarter-wave, broad-band with 50-ohm terminal impedance*Power Requirements:* 125 w; 110- to 120-v, 50-to 60-cycle, 1-phase ac**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Radio Receiving Set AN/ URR-13( ) including:	-----	8-7/16 x 17-1/2 x 19-1/8	57
1	Band Suppression Filter F-89/URR-13			
1	Radio Receiver R-266/ URR-13			

**REFERENCE DATA AND LITERATURE:**

NAVSHIPS 91270

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
1	7.4	167

**PROCUREMENT DATA****PROCURING SERVICE:** USN**DESIGN COG:** USN, BuShips (RCUE)**SPEC &/or DWG:** MIL-R-1513A(Ships), 16R53(RE), MIL-R-1513B(Ships)

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Federal Telephone and Radio Corp.	Clifton, N. J.	AN/URR-13: NObsr-43176, 6 January 1949	\$1,500.00
		AN/URR-13A: NObsr-52051, 13 November 1951	1,500.00
		AN/URR-13C: NObsr-52398, 21 May 1951	1,500.00
Espey Manufacturing Co., Inc.	New York, N. Y.	AN/URR-13B: NObsr-49274, 18 June 1950	1,500.00

RADIO RECEIVING SET **AN/URR-21, -21A**

3 December 1958

Cognizant Serv: USA FSN: 5820-501-4986 (AN/URR-21A)

USA

USN

USAF

TYPE CLASS: --  
STOCK NO: --Used by  
AN/URR-21A: F16-Q- --  
123889-200

AN/URR-21

**FUNCTIONAL DESCRIPTION:**

Radio Receiving Sets AN/URR-21 and AN/URR-21A are very-high frequency units used in conjunction with Radio Transmitting Equipment TDQ on aircraft carriers, and at shore stations, for communication with aircraft. They have a high degree of stability, freedom from cross modulation and radiation, and quickly selectable preset channels. In addition, they employ a squelch circuit which operates when the input signal level drops below a predetermined value.

Both receivers are designed for use with a 50-ohm fixed antenna.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range:* 115 mc to 156 mc

*Preset Channels:* 4

*Frequency Control:* Crystal

*Intermediate Frequency:* 12 mc

*Type Modulation:* Am

*Type Reception:* A3 (voice)

*Type Receiver:* Superheterodyne

*Output:* 65 mw into 600-ohm phones or loudspeaker

*Sensitivity:* 5 uv

*Input Impedance:* 50 ohms

*Features:* Noise limiter, squelch circuits, automatic gain control, 10 w oscillator radiation

*Mounting Data:* Shock mounted for table or bench

*Power Requirements:* 106 w, 110, 115 to 120 v, 55 to 60 cps, pf 0.95 or more

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**AN/URR-21, -21A** RADIO RECEIVING SET

MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
<i>For Radio Receiving Set AN/ URR-21:</i>				
1	Radio Receiver R-432/ URR-21	-----	10-7/8 x 18-1/8 x 23	112
1	Set of equipment spares			
<i>For Radio Receiving Set AN/ URR-21A:</i>				
1	Radio Receiver R-432A/ URR-21	-----	11-21/64 x 18-1/8 x 17-1/2	117
1	Set of equipment spares			

REFERENCE DATA AND LITERATURE:

NAVSHIPS 91642(A)  
NAVSHIPS 91497

SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
2	9.72	187

PROCUREMENT DATA

PROCURING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG: USN, BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Air Associates Inc., Electronics Division	Orange, N. J.	NObsr-52171, 5 January 1951	

RADIO RECEIVING SET **AN/URR-23, -23A**

3 December 1958

Cognizant Serv: USN FSN: AN/URR-23: 5820-642-6418  
AN/URR-23A: 5820-642-6855

USA

USN

USAF

TYPE CLASS: --  
STOCK NO: --Used by --  
AN/URR-23A: F16-R- --  
38281

AN/URR-23

**FUNCTIONAL DESCRIPTION:**

Radio Receiving Sets AN/URR-23 and AN/URR-23A are designed for long-range, ship or shore communication application requiring maximum stability and dial accuracy. They are suitable for amplitude modulated and continuous wave reception or for presetting at a specific frequency without repeated search or frequency readjustment.

Radio Receiving Set AN/URR-23 is essentially the commercial Collins Model 51J-2; the AN/URR-23A is the Collins Model 51J-3. Both sets are similar except that the AN/URR-23A has an antenna trimmer control and chassis handles.

The sets tune with normal setting error and a drift of less than 1 kilocycle at any frequency within their range.

The fundamental or harmonic output of the frequency oscillator is controlled by one of 10 quartz crystals selected by the band-change control.

A high-impedance whip type or single-ended antenna is recommended for use with these equipments.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in Mc:* 0.5 to 30.5

*Number of Bands:* 30

*Band Width:* 1.0 mc

*Frequency Stability:* Dial calibration within 300 cps if nearest 100-kc calibration point is used to adjust the fiducial

*Type Modulation:* Am

*Type Reception:* A1, A2, A3 (cw, mcw, voice)

*Power Output:* 1.5 w at 1,000 cps, less than 15% distortion

*Sensitivity:*

Band 1: Better than 15 uv gives 1 w with 10 db s/n

Band 2-30: Better than 5 uv gives 1 w with 10 db s/n

*Selectivity:*

Crystal Filter In: Total bandwidth 0.2 kc at 6 db down; 12 kc at 60 db down

Crystal Filter Out: Total bandwidth 5.5 to 6.5 kc at 6 db down; 17 to 20 kc at 60 db down

Automatic Volume Control:

*Less than 5 Db Increase in Audio Power:* From 100 mw with an increase in rf input from 5.0 to 125,000 uv at 1,000 cps modulated 30%

*Maximum of 7 Db Increase:* From 125,000 to 500,000 kc

*Noise Limiter:* Series type

*Meter:* Calibrated 0 to 20, 40, 60, 80, 100 db above automatic volume control threshold, and -10 to +6 dbm audio level

*Output Impedance:* 4.0 and 600 ohms

*Power Requirements:* 85 w; 115- or 230-v, 45- to 70-cycle, 1-phase ac

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**AN/URR-23, -23A RADIO RECEIVING SET**

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
<i>For Radio Receiving Set AN/URR-23:</i>				
1	Dynamic Loudspeaker LS- 175/U	-----	10-9/16 x 15 x 8-7/8	
1	Radio Receiver R-381A/ URR-23	-----	10-1/2 x 19 x 13	
<i>For Radio Receiving Set AN/URR-23A:</i>				
1	Case CY-1235/URR			
1	Dynamic Loudspeaker LS- 199/U	-----	10-1/16 x 15 x 8-7/8	
1	Radio Receiver R-388/URR	-----	12-1/4 x 21-1/8 x 13-7/8	

**REFERENCE DATA AND LITERATURE:**

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
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**PROCUREMENT DATA**

PROCURING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG: USN, BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Collins Radio Co.	Cedar Rapids, Iowa	NObsr-49132, 15 May 1950 NObsr-52527, 22 June 1951	



## RADIO RECEIVING SET AN/URR-27

3 December 1958

Cognizant Serv: USN FSN: 5820-644-4991

USA

USN

USAF

TYPE CLASS: --

Used by

Std

STOCK NO: --

F16-Q-123894-100



or by other military establishments in general application. It is designed primarily for operation as a pretuned, single-channel receiver with provisions for continuous variable tuning as well as crystal control.

This equipment includes provisions for connecting a panoramic adapter to obtain a visual indication of the received signal frequency. The scanning channel has a bandwidth of 600 kilocycles, flat to within 6 decibels.

The AN/URR-27 is similar to Radio Receiving Set AN/URR-13 in electrical design and mechanical construction. However, the AN/URR-13 covers a frequency range of 225 to 400 megacycles.

**TECHNICAL CHARACTERISTICS:***Frequency Range in Mc:*

Rated: 105 to 190

Maximum: 103.9 to 191.9

*Tuning Bands:* Complete coverage of range with 19 consecutive turns of the tuning control crank

*Preset Frequencies:*

Manual Tuning: None

Crystal Tuning: One; determined by crystal unit installed

*Frequency Control:* Crystal-controlled oscillator (crystal tuning only)

*Type Receiver:* Superheterodyne

*Intermediate Frequency:* 18.6 mc  $\pm 2$  kc

*Type Reception:* A2 (mcw, tone)

*Type Modulation:* Am

*Input Impedance:* 51 ohms

*Output:*

Audio Channel: 60 mw maximum into 600-ohm load, or 600 mw maximum into 60-ohm load with 7% distortion

Phone Jack: 60 mw maximum into 600-ohm load

Scanning Channel: 10 uv minimum across 50-ohm load for signal input of 10 uv maximum

*Mounting:* Shock mounted for bench or shelf; bracket supplied for standard relay-crack mounting

*Power Requirements:* 112 w nominal, 120 w maximum; 110-, 115- to 120-v 60-cycle, 1-phase ac

**FUNCTIONAL DESCRIPTION:**

Radio Receiving Set AN/URR-27 is an amplitude modulated communication unit used aboard ship, at shore stations,

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**AN/URR-27** RADIO RECEIVING SET

MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
2	Instruction Book NAVSHIPS 91771			
1	Radio Receiver R-516/URR-27 including:	-----	8-7/16 x 17-1/2 x 19-1/8	57
4	Plugs			
2	Mounting brackets			
1 set	Equipment spares	-----	6-1/8 x 19 x 10	23

REFERENCE DATA AND LITERATURE:

NAVSHIPS 91771  
NAVSHIPS 91771.2  
NAVSHIPS 91771.4

SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
1	7.4	166.25

PROCUREMENT DATA

PROCURING SERVICE: USN  
SPEC &/or DWG: MIL-R-15872(SHIPS) and Amendment No. 2

DESIGN COG: USN, BuShips (RCUE)

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
National Co., Inc.	Malden, Mass.	NObsr-52699, 28 June 1951	

RADIO RECEIVING SET **AN/URR-28**

3 December 1958

Cognizant Serv: USN FSN: 5820-665-2245

	USA	USN	USAF
TYPE CLASS:	--	Used by	--
STOCK NO:	--	--	--

(No Illustration Available)

**FUNCTIONAL DESCRIPTION:**

Radio Receiving Set AN/URR-28 is a double conversion type superheterodyne unit designed for table mounting. However, brackets are supplied for adaption to rack mounting.

This equipment has projection dial tuning and provisions for local or remote control of 10 preset crystal-controlled channels. No provisions for the use of plug-in coils are furnished.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in Mc:* 225 to 400

*Number of Bands:* 1

*Number of Preset Channels:* 10

*Frequency Control:* Crystal

*Operation:* Local or remote

*Type Modulation:* Am

*Type Reception:* Cw, voice

*Type Receiver:* Double conversion superheterodyne

*Special Feature:* Projection dial tuning

*Mounting:* Table with adapters for rack

*Power Requirements:* 105-, 115-, or 125-v, 50- to 60-cycle 1-phase ac

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Filter assembly			
1	Radio receiver			

**REFERENCE DATA AND LITERATURE:**

NAVSHIPS 92563

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)

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**AN/URR-28** RADIO RECEIVING SET

PROCUREMENT DATA

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PROCURING SERVICE: USN  
SPEC &/or DWG: MIL-R-16981 (SHIPS)

DESIGN COG: USN, BuShips

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CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
National Co., Inc.	Malden, Mass.	----	\$10,000.00

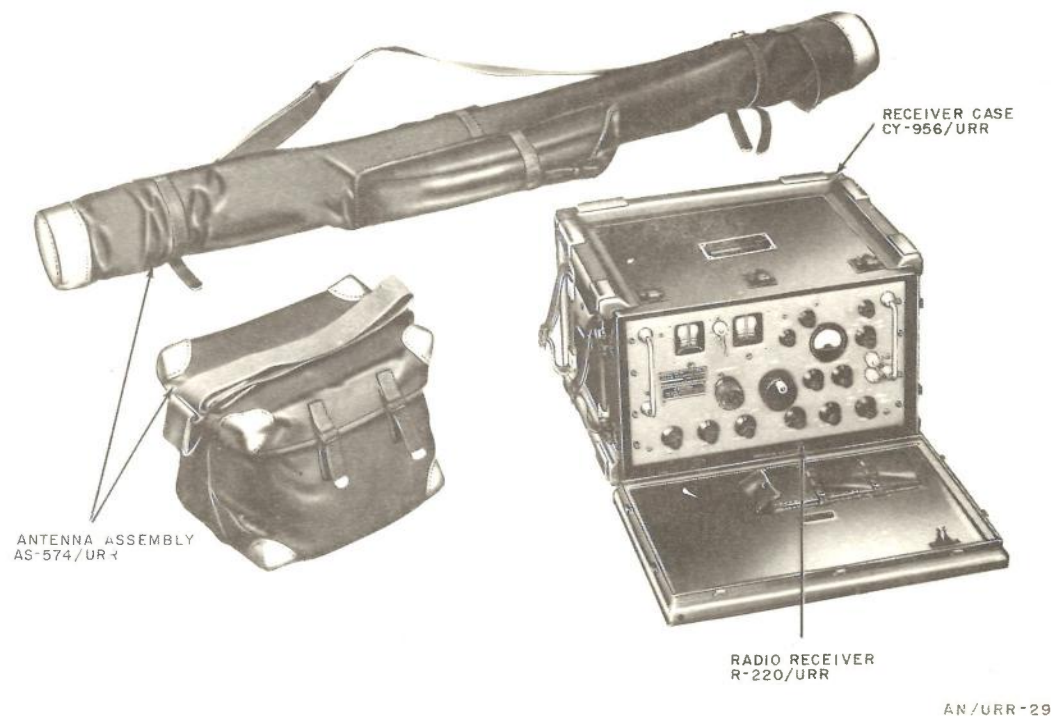
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RADIO RECEIVING SET **AN/URR-29**

1 July 1958

Cognizant Serv: USA FSN: 5820-567-2358

	USA	USN	USAF
TYPE CLASS:	Std	--	Std
STOCK NO:	2C4565-29	--	--

**FUNCTIONAL DESCRIPTION:**

Radio Receiving Set AN/URR-29 is a transportable general purpose HF and VHF equipment used for the monitoring and reception of CW, AM, and FM signals. It can be used in fixed, semifixed, and transportable applications.

This equipment consists essentially of Radio Receiver R-220/URR, an internal power supply, and accessory components.

It can be used for diversity reception, direction-finding,

frequency-shift radioteletype, facsimile, signal analysis, and single-sideband reception, when operated with suitable associated equipment.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in Mc:* 20 to 230

*Type Modulation:* AM, FM

*Type of Signal:* Cw, mew, fsk, voice

*Power Requirements:* 253 w, 115/230-v 48-62-cycle ac

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**AN/URR-29** RADIO RECEIVING SET

MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
		(USA)		
1	Antenna Assembly AS-574/ URR	2A264-574	9-3/8 x 7 x 67-3/4	
1	Power Supply PP-660/URR	-----	6-1/4 x 5-3/4 x 11-1/2	30
1	Radio Receiver R-220/URR	2C4180-220	10-1/2 x 14-3/4 x 19	96
1	Receiver Case CY-956/URR	6F300-956	17-1/8 x 13-1/4 x 22	38

REFERENCE DATA AND LITERATURE:

TM 11-882

SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
3	10.7	270

PROCUREMENT DATA

PROCURING SERVICE: USA

DESIGN COG: USA, Sig C

SPEC &/or DWG: MIL-R-10584A

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Motorola, Inc.	Chicago, Ill.	08714-P-55-51	

RADIO RECEIVING SET **AN/URR-29X**

3 December 1958

Cognizant Serv: USA FSN: 5820-511-8151

	USA	USN	USAF
TYPE CLASS:	Std	Used by	--
STOCK NO:	--	--	--

(No Illustration Available)

**FUNCTIONAL DESCRIPTION:**

Radio Receiving Set AN/URR-29X is a portable communication unit suitable for fixed, semifixed, or portable installations. It is designed for the reception and monitoring of amplitude-modulated and frequency-modulated signals.

The receiver has provisions for output connections to standard equipments as required for diversity reception, direction finding, carrier-shift radio teletypewriter, facsimile, signal analysis and sideband reception.

This equipment consists essentially of Radio Receiver R644/URR, and related accessory components.

The set is generally similar to Radio Receiving Set AN/URR-29; however, it differs in respect to the radio receiver and other components.

**TECHNICAL CHARACTERISTICS:***Frequency Range in Mc:* 20 to 230*Number of Bands:* 7*Type Modulation:* Am, fm*Type Reception:* A9, F9 (mcw, cw)*Type Presentation:* Electric meter*Power Requirements:* 22-v to 32-v dc**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Antenna Assembly AS-574/ URR	5985-264-7527		
1	Cord CD-307A	5995-196-9564	70-13/32	
1	Headset, Electrical H-113/U	5965-504-6370		
	or			
1	Headset, Electrical USN Type No. 49507	5965-128-8757		
1	Receiver Case CY-956/URR	5820-503-1650	13-1/4 x 17-1/8 x 22	
1	Receiver, Radio R-644/URR	5820-519-3939	19 x 14-7/8 x 10-1/2	

**REFERENCE DATA AND LITERATURE:**

TM 11-5016

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)

MIL-HDBK-161

**AN/URR-29X** RADIO RECEIVING SET

PROCUREMENT DATA

PROCURING SERVICE: USA  
SPEC &/or DWG:

DESIGN COG: USA, Sig C

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
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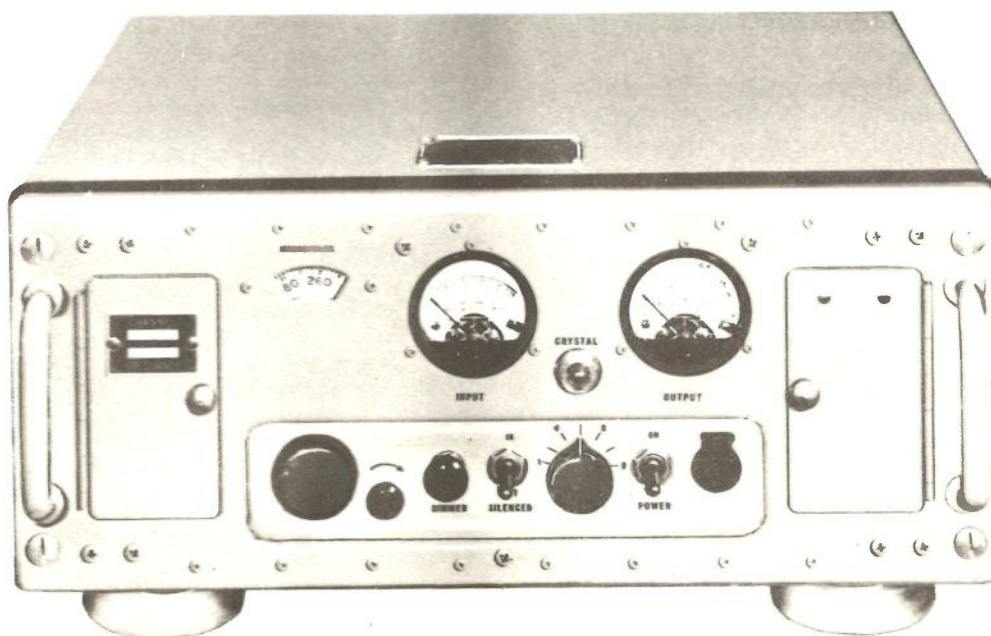


## RADIO RECEIVING SETS AN/URR-35, -35A, -35B, -35C

3 December 1958

Cognizant Serv: USN FSN: AN/URR-35: 5820-665-2375  
 AN/URR-35A: 5820-665-1245  
 AN/URR-35B: 5820-642-8747  
 AN/URR-35C: 5820-644-4773

	USA	USN	USAF
TYPE CLASS:	--	Used by	AN/URR-35A: Std
STOCK NO:	--	--	--



AN/URR-35

**FUNCTIONAL DESCRIPTION:**

Radio Receiving Sets AN/URR-35, AN/URR-35A, AN/URR-35B, and AN/URR-35C are general purpose very-high-frequency and ultra-high-frequency units used on naval vessels, at naval air and shore stations, or at other military establishments. They provide amplitude-modulated point-to-point communications.

All of these equipments are similar functionally and in appearance. The frequency range, operating modes, sensitivity, and response characteristics are the same for the entire series.

The AN/URR-35 and AN/URR-35A are identical except for minor changes in the values of two resistors.

The AN/URR-35B contains a new blower and a plug-and-jack type connection for the blower circuit.

The AN/URR-35C eliminates the entire scanning circuit and the test cables included with previous models. There are, in addition, a few minor modifications of resistance values.

Auxiliary apparatus necessary to operate these equipments are the antenna, antenna transmission line, crystal units, power cable, audio output cable, headphones, and loudspeaker or other responsive devices.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in Mc:*

Nominal: 225 to 400

Maximum: 222.75 to 404.0

*Tuning Bands:* 1 (continuous)

## AN/URR-35, -35A, -35B, -35C RADIO RECEIVING SETS

*Number of Preset Frequencies:*

Manual Tuning: None

Crystal Tuning: 1; as determined by crystal unit installed

*Type of Frequency Control:* Crystal-controlled oscillator*Type Receiver:* Double superheterodyne*Intermediate Frequencies:* 18.6 mc; 1.775 mc*Type Modulation:* Am*Type Reception:* A1, A3 (voice, mc, mcw)*Outputs:*

Audio Channel Output: 60 mw into 600-ohm load; 7% maximum distortion

Phone Jack Output: 60 mw into 600-ohm load; 7% maximum distortion

Scan Channel Output: 10  $\mu$ v minimum across a 50-ohm load, for maximum signal input of 75  $\mu$ v (AN/URR-35 and AN/URR-35A only)*Frequency Stability:* Overall stability for any selected frequency, operating between 103.5 and 126.5 v ac (suing 115-v transformer tap), between  $-4^{\circ}$  F. and  $+122^{\circ}$  F. and between 30% and 90% humidity:*For Voltage Variation:*

Crystal Operation: Negligible

Manual Operation:  $\pm 0.02\%$ *For Temperature Variation:*Crystal Operation:  $\pm 0.008\%$ Manual Operation:  $\pm 0.1\%$ *Silencer Circuit:*

Effective; Silencing Range: 300-uv input (maximum)

Audio Output Reduction: 40 db under standard output conditions (maximum)

Time-Constant: Less than 0.2 sec

*Impedance:*

Antenna Input: 50 ohms, coaxial

Audio Channel Output: 600 ohms, nominal

Phone Jack Output: 600 ohms, nominal

Scan Channel Output: 50 ohms, coaxial (AN/URR-35, AN/URR-35A only)

*Sensitivity:* 8 uv, in series with 50 ohms, for 10-db signal-to-noise ratio (signal modulated 30% at 1,000 cps)*Selectivity:* 70 to 85 kc down 6 db; less than 190 kc down 60 db*Power Requirements:* 98 w (with blower off), 108 w (with blower on); 0.97 amps, 105 to 125 v, 50- to 60-cycle, 1-phase ac

## MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
<i>For Radio Receiving Set AN/URR-35:</i>				
1	Electrical Power Cable Assembly CX-1869/U	-----	1-1/2 x 1-3/4 x 52	0.81
1	Maintenance parts kit	-----		
1	Pair relay rack mounting brackets	-----	1-1/8 x 7 x 12	1.31
1	Radio Receiver R-482/URR-35	-----	8-7/16 x 17-1/2 x 19-1/8	57
1	RF Cable Assembly CG-839/U	-----	1 x 1 x 50	.25
1	Set connector plugs	-----		
<i>For Radio Receiving Set AN/URR-35A:</i>				
1	Electrical Power Cable Assembly CX-1869/U	-----	1-1/2 x 1-3/4 x 52	.81
1	Maintenance parts kit	-----		
1	Pair relay rack mounting brackets	-----	1-1/8 x 7 x 12	1.31
1	Radio Receiver R-482A/URR-35	-----	8-7/16 x 17-1/2 x 19-1/8	57
1	RF Cable Assembly CG-839/U	-----	1 x 1 x 50	.25
1	Set connector plugs	-----		

RADIO RECEIVING SETS **AN/URR-35, -35A, -35B, -35C**

## MAJOR COMPONENTS—Continued

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
<i>For Radio Receiving Set AN/URR-35B:</i>				
1	Maintenance parts kit			
1	Pair relay rack mounting brackets	-----	1-1/8 x 7 x 12	1.31
1	Radio Receiver R-482B/ URR-35	-----	8-7/16 x 17-1/2 x 19-1/8	57
1	Set connector plugs			
<i>For Radio Receiving Set AN/URR-35C:</i>				
1	Maintenance parts kit			
1	Pair relay rack mounting brackets	-----	1-1/8 x 7 x 12	1.31
1	Radio Receiver R-482C/ URR-35	-----	8-7/16 x 17-1/2 x 19-1/8	55
1	Set connector plugs			

## REFERENCE DATA AND LITERATURE:

NAVSHIPS 91906 (AN/URR-35 and AN/URR-35B)

NAVSHIPS 92022 (AN/URR-35A)

NAVSHIPS 92676 (AN/URR-35C)

## SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
2	5.79	125

## PROCUREMENT DATA

PROCURING SERVICE: USN	DESIGN COG: USN, BuShips
SPEC &/or DWG: MIL-R-10584 (AN/URR-35A) MIL-R-16620 (Each other model)	

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
<i>AN/URR-35, -35B:</i> Federal Telephone and Radio Corp.	Clifton, N. J.	NObsr-57142, 14 January 1952	\$1,000.00
<i>AN/URR-35A:</i> National Co., Inc.	Malden, Mass.	NObsr-57143, 14 January 1952	1,000.00
<i>AN/URR-35C:</i> Rauland-Borg Corp.	Chicago, Ill.	NObsr-64647, 28 February 1955	1,000.00



RADIO RECEIVING SET **AN/URR-35D**

3 December 1958

Cognizant Serv: USN FSN:

	USA	USN	USAF
TYPE CLASS:	--	Used by	Std
STOCK NO:	--	--	--

(No Illustration Available)

**FUNCTIONAL DESCRIPTION:**

Radio Receiving Set AN/URR-35D is a very-high-frequency and a ultra-high-frequency unit used on naval vessels, at naval air and shore stations, or at any other military establishments.

This equipment is designed primarily for operation as a pretuned, single-channel, crystal-controlled receiver. By selecting a suitable crystal, any channel within the frequency range of the set may be used.

An adjustable carrier relay circuit is provided to allow operation over an input signal range of 2 to 20 microvolts.

A panel-mounted pilot light indicates the operation of the carrier relay.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in Mc:* 225 to 400

*Type Modulation:* Am

*Type Reception:* Voice, mew

*Frequency Control:* Crystal or manual

*Type Receiver:* Double superheterodyne

*Presentation:* Audio type

*Input Signal Voltage:*

*Power Requirements:* 105-, 115-, or 125-v, 50- to 60-cycle, 1-phase ac

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Filter, Low Pass F-318( )/ URR-35			
1	Radio Receiver R-482( )/ URR-35			

**REFERENCE DATA AND LITERATURE:****SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
2	5.79	125

MIL-HDBK-161

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**AN/URR-35D** RADIO RECEIVING SET

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PROCUREMENT DATA

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PROCURING SERVICE: USN  
SPEC &/or DWG: MIL-R-16620A(SHIPS)

DESIGN COG: USN, BuShips

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CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Rauland-Borg Corp.	Chicago, Ill.		
and			
Western Electric Co.	New York, N. Y.		

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RADIO RECEIVING SET **AN/URR-36**

3 December 1958

Cognizant Serv: USN FSN:

	USA	USN	USAF
TYPE CLASS:	--	Used by	--
STOCK NO:	--	--	--

(No Illustrations Available)

**FUNCTIONAL DESCRIPTION:**

Radio Receiving Set AN/URR-36 is a general purpose amplitude-modulated communication unit used aboard ship or at shore installations. It is essentially a commercial National Company Model HRO-50-1 receiving set. Frequency range coverage is accomplished by use of 12 coil sets.

This equipment includes provisions for connecting a frequency-modulated adapter and a crystal calibrator unit. These accessories may be permanently installed and switched on or off by means of a single front panel control.

Facilities for connecting a vibrator power supply to permit operation from a storage battery are also provided.

**TECHNICAL CHARACTERISTICS:***Frequency Range:*

Total Coverage: 50 kc to 430 kc and 480 kc to 35,000 kc

Number of Bands: 12

## Coil Set A:

General Coverage: 14 mc to 30 mc

Bandspread: 27 mc to 30 mc

## Coil Set B:

General Coverage: 7 mc to 14.4 mc

Bandspread: 14 mc to 14.4 mc

## Coil Set C:

General Coverage: 3.5 mc to 7.3 mc

Bandspread: 7 mc to 7.3 mc

## Coil Set D:

General Coverage: 1.7 mc to 4 mc

Bandspread: 3.5 mc to 4 mc

## Coil Set E:

General Coverage: 900 kc to 2,050 kc

## Coil Set F:

General Coverage: 480 to 960 kc

## Coil Set G:

General Coverage: 180 kc to 430 kc

## Coil Set H:

General Coverage: 100 kc to 200 kc

## Coil Set J:

General Coverage: 50 kc to 100 kc

## Coil Set AA:

Bandspread: 27.5 mc to 30 mc

## Coil Set AB:

General Coverage: 25 mc to 35 mc

## Coil Set AC:

Bandspread: 21 mc to 21.5 mc

*Type Modulation:* Am; fm by use of accessory unit

*Type Reception:* A1, A2, A3 (Cw, mcw, tone, voice)

*Audio Output:*

Undistorted: 8 w, approximately

Maximum: 10 w

*Input Impedance:* 300 to 600 ohms

*Antenna:* 50 to 100 ft single-wire, or other transmission line of 70 ohms minimum 300- to 600-ohm line is recommended (not supplied)

*Power Requirements:* 115 w; 110- to 120-v, or 220- to 240-v, 50- to 60-cycle, 1-phase ac; or 6-v dc from storage battery

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
12	Coil sets A through AC			
1	Loudspeaker HRO-50-TS (for table mounting)			
	or			
	HRO-50-RS (for relay rack mounting)			
1	Receiver HRO-50-1			

MIL-HDBK-161

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**AN/URR-36** RADIO RECEIVING SET

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REFERENCE DATA AND LITERATURE:  
NAVSHIPS 91648

SHIPPING DATA

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PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
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PROCUREMENT DATA

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PROCURING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG: USN, BuShips

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CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
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National Co., Inc.

Malden, Mass.

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RADIO RECEIVING SET **AN/URR-36A**

3 December 1958

Cognizant Serv: **USN FSN: 5820-665-2372****USA****USN****USAF**

TYPE CLASS: --

Used by --

STOCK NO: --

**(No Illustration Available)****FUNCTIONAL DESCRIPTION:**

Radio Receiving Set AN/URR-36A is a double conversion superheterodyne communication unit suitable for direct current or alternating current operation. Visual indication of tuning is accomplished by a frequency calibrated slide rule dial and a micrometer dial with 0° to 350° rotation calibrated from 0 to 500

This equipment is furnished with 10 plug-in coil sets as well as an 8-section coil container and an 8-inch permanent magnet loudspeaker.

The AN/URR-36A and Radio Receiving Set AN/URR-36 are basically similar; however, the an/URR-36 has 12 bands while the AN/URR-36A has 10 bands.

**TECHNICAL CHARACTERISTICS:***Frequency Range:* 50 kc to 430 kc; 480 kc to 35,000 kc*Number of Bands:* 10*Number of Channels:* 1*Number of Plug-in Coil Sets:* 10*Type Modulation:* AM*Type Reception:* A1, A2, A3 (cw, mcw, voice)*Type Receiver:* Double conversion superheterodyne*Loudspeaker:*

Size: 8 in.

Type: Permanent magnet

*Type Mounting:* Rack*Power Requirements:* 115-v or 230-v, 50- to 60-cycle, 1-phase ac; or 6-v and 180-v dc**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
10	Coil set			
1	Combination unit			
1	Crystal calibrator			
1	Mounting rack			
1	Radio Receiver R-5234/ URR-36A	-----	12-5/8 x 20-1/2 x 29	

**REFERENCE DATA AND LITERATURE:**

NAVSHIPS 92563

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)

MIL-HDBK-161

**AN/URR-36A** RADIO RECEIVING SET

PROCUREMENT DATA

PROCURING SERVICE: USN  
SPEC &/or DWG: 880F-1(831-138)7115-A, 7 November 1955

DESIGN COG: USN, BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
National Co., Inc.	Malden, Mass.	NObsr-71193	\$1,160.00

RADIO RECEIVING SET **AN/URR-39**

3 December 1958

Cognizant Serv: USN FSN:

	USA	USN	USAF
TYPE CLASS:	--	Used by	--
STOCK NO:	--	--	--

(No Illustration Available)

**FUNCTIONAL DESCRIPTION:**

Radio Receiving Set AN/URR-39 is a superheterodyne, table-mounted communication unit designed for amplitude-modulated reception.

This equipment incorporates a built-in crystal filter, a beat frequency oscillator, and an accessory socket.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range:* 50 kc to 150 kc; 0.54 mc to 31 mc

*Number of Bands:* 5

*Type Modulation:* AM

*Type Reception:* Cw, mcw, voice

*Mounting:* Table

*Number of Plug-in Coils:* None

*Built-in:* Crystal filter

*Power Requirements:* 110-v to 120-v or 220-v to 240-v, 50- to 60-cycle, 1-phase ac

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Radio Receiving Set AN/URR-39 including:	-----	14-3/4 x 20-1/2 x 27-1/4	
1	Electrical Equipment Rack MT-1529/U			
1	Permanent Magnet Loudspeaker LS-228/U			
1	Radio Receiver R-651/URR-39			

**REFERENCE DATA AND LITERATURE:****SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)

MIL-HDBK-161

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**AN/URR-39** RADIO RECEIVING SET

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PROCUREMENT DATA

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PROCURING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG: USN, BuShips

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CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
National Co., Inc.	Malden, Mass.	NObsr-64281	

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5 November 1958

Cognizant Serv: USN

FSN:

RECEIVER AN/URR-type

51J-4

USA

USN

USAF

TYPE CLASS:

Used by

Used by

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STOCK NO:

--

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51J-4

### FUNCTIONAL DESCRIPTION:

Receiver 51J-4 is a superheterodyne radio receiver capable of being tuned to any amplitude-modulated signal within the frequency range of the unit. When advantageous, it uses single, double, or triple conversion in tuning throughout its entire frequency range. The equipment is calibrated for direct reading in both megacycles and kilocycles, and tuning is linear with a uniform bandspread.

The receiver is designed for fixed or mobile station use. The antimagnetic case, made of aluminum, is suitable for either table or rack mounting.

The 51J-4 is similar to Radio Receiver R-388/URR, part of Radio Sets AN/GRC-26A, AN/GRC-26B, and AN/GRC-26C.

### TECHNICAL CHARACTERISTICS:

*Frequency Range:* 540 kc to 30.5 mc

*Frequency Stability:* Dial calibration at room temperature—within 300 cps if nearest 100-kc calibration point is used to adjust the fiducial

*Type Signal:* AM

*Type Reception:* Cw, mcw

*Sensitivity:*

Band 1: Less than 15  $\mu$ v gives 1 w with 10 db signal-to-noise ratio

Band 2: Less than 5  $\mu$ v gives 1 w with 10 db signal-to-noise ratio

*Frequency Response:*

Spurious: Down at least 40 db

Audio (Overall): 3 db (maximum) at 200 cps and 7 db (maximum) at 2,500 cps when 6-kc filter is used

*Automatic Volume Control:* Less than 3.5 db increase in audio power output with increase in RF signal from 5 to 125,000  $\mu$ v

*Noise Limiter:* Series type ahead of first audiostage

*S Meter:* Calibrated in 20, 40, 60, 80, and 100 db above avc threshold and -10 to +6 db audio level with 6 mw as reference

*Audio Power Output:* 1.5 w at 1,000 cps with less than 15% distortion

*Output Impedance:*

Audio Output: 4 and 600 ohms

IF Output: 50 ohms

RF Output: Designated to operate into high impedance whip or single-ended antenna

*Temperature Range:* -20° to +60°C

*Power Requirements:* 85 w, 115- or 230-v 45- to 70-cycle ac

MIL-HDBK-161

**AN/URR-type RECEIVER**

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1 set	Equipment spares			
1	Mechanical filter, 1.4 kc			
1	Mechanical filter, 3.1 kc			
1	Mechanical filter, 6 kc			
1	Receiver 51J-4	-----	12-3/8 x 13-1/8 x 21-1/8	43
1	Speaker	-----	7 x 11 x 13	

**REFERENCE DATA AND LITERATURE:**

NAVSHIPS 92324

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
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**PROCUREMENT DATA**

PROCURING SERVICE: USN, BuShips  
SPEC &/or DWG:

DESIGN COG: Commercial

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Collins Radio Co.	Cedar Rapids, Iowa	NObsr-71045, 26 Sep- tember 1955	\$1,307 with equipment spares

## AMATEUR-BAND RECEIVER AN/URR-type

6 November 1958

Cognizant Serv: USN FSN:

75A-4, 75A-4 (MOD)

USA

USN

USAF

TYPE CLASS: --

Used by --

STOCK NO: --



75A-4

**FUNCTIONAL DESCRIPTION:**

Amateur-Band Receivers 75A-4 and 75A-4 (mod) are used primarily for amateur reception on the seven high-frequency amateur bands. They are dual conversion receivers on all bands except 160 meters where single conversion is used. They are designed for single-sideband reception.

Both receivers incorporate the following features: separate detectors for double- or single-sideband reception; a fast attach; a slow release automatic-volume-control system fast enough to respond to the first few cycles of a sideband transmission that does not require a carrier for operation; a band-pass tuning system where the receiver beat frequency oscillator is mechanically ganged and tracked with the main tuning dial; a Q multiplier that results in less loss of intelligibility while still eliminating heterodynes; space for three mechanical filters that allow the operator to tailor the set to his requirements; a noise limiter designed to clip both the positive and negative peaks of the detected signal; a crystal calibrator circuit that presents calibration signals every 100 kilocycles.

The 75A-4 and 75A-4 (mod) differ only in that the 75A-4 (mod) frequency bands are different and minor mechanical changes have been incorporated. In both receivers, more than one frequency band may be included in a single frequency range.

The amateur-band receivers are designed for table mounting. However, a rack mounting bracket assembly is available so that they can be adapted for standard relay rack mounting.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in Mc:* 1.5 to 30

*Frequency Band Data:*

75A-4:

1.5 to 2.5 mc

3.2 to 5.2 mc

6.8 to 7.8 mc

14 to 15 mc

20.8 to 21.8 mc

**AN/URR-type AMATEUR-BAND RECEIVER**

26.5 to 27.5 mc

28 to 30 mc

75A-4 (Mod):

1.5 to 2.5 mc

3.2 to 6.2 mc

6.8 to 7.8 mc

13 to 15 mc

29 to 30 mc

*Type Signal:* AM*Type Reception:* Ssb, cw, mcw*Sensitivity:* 1  $\mu$ v for 6 db signal-to-noise ratio with 3-kc bandwidth*Selectivity:* Determined by choice of mechanical filter*Avc Data:*Audio Rise: Less than 3 db for 5- to 200,00  $\mu$ v inputs

Time Constants:

Rise Time: 0.01 second fast, .01 second slow

Release Time: 0.1 second fast, 1 second slow

*IF and Image Rejection:* All greater than 50 db down*Audio Data:*Output: 0.75 w with a 3- $\mu$ v signal, 30% modulated

Output Impedance: 500 ohms, 4 ohms

Audio Circuit Response:  $\pm$ 3 db at 100 to 5,000 cps

Distortion: Less than 10%

*Noise Limiter:*

AM: Adjustable clip point, automatic carrier reference

Cw—ssb: Adjustable clip point, clip reference controlled by flat ave

*Frequency Stability (At 14.5 Mc):*

Temperature: Not more than 1,200 cps drift from 0° to 60°C

Warm-up: Drift does not exceed 100 cps during any 10-minute period after 30-minute warmup.

Voltage: Frequency does not change more than 100 cps for line voltage changes of  $\pm$ 10%.

Humidity: Frequency does not change more than 50 cps for humidity changes from 0 to 90%.

Dial Accuracy After Calibration, All Bands:  $\pm$ 300 cps*Antenna Input:* 50 to 150 ohms terminal impedance*Power Requirements:* 85 w, 105- to 125-v 50- to 60-cycle ac**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Amateur-Band Receiver, Collins Type 75A-4 or 75A-4 (mod) consisting of:	-----	10-1/2 x 15-1/2 x 17-1/4	35
1 set	Equipment maintenance parts			
1	Connector UG-21B/U (75A-4 only)			
1	Mechanical filter, 0.8 kc			
1	Mechanical filter, 3.1 kc			
1	Mechanical filter, 6.0 kc			
1	Speaker, Collins Type 270-G-3 (75A-4 only)	-----	9-1/8 x 11-1/8 x 15	

**REFERENCE DATA AND LITERATURE:**

NAVSHIPS 92788

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)



AMATEUR-BAND RECEIVER **AN/URR-type**

## PROCUREMENT DATA

PROCURING SERVICE: USN, BuShips  
SPEC &/or DWG:

DESIGN COG: Commercial

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Collins Radio Co.	Cedar Rapids, Iowa	NObsr-71287, 27 April 1956 (75A-4)	\$1,126 with equipment spares
		NObsr-71289, 27 April 1956 (75A-4 MOD)	\$1,126 with equipment spares



1 July 1958

Cognizant Serv: USA FSN:

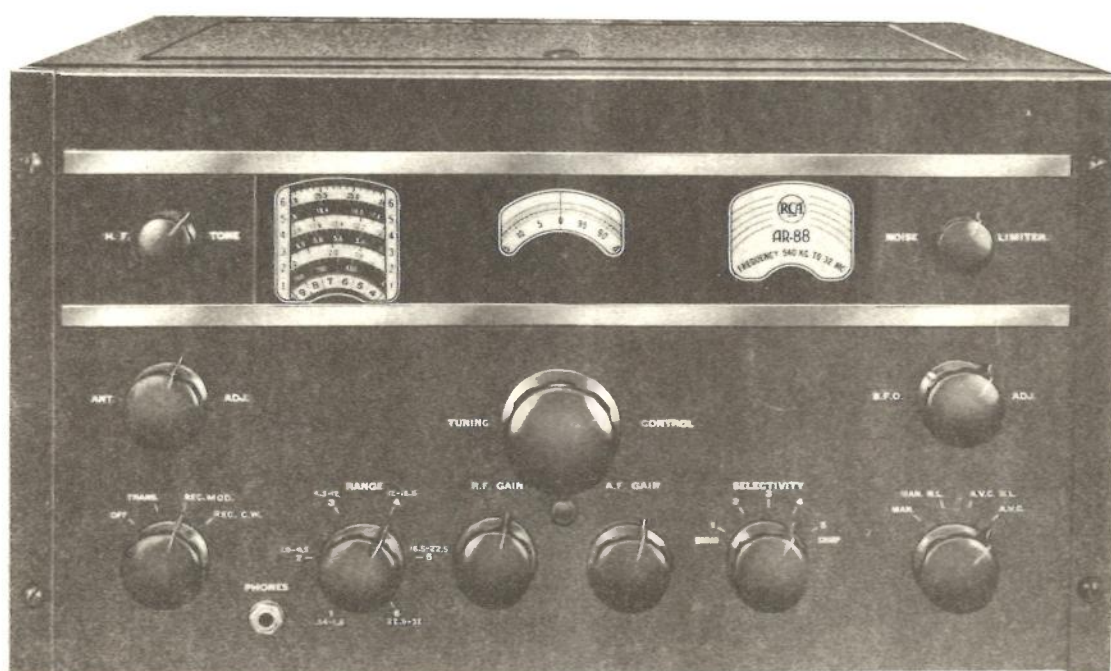
RADIO RECEIVER AN/URR-type

AR-88 (RCA)

USA

USN

USAF

TYPE CLASS:  
STOCK NO:

AR-88 (RCA)

**FUNCTIONAL DESCRIPTION:**

Radio Receiver RCA Model AR-88 is a commercial radio receiving equipment, two models of which have been procured. The AR-88-D (shown above) is the cabinet-inclosed version and is used for AM (voice, cw, and mcw) communication in the HF range in point-to-point, ground-to-air, ship-to-shore, and similar applications.

The AR-88-F (not illustrated) is panel-mounted and is designed for diversity applications at fixed-plant installations.

The AR-88-F differs from the AR-88-D by having auto-

matic volume control, IF gain control, a diode output circuit, and provision for connection to a tone keyer rather than to a transmitter relay.

Both models have the same technical characteristics.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in Mc:* 0.54 to 32.0

*Type Modulation:* AM

*Type of Signal:* Voice, cw, mcw

*Power Requirements:* 100-165/190-260-v 50/60-cycle ac

MIL-HDBK-161

**AN/URR-type** RADIO RECEIVER

MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Radio Receiver AR-88 (RCA) (Equipment consists of only one major component.)			

REFERENCE DATA AND LITERATURE:

TM 11-880

SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
1	8.15	140

PROCUREMENT DATA

PROCURING SERVICE: USA  
SPEC &/or DWG:

DESIGN COG: USA, Sig C

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
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## RADIO RECEIVER AN/URR-type

4 December 1958

Cognizant Serv: USA FSN:

AR-88D(RCA)

USA

USN

USAF

TYPE CLASS: Used by  
STOCK NO: --Used by --  
--

AR-88 (RCA)

**FUNCTIONAL DESCRIPTION:**

Radio Receiver AR-88D is a 14-tube, general purpose medium frequency receiver used principally for communication at corps and higher headquarters in point-to-point, ground-to-air, ship-to-shore, and similar applications. The equipment is contained in a metal cabinet for table mounting.

The following equipment is used, but is not supplied with Radio Receiver AR-88D: antenna, headset or loudspeaker.

Radio Receiver AR-88F has been procured under official nomenclature Radio Receiver R-320/FRC, and is described in this handbook under that type number.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range:* 540 to 32,000 kc in 6 bands

Band 1: 540 to 1,600 kc

Band 2: 1,570 to 4,550 kc

Band 3: 4,450 to 12,150 kc

Band 4: 11,900 to 16,600 kc

Band 5: 16,100 to 22,700 kc

Band 6: 22,000 to 32,000 kc

*Reception:* Cw, mcw, or AM voice

*Antenna:* Various types

*Receiver Type:* Superheterodyne

*Intermediate Frequency:* 455 kc

*Output Impedance:* 2.5 ohms and 600 ohms

*Maximum Undistorted Output:* 2.5 w

*Power Input:* 100 w

*Power Requirements:* 100- to 165-v or 190- to 260-v, 50- to 60-cycle ac; or 6-v and 250- to 300-v dc from battery or vibrator

MIL-HDBK-161

**AN/URR-type RADIO RECEIVER**

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
		(USA)		
1	Coil-adjustment tool	6R38476		
1	Plunger-trimmer tool	6R38475		
1	Radio Receiver AR-88D		11 x 19-1/4 x 19-1/4	98
1	Set screw wrench	6R57400		

**REFERENCE DATA AND LITERATURE:**

IB-25927-3  
TM 11-880

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
1	8.15	140

**PROCUREMENT DATA**

PROCURING SERVICE: USA  
SPEC & /or DWG:

DESIGN COG: USA, Sig C

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Radio Corporation of America	Camden, N. J.		

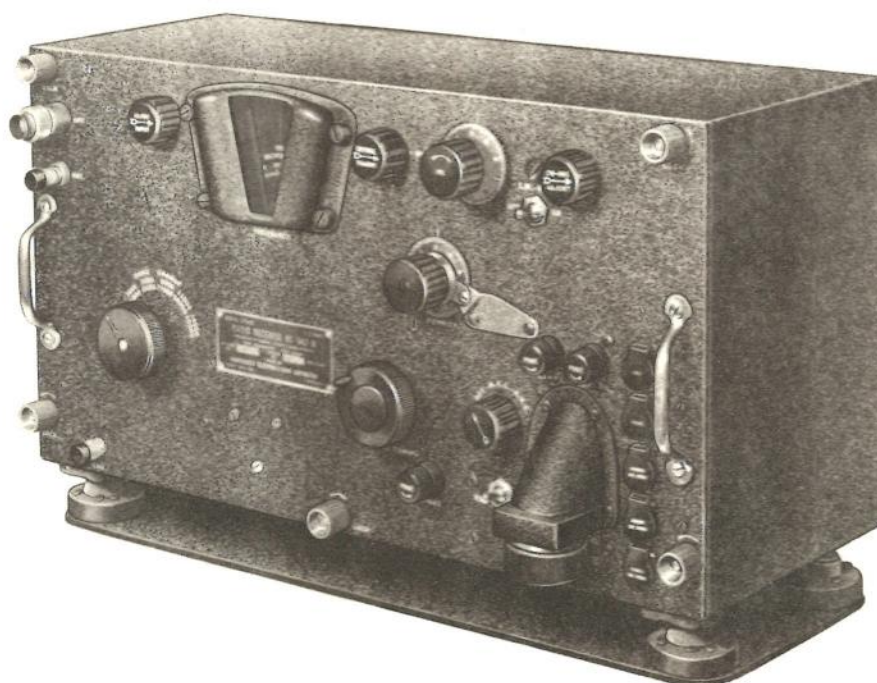
RADIO RECEIVER **AN/URR-type**

1 July 1958

Cognizant Serv: USA FSN: BC-312, -A, -C thru N: 5820-164-7230  
BC-312-HX, -NX: 5820-164-6371

BC-312-( )

	USA	USN	USAF
TYPE CLASS:	Std	--	L/Std
STOCK NO:	2C4312	--	--



BC-312

**FUNCTIONAL DESCRIPTION:**

Radio Receiver BC-312-( ) is an MF and HF, AM (voice, tone, and cw) general utility radio receiving equipment widely used as part of such radio sets as the AN/GRC-26 and SCR-399. It can be used in mobile, vehicular, fixed-plant, or airborne radio communication applications.

This equipment consists of a single primary operating component. It can be used with a loudspeaker or headphones.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in Mc:* 1.5 to 18.0 in 6 bands

*Type Modulation:* AM

*Type of Signal:* Cw, tone, voice

*Power Requirements:* BC-312 (most models): 12-14-v dc (storage battery); BC-312-HX, -NX: 24-28-v dc (storage battery)

MIL-HDBK-161

**AN/URR-type RADIO RECEIVER**

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
		(FSN)		
1	Radio Receiver BC-312 (Equipment consists of only one major component.)	5820-164-7230	10 x 9-1/16 x 18-1/16	58

**REFERENCE DATA AND LITERATURE:**

TM 11-850

**SHIPPING DATA**

PKGS		VOLUME (Cu Ft)	WEIGHT (Lbs)
1	25-3/8 x 21-7/8 x 14-3/8	4.7	120

**PROCUREMENT DATA**

PROCURING SERVICE: USA  
SPEC &/or DWG: (USA)71-914

DESIGN COG: USA, Sig C

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Farnsworth Television & Radio	Ft. Wayne, Ind.	4611-P-42	



## RADIO RECEIVER AN/URR-type

1 July 1958

Cognizant Serv: USA FSN: 5820-164-6374

BC-314-( )

USA

USN

USAF

TYPE CLASS:

Std

--

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STOCK NO:

2C4314

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BC-314

**FUNCTIONAL DESCRIPTION:**

Radio Receiver BC-314-( ) is a lightweight, portable, battery-operated, AM radio receiving equipment used for voice, cw, and tone signal communication in the LF and MF bands. It is a general purpose equipment that can be used in fixed-station, mobile, or vehicular applications.

This equipment consists of a single cabinet-inclosed super-heterodyne radio receiver, which is the battery-operated ver-

sion of Radio Receiver BC-344, and is used as a component of such equipment as Radio Set SCR-177-B.

It uses a conventional straight wire or a vehicular whip-type antenna.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in Mc:* 0.15 to 1.5

*Type Modulation:* AM

*Type of Signal:* Cw, tone, voice

*Power Requirements:* 12- to 14-v dc from storage battery

MIL-HDBK-161

**AN/URR-type** RADIO RECEIVER

MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
		(FSN)		
1	Radio Receiver BC-314-( ) (Equipment consists of only one major component.)	5820-164-6374	10 x 9-1/16 x 18-1/16	61.5

REFERENCE DATA AND LITERATURE:

TM 11-850  
TM 11-4002

SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
1	4.7	120

PROCUREMENT DATA

PROCURING SERVICE: USA  
SPEC &/or DWG:

DESIGN COG: USA, Sig C

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Farnsworth Television & Radio Co.	----	13462-P-42	

## RADIO RECEIVER AN/URR-type

1 July 1958

Cognizant Serv: USA FSN: 5820-162-8759

BC-787-( )

USA

USN

USAF

TYPE CLASS:

L/Std

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STOCK NO:

2C4787

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BC-787

**FUNCTIONAL DESCRIPTION:**

Radio Receiver BC-787-( ) is a 3-band, AM and FM, voice and cw equipment operating in the VHF range. It can be used in fixed-plant, point-to-point communication, for intercept or monitoring purposes, and for special applications in vehicles as a mobile equipment.

This equipment consists of a commercial (Hallicrafter S-36) table model, communication-type radio receiver, and a shock mount. It can be installed on a standard relay rack and arranged for standby operation at a distance by means of re-

mote control equipment. It is the principal operating component of Radio Set SCR-607 and similar equipment.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in Mc:* 27.8 to 142

*Type Modulation:* AM, FM

*Type of Signal:* Voice, cw

*Power Requirements:* 110 w, 115/230-v 50/60-cycle ac; or 4.5 amp at 6-v dc from A battery and 145 ma at 270-v dc from B battery

MIL-HDBK-161

**AN/URR-type** RADIO RECEIVER

MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
		(FSN)		
1	Radio Receiver BC-787 (Equipment consists of only one major component.)	5820-162-8759	9-5/16 x 21-1/4 x 14-1/2	78

REFERENCE DATA AND LITERATURE:

TM 11-867

SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
1	5.2	170

PROCUREMENT DATA

PROCURING SERVICE: USA  
SPEC &/or DWG: MIL-R-10235

DESIGN COG: USA, Sig C

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
The Hallicrafters Co.	Chicago, Ill.	21686-P-50-51	\$379.22

## RADIO RECEIVING EQUIPMENT AN/URR-type

4 December 1958

Cognizant Serv: USN FSN:

BF

USA

USN

USAF

TYPE CLASS: --

Used by --

STOCK NO: --

(No Illustration Available)

## FUNCTIONAL DESCRIPTION:

Radio Receiving Equipment BF is used basically for ship-board or shore installations; it is designed to be used with Radio Transmitting Equipment BE.

The equipment is remotely operated by a receiving control unit at a fixed frequency of 470 mc, and is primarily used to provide visual means of recognition between vessels with Radio Transmitting Equipment BE installed.

## TECHNICAL CHARACTERISTICS:

*Frequency Range in Mc:* 470*Intermediate Frequency:* 40 mc*Reply Signal:* Indicating lamp and warning buzzer*Circuit:* Superheterodyne*Antenna:* Vertically polarized dipole*Power Requirements:* 115-v 60-cycle 1-phase ac

## MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Receiver Antenna 66AAB	-----	16	0.35
1	Receiver Control 23AAD	-----	7-3/4 x 12-1/4 x 19-1/2	36
1	Receiver unit 46AAB	-----	13-3/8 x 36 x 48	25

## REFERENCE DATA AND LITERATURE:

Technical Manual for Radio Receiving Equipment BF

## SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)

MIL-HDBK-161

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**AN/URR-type** RADIO RECEIVING EQUIPMENT

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PROCUREMENT DATA

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PROCURING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG: USN, BuShips

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CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
General Electric Co.	Bridgeport, Conn.	NOs-82256	

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## RADIO RECEIVER AN/URR-type

1 July 1958

Cognizant Serv: USA FSN: 5820-164-6361

R-129( )/U

USA

USN

USAF

TYPE CLASS:

L/Std

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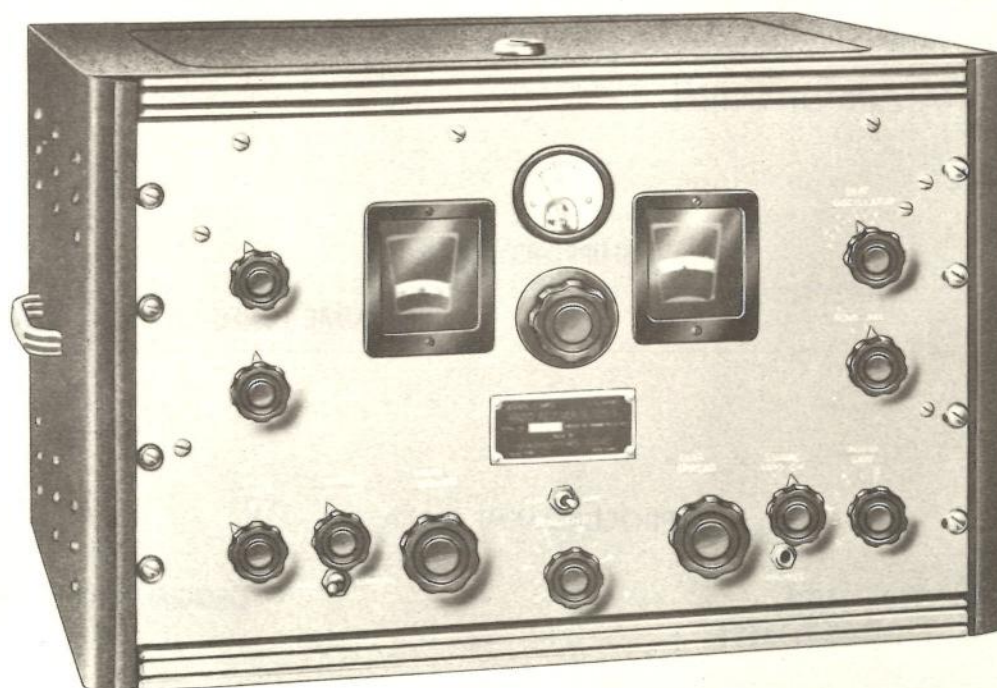
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STOCK NO:

2C4180-129

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R-129/U

**FUNCTIONAL DESCRIPTION:**

Radio Receiver R-129( )/U is a transportable, AM (voice, tone, and cw) radio receiving equipment operating in the medium- and high-frequency bands in fixed station communication, monitoring, or intercept applications.

This equipment is a table model, cabinet-inclosed radio receiver that can be removed from the cabinet and mounted on a standard 19-inch rack. It can be installed and operated in a vehicle by means of appropriate shock mounts.

It uses a doublet antenna with balanced transmission line, a straight wire and ground, or similar antenna system.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in Mc:* 0.3 to 10.0 in 5 bands

*Type Modulation:* AM

*Type of Signal:* Cw, voice, tone

*Power Requirements:*

Battery: One 6-v storage battery, five 45-v B batteries, and one 45-v C battery

Ac: 180 w, 95-130/190-260-v 25/60-cycle ac or 180 w, 115/230-v 50/60-cycle ac. (Ac operation requires use of Power Supply Unit RA-74( ), RA-84( ), or RA-94-A.)

MIL-HDBK-161

**AN/URR-type RADIO RECEIVER**

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Radio Receiver R-129/U in Cabinet CH-104A (Equipment consists of only one major component.)	(FSN) 5820-164-6361 (USA) 2C4180-129	12-1/4 x 16-1/2 x 23	73

**REFERENCE DATA AND LITERATURE:**

TM 11-4054

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
1	4.3	90

**PROCUREMENT DATA**

PROCURING SERVICE: USA  
SPEC &/or DWG: (USA) 71-1523

DESIGN COG: USA, Sig C

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Hammarlund Manufacturing Co.	New York, N. Y.		



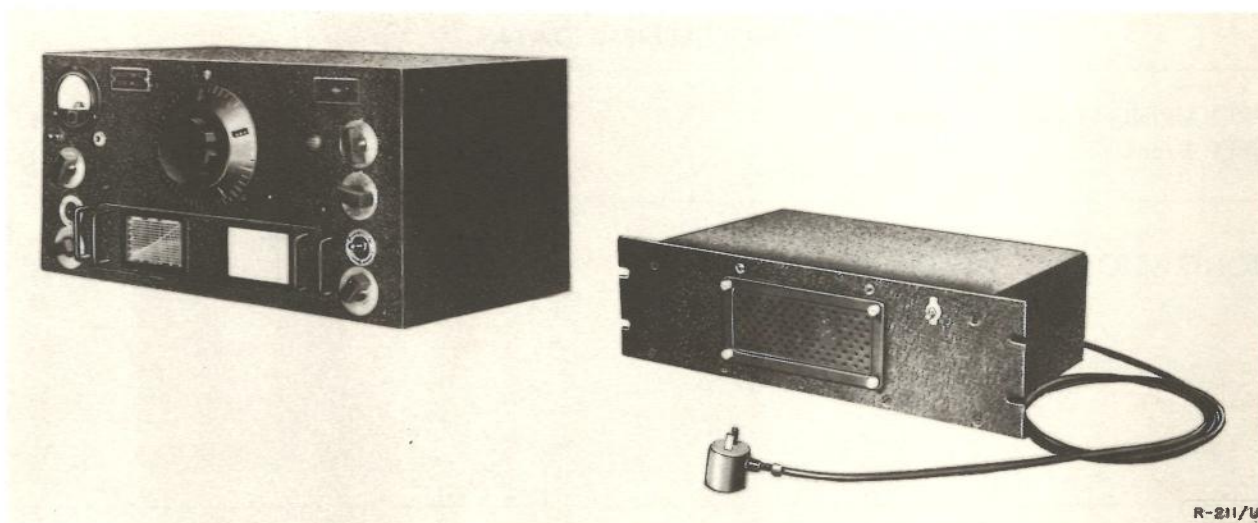
## RADIO RECEIVER AN/URR-type

1 July 1958

Cognizant Serv: USA FSN: 5820-194-2998

R-211( )/U

	USA	USN	USAF
TYPE CLASS:	L/Std	--	--
STOCK NO:	2C4529-22	--	--



## FUNCTIONAL DESCRIPTION:

Radio Receiver R-211( )/U is a general purpose, light-weight, AM (voice, tone, and cw) receiving equipment used for communication in the LF, MF, and HF bands.

This equipment consists of a single radio receiver, which may be table-or rack-and-panel-mounted, and has an external power supply. It operates in nine frequency bands, selected by means of interchangeable coils, and has a crystal-controlled band-pass filter that operates at 0.456 mc.

This receiver can be operated with a conventional single wire or doublet antenna system.

## TECHNICAL CHARACTERISTICS:

*Frequency Range in Mc:* 0.05 to 0.43 and 0.48 to 30.0 in 9 overlapping bands selected by RF coil inserts

*Type Modulation:* AM

*Type of Signal:* Cw, voice, tone

*Power Requirements:* 115-v 50/60-cycle ac with National Type SPU-697 Power Supply; or 6-v dc with National Type SPU-686-S Power Supply

## MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Radio Receiver R-211/U	(FSN) 5820-194-2998 (USA) 2C4529-22	-----	79.5
	(Equipment consists of only one major component.)			

## REFERENCE DATA AND LITERATURE:

MIL-HDBK-161

**AN/URR-type** RADIO RECEIVER

SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
3	9.1	211

PROCUREMENT DATA

PROCURING SERVICE: USA  
SPEC &/or DWG:

DESIGN COG: USA, Sig C

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO	APPROX UNIT COST
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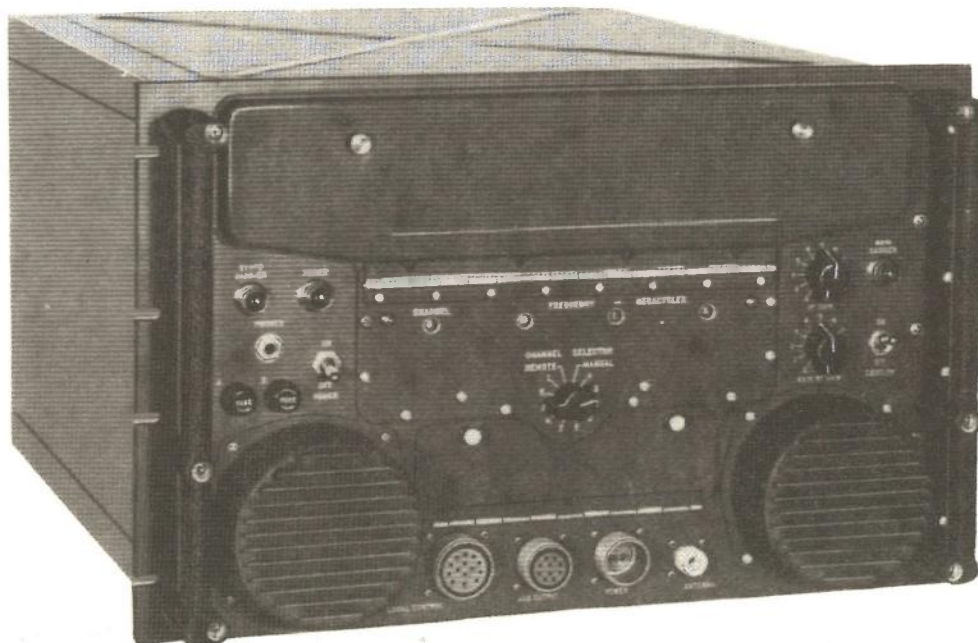
RADIO RECEIVER **AN/URR-type**

5 December 1958

Cognizant Serv: USAF FSN:

R-278/GR

	USA	USN	USAF
TYPE CLASS:	--	--	S/Std
STOCK NO:	--	--	--



R-278/GR

**FUNCTIONAL DESCRIPTION:**

Radio Receiver R-278/GR is a ground-operated, UHF, crystal-controlled AM receiver, operating on any one of 10 preset channels (of a total of 1,750 available channels spaced 100 kilocycles apart) in the 225 to 399.9 megacycle range. It also monitors either of two crystal-controlled, preset, standby, guard frequencies in the 238 to 248 mc range.

The equipment is used in fixed or mobile installations for ground-to-air and point-to-point communication and can be used for navigation applications with Radio Direction Finder Set AN/CRD-6.

The R-278/GR can be remotely controlled over distances up to five miles by means of Radio Set Control C-565/GR and Control Indicator C-806/GR.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in Mc:* 225 to 399.9

*Type of Modulation:* AM

*Type of Signal:* Voice or tone

*Power Output:* 3w

*Power Requirements:* 470 w, 115/230-v 60-cycle 1-phase ac

MIL-HDBK-161

**AN/URR-type RADIO RECEIVER**

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Radio Receiver R-278/GR (Equipment consists of only one major component.)	-----	19 x 12-1/2 x 20	115

**REFERENCE DATA AND LITERATURE:**

TO 16-35-OA-192-3

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
1	6	135

**PROCUREMENT DATA**

PROCURING SERVICE: USAF  
SPEC &/or DWG:

DESIGN COG:

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
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RADIO RECEIVER **AN/URR-type**

1 July 1958

Cognizant Serv: USA, USN FSN: 5820-537-3895

R-388( )/URR

	USA	USN	USAF
TYPE CLASS:	Std	Std	Std
STOCK NO:	2C4180-388	--	--



R-388/URR

**FUNCTIONAL DESCRIPTION:**

Radio Receiver R-388( )/URR is a general purpose, AM (voice, cw, and frequency-shift keying) radio receiving equipment operating in the MF and HF bands for fixed-station or mobile applications.

This equipment, consisting of a single self-contained rack-mounted radio receiver, having unusual stability and calibration accuracy; is especially useful for operating on known frequencies without searching or readjustment, and for reception of frequency-shift-keyed signals. It includes a 100-kc, crystal-calibrated oscillator, a coaxial antenna input connector, a coaxial connector for tapping the IF output, and has

provision for connecting an external circuit to control the built-in remote-disabling relay. It can be operated with straight wire or doublet-type antenna systems.

Radio Receiver R-388A/URR, procured by the USN, is identical to the R-388/URR, except that it uses mechanical filters and nonmagnetic side panels.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in Mc:* 0.5 to 30.5

*Type Modulation:* AM

*Type of Signal:* Cw, voice, fsk

*Power Requirements:* 85 w, 115/230-v 45-70-cycle ac

MIL-HDBK-161

**AN/URR-type RADIO RECEIVER**

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
		(FSN)		
1	Radio Receiver R-388/URR (Equipment consists of only one major component.)	5820-537-3895	10-1/2 x 19 x 13-11/16	35

**REFERENCE DATA AND LITERATURE:**

TM 11-854

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
1		

**PROCUREMENT DATA**

PROCURING SERVICE: USA, USN

DESIGN COG: USA, Sig C  
USN, BuShips

SPEC &/or DWG:

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Collins Radio Co. (R-388/URR)	Cedar Rapids, Iowa	3470-P-52	
Collins Radio Co. (R-388A/URR)	Cedar Rapids, Iowa	Nobsr-69046	\$755.00

RADIO RECEIVER **AN/URR-type**

1 July 1958

Cognizant Serv: USA FSN: 5820-503-1417

R-389( )/URR

USA

USN

USAF

TYPE CLASS:

Std

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Used by

STOCK NO:

2C4180-389

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**FUNCTIONAL DESCRIPTION:**

Radio Receiver R-389( )/URR is a general purpose, low- and medium-frequency, fixed station equipment used in communication, intercept, and direction-finding applications.

