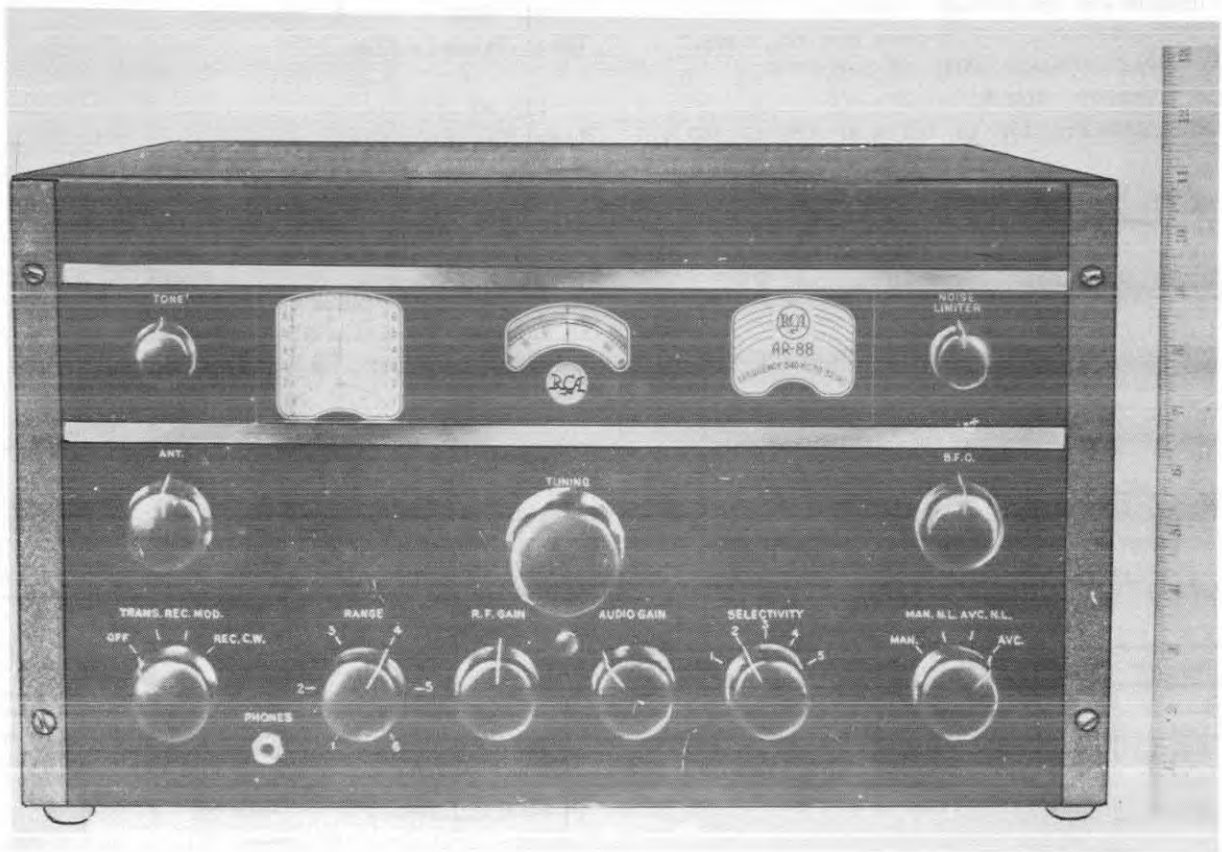


RADIO RECEIVER

AR-88D



Radio Receiver AR-88D

FUNCTIONAL DESCRIPTION

The AR-88D is a 14 tube, general purpose communications, superheterodyne receiver used principally for high frequency communication in the 540 to 32,000 kilocycle range. It is designed for the reception of CW, MCW or AM signals. It is used for rebroadcast pickup, airbase to airbase service, ship to shore service and island to island service. The equipment is contained in a metal cabinet for table mounting.

No field changes in effect at time of preparation (19 September 1956).

RELATION TO OTHER EQUIPMENT

Similar to Model AR-88F except for en-

closing cabinet.

Equipment Required but not Supplied:
Antenna, Headset or loudspeaker.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 540 to 32,000 kc in 6 bands.

BAND DATA

BAND 1: 540 to 1600 kc.

BAND 2: 1570 to 4550 kc.

BAND 3: 4450 to 12,150 kc.