For radioteletype applications, this equipment has a 455-kc output that can be connected to a suitable frequency-shift converter to operate teletypewriter equipment.

It is intended for standard rack-and-panel installation in

fixed-plant applications, but may also be used in mobile applications where suitable power is available.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in Mc:* 0.015 to 1.5

*Type Modulation:* AM

*Type of Signal:* Cw, mcw, voice, fsk

*Power Requirements:* 250 w, 115/230-v 48-62-cycle ac

MIL-HDBK-161

**AN/URR-type** RADIO RECEIVER

MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Radio Receiver R-389( )/ URR (Equipment consists of only one major component.)	-----	10-1/2 x 17-1/4 x 19	82

REFERENCE DATA AND LITERATURE:

TM 11-855

SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
1	12.4	115

PROCUREMENT DATA

PROCURING SERVICE: USA  
SPEC &/or DWG: MIL-R-10474

DESIGN COG: USA, Sig C

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
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RADIO RECEIVER **AN/URR-type**

1 July 1958

Cognizant Serv: USA FSN: 5820-503-1242

R-390/URR

USA

USN

USAF

TYPE CLASS:

Std

Std

STOCK NO:

2C4180-390



R-390/URR

**FUNCTIONAL DESCRIPTION:**

Radio Receiver R-390/URR is a general purpose am (cw, mcw, and voice) medium- and high-frequency equipment of exceptional stability characteristics, used in fixed and mobile applications.

This equipment can be operated in space-diversity and single sideband arrangements for radioteletype communication, in conjunction with such equipment as Radioteletype Terminal Equipment AN/FGC-1, Frequency Shift Converter

CV-116/URR, or Single Sideband Converter CV-157/URR.

This receiver is composed of seven subchassis assemblies that can be removed for troubleshooting and repair.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in Mc:* 0.5 to 32

*Type Modulation:* AM

*Type of Signal:* Cw, mcw, voice, fsk, composite transmissions

*Power Requirements:* 225/270 w, 115/230-v 48-62-cycle ac

MIL-HDBK-161

**AN/URR-type** RADIO RECEIVER

MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
		(FSN)		
1	Radio Receiver R-390/URR (Equipment consists of only one major component.)	5820-503-1242	10-1/2 x 17-1/4 x 19	84.7

REFERENCE DATA AND LITERATURE:

TM 11-264B  
TM 11-856

SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
1	3.89	99.76

PROCUREMENT DATA

PROCURING SERVICE: USA  
SPEC &/or DWG: MIL-R-10474, MIL-R-13947

DESIGN COG: USA, Sig C

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Motorola, Inc.	Chicago, Ill.	0014-P-56-93	\$431.88

RADIO RECEIVER **AN/URR-type**

5 December 1958

Cognizant Serv: USA FSN: 5820-510-1605

R-390A/URR

USA

USN

USAF

TYPE CLASS:

Std

Used by

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STOCK NO:

2C4180-390A

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**FUNCTIONAL DESCRIPTION:**

Radio Receiver R-390A/URR is a high performance, exceptionally stable, general purpose superheterodyne receiver for use in fixed and mobile applications. It provides reception of continuous wave, modulated continuous wave, voice and frequency-shift keyed signals within a frequency range of 0.5 to 32 megacycles.

The receiver can be operated in a space-diversity receiving system, either of two types of space-diversity radioteletype receiving systems, and in a single-side band radioteletype receiving system.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in Mc:* 0.5 to 32

*Type of Signal:* A1, A2, A3, A9, F1

*Audio Power Output:*

600-ohm Unbalanced Line: 500 mw (minimum)

600-ohm Balanced Line: 10 mw (minimum)

Headphones: 1 mw

*IF Selectivity:* 100 cps to 16 kc

*Antenna:*

Unbalanced: Straight wire or random length or vehicular mounted whip

Balanced: 125-ohm terminating impedance

*Power Requirements:* 225 w, 115/230 v ( $\pm 10\%$ ) 48- to 62-cycle ac

MIL-HDBK-161

**AN/URR-type RADIO RECEIVER**

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Amplifier, radio frequency	(FSN) 5820-697-9667 (USA) 2C332-31	11-3/4 x 4-11/16 x 5	
1	Audio Assembly	(FSN) 5820-694-1061 (USA) 2C640C-1	11-1/8 x 5-1/4 x 3-5/16	
1	Meter, audio level	(FSN) 6625-510-1815 (USA) 3F3307.6-5	1-1/2 dia (body) x 1 dia	

**REFERENCE DATA AND LITERATURE:**

TM 11-856A

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
3	16.29	99.76

**PROCUREMENT DATA**

PROCURING SERVICE: USA  
SPEC &/or DWG: MIL-4-1D474

DESIGN COG: USA, Sig C

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Collins Radio Co.	Cedar Rapids, Iowa	14214-Phila-51-93	\$2,210.00

RADIO RECEIVER **AN/URR-type**

1 July 1958

Cognizant Serv: USA FSN: 5815-503-1256

R-391/URR

USA

USN

USAF

TYPE CLASS:

Std

Used by

STOCK NO:

2C4180-391



R-391/URR

**FUNCTIONAL DESCRIPTION:**

Radio Receiver R-391/URR is a general purpose MF and HF equipment for both fixed and mobile service and provides reception of AM (cw, mcw, voice) and fsk signals.

This equipment consists of the receiver, which contains its own power supply, and necessary cable assemblies. The antenna, headset, speaker, transmission line, adapter connectors, and a separate power supply for use with an autotune system are required but not supplied.

Two or three receivers may be connected as a space-diversity receiving system for reception of voice signals.

This receiver is one of a series that also includes the R-389/URR and R-390/URR. Each one, differing in the

method of tuning and frequency range, has a number of features in common, such as unitized construction and interchangeable subchassis.

This receiver, in mobile applications, requires an external Power Supply PP-629/URR.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in Mc:* 0.5 to 32 in 32 steps

*Type Modulation:* AM

*Type of Signal:* Cw, mcw, voice, fsk

*Power Requirements:* 270 w, 115/230-v ( $\pm 10\%$ ) 48-62-cycle ac; or 3 amp at 24-v dc with Power Supply PP-629/URR for autotune systems only

MIL-HDBK-161

**AN/URR-type** RADIO RECEIVER

MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Radio Receiver R-391/URR (Equipment consists of only one major component.)	-----	10-1/2 x 17-1/4 x 19	87.2

REFERENCE DATA AND LITERATURE:

TM 11-863

SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
1	12.4	

PROCUREMENT DATA

PROCURING SERVICE: USA  
SPEC &/or DWG: MIL-R-10474

DESIGN COG: USA, Sig C

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Collins Radio Co.	Cedar Rapids, Iowa	11424-P-51-53	\$2,808.00

## RADIO RECEIVER AN/URR-type

1 July 1958

Cognizant Serv: USA FSN: 5820-503-1250

R-392/URR

USA

USN

USAF

TYPE CLASS:

Std

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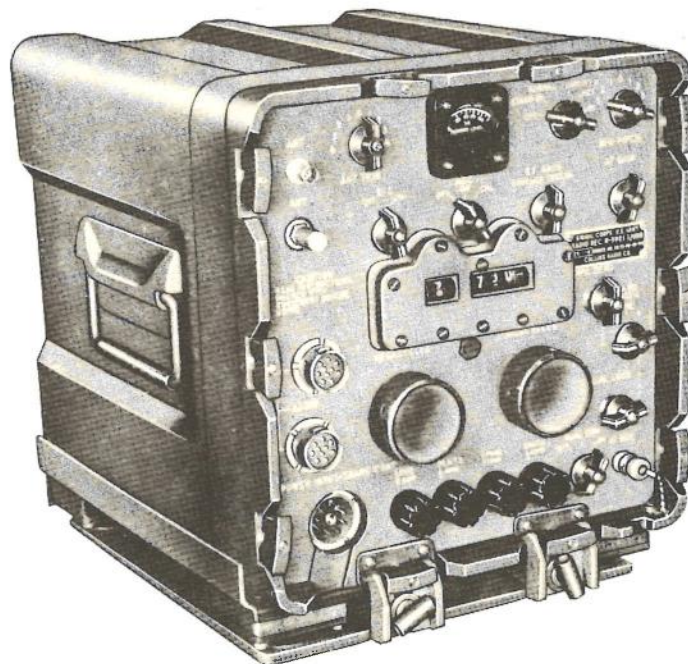
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STOCK NO:

2C4180-392

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R-392/URR

**FUNCTIONAL DESCRIPTION:**

Radio Receiver R-392/URR is a vehicular equipment used for receiving radiotelegraph, voice, and single-channel, frequency-shift radioteletype signals.

This equipment consists of the receiver and tube case. Additional equipment required, but not supplied, includes an antenna, a headset, a speaker, the mounting, power source, and accessories.

It can be used as a conventional communication receiver; as part of a vehicular two-way communication system; or as part of a single-channel, frequency-shift radioteletype system.

This receiver is immersionproof and is sufficiently rugged to withstand parachute delivery when mounted in a truck or in standard U.S. Army parachute delivery container.

It has provision for connection of its 455-ke IF signal output to a frequency-shift radioteletype converter.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in Mc:* 0.5 to 32 in 32 bands

*Type Modulation:* AM

*Type of Signal:* Cw, mfw, voice, fsk

*Power Requirements:* 3 amp, 22-28-v dc

MIL-HDBK-161

**AN/URR-type RADIO RECEIVER**

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Electron Tube Case CY-1298/ URR	(USA) 6F1298-1298	4 x 3-1/16 x 10-1/8	2
1	Radio Receiver R-392/URR	(FSN) 5820-503-1250	11-1/2 x 14-1/8 x 11	52

**REFERENCE DATA AND LITERATURE:**

TM 11-858

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
1	1.6	80

**PROCUREMENT DATA**

PROCURING SERVICE: USA  
SPEC &/or DWG: MIL-R-10474

DESIGN COG: USA, Sig C

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Collins Radio Co.	Cedar Rapids, Iowa	3075-P-51-93	



RADIO RECEIVER **AN/URR-type**

1 July 1958

Cognizant Serv: USA FSN: 5820-503-1403

R-520( )/URR

USA

USN

USAF

TYPE CLASS: S/Std  
 STOCK NO: 2C4180-520



R-520/URR

**FUNCTIONAL DESCRIPTION:**

Radio Receiver R-520( )/URR is a portable superheterodyne receiving equipment used for troop information. It is capable of receiving AM signals over the broadcast and short-wave bands (total of seven), and of operating with an internal loudspeaker or an externally connected, low-impedance headset.

Accessory equipment, such as a headset and a long-wire antenna, is not supplied with this equipment.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in Mc:* 0.54 to 1.6; 2 to 4; 4 to 8; 9.4 to 9.8; 11.6 to 12; 14.9 to 15.5; 17.5 to 18.1

*Type Modulation:* AM

*Type of Signal:* Voice

*Power Requirements:* 10/20 w, 115/230-v ac; 7.5/15 w, 115/230-v dc; or 67 ma at 9-v dc (A battery) and 17 ma at 90-v dc (B battery)

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Radio Receiver R-520( )/ URR (Equipment consists of only one major component.)	(FSN) 5820-503-1403 (USA) 2C4180-520	11-1/16 x 7-3/32 x 17-5/16	20

**REFERENCE DATA AND LITERATURE:**

TM 11-877

MIL-HDBK-161

**AN/URR-type** RADIO RECEIVER

SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
1	1.9	29.5

PROCUREMENT DATA

PROCURING SERVICE: USA  
SPEC &/or DWG: PT/DWG SG 6640

DESIGN COG: USA, Sig C

CONTRACTOR	LOCATION	CONTRACTOR ORDER NO.	APPROX UNIT COST
Zenith Radio Corp. (R-520A/URR)	Chicago, Ill.	31241-P-55	\$73.00

VHF RECEIVER AN/URR-type

5 December 1958

Cognizant Serv: USAF FSN:

R-5200

	USA	USN	USAF
TYPE CLASS:	--	--	A/Std
STOCK NO:	--	--	--



SERVO R-5200

#### FUNCTIONAL DESCRIPTION:

VHF Receiver, Servo Model R-5200 is an amplitude-modulated and frequency-modulated radio receiving equipment for general communication, laboratory measurements, and direction-finding applications.

This equipment includes all features normally required for communication and laboratory work as integral parts of the receiver. In addition, special outputs are provided for the operation of external apparatus and accessory units to permit

use of this receiver as a component of complete communication telemetering and direction-finding systems.

The R-5200 is used with Direction Finder Set AN/TRD-10.

#### TECHNICAL CHARACTERISTICS:

*Frequency Range in Mc:* 50 to 200

*Type Modulation:* AM (A0, A1, A2, A3); FM (F1, F2, F3)

*Type of Signal:* Cw, mcw, tone, voice, fsk

*Power Output:* 1 w

*Power Requirements:* 125 w, 115/230-v 50/60-cycle ac

MIL-HDBK-161

**AN/URR-type** VHF RECEIVER

MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	VHF Receiver R-5200 (Equipment consists of only one major component.)	-----	19 x 14 x 8-3/4	60

REFERENCE DATA AND LITERATURE:

SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
1	1.3	

PROCUREMENT DATA

PROCURING SERVICE: USAF  
SPEC &/or DWG:

DESIGN COG: USAF, RADC

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Servo Corporation of America	Long Island, N. Y.		

RADIO RECEIVING EQUIPMENT **AN/URR-type**

5 December 1958

Cognizant Serv: USN FSN: RAK: 5820-665-1689  
 RAK-1: 5820-665-3667  
 RAK-2: 5820-644-4759  
 RAK-3: 5820-665-3828  
 RAK-4: 5820-642-8841  
 RAK-5: 5820-665-2250  
 RAK-6: 5820-665-3740  
 RAK-7: 5820-642-8845  
 RAK-8: 5820-665-3824

RAK, RAK-1 thru -8

USA

USN

USAF

TYPE CLASS:

STOCK NO:

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RAK: F16-Q-241810-200

RAK-1: F16-Q-241830-200

RAK-2: F16-Q-241850-200

RAK-3: F16-Q-241870-200

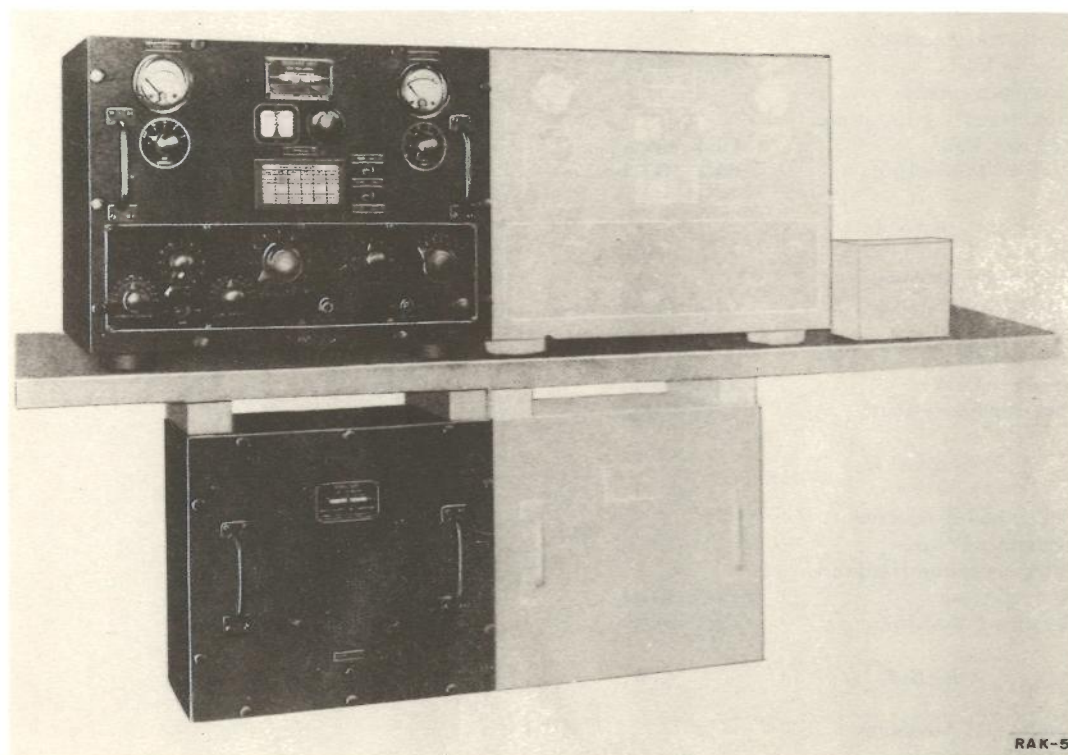
RAK-4: F16-Q-241890-200

RAK-5: F16-Q-241910-200

RAK-6: F16-Q-241931-200

RAK-7: F16-Q-241950-200

RAK-8: F16-Q-241970-200



RAK-5

**AN/URR-type RADIO RECEIVING EQUIPMENT****FUNCTIONAL DESCRIPTION:**

Radio Receiving Equipments RAK and RAK-1 through 8 are communication receivers used for ship, submarine, and shore use. These equipments may operate independently but are generally used with one of the Radio Receiving Equipment RAL series to allow two-channel guarding by one operator. In an emergency, any RAL- and RAK-series equipment combination may use a common antenna.

A control unit may be used with any RAL, RAK-series combination for combining the output of the two receivers and thus make available signals from either or both receivers through two headphone jacks. Use of this control unit is optional and it is not part of any RAK- or RAL-series equipment; however, it is shipped with the RAK-1 through 4 equipments as an accessory, as is the hardware for securing any of these RAK series equipments to any other corresponding series equipment. The control unit and hardware are shipped with the RAL-5, when the RAK-5,—RAL-5 combination is desired.

The RAK and RAK-1 through 8 are essentially similar; however, the RAK operates on batteries and thus requires no ac power unit. The RAK-6, 7, and 8 have been progressively improved to insure elimination of radar interference.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range:* 15 to 600 kc

*Power Output:* 170 mw

*Sensitivity:* 2 to 5  $\mu$ v approx

*Output Impedance:* 600 ohms

*Circuit Type:* TRF

*Type of Reception:* A1, A2, A3

*Power Source Required:*

RAK: 6-v storage battery, 180 v B battery

RAK-1 through -8: 200 w; 115-v  $\pm 10\%$ , 60-cycle 1-phase ac

*Mounting Data:* Receiver, power and control units; Shelf

Antenna: 6 feet from any parallel stay, mast, or stack, and erected as high as possible

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
<i>RAK, RAK-1, 2, 3:</i>				
1 set	Cables and Accessories			
1	Control Unit	CRV-23073	4-3/4 x 5-3/8 x 3-5/8	2
1 set	Equipment Spares			
1 set	Interconnecting Hardware			
1	Receiver Vnit	CRV-46044	13-5/16 x 18 x 16-3/32	69
1	Rectifier Power Unit	CRV-20036	12-1/4 x 14 x 8	41
<i>RAK-4:</i>				
1 set	Cables and Accessories			
1	Control Unit	CRV-23073	4-3/4 x 5-3/8 x 3-5/8	2
1 set	Equipment Spares			
1 set	Interconnecting Hardware			
1	Receiver Unit	CRV-46044	13-5/16 x 18 x 16-3/32	69
1	Rectifier Power Unit	CRV-20036A	12-1/4 x 14 x 8	41
<i>RAK-5:</i>				
1 set	Cables and Accessories			
1 set	Equipment Spares			
1 set	Interconnecting Hardware			
1	Receiver Unit	CRV-46044	13-5/16 x 18 x 16-3/32	69
1	Rectifier Power Unit	CRV-20036A	12-1/4 x 14 x 8	41
<i>RAK-6, 7:</i>				
1 set	Cables and Accessories			
1 set	Equipment Spares			
1 set	Interconnecting Hardware			

RADIO RECEIVING EQUIPMENT **AN/URR-type**

## MAJOR COMPONENTS—Continued

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Radio Receiver	CRV or CND-46155	13-5/16 x 18 x 16-3/4	74
1	Rectifier Power Unit	CRV or CND-20131	12-1/4 x 14 x 8	41
<i>RAK-8:</i>				
1 set	Cables and Accessories			
1 set	Equipment Spares			
1 set	Interconnecting Hardware			
1	Radio Receiver	CMV-46155-A	13-5/16 x 18 x 16-3/4	41
1	Rectifier Power Unit	CMX-20131-A	12-1/4 x 14 x 8-5/8	41

## REFERENCE DATA AND LITERATURE:

NAVSHIPS 95231, 900,480, 95232, Instructions, Models RAK and RAK-1 Radio Receiving Equipment, Instructions, Models RAK-2 Radio Receiving Equipment, Instructions, Models RAK-3 Radio Receiving Equipment, Instructions, Models RAK-4 Radio Receiving Equipment, Instructions, Models RAK-5 Radio Receiving Equipment

## SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
4	17.0	371

## PROCUREMENT DATA

PROCURING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG: BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Andrea Radio Corp.	Camden, N. J.	NXss-19101 NXsr-38089	
Magnavox Co. RCA Manufacturing Co., Inc.	Fort Wayne, Ind. Camden, N. J.	NXss-21827 NOs-41370 NOs-51782 NOs-55482 NOs-61536 NOs-70577 NOs-95022	\$1,800.00





RADIO RECEIVING EQUIPMENT **AN/URR-type**

5 December 1958

Cognizant Serv: USN FSN: RAL: 5820-665-2058 RAL, RAL-1 thru -8  
 RAL-1: 5820-665-3666  
 RAL-3: 5820-644-4760  
 RAL-4: 5820-642-8844  
 RAL-5: 5820-665-2131  
 RAL-6: 5820-642-8556  
 RAL-7: 5820-642-8843  
 RAL-8: 5820-665-3825

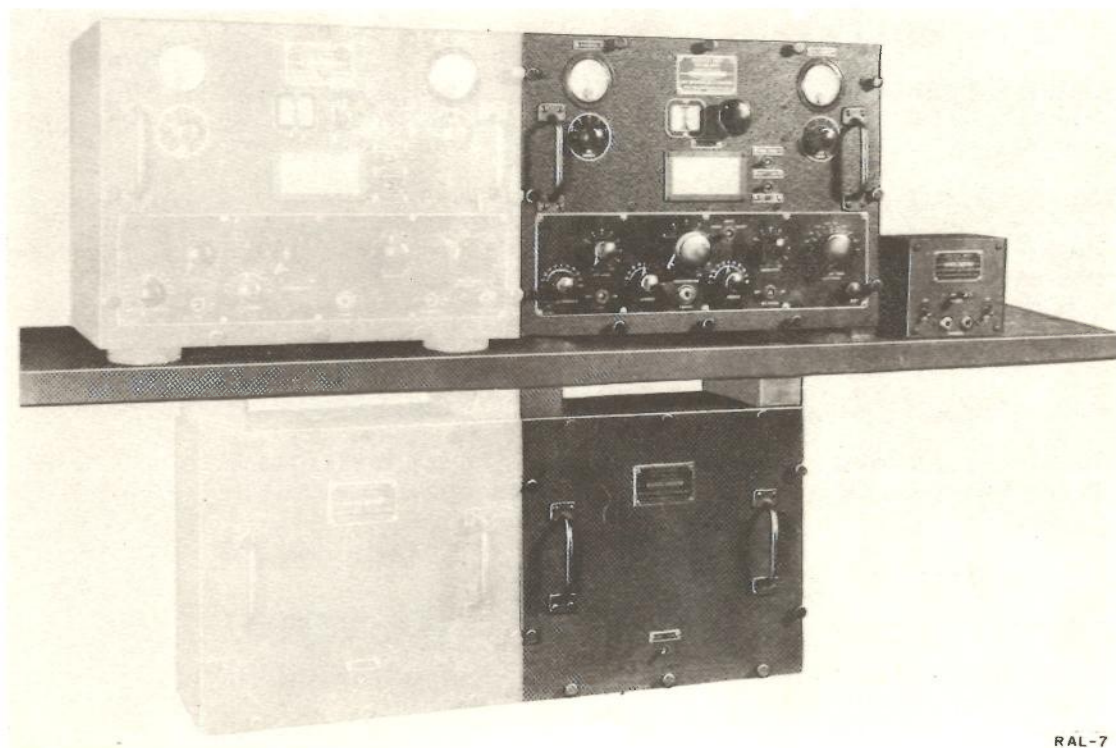
USA

USN

USAF

TYPE CLASS: --  
 STOCK NO: --

RAL: F-16-Q-242680-200 --  
 RAL-1: F-16-Q-242701-200  
 RAL-2: F-16-Q-242702-200  
 RAL-3: F-16-Q-242703-200  
 RAL-4: F-16-Q-242720-200  
 RAL-5: F-16-Q-242740-200  
 RAL-6: F-16-Q-242760-200  
 RAL-7: F-16-Q-242780-200  
 RAL-8: F-16-Q-242800-200



RAL-7

## AN/URR-type RADIO RECEIVING EQUIPMENT

## FUNCTIONAL DESCRIPTION:

Radio Receiving Equipments RAL and RAL-1 through 8 are broad range communication receivers for ship, submarine, and shore use. These equipments may operate independently, but are generally used with one of the Radio Receiving Equipments of the RAK-series to allow two-channel guarding by one operator. In an emergency, any RAL- and RAK-series equipment combination may use a common antenna.

A control unit may be used with any RAL-, RAK-series combination for combining the output of the two receivers and thus make available signals from either or both receivers through two headphone jacks. Use of this control unit is optional and it is not part of any RAL- or RAK-series equipment; however, it is shipped with the RAK-1 through 4 equipments as an accessory, as in the hardware for securing any of these RAK-series equipments to any corresponding RAL-series equipment. The control unit and hardware are shipped with the RAL-5, when the RAK-5—RAL-5 combination is desired.

The RAL and RAL-1 through 8 are essentially similar;

however, the RAL operates on batteries and thus requires no ac power unit. The RAL-6 through 8 have been progressively improved to eliminate radar interference.

## TECHNICAL CHARACTERISTICS:

*Frequency Range in Mc:* 0.3 to 23

*Type:* TRF

*Type of Reception:* A1, A2, A3

*Power Output:* 170 mw

*Sensitivity:* 2 to 5  $\mu$ v

*Output Impedance:* 600 ohms

*Power Source Required:*

RAL: 6-v storage battery, 180-v B battery

RAL-1 through 8: 200 w; 115-v  $\pm$ 10%, 60-cycle, 1-phase ac

*Power Supply Equipment:* Rectifier power unit for RAL-1 through 5 only.

*Mounting Data:* Receiver and Power Unit—Shelf Antenna—6 ft from any parallel stay, mast, or stack, and erected as high as possible

## MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
<i>For RAL, RAL-1, 2, 3:</i>				
1	Receiver Unit CRV-46045	-----	13-5/16 x 18 x 16-3/32	69
1	Rectifier Power Unit CRV-20036	-----	12-1/4 x 14 x 8	41
<i>For RAL-4:</i>				
1	Receiver Unit CRV-46045	-----	13-5/16 x 18 x 16-3/32	69
1	Rectifier Power Unit CRV-20036A	-----	12-1/4 x 14 x 8	41
<i>For RAL-5:</i>				
1	Control Unit CRV or CND-23073	-----	4-3/4 x 5-3/8 x 3-5/8	2
1	Receiver Unit CRV-46045	-----	13-5/16 x 18 x 16-3/32	69
1	Rectifier Power Unit CRV-20036A	-----	12-1/4 x 14 x 8	41
<i>For RAL-6 and 7:</i>				
1	Control Unit CRV or CND-23073	-----	4-3/4 x 5-3/8 x 3-5/8	2
1	Radio Receiver CRV or CND-46156	-----	13-5/16 x 18 x 16-3/4	69

RADIO RECEIVING EQUIPMENT **AN/URR-type**

## MAJOR COMPONENTS—Continued

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
<i>For RAL-8:</i>				
1 set	Cables and Accessories			
1	Control Unit CMX-23073-A	-----	4-3/4 x 5-3/8 x 3-5/8	2
1 set	Equipment Spares			
1	Radio Receiver CMX-46156-A	-----	13-5/16 x 18 x 16-3/4	69
1	Rectifier Power Unit CMX- 20131-A	-----	12-1/4 x 14 x 8-5/8	64

## REFERENCE DATA AND LITERATURE:

NAVSHIPS 480, 900, 95233, 95234 Instructions, Models RAL and RAL-1 Radio Receiving Equipment; Instructions, Model RAL-2 Radio Receiving Equipment; Instructions, Model RAL-3 Radio Receiving Equipment; Instructions, Model RAL-4 Radio Receiving Equipment; Instructions, Model RAL-5 Radio Receiving Equipment

## SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
5	17.	368

## PROCUREMENT DATA

PROCURING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG: BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Andrea Radio Corp. for RCA Victor Div.	Camden, N. J.	NX <sub>ss</sub> 10101 NX <sub>ss</sub> 38089	\$1,800.00
The Magnavox Co. RCA Manufacturing Co., Inc.	Fort Wayne, Ind. Camden, N. J.	NX <sub>ss</sub> 21877 NOs 41370 NOs 51782 NOs 55482 NOs 61436 NOs 70577 NOs 95022	



## RADIO RECEIVING EQUIPMENT AN/URR-type

5 December 1958

Cognizant Serv: USN FSN: RAO-2: 5820-644-3394  
 RAO-3: 5820-644-0976  
 RAO-4: 5820-644-4766  
 RAO-5: 5820-665-2248  
 RAO-6: 5820-665-1675  
 RAO-7: 6625-665-0506  
 RAO-9: 5820-669-7031

RAO-2 thru 7, 9

USA

USN

USAF

TYPE CLASS: --

STOCK NO: --

RAO-2: F16-Q-243570-200

RAO-3: F16-Q-243590-200

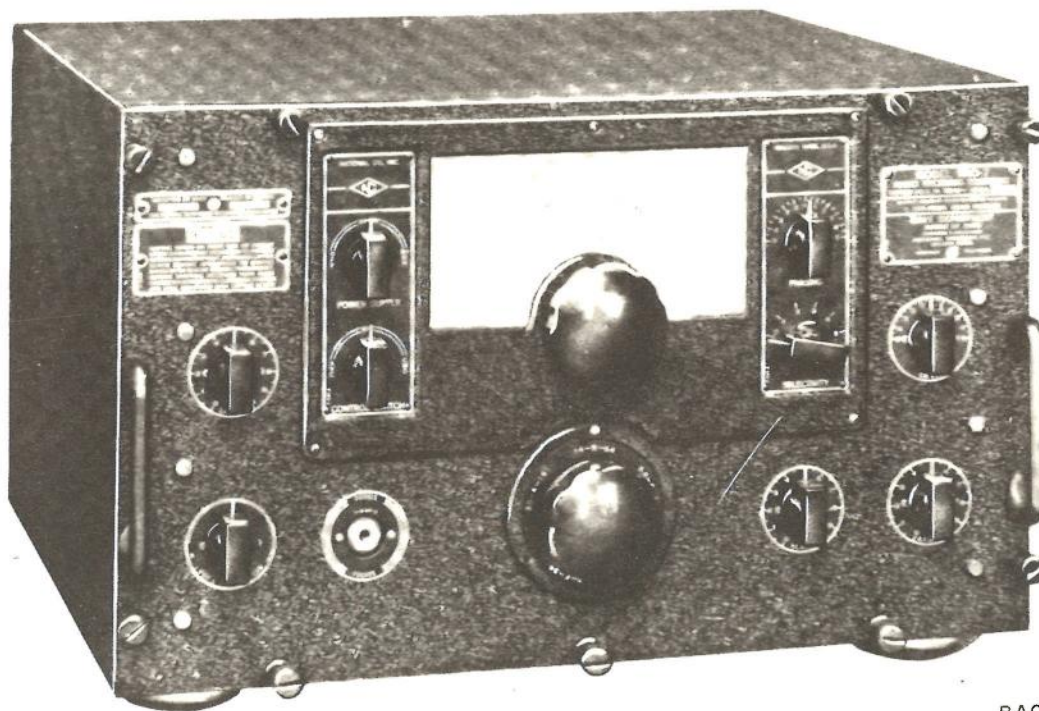
RAO-4: F16-Q-243610-200

RAO-5: F16-Q-243630-200

RAO-6: F16-Q-243650-200

RAO-7: F16-Q-243670-200

RAO-9: F16-Q-243710-200



RAO-2

**AN/URR-type RADIO RECEIVING EQUIPMENT****FUNCTIONAL DESCRIPTION:**

Radio Receiving Equipment RAO-2 through 7 are super-heterodyne receivers intended for general purpose radio-telegraph and radiotelephone reception aboard ship or at shore stations. Radiation of RF power from the internal heterodyne oscillator has been reduced to less than 400 microwatts at the antenna terminals.

The Radio Receiving Equipment RAO-9 is very similar to the above equipments; however, circuit modifications better adapt this model for countermeasures use. It is used with a panoramic adaptor to detect radio signals within its frequency range and is relatively unaffected by nearby electrical noise.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range:* 0.54 to 30.0 mc

*Type of Reception:* A1, A2, A3

*Sensitivity:* 15  $\mu$ v for A3, 10  $\mu$ v for A1

*Signal/Noise Ratio:* A1: 20 db; A2: 10 db

*Power Output:*

RAO-2, 3, 4, 6, 7, and 9—0.3 W into 600 ohm load

RAO-5—0.015 W for headset; 2.0 W for loudspeaker

*Output Impedance:* 600 ohms

*Power Source Required:* 6 w; 115-v, 50- to 60-cycle ac. (In emergencies the RAO-2 through 7 are powered from 6.3-v 22-w and 135-v 5.4 w batteries)

*Antenna:* Single-wire, 50- to 200-foot long at 70 ohms impedance

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
<i>For RAO-2:</i>				
1	Mounting Base	CNA-10125	2-9/16 x 17-11/16 x 17-1/32	5.75
1	Radio Receiver	CNA-46187	10-11/16 x 17-3/16 x 17-1/4	75
<i>For RAO-3:</i>				
1	Mounting Base	CWQ-10125-A	2-11/16 x 16-1/16 x 16-1/16	5.75
1	Radio Receiver	CWQ-46187-A	10-11/16 x 17-3/16 x 17-1/4	75
<i>For RAO-4:</i>				
1	Headphone	NT-49016	3/4 x 1-3/4 dia.	
1	Mounting Base	CWQ-10125-A	2-11/16 x 16-1/16 x 16 1/16	5.75
1	Radio Receiver	CWQ-46187-B	10-11/16 x 17-3/16 x 17-1/4	75
<i>For RAO-5:</i>				
1	Loudspeaker	CJS-49493	8-1/4 x 8-1/4 x 4-3/8	
1	Mounting Base	CWQ-10125-A	2-11/16 x 16-1/16 x 16-1/16	5.75
1	Radio Receiver	CWQ-46229	10-11/16 x 17-3/16 x 17-1/4	75
<i>For RAO-6:</i>				
1	Mounting Base	CNA-10125	2-9/16 x 17-11/16 x 17-1/32	5.75
1	Radio Receiver	CWQ-46229	10-11/16 x 17-3/16 x 17-1/4	75
<i>For RAO-7:</i>				
1	Radio Receiver	CNA-46233	12-7/16 x 19 x 17-3/4	97
<i>For RAO-9:</i>				
1	Radio Receiver	CNA-46263	12-7/16 x 19 x 17-3/4	97
1 set	Equipment spares			

RADIO RECEIVING EQUIPMENT **AN/URR-type****REFERENCE DATA AND LITERATURE:**

NAVSHIPS 900,351, 900,489 1B; 900,359 1B; 900,356

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
3	8.6	215

**PROCUREMENT DATA**

PROCURING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG:

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
National Co., Inc.	Malden, Mass.	NXs4681 NXsr38306 NXsr55614 NXsr85045	
Wells-Gardner and Co.	Chicago, Ill.	NXss-21446 NXsr-38492	





## RADIO RECEIVING EQUIPMENT AN/URR-type

5 December 1958

Cognizant Serv: USN FSN: RAS-2: 5820-644-4758  
 RAS-3: 5820-665-3672  
 RAS-4: 5820-501-0641  
 RAS-5: 5820-665-2134

RAS, RAS-1 thru -5

USA

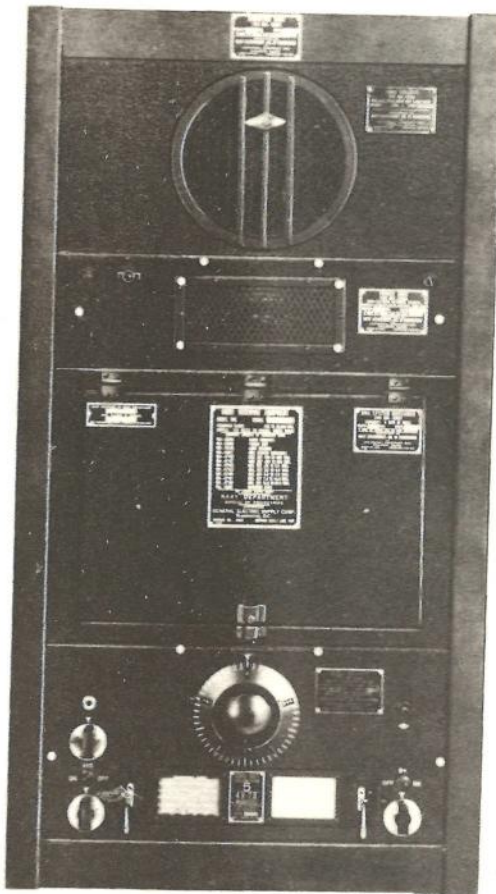
USN

USAF

TYPE CLASS: --  
 STOCK NO: --

Used by

RAS: F16-Q-244458-200  
 RAS-1: F16-Q-244461-200  
 RAS-2: F16-Q-244462-200  
 RAS-3: F16-Q-244463-200  
 RAS-4: F16-Q-244464-200  
 RAS-5: F16-Q-244465-200



RAS

## FUNCTIONAL DESCRIPTION:

Radio Receiving Equipments RAS and RAS-1 through -5 are rack-mounted superheterodyne receivers designed for shipboard or shore station reception. All models are supplied with Receiver Unit 46080 which has a narrow IF pass band. IF modification kits may be assembled to convert the 46080 to Receiver Unit 46080A, which has a wide IF pass band.

Noise Limiter 50142 is an adapter used to reduce the effects of pulse-type noise picked up by antenna system.

## TECHNICAL CHARACTERISTICS:

*Frequency Range:* 0.19 to 30.0 mc

*Type of Signal:* Cw, mcw, voice

*Power Output:* 10 mw into 600-ohm load; 2 w into 5,000-ohm load

*Output Impedance:* 600 ohms for headphones; 5,000 ohms for loudspeaker

*Sensitivity:*

Cw: 12  $\mu$ v for 6 mw output

Mcw: 7  $\mu$ v for 6 mw output

*Antenna:*

Input Impedance: 500 ohms when using coil sets types

CNA-47159 to 47162 inclusive; coil sets types CNA-

47156 to 47158 inclusive have higher values but in no

case does the impedance exceed 5,000 ohms

Length: 50 to 200 ft long

*Power Requirements:* 70 w, 110/120-v 25/50-60-cycle ac

**AN/URR-type RADIO RECEIVING EQUIPMENT**

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Coil Set 47156	-----	2-7/16 x 10-3/8 x 5-3/8	
1	Coil Set 47157	-----	2-7/16 x 10-3/8 x 5-3/8	
1	Coil Set 47158	-----	2-7/16 x 10-3/8 x 5-3/8	
1	Coil Set 47159	-----	2-7/16 x 10-3/8 x 5-3/8	
1	Coil Set 47160	-----	2-7/16 x 10-3/8 x 5-3/8	
1	Coil Set 47161	-----	2-7/16 x 10-3/8 x 5-3/8	
1	Coil Set 47162	-----	2-7/16 x 10-3/8 x 5-3/8	
1	Coil System Container 10037	-----	12-1/4 x 19 x 5-7/8	
1	Loudspeaker 49105 (rack mounting)	-----	8-3/4 x 19 x 4-1/16	9
1	Loudspeaker 49106 (table mounting)	-----	9-3/8 x 10-1/4 x 7-1/4	11
1	Mounting Rack 10036	-----	39-1/2 x 20-1/2 x 12-3/8	27
1	Receiver Unit 46080	-----	8-3/4 x 19 x 10-1/4	35
1	Rectifier Power Unit 20090 (when 25 cps source is used)	-----	5-1/4 x 19 x 9-3/4	22

**REFERENCE DATA AND LITERATURE:**

NAVSHIPS 95236, 95237, 95238, 95239, Instructions for Radio Receiving Equipment Model RAS, Instructions for Radio Receiving Equipment Model RAS-1.

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
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**PROCUREMENT DATA**

PROCURING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG: USN, BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
General Electric Supply Corp.	Washington, D. C.	NOs-66920 NOs-70176 NOs-79121 NOs-94477 NXs-455 NXs-20976	

SUPER FREQUENCY AIRCRAFT RADIO RECEIVING EQUIPMENT **AN/URR-type**

5 December 1958

Cognizant Serv: USN FSN:

RAY

USA

USN

USAF

TYPE CLASS: --

STOCK NO: --

(No Illustration Available)

**FUNCTIONAL DESCRIPTION:**

Radio Receiver RAY is a self-contained crystal-controlled superheterodyne receiver designed for use in high frequency communication. It may be operated on any frequency within 23 to 28 mc band by installing the proper crystal.

*Selectivity:* The IF selectivity is down at least ten times at 20 kc off resonance and is down approximately 1000 times at 60 kc off resonance

*Automatic Volume Control:* The audio voltage developed across a 500 ohm load does not vary more than 25% from 100  $\mu$ v to 1 v

*Power Output:* 2 w into 500 ohm load

*Fidelity:* 3 db variation maximum from 200 to 3000 cps into a 500 ohm load

*Power Requirements:* 11 to 14 v dc

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in Mc:* 23 to 28

*Sensitivity:* 3  $\mu$ v or better with 0.5 w output

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Radio Receiver Model RAY	-----	9-1/4 x 10 x 13-1/2	22

**REFERENCE DATA AND LITERATURE:**

Technical Manual for Radio Receiver Navy Model RAY (Doolittle & Falknor Model PR-3N)

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
1	.75	22

MIL-HDBK-161

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**AN/URR-type** SUPER FREQUENCY AIRCRAFT RADIO RECEIVING EQUIPMENT

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PROCUREMENT DATA

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PROCURING SERVICE: BUSHIPS  
SPEC &/or DWG:

DESIGN COG: BuShips

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CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Doolittle & Falknor, Inc.	Chicago, Ill.	69814 dated 20 November 1939	

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## RADIO RECEIVING EQUIPMENT AN/URR-type

5 December 1958

Cognizant Serv: USN FSN: RBA-1: 5820-665-3671  
 RBA-2: 5820-665-3739  
 RBA-3: 5820-642-6842  
 RBA-5: 5820-665-2363  
 RBA-5A: 5820-644-3393

RBA, RBA-1, -2, -3, -5, -5A

	USA	USN	USAF
TYPE CLASS:	--	Used by	--
STOCK NO:	--	--	--



## FUNCTIONAL DESCRIPTION:

Radio Receiving Equipments RBA, RBA-1, -2, -3, -5, and -5A are designed for use aboard vessels and in shore stations for the reception of cw, or modulated or interrupted continuous wave radiotelegraph signals.

Provisions are included for operation of a number of receivers from a common antenna and transmission line, for simultaneous emergency operation of two receivers from a common power unit, and for automatic regulation of receiver output signal voltage as a function of load resistance, so that from one to twenty 600 ohm headphones may be connected across the output circuit with less than 40% change in output voltage.

## TECHNICAL CHARACTERISTICS:

Frequency Range: 14.5 to 600 kc

*Type of Reception:* Cw, mcw, or voice is possible, but some distortion is present below 300 kc due to the high order of selectivity, and the characteristics of filters employed in the audio frequency amplifier.

*Output Impedance:* 600 and 30 ohms

*Input Impedance:* Adjustable over a wide range

*Sensitivity:* 10  $\mu$ v input for 6 mw output on cw operation

*Frequency Calibration Dial Accuracy:*  $\pm 1\%$

*Power Output:*

600 ohm load: 50 mw

30 ohm load: 50 mw

*Power Requirements:*

RBA, RBA-1, -2, -3, -5: 67 w (one receiver, 100 w (two receivers); 110/115/120-v 55-65-cycle 1-phase ac

RBA-5A: 115-v 400-cycle 1-phase ac

## AN/URR-type RADIO RECEIVING EQUIPMENT

## MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
<i>For RBA, RBA-1, -2, -3:</i>				
1	Cable, Power	49162		
1	Radio Receiver	46154		
1	Rectifier Unit	20130		
<i>For RBA-5:</i>				
1	Adapter	49509		
1	Cable, Power	49162		
1	Radio Receiver	46154A		
1	Rectifier Unit	20130-B		
<i>For RBA-5A:</i>				
1	Adapter	49509		
1	Cable, Power	49162(MOD)		
1	Radio Receiver	46154A(MOD)		
1	Rectifier Unit	20130-B(MOD)		

## REFERENCE DATA AND LITERATURE:

NAVSHIPS 900,473, 900,708, 91319

## SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
1	28.0	365

## PROCUREMENT DATA

PROCURING SERVICE: USN  
 SPEC &/or DWG:

DESIGN COG: BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Federal Telephone and Radio Corp.	Newark, N. J.	NOs-73055 NOs-91165 NX <sub>ss</sub> -11780 NX <sub>ss</sub> -16498 N5sr-17829	\$3,000.00
Radio Corporation of America	Camden, N. J.	NOsr-39341 NObsr-43335	

## RADIO RECEIVING EQUIPMENT AN/URR-type

5 December 1958

Cognizant Serv: USN FSN: 5820-642-8486

RBA-6

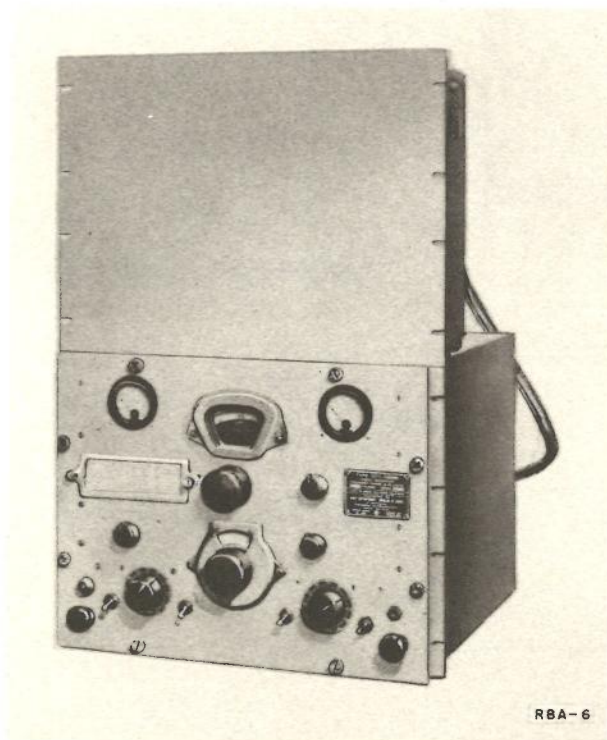
USA

USN

USAF

TYPE CLASS:  
STOCK NO:

Used by



## FUNCTIONAL DESCRIPTION:

Radio Receiving Equipment RBA-6 is designed for use aboard vessels and for shore stations for the reception of cw or modulated or interrupted continuous wave radio signals in the frequency range of 14.5 to 600 kilocycles.

Provisions are included for operation of a number of receivers from a common antenna and transmission line, for simultaneous emergency operation of two receivers from a common power unit, and for automatic regulation of receiver output signal voltage as a function of load resistance, so that from one to twenty 600-ohm headphones may be connected across the output circuit with less than 40 per cent change in output voltage.

This equipment is designed for rack mounting and is electrically and mechanically interchangeable with the other models in the RBA series.

## TECHNICAL CHARACTERISTICS:

*Frequency Range:* 14.5 to 600 kc

*Power Output:*

600 Ohm Load: 50 mw

30 Ohm Load: 500 mw

*Impedance Data:*

Output: 600 and 30 ohms

Input: Adjustable over a wide range

*Type Modulation:* Cw, mcw, voice

*Sensitivity:* 10  $\mu$ v for 6 mw output on A1 operation

*Power Requirements:* 67 w (one receiver), 100 w (two receiver);

110/115/120-v 55-65-cycle ac

## MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Meter, audio level decibel; range -10 to +5 db	(USA) 3F3307.9-1 (FSN) 6625-220-9981		
1	Meter, voltmeter DC: 0-300 v	(USA) 3F8300-22 (FSN) 6625-196-8977		
1	Power Supply 20130-C	(USA) 3H4496.10-2 (FSN) 5820-231-0649		
1	Receiver 46300	(USA) 2C4027-1 (FSN) 5820-221-0161		
1	Rectifier Unit 20130-B			

MIL-HDBK-161

**AN/URR-type** RADIO RECEIVING EQUIPMENT

REFERENCE DATA AND LITERATURE:

NAVSHIPS 900,708

SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
1	28	365

PROCUREMENT DATA

PROCURING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG: USN, BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Federal Telephone and Radio Corp. Radio Corporation of America	Newark, N. J.	NObsr-39341, 30 June 1947	\$3,000.00
	Camden, N. J.	NObsr-43335 15 June 1949	3,000.00



## RADIO RECEIVING EQUIPMENT AN/URR-type

5 December 1958

Cognizant Serv: USN FSN: 5820-665-2204

RBA-7

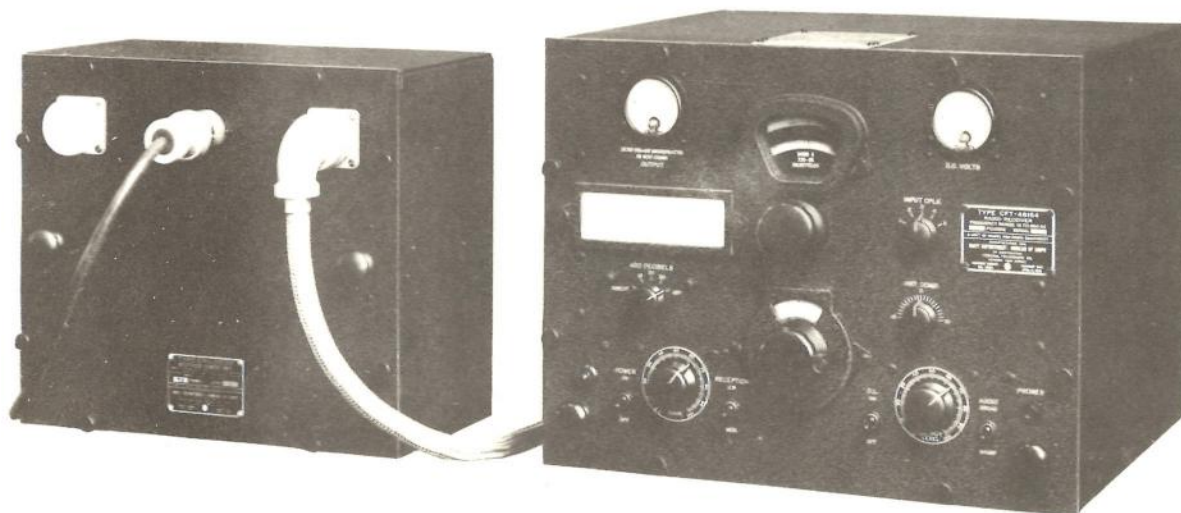
USA

USN

USAF

TYPE CLASS: --

STOCK NO: --



RBA-7

**FUNCTIONAL DESCRIPTION:**

Radio Receiving Equipment RBA-7 is an amplitude-modulated long-wave communications receiver designed for use aboard ship or land-based stations. The equipment is capable of receiving cw and mcw. Voice reception is possible but some distortion is present below .3 mc because of audio frequency filtering action and selectivity.

Automatic regulation of receiver output signal voltage (as a function of load resistance) permits from one to twenty 600-ohm headphones to be connected across the output circuit with less than 40 per cent change in output voltage.

**TECHNICAL CHARACTERISTICS:***Frequency Range in Mc:*

Band 1: .015 to .038

Band 2: .038 to .095

Band 3: .095 to .235

Band 4: .235 to .600

*Input Impedance:* Adjustable over a wide range*Receiver Output:* 500 mw into 30-ohm load; 50 mw into 600-ohm load*Reception, type:* A1, A2, and A3*Sensitivity:* 10  $\mu$ v input for 6 mw (cw)*Power Requirements:* 115 v, 55- to 65-cycle 1-phase ac

MIL-HDBK-161

**AN/URR-type RADIO RECEIVING EQUIPMENT**

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Set Equipment Maintenance Parts	-----	9-3/16 x 13-1/4 x 25-3/4	70
1	Radio Receiver CFT-46154-B	-----	14-23/32 x 18-1/2 x 20-9/16	98
1	Rectifier Power Unit CBOG- 20130-D	-----	9-3/4 x 13-1/2 x 15	52

**REFERENCE DATA AND LITERATURE:**

Technical Manual for Radio Receiver Equipment Model RBA-7.

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
1	13.4	270
1	3.1	92

**PROCUREMENT DATA**

PROCURING SERVICE: BuShips  
SPEC &/or DWG:

DESIGN COG: BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Federal Telephone & Radio Corp.	Clifton, N. J.	NObsr-52110 26 May 1952	\$2,900.00

RADIO RECEIVING EQUIPMENT **AN/URR-type**

5 December 1958

Cognizant Serv: USN

FSN:

RBB: 5820-260-5319

RBB, RBB-1, -2, -2A, -3 thru -6

RBB-1: 5820-644-3396

RBB-2: 5820-665-3720

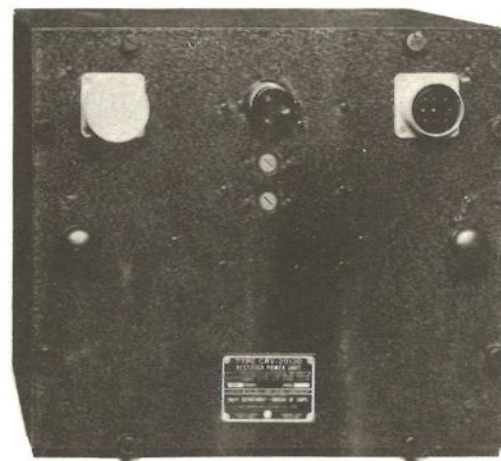
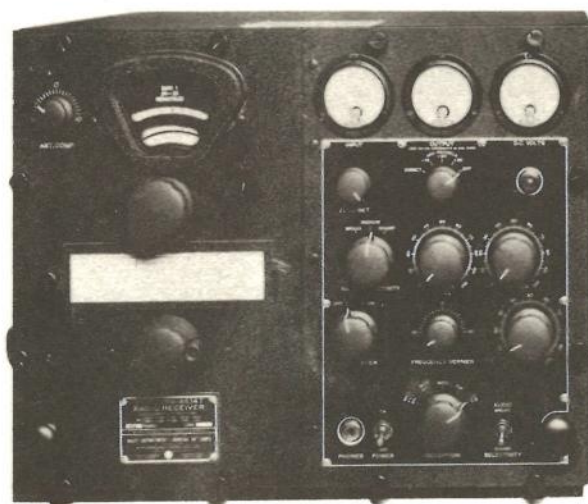
RBB-3: 5820-501-3999

RBB-4: 5820-501-3994

RBB-5: 5820-665-2361

RBB-6: 5820-665-3713

	USA	USN	USAF
TYPE CLASS:	--	Used by	--
STOCK NO:	--	--	--



RBB

**FUNCTIONAL DESCRIPTION:**

The Radio Receiving Equipments RBB, RBB-1, -2, -2A, -3 through -6 are primarily designed for operation aboard ship and at shore stations. The equipments are designed for voice, mcw, and cw reception. More than one receiver can be operated on a single antenna system with little frequency separation, even when the antenna is adjacent to a transmitter antenna. These sets also have provisions for connecting a panoramic adapter or a frequency-shift converter unit.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in Mc:* 0.5 to 4

*Type of Signal:* Cw, mcw, voice

*Type of Receiver:* Superheterodyne

*Power Output:* 15 mw

*Intermediate Frequency:* 400 kc

*Output Impedance:* 600 ohms

*Input Impedance:*

Transmission line—70 ohms

Antenna—300 ohms at lowest frequency of band 1, up to 1500 ohms at high frequency end of band 4

*Power Requirements:*

RBB, RBB-1, -2, -3, -4, -5, -6: 100 w (one receiver), 160 w (two receiver); 110-120-v 55-65-cycle ac

RBB-2A: 115-v 400-cycle 1-phase ac

**AN/URR-type** RADIO RECEIVING EQUIPMENT

## MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
<i>For RBB, RBB-1, -2, -3, -4:</i>				
1	Radio Receiver	46147	14-3/4 x 18-1/8 x 20-1/8	82
1	Rectifier Power Unit	20130	9-7/8 x 13-7/16 x 15	52
<i>For RBB-2A:</i>				
1	Radio Receiver	47147(MOD)	14-3/4 x 18-1/8 x 20-1/8	82
1	Rectifier Power Unit	20130(MOD)	9-7/8 x 13-7/16 x 15	52
<i>For RBB-5:</i>				
1	Radio Receiver	46147-D	14-11/16 x 18-1/8 x 20-7/8	85
1	Rectifier Power Unit	20130-B	9-1/2 x 13-7/16 x 15	55
<i>For RBB-6:</i>				
1	Radio Receiver	46296-A	14-3/16 x 19 x 20-7/8	88
1	Rectifier Power Unit	20130-B	9-13/16 x 14 x 19	59

## REFERENCE DATA AND LITERATURE:

NAVSHIPS 900,477; 91101, 91469, 91319

## SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
2	22.8	312

## PROCUREMENT DATA

PROCURING SERVICE: USN  
 SPEC &/or DWG:

DESIGN COG: BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
RCA Victor Division, Radio Corporation of America	Camden, N. J.	NOs-73056 NOs-91265 NXss-17001 NXsr-39262 NObsr-43335 NObsr-39340 NObsr-52028	\$2,700.00

## RADIO RECEIVING EQUIPMENT AN/URR-type

5 December 1958

Cognizant Serv: USN FSN: RBC: 5820-642-7832 RBC, RBC-1, -2, -3, -3a, -4, -5, -6  
 RBC-1: 5810-665-2366  
 RBC-2: 5820-642-8395  
 RBC-3: 5820-665-2133  
 RBC-4: 5820-665-2367  
 RBC-5: 5820-665-2132  
 RBC-6: 5820-665-3827

USA

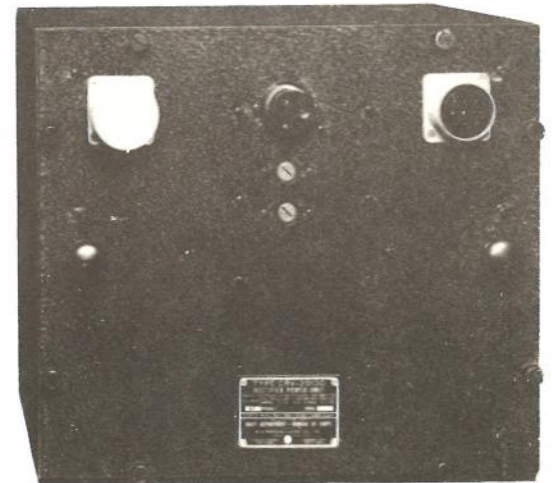
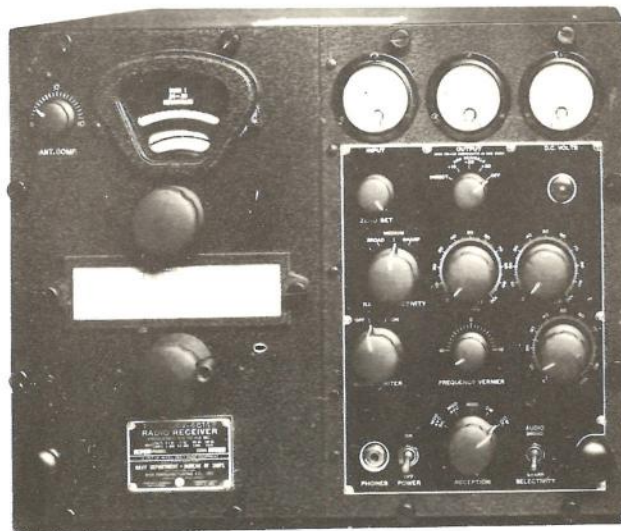
USN

USAF

TYPE CLASS: --  
 STOCK NO: --

Used by

--



RBC

**FUNCTIONAL DESCRIPTION:**

Radio Receiving Equipments RBC, RBC-1, -2, -3, -3a, -4, -5, and -6 are general purpose, radiotelegraph, or radiotelephone receivers designed for operation aboard all types of naval vessels and at shore stations. More than one receiver can be operated on a single antenna system with little frequency separation when the antenna is adjacent to a transmitter antenna. These equipments have provisions for connecting a panoramic adapter or a frequency shift converter unit.

The RBC series may be used with Radio Receiving Equipment RBB series to provide continuous coverage in the 0.5 to 27 megacycle range.

The RBC series are electrically and mechanically interchangeable with the exception of mountings and RBC-3a which is modified to operate on 400 cycles instead of 55 to 65 cycles. RBC-4 and RBC-6 are for rack mounting; RBC-5 and RBC-6 include Panoramic Adapter Kit 10335 for coupling

to Frequency Shift Converter CV-57/URR or Panoram <sup>o</sup> Adapter Units RBU and RBV.

An antenna and headset are used with Radio Receiving Equipments RBC, RBC-1, -2, -3, -3a, -4, -5, and -6. However, the antenna and headset are not supplied with the equipments.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in Mc: 4 to 27*

*Band Data:*

Band 1: 4 to 6.45 mc

Band 2: 6.45 to 10.30 mc

Band 3: 10.30 to 16.50 mc

Band 4: 16.50 to 27 mc

*Intermediate Frequency: 400 kc*

*Reception: A1, A2, A3*

*Type Receiver: Superheterodyne*

*Type Modulation: AM*

## AN/URR-type RADIO RECEIVING EQUIPMENT

Type of Signal: Cw, icw, mcw, voice

Impedance Data:

Output: 600 ohms

Input:

Transmission Line: 70 ohms

Antenna: 300 ohms

Power Output: 15 mw

Power Requirements:

For RBC, RBC-1, -2, -3, -4, -5, -6:

One Receiver: 100 W, 96% pf; 110- to 120-v, 55- to 65-cycle, 1-phase ac

Two Receivers: 160 W, 97% pf; 110- to 120-v, 55- to 65-cycle, 1-phase ac

For RBC-3a: 115-v, 400-cycle, 1-phase ac

## MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
	<i>For RBC, RBC-1, -2, -3, -3a, -4, -5, -6:</i>			
1 set	Accessories			
1 set	Equipment spares			
	<i>For RBC:</i>			
1	Radio Receiver NT-46148	-----	14-3/4 x 18-1/8 x 20-1/8	82
1	Rectifier Power Unit NT-20130	-----	9-7/8 x 13-7/16 x 15	52
	<i>For RBC-1:</i>			
1	Radio Receiver NT-46148 or NT-46148-B	-----	14-3/4 x 18-1/8 x 20-1/8	82
1	Rectifier Power Unit NT-20130	-----	9-7/8 x 13-7/16 x 15	52
	<i>For RBC-2:</i>			
1	Radio Receiver NT-46148-B	-----	14-3/4 x 18-1/8 x 20-1/8	82
1	Rectifier Power Unit NT-20130	-----	9-7/8 x 13-7/16 x 15	52
	<i>For RBC-3:</i>			
1	Radio Receiver NT-46148-C	-----	14-3/4 x 18-1/8 x 20-1/8	82
1	Rectifier Power Unit NT- 20130-B	-----	9-1/2 x 13-7/16 x 15	48
	<i>For RBC-3a:</i>			
1	Radio Receiver NT-46148-C (MOD)	-----	14-3/4 x 18-1/8 x 20-1/8	82
1	Rectifier Power Unit NT- 20130-B (MOD)	-----	9-1/2 x 13-7/16 x 15	48
	<i>For RBC-4:</i>			
1	Radio Receiver NT-42697	-----	14-11/16 x 18-1/8 x 20-7/8	82
1	Rectifier Power Unit NT- 20130-B	-----	9-1/2 x 13-7/16 x 15	48

## RADIO RECEIVING EQUIPMENT AN/URR-type

## MAJOR COMPONENTS—Continued

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
<i>For RBC-5:</i>				
1	Radio Receiver NT-46148-D	-----	14-11/16 x 18-1/8 x 20-7/8	82
1	Rectifier Power Unit NT-20130-B	-----	9-1/2 x 13-7/16 x 15	48
<i>For RBC-6:</i>				
1	Radio Receiver NT-46297-A	-----	14-3/16 x 19 x 20-7/8	82
1	Rectifier Power Unit NT-20130-B	-----	9-1/2 x 13-7/16 x 15	48

## REFERENCE DATA AND LITERATURE:

*RBC, RBC-1, -2:* NAVSHIPS 900,477  
*RBC-3, -4:* NAVSHIPS 91101  
*RBC3a:* NAVSHIPS 91319  
*RBC-5, -6:* NAVSHIPS 91469

## SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
<i>For RBC, RBC-1, -2:</i>		
2 Wood Box	22.8	305
2 Corrugated Carton:	18.3	261
<i>For RBC-3, -3a, -4:</i>		
2	18.3	261
<i>For RBC-5:</i>		
3	22.2	380
<i>For RBC-6:</i>		
3	25.1	382

## PROCUREMENT DATA

PROCURING SERVICE: USN  
 SPEC &/or DWG:

DESIGN COG: USN, BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
RCA Victor Div., Radio Corporation of America	Camden, N. J.	<i>For RBC:</i> NOs-73056, 12 April 1940	\$2,400.00 with spares

**AN/URR-type** RADIO RECEIVING EQUIPMENT

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
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*For RBC-1:*  
NOs-91265, 2 September  
1941

*For RBC-2:*  
NXss-17001, 17 June  
1943  
NXsr-39262, 3 No-  
vember 1943

*For RBC-3:*  
NObsr-39151, 28 April  
1947

*For RBC-3a:*  
NObsr-43335, 15 June  
1949

*For RBC-4:*  
NObsr-39340, 30 June  
1947

*For RBC-5, -6:*  
NObsr-52028, 25 Sep-  
tember 1950



## RADIO RECEIVING EQUIPMENT AN/URR-type

5 December 1958

Cognizant Serv: USN FSN:

RBJ, RBJ-1, -2, -3, -4

	USA	USN	USAF
TYPE CLASS:	--	Used by	--
STOCK NO:	--	--	--

(No Illustration Available)

## FUNCTIONAL DESCRIPTION:

Radio Receiving Equipments RBJ, RBJ-1, -2, -3, and -4 are each complete radio receiving equipments suitable in all respects for use at Naval radio shore stations or aboard Naval vessels. The equipments are suitable for the reception of radiotelephone or radiotelegraph signals (cw or mcw) by either headphone or loudspeaker methods. The equipments are of the self-supported rack mounted type—the racks can be table mounted.

A loudspeaker or headphone and an antenna are used with, but not supplied with, Radio Receiving Equipments RBJ, RBJ-1, -2, -3, and -4.

## TECHNICAL CHARACTERISTICS:

Frequency Range: 50 to 400 kc and 480 to 30,000 kc

Intermediate Frequency: 456 kc

Type of Receiver: Superheterodyne

Type of Reception: Cw or amplitude modulated mcw

Out Impedance:

Phones: 600 ohms

Loudspeaker: 5,000 ohms

Input Circuit: Single wire antenna or balanced feedline

Band Changing Method: Frequency range is covered by means of nine plug-in coil sets

Power Output:

Phones: 10 mw

Loudspeaker: 2 w

Power Requirements:

For RBJ, and RBJ-4: 220- to 240-v, 50- to 60-cycle, 1-phase ac

For RBJ-1, and 2: 110- to 120-v, 50- to 60-cycle, 1-phase ac; or, 180-v dc and 6-v dc

For RBJ-3: 220- to 240-v, 50- to 60-cycle, 1-phase ac; or 180-v dc, and 6-v dc; or 6.3-v dc, with Vibrator Power Supply NT-20146

## MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
<i>For RBJ, RBJ-1, -2, -3, and -4:</i>				
1	Blank panel (7 in.)			
1	Coil Set 47163	-----	2-7/16 x 5-3/8 x 10-3/8	
1	Coil Set 47164	-----	2-7/16 x 5-3/8 x 10-3/8	
1	Coil Set 47165	-----	2-7/16 x 5-3/8 x 10-3/8	
1	Coil Set 47166	-----	2-7/16 x 5-3/8 x 10-3/8	
1	Coil Set 47167	-----	2-7/16 x 5-3/8 x 10-3/8	
1	Coil Set 47168	-----	2-7/16 x 5-3/8 x 10-3/8	
1	Coil Set 47169	-----	2-7/16 x 5-3/8 x 10-3/8	
1	Coil Set 47181	-----	2-7/16 x 5-3/8 x 10-3/8	
1	Coil Set 47182	-----	2-7/16 x 5-3/8 x 10-3/8	
1	Coil System Container 10075	-----	11-5/8 x 14 x 19	
1	Mounting Rack 10036	-----	12-3/8 x 20-1/2 x 39-1/2	
1	Radio Receiver 46081	-----	8-3/4 x 10-1/4 x 19	
<i>For RBJ, and RBJ-4:</i>				
1	Power Unit 20125	-----	5-1/4 x 9-3/4 x 19	

## AN/URR-type RADIO RECEIVING EQUIPMENT

## MAJOR COMPONENTS—Continued

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
<i>For RBJ-1, and -2:</i>				
1	Power Unit 20090	-----	5-1/4 x 9-3/4 x 19	
<i>For RBJ-3:</i>				
1	Power Unit 20125	-----	5-1/4 x 9-3/4 x 19	
1	Vibrator Power Unit 20146 (for each two equipments)			

## REFERENCE DATA AND LITERATURE:

## SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)

## PROCUREMENT DATA

PROCURING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG: USN, BuShips

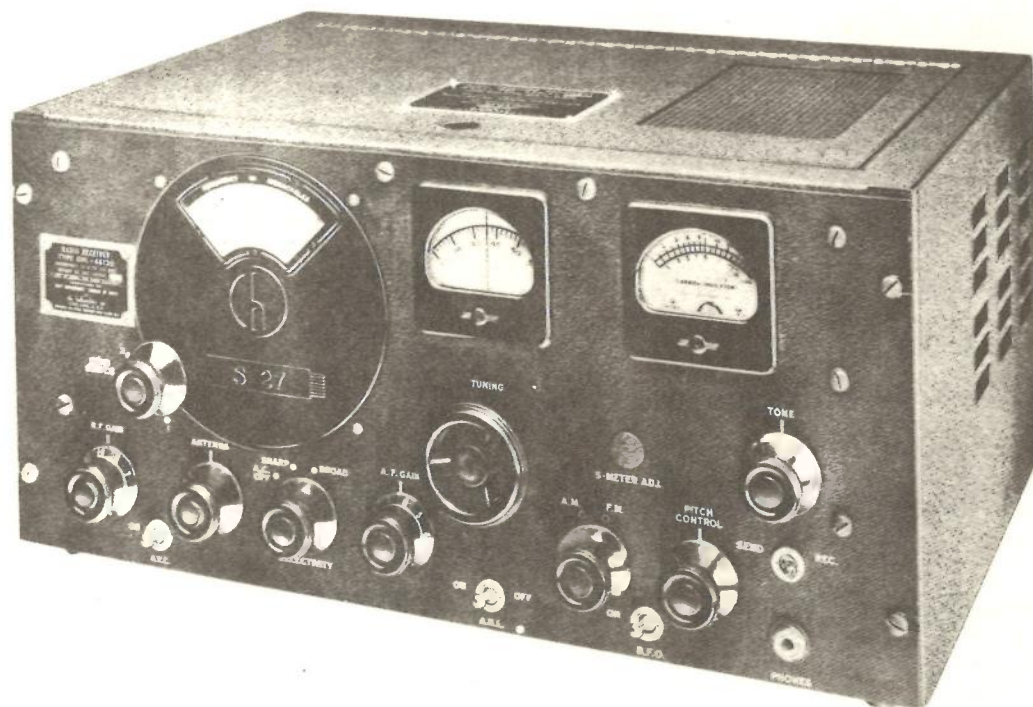
CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
<i>For RBJ-3:</i> General Electric Supply Corp.	Washington, D. C.	11-N140s-98876, 6 March 1942	
<i>For RBJ-4:</i> National Company, Inc.	Malden, Mass.	NXs-11-8604, 1 October 1942	

RADIO RECEIVING EQUIPMENT **AN/URR-type**

5 December 1958

Cognizant Serv:	USN	FSN:	RBK-1: 5820-665-2377	RBK, RBK-1, -5, -7, -8, -9, -12, -13, -14
			RBK-5: 5820-665-1683	
			RBK-7: 5820-665-2052	
			RBK-9: 5820-665-1688	
			RBK-12: 5820-665-3714	
			RBK-14: 5820-644-3423	

	USA	USN	USAF
TYPE CLASS:	--	Used by	--
STOCK NO:	--	RBK: F16-M-83-261	--
		RBK-1: F16-Q-250581-200	
		RBK-5: F16-Q-250585-200	
		RBK-7: F16-Q-250597-200	
		RBK-8: F16-Q-250589-200	
		RBK-9: F16-Q-250591-200	
		RBK-12: F16-Q-250700-200	
		RBK-13: F16-Q-250720-200	
		RBK-14: F16-Q-250740-200	



RBK

## AN/URR-type RADIO RECEIVING EQUIPMENT

## FUNCTIONAL DESCRIPTION:

Radio Receiving Equipments RBK, RBK-1, -5, -7, -8, -9, -12, -13, and -14 are superheterodyne very high frequency communication receivers designed for the reception of signals within the frequency range from 27.8 to 143 megacycles.

Panoramic Radio Adaptor RBW can be used with RBK to RBK-13, and Dual Panoramic Adaptor Equipment REM with RBK-14.

The RBK, RBK-1 and -9 are identical to Hallicrafters Model S-27D receivers. RBK-5, -7, and -8 are similar to Hallicrafters Model S-27D. Facilities are provided for connection to a panoramic adaptor, and a different power transformer allows operation from either 115- or 230-volts alternating current.

The RBK-12 and -13 are similar to earlier models except that they have hermetically sealed transformers and chokes and permeability-tuned intermediate frequency transformers. The RBK-14 is similar to RBK-12 and -13, except for the addition of a blanking circuit to operate with a dual display panoramic adaptor.

The following equipment is used with, but not supplied with, Radio Receiving Equipments RBK, RBK-1, -5, -7, -8,

-9, -12, -13, and -14: A receiving antenna, 600-ohm headset or a 500-ohm or 5,000-ohm loudspeaker.

## TECHNICAL CHARACTERISTICS:

*Frequency Range in Mc:* 27.8 to 143.0, in three bands

Band 1: 27.8 to 46.0

Band 2: 46 to 82

Band 3: 82 to 143

*Type of Reception:* A1, A2, A3, F3

*FM Bandpass:*  $\pm 75$  kc

*Sensitivity:*

AM:  $7 \mu\text{v}$  input for 100 db signal to noise ratio

FM:  $20 \mu\text{v}$  input for 20 db reduction of hiss level

*Output Impedance:* 500 ohms, 600 ohms balanced, 5,000 ohms

*Antenna Requirements:* 50 to 100 ft, single wire; half wave double or multiple dipole

*Mounting Data:* The chassis and panel assembly are housed in a metal cabinet with a hinged lid and rubber feet for table top use. If desired, the receiver may be installed in a standard relay rack.

*Power Output:* 3 w at less than 5% distortion

*Power Requirements:* 115 w; 115- to 230-v, 50- to 60-cycle ac

## MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
	<i>For RBK, RBK-1, -5, -7, -8, -9, -12, -13, -14:</i>			
1 set	Equipment spare parts	-----	12-3/4 x 15 x 20-1/2	88
	<i>For RBK, RBK-1, -9:</i>			
1	Radio Receiver CHL-46130			
	<i>For RBK-5, -7, -8:</i>			
1	Radio Receiver CHL-46130-A			
	<i>For RBK-12, -13:</i>			
1	Radio Receiver CHL-46130-C	-----	9-5/16 x 19-1/8 x 15-13/16	63
	<i>For RBK-14:</i>			
1	Radio Receiver CHL-46130-D	-----	9-1/2 x 19-1/8 x 15-5/16	63

RADIO RECEIVING EQUIPMENT **AN/URR-type**

## REFERENCE DATA AND LITERATURE:

NAVSHIPS 95244  
*RBK-9*: NAVSHIPS 95245  
*RBK-12, -13, -14*: NAVSHIPS 900,235

## SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
<i>For RBK-12, -13, -14:</i> 1	6.7	228

## PROCUREMENT DATA

PROCURING SERVICE: USN  
 SPEC &/or DWG:

DESIGN COG: USN, BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
The Hallicrafters Co.	Chicago, Ill.	<i>For RBK:</i> NOs-87293, 16 June <i>For RBK-1:</i> NXs-3265, 20 April 1942 <i>For RBK-5:</i> NXs-9513, 9 July 1942 <i>For RBK-7:</i> NXss-21514 <i>For RBK-8:</i> NXss-28816 <i>For RBK-9:</i> NXss-32842 <i>For RBK-12:</i> NXsr-39265, 10 June 1944 <i>For RBK-13:</i> NXsr-56768, 2 February 1945 NXsr-67988, 10 June 1944 <i>For RBK-14:</i> NXsr-39265, 30 June 1944 NXsr-85032, 30 December 1944	



## RADIO RECEIVING EQUIPMENT AN/URR-type

5 December 1958

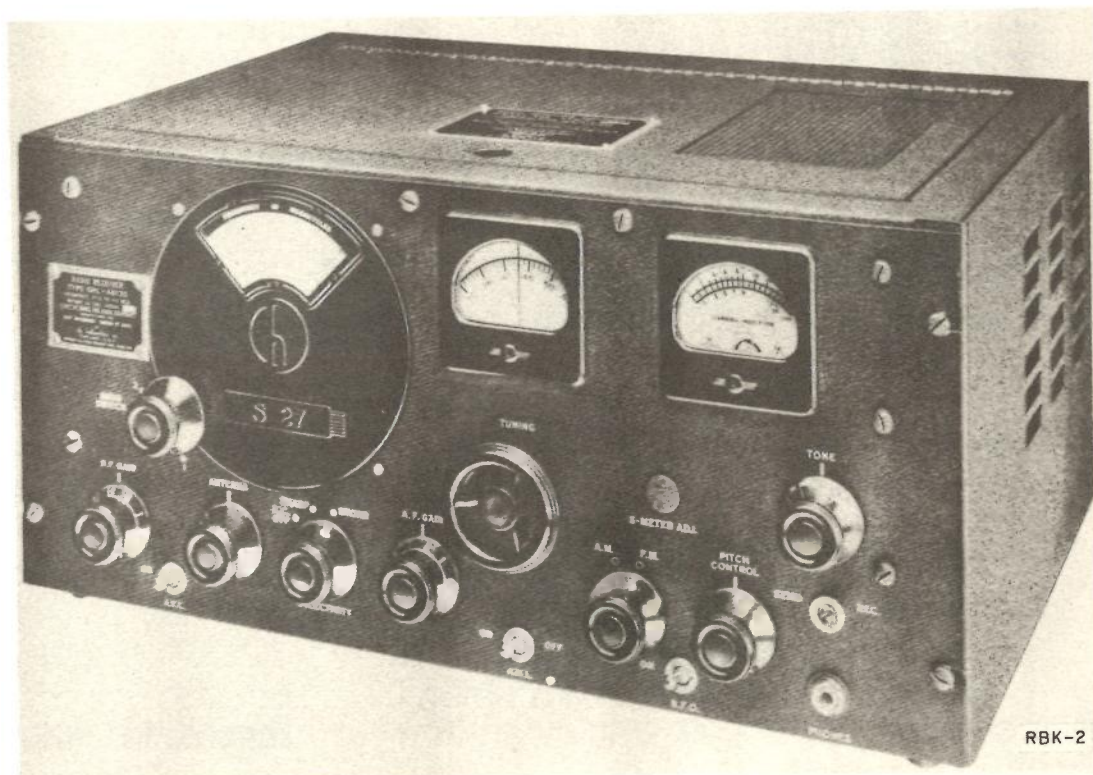
Cognizant Serv: USN FSN: RBK-11: 5820-665-1686

RBK-2, -11

USA

USN

USAF

TYPE CLASS: --  
STOCK NO: --Used by  
RBK-2: F16-Q-250582-200 --  
RBK-11: F16-Q-250590-200

## FUNCTIONAL DESCRIPTION:

Radio Receiving Equipments RBK-2 and -11 are superheterodyne receivers designed to receive amplitude modulated or frequency modulated radiotelephone and radiotelegraph signals. Receiver disabling is provided by means of a "Send-Receive" switch located on the front panel, and a special socket for connection to the control circuit of the associated transmitter.

An antenna and headset are used with, but not supplied with, Radio Receiving Equipments RBK-2 and -11.

## TECHNICAL CHARACTERISTICS:

*Frequency Range in Mc:* 27.8 to 143.0

*Type Receiver:* Superheterodyne

*Type of Reception:* A1, A2, A3, and F1, F2, F3

*Audio Response:* Within  $\pm 3$  db, 40 to 10,000 cps

*Audio Output:* 3 w into 500, 600, or 5,000 ohms

*Features:* BFO, AVC

*Power Requirements:* 80 w; 117-v, 50- to 60-cycle, 1-phase ac

MIL-HDBK-161

**AN/URR-type RADIO RECEIVING EQUIPMENT**

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
	<i>For RBK-2:</i>			
1	Loudspeaker CHL-49172	-----	10-7/8 x 16 x 11	20
1	Radio Receiver CHL-46162	-----	9-3/8 x 19-1/8 x 14-3/16	63
	<i>For RBK-11:</i>			
1	Radio Receiver CHL-46241	-----	9-5/16 x 19-1/8 x 15-13/16	

**REFERENCE DATA AND LITERATURE:**

NAVSHIPS 95244  
NAVSHIPS 95245

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
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**PROCUREMENT DATA**

PROCURING SERVICE: USN  
SPEC &/or DWG: DESIGN COG: USN, BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
The Hallicrafters Co.	Chicago, Ill.	<i>RBK-11:</i> NXsr-47385	



## RADIO RECEIVING EQUIPMENT AN/URR-type

5 December 1958

Cognizant Serv: USN FSN: 5820-644-0920

RBK-15

USA

USN

USAF

TYPE CLASS:  
STOCK NO:--  
--Used by  
----  
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RBK-15

**FUNCTIONAL DESCRIPTION:**

Radio Receiving Equipment RBK-15 consists of a very high frequency receiver mounted in a sheet-steel, table mounted cabinet. The receiver is entirely self-contained except for headset or speaker, panoramic adapter, and 115- or 230-volt source.

The receiver is capable of receiving both amplitude modulated and frequency modulated phone signals and continuous wave telegraph signals. Automatic volume control and automatic noise limiter circuits are incorporated.

The following equipment is used with, but is not supplied with, Radio Receiving Equipment RBK-15: headset, speaker, or panoramic adapter; single wire or doublet antenna.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in Mc:* 27.8 to 143 in three bands

*Intermediate Frequency:* 5.25 mc

*Type of Reception:* AM or FM, cw or voice

*Output Impedance:* Variable, 500, 600, or 5,000 ohms

*Tuning Indicator:* Meter calibrated in "S" units, 160-0-40 microamperes movement

*Antenna:* Single wire or doublet

*Type of Operation:* Local or remote

*Cw Audio Frequency:* Set at 1,000 cps

*Power Requirements:* 115- or 230-v, 50- to 60-cycle, 1-phase ac; or 4.5 amp, 6-v, dc; or 145 ma, 270-v dc

MIL-HDBK-161

**AN/URR-type** RADIO RECEIVING EQUIPMENT

MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Radio Receiving Equipment RBK-15 consists of:			
1	UHF Radio Receiver NT- 46298			

REFERENCE DATA AND LITERATURE:

SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
------	----------------	--------------

PROCUREMENT DATA

PROCURING SERVICE: USN  
SPEC &/or DWG: DESIGN COG: USN, BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
The Hallicrafters Co.	Chicago, Ill.	NObsr-39304	\$750.00 with spares

## RADIO RECEIVING EQUIPMENT AN/URR-type

5 December 1958

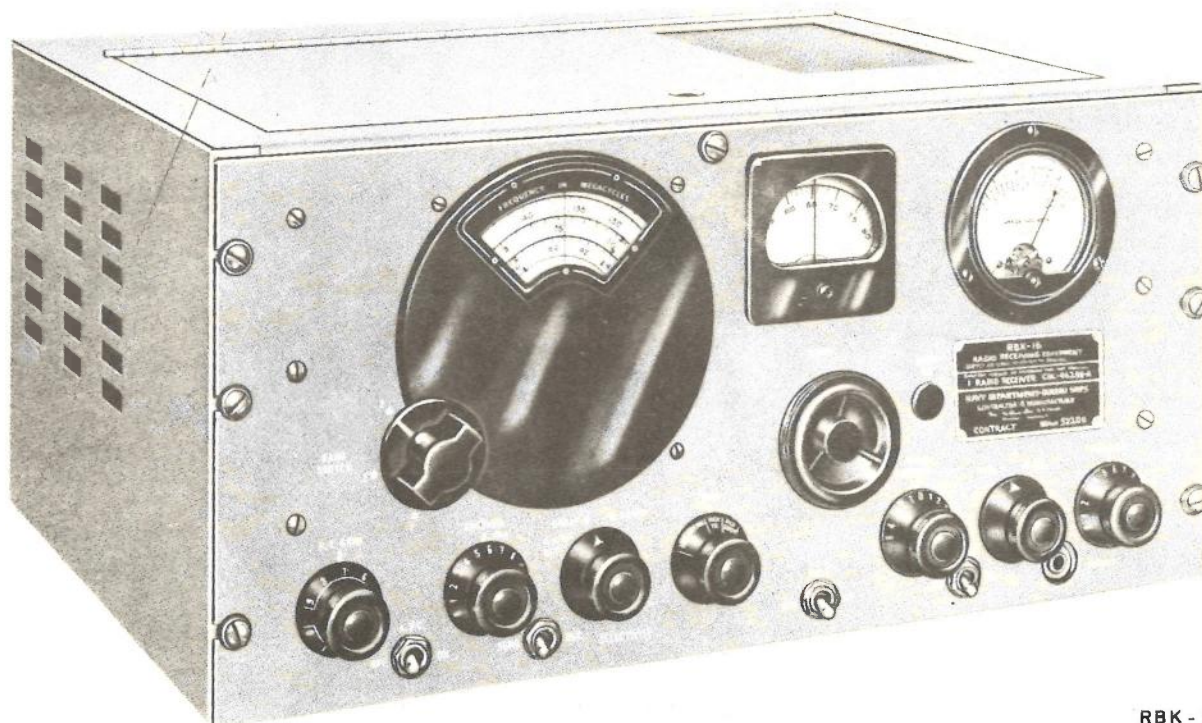
Cognizant Serv: USN FSN: 5820-665-1976

RBK-16

USA

USN

USAF

TYPE CLASS:  
STOCK NO:--  
--Used by  
----  
--

RBK - 16

**FUNCTIONAL DESCRIPTION:**

Radio Receiving Equipment RBK-16 is intended primarily for use on ships and other stations as a very high frequency receiver. It is conventional in design but incorporates two features not found in most receivers: a radio frequency amplifier used as a radiation suppressor and a receptacle for connecting a panoramic adaptor.

The receiver is designed for satisfactory operation under extreme conditions of temperature, humidity, and vibration often encountered in marine service. It is especially treated to resist the attack of fungus which may be encountered in tropical areas. An outside case (dust cover) is provided with each receiver so that it can be mounted on a desk or table. The receiver is self-contained, except for speaker or headset, the antenna, and the receiver connection to an external power source. An automatic noise limiter is provided for the reduction of impulse noise such as that caused by man-made interference.

The following equipment is used with, but is not supplied

with Radio Receiving Equipment RBK-16: headphones or loudspeaker, and antenna.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in Mc:* 27.8 to 143

Band 1: 27.8 to 47

Band 2: 47 to 82

Band 3: 82 to 143

*Intermediate Frequency:* 5.25 mc

*Frequency Control:* Local self-excited oscillator

*Receiver Type:* Superheterodyne

*Audio Output:* 3 w

*Distortion:* Less than 5%

*Reception:* AM, FM, and cw

*Impedance:*

Output: 500 and 600 ohms

Input (Antenna): 50 ohms

*Power Requirements:* 115 w; 115- or 230-v, 50- to 60-cycle, 1-phase ac; or 4.5 amp, 6-v dc; or 145 ma, 270-v dc

MIL-HDBK-161

**AN/URR-type** RADIO RECEIVING EQUIPMENT

MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Radio Receiving Equipment RBK-16	-----	9-5/16 x 15-3/4 x 19-1/8	78
1 set	Spare parts			

REFERENCE DATA AND LITERATURE:

NAVSHIPS 91616

SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
1	10.1	200

PROCUREMENT DATA

PROCURING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG: USN, BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
The Hallicrafters Co.	Chicago, Ill.	NObsr-52200, 6 January 1951	\$750.00 with spares

RADIO RECEIVING EQUIPMENT **AN/URR-type**

5 December 1958

Cognizant Serv: USN FSN: RBL-1: 5820-644-3387  
 RBL-2: 5820-665-1680  
 RBL-5: 5820-665-2026  
 RBL-6: 5820-665-2025

RBL, RBL-1, -2, -3, -4, -5, -6

	USA	USN	USA	USAF
TYPE CLASS:	--	Used by	--	--
STOCK NO:	--	RBL-1: F16-Q-251441-200	--	--
		RBL-2: F16-Q-251442-200		
		RBL-3: F16-Q-251460-200		
		RBL-4: F16-Q-251480-200		
		RBL-5: F16-Q-251500-200		
		RBL-6: F16-Q-251520-200		



RBL

**FUNCTIONAL DESCRIPTION:**

Radio Receiving Equipments RBL, RBL-1, -2, -3, -4, -5, and -6 are tuned radio frequency receivers operating in the frequency range of 15 to 600 kilocycles. The receivers are used at either shore stations or on Naval vessels. They are designed for low radiation and are considered safe for use in combat areas.

The RBL series are electrically and mechanically interchangeable with the exception of the power transformer used in the RBL-4 which is for 115- or 230-volts, alternating current.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range:* 15 to 600 kc in six bands  
*Type Reception:* A1 and A2

**AN/URR-type RADIO RECEIVING EQUIPMENT**

*Power Output:* 300 mw undistorted power into a 600-ohm load  
*Impedance:*

Input: Antenna capacitance can vary from 150  $\mu\text{f}$  to 2,000  $\mu\text{f}$ . Receiver includes a variable compensator control

Output: 600 ohms

*A1 Sensitivity:*

Sharp: 5  $\mu\text{v}$  input for 6 mw

Broad: 10  $\mu\text{v}$  input for 6 mw

*Audio Fidelity:*

Sharp: 500 cps band-pass at 20 db down, peak response at 750 cps

Broad: 3,500 cps band-pass at 20 db down, peak response at 1,500 cps

*Mounting Data:* Receiver is provided with shock-proof mounting base for table mounting only.

*Power Requirements:*

Built-in Rectifier Power:

Supply: 45 w; 115-v, 50- to 60-cycle, 1-phase ac

Emergency Operation: 6-v heater battery, and 135-v B battery

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
<i>For RBL, RBL-1, -2:</i>				
1	Mounting Base CNA-10124	-----	2-9/16 x 17-21/32 x 16-5/16	6
1	Radio Receiver CNA-46161	-----	12-5/16 x 17-11/16 x 17-1/4	75
<i>For RBL-3:</i>				
1	Mounting Base CWQ-10124-A	-----	2-9/16 x 17-17/32 x 16-5/16	6
1	Radio Receiver CWQ-46161-A	-----	10-1/2 x 17-5/16 x 17-5/8	79
<i>For RBL-4:</i>				
1	Mounting Base CWQ-10124-A	-----	2-9/16 x 17-17/32 x 16-5/16	6
1	Radio Receiver CWQ-46230	-----	12-5/16 x 17-5/16 x 17-5/8	79
<i>For RBL-5:</i>				
1	Mounting Base CNA-10124	-----	2-9/16 x 17-21/32 x 16-5/16	6
1	Radio Receiver CNA-46161B	-----	12-5/16 x 17-5/8 x 18-1/16	81
<i>For RBL-6:</i>				
1	Mounting Base CNA-10124	-----	2-9/16 x 17-21/32 x 16-5/16	6
1	Radio Receiver CNA-46235	-----	12-7/16 x 19 x 17-7/8	104

**REFERENCE DATA AND LITERATURE:**

*For RBL, RBL-1, -2:* NAVSHIPS 900,353

*For RBL, RBL-3, -4:* NAVSHIPS 900,292

*For RBL, RBL-5, -6:* NAVSHIPS 900,350

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
1		

RADIO RECEIVING EQUIPMENT **AN/URR-type**

## PROCUREMENT DATA

PROCURING SERVICE: USN  
 SPEC &/or DWG:

DESIGN COG: USN, BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
National Co., Inc.	Malden, Mass.	<i>For RBL:</i> NOs-91741, 8 September 1941 <i>For RBL-1:</i> NXs-456, 10 March 1942 <i>For RBL-2:</i> NXs-4683, 30 April 1942 <i>For RBL-3:</i> NXss-21440, 11 January 1943 <i>For RBL-4:</i> NXsr-38492, 24 September 1943 <i>For RBL-5:</i> NXsr-38306, 22 September 1943 <i>For RBL-6:</i> NXsr-38306, 22 September 1943	\$2,420.00 with spares
Wells-Gardner Co.	Chicago, Ill.	NXsr-55614, 5 April 1944	





## RADIO RECEIVING EQUIPMENT AN/URR-type

5 December 1958

Cognizant Serv: USN

FSN: RBO: 5820-669-7046

RBO, RBO-1, -2, -2a, -3, -4

RBO-1: 5820-642-8446

RBO-2: 5820-636-4746

RBO-3: 5820-644-3400

RBO-4: 5820-642-8249

	USA	USN	USAF
TYPE CLASS:	--	Used by	--
STOCK NO:	--	--	--



RBO

**FUNCTIONAL DESCRIPTION:**

Radio Receiving Equipment RBO, RBO-1, -2, -2a, -3, and -4 are superheterodyne receivers for entertainment use aboard ships and for shore installations. The RBO-series is specifically designed to provide optimum performance and high quality reception of voice or tone modulated signals on all frequency bands covered. Provision is made for headphone or loudspeaker reception. The equipment is designed to minimize radiation from the high frequency oscillator and is considered safe for use in combat areas.

The RBO, RBO-1, -2, -3, and -4 are identical except for minor component differences, the addition of a noise limiter in the RBO-1 and -2, and other minor circuit modifications.

The RBO-2a is the RBO-2 modified for operation from a different power source than the other models.

The following equipment is used with, but is not supplied with, Radio Receiving Equipments RBO, RBO-1, -2, -2a, -3, and -4: 600 ohm headphones or loudspeaker with coupling transformer to match 600 or 5,000 ohms, power cord, and antenna.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in Mc:* Three bands

Band 1: 0.53 to 1.60

Band 2: 5.55 to 9.55

Band 3: 9.2 to 15.6

## AN/URR-type RADIO RECEIVING EQUIPMENT

Type Reception: A2 and A3

Impedance:

Input: Antenna input circuit includes a 2-position switch for operation of the receiver with a long or short, single-wire antenna

Output:

For RBO: 600 and 5,000 ohms

For RBO-1, -2, -2a, -3: 600 and 60, 600 or 5,000 ohms (late RBO-3's have balanced output)

For RBO-4: 600 to 30 ohms (variable), and 600 ohms balanced or unbalanced.

Sensitivity: 12  $\mu$ v

Signal to Noise Ratio: 20 db

Antenna Input: Concentric antenna jack 49120 mounted at rear of receiver for RF connection

Mounting: Rack or shock mounting to table or bench at shore installations; shock mounting aboard ship

Power Output: 30 mw into 600 ohm load; 2 w maximum undistorted power into 600 ohm or 5,000 ohm load

Power Requirements:

For RBO, RBO-1, -2, -3, -4: 85 w; 115-v, 600-cycle, 1-phase ac

For RBO-2a: 85 w; 115-v, 400-cycle, 1-phase ac

## MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
	<i>For RBO-1:</i>			
1	Radio Receiver NT-46139 or NT-46224	-----	13-3/4 x 18-1/2 x 20-1/2	103
	<i>For RBO-2:</i>			
1	Radio Receiver NT-46225	-----	13-3/4 x 18-1/2 x 20-1/2	104
	<i>For RBO-3:</i>			
1	Radio Receiver NT-46225-A	-----	13-3/4 x 18-1/2 x 20-1/2	104
	<i>For RBO-4:</i>			
1	Radio Receiver NT-46279	-----	13-3/4 x 18-1/2 x 20-1/2	

## REFERENCE DATA AND LITERATURE:

NAVSHIPS 95247

For RBO-2: NAVSHIPS 95259(A)

NAVSHIPS 95248

NAVSHIPS 95249

For RBO-2a: NAVSHIPS 91290

For RBO-3: NAVSHIPS 95249(A)

RADIO RECEIVING EQUIPMENT **AN/URR-type**

## SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
1		

## PROCUREMENT DATA

PROCURING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG: USN, BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
E. H. Scott Radio Labs, Inc.	Chicago, Ill.	<i>For RBO:</i> NOs-99260, 18 March 1952 <i>For RBO-1:</i> NXss-20313 <i>For RBO-2, -3:</i> NXsr-38078 <i>For RBO-2a:</i> NObsr-43407 <i>For RBO-4:</i> NXsr-95080	\$800.00 with spares



HIGH FREQUENCY RADIO RECEIVING EQUIPMENT **AN/URR-type**

5 December 1958

Cognizant Serv: USN FSN: 5820-642-7793

RBQ

USA

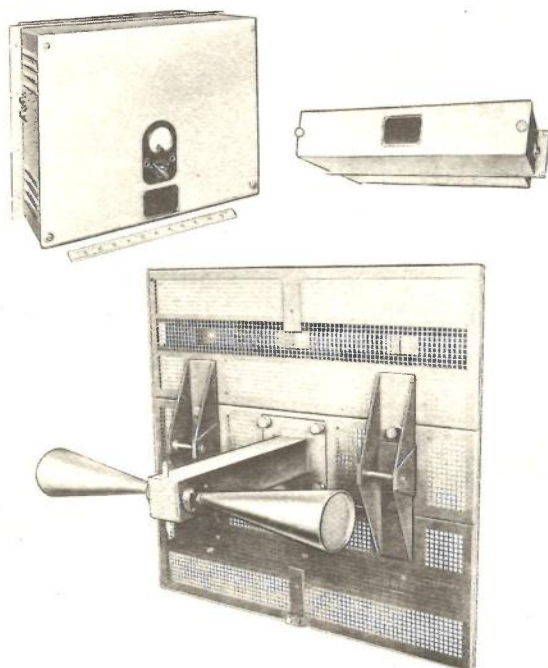
USN

USAF

TYPE CLASS: --

Used by --

STOCK NO: --



RBQ

**FUNCTIONAL DESCRIPTION:**

High Frequency Radio Receiving Equipment is a radio receiving equipment used in ultra-high frequency radio link. The equipment is suitable for reception of single channel voice, multichannel voice carrier telegraph, or multichannel voice carrier telegraph and two channel voice carrier telephone signals.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in Mc:* 132 to 156

*Frequency Control:* Crystal

*Type of Reception:* A2, A3

*Power Requirements:* 115-v 60-cycle, 1-phase ac

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Antenna D-150423			
1	Antenna D-150427			
1	Antenna Outfit D-150426			
1	Cable Outfit D-150418			
1	Indoor Cabinet X-6360BA List 1	-----	17 x 26-1/2 x 84	
1	Outdoor Cabinet D-150426	-----	18 x 32 x 64-1/2	
1	Radio-Frequency Panel D-151285			
	or			
1	Radio-Frequency Panel D-150966			

**AN/URR-type** HIGH FREQUENCY RADIO RECEIVING EQUIPMENT

## MAJOR COMPONENTS—Continued

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Radio Receiver NT-46168	-----	9-3/4 x 14 x 19	
1	Spare Parts Panel D-150639	-----	3-15/32 x 9-1/2 x 19	
1	Test Set Oscillator NT-60037			

## REFERENCE DATA AND LITERATURE:

## SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)

## PROCUREMENT DATA

PROCURING SERVICE: USN  
 SPEC &/or DWG:

DESIGN COG: USN, BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Western Electric Co.	New York, N. Y.	NXs-149, 9 September 1942	\$2,050.00 with spares

## RADIO RECEIVING EQUIPMENT AN/URR-type

2 December 1958

Cognizant Serv: USN FSN:

RBS, RBS-1, RBS-2, RBS-2a

USA

USN

USAF

TYPE CLASS: --  
STOCK NO: --Used by --  
--

RBS-2

## FUNCTIONAL DESCRIPTION:

Radio Receiving Equipments RBS, RBS-1, and RBS-2 are general-purpose, high-frequency radio receiving equipments designed for use aboard all types of vessels and at shore stations. The RBS-2a is used aboard special types of vessels only and at shore stations. The receivers can communicate with any radio transmitter operating within the same frequency range.

The RBS-series radio receiving equipments consist of a radio receiver with a separate rectifier power-amplifier unit. They are ruggedly constructed for use under adverse conditions. The illustration shows the radio receiver of the RBS-2.

The RBS and RBS-1 are designed for bulkhead mounting but also may be table-mounted. The RBS-2 and RBS-2a have no bulkhead mounting frame and can be table-mounted only. The RBS-2 is similar to the RBS and RBS-1 except that an antenna connector adapter assembly has been added. The RBS-2a is the RBS-2 modified for operation from a 115-volt,

400-cycle ac power source. This modification includes the shielding of certain leads, substitution of two crystal rectifiers for a vacuum-tube dual-diode rectifier, relocation of several chassis grounds, and disconnection of the capacitor across the filter choke.

Additional equipment required for the operation of the radio receiving equipment are a 600-ohm headphone (49015 or equal), a standard loudspeaker, connecting cable for the speaker, power cable (MCOS-2), and a receiving antenna.

The RBS, RBS-1, and RBS-2 are similar to Radio Receiving Equipment RBS-3 with the exception of minor differences in components and mounting facilities. The electrical design of the RBS-series equipments is basically the same as Portable Radio Receiving Equipment RBM. However, the RBM equipment covers the 200-kilocycle to 2-megacycle frequency range, as well as the frequencies covered by the RBS receivers.

## TECHNICAL CHARACTERISTICS:

*Frequency Range in Mc:* 2 to 20*Number of Channels:* 4

Band 1: 2 to 3.6 mc

Band 2: 3.6 to 6.5 mc

Band 3: 6.5 to 11.4 mc

Band 4: 11.4 to 20 mc

*Type Receiver:* Superheterodyne*Type Signal:* AM*Type Reception:* Cw, mcw, voice*Sensitivity:* Below 8  $\mu$ v on all bands with a signal-to-noise ratio of 20 db on cw or 10 db on mcw*Power Output:*

At Phonejack of Receiver: 150 mw with 1.7% distortion

At Speaker Receptacle on Rectifier Power-Amplifier Unit:

8 w with 1.7% distortion

*Output Impedance:* 600 ohms*Antenna Requirements:* Capacitance of 80 to 500  $\mu$ f*Power Requirements:*

RBS, RBS-1, RBS-2: 120 w, 115-v 50- to 60-cycle 1-phase ac

RBS-2a: 120 w, 115-v 400-cycle 1-phase ac

## AN/URR-type RADIO RECEIVING EQUIPMENT

## MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Accessories kit	-----	3-1/2 x 5-1/2 x 7-1/2	
1	Antenna adapter assembly (for RBS-2 and -2a)	-----		
1 set	Equipment spares	-----	9-3/4 x 16-1/4 x 19-1/8	
1	Mounting Rack Assembly 10227 (for RBS, RBS-1)	-----	11-3/4 x 17-3/4 x 19	
1	Radio Receiver 46217 (for RBS, RBS-1)	-----	9-3/4 x 12-1/2 x 17	32
1	Radio Receiver 46217A (for RBS-2, -2a)	-----	10 x 14-1/2 x 17	43
1	Rectifier Power-Amplifier Unit 20234A (for RBS and RBS-1 with serial Nos. 1157 and above)	-----	10-3/4 x 11 x 14	
1	Rectifier Power-Amplifier Unit 20235 (for RBS and RBS-1 with serial Nos. 1 through 1156)	-----	10-3/4 x 11 x 14	
1	Rectifier Unit 20235B (for RBS-2, -2a)	-----	10-3/4 x 11-1/4 x 16	56
1	Splashproof Cabinet	-----	11-1/2 x 16-7/8 x 20-1/2	

## REFERENCE DATA AND LITERATURE:

NAVSHIPS 900,324  
NAVSHIPS 91353

## SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
<i>For RBS:</i> 1	19.5	333
<i>For RBS-1:</i> 1	19.5	360
<i>For RBS-2, -2a:</i> 3	11.12	301



## RADIO RECEIVING EQUIPMENT AN/URR-type

## PROCUREMENT DATA

PROCURING SERVICE: USN  
 SPEC &/or DWG:

DESIGN COG: USN, BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Maryland Electronic Manufacturing Corp.	College Park, Md.	(RBS-2a)	\$1,000 with equipment spares
Stromberg-Carlson Co.	Rochester, N. Y.	NXs-12481, 27 August 1942 (RBS)	\$1,000 with equipment spares
		NXsr-33641, 30 June 1943 (RBS-1, RBS-2)	\$1,000 with equipment spares
		NObsr-49085, 3 April 1950	\$1,000 with equipment spares
		NObsr-52687, 26 June 1951	\$1,000 with equipment spares



RADIO RECEIVING EQUIPMENT **AN/URR-type**

3 December 1958

Cognizant Serv: USN FSN:

RBS-3

	USA	USN	USAF
TYPE CLASS:	--	Used by	--
STOCK NO:	--	--	--

(No Illustration Available)

**FUNCTIONAL DESCRIPTION:**

Radio Receiving Equipment RBS-3 is a general-purpose, high-frequency radio receiving equipment designed for use aboard ship or at shore stations. It will receive a continuous range of frequencies from 2 to 20 megacycles in four calibrated channels. A beat-frequency oscillator is incorporated to permit satisfactory reception of continuous-wave signals. The RBS-3 can communicate with any radio transmitter operating within the same frequency ranges.

The equipment consists of a radio receiver with a separate rectifier power-amplifier unit. It is ruggedly constructed and designed for table mounting.

Additional equipment required for the operation of the radio receiving equipment are Headphones 49016, a loudspeaker, Speaker Cable NT-DHFA-3, Power Cable NT-MCOS-2, and an antenna.

The RBS-3 is similar to the RBS, RBS-1, and RBS-2 with the exception of minor differences in components and mounting facilities.

**TECHNICAL CHARACTERISTICS:***Frequency Range in Mc:* 2 to 20*Number of Channels:* 4

Band 1: 2 to 3.6 mc

Band 2: 3.6 to 6.5 mc

Band 3: 6.5 to 11.4 mc

Band 4: 11.4 to 20 mc

*Type Receiver:* Superheterodyne*Type Signal:* AM*Type Reception:* Cw, mcw, voice*Sensitivity:* Below 8  $\mu$ v on all bands with a signal-to-noise ratio of 10 to 1 on cw and 3.2 to 1 on mcw*Power Output:*

Phonejack: 150 mw

Speaker Receptacle: 8 w

*Output Impedance:* 600 ohms*Antenna Requirements:* Any antenna having a capacitance of 80 to 500  $\mu$ mf*Power Requirements:* 120 w, 115-v 50- to 60-cycle 1-phase ac**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Accessories kit			
1	Equipment spare parts box (Type M), including:			
1 set	Spare parts			
1	Radio Receiver R-303/FRR, including:			
1	Antenna Connection Adapter Assembly E-521 or 49120			
1	Mounting Plate A-505			
1	Rectifier power-amplifier unit, including:			
1	Mounting Plate A-901			

**REFERENCE DATA AND LITERATURE:**

NAVSHIPS 91944

MIL-HDBK-161

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**AN/URR-type** RADIO RECEIVING EQUIPMENT

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SHIPPING DATA

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PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
2	8.33	235

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PROCUREMENT DATA

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PROCURING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG: USN, BuShips

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CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Z and W Machine Products, Inc.	Cleveland, Ohio	NObsr-43286, 16 July 1953	\$400 with equipment spares

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## RADIO RECEIVING EQUIPMENT AN/URR-type

Cognizant Serv:	USN	FSN:		RCE-2
	USA		USN	USAF
TYPE CLASS:	--		Used by	--
STOCK NO:	--		--	--

(No Illustration Available)

## FUNCTIONAL DESCRIPTION:

Radio Receiving Equipment RCE-2 is a single-frequency superheterodyne communications receiver for service in the 2- to 30-megacycle frequency range. It permits the reception of amplitude-modulated phone, modulated-continuous wave, or unmodulated-continuous-wave radio-frequency signals.

Front panel controls provide selection of crystal filter operation and automatic volume control. An "S" meter serves to indicate the strength of a received signal. Four plug-in coil assemblies, each consisting of three RF and one oscillator coil, are provided to cover the frequency range.

## TECHNICAL CHARACTERISTICS:

*Frequency Range in Mc:* 20 to 30 in four bands by means of four coil sets

*Band Data:* 2 to 4 mc; 4 to 7 mc; 7 to 14 mc ;14 to 30 mc  
*Sensitivity:* 1  $\mu\text{v}$  to deliver 2-w output wkth a 7000-ohm load  
*Selectivity:*

Crystal Filter Off: Ratio 2, bandwidth 3 kc; ratio 10, bandwidth 7.5 kc; ratio 100, bandwidth 14 kc; ratio 1,000, bandwidth 21.5 kc

Crystal Filter In: 200-cycle bandwidth maximum selectivity, 2.5-kc bandwidth minimum selectivity

*CW, Noise Equivalent:* 0.2  $\mu\text{v}$

*Signal-to-Noise Ratio:* 16 db at 5  $\mu\text{v}$

*Input Impedance:* 500 ohms (average) at antenna terminals

*Undistorted Power Output:* 1.5 w (maximum)

*Automatic Volume Control Characteristic:* Flat within  $\pm 10$  db between 1.0 and 100,000  $\mu\text{v}$

*Power Requirements:* 230-v 50/60-cycle 1-phase ac

## MAJOR COMPONENT

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Coil Set 47166-S (2 to 4 mc)			
1	Coil Set 47167-S (4 to 7 mc)			
1	Coil Set 47168-S (7 to 14 mc)			
1	Coil Set 47169-S (14 to 30 mc)			
1	Radio Receiver 46198			
1	Rectifier Power Unit 20180			

## REFERENCE DATA AND LITERATURE:

NAVSHIPS 95255

MIL-HDBK-161

**AN/URR-type** RADIO RECEIVING EQUIPMENT

SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
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PROCUREMENT DATA

PROCURING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG: USN, BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
National Co., Inc.	Malden, Mass.	N40's-13791A, 29 December 1942	

## RADIO TRANSMITTING SETS AN/URT-2, -2X, -3, -3X, -4, -4X

3 December 1958

Cognizant Serv: USA FSN:

USA

USN

USAF

TYPE CLASS: --

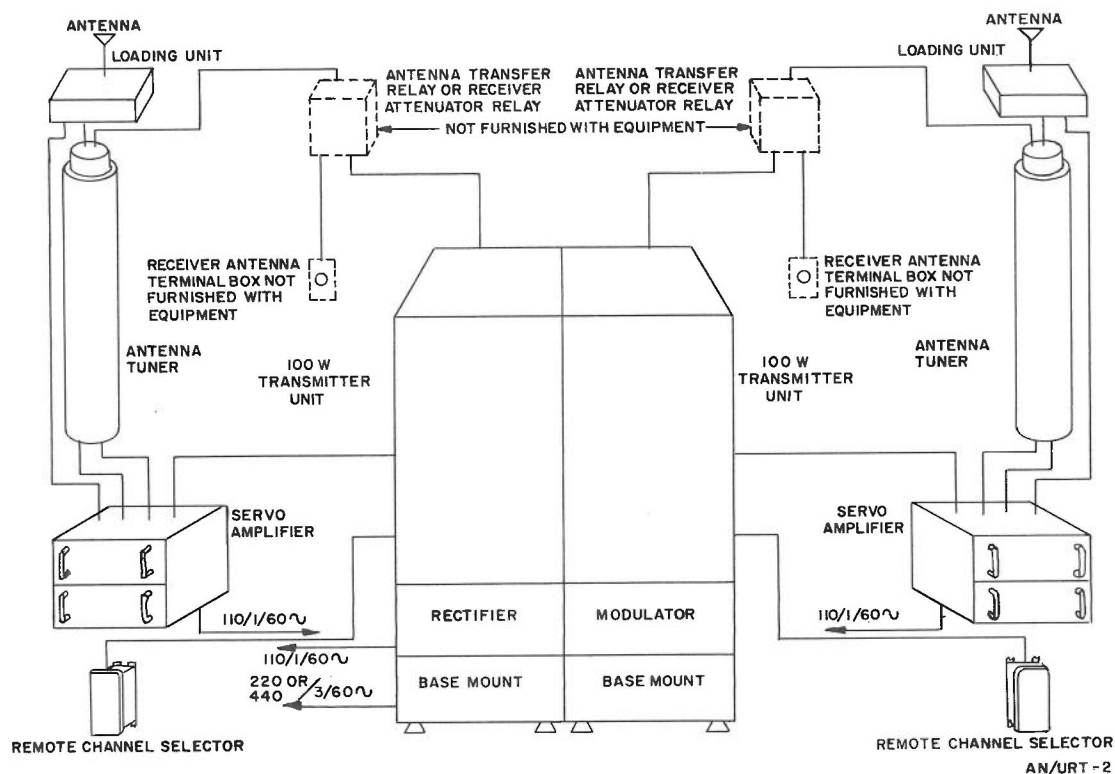
Used by

STOCK NO: --

AN/URT-2: F16-Q-123896-200 --

AN/URT-3: F16-Q-123897-200 --

AN/URT-4: F16-Q-123395-100 --



## FUNCTIONAL DESCRIPTION:

Radio Transmitting Sets AN/URT-2, AN/URT-2X, AN/URT-3, AN/URT-3X, AN/URT-4, and AN/URT-4X are medium-frequency and high-frequency units designed for shipboard installation and ship-to-shore use. They operate in conjunction with such receivers as Radio Receiving Equipments RBA, RBB, and RBC and the shipboard remote control system.

These equipments provide two frequency bands, 300 kilocycles to 26 megacycles and 2 megacycles to 26 megacycles, with higher power output on the latter. The AN/URT-4 consists of the AN/URT-2 and the AN/URT-3, both of which may be operated simultaneously. The AN/URT-2 may be used as a replacement for Radio Transmitting Equipment TBL, TDE, or TCZ; the AN/URT-3 may replace Radio Transmitting Equipment TBA, TBK, TBM, or TCK.

The AN/URT-2X, -3X, and -4X are identical with the AN/URT-2, -3, -4 respectively, except that these latter sets may require a 400-cycle alternating current power supply.

The transmitters are designed for use with either a 35-foot whip antenna or an L-type wire antenna.

## TECHNICAL CHARACTERISTICS:

*Frequency Range in Mc:*

100 Watts: 0.3 to 26

500 Watts: 2 to 26

*Tuning Bands in Mc:*

Band 1: 0.3 to 0.8

Band 2: 0.8 to 2

Band 3: 2 to 5

Band 4: 5 to 11

Band 5: 11 to 19

Band 6: 19 to 26

## AN/URT-2, -2X, -3, -3X, -4, -4X RADIO TRANSMITTING SETS

*Number of Preset Frequencies:*

AN/URT-2, -2X, -3, -3X: 10

AN/URT-4, -4X: 20

*Nominal Carrier Output in Watts:*

AN/URT-2, -2X:

A1, F1, F4 Type Emission: 100 w

A3 Type Emission: 67 w

AN/URT-3, -3X:

A1, F1, F4 Type Emission: 100 w, 500 w

A3 Type Emission: 67 w, 333 w

AN/URT-4, -4X:

A1, F1, F4 Type Emission: 100 w and 100 w/500 w  
simultaneously

A3 Type Emission: 67 w and 67 w/333 w simultaneously

*Channels:* 10 preset and manual*Type Modulation:* AM, FM*Type Emission:* A1, F1, A3, F4 (cw, mew, iew, tone, voice)*Modulation Capability:*

A1: 100%

F1: 1,000-cps total shift

A3: 100%

F4: From 0- to +2,000-cps shift

*Frequency Control:* Crystal oscillator; frequency-shift oscillator*Squelch Circuit:* Conventional circuit; cuts off audio amplifier in absence of audio frequency input signal*Harmonic Attenuation (RF Amplifier):* 40 db below carrier level from 0.3 mc to 2 mc; 50 db below carrier level from 0 mc to 5 mc; 60 db below carrier level above 5 mc*Automatic Tuning Time:* 30 to 90 sec*Power Requirements:*

AN/URT-2: 1,000 w; 115-v, 60-cycle 1-phase ac

AN/URT-2X: 1,000 w; 115-v, 400 cycle, 1-phase ac

AN/URT-3: 800 w; 115-v, 60-cycle, 1-phase ac: or 1,800 w; 200-v or 440-v, 60-cycle, 3-phase ac

AN/URT-3X: 800 w; 115-v; 400-cycle, 1-phase ac: or 1,800 w, 220-v or 440-v, 400-cycle, 3-phase ac

AN/URT-4: 800-w; 115-v, 60-cycle, 1-phase ac: or 1,800 w; 220-v or 440-v, 60-cycle, 3-phase ac

AN/URT-4X: 1,800 w; 115-v, 400-cycle, 1-phase ac: or 220-v or 440-v, 400-cycle, 3-phase ac

## MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
<i>For Radio Transmitting Set AN/URT-2:</i>				
1	Antenna Control Group OA-297/URT including:	-----	17-1/2 x 18 x 19	128
1	Antenna Control Group Cabinet CY-1047/URT	-----		
1	Control Indicator C-915/URT	-----		
2	Electronic Control Amplifier AM-555/URT	-----		
2	Electronic Control Pre-Amplifier AM-556/URT	-----		
1	Power Supply PP-708/URT	-----		
1	Capacitor Assembly CB-5/URT	-----	10-1/4 x 12-3/4 x 15	25
1	Equipment spare parts	-----	15-1/2 x 16-1/4 x 44	140
1	Radio Frequency Tuner TN-197/URT	-----	13-1/2 x 15-1/4 x 48	165
1	Transmitter Control C-916/URT	-----	4-3/4 x 5-1/4 x 10-3/4	5.3
1	Transmitter Group OA-353/URT	-----	16 x 26-1/4 x 55-1/4	765
<i>For Radio Transmitting Set AN/URT-3:</i>				
1	Antenna Control Group OA-297/URT including:	-----	17-1/2 x 18 x 19	128
1	Antenna Control Group Cabinet CY-1047/URT	-----		



## RADIO TRANSMITTING SETS AN/URT-2, -2X, -3, -3X, -4, -4X

## MAJOR COMPONENTS—Continued

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Control Indicator C-915/ URT			
2	Electronic Control Ampli- fier AM-555/URT			
2	Electronic Control Pre- Amplifier AM-556/URT			
1	Power Supply PP-708/URT			
1	Capacitor Assembly CB-5/ URT	-----	10-1/4 x 12-3/4 x 15	25
1	Cover CW-287/URT-3	-----	2-1/2 x 16 x 24-1/2	12
1	Equipment spare parts	-----	15-1/2 x 16-1/4 x 44	140
1	Radio Frequency Tuner TN-197/URT	-----	13-1/2 x 15-1/4 x 48	165
1	Radio Modulator-Power Supply OA-354/URT	-----	16 x 20 x 26-1/8	325
1	Transmitter Control C-916/URT	-----	4-3/4 x 5-1/4 x 10-3/4	5.3
1	Transmitter Group OA- 353/URT	-----	16 x 26-1/4 x 55-1/4	765
<i>For Radio Transmitting Set AN/URT-4:</i>				
2	Antenna Control Group OA- 297/URT including:	-----	17-1/2 x 18 x 19	128
2	Antenna Control Group Cabinet CY-1047/URT			
2	Control Indicator C-915/ URT			
4	Electronic Control Ampli- fier AM-555/URT			
4	Electronic Control Pre- Amplifier AM-556/URT			
2	Power Supply PP-708/URT			
2	Capacitor Assembly CB-5/ URT	-----	10-1/4 x 12-3/4 x 15	25
1	Equipment spare parts	-----	15-1/2 x 16-1/4 x 44	140
1	Radio Frequency Tuner TN-197/URT	-----	13-1/2 x 15-1/4 x 48	165
1	Radio Modulator-Power Supply OA-354/URT	-----	16 x 20 x 26-1/8	325
2	Transmitter Control C-916/URT	-----	4-3/4 x 5-1/4 x 10-3/4	5.3
2	Transmitter Group OA- 353/URT	-----	16 x 26-1/4 x 55-1/4	765

## REFERENCE DATA AND LITERATURE:

NAVSHIPS 91833(A)

MIL-HDBK-161

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**AN/URT-2, -2X, -3, -3X, -4, -4X** RADIO TRANSMITTING SETS

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SHIPPING DATA

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PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
7 (AN/URT-2)	108.8	2,370
8 (AN/URT-3)	122.6	2,803
11 (AN/URT-4)	190.2	4,550

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PROCUREMENT DATA

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PROCURING SERVICE: USN  
SPEC &/or DWG: MIL-T-15480A (SHIPS)

DESIGN COG: USN, BuShips

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CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Federal Telephone and Radio Corp.	Clifton, N. J.	NObsr-43409 12 Aug- ust 1949	(AN/URT-2) \$21,340.00
		NObsr-52021	(AN/URT-3) \$24,390.00
			(AN/URT-4) \$44,220.00

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RADIO TRANSMITTING SET **AN/URT-6(XN-1)**

3 December 1958

Cognizant Serv: USN FSN: 5820-644-4898

	USA	USN	USAF
TYPE CLASS:	--	Used by	--
STOCK NO:	--	F16-Q-123892-100(USN)	--

(No Illustration Available)

## FUNCTIONAL DESCRIPTION:

Radio Transmitting Set AN/URT-6(XN-1) is a very high-frequency unit used aboard ship or submarine, or at shore stations. It employs a control unit that provides limited remote control up to 5 miles. The set can be operated from standard shipboard remote units.

This equipment, when operating with a handset, provides carrier control, audio input to modulator, and receiver monitoring. Two associated amplifier units are employed for monitoring.

The modulator contains special circuits to provide expander, automatic volume control, and clipper-filter action; these features increase the average carrier sideband power under A3 operating conditions. A 1,000-cycle oscillator is included for A2 operation.

Radio Transmitting Sets AN/URT-6(XN-1), AN/URT-7, and AN/URT-10 are functionally similar; however, they differ electrically and mechanically. The AN/URT-6(XN-1) replaces the transmitting sections of Radio Transmitting and Receiving Equipment TBS.

## TECHNICAL CHARACTERISTICS:

*Frequency Range in Mc:* 60 to 80*Frequency Stability:*  $\pm 0.007\%$ *Frequency Control:* Crystal*Type Modulation:* AM*Type Emission:* A2, A3*Modulation Capability:* 100%*Power Output:* 30 w*Audio Input:* 25 db to +5 db from a reference level of 0.1 to 3.4 v*AF Response:* Flat within  $\pm 3$  db, 300 to 3,500 cps*Impedance:*

Microphone: 600 ohms

Antenna: 50 ohms

*Mounting:* Either table or relay rack*Power Requirements:* 750 w, 115-v or 230-v, 50- to 60-cycle, 1-phase ac

## MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Electrical Specials Purpose Cable Assembly CX-1826/U	-----	-----	1.75
1	Electrical Special Purpose Cable Assembly CX-1827/U	-----	-----	1.50
1	Electrical Special Purpose Cable Assembly CX-1828/U	-----	-----	1
1	Maintenance parts kit	-----	-----	.03
2	Radio Frequency Jack UG- 21B/U	-----	-----	.03
1	Radio Transmitter T-334 (XN-1)/URT-6 including:	-----	13-23/32 x 19 x 15	146
1	Amplifier Oscillator AM- 633(XN-1)/URT	-----	-----	-----
1	Electrical Equipment Cabinet CY-1126/URT	-----	-----	-----
1	Power Supply PP-773/URT	-----	-----	-----
1	Radio Modulator MD-163/ URT	-----	-----	-----
1	Transmitter Control CFT-23555	-----	5-13/16 x 4-7/16 x 3-5/16	4

MIL-HDBK-161

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**AN/URT-6(XN-1)** RADIO TRANSMITTING SET

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REFERENCE DATA AND LITERATURE:

NAVSHIPS 91576

SHIPPING DATA

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PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
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PROCUREMENT DATA

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PROCURING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG: USN, BuShips

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CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
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Federal Telephone and Radio Corp.

Clifton, N. J.

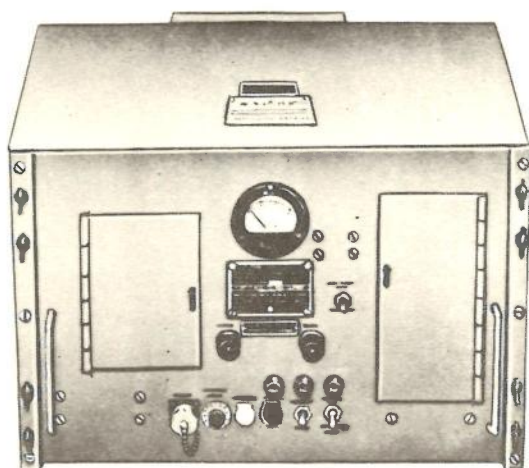
NObsr-52221, 11 January  
1951

RADIO TRANSMITTING SETS AN/URT-7, -7A, -7B, -7C

3 December 1958

Cognizant Serv: USN FSN: 5820-665-2473 (AN/URT-7B)

	USA	USN	USAF
TYPE CLASS:	--	Used by	AN/URT-7: Ltd-Std AN/URT-7A: Std
STOCK NO:	--	F16-Q-123893-100	--



AN/URT-7

FUNCTIONAL DESCRIPTION:

Radio Transmitting Sets AN/URT-7, AN/URT-7A, AN/URT-7B, and AN/URT-7C are low power, general purpose units designed for radiotelephone and modulated continuous wave communication on ship, submarine, or at shore installations.

This equipment may be mounted on a table or may be removed from its cabinet and mounted in a standard 19-inch

relay rack. Remote control operation may be from a standard Remote Radiophone Unit NT-23500 or equivalent. Limited control from a remote location may be obtained with Transmitter Control NT-23555.

Radio Transmitting Sets AN/URT-7, AN/URT-7A, AN/URT-7B, and AN/URT-7C are interchangeable but differ in minor electrical and mechanical design.

TECHNICAL CHARACTERISTICS:

- Frequency Range in Mc: 115 to 156
- Frequency Control: Crystal
- Frequency Stability:  $\pm 0.007\%$
- Type Modulation: AM
- Type Emission: A2, A3 (cw, mcw, voice)
- Power Output: 30 w, nominal
- Impedance:
  - Microphone: 600 ohms input
  - Antenna: 50 ohms output
- Audio Input Voltage: 25 to +5 db from a 0.006-w reference level (0.1 to 3.4 v)
- Audio Frequency Response: Flat within  $\pm 3$  db from a 1,000-cps reference level, from 300 to 3,500 cps
- Audio Frequency Filter: Flat within  $\pm 2$ db from a 1,000-cps reference level, and -50 db at 5,000 cps and over
- Input to Clipping Stage: Normally held at  $20 \pm 5$  db above the clipping level by action of the avc circuit for variations in the input of -25 to +5 db from 0.006-w reference level
- Heat Dissipation: 700 w
- Power Requirements: 750 w; 115- or 230-v  $\pm 10\%$ , 50- to 60-cycle  $\pm 5\%$ , 1-phase ac, 0.85 pf

MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
<i>For Radio Transmitting Set AN/URT-7:</i>				
1	Cable Assembly CX-1826/U	-----	-----	1.75
1	Cable Assembly CX-1827/U	-----	-----	1.50
1	Cable Assembly CX-1828/U	-----	-----	1
2	Connector, Plug UG-21B/U	-----	13/16 x 13/16 x 1-3/4	0.03

## AN/URT-7, -7A, -7B, -7C RADIO TRANSMITTING SETS

## MAJOR COMPONENTS—Continued

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Radio Transmitter T-336/ URT-7 including:	-----	13-23/32 x 16-1/2 x 19	146
1	Amplifier-Oscillator AM- 638/URT	-----	5 x 9-31/32 x 14-1/2	
1	Electrical Equipment Cabi- net CY-1126/URT	-----	13-23/32 x 14-13/16 x 19	
1	Power Supply PP-773/ URT	-----	12-7/32 x 16-1/4 x 19	
1	Radio Modulator MD- 163-URT	-----	4 x 9-31/32 x 14-3/8	
1 set	Equipment spares	-----	12-1/8 x 16-3/8 x 25-1/8	85
	<i>For Radio Transmitting Set AN/URT-7A:</i>			
1	Cable Assembly CX-1826/U	-----	-----	1.75
1	Cable Assembly CX-1827/U	-----	-----	1.50
1	Cable Assembly CX-1828/U	-----	-----	1
2	Connector, Plug UG-21B/U	-----	13/16 x 13/16 x 1-3/4	.03
	<i>For Radio Transmitting Set AN/URT-7A:</i>			
1	Radio Transmitter T-336A/ URT-7 including:	-----	13-23/32 x 16-1/2 x 19	146
1	Amplifier-Oscillator AM- 638A/URT-7	-----	5 x 9-31/32 x 14-1/2	
1	Electrical Equipment Cabi- net CY-1126A/URT	-----	13-23/32 x 14-13/16 x 19	
1	Power Supply PP-773A/ URT	-----	12-7/32 x 16-1/4 x 19	
1	Radio Modulator MD- 163A/URT	-----	4 x 9-32/32 x 14-3/8	
1 set	Equipment spares	-----	12-1/8 x 16-3/8 x 25-1/8	85
	<i>For Radio Transmitting Set AN/URT-7B:</i>			
1	Cable Assembly CX-1826/U	-----	-----	1.75
1	Cable Assembly CX-1827/U	-----	-----	1.50
1	Cable Assembly CX-3154/U	-----	-----	1
2	Connector, Plug UG-21B/U	-----	13/16 x 13/16 x 1-3/4	.03
1	Radio Transmitter T-336B/ URT-7 including:	-----	13-23/32 x 16-1/2 x 19	146
1	Amplifier-Oscillator AM- 638B/URT	-----	5 x 9-31/32 x 14-1/2	
1	Electrical Equipment Cabi- net CY-1126B/URT	-----	13-23/32 x 14-13/16 x 19	
1	Power Supply PP-773B/ URT	-----	12-7/32 x 16-1/4 x 19	

## RADIO TRANSMITTING SETS AN/URT-7, -7A, -7B, -7C

## MAJOR COMPONENTS—Continued

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Radio Modulator MD-163B/URT	-----	4 x 9-31/32 x 14-3/8	
1	Set of equipment spares	-----	12-1/8 x 16-3/8 x 25-1/8	85
	<i>For Radio Transmitting Set AN/URT-7C:</i>			
1	Cable Assembly CX-1826/U	-----	-----	1.75
1	Cable Assembly CX-1827/U	-----	-----	1.50
1	Cable Assembly CX-3154/U	-----	-----	1
2	Connector, Plug UG-21D/U	-----	13/16 x 13/16 x 1-3/4	.03
1	Radio Transmitter T-336C/URT-7 including:	-----	13-23/32 x 16-1/2 x 19	146
1	Amplifier-Oscillator AM-638C/URT	-----	5 x 10 x 13-3/4	
1	Electrical Equipment Cabinet CY-1126A/URT	-----	13-23/32 x 15 x 19	
1	Power Supply PP-773C/URT	-----	12-7/32 x 16-1/4 x 19	
1	Radio Modulator MD-163C/URT	-----	4 x 10 x 13-3/8	
1	Set of equipment spares	-----	7-1/2 x 01-1/2 x 21-1/2	27

## REFERENCE DATA AND LITERATURE:

NAVSHIPS 91684 (AN/URT-7, -7A, -7B)

## SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
<i>For AN/URT-7, -7A, -7B:</i>		
2	11	301
<i>For AN/URT-7C:</i>		
2	11.1	336

**AN/URT-7, -7A, -7B, -7C** RADIO TRANSMITTING SETS

## PROCUREMENT DATA

PROCURING SERVICE: USN  
 SPEC &/or DWG: MIL-R-15591 (AN/YRT-7, -7A, -7B)  
 MIL-T-15244B (AN/URT-7C)

DESIGN COG: USN, BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Federal Telephone and Radio Corp.	Clifton, N. J.	(AN/URT-7, -7A) NObsr-52311, 27 June 1951	
Rauland-Borg Corp.	Chicago, Ill.	(AN/URT-7, -7A, -7B) NObsr-64523, 30 July 1954 (AN/URT-7C) NObsr-71142, 22 December 1955	



## RADIO TRANSMITTING SETS AN/URT-8(XN-1), -9(XN-1)

3 December 1958

Cognizant Serv: USN FSN: 5340-205-4797 (AN/URT-9(XN-1))

USA

USN

USAF

TYPE CLASS: ---  
STOCK NO: ---

Used by ---

(No Illustration Available)

## FUNCTIONAL DESCRIPTION:

Radio Transmitting Sets AN/URT-8(XN-1) and AN/URT-9(XN-1) are very-high-frequency and ultra-high-frequency units designed for shipboard or shore station installation. Both are capable for complete remote operation.

The AN/URT-8(XN-1) employed four separate radio-frequency units, each providing four crystal-controlled operating channels. The desired radio frequency can be quickly selected by using a telephone dial system.

The AN/URT-9(XN-1) essentially has the same operating principles as the AN/URT-8(XN-1); however, the AN/URT-9(XN-1) contains 10 radio frequency units. Any two of these units may be operated simultaneously, with separate or the same information being transmitted over each of the channels in operation. The AN/URT-9(XN-1) used two modulators; each with its own independent selector system, capable of applying modulation to any one of the 10 radio frequency units.

The AN/URT-9(XN-1) replaces Radio Transmitting Equipment TDZ. It nets with Radio Receiving Equipment RDZ, AN/URR-13( ), AN/URR-35, and Radio Receiver R-278/GR.