BAND 4: 11900 to 16600 kc.

BAND 5: 16100 to 22700 kc.

BAND 6: 22000 to 32000 kc.

RECEPTION: CW, MCW or AM VOICE.

ANTENNA: Various types.

RECEIVER TYPE: Superheterodyne.

June 1957

Radio-Receivers

AR-88D**RADIO RECEIVER**

INTERMEDIATE FREQUENCY: 455 kc.
 OUTPUT IMPEDANCE: 2.5 ohms and 600 ohms.
 MAX UNDISTORTED OUTPUT: 2.5 W.
 POWER INPUT: 100 W.
 POWER SOURCE: 100 to 165 v or 190 to 260 v,
 50 to 60 cps or 6 v and 250 to 300 v DC
 from battery or vibrator.

(1) 6SJ7 (1) VR-150-30
 Total Tubes: (14).

(1) A1
 Total Crystals (1).

REFERENCE DATA AND LITERATURE

IB-25927-3: Technical Manual for General
 Purpose Communications Receiver.
 Model AR-88D.

MANUFACTURER'S OR CONTRACTOR'S DATA

RCA Victor Division of Radio Corp, of
 America, Camden, N.J.

TUBE AND/OR CRYSTAL COMPLEMENT

(1) 5Y3GT (2) 6H6 (2) 6J5
 (1) 6K6GT (1) 6SA7 (5) 6SG7

TYPE CLASSIFICATION
DESIGN COGNIZANCE
PROCUREMENT COGNIZANCE
STOCK NO.
R.D.B. IDENT. NO.

SHIPPING DATA

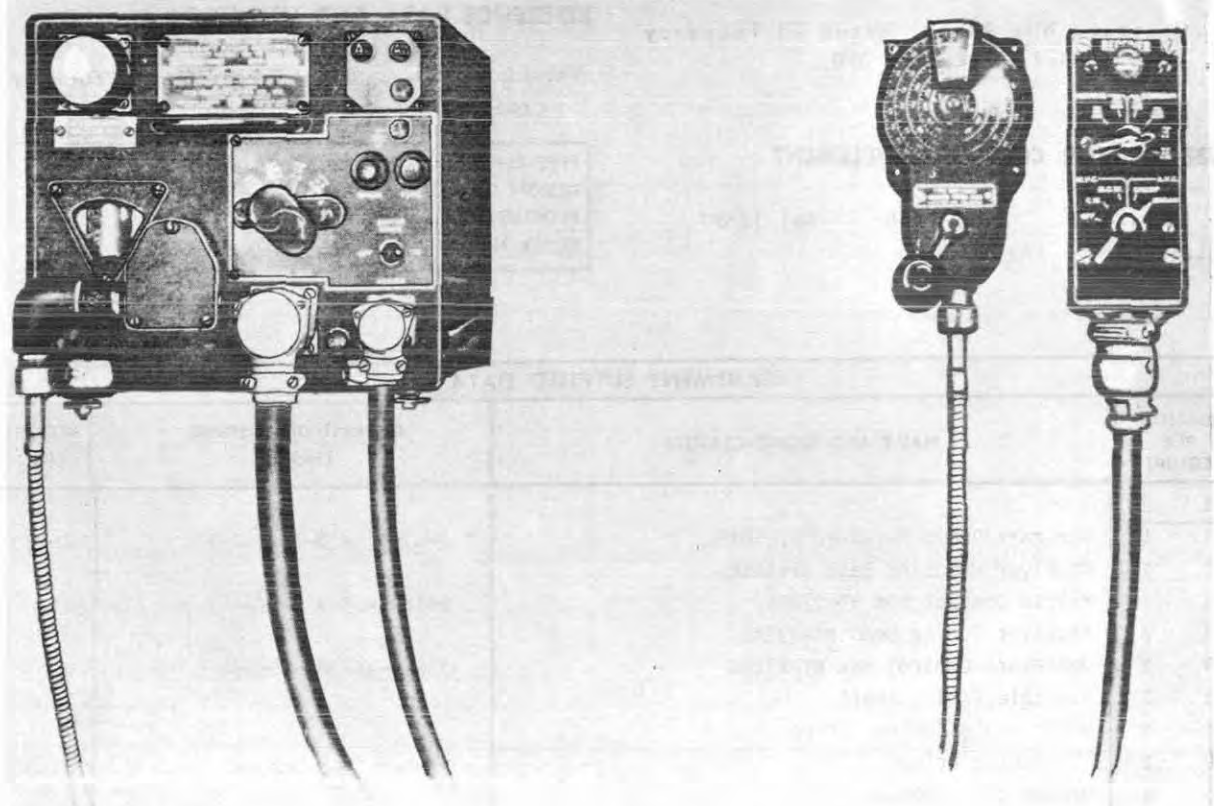
NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
1	Radio Receiver - AR-88D	8.15	18-1/4 X 26-1/2 X 29	110