## TECHNICAL CHARACTERISTICS:

*Frequency Range in Mc:* 225 to 400*Number of Preset Channels:*

AN/URT-8(XN-1): 16

AN/URT-9(XN-1): 40

*Frequency Control:* Crystal*Type Modulation:* AM*Modulation:* 100%*Type Emission:* A2, A3*Operating Range:* Line of sight*Frequency Stability:* 0.007%*AF Response:* Flat within  $\pm 3$  db (1,000-cps reference level) from 300 to 3,500 cps*Input Voltage:* -25 db to +4 db from a 0.006-w reference level (0.1 to 3.4 v)*Impedance:*

Antenna Terminal: 50 ohms

Microphone: 600 ohms

*Power Output:* 15 w, nominal*Power Requirements:* 115-v or 230-v, 60-cycle, 1-phase ac

## MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
<i>For Radio Transmitting Set AN/URT-8(XN-1):</i>				
1	Blower-Cable Assembly HD-134(XN-1)/URT			
1	Maintenance parts kit			
1	Radio Transmitter T-394			
	(XN-1)/URT-8 including:			
4	Amplifier-Oscillator Unit AM-803(XN-1)/URT			
1	Modulator Unit MD-186 (XN-1)/URT			
1	Special Purpose Electrical Cable Assembly CX-2183(XN-1)/URT			

## AN/URT-8(XN-1), -9(XN-1) RADIO TRANSMITTING SETS

## MAJOR COMPONENTS—Continued

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
<i>For Radio Transmitting Set AN/URT-9(XN-1):</i>				
1	Blower-Cable Assembly HD- 134(XN-1)/URT			
1	Maintenance parts kit			
1	Radio Transmitter T-395 (XN-1)/URT-9 including:			
10	Amplifier Oscillator Unit AM-803(XN-1)/URT			
2	Modulator Unit MD- 186(XN-1)/URT			
1	Special Purpose Electrical Cable Assembly CX-2183 (XN-1)/URT			

## REFERENCE DATA AND LITERATURE:

## SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
------	----------------	--------------

## PROCUREMENT DATA

PROCURING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG: USN, BuShips

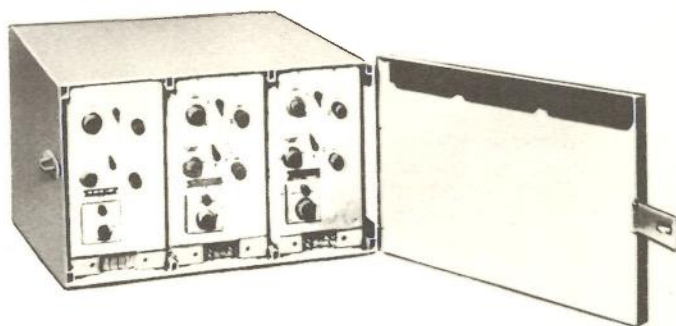
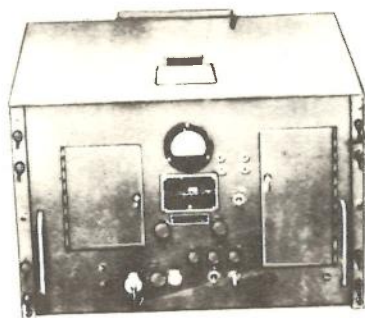
CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Federal Telephone and Radio Corp.	Clifton, N. J.	NObsr-52139, 20 December 1950	

## RADIO TRANSMITTING SET AN/URT-10(XN-1)

3 December 1958

Cognizant Serv: USN FSN:

	USA	USN	USAF
TYPE CLASS:	--	Used by	--
STOCK NO:	--	--	--



AN/URT-10

## FUNCTIONAL DESCRIPTION:

Radio Transmitting Set AN/URT-10(XN-1) is a very-high-frequency and ultra-high-frequency unit used aboard ship or submarine, or at shore installations. A control unit is employed to provide limited remote control up to 5 miles. It can be operated from standard shipboard remote control facilities. Carrier control, audio input to modulator, and receiver monitoring are available when operating with hand-set.

This equipment incorporates four interchangeable amplifier-oscillator units designed to cover a specific frequency range. Each employs crystal-controlled master oscillator control.

The modulator contains special circuits to furnish expander, automatic volume control, and clipper-filter action to increase the average carrier sideband power under A3 operating conditions. A 1,000 cycle-per-second oscillator is included for A2 operation.

Radio Transmitting Sets TED, AN/URT-6( ), AN/URT-7( ), and AN/URT-10(XN-1) are all similar functionally; however, they differ electrically in the frequency determining components. Mechanically all sets are similar.

The sets may be table or rack mounted.

## TECHNICAL CHARACTERISTICS:

*Frequency Range in Mc:*

AM-634/URT: 30 to 60

AM-635/URT: 60 to 115

AM-636/URT: 115 to 225

AM-637/URT: 225 to 400

*Frequency Control:* Crystal*Type Modulation:* AM*Type Emission:* A2, A3*Modulation Capability:* 10%*Power Output:*

30 to 115 Mc: 30 w

115 to 400 Mc: 15 w

*Audio Input:* -25 to +5 db from a 0.006 reference level*AF Response:* Flat within  $\pm 3$  db, 300 to 3,500 cps (from a 1,000-cps reference level)*Impedance:*

Microphone: 600 ohms

Antenna: 50 ohms

*Frequency Stability:* +0.007%*Mounting:* Table or relay rack*Power Requirements:* 750 w; 115-v or 230-v, 50- to 60-cycle, 1-phase ac

**AN/URT-10(XN-1) RADIO TRANSMITTING SET****MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Electrical Special Purpose Cable Assembly CX-1826/U			
1	Electrical Special Purpose Cable Assembly CX-1827/U			
1	Electrical Special Purpose Cable Assembly CX-1828/U			
1	Maintenance parts kit			
2	Radio Frequency Jack UG- 21B/U	-----	1-3/4 x 13/16 x 13/16	.03
1	RF storage box	-----	10-5/8 x 18-5/8 x 14-3/4	
1	Radio Transmitter T-335 (XN-1)/URT-10 including:	-----	13-23/32 x 19 x 16-1/2	146
1	Amplifier Oscillator AM- 634(XN-1)/URT	-----	10 x 5 x 14-1/2	30
1	Amplifier Oscillator AM- 635(XN-1)/URT	-----	10 x 5 x 14-1/2	30
1	Amplifier Oscillator AM- 636(XN-1)/URT	-----	10 x 5 x 14-1/2	30
1	Amplifier Oscillator AM- 637(XN-1)/URT	-----	10 x 5 x 14-1/2	30
1	Electrical Equipment Cabi- net CY-1126/URT	-----	13-3/4 x 19 x 14-13/16	
1	Power Supply PP-773/ URT	-----	12-7/32 x 19 x 16-1/4	
1	Radio Modulator MC- 163/URT	-----	10 x 4 x 14-3/8	
1	Transmitter Control CFT- 63555	-----	5-13/16 x 4-7/16 x 3-5/16	4

**REFERENCE DATA AND LITERATURE:**

NAVSHIPS 91623

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
3	2.75	240

RADIO TRANSMITTING SET **AN/URT-10(XN-1)**

PROCUREMENT DATA

PROCRING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG: USN, BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Federal Telephone and Radio Corp.	Clifton, N. J.	NObsr-52221, 11 January 1951	



RADIO TRANSMITTING SET **AN/URT-12**

3 December 1958

Cognizant Serv: USN FSN:

	USA	USN	USAF
TYPE CLASS:	--	Used by	Std
STOCK NO:	--	--	--

(No Illustration Available)

**FUNCTIONAL DESCRIPTION:**

Radio Transmitting Set AN/URT-12 is a general purpose communication equipment designed for ship and shore use. It provides eight bands to facilitate the employment of the frequency range.

This equipment consists essentially of a radio transmitter, a power supply, a cabinet, and associated accessories.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range:* 2 mc to 30 mc

*Number of Bands:* 8

*Type Modulation:* AM

*Type Emission:* A1, A3

*Frequency Control:* Crystal

*Power Output:*

Emission A1: 100 w

Emission A3: 75 w

*Power Requirements:* 1,050 w; 115-v or 230-v, 50- to 60-cycle, 1-phase ac

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Radio Transmitting Set AN/ URT-12 includes:	-----	20 x 20 x 36	
1	Cabinet CY-1369/ URT-12			
1	Power Supply PP-950/ URT-12			
1	Radio Transmitter T-408/ URT-12			

**REFERENCE DATA AND LITERATURE:****SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)

MIL-HDBK-161

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**AN/URT-12** RADIO TRANSMITTING SET

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PROCUREMENT DATA

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PROCURING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG: USN, USCG

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CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Radiomarine Corporation of America	New York, N. Y.	Teg-38554	

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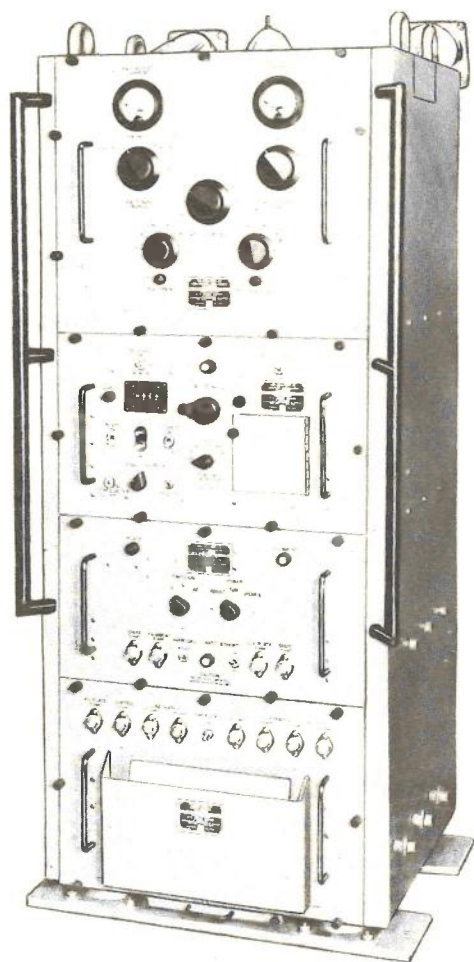


RADIO TRANSMITTING SET **AN/URT-13**

3 December 1958

Cognizant Serv: USN FSN:

	USA	USN	USAF
TYPE CLASS:	--	Used by	--
STOCK NO:	--	--	--



AN/URT-13

**FUNCTIONAL DESCRIPTION:**

Radio Transmitting Set AN/URT-13 is a transmission facility intended for use on Coast Guard vessels and shore stations. It is designed to operate under widely varying climatic conditions.

This equipment is complete with the exception of antenna, power source, channel frequency crystals, and keying items. It is designed to operate at ambient temperatures between 0° to 55°C. and in a relative humidity up to 95 percent.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range:* 239 kc to 556 kc

*Frequency Control:* Crystal or master oscillator

*Number of Crystal Channels:* 4

*Type MO Control:* Manual, continuously variable over entire range in 3 bands

*Type Modulation:* AM

*Type Emission:* A1, A2

*Modulation Frequency:* 1,000 cps, -10 to +20%

*Modulation Capability:* 100%

*Keying Type:* On-off (electron tube)

*Keying Speed:*

CW: Up to 100 wpm

MCW: Up to 60 wpm; keys carrier and modulation

*Control:* Local or remote start-stop and keying, manual or automatic

*RF Output:* 200 w, 4 ohms, 750  $\mu$ f

*Spurious Radiation:* 50 db minimum below carrier

*Hum Level:* Less than 1% of value equivalent to 100% modulation

*Accuracy and Stability:* Within  $\pm 0.02\%$  of desired carrier frequency

*Operating Temperature:* 0° to 55° C.

*Line Voltage:*  $\pm 10\%$

*Line Frequency:*  $\pm 5\%$

*Heat Dissipation:* 1,510 w

*Power Requirements:* 115-v or 230-v, 50- to 60-cycle, 1-phase ac

## AN/URT-13 RADIO TRANSMITTING SET

## MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Box maintenance parts kit	-----	15 x 15 x 24	275
1	Radio Transmitting Set AN/ URT-13 including:	-----	24 x 27 x 63-5/8	840
1	Amplifier-Oscillator AM- 854/URT-13	-----	12-11/16 x 21-1/8 x 23-5/8	75
1	Cabinet, Electrical Equip- ment CY-1384/URT-13	-----	24 x 27 x 63-5/8	240
1	M. O. Calibration chart	-----	3/32 x 8-1/2 x 11	
1	Power Supply PP-965/ URT-13	-----	14-1/2 x 21-1/8 x 23-1/2	340
1	Radio Frequency Tuner Assembly TN-222/ URT-13	-----	18-3/16 x 21-1/8 x 23-1/2	50
1	Radio Modulator MD- 197/URT-13	-----	11-3/8 x 21-1/8 x 23-1/2	135
2 sets	Servicing diagrams	-----	13-1/2 x 10	1
1 set	Test cables	-----		5

## REFERENCE DATA AND LITERATURE:

## SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
2	66	1,350

## PROCUREMENT DATA

PROCURING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG: USN, USCG

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Radiomarine Corporation of America	New York, N. Y.	Tcg-38556, 26 June 1951	

RADIO TRANSMITTING SET **AN/URT-14**

3 December 1958

Cognizant Serv: USN FSN:

USA

USN

USAF

TYPE CLASS: --

Used by

--

STOCK NO: --

--

--

(No Illustration Available)

## FUNCTIONAL DESCRIPTION:

Radio Transmitting Set AN/URT-14 is a general purpose communication equipment designed for ship and shore use. It provides four channels to facilitate the employment of the available frequency range.

This equipment consists essentially of a radio frequency oscillator, an amplifier tuner, a power supply and associated accessories.

## TECHNICAL CHARACTERISTICS:

*Frequency Range:* 300 kc to 535 kc*Number of Channels:* 4*Type Modulation:* AM, FM*Type Emission:* A1, A2, F1*Type Frequency Control:* Crystal and master oscillator*Power Output:* 500 w*Power Requirements:* 5.5 kva; 220-v or 400-v, 50- to 60-cycle, 3-phase ac

## MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Radio Transmitting Set AN/ URT-14 including:	-----	24 x 36 x 72	
1	Amplifier-tuner			
1	Modulator-power supply			
1	RF Oscillator O-396/ URT-14			

## REFERENCE DATA AND LITERATURE:

## SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)

MIL-HDBK-161

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**AN/URT-14** RADIO TRANSMITTING SET

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PROCUREMENT DATA

---

PROCURING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG: USN, USCG

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CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Air Associates, Inc.	Orange, N. J.		

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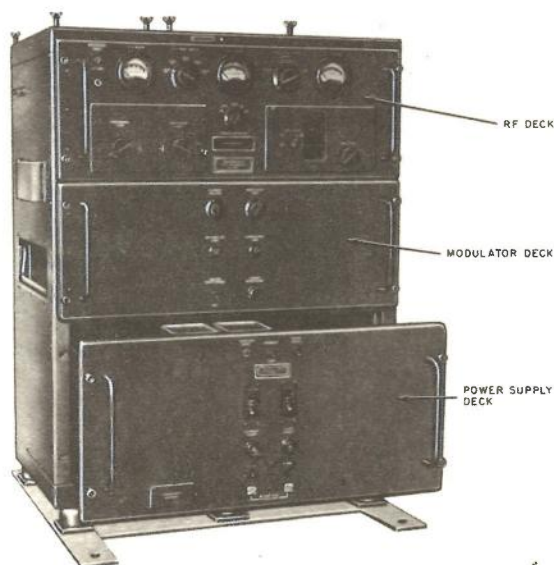
## RADIO TRANSMITTER AN/URT-type

1 July 1958

Cognizant Serv: USA FSN: 5820-503-2640

T-368( )/URT

	USA	USN	USAF
TYPE CLASS:	Std	--	Std
STOCK NO:	2C6900-368	--	--



T-368( )/URT

## FUNCTIONAL DESCRIPTION:

Radio Transmitter T-368( )/URT is a medium-power, AM (cw, voice), HF transmitter that can be used as mobile or fixed-station equipment.

It may also be used as an RF amplifier for low-powered exciter units or as a driver of high-power transmitters. In such applications, it will transmit frequency-shift keying, narrow-band FM, and a combination of frequency-shift keying with voice AM.

This equipment consists of the transmitter and accessory items, and requires a tuning unit when a long-wire or whip-type antenna is used. It also requires auxiliary equipment for frequency-shift keying or other special modes of transmission.

## TECHNICAL CHARACTERISTICS:

*Frequency Range in Mc:* 1.5 to 20

*Type Modulation:* AM, FM

*Type of signal:* Cw, icw, voice, fsk

*Power Output:*

AM: 4000 w

Cw: 450 w

*Power Requirements:* 2.2 kw, 115-v 50/60-cycle ac

## MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
		(FSN)		
1	Radio Transmitter T-368/ URT	5820-503-2640	57 x 31 x 32	700
	(Equipment consists of only one major component.)			

## REFERENCE DATA AND LITERATURE:

TM 11-809

## SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
1	38	940

MIL-HDBK-161

**AN/URT-type** RADIO TRANSMITTER

PROCUREMENT DATA

PROCURING SERVICE: USA  
SPEC &/or DWG: MIL-T-11770; MIL-T-11437

DESIGN COG: USA, Sig

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Barker & Williamson, Inc.	Upper Darby, Pa.	3472-P-52-31 25070-P-54-55	\$3,230.88 3,301.11

## RADIO TELEGRAPH TRANSMITTING EQUIPMENT AN/URT-type

1 December 1958

Cognizant Serv: USN FSN:

TAG

	USA	USN	USAF
TYPE CLASS:	--	Used by	--
STOCK NO:	--	--	--

(No Illustration Available)

## FUNCTIONAL DESCRIPTION:

Radio Telegraph Transmitting Equipment TAG is designed for either shipboard or shore station installation. The two models are similar, except for the power supply equipment furnished with each type.

This equipment is primarily used as the main high frequency transmitter for Fleet and Force Flagships, Aircraft Carriers first line, Cruisers first line, and for certain remote shore stations where the primary requirement is to effect distant radio transmission to the fleet components.

## TECHNICAL CHARACTERISTICS:

*Frequency Range:* 4,000 to 4,525 kc; 8,000 to 9,050 kc; 12,000 to 13,575 kc; and 16,000 to 18,100 kc

*Power Output:*

At Frequencies below 9,050 kc: 6 kw

In 12,000- to 13,575-kc band: 4.8 kw

In 16,000- to 18,100-kc band: 3.0 kw

*Antenna:* Single wire, approximately 58 feet long

*Power Requirements:*

Shipboard: 240-v dc

Shore Station: 220-v 60-cycle 3-phase ac

## MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
<i>For Shipboard Installation:</i>				
1	Automatic Starter 3093			
1	Automatic Starter 3229			
1	Automatic Starter 3248			
1	External monitor lamp and resistor			
1	Low power motor generator filter unit			
1	Motor generator set, consisting of:			
1	Generator 3091			
1	Generator 3092			
1	Motor 3090			
1	Motor generator set, consisting of:			
1	Motor 3094			
1	Motor 3095			
1	Protective and filter unit (for 7,500-v generator)			
1	Radio Transmitter 3079			
1	Transmitter start-stop switch			
1	Water Cooling Unit 3096			
<i>For Shore Station Installation:</i>				
1	Automatic Starter 3098			
1	Automatic Starter 3105			
1	Automatic Starter 3247			

MIL-HDBK-161

**AN/URT-type RADIO TELEGRAPH TRANSMITTING EQUIPMENT**

**MAJOR COMPONENTS—Continued**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Low power MG filter unit			
1	Motor generator set, consisting of:			
1	Generator 3091			
1	Generator 3092			
1	Motor 3097			
1	Motor generator set, consisting of:			
1	Generator 3095			
1	Generator 3100			
1	Motor 3099			
1	Protective and filter unit (for 7,500-v generator)			
1	Radio Transmitter 3079			
1	Water Cooling Unit 3096-A			

**REFERENCE DATA AND LITERATURE:**

GEI 3973

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
------	----------------	--------------

**PROCUREMENT DATA**

PROCURING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG: USN, BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
General Electric Co.	----	NOs-4374	



RADIO TRANSMITTING EQUIPMENT **AN/URT-type**

1 December 1958

Cognizant Serv: USN FSN:

TBK-4

USA

USN

USAF

TYPE CLASS: --

Used by

--

STOCK NO: --

--

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(See Illustration TBK-11 under AN/FRT-type: TBK-6, TBK-11, TBK-15, TBK-16, p. 619)

**FUNCTIONAL DESCRIPTION:**

Radio Transmitting Equipment TBK-4 is a medium power, high frequency transmitter capable of relay keying speeds up to 100 words per minute. The transmitter power may be reduced from full power to 75 watts by disconnecting the power amplifier. This set is designed for either shipboard or shore station use.

Remote operation of this transmitter is possible on shipboard installations by use of a standard 4- or 6-wire control system; in shore stations, remote control may be accomplished through a landline telegraph circuit.

This equipment is essentially the same as the TBM series of transmitters, except that the TBK series does not have provisions for modulated continuous wave signaling.

Models of this equipment suitable only for shipboard instal-

lation (classified and described under AN/SRT-type) are the TBK-3, TBK-5, TBK-7, through TBK-10, TBK-12 through TBK-14, and TBK-17 through TBK-20. Models designed for use at shore installations, classified and described under AN/FRT-type equipments, are the TBK-6, TBK-11, TBK-15, and TBK-16.

**TECHNICAL CHARACTERISTICS:***Frequency Range in Mc:* 2.0 to 18.1*Frequency Control:* Master Oscillator*Type of Signal:* Cw*Power Output:* 75 or 500 w*Keying Speed:* 100 wpm (maximum)*Antenna:* 80 feet (maximum length)*Power Requirements:* 440-v 60-cycle 3-phase ac**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Auto Transformer 30286	-----	9-3/4 x 11-13/16 x 21-3/4	171
1	Junction Box 23055	-----	11-7/8 x 23-7/16 x 46-1/8	117
1	Radio Transmitter 52032	-----	24 x 32 x 72	688
1	Rectifier Power Unit 20018	-----	22-7/8 x 23-15/16 x 71-7/8	976
1	Remote Control Unit 23084	-----	12-15/16 x 19 x 20	88

**REFERENCE DATA AND LITERATURE:**

Technical Manuals for Navy Model TBK-3, 4, 5, 6, 7, 8, 10, and 17, Radio Transmitting Equipment

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
------	----------------	--------------

MIL-HDBK-161

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**AN/URT-type** RADIO TRANSMITTING EQUIPMENT

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PROCUREMENT DATA

---

PROCURING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG: USN, BuShips

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CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Westinghouse Electric & Mfg. Co.	Baltimore, Md.	NOs 44507	

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## RADIO TELEPHONE TRANSMITTING EQUIPMENT AN/URT-type

4 December 1958

Cognizant Serv: FSN:

TCA

	USA	USN	USAF
TYPE CLASS:	--	Used by	--
STOCK NO:	--	--	--

(No Illustration Available)

## FUNCTIONAL DESCRIPTION:

Radio Telephone Transmitting Equipment TCA is designed for voice communication. Rapid frequency change to any one of four preselected frequencies in the range of 3,000 to 10,000 kilocycles is accomplished by manipulation of a single switch. Audio-frequency response and harmonic content are held to values that will give high quality transmission for the service for which designed.

## TECHNICAL CHARACTERISTICS:

*Frequency Range:* 3,000 to 10,000 kc  
*Frequency Control:* Crystal  
*Power Output:* 15 w  
*Channels:* 4  
*Types of Signal:* Voice  
*Audio Frequency Response:* Within 2 db from 500 to 2,500 cps with sharp cutoff below 500 cps and above 2,500 cps, and down 30 db at 60 cps and 5,000 cps  
*Power Requirements:* 110-v 50/60-cycle ac

## MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Cabinet assembly			
1	Filter unit			
1	Microphone			
1	Modulator unit			
2	Mounted crystal			
1	Oscillator coil			
2	Output cable			
1	Panel assembly			
1	Power supply			
1	RF assembly			

## REFERENCE DATA AND LITERATURE:

## SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)

MIL-HDBK-161

---

**AN/URT-type** RADIO TELEPHONE TRANSMITTING EQUIPMENT

---

PROCUREMENT DATA

---

PROCURING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG: USN, BuShips

---

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Collins Radio Corp.	Cedar Rapids, Iowa	NOs-66284, 22 April 1939	\$750.00 with spares

---

RADIO TRANSMITTING EQUIPMENT **AN/URT-type**

5 December 1958

Cognizant Serv: USN FSN:

TCM

USA

USN

USAF

TYPE CLASS: --

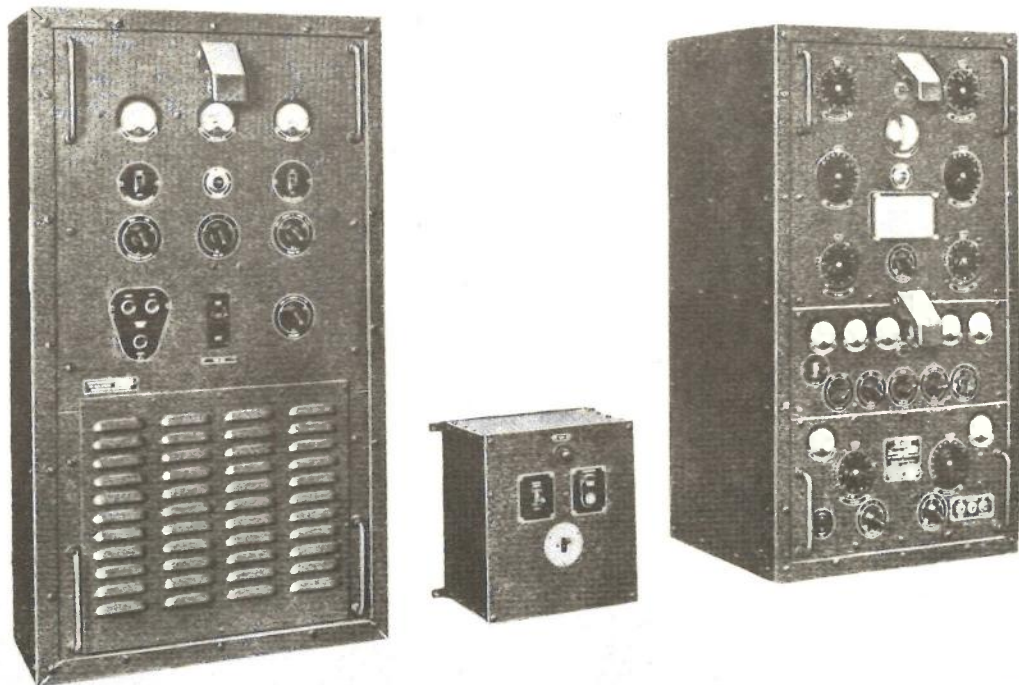
Used by

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STOCK NO: --

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TCM

**FUNCTIONAL DESCRIPTION:**

Radio Transmitting Equipment TCM and the TCM-1 and -2 are designed for use in either shore or shipboard installations where a compact medium-powered radio transmitter is required.

Equipment required but not supplied: one hand Microphone NT-51006-A, one Chest Microphone NT-51016A, and one set of cables.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range:* 2,000 to 18,100 kc

*Type of Signal:* Cw, mew, voice

*Power Output:*

Cw: 125 w

Mew: 30 w

Voice: 30 w

*Power Requirements:* 115-v 60-cycle 1-phase ac

MIL-HDBK-161

**AN/URT-type** RADIO TRANSMITTING EQUIPMENT

MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Control Unit 23241	-----	9 x 11-1/2 x 12-3/8	35
1	Hf Radio Transmitter 52206	-----	18-3/4 x 20-1/2 x 36-3/4	200
1	Rectifier 20122	-----	14-3/4 x 20-1/2 x 36-3/4	259

REFERENCE DATA AND LITERATURE:

NAVSHIPS 900,401

SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
5	96.01	1,079

PROCUREMENT DATA

PROCURING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG: USN, BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
General Electric Co.	Schenectady, N. Y.	NOs-48078, 4 Jan 1941	\$2,500.00 in- cluding equip- ment spares

RADIO TRANSMITTING EQUIPMENT **AN/URT-type**

5 December 1958

Cognizant Serv: USN FSN:

TCM-1

USA

USN

USAF

TYPE CLASS: --

Used by

--

STOCK NO: --

--

--

(See Illustration of TCM, p. 1935)

## FUNCTIONAL DESCRIPTION:

Radio Transmitting Equipment TCM-1 and the TCM and TCM-2 are designed for use in either shore or shipboard installations where a compact medium-powered radio transmitter is required.

Equipment required but not supplied: one set of cables.

## TECHNICAL CHARACTERISTICS:

*Frequency Range:* 2,000 to 18,100 kc

*Type of Signal:* Cw, mcw, voice

*Power Output:*

Cw: 125 w

Mcw: 30 w

Voice: 30 w

*Power Requirements:* 115-v 60-cycle 1-phase ac

## MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Chest Microphone 51046			
1	Control Unit 23241	-----	9 x 11-1/2 x 12-3/8	35
1	Hand Microphone 51006A	-----		
1	Hf Radio Transmitter 52206	-----	18-3/4 x 20-1/2 x 36-3/4	200
1	Rectifier 20122	-----	14-3/4 x 20-1/2 x 36-3/4	259

## REFERENCE DATA AND LITERATURE:

NAVSHIPS 900,401

## SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
7	96.01	1,013

MIL-HDBK-161

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**AN/URT-type** RADIO TRANSMITTING EQUIPMENT

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PROCUREMENT DATA

---

PROCURING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG: USN, BuShips

---

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
General Electric Co.	Schenectady, N. Y.	98843, 11 Feb 1942	\$3,930.00 including equipment spares

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RADIO TRANSMITTING EQUIPMENT **AN/URT-type**

5 December 1958

Cognizant Serv: USN FSN:

TCM-2

USA

USN

USAF

TYPE CLASS:  
STOCK NO:--  
--Used by  
----  
--

(See Illustration of TCM, p. 1935)

## FUNCTIONAL DESCRIPTION:

Radio Transmitting Equipment TCM-2 and TCM and TCM-1 are designed for use in either shore or shipboard installations where a compact medium-powered radio transmitter is required.

Equipment required but not supplied: one Chest Microphone 51016A, and one set of cables.

## TECHNICAL CHARACTERISTICS:

*Frequency Range:* 2,000 to 18,100 kc*Type of Signal:* Cw, mew, voice*Power Output:*

Cw: 125 w

Mew: 30 w

Voice: 30 w

*Power Requirements:* 115-v 60-cycle 1-phase ac

## MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Control Unit NT-23241	-----	9 x 11-1/2 x 12-3/8	35
1	Hand Microphone NT-51004C	-----		
1	Hf Radio Transmitter NT-52206	-----	18-3/4 x 20-1/2 x 36-3/4	200
1	Rectifier NT-20122	-----	14-3/4 x 20-1/2 x 36-3/4	259

## REFERENCE DATA AND LITERATURE:

NAVSHIPS 900,401

## SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
6	96.01	1,013

MIL-HDBK-161

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**AN/URT-type** RADIO TRANSMITTING EQUIPMENT

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PROCUREMENT DATA

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PROCURING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG: USN, BuShips

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CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
General Electric Co.	Schenectady, N. Y.	NXs-15910, 1 Jun 1943	\$3,930.00 in- cluding equip- ment spares

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## RADIO TRANSMITTING EQUIPMENT AN/URT-type

5 December 1958

Cognizant Serv: USN FSN:

TCN

	USA	USN	USAF
TYPE CLASS:	--	Used by	--
STOCK NO:	--	--	--



TCN

## FUNCTIONAL DESCRIPTION:

Radio Transmitting Equipment TCN and TCN-1 are designed primarily for either shore or shipboard installation wherever a compact medium-powered radio transmitter is required.

Equipment required but not supplied: one Hand Microphone 51106-A, one Chest Microphone 51016-A and, one set of cables.

## TECHNICAL CHARACTERISTICS:

*Frequency Range:* 300 to 2,000 kc; 2,000 to 18,100 kc

*Type of Signal:* Cw, mew, voice

*Power Output:*

Cw: 125 w

Mew: 30 w

Voice: 30 w

*Power Requirements:* 115-v 50-62-cycle 1-phase ac

## MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Control Unit 23241	-----	9 x 11-1/2 x 12-3/8	35
1	Hf Radio Transmitter 52206	-----	18-3/4 x 20-1/2 x 36-3/4	200
1	IF Radio Transmitter 52205	-----	18-3/4 x 20-1/2 x 36-3/4	175
1	Power Transfer Switch 24094	-----	6-1/4 x 10 x 18-3/4	25
1	Rectifier 20122	-----	14-3/4 x 20-1/2 x 36-3/4	259

MIL-HDBK-161

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**AN/URT-type** RADIO TRANSMITTING EQUIPMENT

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**REFERENCE DATA AND LITERATURE:**

NAVSHIPS 900,401

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**SHIPPING DATA**

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PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
7	121.51	1,681

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**PROCUREMENT DATA**

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PROCURING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG: USN, BuShips

---

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
General Electric Co.	Schenectady, N. Y.	NOS-48078, 4 January 1941	\$6,270.00 including equipment spares

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RADIO TRANSMITTING EQUIPMENT **AN/URT-type**

5 December 1958

Cognizant Serv: USN FSN:

TCN-1

USA

USN

USAF

TYPE CLASS: --

Used by --

STOCK NO: --

(See Illustration of TCN, p. 1941)

## FUNCTIONAL DESCRIPTION:

Radio Transmitting Equipment TCN-1 and TCN are designed primarily for either shore or shipboard installation wherever a compact medium-powered radio transmitter is required.

Equipment required but not supplied: one set of cables.

## TECHNICAL CHARACTERISTICS:

*Frequency Range:* 300 to 2,000 kc and 2,000 to 18,100 kc

*Type of Signals:* Cw, mcw, voice

*Power Output:*

Cw: 125 w

Mcw: 30 w

Voice: 30 w

*Power Requirements:* 115-v 50-62-cycle 1-phase ac

## MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Chest Microphone 51046			
1	Control Unit 23241	-----	9 x 11-1/2 x 12-3/8	30
1	Hand Microphone 51006A			
1	Hf Radio Transmitter 52206	-----	18-3/4 x 20-1/2 x 36-3/4	169
1	IF Radio Transmitter 52205	-----	18-3/4 x 20-1/2 x 36-3/4	146
1	Power Transfer Switch 24094	-----	6-1/4 x 10 x 18-3/4	15
1	Rectifier 20122	-----	14-3/4 x 20-1/2 x 36-3/4	229

## REFERENCE DATA AND LITERATURE:

NAVSHIPS 900,401

## SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
7	131.26	1,568

MIL-HDBK-161

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**AN/URT-type** RADIO TRANSMITTING EQUIPMENT

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PROCUREMENT DATA

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PROCURING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG: USN, BuShips

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CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
General Electric Co.	Schenectady, N. Y.	NOs-98843, 11 February 1942	\$6,270.00 in- cluding equip- ment spares

---

RADIO TRANSMITTING EQUIPMENT **AN/URT-type**

2 December 1958

Cognizant Serv: USN FSN:

TCU, TCU-1, 2

USA

USN

USAF

TYPE CLASS: --

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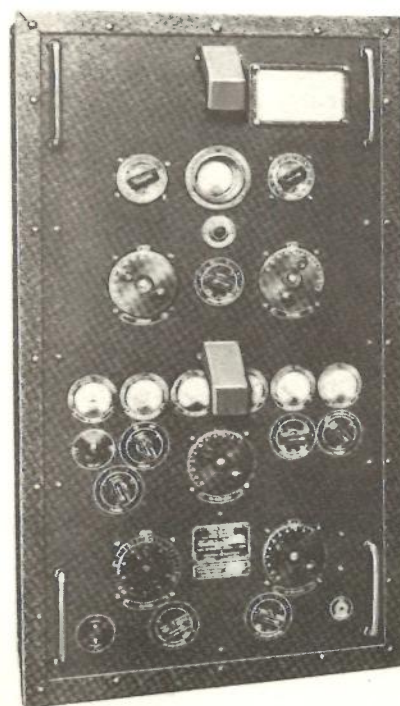
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STOCK NO: --

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TCU

**FUNCTIONAL DESCRIPTION:**

Radio Transmitters TCU, TCU-1 and 2 are compact medium-powered sets designed for shore or shipboard use. The equipments are constructed to provide efficient, reliable, and rapid communication.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range:* 300 to 2000 kc

*Power Output:*

Cw (A1) — 125 W

MCW (A2) — 30 W

*Power Requirements:* 115-v, 50 to 60-cycle, 1-phase ac

MIL-HDBK-161

**AN/URT-type RADIO TRANSMITTING EQUIPMENT**

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
<i>For TCU:</i>				
1	Case Spare Parts 23241			
1	Control Unit 23241	-----	9 x 11-1/2 x 12-3/8	35
1	IF Radio Transmitter 52205	-----	18-3/4 x 20-1/2 x 36-3/4	175
1	Rectifier 20122	-----	14-3/4 x 20-1/2 x 36-3/4	259
<i>For TCU-1, 2:</i>				
1	Case Spare Parts 23241	-----		93
1	Control Unit 23241	-----	9 x 11-1/2 x 12-3/8	30
1	IF Radio Transmitter 52205	-----	18-3/4 x 20-1/2 x 36-3/4	146
1	Rectifier 20122	-----	14-3/4 x 20-1/2 x 36-3/4	229

**REFERENCE DATA AND LITERATURE:**

NAVSHIPS 900,401

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
5	95.0	986

**PROCUREMENT DATA**

PROCURING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG: BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
General Electric Co.	Schenectady, N. Y.	Nos 48078 Nos 98843 NXs 15910	\$3,500.00



## RADIO TRANSMITTING EQUIPMENT AN/URT-type

5 December 1958

Cognizant Serv: USN FSN:

TCZ

USA

USN

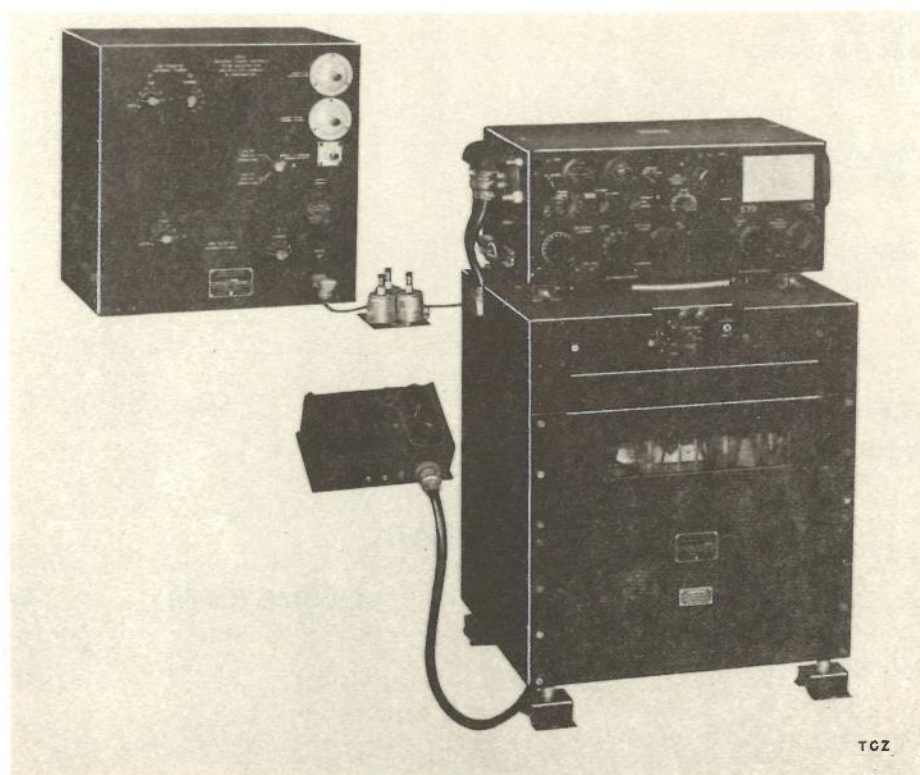
USAF

TYPE CLASS: --

Used by

--

STOCK NO: --

F16-Q-328525-200  
(115-v dc)F16-Q-328535-200  
(115-v dc)**FUNCTIONAL DESCRIPTION:**

Radio Transmitting Equipment TCZ is designed for either a ship- or a shore-based installation. Two bands of transmission frequencies are available within the specified range of this model. Transmission facilities include A1, A2, and A3; remote control operation is also provided.

**TECHNICAL CHARACTERISTICS:**

*Frequency Control:* Master oscillator  
*Type Emission:* A1, A2, A3  
*Power Output:* 100 w  
*Type Keying:* Relay, 30 wpm  
*Power Requirements:* 4.5 kw, 115-v 60-cyc'e 1-phase ac  
*Antenna:* Whip, 20 to 35 feet in length

**AN/URT-type RADIO TRANSMITTING EQUIPMENT****MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Antenna Loading Coil COL- 47370	-----	10-7/32 x 18-5/8 x 10-3/4	14.5
1	Antenna Shunt Capacitor COL- 481628	-----	3-7/8 x 5 x 4-1/8	1.6
1 set	Equipment spares	-----	-----	100
1 set	Interconnecting cables	-----	-----	-----
1	Motor-Generator Rectifier COL-211101 (ac)	-----	29-7/16 x 23-7/16 x 20-1/8	320
	or			
	Dynamotor Assembly Power COL-21102 (dc)	-----	29-7/16 x 23-7/16 x 20-1/8	210
1	Radio Transmitter COL-52286	-----	10-3/4 x 23-9/16 x 13-1/4	66
1	Remote Control Unit COL- 23140	-----	4-3/4 x 9-31/32 x 6-9/16	8

**REFERENCE DATA AND LITERATURE:**

NAVSHIPS 900,854

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
4	61.05	1,202

**PROCUREMENT DATA**

PROCURING SERVICE: USN, BuShips  
SPEC &/or DWG:

DESIGN COG: USN, BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Collins Radio Co.	Cedar Rapids, Iowa	NXs-491 9 May 1942	\$5,540.00 in- cluding equip- ment spares

## RADIO TRANSMITTING EQUIPMENT AN/URT-type

5 December 1958

Cognizant Serv: USN

FSN:

TCZ-1, TCZ-2

USA

USN

USAF

TYPE CLASS:

STOCK NO:

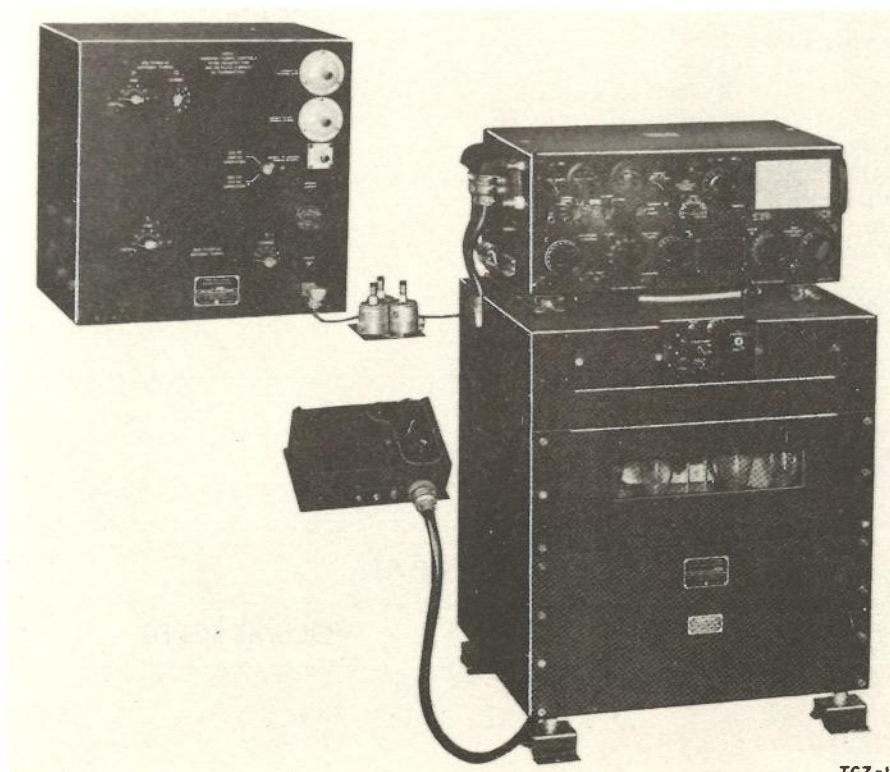
Used by

F16-Q-328560-200

(TCZ-1)

F16-Q-328570-200

(TCZ-2)



TCZ-1

**FUNCTIONAL DESCRIPTION:**

Radio Transmitting Equipments TCZ-1 and TCZ-2 are medium-power equipments designed for ship to shore use. An auto-tune system allows rapid automatic selection of eleven preset channels or, if desired, manual tuning is possible throughout the frequency range. Provision is also made for break-in operation, so that an associated receiver may be used with the transmitter. Remote control is possible through the use of one or more remote selector units, or through four- or six-wire radiophone units.

These two models are similar, except that this model operates from an alternating current source while the TCZ-2 uses a direct current source of power.

Both models are adaptations of the Aircraft Radio Transmitting Equipment ATC.

Equipment required but not supplied: microphone, telegraph key, head-phone, and antenna.

**TECHNICAL CHARACTERISTICS:***Frequency:*

*Range:* 200 to 18,100 kc

*Control:* Master oscillator

*Type Emission:* A1, A2, A3

*Modulation Capability:* 90%

*Power Output:* 100 w maximum

*Keying Speed:* 30 wpm

*Tuning System:* Automatic selection of 11 channels, and manual control

*Input Impedance:* 40 to 200 ohms

*Antenna Type:* Vertical, 20 to 35 feet

*Power Requirements:*

For TC2-1-1, 200 w; 110- or 115-v, 50- to 60-cycle, 1-phase ac, 80% pf

For TC2-2, 1,300 w at 115-v dc

*Mounting Data:* Deck mounted

**AN/URT-type RADIO TRANSMITTING EQUIPMENT**

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Antenna Load Coil	COL-47505	19-3/4 x 18-5/8 x 15-1/2	48
1	Antenna Shunt Capacitor	COL-481628	3-7/8 x 5 x 4-1/8	1.56
1	Crystal Unit	CR-2B/U	7/16 x 1-1/16 x 1-1/2	.03
4	Interconnecting Cables	65X-7	11-11/32 long	.62
		65X-8	11-9/16 long	.56
		65X-9	120 long	.62
		65X-10	120 long	4
1	Motor-Generator Rectifier	COL-211322 (for TCZ-1)	29-7/16 x 23-7/16 x 20-1/8	320
1	Radio Transmitter	COL-52286-A	10-3/4 x 23-9/16 x 13-1/4	70
1	Remote Control Unit	COL-23410	4-3/8 x 9-31/32 x 6-1/2	8
1	Dynamotor Assembly	COL-211624 (for TCZ-2)	29-7/16 x 23-7/16 x 20-1/8	210

**REFERENCE DATA AND LITERATURE:**

NAVSHIPS 900,481(A)

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
7	8.06	1,765

**PROCUREMENT DATA**

PROCURING SERVICE: USN, BuShips  
SPEC &/or DWG:

DESIGN COG: USN, BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Collins Radio Co.	Cedar Rapids, Iowa	NXsr-65358, 29 June 1944	

RADIO TRANSMITTING EQUIPMENT **AN/URT-type**

5 December 1958

Cognizant Serv: USN FSN:

TDE, TDE-1, 2, 3

USA

USN

USAF

TYPE CLASS: --

STOCK NO: --

TDE: 16-Q-332125-200

TDE-1: 16-Q-332145-200 (115-230 ac)

TDE-1: 16-Q-332196-200 (115 dc)

TDE-1: 16-Q-332176-200 (220-440 ac)

TDE-1: 16-Q-332155-200 (230 dc)

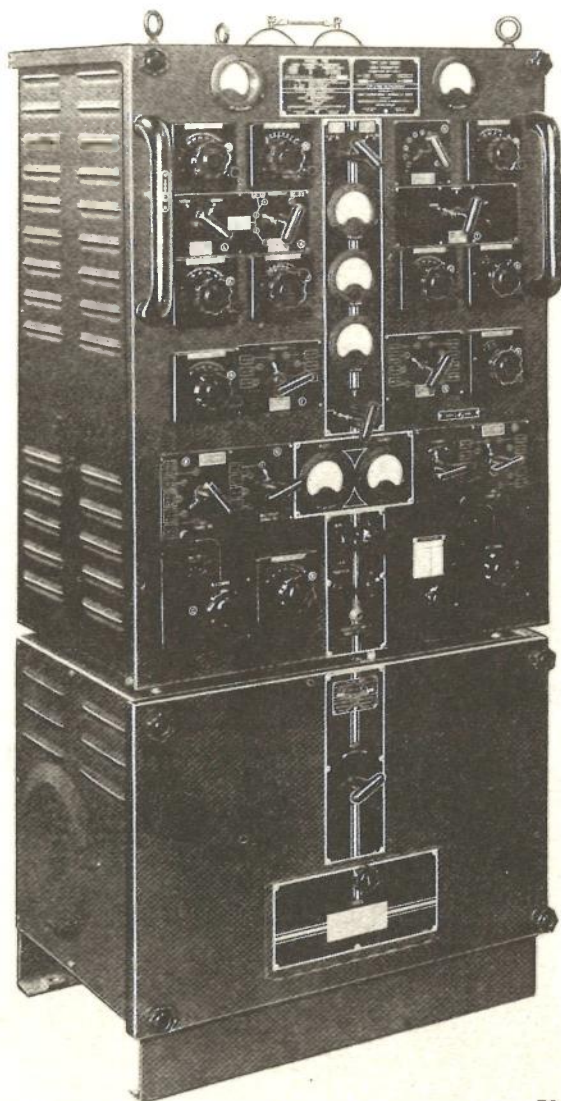
TDE-2: 16-Q-332198-200 (115 dc)

TDE-2: 16-Q-332178-200 (220-440 ac)

TDE-2: 16-Q-332199-200 (230 dc)

TDE-2: 16-Q-332200-200 (115 dc)

TDE-3: 16-Q-332235-200 (440 ac)



TDE

**FUNCTIONAL DESCRIPTION:**

Radio Transmitting Equipments TDE and TDE-1, 2, and 3 are low-power sets designed to facilitate rapid installation aboard surface vessels or at shore stations. They may be operated from the front panel or from a remote point by a 4- or 6-wire remote control system. An hf and an mf transmitter may be used as a single unit, readily matched to a wide range of antennas; or, separate antennas may be used for the mf and hf sections.

These equipments are similar in design and operation; however, the major units vary with the type of power source available.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in Mc:* 0.3 to 1.5, and 1.5 to 18.1

*Type of Emission:* A1, A2, A3

*Keying Speed:* 100 wpm, maximum

*Frequency Control:* Master Oscillator

*Power Output:* A1—124 W; A2—35 W; A3—30 W

*Power Source Required:*

TDE and TDE-2—1, 2 kw, 115- or 230-v dc; or 1.2 kw, 60-cycle 3-phase ac

TDE-1 and TDE-3—1.2 kw, 115- or 230-v dc; or, 1.2 kw at 115- and 230-v 60-cycle, 1-phase ac; or 1.2 kw at 208-v 220-v, or 440-v 60-cycle 3-phase ac

*Power Supply Equipment:* Motor-generator set and rectifier power unit

## AN/URT-type RADIO TRANSMITTING EQUIPMENT

## MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
<i>TDE:</i>				
1 set	Equipment Spares	-----	-----	155
1	Motor Generator and Rectifier	21848 or	22-13/16 x 28 x 19-7/16	372
	Power Unit	21849 or	22-13/16 x 28 x 19-7/16	372
		21850 or	22-13/16 x 28 x 19-7/16	355
		211030	22-13/16 x 28 x 19-7/16	360
1	Radio Transmitter	52267	39-13/16 x 28-1/4 x 20-1/2	334
1	Remote Control Unit	23305	3-9/16 x 5-7/16 x 5-3/16	3
<i>TDE-1, 3:</i>				
1	Auto Transformer	301145	3-1/8 x 7 x 5-1/2	6.5
1 set	Equipment Spares	-----	-----	155
1	Motor Generator and Rectifier	21848 or	22-13/16 x 28 x 19-7/16	372
	Power Unit	21849 or	22-13/16 x 28 x 19-7/16	372
		21850 or	22-13/16 x 28 x 19-7/16	355
		211030	22-13/16 x 28 x 19-7/16	360
1	Radio Transmitter	52267-A	39-13/16 x 28-1/4 x 20-1/2	334
1	Remote Control Unit	23381	3-11/16 x 5-7/16 x 5-1/8	3.5
<i>TDE-2:</i>				
1 set	Equipment Spares	-----	-----	155
1	Motor Generator and Rectifier	21848 or	22-13/16 x 28 x 19-7/16	372
	Power Unit	21849	22-13/16 x 28 x 19-7/16	372
1	Radio Transmitter	52267-A	39-13/16 x 28-1/4 x 20-1/2	334
1	Remote Control Unit	23305	3-9/16 x 5-7/16 x 5-3/16	3

## REFERENCE DATA AND LITERATURE:

NAVSHIPS 900,389-1B; 95328

## SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
2	6.19	205

RADIO TRANSMITTING EQUIPMENT **AN/URT-type**

## PROCUREMENT DATA

PROCURING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG, BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Farnsworth Television & Radio Corp. Westinghouse Electric & Mfg. Co.	Fort Wayne, Ind. Baltimore, Md.	NX <sub>ss</sub> -33636 NX <sub>s</sub> -3179, NX <sub>s</sub> -20802, NX <sub>ss</sub> -33634, NX <sub>sr</sub> -38682	



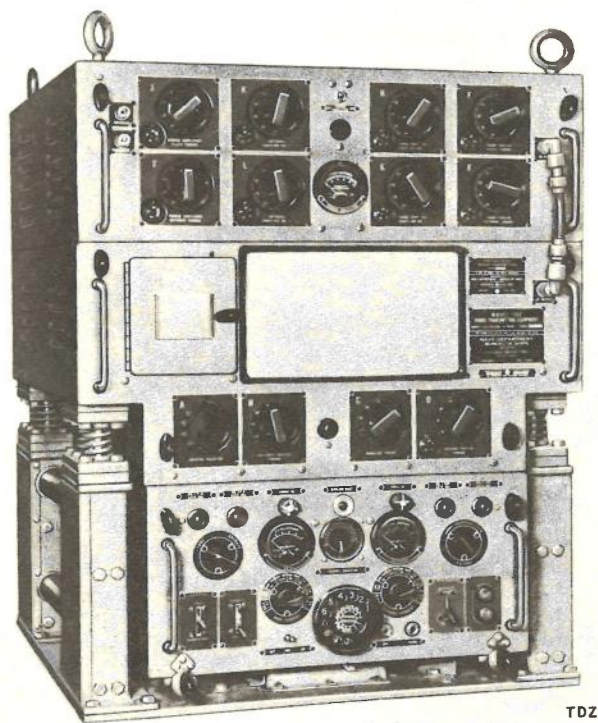


## RADIO TRANSMITTING EQUIPMENT AN/URT-type

16 October 1958

Cognizant Serv: USN FSN: 110/220/440-v Ac, 5820-665-0003, TDZ, TDZ-a  
 5820-644-3405 (with equipment spares)  
 115-v Dc, 5820-642-7709;  
 115-v Dc, 5820-642-7709;  
 5820-665-1804 (with equipment spares)  
 230-v Dc, 5820-665-0002;  
 5820-644-4872 (with equipment spares)

	USA	USN	USAF
TYPE CLASS:	--	Used by	--
STOCK NO:	--	--	--



## FUNCTIONAL DESCRIPTION:

Radio Transmitting Equipments TDZ and TDZ-a are medium-powered, multichannel very-high-frequency/ultra-high-frequency equipments designed for shipboard, vehicular, or shore station communication within line-of-sight distances. Either of these equipments will provide manual or automatic selection of any one of 10 preset crystal-controlled channels by the use of a telephone type dial.

Features of the equipment include the selection of the type of emission and starting and stopping the equipment, in addition to automatic frequency selection, either at the transmitter or through a remote channel selector and indicator unit or a six-wire radiophone remote control unit. As many as four channel selector and indicator units and four radiophones may be used at one time.

Keying may be accomplished either locally or at a remote station. Relay keying speeds up to 40 words per minute are possible.

A carbon microphone such as the 510046C is required for operation but is not a part of the equipment. A vertical dipole type antenna such as the 66147 also may be used.

The TDZ and TDZ-a are physically and functionally identical. The TDZ-a differs from the TDZ in that it has been converted from 60- to 400-cycle power frequency operation.

## TECHNICAL CHARACTERISTICS:

*Frequency Range in Mc:* 225 to 400

*Frequency Control:* Crystal

*Type Signal:* AM, 95% maximum capability

*Type Transmission:* Mcw, voice

*Type Keying:* Relay

*Keying Speed:* 40 wpm max

*Nominal Power Output:* 30 w

*Heat Dissipation:*

Transmitter: 875 w (maximum)

Motor Alternator:

115-v Dc: 800 w (key down)

230-v Dc: 730 w (key down)

*Power Requirements:*

TDZ:

Ac Operation: 0.87/0.995/0.99 kva, 110/220/440-v 50- to 60-cycle 1 phase ac

Dc Operation: 1.6/1.53 kw, 115/230-v dc

TDZ-a: 110-v 400-cycle ac

**AN/URT-type RADIO TRANSMITTING EQUIPMENT****MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1 set	Accessories			
1 set	Equipment spares			
1	Magnetic Controller:			
	21137 (for 115-v dc operation)	-----	10-5/8 x 11-9/16 x 17-5/16	48
	211375 (for 230-v dc operation)	-----	10-5/8 x 11-9/16 x 17-5/16	48
1	Motor-Generator Set:			
	211403 (for 230-v dc operation)	-----	10-1/4 x 13-1/2 x 31-15/16	250
	211405 (for 115-v dc operation)	-----	10-1/4 x 13-1/2 x 31-15/16	250
1	Radio Transmitter 52342	-----	24-3/4 x 25-11/16 x 32-1/16	760
1	Remote Channel Selector 23445	-----	4-7/8 x 6-7/8 x 6-7/8	7

**REFERENCE DATA AND LITERATURE:**

NAVSHIPS 900,809 (TDZ)

NAVSHIPS 91284 (TDZ-a)

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
2	101.2	1,800

*Note.* Power conversion equipment for use with dc power source supplied as a separate shipment.

**PROCUREMENT DATA**

PROCURING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG: USN, BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Melpar, Inc.	Alexandria, Va.	NXsr-55652 (TDZ), 7 April 1944  NObar-43140 (TDZ-a), 13 December 1948	\$8,992 with equipment spares

## RADIO TRANSMITTING EQUIPMENT AN/URT-type

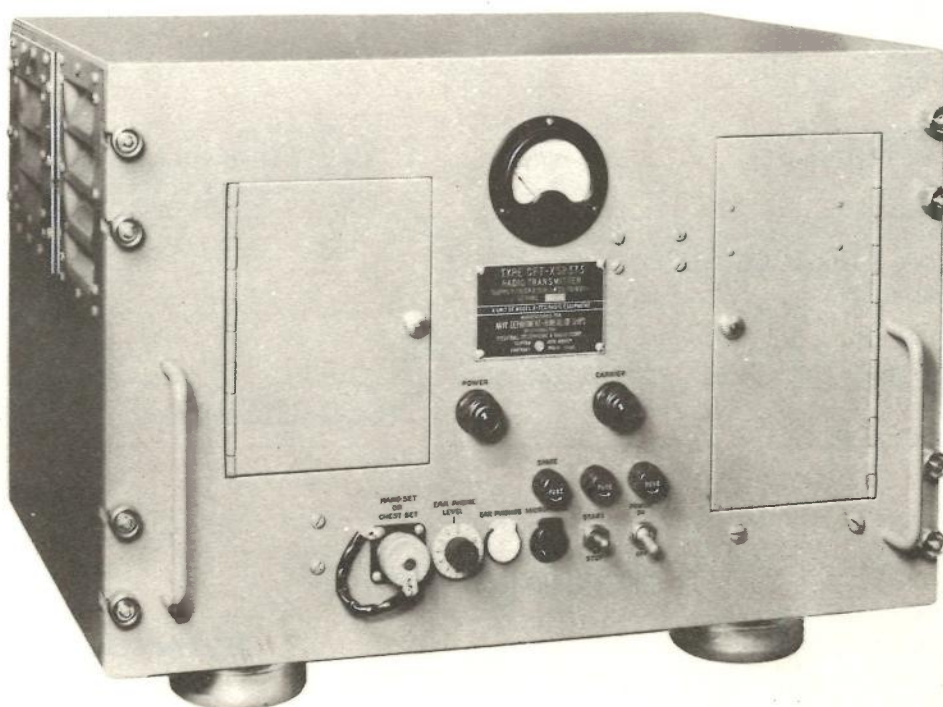
17 October 1958

Cognizant Serv: USN

FSN: TED, 5820-643-6151;  
 5820-644-3331 (with equipment spares)  
 TED-1, 5820-642-6155;  
 5820-665-2005 (with equipment spares)  
 TED-2, 5820-642-6150;  
 5820-665-1661 (with equipment spares)

TED, TED-1, TED-2

	USA	USN	USAF
TYPE CLASS:	--	Used by	--
STOCK NO:	--	TED: F16-Q-339598-200	--
		TED-1: F16-Q-339599-200	
		TED-2: F16-Q-339597-200	



TED

## FUNCTIONAL DESCRIPTION:

Radio Transmitting Equipments TED, TED-1, and TED-2 are single-channel, low-powered ultra high frequency radio-telephone transmitters used either for shipboard or shore aircraft control. The transmitters may be installed in surface ships or submarines or at shore stations. Each unit may be table mounted in its own cabinet or installed on a standard relay rack.

The equipment is designed for microwave or voice-modulated transmission within line-of-sight distances. The transmitters may be used in conjunction with an associated Radio Receiving Set AN/URR-13 and a standard shipboard remote control system. They also may be controlled through two control units, one for local operation and one for limited remote control.

Additional equipment required for operation includes

**AN/URT-type RADIO TRANSMITTING EQUIPMENT**

Radiophone Unit 23500, Handset 51081, Chest Set 51090, Crystal Unit CR-24/U, and Antenna AT-150/SCR, AS-390/SCR, or, for submarines, AS-468/B.

The TED, TED-1, and TED-2 are identical except for the remote control unit supplied with the TED only for land operation.

*Frequency Control:* Crystal

*Type Signal:* AM, 100% max capability

*Type Transmission:* Mew, Voice

*Power Output:* 15 w

*Input Impedance:* From microphone, 600 ohms

*Output Impedance:* To antenna, 50 ohms

*Power Requirements:* 750 w, 115/230-v 50- to 60-cycle 1-phase ac

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in Mc:* 225 to 400

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Control Transmitted 23555 (TED only)	-----	5-13/16 x 4-7/16 x 3-5/16	4
3	Electrical Special Purpose Cable Assembly:			
(1)	CX-1826/U			
(1)	CX-1827/U			
(1)	CX-1828/U			
1	Radio Frequency Plug UG- 218/U			
1	Radio Transmitter 52373	-----	13-23/32 x 19 x 15	145
1 box	Spare parts (TED only)	-----	15-1/8 x 43-1/8 x 16-3/8	139
1 box	Spare parts	-----	12-1/8 x 25-1/8 x 16-3/8	60

**REFERENCE DATA AND LITERATURE:**

NAVSHIPS 91357

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
3	19	557

**PROCUREMENT DATA**

PROCURING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG: USN, BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Federal Telephone & Radio Corp.	Clifton, N. J.	NObsr-39187 (TED)	\$2,200 0
		NObsr-43268 (TED)	2,200.00
		NObsr-52036 (TED-1)	2,200.00
Westinghouse Electric Corp.	Baltimore, Md.	NObsr-49237 (TED-2)	2,200.00
		NObsr-52310 (TED-2)	2,200.00

## RADIO TRANSMITTING EQUIPMENT AN/URT-type

7 October 1958

Cognizant Serv: USN FSN: 5820-642-6203  
5820-665-2051 (with equipment spares)

TED-3

	USA	USN	USAF
TYPE CLASS:	--	Used by	--
STOCK NO:	--	--	--

(No Illustration Available)

## FUNCTIONAL DESCRIPTION:

Radio Transmitting Equipment TED-3 is a short range radio transmitting equipment that can be used aboard ships or submarines or in shore installations. The unit may be table mounted in the cabinet supplied or it may be installed in a standard 19-inch relay rack.

The equipment is designed for modulated continuous-wave or voice-modulated transmission in the frequency range of 225 to 400 megacycles. Its effective range normally is limited to line-of-sight distances. For voice transmission, special circuits in the transmitter modulator section provide higher speech intelligibility for a given carrier level than is obtained with conventional circuits.

Four remote radiophone units, plus antenna, crystal units, and interconnecting cables, are required in the operation of this equipment. Standard shipboard remote control units may

be used, or Transmitter Control Unit 23555 may be used for limited control of the equipment from a point not normally equipped with standard remote control units.

## TECHNICAL CHARACTERISTICS:

*Frequency Range in Mc:* 225 to 400*Frequency Control:* Crystal*Type Signal:* AM*Type Transmission:* Mcw, voice*Carrier Output:* 12 to 15 w*Power Output:* 35 w*Impedance:*

Input: 600 ohms (for microphone)

Output: 50 ohms (to antenna)

*Power Requirements:* 750 w, 115/230-v 50- to 60-cycle 1-phase ac

## MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Electrical Special Purpose Cable Assembly CX-1826/U			
1	Electrical Special Purpose Cable Assembly CX-1827/U			
1	Electrical Power Cable As- sembly CX-3134/U			
1 set	Equipment spares	-----	12-1/8 x 16-1/2 x 25-1/4	89
2	Plug UG-2158/U			
1	Radio Transmitter 52373-B	-----	13-23/32 x 15 x 19	144

## REFERENCE DATA AND LITERATURE:

NAVSHIPS 91796

MIL-HDBK-161

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**AN/URT-type** RADIO TRANSMITTING EQUIPMENT

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SHIPPING DATA

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PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
2	14.7	331

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PROCUREMENT DATA

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PROCURING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG: USN, BuShips

---

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Westinghouse Electric Corp.	Pittsburgh, Pa.	NObsr-52310 NObsr-64599	\$2,040.00 2,040.00

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## RADIO TRANSMITTING EQUIPMENT AN/URT-type

8 October 1958

Cognizant Serv: USN FSN: 5820-503-2472 (with equipment spares)

TED-7

USA

USN

USAF

TYPE CLASS: --

Used by --

STOCK NO: --

(No Illustration Available)

## FUNCTIONAL DESCRIPTION:

Radio Transmitting Equipment TED-7 is a short-range radio transmitting equipment that can be used aboard ships or submarines or in shore installations. The unit may be table mounted in the cabinet supplied or it may be installed in a standard 19-inch relay rack.

The equipment is designed for modulated continuous-wave or voice-modulated transmission in the frequency range of 225 to 400 megacycles. Its effective range normally is limited to line-of-sight distances. For voice transmission, special circuits in the transmitter modulator section provide higher speech intelligibility for a given carrier level than is obtained with conventional circuits.

Four remote radiophone units, plus antenna, crystal units, and interconnecting cables, are required in the operation of this equipment. Standard shipboard remote control units may be used, or Transmitter Control Unit 23555 may be used for limited control of the equipment from a point not normally equipped with standard remote control units.

## TECHNICAL CHARACTERISTICS:

*Frequency Range in Mc:* 225 to 400*Frequency Control:* Crystal*Frequency Stability:*  $\pm 0.007\%$  under any conditions or combination of conditions*Type Signal:* AM*Type Transmission:* Mew, voice*Modulation:*

Mew: 90%

Voice: 100%

*Carrier Output:* 12 to 15 w*Impedance:*

Input: 600 ohms

Output: 50 ohms (to antenna)

*Audio Input Voltage:* -25 db to +5 db from 0.006 with reference level (0.1 to 3.4 v)*Af Response:* Flat within  $\pm 3$  db from 1,000 cps response level, from 300 to 3,500 cps*Heat Dissipation:* 725 w*Power Requirements:* 750 w, 0.85 pf, 115/230-v 50- to 60-cycle 1 phase ac

## MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1 set	Equipment spares	-----	12-1/2 x 16-1/4 x 16-1/4	51
2	Plug UG-218/U	-----		.5
1	Radio Transmitter 52373-E	-----	13-23/32 x 15 x 19	144

## REFERENCE DATA AND LITERATURE:

NAVSHIPS 92701

MIL-HDBK-161

**AN/URT-type** RADIO TRANSMITTING EQUIPMENT

SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
2	9.9	263

PROCUREMENT DATA

PROCURING SERVICE: USN  
SPEC &/or DWG: MIL-T-15244B(Ships)

DESIGN COG: USN, BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
CBS Columbia-Division of Columbia Broadcasting, Inc.	Long Island City, N. Y.	NObsr-64806 NObsr-59925	\$860.00 860.00



## RADIO TRANSMITTING EQUIPMENT AN/URT-type

8 October 1958

Cognizant Serv: USN FSN:

TED-8

	USA	USN	USAF
TYPE CLASS:	--	Used by	--
STOCK NO:	--	--	--

(No Illustration Available)

## FUNCTIONAL DESCRIPTION:

Radio Transmitting Equipment TED-8 is a short-range radio transmitting equipment that can be used aboard ships or submarines or in shore installations. The unit may be installed in the cabinet supplied or it may be mounted in a standard 19-inch relay rack.

The equipment is designed for modulated continuous-wave or voice-modulated transmission in the frequency range of 225 to 400 megacycles. Its effective range normally is limited to line-of-sight distances. For voice transmission, special circuits in the transmitter modulator section provide higher speech intelligibility for a given carrier level than is obtained with conventional circuits.

Four remote radiophone units, plus antenna, crystal units, and interconnecting cables, are required in the operation of this equipment. Standard shipboard remote control units may be used, or Transmitter Control Unit 23555 may be used for limited control of the equipment from a point not normally equipped with standard remote control units.