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radio Receiver AR-88D	11 X 19-1/4 X 19-1/4	98
1	Coil-Adjustment Tool		
1	Plunger-Trimmed Tool		
1	Setscrew Wrench		
2	Technical Manuals TM-11-880	1/4 X 8 X 10-1/2	0.4

AIRCRAFT RADIO RECEIVER

ARB



Aircraft Radio Receiver ARB

FUNCTIONAL DESCRIPTION

The Model ARB consists of a superheterodyne receiver designed for the reception of voice, now or continuous wave signals within the frequency range between 195 and 9050 kilocycles and a group of controls and accessories which permit control of the receiver from either one or two remote locations. The frequency range is divided into four bands. On the two lower bands (195 to 1600 kc,) either a loop or an extended antenna may be used; on the upper frequency bands, only an extended antenna may be used. The receiver selectivity may be broadened on the two high frequency bands to facilitate the locating of signals.

An Accessories Plug is provided on the receiver unit to power auxiliary equipment through the receiver.

No field changes in effect at time of preparation (19 October 1956).

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 195 to 9050 kc.

BAND DATA

BAND A: 195 to 560 kc.

BAND B: 560 to 1600 kc.

BAND C: 1.6 to 4.5 mc.

BAND D: 4.5 to 9.05 mc.

ANTENNA: Loop or extended type on Bands A and B, extended type only on bands C and D.

RECEPTION: Voice, MCW or CW.

INTERMEDIATE FREQUENCY: 135 k on bands A and B, 915 kc on bands C and D.

FREQUENCY CONTROL: Manual at either local or remote positions.

OUTPUT IMPEDANCE: 300 and 4000 ohms.

POWER SOURCE: 28 v DC.

MANUFACTURER'S OR CONTRACTOR'S DATA

Radio Corp of America.

June 1957

ARB

AIRCRAFT RADIO RECEIVER

Contract NOs 98559, dated 23 February
craft Radio Receiver ARB.

REFERENCE DATA AND LITERATURE

NAVAER 08-5Q-3: Technical Manual for Air-
craft Radio Receiver ARB.

TUBE AND/OR CRYSTAL COMPLEMENT

(1) 12AS7 (1) 12A6 (4) 12SF7
Total Tubes: (6)

TYPE CLASSIFICATION DESIGN COGNIZANCE BUAER PROCUREMENT COGNIZANCE STOCK NO.