## TECHNICAL CHARACTERISTICS:

*Frequency Range in Mc:* 225 to 400*Frequency Control:* Crystal*Frequency Stability:*  $\pm 0.0007\%$ *Type Signal:* AM*Type Transmission:* Mcw, voice*Modulation Capability:* 100%*Nominal Carrier Output:* 12 to 15 w*Impedance:*

Input: 600 ohms

Output: 50 ohms

*Audio Frequency Response:* Flat within  $\pm 3$  db from a 1,000 cps response level from 300 to 3,500 cps*Maximum Permissible Line Voltage Variation:*  $\pm 10\%$ *Heat Dissipation:* 725 w*Power Requirements:* 750 w, 0.85 pf, 115/230-v 50- to 60-cycle 1-phase ac

## MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1 set	Equipment spares	-----	10-3/4 x 16-3/8 x 16-3/8	45
2	Plug UG-21D/U	-----		.5
1	Radio Transmitter 52373-F	-----	13-23/32 x 15 x 19	144

## REFERENCE DATA AND LITERATURE:

NAVSHIPS 92703

## SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
2	16.4	266

MIL-HDBK-161

**AN/URT-type** RADIO TRANSMITTING EQUIPMENT

PROCUREMENT DATA

PROCURING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG: USN, BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Rauland-Borg Corp.	Chicago, Ill.	NObsr-71106	

## CONTROL-MONITOR AN/URW-type

5 December 1958

Cognizant Serv: USN FSN:

C-1947/U

USA

USN

USAF

TYPE CLASS: --

Used by --

STOCK NO: --

(No Illustration Available)

## FUNCTIONAL DESCRIPTION:

Control-Monitor C-1947/U provides audio remoting facilities for up to four channels for any receivers and transmitters in the high-frequency, very-high-frequency, and ultra-high-frequency range.

## TECHNICAL CHARACTERISTICS:

*Range of Audio Frequency Signals:* 30 to 3,500 cps  
*Power Requirements:* 110 v, 60-cycle, 1-phase ac

## MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Control-Monitor C-1947/U (This equipment consists of only one major component.)			

## REFERENCE DATA AND LITERATURE:

## SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)

MIL-HDBK-161

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**AN/URW-type** CONTROL-MONITOR

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PROCUREMENT DATA

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PROCURING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG: USN

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CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
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## REMOTE CONTROL UNIT AN/URW-type

20 November 1958

Cognizant Serv: USA FSN: 5820-162-1306

RM-29-A

USA

USN

USAF

TYPE CLASS:

Std

Used by

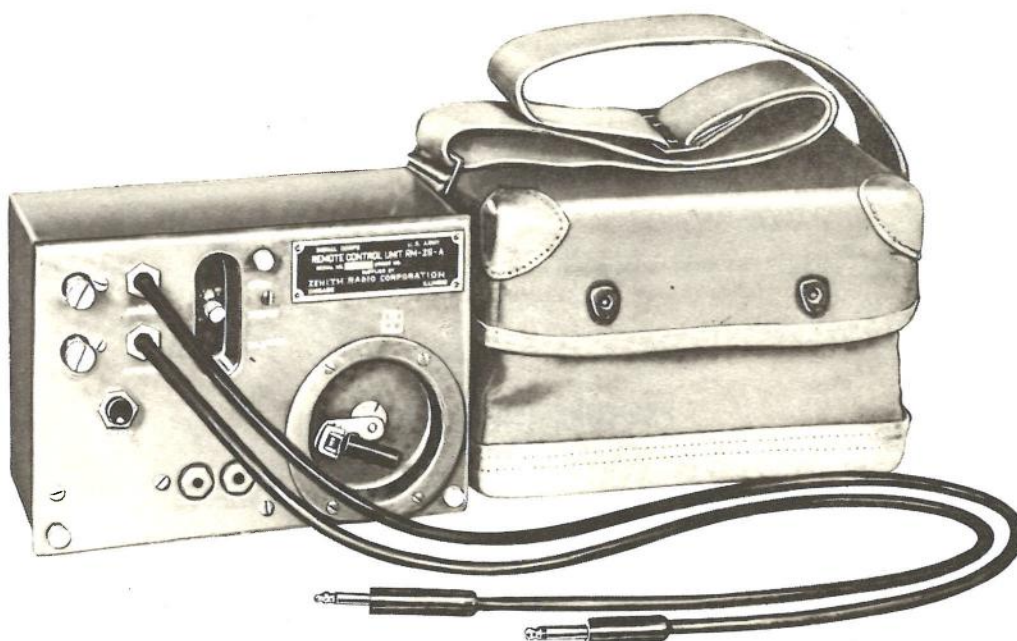
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STOCK NO:

2C7629

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RM-29-A

**FUNCTIONAL DESCRIPTION:**

Remote Control Unit RM-29-A is a self-contained unit which provides for remote control voice operation of Radio Sets SCR-178, SCR-284 series, SCR-299 series, SCR-608 series, SCR-609 series, SCR-610 series, SCR-628 series, and other models of similar design.

The unit operates in conjunction with Telephone EE-8A over a two-wire telephone line. Microphone T-17 and Headset P-19 (or equivalents), when plugged into the unit, are used for transmission and reception of signals via the radio set, for

monitoring signals between the telephone and the radio set and for direct telephonic communication with Telephone EE-8A.

Operational functions are selected by a switch on the front panel of the remote control unit.

This equipment is similar to Remote Control Unit RA-29-B, except for the mechanical placement of component parts.

**TECHNICAL CHARACTERISTICS:**

*Power Requirements:* 4-1/2 volts from Battery BA-27

MIL-HDBK-161

**AN/URW-type** REMOTE CONTROL UNIT

MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Case CS-76-B	-----	7 x 9-1/4 x 10-1/2	2.0
1	Remote Control Unit RM- 29-A	-----	5-3/16 x 6-5/16 x 9-5/16	13.5

REFERENCE DATA AND LITERATURE:

TM 11-308

SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
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PROCUREMENT DATA

PROCURING SERVICE: USA  
SPEC &/or DWG:

DESIGN COG: USA, Sig C

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Zenith Radio Corp	Chicago, Ill.	Order No. 7880-Phila-40	

VOLTAGE REGULATOR **AN/USA-type**

5 December 1958

Cognizant Serv: USN FSN:

CN-154/U

USA

USN

USAF

TYPE CLASS: --

Used by

--

STOCK NO: --

--

(No Illustration Available)

**FUNCTIONAL DESCRIPTION:**

Voltage Regulator CN-154/U is an electromechanical unit designed to automatically regulate fluctuating alternating current lines and to maintain a constant output voltage regardless of line or load changes.

It provides a constant output of 117 volts, alternating current, 1-phase, at 4 kilovolt-amperes with inputs ranging from 100 to 135 volts at any frequency from 45 to 65 cycles per second.

Voltage Regulator CN-154/U is similar to Voltage Regulator CN-154A/U except that in the CN-154A/U an aluminum

cabinet is used instead of steel and no mounting plate is included.

Equipment required, but not supplied, with Voltage Regulator CN-154/U consists of connecting cables as required.

**TECHNICAL CHARACTERISTICS:**

*Output Range:* 4-kva (max) at 110- to 120-v,  $\pm 1\%$ , 60-cycle 1-phase ac

*Heat Dissipation:*

1/4 load: 23.5 w

1/2 or Full Load: 25 w

*Power Requirements:* 40 amp (max) 100- to 135-v, 60-cycle 1-phase ac

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Maintenance parts kit	-----	6 x 6 x 12	2.5
1	Voltage Regulator CN-145/U	-----	13-3/13 x 13-1/4 x 32-1/4	176

**REFERENCE DATA AND LITERATURE:**

NAVSHIPS 91546(A)

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
2	20.4	524

MIL-HDBK-161

**AN/USA-type** VOLTAGE REGULATOR

PROCUREMENT DATA

PROCURING SERVICE: USN  
SPEC &/or DWG: SHIPS-S-228

DESIGN COG: USN, BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Sangamo Electric Co.	Springfield, Ill.	NObsr-43419 NObsr-52018 NObsr-52043 NObsr-52186 NObsr-52339 NObsr-52509 NObsr-64056	\$570.00 with spares



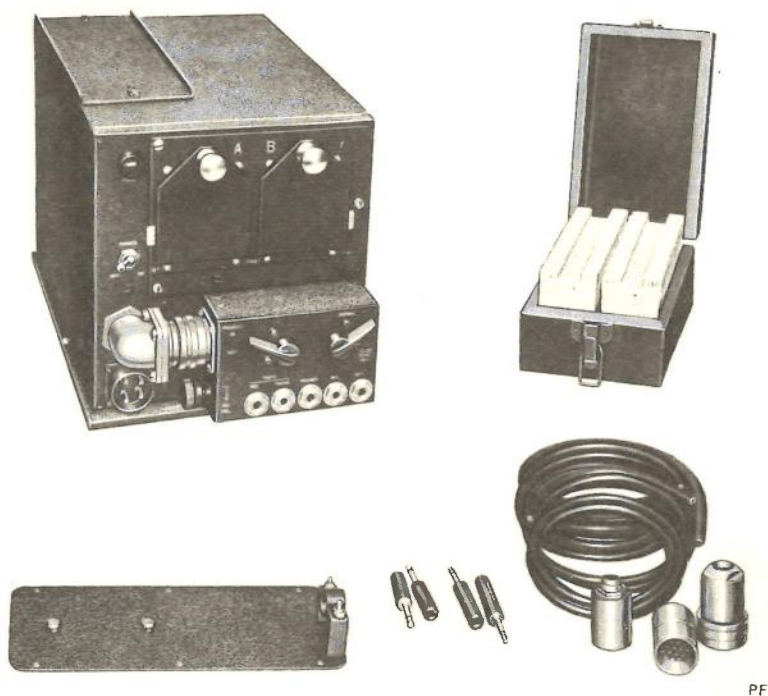
## AUDIO SIGNAL SCRAMBLING EQUIPMENT AN/USA-type

5 December 1958

Cognizant Serv: USN FSN: 5805-644-4703

PF

	USA	USN	USAF
TYPE CLASS:	--	Used by	--
STOCK NO:	--	--	--

**FUNCTIONAL DESCRIPTION:**

Audio Signal Scrambling Equipment PF is a device for obtaining voice or telegraphy privacy by scrambling (or coding) either type of signal at the transmitting terminal of a communication link, and unscrambling (or decoding) at the

receiving terminal. It normally is used in conjunction with a suitable radio transmitter and receiver for this purpose.

**TECHNICAL CHARACTERISTICS:**

*Temperature Range:* -40° F. to +140° F.

*Power Requirements:* 22-30-v dc

MIL-HDBK-161

**AN/USA-type** AUDIO SIGNAL SCRAMBLING EQUIPMENT

MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Audio Signal Scrambling Unit and Enclosure 68AAA	-----	8-1/2 x 8-1/2 x 14	22.8
1	Control Unit 23ACT	-----	2-1/2 x 3 x 6	.9
1	Mounting Plate Assembly for Remote Control 10131	-----	1-1/2 x 4 x 9	.3
1	Mounting Base 10140	-----	2 x 9 x 13	.6
1	Card Set 151541	-----	3-3/4 x 4-3/4 x 7-1/2	3.8

REFERENCE DATA AND LITERATURE:

NAVSHIPS 900922

SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
------	----------------	--------------

PROCUREMENT DATA

PROCURING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG: USN, BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Western Electric Co., Inc.	New York, N. Y.	NXS 4526	\$1,650.00

TELEPHONE TERMINAL AN/USA-type

1 December 1958

Cognizant Serv: USN FSN:

TA-269/U

	USA	USN	USAF
TYPE CLASS:	--	Used by	--
STOCK NO:	--	--	--

(No Illustration Available)

FUNCTIONAL DESCRIPTION:

Telephone Terminal TA-269/U provides two-way telephone conversation over a radio circuit from a two-wire or four-wire telephone system. Connections are provided to extend the two-wire voice circuit to a point remote from the terminal; or a local four-wire handset can be used to communicate over either the radio circuit or over the two-wire voice line to a remote point.

By setting a remote three-position switch, the internal circuits of this equipment can be switched by relays for communication with the local handset over the radio circuit, to the remote station (or PBX board), or for the usual communication from the remote station on the two-wire line over the four-wire radio circuit.

TECHNICAL CHARACTERISTICS:

*Frequency Range:*  
 Amplifier Response: Within 2 db from 200 to 3,500 cps  
 Filter Band-Pass: Within 3 db from 200 to 3,000 cps  
*Power Output:* +8 dbm (maximum) output level of both receiver and transmitter amplifier  
*Sensitivity:* Input signal to the limiter circuit at level of -15 dbm to +6 dbm appears at limiter circuit output at level of -28 dbm to -18 dbm  
*Amplification:* Signal from limiter output (-28 dbm to -18 dbm) amplified by transmitting amplifier with adjustable amplification gain of 8 to 35 db  
*Power Requirements:* 35 w, 115/230-v ( $\pm 10\%$ ) 50-60-cycle 1-phase ac

MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Telephone Terminal TA-269/U (Equipment consists of only one major component.)	-----	5-1/4 x 16 x 19	53

REFERENCE DATA AND LITERATURE:

NAVSHIPS 92181

SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
1	3.5	83

MIL-HDBK-161

**AN/USA-type** TELEPHONE TERMINAL

PROCUREMENT DATA

PROCURING SERVICE: USN  
SPEC &/or DWG: Part No. HD-5700

DESIGN COG: USN, BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Radio Frequency Laboratories, Inc.	Boonton, N. J.	NObsr-52374	\$3,850.00

MODULATOR **AN/USM-type**

4 December 1958

Cognizant Serv: USN FSN:

MD-83A/ARN

USA

USN

USAF

TYPE CLASS: --

Used by

Used by

STOCK NO: --

--

--

(No Illustration Available)

**FUNCTIONAL DESCRIPTION:**

Modulator MD-83A/ARN is designed to facilitate the testing and calibrating of omni-range navigation receivers for aircraft use.

In conjunction with Signal Generator SG-1/ARN, this equipment provides a synthesis of signals encountered in reception and interpretation of omni-range, tone localizer, voice, and glide slope facilities. In addition, the various components of these signals are available singly and in combination for test purposes.

All voltages obtained from the modulator are generated mechanically.

**TECHNICAL CHARACTERISTICS:***Output Voltage:* 3 v*Voltage Stability:*  $\pm 5\%$ *Frequency Stability:* Dependent upon power source*Phase Angle Stability:*  $\pm 0.2$ *Power Requirements:* 115-v 60-cycle 1-phase ac**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Modulator MD-83A/ARN (Equipment consists of only one major component.)	-----	12 x 12 x 15	60

**REFERENCE DATA AND LITERATURE:**

TO 33A1-8-37-1

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)

MIL-HDBK-161

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**AN/USM-type** MODULATOR

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PROCUREMENT DATA

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PROCURING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG: USN, BuAer

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CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Collins Radio Co.	Cedar Rapids, Iowa		

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## DUAL RECORDING EQUIPMENT AN/USP-type

5 December 1958

Cognizant Serv: USN FSN:

CXDB

USA

USN

USAF

TYPE CLASS: --

Used by --

STOCK NO: --

(No Illustration Available)

## FUNCTIONAL DESCRIPTION:

Dual Recording Equipment CXDB is an electromechanical equipment, versatile in its functions and highly accurate. It provides a means for recording, playback, or rerecording of an applied signal. Signals continuing for an extended period of time can be recorded without loss of continuity by means of overlap recording, since the CXDB provides two recorder-reproducer units.

The equipment has been designed for the recording, playback, and dubbing (rerecording) of 16-inch acetate coated recording disks rotated at a speed of 33-1/3 revolutions per minute. The rotating speed is maintained to high accuracy by internal means. The design of the equipment is such that both cutterhead and pickup are held by the same carriage arm which facilitates their tracking in a radial line. Variable equalizers, attenuators, and amplifier controls serve to make the frequency response of the recording and playback processes widely controllable. The equipment contains a monitoring speaker and test equipment consisting of an oscilloscope and a dial test indicator.

All units have been treated for moisture and fungus.

The following equipment is used with, but not supplied with, Dual Recording Equipment CXDB: dividers (1 set), Chatillon scale (1), and test equipment as required.

## TECHNICAL CHARACTERISTICS:

*Frequency Response:* 30 to 10,000 cps; 70 to 8,000 cps  $\pm$  3 db (amplifier-equalizer control knobs in counterclockwise position and pickup equalizer at position 3)

*Impedances:*

Amplifier Input: 50, 250, and 500 ohms, balanced or unbalanced

Amplifier Output: 500 and 8 ohms

Attenuator: 500 ohms

Cutterhead: 500 ohms

Pickup: 50 ohms

Repeater Transformer: 500 ohms

Speaker: 8 ohms

*Rotating Speed:* 33-1/3 rpm

*Accuracy:* One part in 100,000

*Cutterhead:* Magnetic type

*Pickup:* Dynamic type with diamond-tipped stylus

*Cutter or Pickup Equalizer:* A capacitance and resistance network

*Heat Dissipation:*

Amplifier Cabinet: 175 w

Recorder Cabinet: 275 w

*Power Requirements:* 11.9 amp (max) at 115-v, 60-cycle, 1-phase ac

## MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Amplifier Cabinet (including jack panels) 10AYE	-----	16-7/8 x 22-3/4 x 82-1/2	180
2	Amplifier Equalizer Unit 10AYC	-----	11-5/8 x 19 x 21	50
3	Attenuator Unit 10AYD	-----	4-3/16 x 5-3/16 x 19	8
1	Constant Voltage Transformer 10AYJ	-----	5-5/8 x 6-15/16 x 14-1/2	38
2	Control and Speaker Unit 10AYF	-----	4-7/8 x 10-1/2 x 19	15
1	Dial indicator	-----	-----	8
1	External cables	-----	99 ft	10
1	Frequency Comparator Unit 10AYG	-----	3-1/2 x 5-1/16 x 19	8

**AN/USP-type** DUAL RECORDING EQUIPMENT

## MAJOR COMPONENTS—Continued

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
2	Frequency Standard Unit 35135-A	-----	7 x 7-1/8 x 19	13
2	Inverter Power Supply Unit 20550-A	-----	10-1/2 x 14-1/8 x 19	75
2	Maintenance repair part box (Case 1 and 2)	-----	9-1/2 x 16 x 25	90
1	Maintenance repair parts box (Case 3)	-----	12-1/2 x 19-1/2 x 37-1/2	180
1	Maintenance repair parts box (Case 4)	-----	9-1/2 x 13 x 13	30
1	Oscilloscope Unit OBL-3b	-----	7 x 15-5/16 x 19	29
2	Recorder Cabinet 10AYM	-----	20-1/2 x 23-3/8 x 53-1/4	260
2	Recorder Unit 10AYK (with microscope)	-----	17 x 17-1/2 x 21	65
1	Repeater Transformer Unit 10AYH	-----	3-1/2 x 5-1/16 x 19	10
2	Stroboscope and Control Unit 10AYL	-----	5-1/4 x 11-1/4 x 19	15

## REFERENCE DATA AND LITERATURE:

NAVSHIPS 91830

## SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
20	136.2	2,600

## PROCUREMENT DATA

PROCURING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG: USN, BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Engineering Research Associates, Inc.	St. Paul, Minn.	NObsr-28476, 7 February 1946 NObsr-42001, 4 August 1947 NObsr-63010	



COMBINATION RADIO RECEIVER AND RECORD PLAYER **AN/USP-type**

5 December 1958

Cognizant Serv: USN

 FSN: RCT: 5820-644-3401  
 RCU: 5853-644-4509  
 RCU-1: 5835-323-9075

RCT, RCU, RCU-1

USA

USN

USAF

TYPE CLASS: --

Used by

STOCK NO: --

RCT: F16-Q-263230-200 --

RCU: F16-Q-263980-200

RCU-1: F16-Q-263981-100

(No Illustration Available)

## FUNCTIONAL DESCRIPTION:

Combination Radio Receiver and Record Players RCT, RCU, and RCU-1 are combination radio receiver and record player units, installed in a console cabinet that also houses dual speakers. An auxiliary cabinet is also supplied, which accommodates 200 10- or 12-inch records in four compartments.

The RCT, RCU, and RCU-1 are identical in all respects except for the type of record player supplied. The RCT is equipped with a manual player with a turntable capable of 33-1/3 revolutions per minute for transcriptions only and 78 revolutions per minute for records or transcriptions. It plays recordings up to 12-inch diameter. The RCU and RCU-1 incorporate an automatic record changer that will accommodate 10- and 12-inch records, but the sizes cannot be intermixed.

## TECHNICAL CHARACTERISTICS:

*Radio:*

## Frequency Range:

Broadcast: 535 to 1720 kc

Police: 1,667 to 5,680 kc

Short Wave: 5.6 to 18.4 mc

*Phonograph:*

RCT: Manual record player

RCU: Automatic record player

RCU-1: Automatic record player

*Power Requirements:* 180 w, 110- to 220-v 50- to 60-cycle ac (Switch located in rear of cabinet provides selection of 110- to 220-v power source operation).

## MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
<i>For RCT:</i>				
1	Radio Phonograph Combination 46226	-----	36-1/4 x 36-1/4 x 19-1/2	
1	Record Cabinet 10280	-----	13-7/8 x 14 x 24-7/8	
<i>For RCU:</i>				
1	Radio Phonograph Combination 46227	-----	36-1/4 x 36-1/4 x 19-1/2	
1	Record Cabinet 10280	-----	13-7/8 x 14 x 24-7/8	
<i>For RCU-1:</i>				
1	Radio Phonograph Combination 46228	-----	36-1/4 x 36-1/4 x 19-1/2	
1	Record Cabinet 10280	-----	13-7/8 x 14 x 24-7/8	

MIL-HDBK-161

**AN/USP-type** COMBINATION RADIO RECEIVER AND RECORD PLAYER

REFERENCE DATA AND LITERATURE:

NAVSHIPS 900,914

SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
------	----------------	--------------

PROCUREMENT DATA

PROCURING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG: USN, BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
The Magnavox Co.	Fort Wayne, Ind.	NX <sub>ss</sub> -31869, 18 June 1943 NX <sub>ss</sub> -8655	

RADIO RECEIVING AND REPRODUCING EQUIPMENT **AN/USQ-type**

20 November 1958

Cognizant Serv: USN FSN:

REK

	USA	USN	USAF
TYPE CLASS:	--	Used by	--
STOCK NO:	--	F16-Q-276590-200	--

(No Illustration Available)

**FUNCTIONAL DESCRIPTION:**

Radio Receiving and Reproducing Equipment REK is designed for hospital ship or shore use to amplify and distribute program material from recordings and microphones or from either of two radio receivers. Programs can be distributed to the various wards; patients receive them by means of ear-phones plugged into convenient outlets.

Four amplifiers provide four program channels which may be switched to one or more wards. The two radio receivers are identical and provide coverage of standard and short-wave broadcasts or cw transmission. An adjustable-speed turntable is provided for recording, and an automatic record

changer provides for reproduction. A microphone may be plugged into each of the four amplifiers for announcements; a comprehensive switching system allows selection of the desired input to each amplifier.

This equipment is designed to be installed in two cabinet-type racks side-by-side, bolted together. In addition, the two racks may be securely bolted to the floor or deck.

**TECHNICAL CHARACTERISTICS:***Receiver Frequency Range:* 535 to 32,000 kc.*Outlet Capacity:* Approximately 800*Power Requirements:* 610 w, 105-125-v 50-60-cycle ac**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
4	Aeropressure microphone	-----	6 x 2 x 2-1/2	2.5 ea
4	Amplifier panel and shelf assemblies	-----	10 x 19 x 19-1/2	31.0 ea
2	Distribution transformer panel			
2	Monitor speaker panel			
2	Output distribution switch panel	-----	19 (wide) x 3-1/2 (deep)	
2	Radio receiver CRV-46246	-----	11 x 19-1/4 x 19-1/4	
1	Record changer and shelf assembly	-----	12-7/16 x 20-3/16 x 16-3/16	
2	Relay rack			
2	Relay rack			
2	Switch and fuse panel	-----	5-7/32 x 19 x 2-3/4	8.5 ea
1	Turntable and pickup shelf			
2	Volume indicator and control panel	-----	5-7/32 x 19 x 2-1/2	

**REFERENCE DATA AND LITERATURE:**

NAVSHIPS 900,961

MIL-HDBK-161

**AN/USQ-type** RADIO RECEIVING AND REPRODUCING EQUIPMENT

SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
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PROCUREMENT DATA

PROCURING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG: USN, BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
RCA Victor Division, Radio Corporation of America	Camden, N. J.	NXsr-62358 NXsr-95123 N5sr-4661	\$2,372.00

## TELEVISION CAMERA GROUP AN/UXA-5(XN-1)

3 December 1958

Cognizant Serv: USN FSN:

USA

USN

USAF

TYPE CLASS: --

Used by

--

STOCK NO: --

--

--

(No Illustration Available)

## FUNCTIONAL DESCRIPTION:

Television Camera Group AN/UXA-5 (XN-1) consists of a complete unit designed for the generation and presentation of a television image.

A camera unit views the scene to be televised, and under control of the camera control unit generates a television signal of 525 sequentially scanned lines at a frame rate of 50 per second. The signal is presented on a picture display monitor, contained in the control-monitor unit.

The power supply unit furnishes power for the camera and the control-monitor units.

Controls for the camera unit are provided in the control-monitor unit. This permits unattended operation of the camera unit.

## TECHNICAL CHARACTERISTICS:

*Camera Unit:*

Type of Pickup Tube: Vidicon  
Maximum Location From Point of Control: 100 ft  
Maximum Lens Aperture: F/2.7

Focal Length of Lens: 25 mm

Light Filter Density: 0 to 2.1 in 8 steps of 0.3 density

Scene Highlight Brightness: 100 to 10,000-ft lamberts

*Scanning:*

Total Lines: 525

Line Rate: 26 kc; adjustable from 22 to 32 kc

Frame Rate: 50 cps; adjustable from 40 to 69 cps

*Presentation:*

Picture Monitor: 10-in. cathode-ray tube

Wave Form Monitor: 3-in. cathode-ray tube

*Video Amplifier Bandwidth:* 10 mc*Wave Form Monitor Sweep Rates:* 18 kc and 25 cps*Blanking Pulse Duration:*

Horizontal Period: 12 to 18%

Vertical Period: 4 to 8%

*Power Consumption:*

Control Monitor Unit: 800 w

Video Indicator Unit: 300 w

*Power Requirements:* 115-v 60-cycle 1-phase ac

## MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
2	Ac power cord	-----	120 lg	1.5
1	Camera	-----	5-1/2 x 7-3/4 x 50	15
1	Camera cable	-----	600 lg	23
1	Camera cable	-----	300 lg	13
1	Control monitor	-----	17-1/4 x 18-1/4 x 19	138
1	Indicator, Video IP-178 (XN-1)UX	-----	14 x 18-1/4 x 18-1/2	127
1	Power cable	-----	180 lg	5
1	Power supply	-----	12-1/2 x 15 x 21-1/2	146

## REFERENCE DATA AND LITERATURE:

NAVSHIPS 91677

MIL-HDBK-161

**AN/UXA-5(XN-1)** TELEVISION CAMERA GROUP

SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
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PROCUREMENT DATA

PROCURING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG: USN, BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
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Allen B. DuMont Laboratories, Inc.

Passaic, N. J.

NObsr-52594, 13 June 1951

## FREQUENCY SHIFT RECEIVER EQUIPMENT AN/UXA-type

5 December 1958

Cognizant Serv: USN

FSN:

FRB

USA

USN

USAF

TYPE CLASS: --

Used by

--

STOCK NO: --

--

--



FRB

## FUNCTIONAL DESCRIPTION:

Frequency Shift Receiver Equipment FRB is designed for ship or shore installations, and is used to convert audio frequency shift facsimile signals to amplitude-modulated audio signals. The signals are fed to a local facsimile machine by use of a loss pad, or to a remote facsimile machine by opening the loss pad circuit. The equipment is engineered to eliminate modulation caused by fading.

Audio FM keyer Equipment FSJ is often used with this equipment to form a converter-inverter system in conjunction with Facsimile Transmitter-Receiver Equipment TT-41/TXC-1B and Facsimile Transmitter-Receiver Equipment TT-66/TXC.

## TECHNICAL CHARACTERISTICS:

*Frequency Range in Kc:* 1.0 to 2.5, and 2.1 to 3.0

*Type Modulation:* FM

*Type of Signal:* Frequency shift

*Input Impedance:* 600 ohms

*Signal Output Level:* Adjustable, 0 to +20 db

*Output Carrier Frequency:* 1,800 cps

*Power Output:*

Output level: 0 dbm to +10 dbm across 600 ohm load

*Power Consumption:* 87 w

*Power Requirements:* 100- to 125-v, 60-cycle 1-phase ac

## MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Frequency Shift Receiver In- verter Model FRB (This equipment consists of only one major component.)	-----	10-1/2 x 14-3/4 x 22	74

---

**AN/UXA-type** FREQUENCY SHIFT RECEIVER EQUIPMENT

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REFERENCE DATA AND LITERATURE:

NAVPERS 10857  
NAVSHIPS 95002

SHIPPING DATA

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PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
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PROCUREMENT DATA

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PROCURING SERVICE: USN	DESIGN COG: USN, BuShips
SPEC &/or DWG:	

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CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Acme Newspictures, Inc.	Cleveland, Ohio	NXsr-85015	\$3,000.00 with spares

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AUDIO FM KEYER EQUIPMENT **AN/UXA-type**

26 November 1958

Cognizant Serv: USN FSN: 5815-665-1996

FSJ

USA

USN

USAF

TYPE CLASS: --

Used by --

STOCK NO: ---

(No Illustration Available)

## FUNCTIONAL DESCRIPTION:

Audio FM Keyer Equipment FSJ is for converting facsimile or amplitude-modulated audio carrier to a frequency-shifted audio tone. It is intended for either shore or ship use.

## TECHNICAL CHARACTERISTICS:

*Terminal Impedance:* 600 ohms*Input Level, Minimum:* 0 dbm*Output Level:* 9 to 10 dbm*Maximum Keying Frequency:* Greater than 900 cps*Power Requirements:* 150 w, 115-v 60-cycle 1-phase ac

## MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Audio FM Keyer FSJ (Equipment consists of only one major component.)	-----	8-3/4 x 12-1/8 x 19	75

## REFERENCE DATA AND LITERATURE:

NAVSHIPS 95002

## SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)

MIL-HDBK-161

**AN/UXA-type** AUDIO FM KEYER EQUIPMENT

PROCUREMENT DATA

PROCURING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG: USN, BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Acme Newspictures	Cleveland, Ohio	NXsr-85015	\$700.00 with spares

## TELEGRAPH MULTIPLEX SET AN/UXC-2

3 December 1958

Cognizant Serv: USN FSN: 5815-644-4808

USA

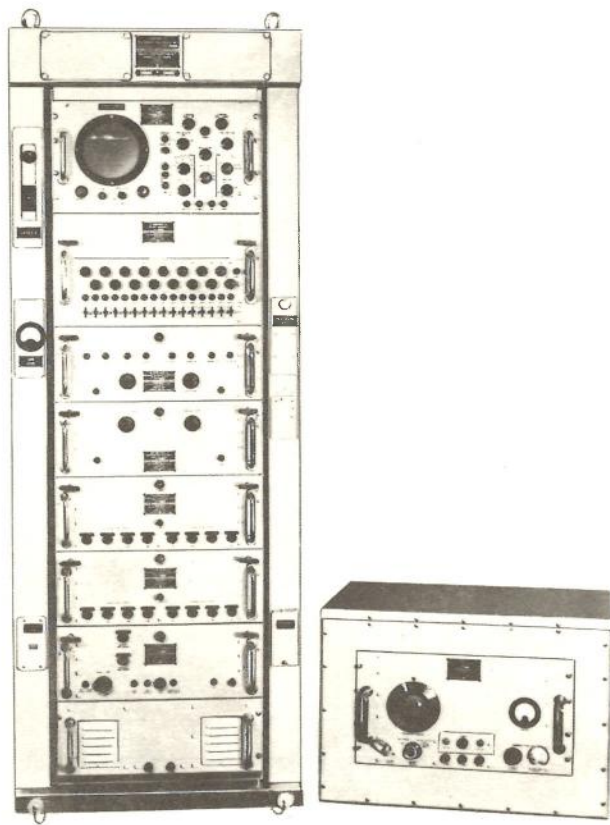
USN

USAF

TYPE CLASS: --

Used by --

STOCK NO: --



AN/UXC-2

**FUNCTIONAL DESCRIPTION:**

Telegraph Multiplex Set AN/UXC-2 is a single channel time and frequency division multiplex system that will combat the effects of propagational disturbances during radio transmission. It is used as terminal equipment at each end of a radio circuit to handle mark-space information that can withstand being sampled at 1 millisecond intervals without any objectionable loss of information.

This equipment effectively eliminates fading and multipath propagation disturbances. Special features include a telegraph key for manual continuous wave type transmission.

The set is intended to be installed in a fixed location. It can be used with any facsimile equipment operating from 1 millisecond, or slower, mark-space information.

**TECHNICAL CHARACTERISTICS:**

*Frequency:* 875; 1,125; 1,375; 1,625; 1,875; 2,125; 2,375; 2,625; 2,875; 3,125; 3,375; 3,625; 3,875; 4,125; 4,375; 4,625 cps

*Bandwidth:* 125 cps for each channel

*Type Modulation:* 125 cps lower side band

*Impedance:*

Input to Transmitter: 75 ohms

Output from Transmitter: 600 ohms

Input to Receiver: 600 ohms

Output from Receiver: 75 ohms

*Heat Dissipation:*

Main Cabinet Equipment:

Transmitting Position: 1,035 w at 115-v 60-cycle 1-phase ac, 59 BTU per minute

Receiving Position: 920 w at 115-v 60-cycle 1-phase ac, 52 BTU per minute

RF Oscillator O-216/U: 115 w at 115-v 60-cycle 1-phase ac, 6.6 BTU per minute

*Power Requirements:* 20 amp, 115-v  $\pm 10\%$ , 50- to 60-cycle, 1-phase ac

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Blower Assembly	-----	7 x 10-1/6 x 19	16
1	Cabinet CY-859/UXC-2	-----	22 x 26 x 72-7/16	440
1	Electrical Synchronizer SN-110/UXC-2	-----	7 x 19 x 20-3/4	48
1	Filter Assembly F-100/UXC-2	-----	7 x 19 x 20-3/4	79

**AN/UXC-2 TELEGRAPH MULTIPLEX SET****MAJOR COMPONENTS—Continued**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Oscilloscope OS-41/U	-----	10-1/2 x 19 x 20-3/4	48
1	RF Oscillator O-216/U	-----	18-3/8 x 21-3/4 x 26-1/2	107
1 Set	Equipment spares	-----	17 x 26 x 31	
1	Telegraph line Control C-1120/ UXC-2	-----	7 x 19 x 20-3/4	58
1	Telegraph Multiplex Receiver R-370/UXC-2	-----	7 x 19 x 20-3/4	53
1	Telegraph Multiplex Trans- mitter T-423/UXC-2	-----	7 x 19 x 20-3/4	67
1	Telegraph Multiplex Trans- mitter T-424/UXC-2	-----	7 x 19 x 20-3/4	67

**REFERENCE DATA AND LITERATURE:**

NAVSHIPS 92153

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
3	68.20	1,632

**PROCUREMENT DATA**

PROCURING SERVICE: USN

DESIGN COG: USN, BuShips

SPEC &amp;/or DWG: MIL-T-16295(SHIPS)

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Melpar, Inc.	Alexandria, Va.	NObsr-52652, 25 June 1951	\$21,000.00

## FACSIMILE RECORDER SET AN/UXH-2(XN-3)

3 December 1958

Cognizant Serv: USN FSN:

USA

USN

USAF

TYPE CLASS:

Used by

Tent-Std

STOCK NO:



AN/UXH-2(XN-3)

**FUNCTIONAL DESCRIPTION:**

Facsimile Recorder Set AN/UXH-2(XN-3) is a continuous web-type unit designed to automatically produce a record of information transmitted by facsimile. It permits long periods of unattended operation while recording data received from a transmitter capable of sending the proper control signals.

This equipment automatically compensates for changes in signal level between transmissions; it will automatically phase, and start the recording as well as stop the apparatus when the transmission is completed.

The control signal adapter of the AN/UXH-2(XN-3) is an accessory used between any one of the Facsimile Transmitters AN/TXC-1, AN/TXC-1A, AN/TXC-1B, AN/TXC-1C or

AN/TXC-1D and the Facsimile Recorder Set AN/UXH-2(XN-3).

**TECHNICAL CHARACTERISTICS:**

*Recording Width:* 18.85 in.

*Type Recording:* Direct stylus

*Scans Per Minute:* 30, 60, 120

*Type Modulation:* AM

*Input Frequency:* 450 cps to 2,700

*Speed Control:* Synchronous motor controlled by 1,800 cps fork oscillator

*Signal Level:* +4 to -36 dbm

*Input Contrast:* 8 to 16 db

*Power Consumption:* 270 w at 11-v or 230-v

*Power Requirements:* 115-v or 230-v, 45- to 65-cycle, 1-phase ac

MIL-HDBK-161

**AN/UXH-2(XN-3)** FACSIMILE RECORDER SET

MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONJ (Inches)	WEIGHT (Lbs)
1	Facsimile Recorder Set AN/ UXH-2(XN-3)	-----	16 x 21-3/4 x 30	180

REFERENCE DATA AND LITERATURE:

NAVSHIPS 92735

SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
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PROCUREMENT DATA

PROCURING SERVICE: USN  
SPEC &/or DWG: MIL-F-19480

DESIGN COG: USN, BuAer

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Times Facsimile Corp.	New York, N. Y.	NObsr-57278, 1 April 1952	

## AUXILIARY INTERPHONE EQUIPMENT AN/VIA-1

1 December 1958

Cognizant Serv: USA FSN: 5830-539-7728

USA

USN

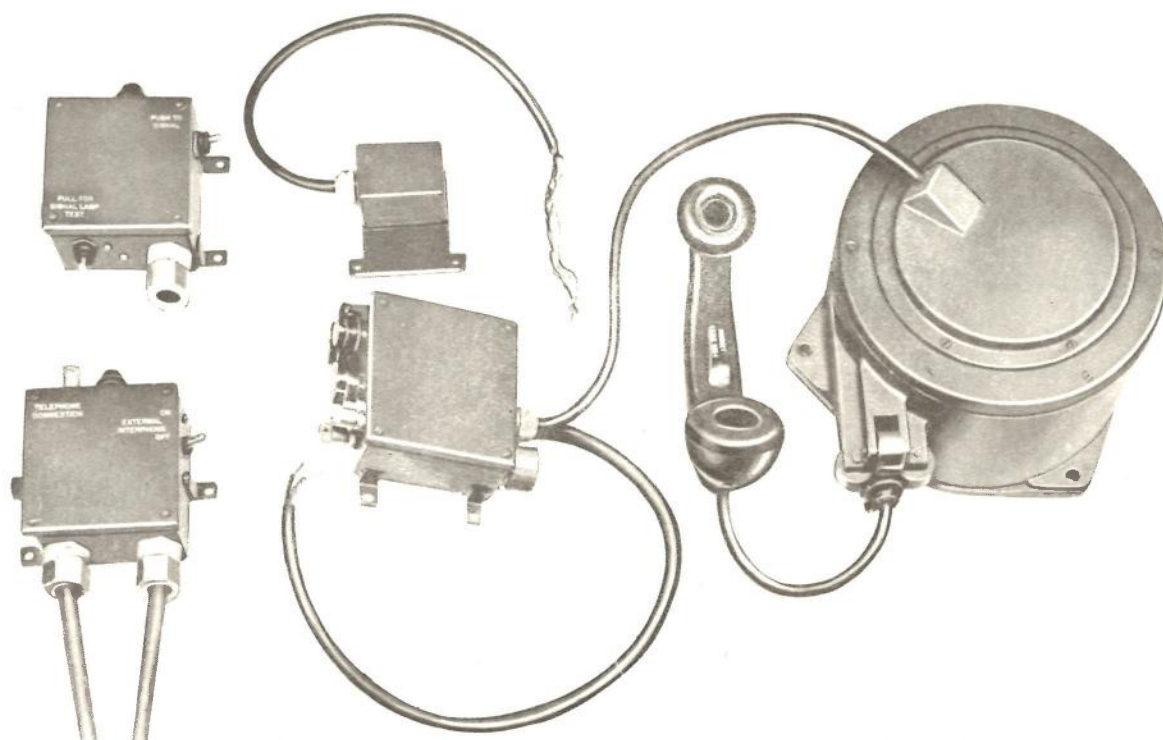
USAF

TYPE CLASS:

Std

STOCK NO:

2C2100-1



AN/VIA-1

**FUNCTIONAL DESCRIPTION:**

Auxiliary Interphone Equipment AN/VIA-1 is an assemblage of components used to extend a vehicular interphone system to the exterior of the vehicle. It is used in inclosed or armored vehicles.

This equipment consists essentially of interphone station control units that are installed within the vehicle, and a cable reel which includes a handset and a control unit designed to be mounted on the exterior of the vehicle to provide an outside interphone station.

The stations of this system have call signal lamps to indicate that control with the exterior station is desired.

The only adjustment provided is for control of volume.

The equipment is powered by the electrical system of the vehicle in which it is installed.

**TECHNICAL CHARACTERISTICS:**

*Facilities:* Can be used with Radio Sets SCR-508, -528, -608, -628, or AN/VRC-3 or with Interphone Equipment RC-99 or similar types of units.

*Type Controls:*

- C-663: External interphone ON-OFF switch
- C-664: External interphone PUSH TO SIGNAL switch
- C-665: VOLUME

*Power Output:* Dependent on interphone system

*Power Requirements:* Draws required power from system to which it is connected.

**AN/VIA-1** AUXILIARY INTERPHONE EQUIPMENT

## MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Cable Reel RL-149/VIA-1	-----	10-3/16 x 9-13/16 x 5-13/16	
1	Handset MTS-1 (USMC)	-----	8-7/8 x 2-3/4 x 3-1/2	
1	Interphone Control C-663/ VIA-1	-----	6-3/8 x 4-7/16 x 5-15/16	
1	Interphone Control C-664/ VIA-1	-----	6-3/16 x 6-9/16 x 2-17/32	
1	Interphone Control C-665/ VIA-1	-----	8-1/2 x 5-5/8 x 3-13/16	
1	Interphone Control C-666/ VIA-1	-----	4-7/16 x 4-3/32 x 1-11/16	

## REFERENCE DATA AND LITERATURE:

TM 11-704

## SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
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## PROCUREMENT DATA

PROCURING SERVICE: USA  
SPEC & /or DWG:

DESIGN COG: USA, Sig C

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
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## INTERPHONE EQUIPMENT AN/VIC-type

5 December 1958

Cognizant Serv: USA FSN:

RC-53

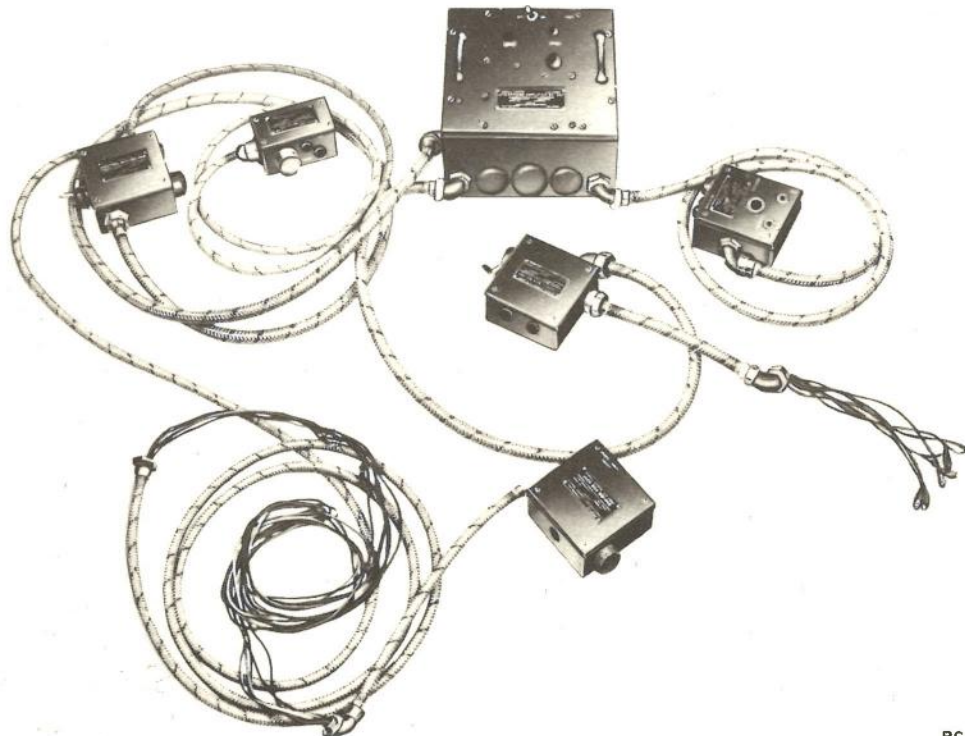
USA

USN

USAF

TYPE CLASS: --

STOCK NO: ---



RC-53

**FUNCTIONAL DESCRIPTION:**

Interphone Equipment RC-53 is a vehicular interphone communication system for tanks and other inclosed vehicles.

This equipment consists essentially of an amplifier, control and jack boxes, and related components.

Through this equipment, the radio operator and vehicle commander may control the vehicular radio equipment and maintain communication contact.

The RC-53 is powered by the 12-v storage battery of the vehicle in which it is installed.

**TECHNICAL CHARACTERISTICS:**

*Facilities Afforded:* Radio and voice, between interphone station

*Type Controls:* Selector switch, volume control, on-off switch

*Power Output:* 2 w

*Power Requirements:* 3 to 3.5 amp at 12-v dc from vehicular storage battery

MIL-HDBK-161

**AN/VIC-type INTERPHONE EQUIPMENT**

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
		(USA)		
1	Control Box BC-422	-----	5-11/16 x 2-3/16 x 4-3/16	2
1	Control Box BC-449	-----	5-11/16 x 2-3/16 x 4-3/16	1.7
6	Headset HS-18	FNS 5965-296-1956 2B818		
1	Interphone Amplifier BC-367	-----	8-15/16 x 8-15/16 x 5-5/8	18.5
1	Jack Box BC-378, -379, -448	-----	2-3/16 x 4-11/16 x 5-1/2	3.2
5	Microphone T-30-A	FNS 5965-170-5234 2B1630	-----	.3
1	Terminal Block TM-183			

**REFERENCE DATA AND LITERATURE:**

TM 11-700

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
------	----------------	--------------

**PROCUREMENT DATA**

PROCURING SERVICE: USA  
SPEC &/or DWG:

DESIGN COG: USA, Sig C

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
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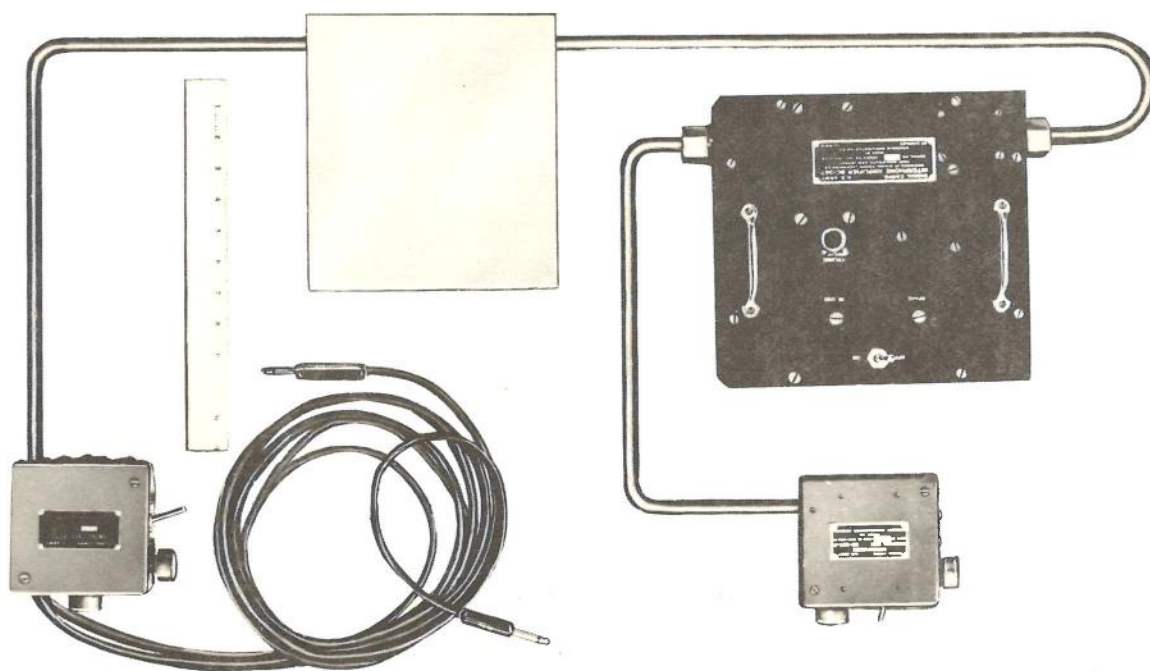
## INTERPHONE EQUIPMENT AN/VIC-type

5 December 1958

Cognizant Serv: USA FSN: 5830-224-5345 (12-v dc)  
5830-224-5346 (24-v dc)

RC-99

	USA	USN	USAF
TYPE CLASS:	L/Std	--	--
STOCK NO:	2S99	--	--



RC-99

**FUNCTIONAL DESCRIPTION:**

Interphone Equipment RC-99 is a vehicular, multistation, intercommunication system used in inclosed vehicles, such as tanks.

This equipment consists of a master-station amplifier unit, two control boxes, and associated accessories. It provides intercommunication facilities within the vehicle and permits the radio operator and vehicle commander to retain partial control of the vehicle's radio equipment.

This interphone equipment is powered by the 12- or 24-volt

storage battery of the vehicle in which it is installed, through appropriate dynamotor equipment.

**TECHNICAL CHARACTERISTICS:**

*Type of Signal:* Af, vf

*Type Communication Circuits:* Interphone and radio communication circuits

*Controls:* Volume control; radio-interphone switch; and on-off switch

*Power Requirements:* 12-v or 24-v dc from vehicular storage battery

## AN/VIC-type INTERPHONE EQUIPMENT

## MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
		(USA)		
1	Control Box BC-739	-----	4 x 4 x 2	2.5
1	Interphone Amplifier BC-367	-----	8-3/4 x 8-3/4 x 4-1/2	19
	or			
1	Interphone Amplifier BC-667	-----	8-3/4 x 8-3/4 x 4-1/2	19
1	Interphone Control Box BC-606-D	2C1738 (FSN) 5830-160-4910	4 x 4 x 2	2

## REFERENCE DATA AND LITERATURE:

TM 11-702

## SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
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## PROCUREMENT DATA

PROCURING SERVICE: USA  
SPEC &/or DWG:

DESIGN COG: USA, Sig C

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
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\$120.00

INTERPHONE EXTENSION KIT **AN/VIC-type**

5 December 1958

Cognizant Serv: USA FSN:

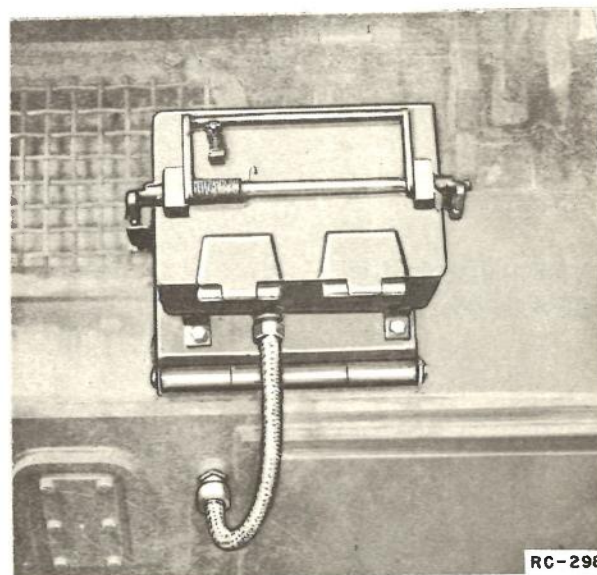
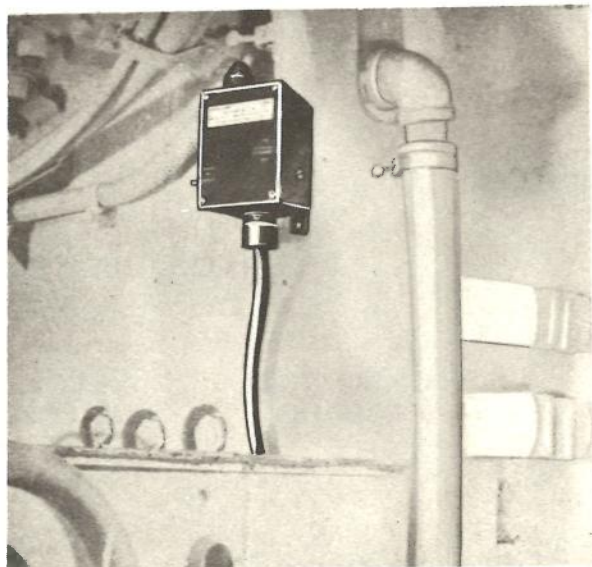
RC-298

USA

USN

USAF

TYPE CLASS: S/Std  
 STOCK NO: 2C196-298

**FUNCTIONAL DESCRIPTION:**

Interphone Extension Kit RC-298 is an assemblage of components that can be added to the existing interphone equipment of inclosed vehicles (such as tanks) to provide an interphone station located outside the vehicle. It is used in conjunction with interphone systems designed for use in armored vehicles.

This equipment consists of an external interphone box, an internal interphone switchbox, and related components. The

only adjustment provided is for control of volume. Internal and external interphone stations have call signal lamps to indicate that contact with the station outside the vehicle is desired.

**TECHNICAL CHARACTERISTICS:**

*Type of Signal:* Voice

*Type Communication Circuits:* Two-way; press-to-talk

*Controls:* Volume only (on external interphone station)

*Power Requirements:* Vehicular storage battery

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Cordage CO-213 (hardware and necessary mounting)			
1	External Interphone Box BC-1362			
1	Switchbox BC-1361			
1	Toggle Switch ST52R			

MIL-HDBK-161

**AN/VIC-type** INTERPHONE EXTENSION KIT

REFERENCE DATA AND LITERATURE:

TM 11-703

SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
1	3.75	

PROCUREMENT DATA

PROCURING SERVICE: USA  
SPEC &/or DWG:

DESIGN COG: USA, Sig C

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
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## RADIO SET AN/VRC-1

1 July 1958

Cognizant Serv: USA FSN:

USA

USN

USAF

TYPE CLASS:

Std

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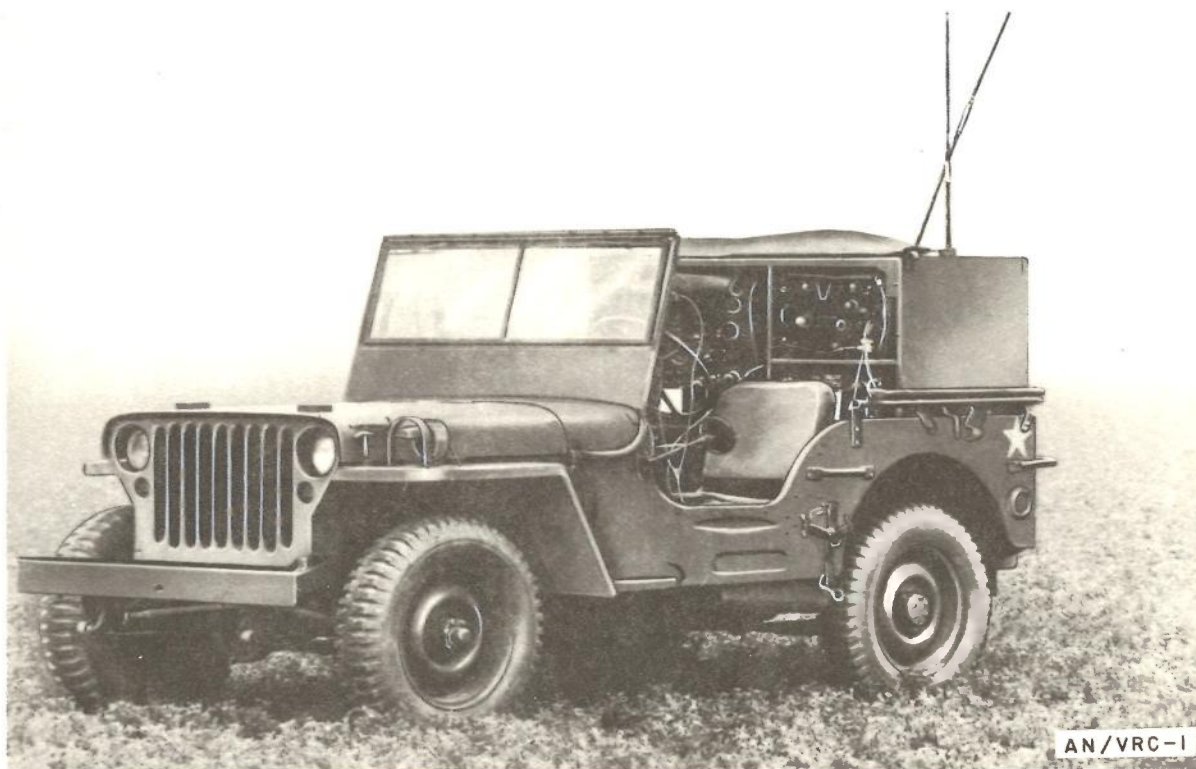
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STOCK NO:

2S4502-1

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AN/VRC-1

**FUNCTIONAL DESCRIPTION:**

Radio Set AN/VRC-1 is a short-range, hf and vhf, AM (voice, tone, and cw) radio transmitting and receiving equipment that may be installed in vehicles for ground-to-air communication.

This equipment consists essentially of a ground communication transmitter and receiver, plus transmitting and receiving equipment designed for airborne use. It is usually used for communication in ground point-to-point nets but can be used as a beacon for compass-equipped aircraft and for hf ground-air radio communication. Antenna and accessory equipment is included. It is powered by the 12-volt storage battery of the vehicle in which it is installed.

**TECHNICAL CHARACTERISTICS:***Frequency Range in Mc:*

Transmitters: 3 to 6.2 (hf); 100 to 156 (vhf)

Receivers: 1.5 to 18 (hf); 100 to 156 (vhf)

*Type Modulation:* AM*Type of Signal:*

Hf: Cs, tone, and voice

Vhf: Voice

*Power Output:*

Hf: 40 s, (voice); 75 w (cw)

Vhf: 8 to 9 w

*Power Requirements:* 65.7 amps from 12-v dc vehicular storage battery (through dynamotors)

MIL-HDBK-161

**AN/VRC-1** RADIO SET

MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
		(USA)		
1	Antenna AN-24	2A224		
1	Antenna AN-27	2A275-27		
1	Dynamotor Unit BD-77	3H1777.2		
1	Dynamotor Unit PE-98-F	3H1898F		
1	Radio Control Box BC-602-D	2C3347D		
1	Radio Receiver BC-312	2C4312	10 x 9-1/16 x 18-1/16	58
1	Radio Receiver BC-624	2C4424	8-3/4 x 5-7/8 x 15-3/8	7
1	Radio Transmitter BC-191	2C6191.9	21-21/32 x 23-1/8 x 9-5/16	68
1	Radio Transmitter BC-625	2C6525	8-3/4 x 5-7/8 x 15-3/8	7

REFERENCE DATA AND LITERATURE:

TM 11-277

SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
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PROCUREMENT DATA

PROCURING SERVICE: USA

DESIGN COG: USA, Sig C

SPEC &/or DWG: (USA) SC-D-7124

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Federal Telephone & Radio Corp.	Clifton, N. J.	22265-P-44-06	



RADIO SET **AN/VRC-2**

1 July 1958

Cognizant Serv: USA FSN: 5820-196-1710

USA

USN

USAF

TYPE CLASS:

L/Std

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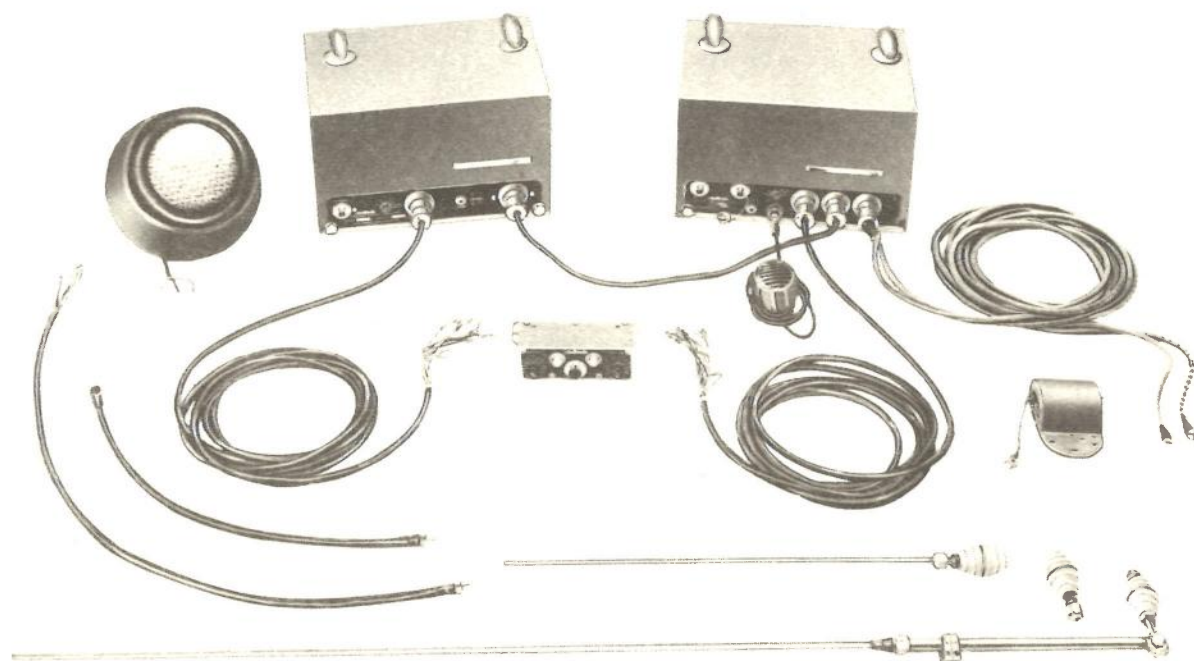
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STOCK NO:

2S4502-2

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AN/VRC-2

**FUNCTIONAL DESCRIPTION:**

Radio Set AN/VRC-2 is a vehicular, short-range, vhf, FM (voice), radio receiving and transmitting equipment used by military police and security troops for highway traffic control and similar applications.

This equipment consists of a crystal-controlled radio transmitter and receiver controlled from the driver's position in a vehicle. It is powered through individual vibrator power supply units by the storage battery of the vehicle in which the equipment is installed.

It uses a single telescopic whip-type antenna controlled by an antenna change-over relay located in the transmitter.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in Mc:* 30 to 40

*Type Modulation:* FM

*Type of Signal:* Voice

*Power Output:* 45 w

*Power Requirements:*

Transmitter: 45 amp at 6.3 v dc and 0.15 amp at 540 v dc from vibrator power supply

Receiver: 14.5 amp at 6.3 v dc and 0.08 amp at 250 v dc from vibrator power supply

MIL-HDBK-161

**AN/VRC-2 RADIO SET**

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS (FSN)	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Antenna AT-129/VR	5985-284-4849	1-1/2 x 1-1/2 x 78	3.25
1	Dynamic Loudspeaker LS-158/U	5965-232-4637	9-1/2 x 4-0/4 (diameter)	5
1	Radio Receiver R-237/VR	5820-163-1698	11-1/2 x 10 x 15	35
1	Radio Set Control C-493/VRC-2	5820-161-1523	2-1/4 x 3-1/4 x 7-1/4	1.5
1	Radio Transmitter T-193/VRC-2	5820-194-0964	11-1/2 x 10 x 15	41

**REFERENCE DATA AND LITERATURE:**

TM 11-607

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
2	8	168

**PROCUREMENT DATA**

PROCURING SERVICE: USA  
SPEC & or DWG: MIL-R-18872

DESIGN COG: USA, Sig C

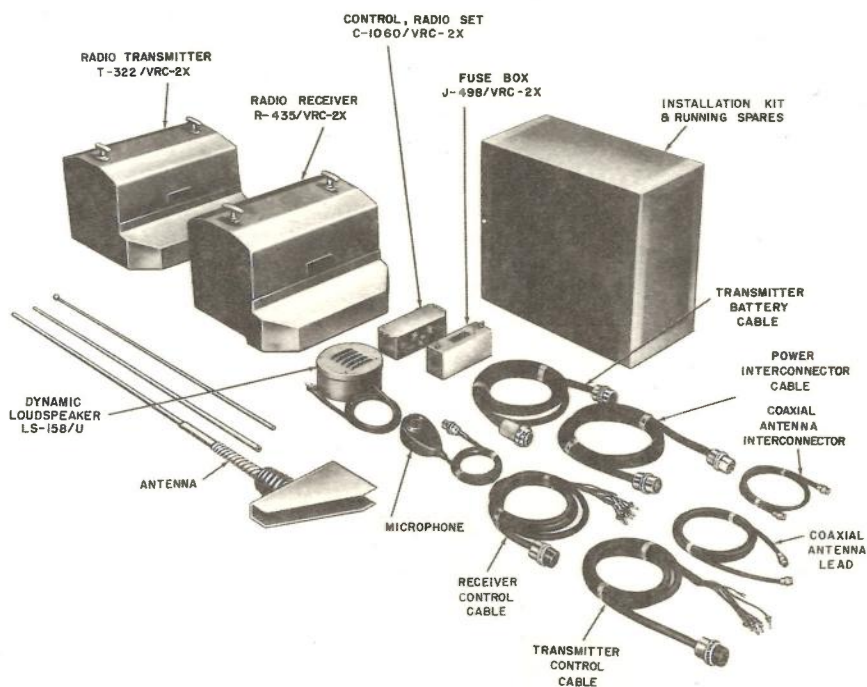
CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Farnsworth Electronics Division, International Telephone & Telegraph Corp.	Palo Alto, Calif.	37214-P-53-51	\$697.52
Utility Electronics Corp.		16816-P-51-31	566.33

## RADIO SET AN/VRC-2X

3 December 1958

Cogniza. Serv: USA FSN: 5820-230-3958 (USA)  
5820-501-0044 (USN)

	USA	USN	USAF
TYPE CLASS:	L/Std	Used by	Ltd-Std
STOCK NO:	2S4502-2X		



AN/VRC-2X

**FUNCTIONAL DESCRIPTION:**

Radio Set AN/VRC-2X is a complete communication unit, less primary power source, designed for vehicular operation.

This equipment provides two-way voice communication. With similar fixed frequency radio sets. Reliable communication is possible to a maximum of 15 miles in an open terrain.

The communication circuit is of a single frequency, push-to-talk type. A single antenna is used and is switched by an antenna relay, located in the transmitter.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in Mc:* 30 to 40, in 3 bands

*Frequency Deviation:*  $\pm 15$  kc for full modulation

*Type Frequency Control:* Crystal

*Type Receiver:* Dual conversion superheterodyne

*Number of Crystal Oscillators:* 2

*Type Modulation:* FM

*Type Emission and Reception:* Voice

*Power Input of Receiver:* 24 v at 3 amp

*Power Output of Transmitter:* 30 s

*Power Input of Transmitter:* 24 v at 10 amp

*Antenna:* 1/4 wave telescopic, whip

*Power Requirements:*

Receiver: 3 amp, 24 v

Transmitter: 10 amp, 24 v

MIL-HDBK-161

**AN/VRC-2X RADIO SET**

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Antenna	-----	1-1/2 x 1-1/2 x 78	3.25
1	Cable group	-----	5 x 11 x 11	13
1	Dynamic Loudspeaker	-----	9-1/2 dia x 4-1/4	5
1	Fuse Box J-498/VRC-2X	-----	2-3/16 x 2-1/2 x 6-1/8	.5
1	Installation components	-----	3 x 4 x 4-1/2	1.75
1	Microphone M-38/U	-----	3-1/2 x 3-3/4 x 5	1.25
1	Radio Receiver R-435/ VRC-2X	-----	10 x 11-1/2 x 15	35
1	Radio Set Control C-1060/ VRC-2X	-----	2-1/4 x 3-1/4 x 7-1/4	1.5
1	Radio Transmitter T-322/ VRC-2X	-----	10 x 11-1/2 x 15	41
1 set	Transmitter plate coils (set of 3)	-----	1-1/2 x 2-1/4 x 4	4
1	Spare parts group	-----	5 x 6 x 8	10
2	Switch Guard MX-1368/ VRC-2X	-----	3-3/4 x 4-1/4 x 14-7/8 1/2 x 8 x 10-1/2	.5 .5

**REFERENCE DATA AND LITERATURE:**

TM 11-607

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
1	12.3	205

**PROCUREMENT DATA**

PROCURING SERVICE: USA  
SPEC & or DWG:

DESIGN COG: USA, Sig C (RCUE)

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
			\$820.00

RADIO SET **AN/VRC-3**

1 July 1958

Cognizant Serv: USA FSN: 5820-196-1735

USA

USN

USAF

TYPE CLASS: L/Std  
 STOCK NO: 2S4502-3



AN/VRC-3

**FUNCTIONAL DESCRIPTION:**

Radio Set AN/VRC-3 is the vehicular version of Radio Set SCR-300. It is a crystal-controlled, short-range, FM (voice) transmitting and receiving equipment used for communication in the vhf band. It is used between tanks and supporting infantry.

This equipment consists of a dry-battery operated receiver-transmitter component. It uses a whip-type antenna and includes Battery BA-70, which can be replaced by Vibrator Power Supply PP-114/VRC-3 for operation from the vehicular storage battery.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in Mc:* 40 to 48

*Type Modulation:* FM

*Type of Signal:* Voice

*Power Output:* 0.3 s

*Power Requirements:* Battery BA-70

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
		(FSN)		
1	Battery Case CS-139	-----	9-3/8 x 10-15/16 x 7-1/4	3.66
1	Radio Receiver and Transmitter BC-1000	5820-196-9042	5-5/8 x 11-5/16 x 7-1/8	13

MIL-HDBK-161

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**AN/VRC-3** RADIO SET

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REFERENCE DATA AND LITERATURE:

TM 11-637

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SHIPPING DATA

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PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
1	11.9	21.5

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PROCUREMENT DATA

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PROCURING SERVICE: USA  
SPEC &/or DWG:

DESIGN COG: USA, Sig C

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CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
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1 July 1958

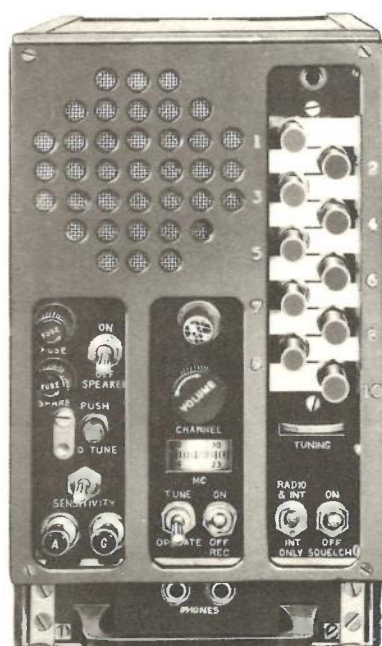
Cognizant Serv: USA FSN: 5820-196-1709

USA

USN

USAF

TYPE CLASS: L/Std  
 STOCK NO: 2S4502-5/12



AN/VRC-5

### FUNCTIONAL DESCRIPTION:

Radio Set AN/VRC-5 is a short-range, low-power, FM (voice) radiotelephone equipment used for communication by vehicles of the armored forces.

This equipment consists of a crystal-controlled transmitter and a receiver, plus antenna and related accessories. The transmitter and the receiver operate on 10 preset channel frequencies selected by means of pushbuttons mounted on the front panels of each of these components.

A single whip-type antenna is used for transmission and reception, and provision is made for automatic disabling of receiver output during operation of the transmitter dynamotor.

The radio set can be operated from the storage battery of the

vehicle in which it is used by means of appropriate dynamotors which are installed within the housings of the transmitter and the receiver.

This equipment has been replaced by Radio Set AN/GRC-4.

### TECHNICAL CHARACTERISTICS:

*Frequency Range in Mc:* 40.0 to 47.9 (10 preset channels)

*Type Modulation:* FM

*Type of Signal:* Voice

*Power Output:* 30w

*Power Requirements:* 24 amp from 12-v storage battery through Dynamotors DM-34 & DM-35, or 14 amp from 24-v storage battery through Dynamotors DM-36 & DM-37

MIL-HDBK-161

**AN/VRC-5 RADIO SET**

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
		(USA)		
1	Antenna A-62	2A262		
1	Dynamotor DM-34	3H1634	4-1/2 x 3 x 6-1/2	4.7
	or			
1	Dynamotor DM-36	3H1636	4-1/2 x 3 x 6-1/2	4.7
1	Dynamotor DM-35	3H1635	5-1/2 x 4-1/2 x 8-1/4	9.2
	or			
1	Dynamotor DM-37	3H1637	5-1/2 x 4-1/2 x 8-1/4	9.2
1	Radio Receiver BC-603	2C4403	11-1/2 x 6-3/4 x 12-1/2	35
1	Radio Transmitter BC-604	2C6494	11-1/2 x 10-1/4 x 18	67

**REFERENCE DATA AND LITERATURE:**

TM 11-600

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
6	29.6	645

**PROCUREMENT DATA**

PROCURING SERVICE: USA

DESIGN COG: USA, Sig C

SPEC &/or DWG: (USA) 71-1046

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
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## RADIO SET AN/VRC-6( )

1 July 1958

Cognizant Serv: USA FSN: 5820-096-7009

USA

USN

USAF

TYPE CLASS:

Std

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STOCK NO:

2S4502-6

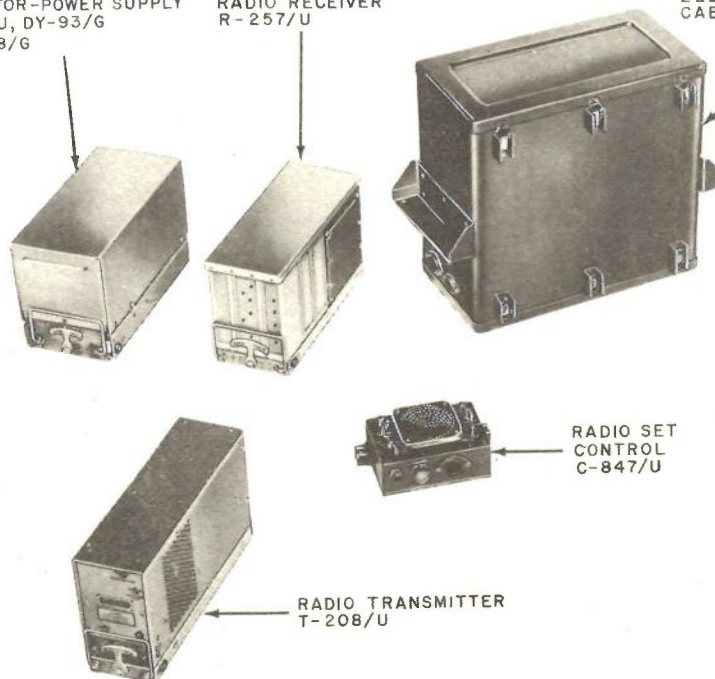
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DYNAMOTOR-POWER SUPPLY  
DY-100/U, DY-93/G  
OR DY-98/G

RADIO RECEIVER  
R-257/U

ELECTRICAL EQUIPMENT  
CABINET CY-938/VRC



AN/VRC-6( )

**FUNCTIONAL DESCRIPTION:**

Radio Set AN/VRC-6( ) is vehicular, HF, FM (voice) receiving and transmitting equipment used for nontactical radio communication with other vehicular and/or fixed stations, including civilian police authorities.

This equipment consists essentially of receiving and transmitting components, each with its own power supplies and associated components. It can be push-to-talk operated from a remote point by means of suitable remote control equipment.

The AN/VRC-6 and AN/VRC-6X enable operation from storage battery sources of 24 or 12 volts, respectively.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in Mc:* 25 to 50

*Type Modulation:* FM

*Type of Signal:* Voice

*Power Output:* 25 w

*Power Requirements:*

Transmitter: 20 amp at 12-v dc through Dynamotor DY-93/G; or 10 amp at 24-v dc through Dynamotor DY-98/G

Receiver: 2 amp at 12-v dc through Power Supply PP-868/U; or 1.1 amp at 24-v dc through Power Supply PP-867/U

**AN/VRC-6( ) RADIO SET****MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
		(FSN)		
1	Dynamotor DY-93/G	6130-393-1706	13-13/16 x 6-7/8 x 6-1/4	
	or			
1	Dynamotor DY-98/G	6130-392-7185	13-13/16 x 6-7/8 x 6-1/4	
1	Electrical Equipment Cabinet CY-938/VRC	5820-503-0793	16-1/2 x 10-1/2 x 19-1/4	33
1	Electrical Equipment Rack MT-1236/VRC	5820-503-3446	7-3/4 x 10-3/4 x 23-1/2	10.5
1	Power Supply PP-868/U	5820-500-4381		
	or			
1	Power Supply PP-867/U	6130-284-0228		
1	Radio Receiver R-257/U	5820-503-1255	8-1/2 x 5-3/4 x 14-1/2	16
1	Radio Set Control C-847/U	5820-503-1015	5 x 2-1/4 x 7-1/2	4.5
1	Radio Transmitter T-208/U	5820-545-7268	8-1/2 x 4-1/2 x 14-1/2	8.5

**REFERENCE DATA AND LITERATURE:**

TM 11-283

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
1	10.3	249

**PROCUREMENT DATA**

PROCURING SERVICE: USA  
 SPEC &/or DWG: MIL-N-11539

DESIGN COG: USA, Sig C

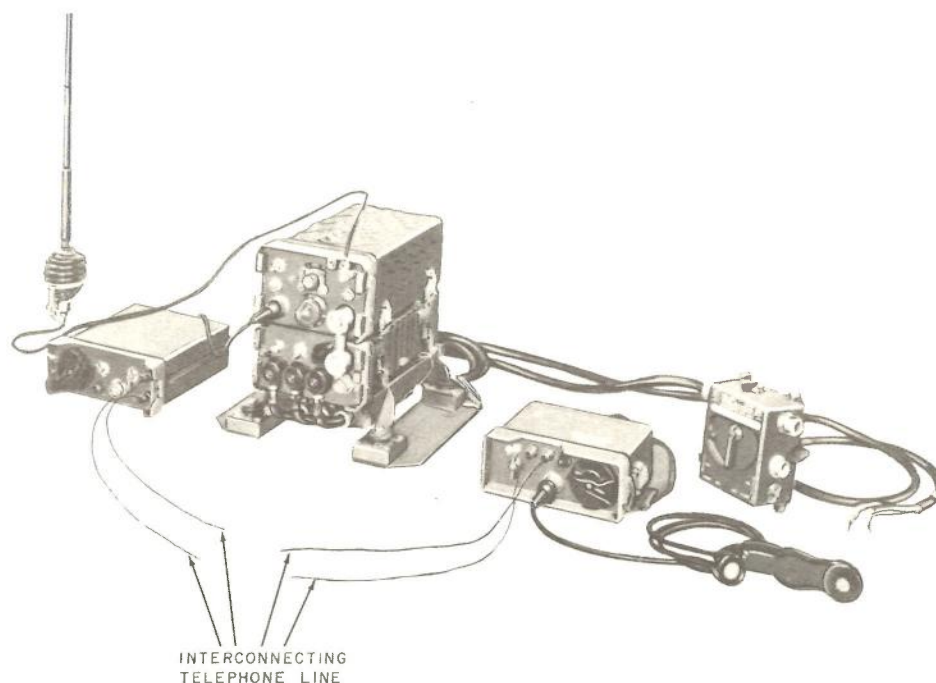
CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Motorola, Inc.	Chicago, Ill.	11661-P-52-51	\$1,005.69

RADIO SET AN/VRC-7( )

1 July 1958

Cognizant Serv: USA FSN: 5820-196-8996

	USA	USN	USAF
TYPE CLASS:	Std	--	--
STOCK NO:	2S4502-7/12-2	--	--



AN/VRC-7

### FUNCTIONAL DESCRIPTION:

Radio Set AN/VRC-7( ) is a short-range, FM (voice), vehicular radiotelephone equipment used within and between artillery, infantry, and armored force units.

This set consists of a separate, short-range, low-power receiver-transmitter component, designated as set 2 when used as part of the integrated series of radio sets, such as the AN/GRC-3 through AN/GRC-8.

It includes a vehicular installation unit, power supply equipment, and an interphone amplifier, plus various control and accessory equipment such as microphone, headset, and loudspeaker.

It can be operated by means of Control Group AN/GRA-6 from a remote point up to a distance of about 2 miles over a telephone pair.

### TECHNICAL CHARACTERISTICS:

*Frequency Range in Mc:* 47.0 to 58.4

*Type Modulation:* FM

*Type of Signal:* Voice

*Power Output:* 500 mw

*Power Requirements:* 6/12/24-v dc from vehicular storage battery

## AN/VRC-7( ) RADIO SET

## MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	AF Amplifier AM-65/GRC	(FSN) 5820-194-8303 (USA) 2C449-65.1	4-1/4 x 13 x 7-7/8	15.5
1	Control Group AN/GRA-6	(FSN) 5820-537-3848 (USA) 2C684A-6	See AN/GRA-6	20.85
1	Power Supply PP-281/GR	(FSN) 5820-500-4375 (USA) 3H4497-281.1	4-1/2 x 6 x 3	6
	or			
1	Power Supply PP-282/GR	(FSN) 5820-500-1684 (USA) 3H4497-282.1	4-1/2 x 6 x 3	6
	or			
1	Power Supply PP-448/GR	(FSN) 6130-231-0677	4-1/2 x 6 x 3	6
1	Receiver-Transmitter RT-70/ GRC	(FSN) 5820-537-3913 (USA) 2C5130-70.2	4-3/4 x 13 x 7-1/8	45

## REFERENCE DATA AND LITERATURE:

TM 11-285

## SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
3	4.92	164

## PROCUREMENT DATA

PROCURING SERVICE: USA  
SPEC &/or DWG:

DESIGN COG: USA, Sig C

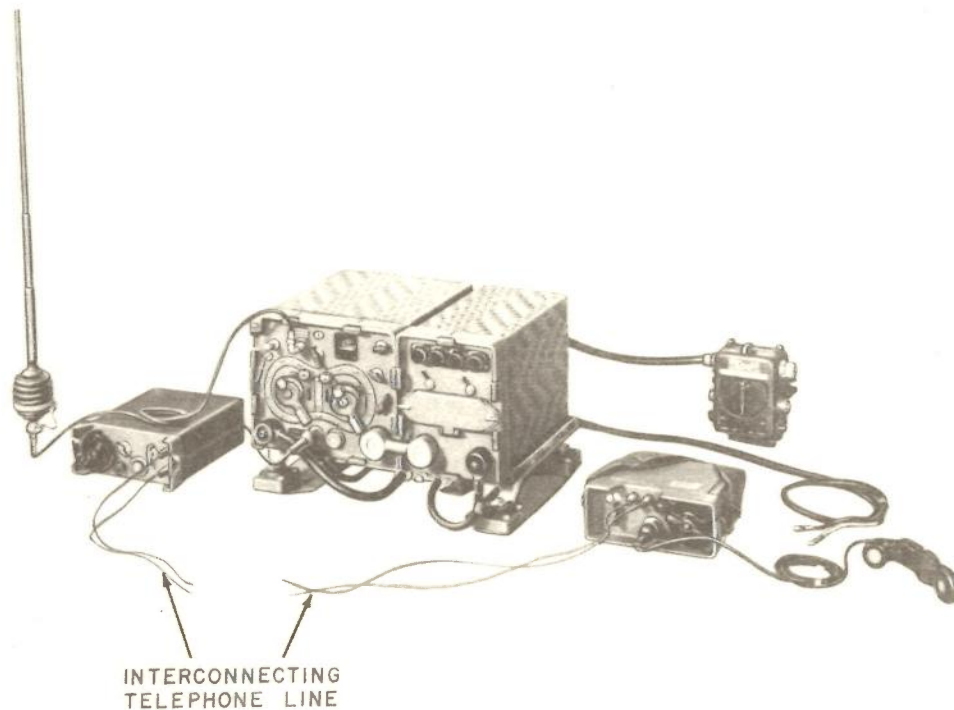
CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST

## RADIO SET AN/VRC-8( )

1 July 1958

Cognizant Serv: USA FSN: 5820-196-1718

	USA	USN	USAF
TYPE CLASS:	Std	--	--
STOCK NO:	2S4502-8/12-2	--	--



AN/VRC-8

**FUNCTIONAL DESCRIPTION:**

Radio Set AN/VRC-8( ) is a short-range vehicular FM (voice) equipment for communication within and between armored units.

This set consists of a receiver-transmitter component designated as set 1 when used as part of the integrated series of radio sets, such as the AN/GRC-3 and AN/GRC-4. A vehicular installation unit, power supply equipment, and control and accessory components are included.

This equipment can be operated from a remote point up to a

distance of about 2 miles over a telephone pair, by means of Control Group AN/GRA-6.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in Mc:* 20.0 to 27.9

*Type Modulation:* FM

*Type of Signal:* Voice

*Power Output:*

High Power: 9 to 16 w

Low Power: 2 w

*Power Requirements:* 12/24-v dc from vehicular storage battery

MIL-HDBK-161

**AN/VRC-8( ) RADIO SET**

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Control Group AN/GRA-6	(FSN) 5820-537-3848 (USA) 2C684A-6	See AN/GRA-6	20.85
1	Power Supply PP-109/GR	(FSN) 6130-284-0231 (USA) 3H4497-109.1	8 x 13 x 9	33
	or			
1	Power Supply PP-112/GR	(FSN) 6130-284-0230 (USA) 3H4497-112.1	8 x 13 x 9	33
1	Receiver-Transmitter RT-66/ GRC	(FSN) 5820-503-1508 (USA) 2C5130-66.1	9 x 13 x 11-1/4	35

**REFERENCE DATA AND LITERATURE:**

TM 11-286

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
3	6.05	267

**PROCUREMENT DATA**

PROCURING SERVICE: USA  
SPEC &/or DWG:

DESIGN COG: USA, Sig C

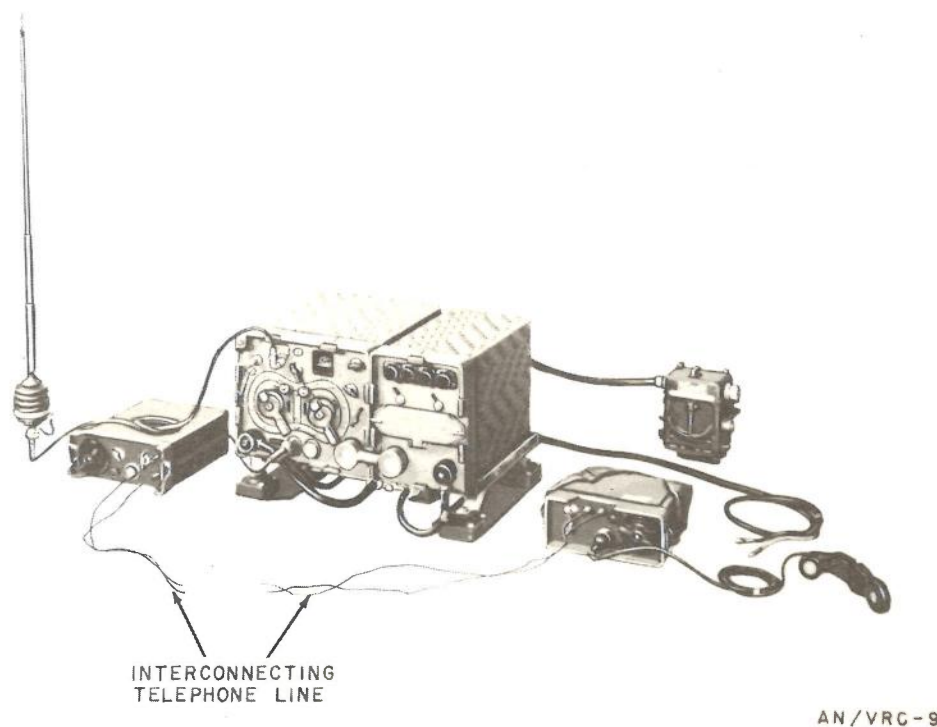
CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
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## RADIO SET AN/VRC-9( )

1 July 1958

Cognizant Serv: USA FSN: 5820-193-8809

	USA	USN	USAF
TYPE CLASS:	Std	--	--
STOCK NO:	2S4502-9/24	--	--

**FUNCTIONAL DESCRIPTION:**

Radio Set AN/VRC-9( ) is a short-range, vehicular, FM (voice) equipment for communication within and between artillery units.

This set consists of the receiver-transmitter component designated as set 1 when used as part of the integrated series of radio sets, such as the AN/GRC-5 and AN/GRC-6. A vehicular installation unit, power supply equipment, and control and accessory items are included.

This equipment can be operated by means of Control Group

AN/GRA-6 from a remote point up to a distance of about 2 miles over a telephone pair.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in Mc:* 27.0 to 38.9

*Type Modulation:* FM

*Type of Signal:* Voice

*Power Output:*

High Power: 9 to 16 w

Low Power: 2 w

*Power Requirements:* 12/24-v dc from vehicular storage battery

**AN/VRC-9( ) RADIO SET****MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Control Group AN/GRA-6	(FSN) 5820-537-3848 (USA) 2C684A-6	See AN/GRA-6	20.8
1	Power Supply PP-109/GR	(FSN) 6130-284-0231 (USA) 3H4497-109.1	8 x 13 x 9	33
	or			
1	Power Supply PP-112/GR	(FSN) 6130-284-0230 (FSN) 3H4497-109.1	8 x 13 x 9	33
1	Receiver-Transmitter RT-67/ GRC	(FSN) 5820-503-1507 (USA) 2C5130-67.1	9 x 13 x 11-1/2	35

**REFERENCE DATA AND LITERATURE:**

TM 11-286

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
3	6.05	267

**PROCUREMENT DATA**

PROCURING SERVICE: USA  
SPEC &/or DWG:

DESIGN COG: USA, Sig C

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST



RADIO SET AN/VRC-10( )

1 July 1958

Cognizant Serv: USA FSN: 5820-196-1721

	USA	USN	USAF
TYPE CLASS:	Std	--	--
STOCK NO:	2S4502-10/25	--	--



AN/VRC-10

**FUNCTIONAL DESCRIPTION:**

Radio Set AN/VRC-10( ) is a short-range, vehicular, FM (voice) equipment for communication within and between infantry units.

This set consists of the receiver-transmitter components, designated as set 1 when used as part of the integrated series of radio sets, such as the AN/GRC-7 and AN/GRC-8. A vehicular installation unit, power supply equipment, and control and accessory items are included.

This equipment can be operated by means of Control Group

AN/GRA-6 from a remote point up to a distance of about 2 miles over a telephone pair.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in Mc:* 38.0 to 54.9

*Type Modulation:* FM

*Type of Signal:* Voice

*Power Output:*

High Power: 9 to 16 w

Low Power: 2 w

*Power Requirements:* 12/24-v dc from vehicular storage battery

MIL-HDBK-161

**AN/VRC-10( ) RADIO SET**

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Control Group AN/GRA-6	(FSN) 5820-537-3848 (USA) 2C684A-6	See AN/GRA-6	20.85
1	Power Supply PP-109/GR	(FSN) 6130-284-0231 (USA) 3H4497-109.1	8 x 13 x 9	33
1	Power Supply PP-112/GR	(FSN) 6130-284-0230 (USA) 3H4497-109.1	8 x 13 x 9	33
1	Receiver-Transmitter RT-68/ GRC	(FSN) 5820-503-1505 (USA) 2C5130-68.1	8 x 13 x 11-1/4	35

**REFERENCE DATA AND LITERATURE:**

TM 11-286

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
3	6.05	267

**PROCUREMENT DATA**

PROCURING SERVICE: USA  
SPEC &/or DWG:

DESIGN COG: USA, Sig C

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
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RADIO SET AN/VRC-13( )

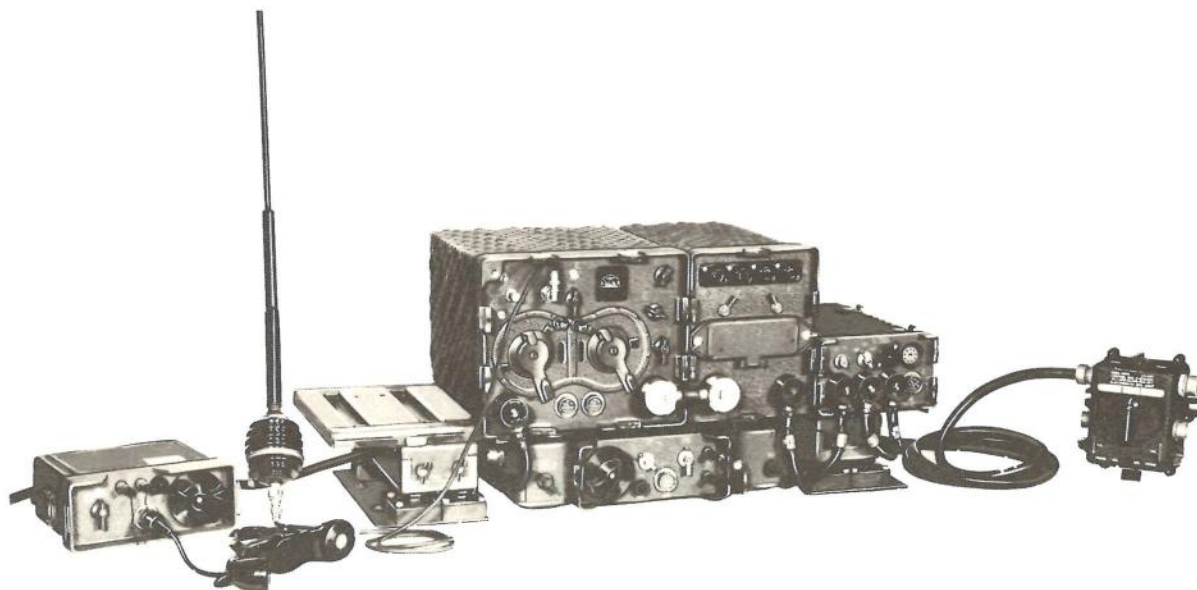
Cognizant Serv: USA FSN: AN/VRC-13: 5820-192-7133  
AN/VRC-13X: 5820-192-7134

USA

USN

USAF

TYPE CLASS: Std  
STOCK NO: AN/VRC-13: 2S4502-13/24  
AN/VRC-13X: 2S4502-13/12



AN/VRC-13

#### FUNCTIONAL DESCRIPTION:

Radio Set AN/VRC-13( ) is a short-range, vehicular, FM (voice) equipment for communication within and between armored units.

This set consists of the receiver-transmitter component, designated as set 1 when used as part of the integrated series of radio sets, such as the AN/GRC-3 and AN/GRC-4. A vehicular installation unit, power-supply equipment, an interphone amplifier, an antenna, and accessory components are included.

This equipment can be operated by means of Control Group

AN/GRA-6 from a remote point up to a distance of about 2 miles over a telephone pair.

#### TECHNICAL CHARACTERISTICS:

*Frequency Range in Mc:* 20.0 to 27.9

*Type Modulation:* FM

*Type of Signal:* Voice

*Power Output:*

High Power: 9 to 16 w

Low Power: 2 w

*Power Requirements:* 12/24-v dc from vehicular storage battery

MIL-HDBK-161

**AN/VRC-13( ) RADIO SET**

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	AF Amplifier AM-65/GRC	(FSN)5820-194-8303 (USA)2C449-65.1	4-1/4 x 13 x 7-7/8	15.5
1	Control Group AN/GRA-6	(FSN)5820-537-3848 (USA)2C684A-6	See AN/GRA-6	20.85
1	Power Supply PP-109/GR	(FSN)6130-284-0231 (USA)3H4497-109.1	8 x 13 x 9	33
	or			
1	Power Supply PP-112/GR	(FSN)6130-284-0230 (USA)3H4497-109.1	8 x 13 x 9	33
1	Power Supply PP-281/GR	(FSN)5820-500-4375 (USA)3H4497-281.1	4-1/2 x 6 x 3	6
	or			
1	Power Supply PP-282/GR	(FSN)5820-500-1648 (USA)3H4497-282.1	4-1/2 x 6 x 3	6
1	Receiver-Transmitter RT-66/ GRC	(FSN)5820-503-1508 (USA)2C5130-66.1	9 x 13 x 11-1/4	35

**REFERENCE DATA AND LITERATURE:**

TM 11-291

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
3	8.59	337

**PROCUREMENT DATA**

PROCURING SERVICE: USA  
SPEC &/or DWG:

DESIGN COG: USA, Sig C

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
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## RADIO SET AN/VRC-14

1 July 1958

Cognizant Serv: USA FSN: 5820-197-6532

USA

USN

USAF

TYPE CLASS:

Std

STOCK NO:

2S4502-14/12-2



AN/VRC-14

**FUNCTIONAL DESCRIPTION:**

Radio Set AN/VRC-14 is a short-range, vehicular, FM (voice) equipment for communication within and between artillery units.

This set consists of a receiver-transmitter component, designated as set 1 when used as part of the integrated series of radio sets, such as the AN/GRC-5 and AN/GRC-6. A vehicular installation unit, an interphone amplifier equipment, power supply equipment, and control and accessory items are included.

This equipment can be operated by means of Control

Group AN/GRA-6 from a remote point up to a distance of about 2 miles over a telephone pair.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in Mc:* 27.0 to 38.9

*Type Modulation:* FM

*Type of Signal:* Voice

*Power Output:*

High Power: 9 to 16 w

Low Power: 2 w

*Power Requirements:* 12/24-v dc from vehicular storage battery

**AN/VRC-14** RADIO SET

## MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	AF Amplifier AM-65/GRC	(FSN) 5820-194-8303 (USA) 2C449-65.1	4-1/4 x 13 x 7-7/8	15.5
1	Control Box C-375/VRC	(FSN) 5839-170-7868 (USA) 2C666-375	7 x 4 x 7	3.5
1	Control Group AN/GRA-6	(FSN) 5820-537-3848 (USA) 2C684A-6	See AN/GRA-6	20.85
1	Power Supply PP-109/GR	(FSN) 6130-284-0231 (USA) 3H4497-109.1	8 x 13 x 9	33
	or			
1	Power Supply PP-112/GR	(FSN) 6130-282-0230 (USA) 3H4497-109.1	8 x 13 x 9	33
1	Power Supply PP-281/GR	(FSN) 5820-500-4375 (USA) 3H4497-281.1	4-1/2 x 6 x 3	6
	or			
1	Power Supply PP-282/GR	(FSN) 5820-500-1648 (USA) 3H4497-282.1	4-1/2 x 6 x 3	6
1	Receiver-Transmitter RT-67/ GRC	(FSN) 5820-503-1507 (USA) 2C5130-67.1	9 x 13 x 11-1/2	35

## REFERENCE DATA AND LITERATURE:

TM 11-291

## SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
3	8.59	337

## PROCUREMENT DATA

PROCURING SERVICE: USA  
SPEC &/or DWG:

DESIGN COG: USA, Sig C

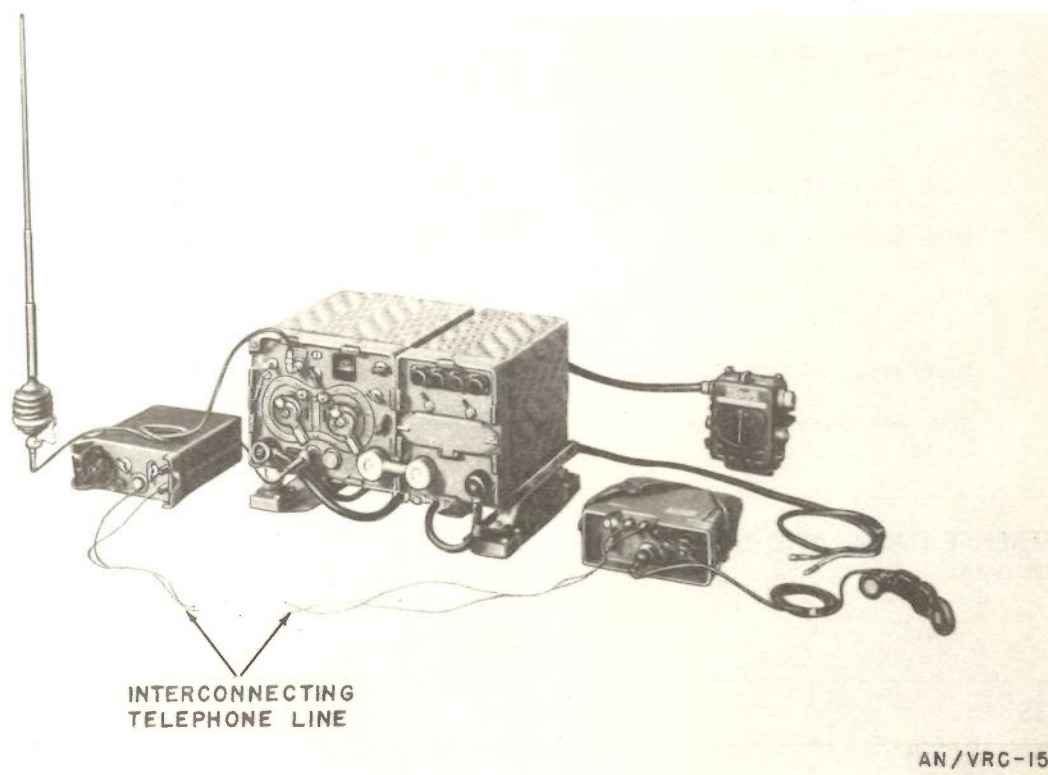
CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST

## RADIO SET AN/VRC-15( )

1 July 1958

Cognizant Serv: USA USN: AN/VRC-15: 5820-192-7111  
 AN/VRC-15X: 5820-192-7109

	USA	USN	USAF
TYPE CLASS:	Std	--	--
STOCK NO:	2S4502-15/24	--	--

**FUNCTIONAL DESCRIPTION:**

Radio Set AN/VRC-15 ( ) is a short-range, vehicular, FM (voice) equipment for communication within and between infantry units.

This set consists of the receiver-transmitter component designated as set 1 when used as part of the integrated series of radio sets, such as the AN/GRC-7 and AN/GRC-8. A vehicular installation unit, an interphone amplifier, power supply equipment, and control and accessory items are included.

This equipment can be operated by means of Control Group

AN/GRA-6 from a remote point at a distance of about 2 miles over a telephone pair.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in Mc:* 38.0 to 54.9

*Type Modulation:* FM

*Type of Signal:* Voice

*Power Output:*

High Power: 9 to 16 w

Low Power: 2 w

*Power Requirements:* 12/24-v dc from vehicular storage battery

**AN/VRC-15( ) RADIO SET****MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	AF Amplifier AM/65-GRC	(FSN) 5820-194-8303 (USA) 2C449-65.1	4-1/4 x 13 x 7-7/8	15.5
1	Control Group AN/GRA-6	(FSN) 5820-537-3848 (USA) 2C684A-6	See AN/GRA-6	20.85
1	Power Supply PP-109/GR	(FSN) 6130-284-0231 (USA) 3H4497-109.1	8 x 13 x 9	33
	or			
1	Power Supply PP-112/GR	(FSN) 6130-284-0230 (USA) 3H4497-112.1	8 x 13 x 9	33
1	Power Supply PP-281/GR	(FSN) 5820-500-4375 (USA) 3H4497-281.1	4-1/2 x 6 x 3	6
	or			
1	Power Supply PP-282/GR	(FSN) 5820-500-1648 (USA) 3H4497-282.1	4-1/2 x 6 x 3	6
1	Receiver-Transmitter RT-68/ GRC	(FSN) 5820-503-1505 (USA) 2C5130-68.1	9 x 13 x 11-1/4	35

**REFERENCE DATA AND LITERATURE:**

TM 11-291

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
3	8.59	337

**PROCUREMENT DATA**

PROCURING SERVICE: USA  
SPEC &/or DWG:

DESIGN COG: USA, Sig C

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
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## RADIO SET AN/VRC-16( )

1 July 1958

Cognizant Serv: USA FSN: AN/VRC-16: 5820-253-6131  
AN/VRC-16X: 5820-234-6398

USA

USN

USAF

TYPE CLASS:  
STOCK NO:

Std  
AN/VRC-16: 2S4502-  
16/24  
AN/VRC-16X: 2S4502-  
16/12



AN/VRC-16

**FUNCTIONAL DESCRIPTION:**

Radio Set AN/VRC-16 ( ) is a short-range, vehicular, FM (voice) equipment for communication within and between armored units.

This set consists of the receiver-transmitter component designated as set 1 when used as part of the integrated series of radio sets, such as the AN/GRC-3 and AN/GRC-4. The auxiliary receiver component of these sets is also provided with this equipment. A vehicular installation unit, power supply equipment, an antenna, and control components are included.

This equipment can be operated by means of Control Group

AN/GRA-6 from a remote point up to a distance of about 2 miles over a telephone pair.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in Mc:* 20.0 to 27.9

*Type Modulation:* FM

*Type of Signal:* Voice

*Power Output:*

High Power: 9 to 16 w

Low Power: 2 w

*Power Requirements:* 12/24-v dc from vehicular storage battery

## AN/VRC-16( ) RADIO SET

## MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Control Group AN/GRA-6	(FSN) 5820-537-3848 (USA) 2C684A-6	See AN/GRA-6	20.85
1	Power Supply PP-109/GR	(FSN) 6130-284-0231 (USA) 3H4497-109.1	8 x 13 x 9	33
	or			
1	Power Supply PP-112/GR	(FSN) 6130-284-0230 (USA) 3H4497-112.1	8 x 13 x 9	33
1	Power Supply PP-281/GR	(FSN) 5820-500-4375 (USA) 3H4497-281.1	4-1/2 x 6 x 3	6
	or			
1	Power Supply PP-282/GR	(FSN) 5820-500-1648 (USA) 3H4497-282.1	4-1/2 x 6 x 3	6
1	Radio Receiver R-108/GRC	(FSN) 5820-503-1413 (USA) 2C4180-108.1	9 x 13 x 7-1/4	35
1	Receiver-Transmitter RT-66/ GRC	(FSN) 5820-503-1508 (USA) 2C5130-66.1	9 x 13 x 11-1/4	35

## REFERENCE DATA AND LITERATURE:

TM 11-611

## SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
3	6.6	306

## PROCUREMENT DATA

PROCURING SERVICE: USA  
SPEC &/or DWG:

DESIGN COG: USA, Sig C

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST

1 July 1958

Cognizant Serv: USA FSN: 5820-351-3384

USA

USN

USAF

TYPE CLASS: Std  
 STOCK NO: 2S4502-17/24



AN/VRC-17

**FUNCTIONAL DESCRIPTION:**

Radio Set AN/VRC-17 is a short-range, vehicular, FM (voice) equipment for communication within and between artillery units.

This set consists of the receiver-transmitter component, designated as set 1 when used as part of the integrated series of radio sets, such as the AN/GRC-5 and AN/GRC-6. The auxiliary receiver component of these sets is also provided with this equipment. A vehicular installation unit, power supply equipment, an antenna, and control components are included.

This equipment can be operated by means of Control Group

AN/GRA-6 from a remote point up to a distance of about 2 miles over a telephone pair.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in Mc:* 27.0 to 38.9

*Type Modulation:* FM

*Type of Signal:* Voice

*Power Output:*

High Power: 9 to 16 w

Low Power: 2 w

*Power Requirements:* 12/24-v dc from vehicular storage battery

**AN/VRC-17** RADIO SET

## MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Control Group AN/GRA-6	(FSN) 5820-537-3848 (USA) 2C684A-6	See AN/GRA-6	20.85
1	Power Supply PP-109/GR	(FSN) 6130-284-0231 (USA) 3H4497-109.1	8 x 13 x 9	33
	or			
1	Power Supply PP-112/GR	(FSN) 6130-284-0230 (USA) 3H4497-112.1	8 x 13 x 9	33
1	Power Supply PP-281/GR	(FSN) 5820-500-4375 (USA) 3H4497-281.1	4-1/2 x 6 x 3	6
	or			
1	Power Supply PP-282/GR	(FSN) 5820-500-1648 (USA) 3H4497-282.1	4-1/2 x 6 x 3	6
1	Radio Receiver R-109/GRC	(FSN) 5820-503-1413 (USA) 2C4180-109.1	9 x 13 x 11-1/2	35
1	Receiver-Transmitter RT-67/ GRC	(FSN) 5820-503-1507 (USA) 2C5130-67.1	9 x 13 x 11-1/2	35

## REFERENCE DATA AND LITERATURE:

TM 11-611

## SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
3	6.6	306

## PROCUREMENT DATA

PROCURING SERVICE: USA  
SPEC &/or DWG:

DESIGN COG: USA, Sig C

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST

## RADIO SET AN/VRC-18( )

1 July 1958

Cognizant Serv: USA FSN: AN/VRC-18: 5820-234-6399  
AN/VRC-18X: 5820-234-6397

	USA	USN	USAF
TYPE CLASS:	Std	--	--
STOCK NO:	AN/VRC-18: 2S4502-18/24	--	--
	AN/VRC-18X: 2S4502-18/12		



AN/VRC-18

**FUNCTIONAL DESCRIPTION:**

Radio Set AN/VRC-18 ( ) is a short-range, vehicular FM (voice) transmitting and receiving equipment used for communication within and between infantry units.

This equipment consists of the receiver-transmitter component, designated as set 1 when used as part of the integrated series of radio sets, such as the AN/GRC-7 and AN/GRC-8. The auxiliary receiver component of these sets is also provided with this equipment. A vehicular installation unit, power supply equipment, an antenna, and control components are included.

This equipment can be operated by means of Control Group

AN/GRA-6 from a remote point up to a distance of about 2 miles over a telephone pair.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in Mc:* 38.0 to 54.9

*Type Modulation:* FM

*Type of Signal:* Voice

*Power Output:*

High Power: 9 to 16 w

Low Power: 2 w

*Power Requirements:* 12/24-v dc from vehicular storage battery

**AN/VRC-18( ) RADIO SET****MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Control Group AN/GRA-6	(FSN) 5820-537-3848 (USA) 2C684A-6	See AN/GRA-6	20.85
1	Power Supply PP-109/GR	(FSN) 6130-284-0231 (USA) 3H4497-109.1	8 x 13 x 9	33
	or			
1	Power Supply PP-112/GR	(FSN) 6130-284-0230 (USA) 3H4497-112.1	8 x 13 x 9	33
1	Power Supply PP-281/GR	(FSN) 5820-500-4375 (USA) 3H4497-281.1	4-1/2 x 6 x 3	6
	or			
1	Power Supply PP-282/GR	(FSN) 5820-500-1648 (USA) 3H4497-282.1	4-1/2 x 6 x 3	6
1	Radio Receiver R-110/GRC	(FSN) 5820-503-1254 (USA) 2C4180-110.1	9 x 13 x 7-1/4	35
1	Receiver-Transmitter RT-68/ GRC	(FSN) 5820-503-1505 (USA) 2C5130-68.1	9 x 13 x 11-1/4	35

**REFERENCE DATA AND LITERATURE:**

TM 11-611

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
3	6.6	306

**PROCUREMENT DATA**

PROCURING SERVICE: USA  
SPEC &/or DWG:

DESIGN COG: USA, Sig C

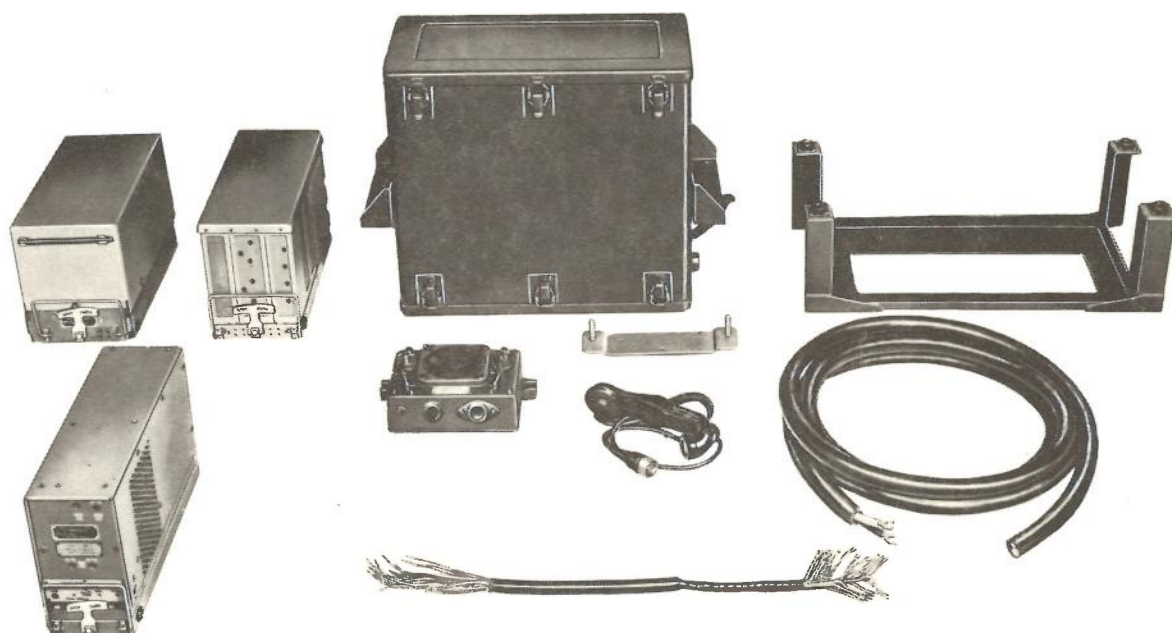
CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST

## RADIO SET AN/VRC-19( )

1 July 1958

Cognizant Serv: USA FSN: 5820-519-4103

	USA	USN	USAF
TYPE CLASS:	Std	--	Std
STOCK NO:	2S4502-19	--	--



AN/VRC-19( )

**FUNCTIONAL DESCRIPTION:**

Radio Set AN/VRC-19 ( ) is a small, battery-powered, vehicular, low-power, FM radio communication equipment used by military police, guard, and security troops. It can be installed in railroad trains and motor vehicles.

This equipment consists essentially of a radio receiver and power supply, a transmitter and power supply, a control unit, and an electrical equipment cabinet.

The AN/VRC-19 and AN/VRC-19X operate on a 24-volt and 12-volt, vehicular battery, respectively.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in Mc:* 152 to 174

*Type Modulation:* FM

*Type of Signal:* Voice

*Power Output:* 20 to 25 w

*Power Requirements:*

AN/VRC-19: 26.4 w (rcvr), 240 w (xmtr); 24-v dc

AN/VRC-19X: 24 w (rcvr), 240 w (xmtr); 12-v dc

## AN/VRC-19( ) RADIO SET

## MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
		(USA)		
1	Dynamotor-Power Supply DY-93/G	3H1535-93	8-5/8 x 6-7/8 x 14-1/2	24
	or			
1	Dynamotor-Power Supply DY-98/G	3H1535-98	8-5/8 x 6-7/8 x 14-1/2	24
	or			
1	Dynamotor-Power Supply DY-100/U	3H1535-100	8-5/8 x 6-7/8 x 14-1/2	24
1	Electrical Equipment Cabinet CY-938( )/VRC	6F290-938	10-1/2 x 19-5/16 x 16-1/2	33
1	Power Supply PP-867/U	3H4497-867	5 x 6-1/4 x 7	10
	or			
1	Power Supply PP-868/U	3H4497-868	5 x 6-1/4 x 7	10
	or			
1	Power Supply PP-869/U	3H4497-869	5 x 6-1/4 x 7	10
1	Radio Receiver R-394/U	2C4180-394	8-1/2 x 5-3/4 x 14-1/2	16
1	Radio Transmitter T-278/U	2C6900-278	8-1/2 x 4-1/2 x 14-1/2	8.5

## REFERENCE DATA AND LITERATURE:

TM 11-297

## SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
1	10.3	249

## PROCUREMENT DATA

PROCURING SERVICE: USA  
SPEC &/or DWG: MIL-N-11539

DESIGN COG: USA, Sig C

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Motorola, Inc.	Chicago, Ill.	11661-P-52-51	\$1,116.28



RADIO SET **AN/VRC-20**

1 July 1958

Cognizant Serv: USA FSN: 5820-519-4104

USA

USN

USAF

TYPE CLASS: Std  
 STOCK NO: 2S4502



AN/VRC-20

**FUNCTIONAL DESCRIPTION:**

Radio Set AN/VRC-20 is a vehicular, short-range, FM (voice), radiotelephone equipment for communication within and between armored units.

This equipment consists of the receiver-transmitter component designated as set 1 when used as part of the integrated series of radio sets, such as the AN/GRC-3 and AN/GRC-4. The auxiliary receiver component of these sets is also provided with this equipment. A vehicular installation unit, power

supply equipment, an antenna, and control components are included.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in Mc:* 20.0 to 27.9

*Type Modulation:* FM

*Type of Signal:* Voice

*Power Output:*

High Power: 9 to 16 w

Low Power: 2 w

*Power Requirements:* 12/24-volt dc from vehicular storage battery

**AN/VRC-20** RADIO SET

## MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	AF Amplifier AM-65/GRC	(FSN) 5820-194-8303 (USA) 2C449-65.1	4-1/4 x 13 x 7-7/8	15.5
1	Control Box C-375/VRC	(FSN) 5830-170-7868 (USA) 2C666-375	7 x 4 x 7	3.5
1	Power Supply PP-109/GR	(FSN) 6130-284-0231 (USA) 3H4497-109.1	8 x 13 x 9	33
	or			
1	Power Supply PP-112/GR	(FSN) 6130-284-0230 (USA) 3H4497-112.1	8 x 13 x 9	33
2	Power Supply PP-281/GR	(FSN) 5820-500-4375 (USA) 3H4497-281.1	4-1/2 x 6 x 3	6
	or			
2	Power Supply PP-282/GR	(FSN) 5820-500-1648 (USA) 3H4497-282.1	4-1/2 x 6 x 3	6
1	Radio Receiver R-108/GRC	(FSN) 5820-503-1258 (USA) 2C4180-108.1	9 x 13 x 7-1/4	35
1	Receiver-Transmitter RT-66/ GRC	(FSN) 5820-503-1508 (USA) 2C5130-66.1	9 x 13 x 11-1/4	35

## REFERENCE DATA AND LITERATURE:

TM 11-642

## SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
3	6.3	296

## PROCUREMENT DATA

PROCURING SERVICE: USA  
SPEC &/or DWG:

DESIGN COG: USA, Sig C

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
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RADIO SET **AN/VRC-21**

1 July 1958

Cognizant Serv: USA FSN: 5820-519-4102

USA

USN

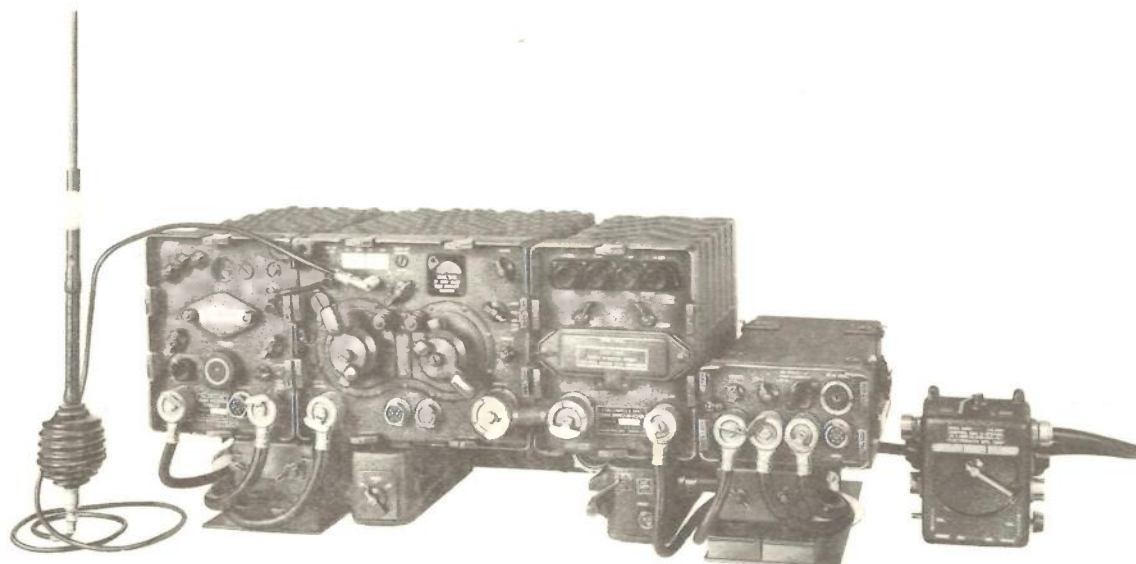
USAF

TYPE CLASS:

Std

STOCK NO:

2S4502-21/24



AN/VRC-21

**FUNCTIONAL DESCRIPTION:**

Radio Set AN/VRC-21 is a vehicular, short-range, FM (voice), radiotelephone equipment for communication within and between artillery units.

This equipment consists of the receiver-transmitter component designated as set 1 when used as part of the integrated series of radio sets, such as the AN/GRC-5 and AN/GRC-6. The auxiliary receiver component of these sets is also provided with this equipment. A vehicular installation unit, power

supply equipment, an antenna, and control components are included.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in Mc:* 27.0 to 38.9

*Type Modulation:* FM

*Type of Signal:* Voice

*Power Output:*

High Power: 9 to 16 w

Low Power: 2 w

*Power Requirements:* 12/24-v dc from vehicular storage battery

**AN/VRC-21** RADIO SET

## MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	AF Amplifier AM-65/GRC	(FSN) 5820-194-8303 (USA) 2C449-65.1	4-1/4 x 13 x 7-7/8	15.5
1	Control Box C-375/VRC	(FSN) 5830-170-7868 (USA) 2C666-375	7 x 4 x 7	3.5
1	Power Supply PP-109/GR	(FSN) 6130-284-0231 (USA) 3H4497-109.1	8 x 13 x 9	33
	or			
1	Power Supply PP-112/GR	(FSN) 6130-284-0230 (USA) 3H4497-112.1	8 x 13 x 9	33
2	Power Supply PP-281/GR	(FSN) 5820-500-4375 (USA) 3H4497-281.1	4-1/2 x 6 x 3	6
	or			
2	Power Supply PP-282/GR	(FSN) 5820-500-1648 (USA) 3H4497-282.1	4-1/2 x 6 x 3	6
1	Radio Receiver R-109/GR	(FSN) 5820-503-1413 (USA) 2C4180-109.1	9 x 13 x 7-1/4	35
1	Receiver-Transmitter RT-67/ GRC	(FSN) 5820-503-1507 (USA) 2C5130-67.1	9 x 13 x 11-1/2	35

## REFERENCE DATA AND LITERATURE:

TM 11-642

## SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
3	6.3	296

## PROCUREMENT DATA

PROCURING SERVICE: USA  
SPEC &/or DWG:

DESIGN COG: USA, Sig C

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST

RADIO SET **AN/VRC-22**

1 July 1958

Cognizant Serv: USA FSN: 5820-519-4101

USA

USN

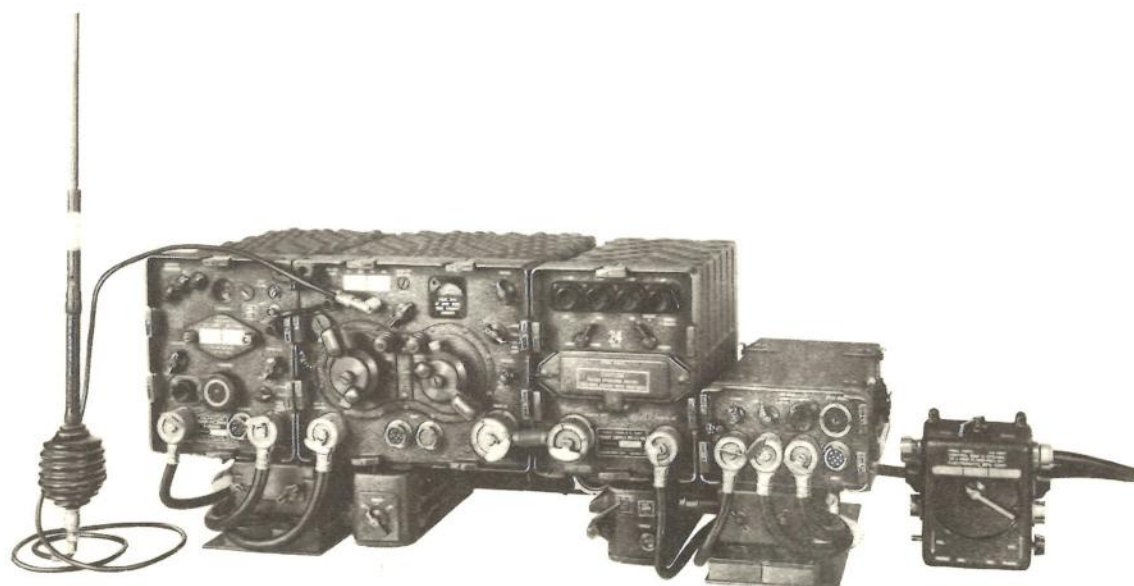
USAF

TYPE CLASS:

Std

STOCK NO:

2S4502-22/24



AN/VRC-22

**FUNCTIONAL DESCRIPTION:**

Radio Set AN/VRC-22 is a vehicular, short-range, FM (voice) radiotelephone equipment for communication within and between infantry units.

This equipment consists of the receiver-transmitter component designated as set 1 when used as part of the integrated series of radio sets, such as the AN/GRC-7 and AN/GRC-8. The auxiliary receiver component of these sets is also provided with this equipment. A vehicular installation unit, and inter-

phone amplifier, power supply equipment, and antenna and accessory components are included.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in Mc:* 38.0 to 54.9

*Type Modulation:* FM

*Type of Signal:* Voice

*Power Output:*

High Power: 9 to 16 w

Low Power: 2 w

*Power Requirements:* 12/24-v dc from vehicular storage battery

**AN/VRC-22** RADIO SET

## MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	AF Amplifier AM-65/GRC	(FSN) 5820-194-8303 (USA) 2C449-65.1	4-1/4 x 13 x 7-7/8	15.5
1	Control Box C-375/VRC	(FSN) 5830-170-7868 (USA) 2C666-375	7 x 4 x 7	3.5
1	Power Supply PP-109/GR	(FSN) 6130-284-0231 (USA) 3H4497-109.1	8 x 13 x 9	33
	or			
1	Power Supply PP-112/GR	(FSN) 6130-284-0230 (USA) 3H4497-112.1	8 x 13 x 9	33
2	Power Supply PP-281/GR	(FSN) 5820-500-4375 (USA) 3H4497-281.1	4-1/2 x 6 x 3	6
	or			
2	Power Supply PP-282/GR	(FSN) 5820-500-1648 (USA) 3H4497-282.1	4-1/2 x 6 x 3	6
1	Radio Receiver R-110/GRC	(FSN) 5820-503-1254 (USA) 2C4180-110.1	9 x 13 x 7-1/4	35
1	Receiver-Transmitter RT-68/ GRC	(FSN) 5820-503-1505 (USA) 2C5130-68.1	9 x 13 x 11-1/4	35

## REFERENCE DATA AND LITERATURE:

TM 11-642

## SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
3	6.30	296

## PROCUREMENT DATA

PROCURING SERVICE: USA  
SPEC &/or DWG:

DESIGN COG: USA, Sig C

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
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## RADIO SET AN/VRC-27( )

1 July 1958

Cognizant Serv: USN FSN:

USA

USN

USAF

TYPE CLASS:

Used by

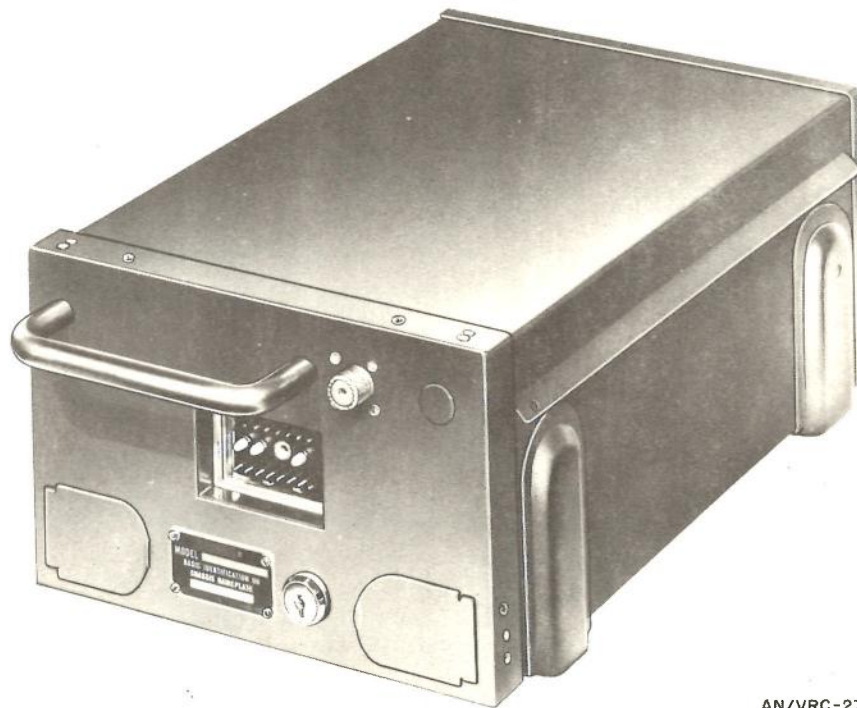
Std

STOCK NO:

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AN/VRC-27

**FUNCTIONAL DESCRIPTION:**

Radio Set AN/VRC-27 ( ) is a vehicular, medium-power, FM (voice) radio receiving and transmitting equipment of modified commercial design, used for short-range communication with land and/or mobile stations.

It provides two-way mobile communication for internal security and industrial control purposes. This equipment consists essentially of a transmitter, a receiver, and a power-supply chassis assembled in a drawer-type mobile housing. Accessories include control head with microphone, speaker,

cable kit, installation kit and antenna. It is mounted at the rear, or installed in the trunk, of patrol- or passenger-type vehicles.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in Mc:* 30 to 42

*Type Modulation:* FM

*Type of Signal:* Voice

*Power Output:* 25 to 30 w

*Power Requirements:* 25 amp at 6-v dc; 12.5 amp at 12-v dc

MIL-HDBK-161

**AN/VRC-27( ) RADIO SET**

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Radio Set AN/VRC-27 (Equipment consists of only one major component.)		6 x 9-5/8 x 18	50

**REFERENCE DATA AND LITERATURE:**

NAVSHIPS 92757

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
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**PROCUREMENT DATA**

PROCURING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG: USN, BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Motorola, Inc.	Chicago, Ill.	NObsr-64259	



RADIO SET **AN/VRC-30**

1 July 1958

Cognizant Serv: USA FSN:

USA

USN

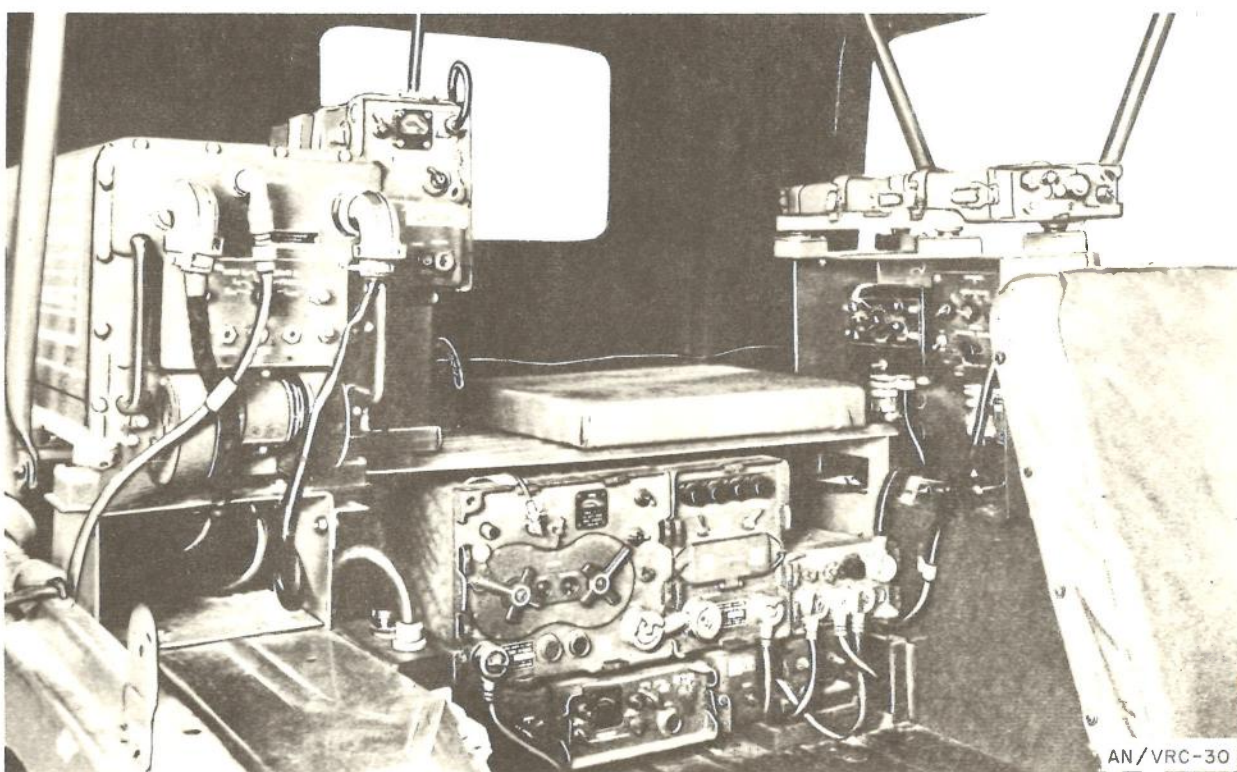
USAF

TYPE CLASS:

Std

STOCK NO:

2S4502-30-V76

**FUNCTIONAL DESCRIPTION:**

Radio Set AN/VRC-30 is an assemblage of transmitting and receiving equipment arranged for vehicular installation and operation. Its components operate in different rf ranges, separately or simultaneously, to increase flexibility of ground and ground-to-air communication.

This equipment consists of the following radio sets: AN/ARC-27, AN/PRC-9, AN/TRC-7 (optional), and AN/VRC-14. The AN/TRC-7 is supplied only when a frequency range of 100 to 156 mc is required.

This equipment provides ground-to-air communication between forward observation posts on the ground and aircraft assigned to close support missions, as well as communication between the forward observation post and a similar radio set at a higher tactical ground-force headquarters.

It is usually installed in a 1/4-ton, 4 x 4 truck (M38 or M38A1) but may be mounted in a 3/4-ton truck, an armored personnel carrier, or a tank.

For installation in the 1/4-ton truck, 3/4-ton truck, or other vehicle, a heavy-duty generator must be installed to provide the necessary power to operate all equipment.

**AN/VRC-30** RADIO SET

## TECHNICAL CHARACTERISTICS:

SET	AN/ARC-27	AN/PRC-9	AN/TRC-7	AN/VRC-14
FREQUENCY RANGE IN .MC	225.0 to 399.9	27.0 to 38.9	100 to 156	27 to 38.9
TYPE MODULATION	AM	FM	AM	FM
TYPE OF SIGNAL	Voice	Voice	Voice	Voice
POWER OUTPUT	10 w	1 w	0.5 to 1.5 w	2 or 20
POWER REQUIREMENTS	24- to 28-v dc	Battery BA-279/U	Battery BA-70 or Hand Generator G-3/TRC-7	12- or 24-v vehicular storage battery

## MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Radio Set AN/ARC-27	(USA) 2S921-27	19-3/4 x 12-3/8 x 27-5/8	81.8
1	Radio Set AN/TRC-9	(FSN) 5820-254-9334	-----	26
1	Radio Set AN/TRC-7 (optional)	(FSN) 5820-537-4006	-----	143
1	Radio Set AN/VRC-14	(FSN) 5820-197-6532	-----	185

## REFERENCE DATA AND LITERATURE:

TB SIG 283

## SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
11	25.6	621.1

## PROCUREMENT DATA

PROCURING SERVICE: USA  
SPEC &/or DWG:

DESIGN COG: USA, Sig C

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST

3 December 1958

Cognizant Serv: USN FSN: 5820-665-1423

USA

USN

USAF

TYPE CLASS: --

Used by --

STOCK NO: --

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AN/VRC-32

**FUNCTIONAL DESCRIPTION:**

Radio Set AN/VRC-32 is a vehicular unit used for point-to-point, two-way communication. It is a militarized version of a commercial, General Electric Company Model MW13W, vehicular radio set.