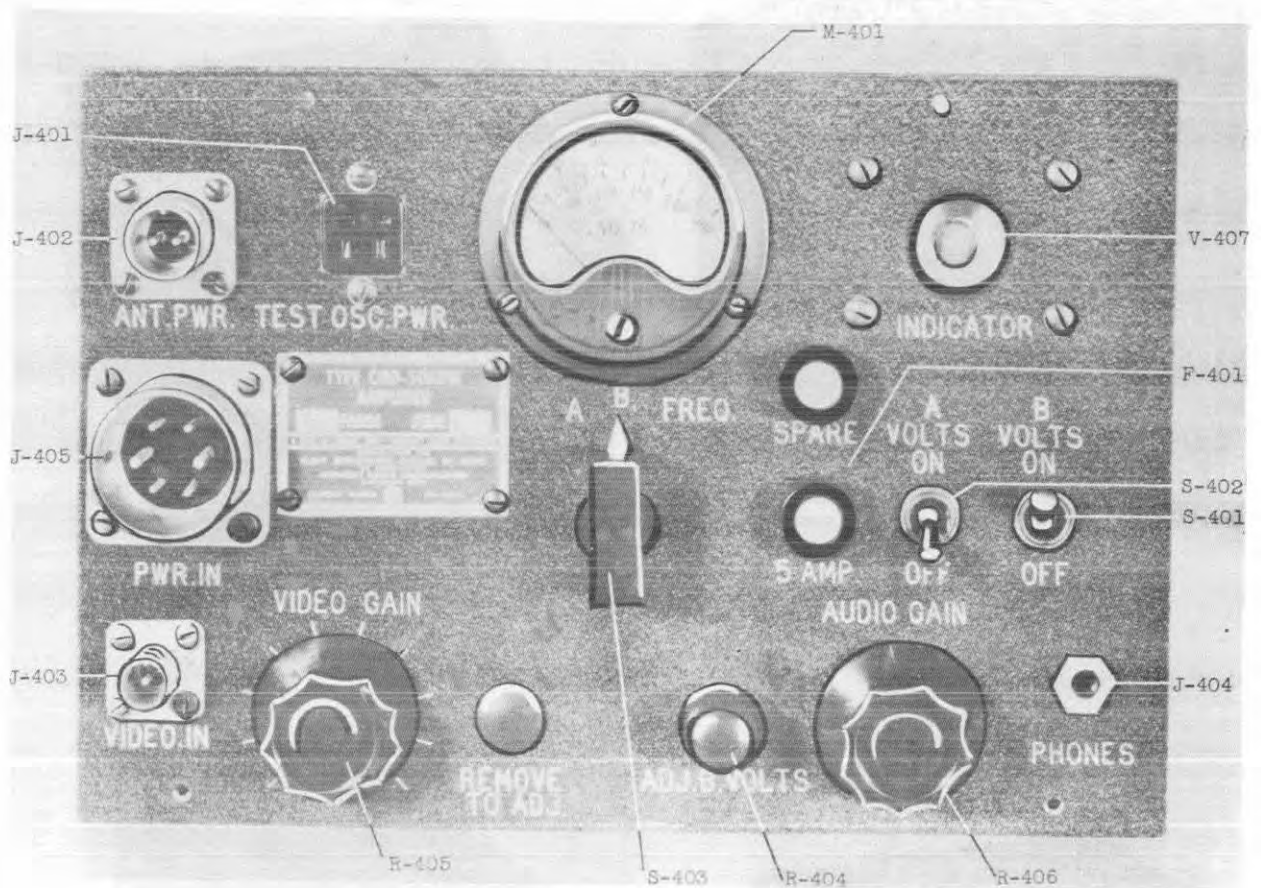
EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1 2			
1 1	Aircraft Radio Receiver NT-56151	* 7-11/16 x 8-5/16 x 17	26.8
1 1	Receiver Mounting Base NT-10081		
1 1	Pilots Control Box NT-23254	2-1/4 x 3 x 5-3/4	1.2
1 2	Receiver Tuning Head NT-23253		
0 1	Operators Control Box NT-23256	3 x 4-15/16 x 5-3/4	2
1 2	Flexible Tuning Shaft		
1 1	Right Angle Tuning Drive		
0 1	"T" Tuning Drive		
0 1	Mechanical linkage		
1 1	Local Tuning Unit		
1 set 0	Bulk Cable and Fittings (P/O RCA MI-8689)		
0 1 set	Bulk Cable and Fittings (P/O RCA MI-8689-A)		
1 1	Receiver Slip Cover		
1 set	Combined Operating Spare Parts (and box) for ARB Receiver and ATB Transmitter (RCA MI-8695)		
1 set	Combined Operating Spare Parts (and box) for ARB Receiver and ATB Transmitter (RCA MI-8695-A)		