This equipment operates in vehicles having battery-generator type power systems in which either the positive or negative terminal on the storage battery is grounded.

**TECHNICAL CHARACTERISTICS:***Transmitter:*

Frequency Range in Mc: 30 to 42

Frequency Stability:

Unheated Crystal:  $\pm 0.002\%$ Heated Crystal:  $\pm 0.0005\%$ 

Frequency Control: Crystal

Type Modulation: FM

Type Emission: F3 phase modulation

Audio Frequency: Between +1 to -3 db of a 6 db/octave preemphasis 300 to 3,000 cps (1,000 cps reference)

Spurious and Harmonic Radiation: At least 80 db below rated power out-put at any frequency

Hum and Noise Level: -40 db (below  $\pm$ kc swing)

Channel separation (Maximum): 0.4% of operating frequency (160 kc approximately) for 2, 3, or 4 channel operation

Crystal Multiplication: 12 times

Ambient Temperature:  $-30^{\circ}\text{C.}$  to  $+60^{\circ}\text{C.}$ 

Bandwidth:

Narrow Band:  $\pm 5$  kcWide Band:  $\pm 15$  kc*Receiver:*

Frequency Range in Mc: 30 to 54

**AN/VRC-32 RADIO SET**

## Frequency Stability:

Unheated Crystal:  $\pm 0.002\%$ Heated Crystal:  $\pm 0.0005\%$ 

Frequency Control: Crystal

Type Modulation: FM

Type Reception: F3 phase modulation

Audio Frequency: Within +2 to -8 db of a 6 db/octave deemphasis curve from 300 to 3,000 cps (1/000 cps reference)

Sensitivity: 0.4  $\mu\text{V}$  (20 db quieting method)Squelch: Adjustable, will open less than 0.15  $\mu\text{V}$  at critical settingBandwidth:  $\pm 15$  kc at the 6 db points (swing method of measurement)

Spurious Response: At least 100 db down

Ambient Temperature:  $-30^{\circ}\text{C}$ . to  $60^{\circ}\text{C}$ .

Channel Separation: 0.4% operating frequency (160 kc approximately)

Intermediate Frequencies: 3.2 mc, 290 kc

Antenna: Vertical whip

Power Output: 30 w, nominal

Power Requirements: 6-, 12-, or 24-v dc; battery operated (vibrator power supply)

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Antenna AT-671/VRC-52			
1	Cabinet, Electrical Equipment CY-1908/VRC-32			
1	Control Cable CX-3659/U			
1	Control Unit C-1847/VRC-32			
1	Fuse Box Assembly J-735/ VRC-32			
1	Loudspeaker LS-255/U			
1	Power Cable CX-3658/U			
1	Radio Receiver-Transmitter RT-367/VRC-32			

**REFERENCE DATA AND LITERATURE:**

NAVSHIPS 92652

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)

**PROCUREMENT DATA**

PROCURING SERVICE: USN	DESIGN COG: USN, BuShips
SPEC &/or DWG:	

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
General Electric	Electronics Park, Syracuse, N. Y.	NObsr-64749, 6 June 1955	\$372.00

FREQUENCY MODULATED MOBILE EQUIPMENT **AN/VRC-type**

4 November 1958

Cognizant Serv: **USN** FSN: 5820-665-0404**35FMTR-7A****USA****USN****USAF**

TYPE CLASS:        --

Used by            --

STOCK NO:         --

(No Illustration Available)

**FUNCTIONAL DESCRIPTION:**

Frequency Modulated Mobile Equipment 35FMTR-7A is a complete vhf radio set, less a primary power source, designed for vehicular operation. It provides two-way voice communication with similar fixed or mobile equipment operating within the same frequency band. The equipment derives its power from a 6-volt storage battery.

The complete radio set consists of a receiver, a transmitter, a control head, and associated operating and installation components. The transmitter contains a dynamotor power supply. All jacks and receptacles are mounted on the front of the trans-

mitter and receiver chassis. There are no tuning controls; the set is operated through the control head.

**TECHNICAL CHARACTERISTICS:***Frequency Range in MC:* 30 to 44*Frequency Deviation:*  $\pm 15$  ke*Type Signal:* FM*System Audio Response:*  $\pm$ db at 500 to 3,00 cps  $\pm 2.5$  db at 350 to 5,000 cps*Power Output (Transmitter):* 35 w*Power Requirements:*

Standby: 13.5 w 2.25 amp at 6-v dc

Transmitting: 180 w 30 amp at 6-v dc

**MAJOR COMPONENTS**

<b>QTY</b>	<b>ITEM</b>	<b>STOCK NUMBERS</b>	<b>DIMENSIONS (Inches)</b>	<b>WEIGHT (Lbs)</b>
1	Cadmium plated tapered steel antenna			
1	Radio Receiver 11-UF-ED7, including:			
1 bag	Accessories, containing: Automatic circuit breakers, bolts, cable clamps, capacitors, screws, suppressors, etc.			
1	Antenna cable with one coaxial fitting			
1	Antenna cable with two coaxial fittings			
1	Control head, two-way			
1	Handset mounting			
1	Loudspeaker with cable and plug			
1	Push-to-talk handset or hand microphone with cable attached			
1	Receiver control cable with plugs			
1	Universal or roof-top antenna mounting			

MIL-HDBK-161

**AN/VRC-type** FREQUENCY MODULATED MOBILE EQUIPMENT

MAJOR COMPONENTS—Continued

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Radio Transmitter 35-UFM-7A, including:			30.75
1	Primary power cable with plugs			
1	Transmitter control cable with plugs			

REFERENCE DATA AND LITERATURE:

NAVSHIPS 91070

SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
3		

PROCUREMENT DATA

PROCURING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG: USN, BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Link Radio Corp.	New York, N. Y.		

## FREQUENCY MODULATED MOBILE RADIO EQUIPMENT AN/VRC-type

5 November 1958

Cognizant Serv: USN FSN:

50FMTR-7A

	USA	USN	USAF
TYPE CLASS:	--	Used by	--
STOCK NO:	--	--	--

(No Illustration Available)

## FUNCTIONAL DESCRIPTION:

Frequency Modulated Mobile Radio Equipment 50FMTR-7A is a complete vhf radio set, less a primary power source, designed for vehicular operation. It provides two-way voice communication with similar fixed or mobile equipment operating within the same frequency band. The equipment derives its power from a 6-volt storage battery.

The complete radio set consists of a superheterodyne type receiver, a transmitter, a control head, and associated operating and installation components. The transmitter contains a dynamotor power supply; the receiver has a built-in synchronous type vibrator unit. All jacks and receptacles are mounted on the front of the transmitter and receiver chassis. There are no tuning controls—the set is operated through the control head.

## TECHNICAL CHARACTERISTICS:

*Frequency Range in Mc:* 30 to 44  
*Frequency Control (Receiver):* Crystal  
*Frequency Deviation:*  $\pm 15$  kc  
*Type Signal:* FM  
*System Audio Response:*  $\pm 1$  db at 500 to 3,000 cps  $\pm 2.5$  db at 350 to 5,000 cps  
*Power Output (Transmitter):* 50 w (nominal)  
*Output Impedance:*  
 Transmitter: Any, usually fed into concentric line  
 Receiver: 6 or 500 ohms  
*Power Requirements:*  
 Transmitter:  
*Standby:* 22.8 w 3.8 amp at 6-v dc  
*Transmitting:* 240 w 40 amp at 6-v dc  
 Receiver: 5 amp (approximately) at 6-v dc

## MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1 bag	Accessories, containing:			
1	Automatic reset circuit breakers, bolts, cable clamps, capacitors, screws, suppressors, etc.			
1	Antenna cable	-----	3 or 12 ft lg	
1	Antenna cable	-----	15 ft	
1	Cadmium plated steel antenna			
1	Hand microphone			
1	Handset mounting			
1	Permanent-magnet type loud speaker			
2	Quick release base assembly (receiver and transmitter)			
1	Radio Receiver 11-UF-ED7	-----	8 x 10 x 12-1/4	23.75
1	Radio Transmitter 50-UFM- ED7A	-----	8 x 10 x 12-1/4	31.75
1	Receiver control cable			
1	Remote control head			
1	Transmitter control cable			
1	Universal or roof-top antenna mounting			

MIL-HDBK-161

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**AN/VRC-type** FREQUENCY MODULATED MOBILE RADIO EQUIPMENT

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REFERENCE DATA AND LITERATURE:

NAVSHIPS 91071

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SHIPPING DATA

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PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
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3

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PROCUREMENT DATA

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PROCURING SERVICE: USN, BuShips  
SPEC &/or DWG:

DESIGN COG: Commercial

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CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
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Link Radio Corp.

New York, N. Y.

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## TRANSMITTER-RECEIVER AN/VRC-type

26 November 1958

Cognizant Serv: USN FSN:

FMTR-30D

USA

USN

USAF

TYPE CLASS: --

Used by --

STOCK NO: --

(No Illustration Available)

## FUNCTIONAL DESCRIPTION:

Transmitter-Receiver FMTR-30D (Motorola) is a crystal-controlled single-frequency radiotelephone transmitter and receiver designed for installation in commercial vehicles, specifically passenger automobiles. It provides two-way voice communication with a similar fixed or mobile equipment operating on the same frequency.

A single antenna is used, which receives or transmits in accordance with the operation of an antenna relay in the transmitter. The equipment employs a dynamotor power supply operated from the 6-volt storage battery of the vehicle.

The FMTR-30D is similar to Transmitter-Receivers FMTR-25 and FMTR-50D except for power output. It is

also similar to Radio Set AN/VRC-2X except for mechanical and electrical differences and in accessories supplied.

## TECHNICAL CHARACTERISTICS:

*Frequency Range:* 30 to 40 mc*Frequency Control:* Crystal*Type of Signal:* Voice*Type Modulation:* FM*Type Receiver:* Double superheterodyne*Receiver If:* 4.3 mc and 455 kc*Power Output:* 30 w*Antenna:* 1/4 wave telescopic whip type*Power Requirements:* 6-v storage battery

## MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Accessory Bag P-8055			
1	Antenna P-253			
1	Connecting Cable Kit K-8025			
1	Control Head P-8022			
1	Generator Filter P-345			
1	Microphone P-255 or P-278			
1	Receiver Unit PA-8033			
1	Speaker (3-ohm voice coil) (as selected)			
1	Transmitter Unit PA-8021			

## REFERENCE DATA AND LITERATURE:

COMMERCIAL

MIL-HDBK-161

**AN/VRC-type** TRANSMITTER-RECEIVER

SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
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PROCUREMENT DATA

PROCURING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG: Commercial

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Galvin Mfg. Corp.	Chicago, Ill.		

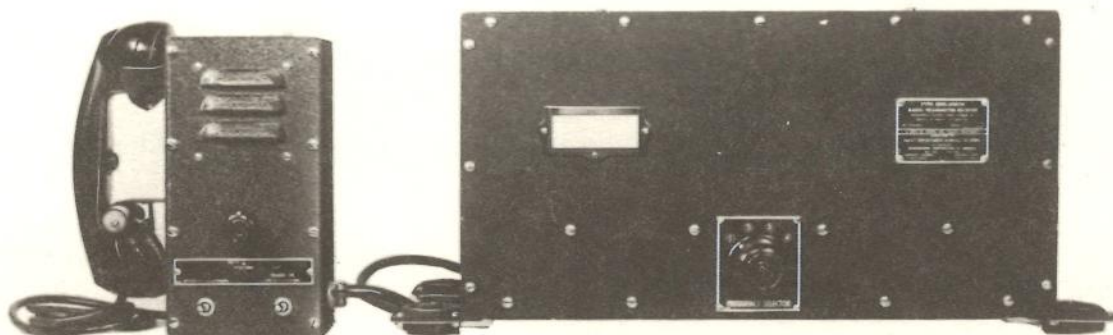
RADIOTELEPHONE EQUIPMENT **AN/VRC-type**

4 December 1958

Cognizant Serv: USN FSN: 5820-665-1345 (6-v dc)  
5820-665-3818 (12-v dc)

MQ-1

	USA	USN	USAF
TYPE CLASS:	--	L/Std	--
STOCK NO:	--	F16-Q-174474-200 (6-v dc) F16-Q-174494-200 (12-v dc)	--



MQ-1

**FUNCTIONAL DESCRIPTION:**

Radiotelephone Equipment MQ-1 is a general purpose, compact, low-power, medium-frequency transmitter-receiver designed for two-way mobile radiotelephone communication.

Any simple single-wire antenna may be used with the MQ-1.

Remote control is provided, but does not include channel selection.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in MC:* 2 to 3.5

*Type of Modulation:* AM

*Type of Signal:* Voice

*Power Output:*

Transmitter: 5 w

Receiver: 50 mw

*Power Requirements:* 113 w 6.3-v dc or 151 w 12.6-v dc

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Remote Control Unit 23327	-----	10-5/8 x 8-1/2 x 4	7
1	Transmitter-Receiver 43023 (6-v dc)	-----		
	or			
	Transmitter-Receiver 43024 (12-v dc)	-----	10-3/8 x 23-5/8 x 13-7/8	40

MIL-HDBK-161

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**AN/VRC-type** RADIOTELEPHONE EQUIPMENT

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REFERENCE DATA AND LITERATURE:

NAVSHIPS 95144

SHIPPING DATA

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PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
1	8.5	140

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PROCUREMENT DATA

PROCURING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG: USN, BuShips

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CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Radiomarine Corp of America	New York, N. Y.	NX <sub>ss</sub> -LL-23979	\$500.00

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RADIOTELEPHONE EQUIPMENT **AN/VRC-type**

4 December 1958

Cognizant Serv: USN FSN: 5820-665-2116

MQ-2

USA

USN

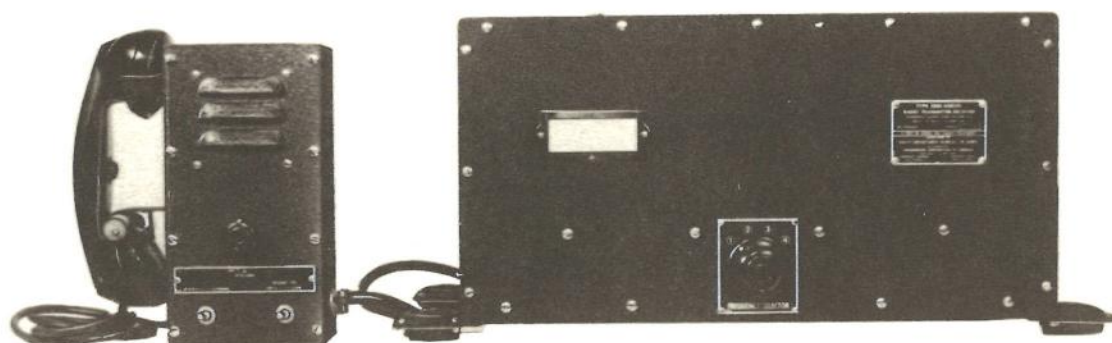
USAF

TYPE CLASS: ---

L/Std

STOCK NO: ---

F16-Q-174514-200 ---



MQ-2

**FUNCTIONAL DESCRIPTION:**

Radiotelephone Equipment MQ-2 is a general purpose, compact, low-power, medium-frequency transmitter-receiver designed for two-way mobile radiotelephone communication.

Any simple single wire antenna may be used with the MQ-2.

*Type of Modulation:* AM*Type of Signal:* Voice*Power Output:*

Transmitter: 5 w

Receiver: 50 mw

**TECHNICAL CHARACTERISTICS:***Frequency Range in Mc:* 2 to 3.5*Power Requirements:* 189 w, 6-v dc; 161 w, 115-v 50/60-cycle 1-phase ac**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Transmitter-Receiver 43046 (Equipment consists of only one major component.)		12-1/8 x 23-5/8 x 18-1/8	71

**REFERENCE DATA AND LITERATURE:**

NAVSHIPS 95145

MIL-HDBK-161

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**AN/VRC-type** RADIOTELEPHONE EQUIPMENT

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SHIPPING DATA

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PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
1	8.5	140

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PROCUREMENT DATA

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PROCURING SERVICE: USN  
SPEC &/or DWG:

DESIGN COG: USN, BuShips

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CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Radiomarine Corp of America	New York, N. Y.	NXs-12088	\$500.00

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RADIO SET **AN/VRC-type**

1 July 1958

Cognizant Serv: USA FSN: 5820-355-8098

SCR-193-( )

USA

USN

USAF

TYPE CLASS:

L/Std

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L/Std

STOCK NO:

2S193.1/12-1

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**FUNCTIONAL DESCRIPTION:**

Radio Set SCR-193-( ) is a medium frequency AM (voice and cw) field radio station used in command vehicles.

This equipment consists essentially of a transmitter (with appropriate tuning units for frequency channels in which the set is operated), a receiver, accessory items, and antenna components. The set is available in several models, each identified by model-letters indicating special application or design for the vehicle in which it is installed.

Radio Set SCR-193-( ) is a vehicular application of primary operating components of Radio Sets SCR-177 and SCR-188.

It operates from a vehicular storage battery and uses a whip-type antenna.

This set has been replaced by Radio Set AN/GRC-19.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in Mc:*

Transmitting: 1.5 to 6.2

Receiving: 1.5 to 18

*Type Modulation:* AM

*Type of Signal:* Voice or cw

*Power Output:* 75 w

*Power Requirements:* Vehicular storage battery

MIL-HDBK-161

**AN/VRC-type RADIO SET**

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
		(USA)		
1	Dynamotor Unit BD-77	3H1777.2	11 x 11 x 7-1/2	37.3
1	Radio Receiver BC-312-( )	2C4312	18-3/4 x 18 x 9	58.0
1	Radio Transmitter BC-191-( )	2C6191.8	21 x 23-1/8 x 9-1/2	55.75
3	Tuning unit	-----	7-3/4 x 16-3/4 x 8-3/4	4.43

**REFERENCE DATA AND LITERATURE:**

TM 11-273

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
6	4.1	210 to 230

**PROCUREMENT DATA**

PROCURING SERVICE: USA  
SPEC &/or DWG:

DESIGN COG: USA, Sig C

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
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RADIO SET **AN/VRC-type**

1 July 1958

Cognizant Serv:

USA

FSN:

SCR-293-( )

USA

USN

USAF

TYPE CLASS:

L/Std

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STOCK NO:

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SCR-293

**FUNCTIONAL DESCRIPTION:**

Radio Set SCR-293-( ) is a vehicular short-range, medium-power, FM (voice) equipment used in inclosed vehicles for two-way voice communication within and between armored units or between armored and infantry units.

This set consists of a receiver-transmitter plus an additional receiver (not shown in the illustration) mounted on a common shock mount, and is powered by the storage battery of the vehicle in which it is installed. Radio Set SCR-293 is the 12-volt version, while the SCR-293-B is the 24- to 28-volt model of this equipment.

The additional receiver component Radio Receiver BC-499

mounted alone on the shock mount constitutes Radio Set SCR-294 (12 v) or SCR-294-B (24 v).

**TECHNICAL CHARACTERISTICS:**

*Type Modulation:* FM

*Type of Signal:* Voice only

*Power Output:*

High: 25 w

Low: 0.5 w

*Power Requirements:*

SCR-293: 12-v vehicular storage battery

SCR-293-B: 24-v vehicular battery

MIL-HDBK-161

**AN/VRC-type RADIO SET**

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Antenna AN-42-A	-----	Mounted: 12 x 14-1/2 x 34	115
1	Mounting FT-239	-----		
1	Radio Receiver and Transmitter BC-500	-----		
1	Radio Receiver BC-499	-----		

**REFERENCE DATA AND LITERATURE:**

Instruction Book, Radio Sets SCR-293 and SCR-294

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
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**PROCUREMENT DATA**

PROCURING SERVICE: USA  
SPEC &/or DWG:

DESIGN COG: USA, Sig C

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
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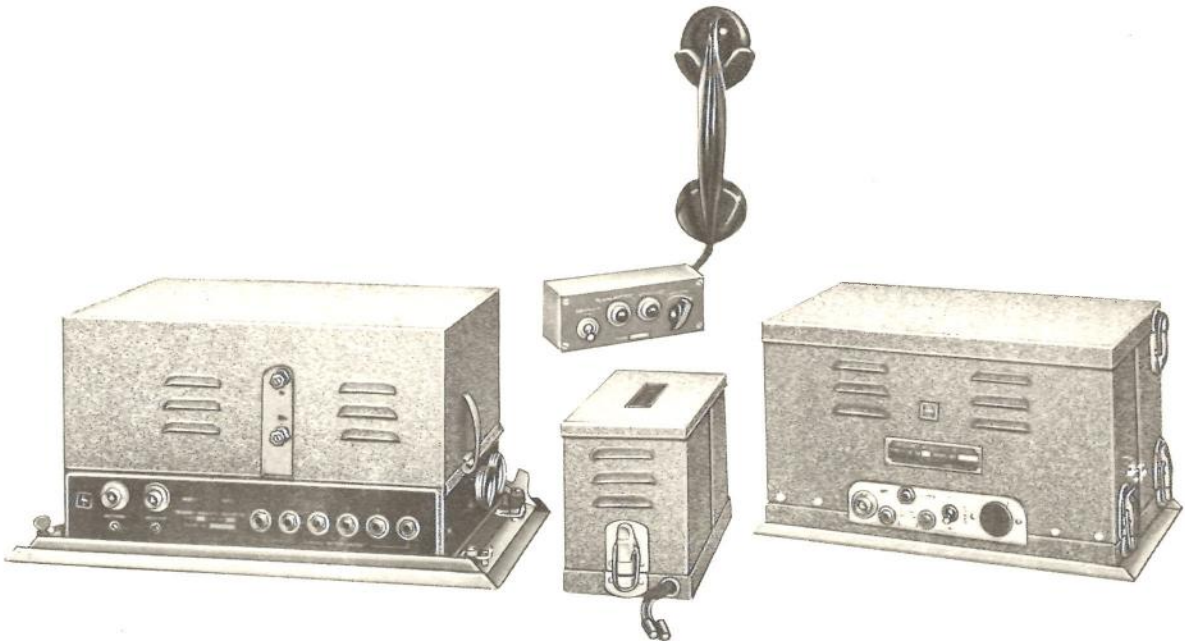
RADIO SET **AN/VRC-type**

1 July 1958

Cognizant Serv: USA FSN: 5820-193-8866

SCR-298-( )

	USA	USN	USAF
TYPE CLASS:	L/Std	--	--
STOCK NO:	2S298T-32	--	--



SCR-298

**FUNCTIONAL DESCRIPTION:**

Radio Set SCR-298-( ) is a vehicular, short-range, FM (voice) transmitting and receiving equipment used by military police, security troops, and similar units.

This equipment is usually installed in the luggage carrier compartment of a vehicle and consists of a commercial police type radio receiver and transmitter with a power supply. The set is operated by means of a remote control unit installed in the driver's compartment.

It can be used to monitor or operate in radio communication

nets serving field artillery or armored force. It operates on power derived from the battery of the vehicle in which it is installed.

**TECHNICAL CHARACTERISTICS:**

- Frequency Range in Mc:* 20 to 28
- Type Modulation:* FM
- Type of Signal:* Voice
- Power Output:* 25 w
- Power Requirements:* 6-v dc from vehicular storage battery (32 amp transmitting, 2.25 amp standby)

MIL-HDBK-161

**AN/VRC-type RADIO SET**

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Power Unit VPA-3A	-----	8-1/2 x 4-1/4 x 5	7.25
1	Radio receiver (F. M. Link Radio Co., Model No. LL- UF)	-----	9 x 13 x 7-1/2	17.5
1	Radio transmitter (F. M. Link Radio Co., Model No. 35 UFM)	-----	9 x 17 x 8-1/4	29

**REFERENCE DATA AND LITERATURE:**

Instruction Book, Radio Set SCR-298 (USA Sig C Stock Number 25298C/B1)

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
	15	185

**PROCUREMENT DATA**

PROCURING SERVICE: USA  
SPEC &/or DWG:

DESIGN COG: USA, Sig C

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
F. M. Link Radio Co.	New York, N. Y.		

RADIO SET **AN/VRC-type**

1 July 1958

Cognizant Serv: USN FSN: 5820-186-9271

SCR-506-( )

USA

USN

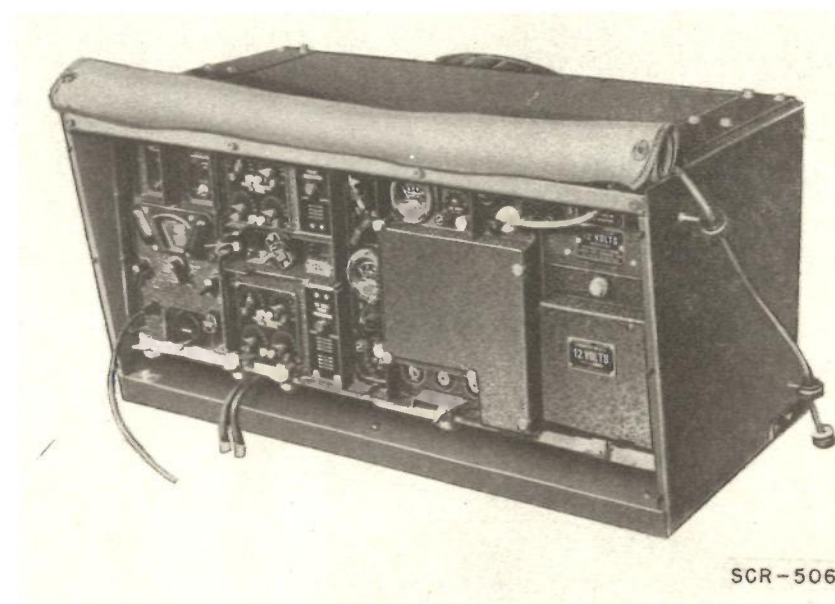
USAF

TYPE CLASS:

L/Std

STOCK NO:

2S506.1/12



SCR-506

**FUNCTIONAL DESCRIPTION:**

Radio Set SCR-506-( ) is a medium power, AM (voice) and cw, vehicular radio transmitting and receiving equipment used by motorized tactical units for ground-to-ground and ground-to-air communication in the medium-frequency range.

This equipment consists of a radio transmitter and a radio receiver mounted on a vehicular shock mounting common to both, and includes antenna, cording, and accessory items. It is usually installed in tanks, armored and amphibious vehicles, personnel carriers and similar vehicles. The set has provision for rapidly adjusting, and operating over, any of five preselected channels.

It operates from the storage battery of the vehicle in which it is installed.

This equipment has been replaced by Radio Set AN/GRC-19.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in Mc:*

Transmitter: 2.0 to 4.5 (126 channels)

Receiver: 2.0 to 6.0 (201 channels, 2 bands)

*Type Modulation:* AM

*Type of Signal:* Voice and cw

*Power Output:*

Voice: 10 to 25 w

Cw: 50 to 90 w

*Power Requirements:* 12/24-v dc from vehicular storage battery

MIL-HDBK-161

**AN/VRC-type RADIO SET**

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
		(USA)		
1	Dynamotor DM-42	3H1642	7 x 4" (diameter)	
1	Radio Receiver BC-652	2C4452	12-1/2 x 14-5/8 x 7-5/8	46.5
1	Radio Transmitter BC-653	2C6530-653	12-1/2 x 14-5/8 x 25-9/32	143.0

**REFERENCE DATA AND LITERATURE:**

TM 11-630

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
4	25	535

**PROCUREMENT DATA**

PROCURING SERVICE: USA  
SPEC &/or DWG:

DESIGN COG: USA, Sig C

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX- UNIT COST
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RADIO SET **AN/VRC-type**

1 July 1958

Cognizant Serv: USA FSN: 5820-192-7137 (12 v)  
5820-192-7138 (24 v)

SCR-508-( )

USA

USN

USAF

TYPE CLASS:

L/Std

Used by

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STOCK NO:

2S508/12-24v

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SCR-508

**FUNCTIONAL DESCRIPTION:**

Radio Set SCR-508-( ) is a vehicular, medium-range, crystal-controlled, FM (voice) radiotelephone equipment used by armored units.

This equipment consists of two receivers and one transmitter mounted on a common shock mount and provides a total of 20 receiving and 10 transmitting channels. It also provides for operation of the vehicular interphone system. Each receiver and the transmitter provide 80 frequency channels, 10 of which are preset, and are selected by means of a pushbutton mounted on the front panel of each. A whip-type vehicular antenna, a set of crystals, and related accessories are included.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in Mc:* 20.0 to 27.9

*Type Modulation:* FM

*Type of Signal:* Voice

*Power Output:* 25 w

*Power Requirements:*

Transmitter: 20 amp at 12-v dc from vehicular storage battery, through Dynamotor DM-35; 12 amp at 24-v dc from vehicular storage battery, through Dynamotor DM-37

Receiver: 4 amp at 12-v dc from vehicular storage battery, through Dynamotor DM-34; 2 amp at 24-v dc from vehicular storage battery, through Dynamotor DM-36

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
		(USA)		
2	Dynamotor DM-34 or	3H1634	4-1/2 x 3 x 6-1/2	4.7
2	Dynamotor DM-36	3H1636	4-1/2 x 3 x 6-1/2	4.7
1	Dynamotor DM-35	3H1635	5-1/2 x 4-1/2 x 8-1/4	9.2

**AN/VRC-type RADIO SET****MAJOR COMPONENTS—Continued**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
	or			
1	Dynamotor DM-37	3H1637	5-1/2 x 4-1/2 x 8-1/4	9.2
1	Interphone Control Box BC-606-H	2C1738	4-1/2 x 2-1/4 x 4-1/4	1.8
1	Mounting FT-237	2Z6721-237	5-1/2 x 13 x 33-5/8	26
2	Radio Receiver BC-603	2C4403	11-1/2 x 6-3/4 x 12-1/2	35
1	Radio Transmitter BC-604	2C6494	11-1/2 x 10-1/4 x 18	67

**REFERENCE DATA AND LITERATURE:**

TM 11-600

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
7	31.6	710

**PROCUREMENT DATA**

PROCURING SERVICE: USA

DESIGN COG: USA, Sig C

SPEC &amp;/or DWG: (USA) 271-1046

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST



RADIO SET AN/VRC-type

1 July 1958

Cognizant Serv: USA FSN: 5820-355-8205

SCR-510-( )

USA

USN

USAF

TYPE CLASS:

L/Std

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STOCK NO:

2S5109/6-12v

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SCR-510

**FUNCTIONAL DESCRIPTION:**

Radio Set SCR-510-( ) is a pack and vehicular, short-range, low-power, FM radiotelephone equipment used as a command set by armored units.

This equipment consists of a receiver-transmitter, power-supply unit, and accessories. It provides 80 crystal-controlled channels spaced 100 kc apart, two of which can be preset.

It can be operated from a remote point over a telephone pair by means of standard remote control apparatus.

If it is operated on the ground from dry batteries in Case

CS-79, it is then identical with Radio Set SCR-509.

This set has been replaced by Radio Set AN/PRC-8.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in Mc:* 20.0 to 27.9

*Type Modulation:* FM

*Type of Signal:* Voice

*Power Output:* 1.8 w

*Power Requirements:* .6- or 12-v vehicular storage battery, Battery BA-41, and Plate Supply Unit PE-97 or Power Supply Unit PE-120

MIL-HDBK-161

**AN/VRC-type RADIO SET**

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
		(USA)		
1	Case CS-79	3B879	4-1/2 x 13-3/16 x 15-9/16	10.00
1	Power Supply Unit PE-120	3H4496-120	6 x 15-3/16 x 14-15/16	20.00
1	Radio Receiver and Transmitter BC-620	2C5360	6-3/4 x 13-3/16 x 14-15/16	27.20

**REFERENCE DATA AND LITERATURE:**

TM 11-605

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
	12	235

**PROCUREMENT DATA**

PROCURING SERVICE: USA  
SPEC &/or DWG: (USA) 271-1057

DESIGN COG: USA, Sig C

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
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## RADIO SET AN/VRC-type

1 July 1958

Cognizant Serv: USA FSN: 5820-164-8114

SCR-528

	USA	USN	USAF
TYPE CLASS:	L/Std	Used by	--
STOCK NO:	2S528/12	--	--



SCR-528

## FUNCTIONAL DESCRIPTION:

Radio Set SCR-528 is a vehicular, short-range, crystal-controlled, FM (voice), transmitting and receiving equipment used for radio communication by vehicles of armored units. It also provides for operation of the interphone system of armored vehicles.

This equipment consists of a radio transmitter and radio receiver mounted on a common shock mount, dynamotors, antenna, and accessories. The transmitter and receiver operate on 10 preset channel frequencies selected by means of 10 push-buttons on the front panels of these components.

## TECHNICAL CHARACTERISTICS:

*Frequency Range in Mc:* 20.0 to 27.9 at 0.1 mc intervals

*Type Modulation:* FM

*Type of Signal:* Voice

*Power Output:* 30 w

*Power Requirements:*

Transmitter: 12-v vehicular battery through Dynamotor DM-35, 24-v vehicular battery through Dynamotor DM-37

Receiver: 12-v vehicular battery through Dynamotor DM-34, 24-v vehicular battery through Dynamotor DM-36

## MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
		(USA)		
1	Dynamotor DM-34	3H1634	4-1/2 x 3 x 6-1/2	4.7
	or			
1	Dynamotor DM-36	3H1636	4-1/2 x 3 x 6-1/2	4.7
1	Dynamotor DM-35	3H1635	5-1/2 x 4-1/2 x 8-1/4	9.2

**AN/VRC-type RADIO SET****MAJOR COMPONENTS—Continued**

QTY	ITEM	STOCK NUMBERS	DIMENSION (Inches)	WEIGHT (Lbs)
	or			
1	Dynamotor DM-37	3H1637	5-1/2 x 4-1/2 x 8-1/4	9.2
1	Interphone Control Box BC-606	2C1738	4-1/2 x 2-1/4 x 4-1/4	1.8
1	Mounting FT-237	2Z6721-237	5 x 12 x 33	26
1	Radio Receiver BC-603	2C4403	11-1/2 x 6-3/4 x 12-1/2	35
1	Radio Transmitter BC-604	2C6494	11-1/2 x 10-1/4 x 18	67

**REFERENCE DATA AND LITERATURE:**

TM 11-600

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
6	29.6	645

**PROCUREMENT DATA**

PROCURING SERVICE: USA  
 SPEC &/or DWG: (USA) 271-1046

DESIGN COG: USA, Sig C

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
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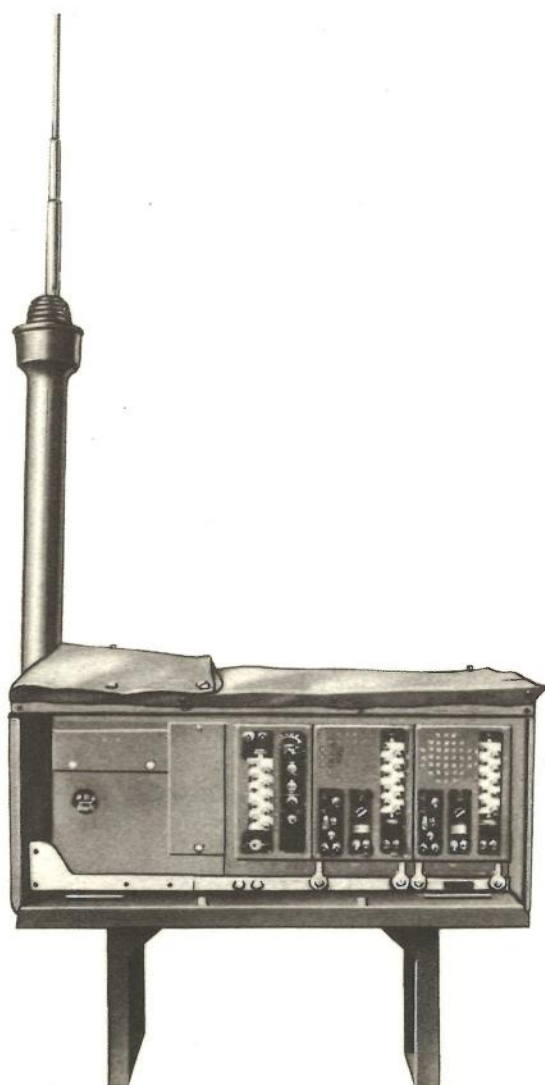
## RADIO SET AN/VRC-type

1 July 1958

Cognizant Serv: USA FSN: 5820-196-6130(12v)  
5820-196-6131(24v)

SCR-608

	USA	USN	USAF
TYPE CLASS:	L/Std	Used by	--
STOCK NO:	2S608/12-24v	--	--



SCR-608

## FUNCTIONAL DESCRIPTION:

Radio Set SCR-608 is a crystal-controlled, vehicular, short-range, low-power radiotelephone equipment used for FM (voice) communication in the frequency range assigned artillery units.

This equipment consists essentially of two receivers, one transmitter, appropriate dynamotors, antenna components, and accessories.

The transmitter and each of the receivers provide 120 channel frequencies, 10 of which may be preset, in each case. Each of these components has on its respective front panel 10 pushbuttons for selecting frequency channels. Thus, 10 transmitting and 20 receiving channels are provided.

This set provides for operation of the interphone equipment of the vehicle in which it is installed.

Through selection of appropriate dynamotors, it can operate from 12- or 24 volt vehicular storage batteries.

## TECHNICAL CHARACTERISTICS:

*Frequency Range in Mc:* 27.0 to 38.9

*Type Modulation:* FM

*Type of Signal:* Voice

*Power Output:* 20 w

*Power Requirements:*

Transmitter: 20 amp at 12-v dc from vehicular storage battery through Dynamotor DM-35, 12 amp at 24-v dc from vehicular storage battery through Dynamotor DM-37

Receiver: 4 amp at 12-v dc from vehicular storage battery through Dynamotor DM-34, 2 amp at 24-v dc from vehicular storage battery through Dynamotor DM-36

MIL-HDBK-161

**AN/VRC-type RADIO SET**

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
2	Dynamotor DM-34	3H1634	4-1/2 x 3 x 6-1/2	4.7
	or			
2	Dynamotor DM-36	3H1636	4-1/2 x 3 x 6-1/2	4.7
1	Dynamotor DM-35	3H1635	5-1/2 x 4-1/2 x 8-1/4	9.2
	or			
1	Dynamotor DM-37	3H1637	5-1/2 x 4-1/2 x 8-1/4	9.2
1	Mounting FT-237	2Z6721-237	5-1/2 x 13 x 33-5/8	44.0
2	Radio Receiver BC-683	2C4460-683	11-1/2 x 6-3/4 x 12-1/2	35.0
1	Radio Transmitter BC-684	2C6530-684	11-1/2 x 10-1/4 x 18	67.0

**REFERENCE DATA AND LITERATURE:**

TM 11-620

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
7	31.6	660

**PROCUREMENT DATA**

PROCURING SERVICE: USA

DESIGN COG: USA, Sig C

SPEC &/or DWG: (USA)271-1317

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Western Electric Co.	New York, N. Y.		

RADIO SET **AN/VRC-type**

1 July 1958

Cognizant Serv: USA FSN: 5820-355-8291

SCR-610-( )

USA

USN

USAF

TYPE CLASS:

L/Std

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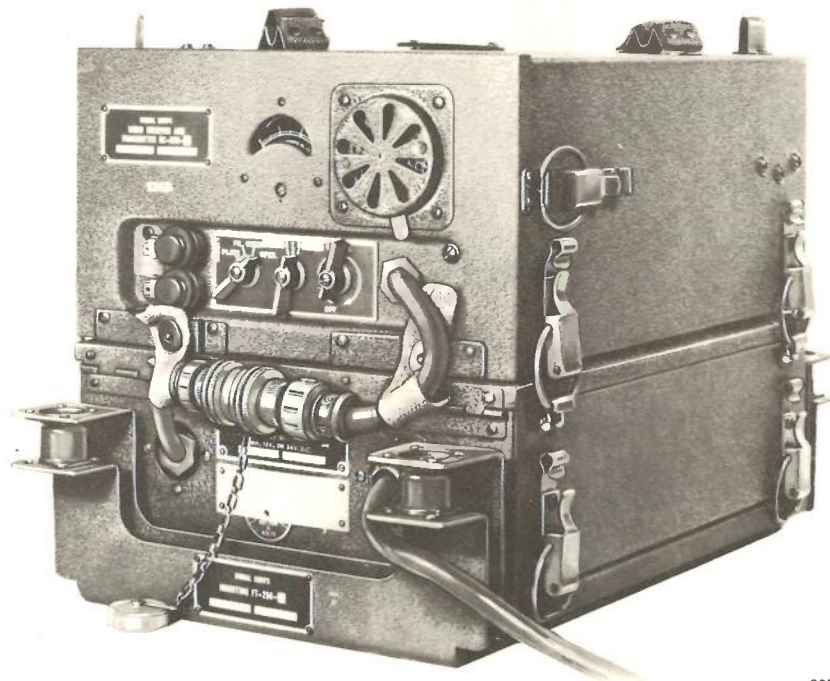
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STOCK NO:

2S610.1/6-1

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SCR-610

**FUNCTIONAL DESCRIPTION:**

Radio Set SCR-610-( ) is a transportable and vehicular, short-range, low-power, FM radiotelephone equipment used as a command set by field artillery units.

This equipment consists of a receiver-transmitter, power-supply unit, and accessories. It provides 120 crystal-controlled channels spaced 100 kc apart, two of which can be preset. This equipment can be operated from a remote point over a telephone pair by means of standard remote control equip-

ment. When operated on the ground from batteries (in Case CS-79) the equipment is identical with Radio Set SCR-609.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in Mc:* 27.0 to 38.9

*Type Modulation:* FM

*Type of Signal:* Voice

*Power Output:* 1.3 w

*Power Requirements:* Plate supply Unit PE-117 from 6- or 12-v storage battery or Power Supply Unit PE-120 from 6-, 12-, or 24-v storage battery

MIL-HDBK-161

**AN/VRC-type RADIO SET**

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
		(USA)		
1	Power Supply Unit PE-120	3H4496-120	8-7/8 x 16-1/2 x 18-7/8	33.8
1	Radio Receiver and Transmitter B-659	2C5379	11-7/8 x 16-3/8 x 21-1/2	35.13

**REFERENCE DATA AND LITERATURE:**

TM 11-615

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
	13.04	280

**PROCUREMENT DATA**

PROCURING SERVICE: USA  
SPEC &/or DWG:

DESIGN COG: USA, Sig C

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Admiral Corp.	Chicago, Ill.	16130-P-44-01	



RADIO SET **AN/VRC-type**

1 July 1958

Cognizant Serv: USA 5820-193-7110

SCR-628

USA

USN

USAF

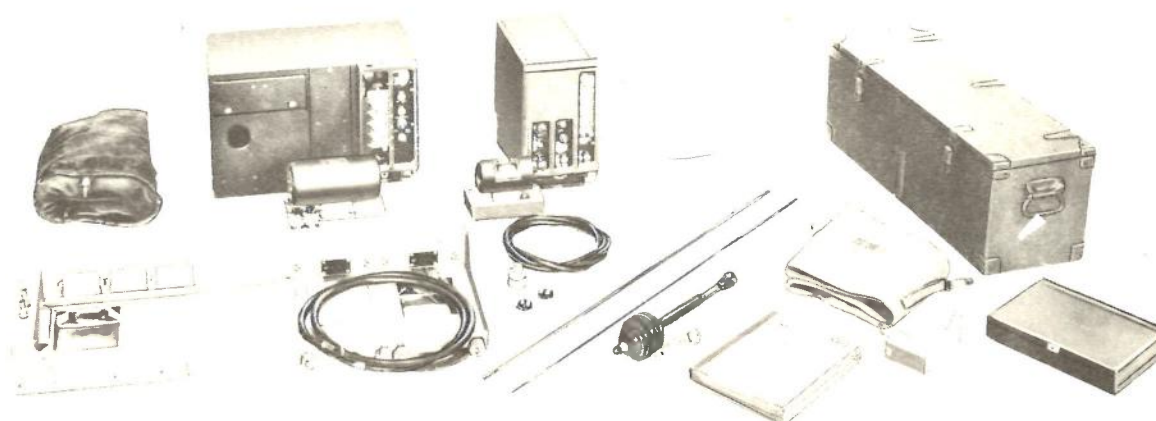
TYPE CLASS:

L/Std

Used by

STOCK NO:

2S628/12



SCR-628

**FUNCTIONAL DESCRIPTION:**

Radio Set SCR-628 is a crystal-controlled, vehicular short-range, low-power radiotelephone equipment used for FM (voice) communication in the frequency range assigned field artillery units.

This equipment consists essentially of one receiver and one transmitter, appropriate dynamotors, antenna components, and accessories. The transmitter and the receiver each provide 120 channel frequencies, 10 of which may be preset. Each of the components are equipped with 10 pushbuttons for selecting frequency channels.

The SCR-628 also provides for operation of the interphone equipment of the vehicle in which it is installed.

It can operate from either 12- or 24-v vehicular storage batteries by installation of appropriate dynamotors.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in Mc:* 27.0 to 38.9

*Type Modulation:* FM

*Type of Signal:* Voice

*Power Output:* 20 w

*Power Requirements:* 20 amp at 12-v dc or 12 amp at 24-v dc

Transmitter: 12-v vehicular battery through Dynamotor

DM-35, 24-v vehicular battery through Dynamotor

DM-37

Receiver: 12-v vehicular battery through Dynamotor

DM-34, 24-v vehicular battery through Dynamotor

DM-36

MIL-HDBK-161

**AN/VRC-type RADIO SET**

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
		(USA)		
1	Dynamotor DM-34	3H1634	4-1/2 x 3 x 6-1/2	4.7
	or			
1	Dynamotor DM-36	3H1636	4-1/2 x 3 x 6-1/2	4.7
1	Dynamotor DM-35	3H1635	5-1/2 x 4-1/2 x 8-1/4	9.2
	or			
1	Dynamotor DM-37	3H1637	5-1/2 x 4-1/2 x 8-1/4	9.2
1	Mounting FT-284	-----	5 x 12 x 33	26
1	Radio Receiver BC-683-BM	2C4460-683	11-1/2 x 6-3/4 x 12-1/2	35
1	Radio Transmitter BC-684-BM	2C6530-684	11-1/2 x 10-1/4 x 18	67

**REFERENCE DATA AND LITERATURE:**

TM 11-620

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
6	31.5	660

**PROCUREMENT DATA**

PROCURING SERVICE: USA  
SPEC &/or DWG:

DESIGN COG: USA

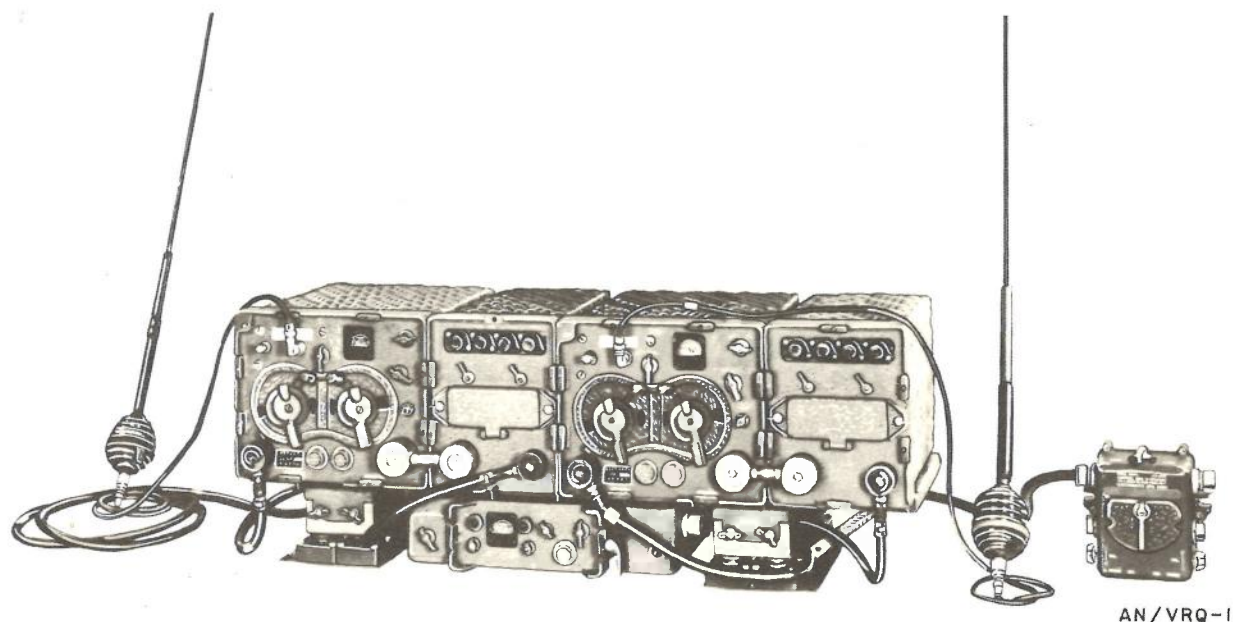
CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
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## RADIO SET AN/VRQ-1

1 July 1958

Cognizant Serv: USA FSN: 5820-222-6404

	USA	USN	USAF
TYPE CLASS:	Std	--	--
STOCK NO:	2S4505-1/24	--	--



AN/VRQ-1

**FUNCTIONAL DESCRIPTION:**

Radio Set AN/VRQ-1 is a short-range, vehicular, FM (voice) equipment for point-to-point, retransmission, or radio-relay communication within and between armored units.

This set consists of two receiver-transmitters, designated as set 1 when used as part of the integrated series of radio sets, such as the AN/GRC-3 and AN/GRC-4. A vehicular installation unit, power-supply equipment, and control and accessory units are included.

This equipment can be operated by means of Control Group

AN/GRA-6 from a remote point up to a distance of about 2 miles over a telephone pair.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in Mc:* 20.0 to 27.9

*Type Modulation:* FM

*Type of Signal:* Voice

*Power Output (Each Transmitter):*

High Power: 9 to 16 w

Low Power: 2 w

*Power Requirements:* 12/24-v dc from vehicular storage battery

**AN/VRQ-1** RADIO SET

## MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Control Group AN/GRA-6	(FSN)5820-537-3848 (USA)2C684A-6	See AN/GRA-6	20.85
2	Power Supply PP-109/GR	(FSN)6130-284-0231 (USA)3H4497-109.1	9 x 13 x 8	33
	or			
2	Power Supply PP-112/GR	(FSN)6130-284-0230 (USA)3H4497-112.1	9 x 13 x 8	33
2	Receiver-Transmitter RT-66/ GRC	(FSN)5820-503-1508 (USA)2C5130-66.1	9 x 13 x 11-1/4	35

## REFERENCE DATA AND LITERATURE:

TM 11-287

## SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
3	8.4	427

## PROCUREMENT DATA

PROCURING SERVICE: USA  
SPEC &/or DWG:

DESIGN COG: USA, Sig C

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST

## RADIO SET AN/VRQ-2( )

1 July 1958

Cognizant Serv: USA FSN: AN/VRQ-2: 5820-193-8838  
AN/VRQ-2X: 5820-193-8839

USA

USN

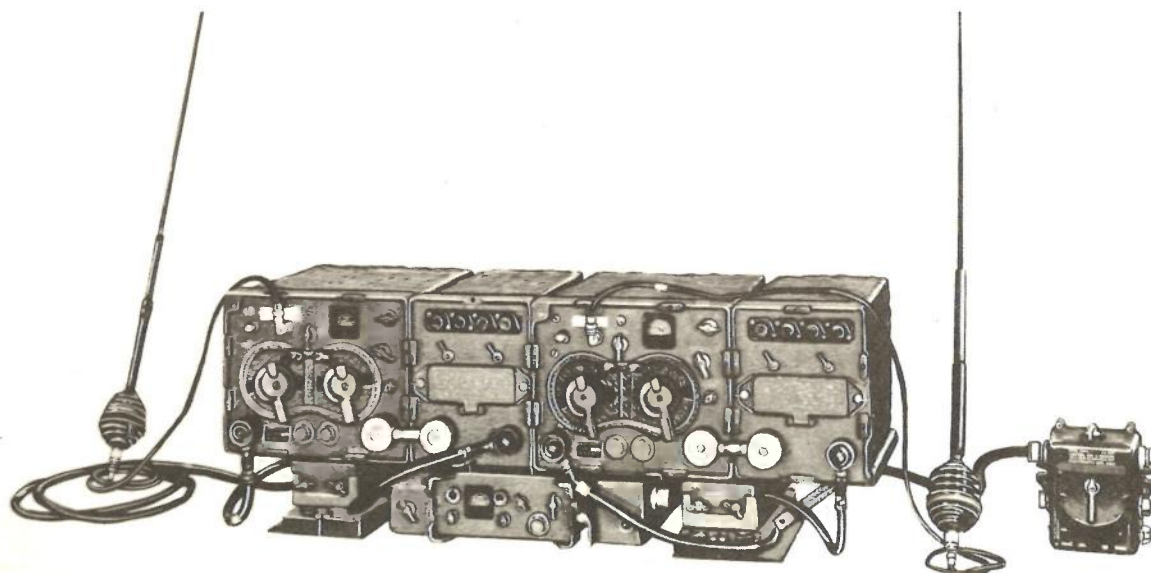
USAF

TYPE CLASS:

Std

STOCK NO:

AN/VRQ-2: 2S4305-2/24 --

AN/VRQ-2X: 2S4305-  
2/12

AN/VRQ-2

**FUNCTIONAL DESCRIPTION:**

Radio Set AN/VRQ-2( ) is a short-range, vehicular, FM (voice) equipment for point-to-point, retransmission, or radio-relay communication within and between artillery units.

This set consists of two receiver-transmitters, designated as set 1 when used as part of the integrated series of radio sets, such as the AN/GRC-5 and AN/GRC-6. A vehicular installation unit, power-supply equipment, and control and accessory units are included.

This equipment can be operated by means of Control Group

AN/GRA-6 from a remote point up to a distance of about 2 miles over a telephone pair.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in Mc:* 27.0 to 38.9

*Type Modulation:* FM

*Type of Signal:* Voice

*Power Output (Each Transmitter):*

High Power: 9 to 16 w

Low Power: 2 w

*Power Requirements:* 12/24-v dc from vehicular storage battery

MIL-HDBK-161

**AN/VRQ-2( ) RADIO SET**

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Control Group AN/GRA-6	(FSN)5820-537-3848 (USA)2C684A-6	See AN/GRA-6	20.85
2	Power Supply PP-109/GR	(FSN)6130-284-0231 (USA)3H4497-109.1	9 x 13 x 8	33
	or			
2	Power Supply PP-112/GR	(FSN)6130-284-0230 (USA)3H4497-112.1	9 x 13 x 8	33
2	Receiver-Transmitter RT-67/ GRC	(FSN)5820-503-1507 (USA)2C5130-67.1	9 x 13 x 11-1/4	35

**REFERENCE DATA AND LITERATURE:**

TM 11-287

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
3	8.4	427

**PROCUREMENT DATA**

PROCURING SERVICE: USA  
SPEC &/or DWG:

DESIGN COG: USA, Sig C

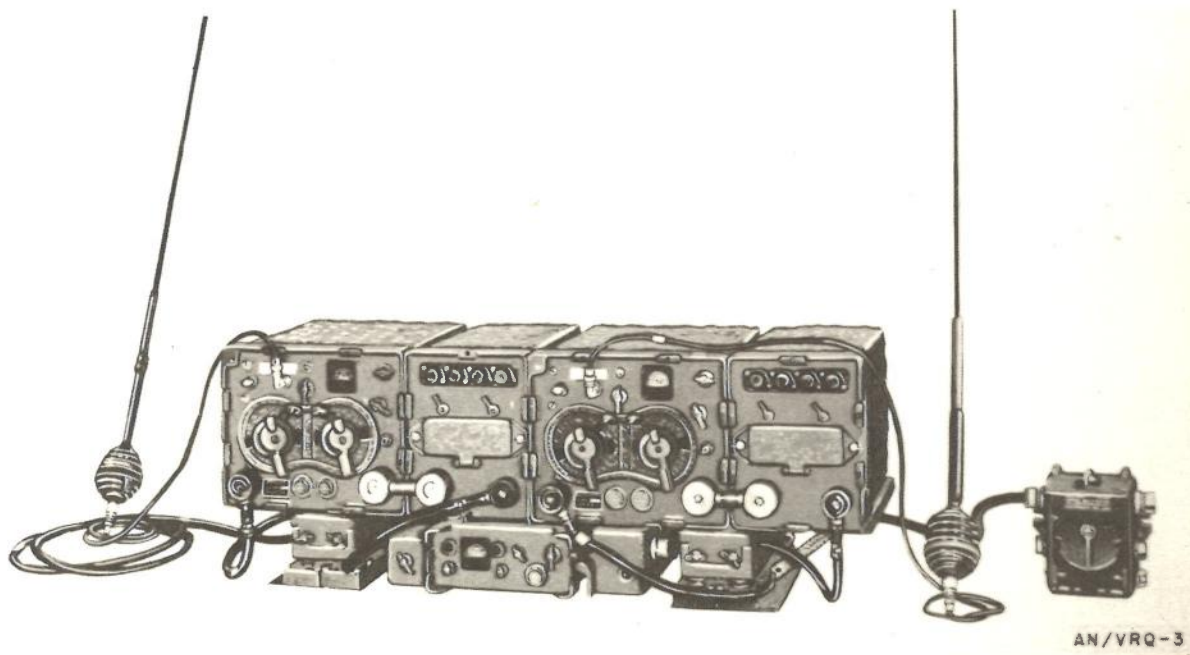
CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
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## RADIO SET AN/VRQ-3( )

1 July 1958

Cognizant Serv: USA FSN: AN/VRQ-3: 5820-193-8811  
AN/VRQ-3X: 5820-193-8831

	USA	USN	USAF
TYPE CLASS:	Std	--	--
STOCK NO:	AN/VRQ-3: 2S4405- 3/24	--	--
	AN/VRQ-3X: 2S4505- 3/12		



AN/VRQ-3

**FUNCTIONAL DESCRIPTION:**

Radio Set AN/VRQ-3( ) is a short range, vehicular, FM (voice) equipment for point-to-point, retransmission, or radio-relay communication within and between infantry units.

This set consists of two receiver-transmitters designated as set 1 when used as part of the integrated series of radio sets such as the AN/GRC-7 and AN/GRC-8. A vehicular installation unit, power supply equipment, and control and accessory units are included.

This equipment can be operated by means of Control Group

AN/GRA-6 from a remote point up to a distance of about 2 miles over a telephone pair.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in Mc:* 38.0 to 54.9

*Type Modulation:* FM

*Type of Signal:* Voice

*Power Output (Each Transmitter):*

High Power: 9 to 16 w

Low Power: 2w

*Power Requirements:* 12/24-v dc from vehicular storage battery

MIL-HDBK-161

**AN/VRQ-3( ) RADIO SET**

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Control Group AN/GRA-6	(FSN) 5820-537-3848 (USA) 2C684A-6	See AN/GRA-6	20.85
2	Power Supply PP-109/GR	(FSN) 6130-284-0231 (USA) 3H4497-109.1	9 x 13 x 8	33
	or			
2	Power Supply PP-112/GR	(FSN) 6130-284-0230 (USA) 3H4497-112.1	9 x 13 x 8	33
2	Receiver-Transmitter RT-68/ GRC	(FSN) 5820-503-1505 (USA) 2C5130-68.1	9 x 13 x 11-1/4	35

**REFERENCE DATA AND LITERATURE:**

TM 11-287

**SHIPPING DATA**

PGKS	VOLUME (Cu Ft)	WEIGHT (Lb)
3	8.4	427

**PROCUREMENT DATA**

PROCURING SERVICE: USA  
SPEC &/or DWG:

DESIGN COG: USA, Sig C

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
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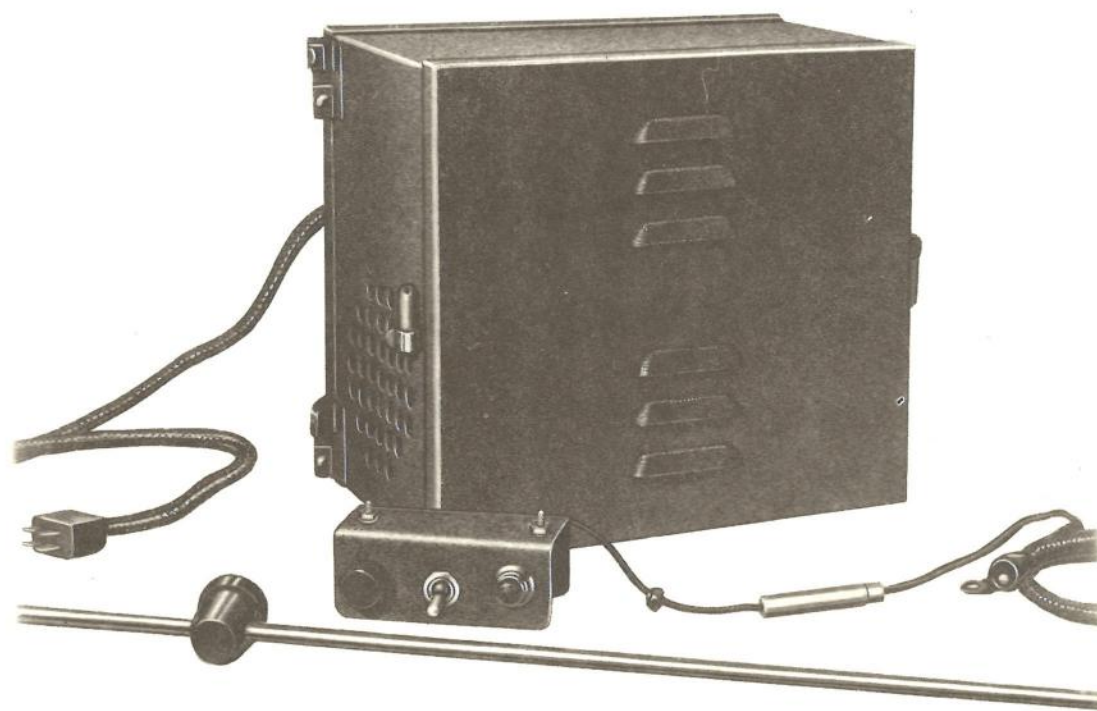


RADIO RECEIVING SET **AN/VRR-2**

1 July 1958

Cognizant Serv: USA FSN: 5820-164-7197

	USA	USN	USAF
TYPE CLASS:	Std	--	--
STOCK NO:	2C6732	--	--



AN/VRR-2

**FUNCTIONAL DESCRIPTION:**

Radio Receiving Set AN/VRR-2 is a vehicular, single fixed-frequency, AM (voice), medium range, receiving equipment used in traffic control, monitoring, and similar applications by military police, guard, and security troops.

This equipment consists essentially of a commercial (KAAR Type 11X) police-type radio receiver and associated components. The radio receiver, which has an integral loudspeaker, is designed to be installed under the dashboard or instrument panel of the vehicle, with the control unit at the driver's position.

Control of volume, power, and squelch circuit is provided. A vehicular-type antenna is included.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in Mc:* Single preset frequency in range 1.6 to 2.9

*Type Modulation:* AM

*Type of Signal:* Voice, tone

*Power Requirements:* 4.5 amp at 6-v dc from vehicular storage battery

MIL-HDBK-161

**AN/VRR-2** RADIO RECEIVING SET

MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Antenna, Cable, Spare Parts, etc	-----	-----	6.75
1	Control Unit KAAR Type K- SR1	-----	2 x 2-5/8 x 4	.50
1	Radio Receiver KAAR Type 11X	-----	9-1/4 x 9-3/8 x 11-7/8	17.00

REFERENCE DATA AND LITERATURE:

TM 11-888

SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
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PROCUREMENT DATA

PROCURING SERVICE: USA  
SPEC &/or DWG:

DESIGN COG: USA, Sig C

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
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RADIO RECEIVING SET **AN/VRR-4**

1 July 1958

Cognizant Serv: USA FSN: 5820-164-7175

USA

USN

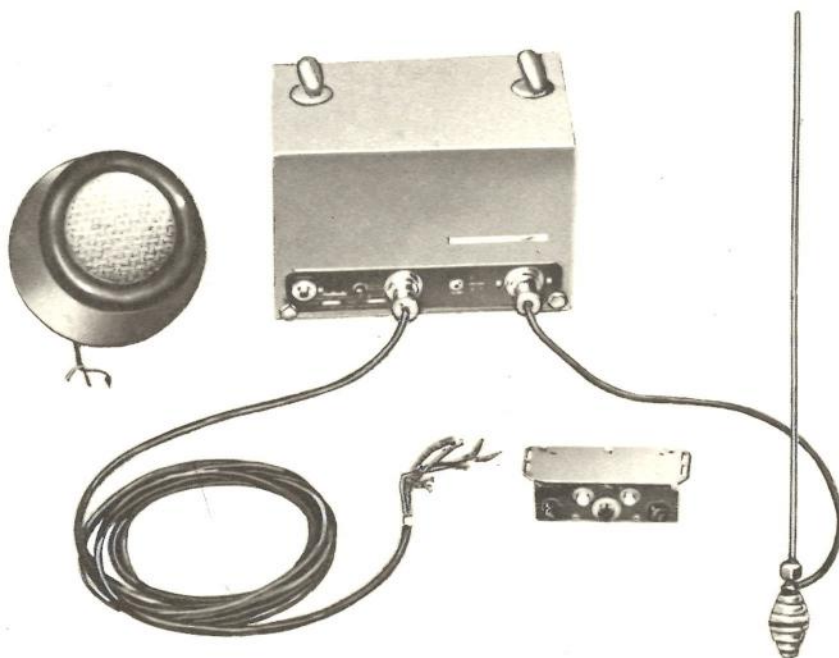
USAF

TYPE CLASS:

L/Std

STOCK NO:

2C4520A-13V



AN/VRR-4

**FUNCTIONAL DESCRIPTION:**

Radio Receiving Set AN/VRR-4 is a vehicular, short-range, FM, fixed-frequency, crystal-controlled radio receiver used by military police, guard, and security troops for traffic control and similar communication in the vhf band.

This equipment consists essentially of a commercial (Galvin FMR-13 v), police car radio receiver and loudspeaker, plus accessories.

This set is composed of the receiver components of Radio

Set AN/VRC-2 and uses a whip-type vehicular antenna. It is powered by the storage battery of the vehicle in which it is installed.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in Mc:* 30 to 40

*Type Modulation:* FM

*Type of Signal:* Voice

*Power Requirements:* 8 amp at 6-v from vehicular storage battery.

MIL-HDBK-161

**AN/VRR-4** RADIO RECEIVING SET

MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
		(USA)		
1	Antenna P-253			
1	Control Head w/cables P-8022 (Galvin)			
1	Loudspeaker P-327			
1	Power supply	3H6694-4	8-3/4 x 4 x 8	
1	Radio Receiver Unit FMR-13V (P8028)	-----	9-5/16 x 14-3/4 x 9-1/2	

REFERENCE DATA AND LITERATURE:

SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
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PROCUREMENT DATA

PROCURING SERVICE: USA  
SPEC &/or DWG:

DESIGN COG: USA, Sig C

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
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## RADIO RECEIVING SET AN/VRR-7

1 July 1958

Cognizant Serv: USA FSN:

	USA	USN	USAF
TYPE CLASS:	Std	--	--
STOCK NO:	--	--	--

(No Photograph Available)

## FUNCTIONAL DESCRIPTION:

Radio Receiving Set AN/VRR-7 is a vhf, FM (voice) equipment used in monitoring and communications applications.

This set consists essentially of a radio receiver with an appropriate power supply, housed in a metal equipment cabinet, and includes either a roof mounted *whisker* type antenna for hard-top vehicles or a bumper-mounted coaxial antenna for canvas-top vehicles.

It is a vehicular version of Radio Receiving Set AN/FRR-36.

## TECHNICAL CHARACTERISTICS:

*Frequency Range in Mc:* 152 to 174

*Type Modulation:* FM

*Type of Signal:* Voice

*Power Requirements:*

Power Supply PP-867/U: 1.1 amp at 24-v dc

Power Supply PP-868/U: 2 amp at 12-v dc

Power Supply PP-869/U: 3.7 amp at 6-v dc

## MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
		(USA)		
1	Antenna AT-496/G	2A204A-496		
1	Electrical Equipment Cabinet CY-1150/U	6F290-1150	10-5/8 x 21-1/4 x 7-1/2	14.5
1	Power Supply PP-867/U	-----	5 x 6-1/4 x 7	10
	or			
1	Power Supply PP-868/U	-----	5 x 6-1/4 x 7	10
	or			
1	Power Supply PP-869/U	-----	5 x 6-1/4 x 7	10
1	Radio Receiver R-394/U	2C4180-394	8-1/2 x 14-1/2 x 5-3/4	17

## REFERENCE DATA AND LITERATURE:

TM 11-229

MIL-HDBK-161

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**AN/VRR-7** RADIO RECEIVING SET

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SHIPPING DATA

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PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
2	7.25	176

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PROCUREMENT DATA

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PROCURING SERVICE: USA  
SPEC &/or DWG: MIL-N-11539

DESIGN COG: USA, Sig C

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CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
Motorola, Inc.	Chicago, Ill	11661-P-52-51	\$615.24

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## RADIO RECEIVER AN/VRR-type

4 December 1958

Cognizant Serv: USA FSN: 5820-352-0033

BC-683-A, -B, -BM

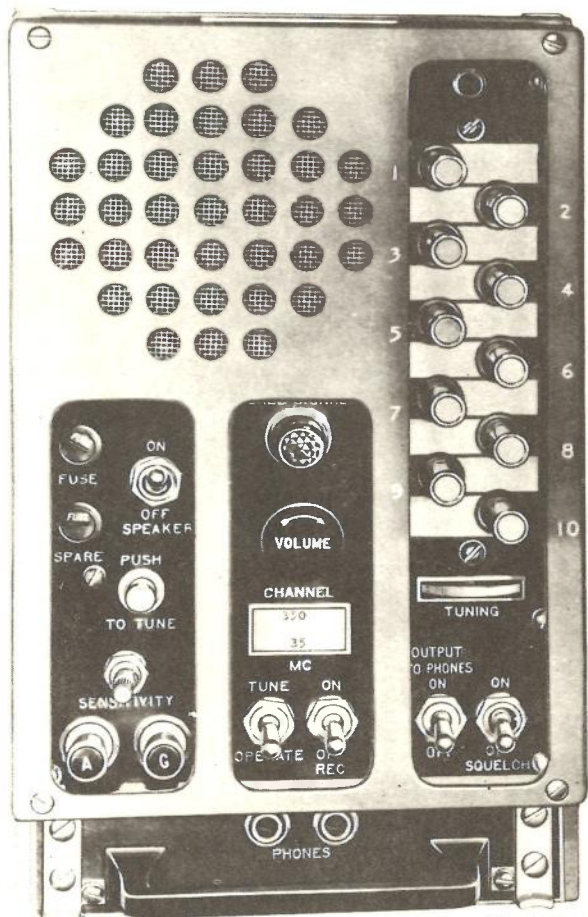
USA

USN

USAF

TYPE CLASS: L/Std  
 STOCK NO: 2C4460-683

Used by  
 BC-683-A: F16-R-  
 2019-0115  
 BC-683-B: F16-R-  
 2033-0007  
 BC-683-BM: F16-Q-  
 125546-100



BC-683-A

## FUNCTIONAL DESCRIPTION:

Radio Receivers BC-683-A, BC-683-B, and BC-683-BM are components of Radio Sets SCR-608-( ) and SCR-628-( ). These receivers provide frequency modulated radiotelephone reception facilities for various types of ground units. The radio sets may be installed and operated in combat vehicles. The receivers are used with Radio Transmitter BC-684-BM and associated equipment for two-way communications.

The -A model differs operationally from the -B and -BM models in that it cannot be used with remote interphone control equipment. In addition, later models incorporate minor circuit changes. The overall performance of all the receivers is the same.

The following equipment is used with, but is not supplied with, Radio Receivers BC-683-A, BC-683-B, and BC-683-BM: whip antenna, dynamotor, and accessories.

## TECHNICAL CHARACTERISTICS:

*Frequency Range in MC:* 27.0 to 38.9

*Number of Preset Channels:* 10

*Bandwidth:* 80 kc

*Intermediate Frequency:* 2.65 mc

*Type Reception:* FM

*Sensitivity:* 1 uv.

*Power Output:*

Speaker: 2 w

Headset: 0.2 w

*Antenna:* 10-ft whip

*Power Requirements:* 12-v dc vehicular battery through Dynamotor DM-34; or 24-v dc vehicular battery through Dynamotor DM-36

MIL-HDBK-161

**AN/VRR-type** RADIO RECEIVER

MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Radio Receiver BC-683-A, BC-683-B, or BC-683-BM	-----	6-3/4 x 12-1/2 x 11-1/2	35

REFERENCE DATA AND LITERATURE:

TM 11-4036

SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
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PROCUREMENT DATA

PROCURING SERVICE: USA  
SPEC &/or DWG:

DESIGN COG: USA, Sig C

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
			\$239.00 with spares



RADIO RECEIVER **AN/VRR-type**

5 December 1958

Cognizant Serv: USA FSN: R-108/GRC: 5820-503-1258  
 R-109/GRC: 5820-503-1413  
 R-110/GRC: 5820-503-1254

R-108/GRC, -109/GRC, -110/GRC

	USA	USN	USAF
TYPE CLASS:	Std	Used by	--
STOCK NO:	R-108/GRC: 2C4180-108	--	--
	R-109/GRC: 2C4180-109		
	R-110/GRC: 2C4180-110		



R-109/GRC

**FUNCTIONAL DESCRIPTION:**

Radio Receivers R-108/GRC, R-109/GRC, and R-110/GRC are small, lightweight, frequency-modulated, superheterodyne-type receivers designed for use in vehicular or ground installations. They provide for the reception of voice-modulated FM signals between the range of 20 to 55 megacycles, and are similar except for their operating frequency range, the components that determine the frequency range, and the bias source for the squelch oscillator.

The equipments contain continuously variable tuning; detent selection of three preset frequencies is also included. They may be operated from a storage battery, in conjunction with a plug-in vibrator-type voltage supply, or from an external power source.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in Mc:*  
 R-108/GRC: 20 to 28

**AN/VRR-type RADIO RECEIVER**

R-109/GRC: 27 to 39

R-110/GRC: 38 to 55

*Channel Data:*

R-108/GRC 80

R-109/GRC: 120

R-110/GRC: 170

*Channel Spacing:* 100 kc*Type of Signal:* Voice or tone*Audio output:*

Loudspeaker: 500 mw

Earphones: 40 mw

*Output Impedance:* 600 ohms (unbalanced)*Antenna Type:* Portable whip*Power Requirements:* Power Supply PP-448/GR with 6-v storage battery, Power Supply PP-281/GRC with 12-v storage battery, or Power Supply PP-282/GRC with 24-v storage battery**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Radio Receiver R-108/GRC, R-109/GRC, or R-110/GRC (Equipment consists of only one major component.)	-----	7-1/4 x 9 x 12-13/16	20.25

**REFERENCE DATA AND LITERATURE:**

TM 11-898

**SHIPPING DATA**

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
1	0.69	38.6

**PROCUREMENT DATA**

PROCURING SERVICE: USA  
SPEC &/or DWG:

DESIGN COG: USA, Sig C

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
For R-108/GRC: Lewyt Corp.	Brooklyn, N. Y.	DA-36-039-SC3769	\$440.00
For R-109/GRC: Lewyt Corp.	Brooklyn, N. Y.	DA-36-039-SC12102	440.00
For R-110/GRC: Federal Telephone and Radio Corp.	Newark, N. J.	MIpr 881-53060	570.00

RADIO SET AN/VRR-type

1 July 1958

Cognizant Serv: USA FSN: 5820-194-7069

SCR-294-( )

USA

USN

USAF

TYPE CLASS: L/Std  
 STOCK NO: 2S294

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SCR-294

### FUNCTIONAL DESCRIPTION:

Radio Set SCR-294-( ) is a vehicular, short-range FM (voice) radio receiving equipment used in armored vehicles. It is also part of Radio Set SCR-293 and is used as the *additional* receiver component of that equipment.

This equipment consists essentially of a single radio receiver and a shock mount. The receiver is capable of operating on five channels spaced 100 kc apart.

Radio Set SCR-294 is the 12-volt model of this equipment; Radio Set SCR-294-B is the 24-volt model.

Power is supplied by the battery of the vehicle in which the equipment is installed.

### TECHNICAL CHARACTERISTICS:

*Frequency Range in Mc:* 20.0 to 27.9

*Type Modulation:* FM

*Type of Signal:* Voice

*Power Requirements:* 12- or 24-v dc from vehicular storage battery, depending on model

MIL-HDBK-161

**AN/VRR-type** RADIO SET

MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Mounting FT-239	-----	12-1/2 x 34-1/2 x 2-1/2	
1	Radio Receiver BC-499	-----	9 x 9-1/2 x 12-1/4	19

REFERENCE DATA AND LITERATURE:

SHIPPING DATA

PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
		200

PROCUREMENT DATA

PROCURING SERVICE: USA  
SPEC &/or DWG:

DESIGN COG: USA, Sig C

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
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RADIO SET AN/VRR-type

1 July 1958

Cognizant Serv: USA FSN: 5820-268-3113

SCR-678-( )

USA

USN

USAF

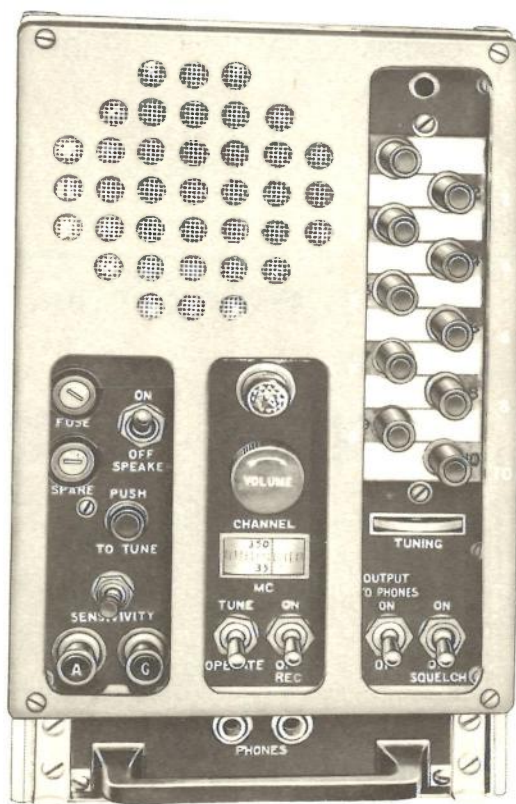
TYPE CLASS: L/Std  
STOCK NO: 2S678.1

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SCR-678

**FUNCTIONAL DESCRIPTION:**

Radio Set SCR-678-( ) is a short-range, low-power, vehicular, FM (voice) receiving equipment used for monitoring, intercept, and communication.

This equipment consists essentially of the radio receiver component of Radio Set SCR-608, plus a vehicular-type shock mount and related accessories. It operates on 10 crystal-controlled preset frequencies selected by means of pushbuttons arranged on the front panel, and uses a whip-type vehicular antenna.

The set is powered by the storage battery (12 or 24 v) of the vehicle in which it is installed, through an appropriate dynamotor mounted within the receiver.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in Mc:* 27.0 to 38.9

*Type Modulation:* FM

*Type of Signal:* Voice

*Power Requirements:* 4 amp at 12-v dc or 2 amp at 24-v dc from vehicular storage battery through Dynamotor DM-34 or DM-36

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
		(USA)		
1	Dynamotor DM-34	3H1634	4-1/2 x 3 x 6-1/2	4.7
	or			
1	Dynamotor DM-36	3H1636	4-1/2 x 3 x 6-1/2	4.7
1	Radio Receiver BC-683	2C4460-683	11-1/2 x 6-3/4 x 12-1/2	35

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**AN/VRR-type** RADIO SET

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REFERENCE DATA AND LITERATURE:

TM 11-620  
TM 11-4036

SHIPPING DATA

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PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
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PROCUREMENT DATA

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PROCURING SERVICE: USA  
SPEC &/or DWG:

DESIGN COG: USA, Sig C

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CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
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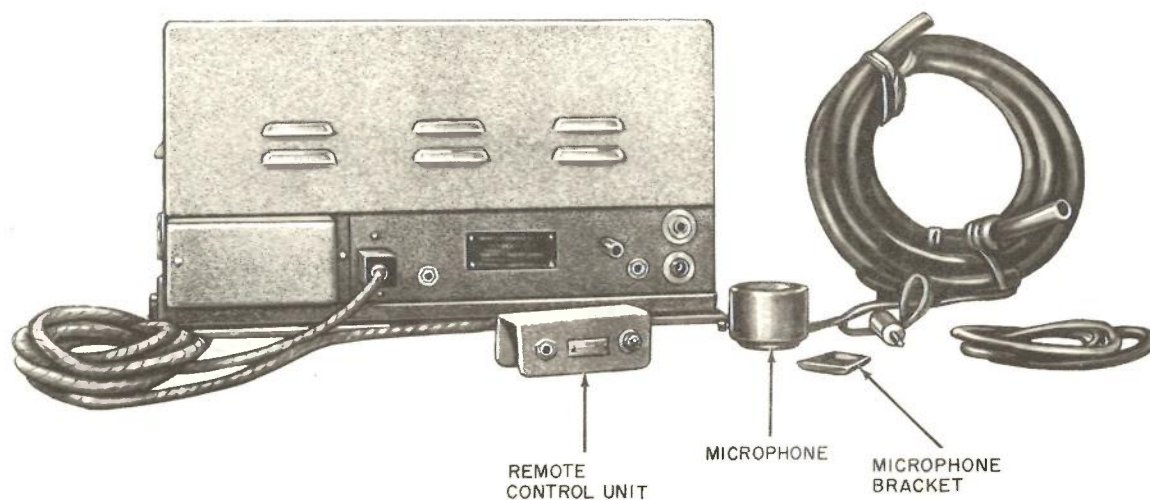
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## RADIO TRANSMITTING SET AN/VRT-1

1 July 1958

Cognizant Serv: USA FSN: 5820-164-8117

	USA	USN	USAF
TYPE CLASS:	Std	--	--
STOCK NO:	2C6729	--	--



AN/VRT-1

**FUNCTIONAL DESCRIPTION:**

Radio Transmitting Set AN/VRT-1 is a vehicular, short-range, high-frequency, AM (voice) equipment for use of military police, security troops, and similar units.

This equipment consists of a police-type radio transmitter and includes microphone, operator's remote control unit, and accessories permitting installation of the transmitter in the trunk of the vehicle or other convenient location. It uses a whip-type vehicular antenna.

It operates from the 6-volt battery of the vehicle in which

it is installed. When operated from vehicular storage batteries of higher voltage, appropriate modifying equipment must be added.

**TECHNICAL CHARACTERISTICS:**

*Frequency Range in Mc:* 30.0 to 40.0

*Type Modulation:* AM

*Type of Signal:* Voice

*Power Output:* 22 w

*Power Requirements:*

6-v dc from vehicular storage battery

**MAJOR COMPONENTS**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (Inches)	WEIGHT (Lbs)
1	Radio Transmitting Set AN/ VRT-1 (Equipment consists of only one major component.)	-----	2.2	45

MIL-HDBK-161

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**AN/VRT-1** RADIO TRANSMITTING SET

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REFERENCE DATA AND LITERATURE:

TM 11-842

SHIPPING DATA

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PKGS	VOLUME (Cu Ft)	WEIGHT (Lbs)
2	3.9	73

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PROCUREMENT DATA

PROCURING SERVICE: USA  
SPEC &/or DWG:

DESIGN COG: USA, Sig C

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CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX UNIT COST
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# APPENDIX I

## GLOSSARY OF ABBREVIATIONS

This appendix is a listing of abbreviations used in this publication, arranged alphabetically. The exact word or phrase for which the abbreviation is used, is given in each case.

<b>A/Std</b> .....	Alternate Standard	<b>HI</b> .....	High
<b>ac</b> .....	alternating current	<b>icw</b> .....	interrupted continuous wave (generally to be construed to mean a continuous radio frequency interrupted at regular intervals in order to produce an audio-frequency tone, and keyed by means of a telegraph key in International Morse code).
<b>ADF</b> .....	Automatic Direction Finder	<b>IF</b> .....	intermediate frequency
<b>AF</b> .....	audio frequency	<b>In</b> .....	Inch(es)
<b>Alt-Std</b> .....	Alternate Standard	<b>Inc</b> .....	Incorporated
<b>am</b> .....	amplitude modulated (modulation)	<b>INPH</b> .....	Interphone
<b>amp</b> .....	ampere(s)	<b>INTER</b> .....	Interphone
<b>approx</b> .....	approximate, approximately	<b>kc</b> .....	kilocycle(s) per second
<b>avc</b> .....	automatic volume control	<b>kva</b> .....	kilovolt-ampere(s)
<b>bfo</b> .....	beat frequency oscillator	<b>kw</b> .....	kilowatt(s)
<b>BuAer</b> .....	Bureau of Aeronautics	<b>L/Std</b> .....	Limited Standard
<b>BuOrd</b> .....	Bureau of Ordnance	<b>Lbs</b> .....	pounds
<b>BuShips</b> .....	Bureau of Ships	<b>lf</b> .....	low frequency (30 to 300 kc)
<b>C</b> .....	Centigrade	<b>ma</b> .....	milliampere(s)
<b>CHAN</b> .....	Channel	<b>mc</b> .....	megacycle(s) per second
<b>CIC</b> .....	Combat Information Center	<b>mcw</b> .....	modulated continuous wave (generally to be construed to mean a continuous radio frequency, modulated by a steady audio-frequency tone, and keyed by telegraph key in International Morse code).
<b>Class</b> .....	Classification	<b>mf</b> .....	medium frequency (300 to 3,000 kc)
<b>Cog</b> .....	Cognizance	<b>MIC</b> .....	Microphone
<b>COMM</b> .....	Communication(s)	<b>MIL</b> .....	Military
<b>Corp</b> .....	Corporation	<b>mv</b> .....	millivolt(s)
<b>cps</b> .....	cycle(s) per second	<b>mw</b> .....	milliwatt(s)
<b>cu</b> .....	cubic	<b>NAV</b> .....	Navigation
<b>cw</b> .....	continuous wave (generally construed to mean continuous radio frequency, keyed in International Morse code).	<b>No</b> .....	number
<b>cyc</b> .....	cycle(s)	<b>Obs</b> .....	Obsolete
<b>db</b> .....	decibel(s)	<b>Obt</b> .....	Obsolescent
<b>dbm</b> .....	decibels referred to 1 milliwatt	<b>opm</b> .....	operations per minute
<b>dc</b> .....	direct current	<b>P/Std</b> .....	Planned standard
<b>Dept</b> .....	Department	<b>pf</b> .....	power factor
<b>dia</b> .....	diameter	<b>Pkgs</b> .....	Packages
<b>dsb</b> .....	double sideband	<b>Qty</b> .....	Quantity
<b>Dwg</b> .....	Drawing	<b>RADC</b> .....	Rome Air Development Center
<b>ea</b> .....	each	<b>RCUE</b> .....	Rome Air Development Center
<b>Ed</b> .....	Edition	<b>rcvr</b> .....	receiver
<b>fax</b> .....	facsimile		
<b>fil</b> .....	filament		
<b>fm</b> .....	frequency modulated (modulation)		
<b>fpm</b> .....	feet per minute		
<b>fsk</b> .....	frequency-shift keyed (keying)		
<b>FSN</b> .....	Federal Stock Number		
<b>ft</b> .....	feet		
<b>GFE</b> .....	Government Furnished Equipment		
<b>hf</b> .....	high frequency (3 to 30 mc)		

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**REC**..... Receiver  
**RF**..... radio frequency  
**rms**..... root mean square  
**rpm**..... revolutions per minute  
**rtt**..... radioteletype (frequency-shift keyed)  
**S-Std**..... Substitute Standard  
**Serv**..... Service  
**shf**..... super high frequency (3,000 to 30,000 mc)  
  
**Sig C**..... Signal Corps, U. S. Army  
**SOS**..... International distress signal (radio-telegraph)  
  
**Spec**..... Specification  
**SPL**..... Special  
**ssb**..... single sideband  
**Std**..... Standard  
**swr**..... standing wave ratio  
**T-Std**..... Tentative Standard  
**Tel**..... Telephone or Telegraph  
**Tent-Std**..... Tentative Standard  
**TM**..... Technical Manual  
**TO**..... Technical Order  
**TTY**..... Teletypewriter

**uhf**..... ultra-high frequency (300 to 3,000 mc)  
**US**..... United States  
**USA**..... United States Army  
**USAF**..... United States Air Force  
**USCG**..... United States Coast Guard  
**usec**..... microsecond(s)  
**USN**..... United States Navy  
**uuf**..... micromicrofarad(s)  
**uv**..... microvolt(s)  
**uw**..... microwatt(s)  
**u/w**..... used with  
**v**..... volt(s)  
**va**..... volt-ampere(s)  
**vf**..... voice frequency  
**vhf**..... very high frequency (30 to 300 mc)  
**vps**..... vibrations per second (used to describe pitch of tuning fork)  
**vu**..... volume unit(s)  
**w**..... watts  
**WADC**..... Wright Air Development Center  
**WCLE**..... Wright Air Development Center  
**wpm**..... words per minute  
**xmtr**..... transmitter

## APPENDIX II

### INDEX OF ITEMS BY NAME

This appendix consists of a listing of all items described in this publication, arranged alphabetically by official nomenclature. In every case, nomenclature appears in narrative style rather than in catalogue style. For example, Frequency Shift Converter CV-62/U (*narrative style*) is found under *F* instead of being listed as Converter, Frequency Shift CV-62/U (*catalogue style*). Thus, all radio sets are found under the letter *R* and all teletypewriters under *T*.

<i>Nomenclature</i>	<i>Type</i>	<i>Page</i>
A		
Adapter Keyer KY-44/FX, -44A/FX, -44B/FX, -44C/FX.....	AN/TXA	1603
AF Amplifier AM-65/GRC.....	AN/GIA	759
Aircraft Radio Equipment:		
AN/ARW-34.....	AN/ARW	137
ATB.....	AN/ART	125
RU-18, -19.....	AN/ARR	115
Aircraft Radio Receiver ARB.....	AN/ARR	111
Aircraft Radio Receiving Equipment:		
ABK, ABK-1, through -7.....	AN/ARR	107
ARA.....	AN/ARR	109
ARJ.....	AN/AXR	139
ARK.....	AN/AXR	141
RAX-1.....	AN/ARR	113
Aircraft Radio Transmitter-Receiver:		
MB.....	AN/ARC	85
ME.....	AN/ARC	87
Aircraft Radio Transmitting Equipment:		
ATA.....	AN/ART	123
ATD.....	AN/ART	127
ATK.....	AN/AXT	143
GP, GP-2.....	AN/ART	129
GP-7.....	AN/ART	131
Amateur-Band Receiver 75A-4, 75A-5(MOD).....	AN/URR	1809
Amplifier Assembly AN/FRA-1( ).....	AN/FRA	337
Amplifier-Control Group:		
AN/SIA-35.....	AN/SIA	1123
AN/SIA-61.....	AN/SIA	1125
AN/SIA-62.....	AN/SIA	1127
Amplifier Equipment AN/TRA-1( ).....	AN/TRA	1451
Amplifier Group AN/FRA-2.....	AN/FRA	339
Amplifier-Modulator Group AN/GRA-24.....	ANGRA	769
Amplifier-Oscillator Group:		
AN/SIA-1.....	AN/SIA	1117
AN/SIA-3.....	AN/SIA	1119
AN/SIA-10.....	AN/SIA	1121
Amplifier-Power Supply Group AN/TRA-19.....	AN/TRA	1457
Antenna:		
AS-768/GR.....	AN/GRA	771
AT-150/SRC.....	AN/SRA	1165

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<i>Nomenclature</i>	<i>Type</i>	<i>Page</i>
AT-249/GRD.....	AN/GRA	773
AT-317(XN-1)/BRR.....	AN/BRA	149
Antenna Assembly AS-390/SRC.....	AN/SRA	1163
Antenna Control C-1670/U.....	AN/SRA	1169
Antenna Coupler:		
CU-168/FRR.....	AN/FRA	353
CU-284/UR.....	AN/SRA	1171
CU-377/UR.....	AN/SRA	1173
Antenna Coupler Group:		
AN/SRA-13.....	AN/SRA	1153
AN/SRA-14.....	AN/SRA	1155
AN/SRA-15.....	AN/SRA	1157
AN/SRA-16.....	AN/SRA	1159
Antenna Group AN/SRA-3.....	AN/SRA	1147
Antenna System AS-81/GR.....	AN/URA	1707
Audio Amplifier AM-413/G, -413A/G.....	AN/UIA	1665
Audio Distributing Central AN/FIA-1.....	AN/FIA	311
Audio FM Keyer Equipment FSJ.....	AN/UXA	1987
Audio Frequency Amplifier:		
50101.....	AN/FCA	163
AM-215/U, -215A/U, -215B/U.....	AN/UIA	1663
CW-50101.....	AN/TCA	1335
Audio Frequency Monitor AN/PTA-1.....	AN/PTA	1093
Audio Signal Scrambling Equipment PF.....	AN/USA	1971
Automatic Transmitter for Perforated Tape XTR-442-C.....	AN/FRA	371
Auxiliary Interphone Equipment AN/VIA-1.....	AN/VIA	1993
Auxiliary Telephone Central Equipment TC-5.....	AN/FTC	749

C

Carrier Control System UN.....	AN/FCC	205
Carrier Hybrid CF-7.....	AN/TCC	1381
Carrier Repeater:		
OA-9/FC.....	AN/FCC	193
OA-10( )/FC.....	AN/FCC	195
Carrier Telegraph Receiver:		
R-405/MC through R-412/MC.....	AN/FGR	295
R-466/UC.....	AN/UGA	1633
Carrier Telegraph Transmitter:		
T-290/MC through T-297/MC.....	AN/FGT	305
T-341/UC.....	AN/FCT	211
Carrier Terminal:		
OA-4( )/FC.....	AN/FCC	183
OA-5( )/FC.....	AN/FCC	185
OA-11/FC.....	AN/FCC	197
OA-12/FC.....	AN/FCC	199
OA-13/FC.....	AN/FCC	201
Carrier Terminal Set AN/FCC-2.....	AN/FCC	167
Code Practice Equipment:		
OAH, OAH-1, OAH-2.....	AN/URA	1735
OW-2.....	AN/URA	1737
Coder-Timer Group AN/URA-11.....	AN/URA	1699
Code Tape Recorder:		
RD-110/U, RD-110A/U.....	AN/FRH	423
RD-112/U.....	AN/FRH	425
Code Training Set AN/GSC-T1( ).....	AN/GSC	883
Combination Radio Receiver and Record Player RCT, RCU, RCU-1.....	AN/USP	1979
Communications Central Office Group AN/MSA-1.....	AN/MSA	965
Communications Transmitter 431D-1.....	AN/FRT	563
Comparator-Converter Group AN/URA-17( ).....	AN/URA	1701

<i>Nomenclature</i>	<i>Type</i>	<i>Page</i>
Console CY-751/GR	AN/GRA	777
Control Group AN/GRA-6	AN/GRA	763
Control Indicator C-806/GR	AN/GRA	775
Control-Keyer Group AN/ARA-26	AN/ARA	19
Control-Monitor C-1947/U	AN/URW	1965
Control-Monitor Group:		
AN/FRA-6	AN/FRA	345
AN/FRA-11	AN/FRA	347
Control-Monitor Set AN/FSW-2	AN/FSW	717
Control-Oscillator Group AN/SAI-66	AN/SIA	1129
Control Switchboard SB-100/MTC	AN/MTC	967
Control Unit C-292( )/TRA-7	AN/TRA	1459
Converter:		
CF-4	AN/TCC	1375
CV-2/TX, -2A/TX, -2B/TX	AN/TXC	1611
CV-2C/TX	AN/TXC	1613
Converter Set TC-33-( )	AN/TCC	1395

## D

Demodulator CW-50124	AN/TCA	1337
Direction Finder Set AN/GRD-5	AN/GRD	845
Diversity Radio Receiving Equipment:		
RCP	AN/FRR	505
RDM, RDM-1	AN/FRR	511
Diversity Receiving Equipment:		
AN/FRR-3( )	AN/FRR	429
RBE	AN/FRR	495
Dual Diversity Converter CV-31( )/TRA-7	AN/TRA	1461
Dual Recording Equipment CXDB	AN/USP	1977
Electrical Filter Assembly:		
AN/SRA-9	AN/SRA	1149
AN/SRA-9A	AN/SRA	1151
Emergency Mobile Communication Equipment MAM	AN/ARC	83
Emergency Radio Telegraph Equipment TDK	AN/SRT	1329
Emergency Switchboard SB-18/GT	AN/PTC	1095
Exciter Unit 0-5/FR	AN/FRA	365
Experimental Electronic Relay Equipment CXES	AN/URA	1719

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Facsimile Equipment RC-120-( )	AN/TXC	1621
Facsimile Recorder:		
RD-92/UX	AN/TXR	1627
RD-92A/UX	AN/TXR	1629
Facsimile Recorder Set AN/UXH-2(XN-3)	AN/UXH	1991
Facsimile Set AN/TXC-1( )	AN/TXC	1607
Facsimile Transceiver:		
FX-1, -1A, -1B	AN/TXC	1619
TT-41/TXC-1B, TT-41A/TXC-1B, TT-41B/TXC-1B	AN/TXC	1623
Facsimile Transmitter Receiver Equipment:		
FOA	AN/TXC	1615
FOC	AN/TXC	1617
Frequency Modulated Mobile Equipment 35FMTR-7A	AN/VRC	2047
Frequency Modulated Mobile Radio Equipment 50FMTR-7A	AN/VRC	2049
Frequency Shift Converter:		
CV-62/U	AN/URA	1711
CV-115( )/URR	AN/URA	1713
CV-116/URR	AN/URA	1715
CV-172/U, -172A/U	AN/TXA	1601

<i>Nomenclature</i>	<i>Type</i>	<i>Page</i>
Frequency Shift Converter-Comparator Group:		
AN/URA-6, -7 .....	AN/URA	1691
AN/URA-8, -8A .....	AN/URA	1695
Frequency Shift Converter Group AN/FRA-4 .....	AN/FRA	343
Frequency Shift Exciter O-39( )/TRA-7 .....	AN/TRA	1465
Frequency Shift Keyer Equipment:		
FSB .....	AN/FGA	213
FSD .....	AN/FRA	357
FSH .....	AN/FRA	359
Frequency Shift Receiver Converter FRC .....	AN/FRA	355
Frequency Shift Receiver Equipment FRB .....	AN/UXA	1985

## G

Generator GN-58-A .....	AN/GRA	779
Ground Station Transmitter 30K-5 .....	AN/FRT	561
High Frequency Power Amplifier Equipment TPA .....	AN/FRA	367
High Frequency Radio Receiving Equipment:		
RBQ .....	AN/URR	1895
RBQ-1 .....	AN/FRR	499
High Frequency Radio Telephone Transmitting Equipment TDG, TDG-1 .....	AN/TRT	1573
Hybrid Circuit Network:		
TA-31( )/U .....	AN/TCC	1383
TA-255/TT .....	AN/TCC	1385

## I

Intercommunicating Station:		
LS-124( )/FI .....	AN/FIC	313
LS-125( )/FI .....	AN/FIC	315
LS-126( )/FI .....	AN/FIC	317
LS-127( )/FI .....	AN/FIC	319
LS-128( )/FI .....	AN/FIC	321
LS-129/FI .....	AN/FIC	323
LS-130( )/FI .....	AN/FIC	325
LS-138/FI .....	AN/FIC	327
Intercommunication Set:		
AN/AIC-8 .....	AN/AIC	11
AN/AIC, -10A .....	AN/AIC	13
AN/UIC-1, -1X .....	AN/UIC	1667
PA-8 .....	AN/TIQ	1447
Intercommunication Station:		
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LS-201/FI .....	AN/FIC	331
LS-202/FI .....	AN/FIC	333
Interphone Amplifier 50128, 50128A .....	AN/UIA	1661
Interphone Equipment:		
AN/AIC-2, -2A .....	AN/AIC	5
AN/AIC-3 .....	AN/AIC	7
RC-53 .....	AN/VIC	1995
RC-99 .....	AN/VIC	1997
Interphone Extension Kit RC-298 .....	AN/VIC	1999
Interphone-Radio Control Set AN/AIC-4 .....	AN/AIC	9

## K

Keyer:		
KY-32/GRT .....	AN/URA	1723
KY-43/URT .....	AN/URA	1725
KY-43A/URT .....	AN/URA	1727

<i>Nomenclature</i>	<i>Type</i>	<i>Page</i>
KY-58/GRT .....	AN/FRA	363
KY-75/SRT .....	AN/SGA	1109
KY-83( )/S .....	AN/SRA	1175
KY-122/URN .....	AN/URN	1773
KY-123/URN .....	AN/URN	1775
KY-123A/URN .....	AN/URN	1777
TG-10, TG-10-F .....	AN/GGA	753
Keying Head Drive MX-439( )/U .....	AN/URA	1731
L		
Line Terminal Equipment UG .....	AN/TCC	1399
Loop Antenna System AT-317/BRR .....	AN/BRA	147
Loran Switching Equipment UM .....	AN/FRA	369
M		
Manual Telephone Central Office AN/TTC-7 .....	AN/TTC	1579
Manual Telephone Switchboard:		
SB-22( )/PT .....	AN/PTC	1097
SB-86/P .....	AN/PTC	1099
Manual Telephone Switchboard Section SB-171/FTC .....	AN/FTC	747
Microwave Radio Relay Set:		
CLR-6, Philco .....	AN/FRC	419
CLR-7, Philco .....	AN/FRC	421
Modulator MD-83A/ARN .....	AN/USM	1975
Modulator Assembly CRV-50194 .....	AN/URA	1709
Modulator-Power Supply AN/FRA-16 .....	AN/FRA	349
Modulator Unit 50065-A .....	AN/SRA	1161
Multiplexer:		
TD-159/U .....	AN/TCA	1339
TD-164/TRC .....	AN/TRA	1467
Multiplexer Group AN/TCA-1 .....	AN/TCA	1333
Multiplexer Set AN/TCC-13 .....	AN/TCC	1357
O		
Ocean Cable Terminal Set AN/FGC-3 .....	AN/FGC	225
Operations Center:		
AN/MTQ-1( ) .....	AN/MTQ	969
AN/TTQ-2 .....	AN/TTQ	1597
Order Wire Transmitter T-389A/TRC-29 .....	AN/TRT	1559
P		
Panoramic Radio Adaptor:		
RBU, RBU-1, RBU-2 .....	AN/URA	1739
RBV, RBV-1, RBV-2 .....	AN/URA	1741
RCC .....	AN/URA	1743
RDK .....	AN/URA	1747
Portable Carrier Control System UF .....	AN/TCA	1341
Portable Emergency Radio Transmitting Equipment TCY, TCY-1 .....	AN/SRT	1323
Portable Lifeboat Radio Transmitter 265 .....	AN/SRT	1271
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TBX-1 .....	AN/PRC	1043
TBX-2 .....	AN/PRC	1047
TBX-3 .....	AN/PRC	1051
TBX-4 .....	AN/PRC	1055
TBX-4a .....	AN/PRC	1057
TBX-5 .....	AN/PRC	1061

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TBX-7	AN/PRC	1069
Portable Radio Receiving Equipment:		
RBM, RBM-1, -2, -3, -4, -5	AN/TRR	1547
RCB-1	AN/PRR	1085
RDR	AN/PRR	1087
Portable Radio Transmitting and Receiving Equipment:		
MAY, MAY-1	AN/PRC	1025
TBX-8	AN/PRC	1073
Portable Radio Transmitting Equipment:		
TBW	AN/TRT	1561
TBW-1	AN/TRT	1563
TBW-2	AN/TRT	1565
TBW-3	AN/TRT	1567
TBW-4	AN/TRT	1569
TBW-5	AN/TRT	1571
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Power Supply PP-1098/GRC-9	AN/GRA	781
Printer:		
TG-7	AN/TGC	1419
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Projection Group AN/UFA-3	AN/UFA	1631
Public Address Set:		
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AN/PIP-1A	AN/PIP	975
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AN/PIQ-2	AN/PIQ	979
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AN/UIQ-3	AN/UIQ	1671
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## R

Radar Data Transfer System		
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Radio Central AN/MRC-25	AN/MRC	923
Radio Communications Receiver SP-600-JX	AN/FRR	523
Radio Communication Transmitting Equipment TEG-1	AN/FRT	709
Radio Control Central AN/TRQ-1	AN/TRQ	1531
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Radio Frequency Oscillator O-406(XN-1)/URC	AN/URA	1733
Radio Frequency Switching Group AN/FRA-3	AN/FRA	341
Radio Frequency Tuner TN-273/URT	AN/ARA	23
Radio Intercept Control Set AN/TTQ-3	AN/TTQ	1599
Radio Modulator:		
MD-168/UX	AN/TXA	1605
MD-209/UC	AN/URA	1729



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<b>Radio Receiver:</b>		
AR-88(RCA).....	AN/URR	1813
AR-88D(RCA).....	AN/URR	1815
BC-312-( ).....	AN/URR	1817
BC-314-( ).....	AN/URR	1819
BC-342.....	AN/GRR	859
BC-344-( ).....	AN/GRR	861
BC-683-A, -B, -BM.....	AN/VRR	2089
BC-779.....	AN/FRR	469
BC-787-( ).....	AN/URR	1821
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R-109/GRC.....	AN/VRR	2091
R-110/GRC.....	AN/VRR	2091
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R-137/GR.....	AN/GRR	863
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R-389( )/URR.....	AN/URR	1833
R-390/URR.....	AN/URR	1835
R-390A/URR.....	AN/URR	1837
R-391/URR.....	AN/URR	1839
R-392/URR.....	AN/URR	1841
R-520( )/URR.....	AN/URR	1843
RAZ.....	AN/SRR	1233
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OA-58A/FRC.....	AN/FRR	477
OA-59/FRC.....	AN/FRR	479
Radio Receiver Transfer Switchboard SB-82/SRR.....	AN/SRR	1237
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<b>Radio Receiving Equipment:</b>		
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AN/ARR-3A, -3B.....	AN/ARR	95
BF.....	AN/URR	1823
RAK, RAK-1 through -8.....	AN/URR	1847
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RAO-2 thru -7, -9.....	AN/URR	1855
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RBA-6	AN/URR	1865
RBA-7	AN/URR	1867
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RBC, RBC-1 through -3, -3A, -4 through -6	AN/URR	1871
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RBJ, RBJ-1 through -4	AN/URR	1875
RBK, RBK-1	AN/URR	1877
RBK-2	AN/URR	1881
RBK-5, -7, -8, -9	AN/URR	1877
RBK-11	AN/URR	1881
RBK-12 through -14	AN/URR	1877
RBK-15	AN/URR	1883
RBK-16	AN/URR	1885
RBL, RBL-1 through -6	AN/URR	1887
RBO, RBO-1, -2, -2A, -3, -4	AN/URR	1891
RBS, RBS-1, -2, -2a	AN/URR	1897
RBS-3	AN/URR	1901
RBZ	AN/PRR	1083
RC-256	AN/FRR	501
RCE-2	AN/URR	1903
RCO	AN/FRR	503
RDC-1	AN/URA	1745
RDE	AN/FRR	507
RDE-1	AN/FRR	509
RDO	AN/URA	1749
RDZ, RDZ-1, RDZ-a	AN/SRR	1235
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AN/FRR-21, -22, -23	AN/FRR	439
AN/FRR-24	AN/FRR	441
AN/FRR-27	AN/FRR	445
AN/FRR-28	AN/FRR	447
AN/FRR-30	AN/FRR	449
AN/FRR-31	AN/FRR	451
AN/FRR-32	AN/FRR	453
AN/FRR-33	AN/FRR	455
AN/FRR-34	AN/FRR	457
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AN/FRR-44	AN/FRR	467
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AN/URR-21, -21A	AN/URR	1783
AN/URR-23, -23A	AN/URR	1785
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AN/URR-29	AN/URR	1791
AN/URR-29X	AN/URR	1793
AN/URR-35, -35A, -35B, -35C	AN/URR	1795
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AN/URR-36	AN/URR	1801
AN/URR-36A	AN/URR	1803
AN/URR-39	AN/URR	1805
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AN/TRC-12( )	AN/TRC	1483
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AN/FRC-34	AN/FRC	397
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AN/GRC-77	AN/GRC	827
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AN/SNH-2 .....	AN/SNH	1139
AN/SNH-3 .....	AN/SNH	1141
AN/SNH-6 .....	AN/SNH	1143
AN/SNH-7 .....	AN/SNH	1145
AN/UNH-6 .....	AN/UNH	1675
<b>Sound Recording Equipment:</b>		
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PH .....	AN/UNH	1681
PJ .....	AN/UNH	1683
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PH .....	AN/UNH	1681
Speak-O-Phone Sound Detector SDB .....	AN/PNS	989
Speech Input Equipment 50254 .....	AN/URA	1705
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BD-72-( ) .....	AN/TTC	1583
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SB-61/FTC .....	AN/FTC	739
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SB-66( )/FGC .....	AN/FGC	263
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Telegraph Carrier Receiver R-551/UC .....	AN/UGA	1635
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AN/FCC-8 .....	AN/FCC	173
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Telegraph Central Office Set TC-3 .....	AN/TGC	1413
Telegraph Multiplex Set AN/UXC-2 .....	AN/UXC	1989
Telegraph Printer Set EE-97-( ) .....	AN/TGC	1407
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Telegraph Set TG-5-B .....	AN/PGC	973
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SB-65( )/FGC .....	AN/FGC	261
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Telegraph-Telephone Terminal AN/TCC-14 .....	AN/TGC	1359
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AN/TCC-20 .....	AN/TCC	1361
AN/UGC-2(XN-1) .....	AN/UGC	1637
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	TH-1/TCC-1	AN/FCC	203
	TH-5/TG	AN/TGC	1429
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	TC-22-( )	AN/TCC	1391
<b>Telephone Central Office Set:</b>			
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	AN/FTC-25	AN/FTC	721
	TC-1	AN/TTC	1587
	TC-2-( )	AN/TTC	1589
	TC-4	AN/TTC	1591
	TC-10-( )	AN/TTC	1593
	TC-12	AN/TTC	1595
<b>Telephone Repeater:</b>			
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	AN/TCC-8	AN/TCC	1353
	AN/TCC-11( )	AN/TCC	1355
	AN/TCC-21	AN/TCC	1363
	AN/TCC-22	AN/TCC	1365
	EE-89-( )	AN/TTC	1585
	OA-7/FC	AN/FCC	189
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	AN/TCC-3	AN/TCC	1345
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	AN/TCC-23	AN/TCC	1367
	CF-1-( )	AN/TCC	1369
	TA-269/U	AN/USA	1973
<b>Telephone Terminal Set:</b>			
	TC-21-( )	AN/TCC	1389
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<b>Teletypewriter:</b>			
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<b>Teletypewriter Repeater Set:</b>		
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AN/FGC-8 .....	AN/FGC	239
AN/FGC-9 .....	AN/FGC	241
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AN/FGC-20( ) .....	AN/FGC	245
AN/FGC-21( ) .....	AN/FGC	247
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AN/FGC-38( ) .....	AN/FGC	253
AN/FGC-39 .....	AN/FGC	253
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AN/PGC-1 .....	AN/PGC	971
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AN/TGC-6 .....	AN/TGC	1405
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## APPENDIX III

### INDEX OF ITEMS BY TYPE NUMBER

The list of items below, described in this publication is arranged in alpha-numerical sequence by officially designated military type number, or by manufacturer's model number in the case of equipment not assigned an official type number.

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50FMTR-7A	Frequency Modulated Mobile Radio Equipment.....	AN/VRC	2049
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149-A	Radio Transmitter.....	AN/SRT	1269
265	Portable Lifeboat Radio Transmitter.....	AN/SRT	1271
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50059	Vacuum Tube Keyer Unit.....	AN/FRA	351
50065-A	Modulator Unit.....	AN/SRA	1161
50101	Audio Frequency Amplifier.....	AN/FCA	163
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OA-6/FC	Telegraph Repeater .....	AN/FCC	187
OA-7/FC	Telephone Repeater .....	AN/FCC	189
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UN	Carrier Control System .....	AN/FCC	205
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G-1T	Telegraph Terminal .....	AN/FGA	215
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TH-21/UC	Telegraph Terminal .....	AN/FGA	219
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AN/FGC-7A	Teletypewriter Repeater Set .....	AN/FGC	237
AN/FGC-8	Teletypewriter Set .....	AN/FGC	239
AN/FGC-9	Teletypewriter Set .....	AN/FGC	241
AN/FGC-10	Teletypewriter Set .....	AN/FGC	243
AN/FGC-20( )	Teletypewriter Set .....	AN/FGC	245
AN/FGC-21( )	Teletypewriter Set .....	AN/FGC	247
AN/FGC-25( )	Teletypewriter Set .....	AN/FGC	249
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SB-66( )/FGC	Switchboard	AN/FGC	263
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TT-103/FG	Teletypewriter Reperforator-Transmitter	AN/FGC	289
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AN/FGQ-type:			
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TT-46/FG	Reperforator	AN/FGR	299
TT-92/FG	Teletypewriter Reperforator	AN/FGR	301
TT-107/FG	Teletypewriter Reperforator	AN/FGR	303
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LS-129/FI	Intercommunicating Station	AN/FIC	323
LS-130( )/FI	Intercommunication Station	AN/FIC	325
LS-138/FI	Intercommunication Station	AN/FIC	327
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FSD	Frequency Shift Keyer Equipment	AN/FRA	357
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R-388( )/URR	Radio Receiver .....	AN/URR	1831
R-389( )/URR	Radio Receiver .....	AN/URR	1833
R-390/URR	Radio Receiver .....	AN/URR	1835
R-390A/URR	Radio Receiver .....	AN/URR	1837
R-391/URR	Radio Receiver .....	AN/URR	1839
R-392/URR	Radio Receiver .....	AN/URR	1841
R-520( )/URR	Radio Receiver .....	AN/URR	1843
R-5200	VHF Receiver .....	AN/URR	1845
RAK, RAK-1 through 8.	Radio Receiving Equipment .....	AN/URR	1847
RAL, RAL-1 through -8.	Radio Receiving Equipment .....	AN/URR	1851
RAO-2 through -7, -9.	Radio Receiving Equipment .....	AN/URR	1855
RAS, RAS-1 through -15.	Radio Receiving Equipment .....	AN/URR	1859
RAY	Super Frequency Aircraft Aircraft Radio Receiving Equipment .....	AN/URR	1861
RBA, RBA-1 through -3, -5, -5A.	Radio Receiving Equipment .....	AN/URR	1863
RBA-6	Radio Receiving Equipment .....	AN/URR	1865
RBA-7	Radio Receiving Equipment .....	AN/URR	1867
RBB, RBB-1, -2, -2A, -3 through -6.	Radio Receiving Equipment .....	AN/URR	1869
RBC, RBC-1 through -3, -3A, -4 through -6.	Radio Receiving Equipment .....	AN/URR	1871
RBJ, RBJ-1 through -4.	Radio Receiving Equipment .....	AN/URR	1875
RBK, RBK-1, -5, -7, -9, -12, -13, -14.	Radio Receiving Equipment .....	AN/URR	1877
RBK-2, -11	Radio Receiving Equipment .....	AN/URR	1881
RBK-15	Radio Receiving Equipment .....	AN/URR	1883
RBK-16	Radio Receiving Equipment .....	AN/URR	1885
RBL, RBL-1 through -6	Radio Receiving Equipment .....	AN/URR	1887
RBO, RBO-1, -2, -2A, -3, -4	Radio Receiving Equipment .....	AN/URR	1891
RBQ	High Frequency Radio Receiving Equipment .....	AN/URR	1895
RBS, RBS-1, -2, -2A.	Radio Receiving Equipment .....	AN/URR	1897
RBS-3	Radio Receiving Equipment .....	AN/URR	1901
RCE-2	Radio Receiving Equipment .....	AN/URR	1903
AN/URT-2, -2X, -3, -3X, -4, -4X.	Radio Transmitting Set .....	AN/URT	1905
AN/URT-6(XN-1)	Radio Transmitting Set .....	AN/URT	1909
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AN/URT-8(XN-1), -9(XN-1).	Radio Transmitting Set .....	AN/URT	1915
AN/URT-10(XN-1)	Radio Transmitting Set .....	AN/URT	1917
AN/URT-12	Radio Transmitting Set .....	AN/URT	1921
AN/URT-13	Radio Transmitting Set .....	AN/URT	1923
AN/URT-14	Radio Transmitting Set .....	AN/URT	1925
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TCA	Radio Telephone Transmitting Equipment	AN/URT	1933
TCM	Radio Transmitting Equipment	AN/URT	1935
TCM-1	Radio Transmitting Equipment	AN/URT	1937
TCM-2	Radio Transmitting Equipment	AN/URT	1939
TCN	Radio Transmitting Equipment	AN/URT	1941
TCN-1	Radio Transmitting Equipment	AN/URT	1943
TCU, TCU-1, -2	Radio Transmitting Equipment	AN/URT	1945
TCZ	Radio Transmitting Equipment	AN/URT	1947
TCZ-1, -2	Radio Transmitting Equipment	AN/URT	1949
TDE, TDE-1 through -3.	Radio Transmitting Equipment	AN/URT	1951
TDZ, TDZ-a	Radio Transmitting Equipment	AN/URT	1955
TED, TED-1, -2	Radio Transmitting Equipment	AN/URT	1957
TED-3	Radio Transmitting Equipment	AN/URT	1959
TED-7	Radio Transmitting Equipment	AN/URT	1961
TED-8	Radio Transmitting Equipment	AN/URT	1963
AN/URW-type:			
C-1947/U	Control-Monitor	AN/URW	1965
RM-29-A	Remote Control Unit	AN/URW	1967
AN/USA-type:			
CN-154/U	Voltage Regulator	AN/USA	1969
PF	Audio Signal Scrambling Equipment	AN/USA	1971
TA-269/U	Telephone Terminal	AN/USA	1973
AN/USM-type:			
MD-83A/ARN	Modulator	AN/USM	1975
AN/USP-type:			
CXDB	Dual Recording Equipment	AN/USP	1977
RCT, RCU, RCU-1.	Combination Radio Receiver and Record Player	AN/USP	1979
AN/USQ-type:			
REK	Radio Receiving and Reproducing Equipment	AN/USQ	1981
AN/UXA-5(XN-1)	Television Camera Group	AN/UXA	1983
AN/UXA-type:			
FRB	Frequency Shift Receiver Group	AN/UXA	1985
FSJ	Audio FM Keyer Equipment	AN/UXA	1987
AN/UXC-2	Telegraph Multiplex Set	AN/UXC	1989
AN/UXH-2(XN-3)	Facsimile Recorder Set	AN/UXH	1991
AN/VIA-1	Auxiliary Interphone Equipment	AN/VIA	1993
AN/VIC-type:			
RC-53	Interphone Equipment	AN/VIC	1995
RC-99	Interphone Equipment	AN/VIC	1997
RC-298	Interphone Extension Kit	AN/VIC	1999
AN/VRC-1	Radio Set	AN/VRC	2001
AN/VRC-2	Radio Set	AN/VRC	2003
AN/VRC-2X	Radio Set	AN/VRC	2005
AN/VRC-3	Radio Set	AN/VRC	2007
AN/VRC-5	Radio Set	AN/VRC	2009
AN/VRC-6( )	Radio Set	AN/VRC	2011
AN/VRC-7( )	Radio Set	AN/VRC	2013
AN/VRC-8( )	Radio Set	AN/VRC	2015
AN/VRC-9( )	Radio Set	AN/VRC	2017
AN/VRC-10( )	Radio Set	AN/VRC	2019
AN/VRC-13( )	Radio Set	AN/VRC	2021
AN/VRC-14	Radio Set	AN/VRC	2023
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AN/VRC-16( )	Radio Set	AN/VRC	2027
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AN/VRC-20	Radio Set	AN/VRC	2035
AN/VRC-21	Radio Set	AN/VRC	2037
AN/VRC-22	Radio Set	AN/VRC	2039
AN/VRC-27( )	Radio Set	AN/VRC	2041
AN/VRC	Radio Set	AN/VRC	2043
AN/VRC-32	Radio Set	AN/VRC	2045
AN/VRC-type:			
35FMTR-7A	Frequency Modulated Mobile Radio Equipment	AN/VRC	2047
50FMTR-7A	Frequency Modulated Mobile Radio Equipment	AN/VRC	2049
FMTR-30D	Transmitter-Receiver	AN/VRC	2051
MQ-1	Radiotelephone Equipment	AN/VRC	2053
MQ-2	Radiotelephone Equipment	AN/VRC	2055
SCR-193-( )	Radio Set	AN/VRC	2057
SCR-293-( )	Radio Set	AN/VRC	2059
SCR-298-( )	Radio Set	AN/VRC	2061
SCR-506-( )	Radio Set	AN/VRC	2063
SCR-508-( )	Radio Set	AN/VRC	2065
SCR-510-( )	Radio Set	AN/VRC	2067
SCR-528	Radio Set	AN/VRC	2069
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SCR-610-( )	Radio Set	AN/VRC	2073
SCR-628-( )	Radio Set	AN/VRC	2075
AN/VRQ-1	Radio Set	AN/VRQ	2077
AN/VRQ-2( )	Radio Set	AN/VRQ	2079
AN/VRQ-3( )	Radio Set	AN/VRQ	2081
AN/VRQ-2	Radio Receiving Set	AN/VRR	2083
AN/VRR-4	Radio Receiving Set	AN/VRR	2085
AN/VRR-7	Radio Receiving Set	AN/VRR	2087
AN/VRR-type:			
BC-683-A, -B, -BM.	Radio Receiver	AN/VRR	2089
R-108/GRC, -109/GRC, -110/GRC.	Radio Receiver	AN/VRR	2091
SCR-294-( )	Radio Set	AN/VRR	2093
SCR-678-( )	Radio Set	AN/VRR	2095
AN/VRT-1	Radio Transmitting Set	AN/VRT	2097
AR-88(RCA)	Radio Receiver	AN/URR	1813
AR-88D(RCA)	Radio Receiver	AN/URR	1815
ARA	Aircraft Radio Receiving Equipment	AN/ARR	109
ARB	Aircraft Radio Receiver	AN/ARR	111
ARK	Aircraft Radio Receiving Equipment	AN/AXR	141
ARJ	Aircraft Radio Receiving Equipment	AN/AXR	139
AS-81/GR	Antenna System	AN/URA	1707
AS-390/SRC	Antenna Assembly	AN/SRA	1163
AS-768/GR	Antenna	AN/GRA	771
AT-150/SRC	Antenna	AN/SRA	1165
AT-249/GRD	Antenna	AN/GRA	713
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ATB	Aircraft Radio Equipment	AN/ART	125
ATD	Aircraft Radio Transmitting Equipment	AN/ART	127
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BC-191-( )	Radio Transmitter	AN/GRT	877
BC-312-( )	Radio Receiver	AN/URR	1817

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BC-339-( )	Radio Transmitter	AN/FRT	567
BC-342	Radio Receiver	AN/GRR	859
BC-344-( )	Radio Receiver	AN/GRR	861
BC-365-( )	Radio Transmitter	AN/FRT	569
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BC-447-( )	Radio Transmitter	AN/FRT	573
BC-610-( )	Radio Transmitter	AN/GRT	879
BC-683-A, -B, -BM	Radio Receiver	AN/VRR	2089
BC-779	Radio Receiver	AN/FRR	469
BC-787-( )	Radio Receiver	AN/URR	1821
BC-794	Radio Receiver	AN/FRR	471
BC-1004	Radio Receiver	AN/FRR	473
BD-71	Switchboard	AN/TTC	1581
BD-72-( )	Switchboard	AN/TTC	1583
BF	Radio Receiving Equipment	AN/URR	1823

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C-292( )/TRA-7	Control Unit	AN/TRA	1459
C-492/SG	Transmitter-Teletypewriter Control	AN/SGA	1107
C-682/SR	Radio Set Control	AN/SRA	1167
C-806/GR	Control Indicator	AN/GRA	775
C-1624/FRC-36	Remote Control Console	AN/FRW	711
C-1670/U	Antenna Control	AN/SRA	1169
C-1846/FRC-42	Radio Set Control	AN/FRW	713
C-1947/U	Control-Monitor	AN/URW	1965
CF-1( )	Telephone Terminal	AN/TCC	1369
CF-2-( )	Telegraph Terminal	AN/TCC	1371
CF-3	Repeater	AN/TCC	1373
CF-4	Converter	AN/TCC	1375
CF-5	Repeater	AN/TCC	1377
CF-6	Telegraph Terminal	AN/TCC	1379
CF-7	Carrier Hybrid	AN/TCC	1381
CLR-6, Philco	Microwave Radio Relay Set	AN/FRC	419
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CNP	Transceiver	AN/TXC	1609
CRV-50194	Modulator Assembly	AN/URA	1709
CU-168/FRR	Antenna Coupler	AN/FRA	353
CU-284/UR	Antenna Coupler	AN/SRA	1171
CU-377/UR	Antenna Coupler	AN/SRA	1173
CV-2/TX, -2A/TX, -2B/TX	Converter	AN/TXC	1611
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CV-115( )/URR	Frequency Shift Converter	AN/URA	1713
CV-116/URR	Frequency Shift Converter	AN/URA	1715
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CXDB	Dual Recording Equipment	AN/USP	1977
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EE-97-( )	Telegraph Printer Set.....	AN/TGC	1407
EE-98-( )	Teletypewriter Set.....	AN/TGC	1409
EE-102	Teletypewriter Set.....	AN/TGC	1411
F			
FMTR-30D	Transmitter-Receiver.....	AN/VRC	2051
FOA	Facsimile Transmitter-Receiver Equipment.....	AN/TXC	1615
FOC	Facsimile Transmitter-Receiver Equipment.....	AN/TXC	1617
FRB	Frequency Shift Receiver Equipment.....	AN/UXA	1985
FRC	Frequency Shift Receiver Converter.....	AN/FRA	355
FSB	Frequency Shift Keyer Equipment.....	AN/FGA	213
FSD	Frequency Shift Keyer Equipment.....	AN/FRA	357
FSH	Frequency Shift Keyer Equipment.....	AN/FRA	359
FSJ	Audio FM Keyer Equipment.....	AN/UXA	1987
FX-1, -1A, -1B	Facsimile Transceiver.....	AN/TXC	1619
G			
G-1T	Telegraph Terminal.....	AN/FGA	215
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KWS-1, KWS-1-(MOD)	Transmitter.....	AN/FRT	575
KY-7/FRT	Tone Keying Unit.....	AN/FRA	361
KY-32/GRT	Keyer.....	AN/URA	1723
KY-43/URT	Keyer.....	AN/URA	1725
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KY-44FX, -44A/FX, -44B/FX, -44C/FX.	Adapter Keyer.....	AN/TXA	1603
KY-58/GRT	Keyer.....	AN/FRA	363
KY-75/SRT	Keyer.....	AN/SGA	1109
KY-83( )/S	Keyer.....	AN/SRA	1175
KY-122/URN	Keyer.....	AN/URN	1773
KY-123/URN	Keyer.....	AN/URN	1775
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LS-129/FI	Intercommunicating Station.....	AN/FIC	323
LS-130( )/FI	Intercommunicating Station.....	AN/FIC	325
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MAC	Radio Transmitting and Receiving Equipment	AN/SRC	1201
MAM	Emergency Mobile Communication Equipment	AN/ARC	83
MAR	Vhf Radio Transmitting and Receiving Equipment	AN/URC	1769
MAW, MAW-1	Portable Vhf Transmitting and Receiving Equipment	AN/PRC	1023
MAY, MAY-1	Portable Radio Transmitting and Receiving Equipment	AN/PRC	1025
MB	Aircraft Radio Transmitter-Receiver	AN/ARC	85
MD-83A/ARN	Modulator	AN/USM	1975
MD-168/UX	Radio Modulator	AN/TXA	1605
MD-209/UC	Radio Modulator	AN/URA	1729
MD-280/TRC	Radio Transmitter Modulator	AN/TRA	1463
ME	Aircraft Radio Transmitter-Receiver	AN/ARC	87
MO-1	Radio Telephone Transmitting and Receiving Equipment	AN/URC	1771
MQ-1	Radiotelephone Equipment	AN/VRC	2053
MQ-2	Radiotelephone Equipment	AN/VRC	2055
MW	Radio Transmitter	AN/FRT	577
MW-3	Radio Transmitter	AN/FRT	579
MX-439( )/U	Keying Head Drive	AN/URA	1731

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O-5/FR	Exciter Unit	AN/FRA	365
O-39( )/TRA-7	Frequency Shift Exciter	AN/TRA	1465
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OA-6/FC	Telegraph Repeater	AN/FCC	187
OA-7/FC	Telephone Repeater	AN/FCC	189
OA-8/FC	Telephone Repeater	AA/FCC	191
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OA-11/FC	Carrier Terminal	AN/FCC	197
OA-12/FC	Carrier Terminal	AN/FCC	199
OA- 3/FC	Carrier Terminal	AN/FCC	201
OA-58/FC	Radio Receiver Assembly	AN/FRR	475
OA-58A/FRC	Radio Receiver Assembly	AN/FRR	477
OA-59/FRC	Radio Receiver Assembly	AN/FRR	479
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OAH, OAH-1, OAH-2	Code Practice Equipment	AN/URA	1735
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PD, PD-1	Voice Recording Equipment	AN/UNH	1677
PE, PE-1	Voice Recording Equipment	AN/UNH	1679
PF	Audio Signal Scrambling Equipment	AN/USA	1971
PG	Sound Recording Equipment	AN/PNH	981
PH	Sound Reproducing Equipment	AN/UNH	1681
PJ	Sound Recording Equipment	AN/UNH	1683
PM	Teletypewriter Repeater	AN/FGC	255
PP-1098/GRC-9	Power Supply	AN/GRA	781
PR	Portable Sound Reproducing Equipment	AN/TNP	1449

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R			
R-62/PR	Radio Receiver	AN/PRR	1077
R-80( )/PR	Radio Receiver	AN/PRR	1079
R-96( )/SR	Radio Receiver	AN/SRR	1223
R-108/GRC, R-109/GRC, R-110/GRC.	Radio Receiver	AN/VRR	2091
R-129( )/U	Radio Receiver	AN/URR	1825
R-137/GR	Radio Receiver	AN/GRR	863
R-230( )/SR	Radio Receiver	AN/SRR	1225
R-206( )/PR	Radio Receiver	AN/PRR	1081
R-208/FR	Radio Receiver	AN/FRR	481
R-209( )/FR	Radio Receiver	AN/FRR	483
R-210/U	Radio Receiver	AN/FRR	485
R-211( )/U	Radio Receiver	AN/URR	1827
R-212/SR	Radio Receiver	AN/SRR	1227
R-213/SR	Radio Receiver	AN/SRR	1229
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R-247/URR	Radio Receiver	AN/GRR	865
R-274/FRR	Radio Receiver	AN/FRR	487
R-274A/FRR, R-274C/FRR	Radio Receiver	AN/FRR	489
R-278/GR	Radio Receiver	AN/URR	1829
R-320/FRC	Radio Receiver	AN/FRR	491
R-320A/FRC	Radio Receiver	AN/FRR	493
R-361C/GR	Radio Receiver	AN/GRR	867
R-388( )/URR	Radio Receiver	AN/URR	1831
R-389( )/URR	Radio Receiver	AN/URR	1833
R-390/URR	Radio Receiver	AN/URR	1835
R-390A/URR	Radio Receiver	AN/URR	1837
R-391/URR	Radio Receiver	AN/URR	1839
R-392/URR	Radio Receiver	AN/URR	1841
R-405/MC through R-412/MC	Carrier Telegraph Receiver	AN/FGR	295
R-466/UC	Carrier Telegraph Receiver	AN/UGA	1633
R-520( )/URR	Radio Receiver	AN/URR	1843
R-551/ C	Telegraph Carrier Receiver	AN/UGA	1635
R-4200	VHF Receiver	AN/URR	1845
RAK, RAK-1 through -8.	Radio Receiving Equipment	AN/URR	1847
RAL, RAL-1 through -8.	Radio Receiving Equipment	AN/URR	1851
RAO-2 through -7, -9	Radio Receiving Equipment	AN/URR	1855
RAS, RAS-1 through -15.	Radio Receiving Equipment	AN/URR	1859
RAX-1	Aircraft Radio Receiving Equipment	AN/ARR	113
RAY	Super Frequency Aircraft Radio Receiving Equipment	AN/URR	1861
RAZ	Radio Receiver	AN/SRR	1233
RBA, RBA-1, -2, -3, -5, -5A.	Radio Receiving Equipment	AN/URR	1863
RBA-6	Radio Receiving Equipment	AN/URR	1865
RBA-7	Radio Receiving Equipment	AN/URR	1867
RBB- RBB-1, -2, -2A, -3 through -6.	Radio Receiving Equipment	AN/URR	1869
RBC, RBC-1, -2, -3, -3A, -4, -5, -6.	Radio Receiving Equipment	AN/URR	1871
RBE	Diversity Receiving Equipment	AN/FRR	495
RBF-3	Radio Receiving Equipment	AN/FRR	497

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RBK-1	Radio Receiving Equipment	AN/URR	1877
RBK-2	Radio Receiving Equipment	AN/URR	1881
RBK-5	Radio Receiving Equipment	AN/URR	1877
RBK-7	Radio Receiving Equipment	AN/URR	1877
RBK-9	Radio Receiving Equipment	AN/URR	1877
RBK-11	Radio Receiving Equipment	AN/URR	1881
RBK-12	Radio Receiving Equipment	AN/URR	1877
RBK-13	Radio Receiving Equipment	AN/URR	1877
RBK-14	Radio Receiving Equipment	AN/URR	1877
RBK-15	Radio Receiving Equipment	AN/URR	1883
RBK-16	Radio Receiving Equipment	AN/URR	1885
RBL, RBL-1, -2, -3, -4, -5, -6.	Radio Receiving Equipment	AN/URR	1887
RBM, RBM-1, -2, -3, -4, -5.	Portable Radio Receiving Equipment	AN/TRR	1547
RBO, RBO-1, -2, -2A, -3, -4.	Radio Receiving Equipment	AN/URR	1891
RBQ	High Frequency Radio Receiving Equipment	AN/URR	1895
RBQ-1	High Frequency Radio Receiving Equipment	AN/FRR	499
RBS, RBS-1, -2, -2a	Radio Receiving Equipment	AN/URR	1897
RBS-3	Radio Receiving Equipment	AN/URR	1901
RBV, RBV-1, -2	Panoramic Radio Adaptor	AN/URA	1739
RBZ	Panoramic Radio Adaptor	AN/URA	1741
RC-52-( )	Radio Receiving Equipment	AN/PRR	1083
RC-53	Radio Transmitting Equipment	AN/FRT	583
RC-99	Interphone Equipment	AN/VIC	1995
RC-120-( )	Interphone Equipment	AN/VIC	1997
RC-256	Facsimile Equipment	AN/TXC	1621
RC-261	Radio Receiving Equipment	AN/FRR	501
RC-289	Remote Control Equipment	AN/PRW	1089
RC-290	Remote Control Equipment	AN/PRW	1091
RC-298	Remote Control Equipment	AN/TTA	1577
RCC	Interphone Extension Kit	AN/VIC	1999
RCE-2	Portable Radio Receiving Equipment	AN/PRR	1085
RCO	Panoramic Radio Adaptor	AN/URA	1743
RCP	Radio Receiving Equipment	AN/URR	1903
RCT	Radio Receiving Equipment	AN/FRR	503
RCU, RCU-1	Diversity Radio Receiving Equipment	AN/FRR	505
RD-2/GXR	Combination Radio Receiver and Record Player	AN/USP	1979
RD-31A/U	Combination Radio Receiver and Record Player	AN/USP	1979
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RT-67/GRC	Receiver-Transmitter (See: AN/GRC-5, AN/GRC-6, AN/VRC-9, AN/VRC-14, AN/VRC-17, AN/VRC-21, AN/VRQ-2.)	AN/GRA	
RT-68/GRC	Receiver-Transmitter (See: AN/GRC-7, AN/GRC-8, AN/VRC-10, AN/VRC-15, AN/VRC-18, AN/VRC-22, AN/VRQ-3.)	AN/GRA	
RT-70/GRC	Receiver-Transmitter (See: AN/GRC-3, AN/GRC-4, AN/GRC-5, AN/GRC-6, AN/GRC-7, AN/VRC-8, AN/VRC-7, AN/PRC-16).	AN/GRA	
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