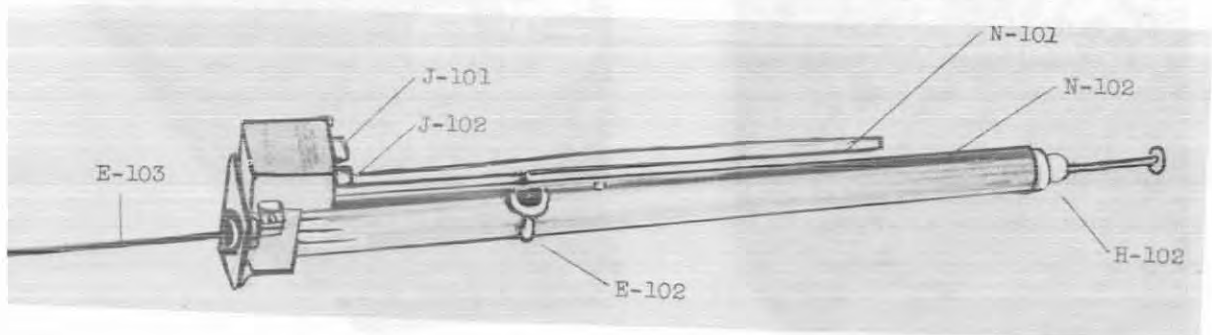
*dim incl mounting base

AIRCRAFT RADIO RECEIVING EQUIPMENT

ARD-1



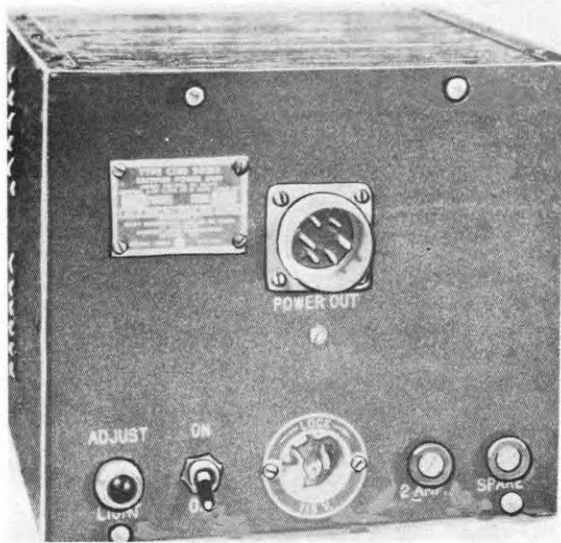
Amplifier 50ABW



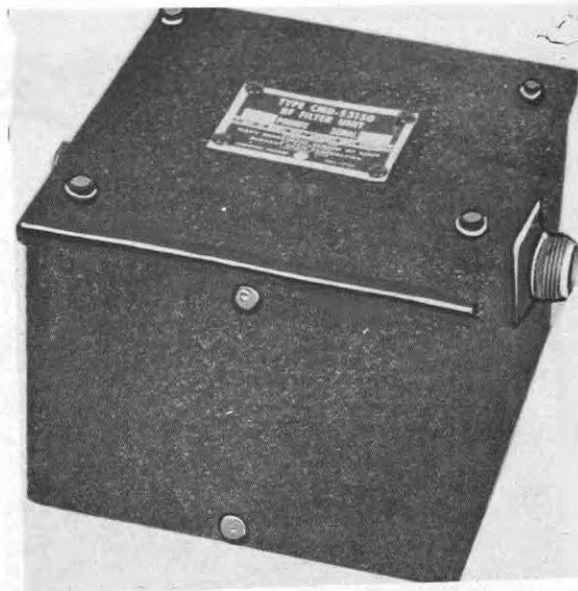
Antenna Detector 66ADQ

ARD-1

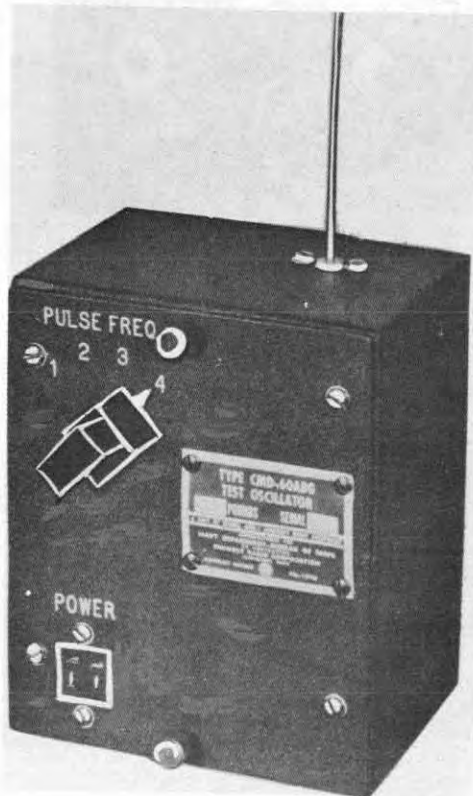
AIRCRAFT RADIO RECEIVING EQUIPMENT



Rectifier Power Unit 20185



RF Filter Unit 53130



Test Oscillator 60AB6



Battery Power Unit 19A40

Aircraft Radio Receiving Equipment 150-1

June 1957

Radio-Receivers

AIRCRAFT RADIO RECEIVING EQUIPMENT

ARD-1

FUNCTIONAL DESCRIPTION

The Model ARD-1 is a non-radiating early warning receiver designed to detect radar signals beyond the effective range of the radar, to measure carrier frequencies and pulse repetition rates, and to locate radar transmitters by means of directive bearings. It is intended primarily for use on submarines and planes.

Radar signals can be heard on the ARD-1 at two or three times the effective range of a radar system. The receiver consists of an antenna-detector unit, an amplifier, and an AC or DC power supply.

No field changes in effect at time of preparation (18 October 1956).

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 0 to 3000 mc max.

PRR MEASURED: 50 to 8000 cps.

SIGNAL STRENGTH: 1 mx per meter from 85 to 1000 mc min.

SENSITIVITY: Diminishes above 700 mc.

ANTENNA-DETECTOR: Consists of a slotted line, antenna rod and a diode detector.

ANTENNA LENGTHS: 53, 31 and 16 centimeters.

POWER REQUIREMENTS

BATTERY POWER SUPPLY NT-19AAC: 72 or 24 v DC and (5) 45 v batteries.

RECTIFIER POWER UNIT

INPUT: 110 v, 60 cps, single phase.

OUTPUT: 215 v at 34 ma and 6.3 v at 3.75 amp.

MANUFACTURER'S OR CONTRACTOR'S DATA

Midwest Radio Corporation, Cincinnati, Ohio.

Contract NXs 12756, dated 12 September 1942.

TUBE AND/OR CRYSTAL COMPLEMENT

(1) 446	(1) 5W4
(1) 6SG7	(3) 6AC7
(3) 6SL7GT	(1) 6U5/6G5
(1) 995	

Total Tubes: (11).

REFERENCE DATA AND LITERATURE

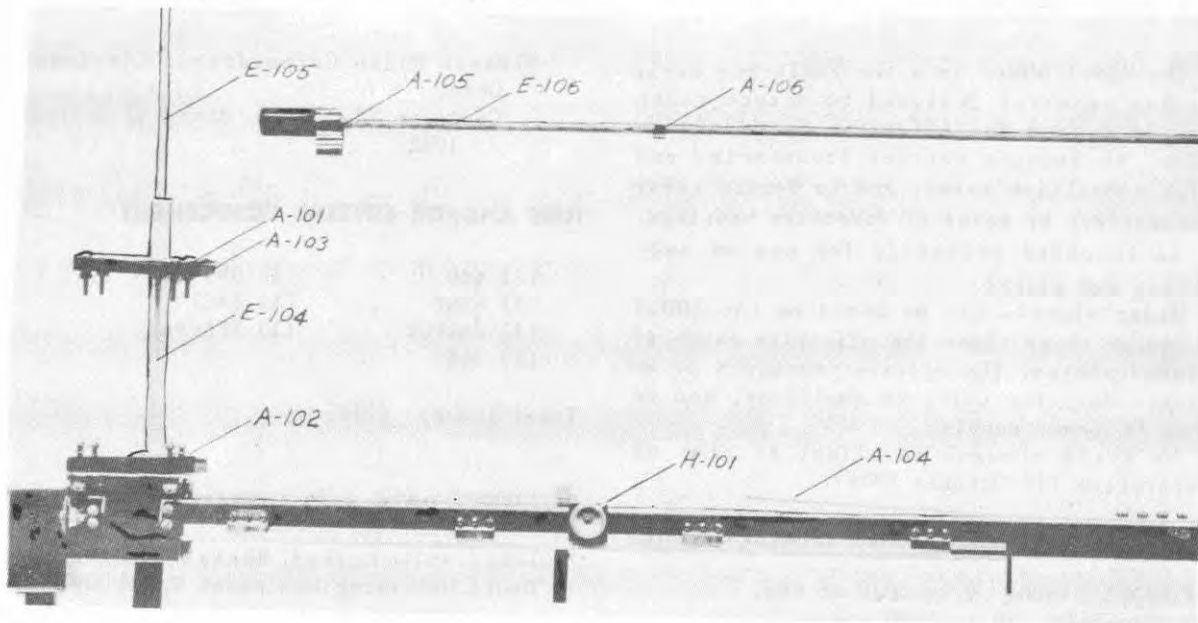
ENG-215: Technical Manual for Aircraft Radio Receiving Equipment Model ARD-1.

TYPE CLASSIFICATION	
DESIGN COGNIZANCE	BUAER
PROCUREMENT COGNIZANCE	
STOCK NO.	

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Aircraft Radio Receiving Equipment Model ARD-1 consisting of:		
1	Antenna and Detector 66ADQ	3-1/4 X 4-1/2 X 73-1/4 ext.	4.4
1	Amplifier 50ABW	7-25/32 X 9-27/32 X 12-7/16	14.7
1	R.F. Filter Unit 53130	4-1/8 X 5-9/32 X 8-3/4	5.2
1	Test Oscillator 60ABG	4-1/4 X 4-5/8 X 5-5/8	3.3
1	Battery Power Unit 19AAC or	6-1/32 X 6-3/4 X 22-5/16	27.0
1	Rectifier Power Unit 20185	7-5/32 X 8-3/16 X 8-21/32	18.8
1	Set of Equipment Spares		20.0

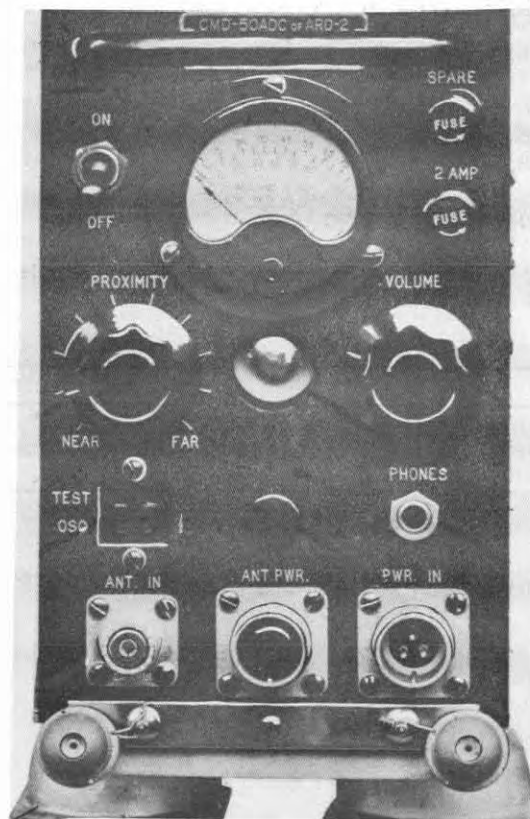
AIRCRAFT RADIO RECEIVING EQUIPMENT



66APH-



60 ABG-1



50 ADC

June 1957

Radio-Receivers

ARD-2**AIRCRAFT RADIO RECEIVING EQUIPMENT****FUNCTIONAL DESCRIPTION**

The Model ARD-2 is a non-radiating intercept receiver primarily intended for airborne use. It is designed to detect radar signals beyond the effective range of the radar, to measure carrier frequencies from 80 to 3000 mc and pulse repetition rates from 50 to 8000 cps. Approximate location of radar transmitters may also be determined when the directive bearings are known.

Radar signals can be heard on the ARD-2 at two or three times the effective range of a radar system. The receiver consists of a tunable antenna-detector unit, an amplifier and power supply on one chassis, and a test oscillator.

No field changes in effect at time of preparation (19 October 1956).

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 0 to 3000 mc.

PRR MEASURED: 50 to 8000 cps.

SIGNAL STRENGTH: 5 to 10 mv min.

ANTENNA DETECTOR: Consists of antenna rods, a diode detector and a tuning stub.

ANTENNA LENGTHS: 55, 30 and 16 centimeters.

POWER REQUIREMENTS: 115 v, 60 to 2400 cps, single phase.

MANUFACTURER'S OR CONTRACTOR'S DATA

Midwest Radio Corporation, Cincinnati, Ohio.

Contract NXss 12756, Dated 12 June 1943.

TUBE AND/OR CRYSTAL COMPLEMENT

(1) 446A	(3) 6AC7
(2) 6SN7GT	(1) 6E5
(2) 6SL7GT	(1) 5Y3GT
(1) VR-150-30	(1) 955

Total Tubes: (12).

REFERENCE DATA AND LITERATURE

Preliminary Technical Manual for Aircraft Radio Receiving Equipment Model ARD-2.

TYPE CLASSIFICATION	
DESIGN COGNIZANCE	BUAER
PROCUREMENT COGNIZANCE	
STOCK NO.	

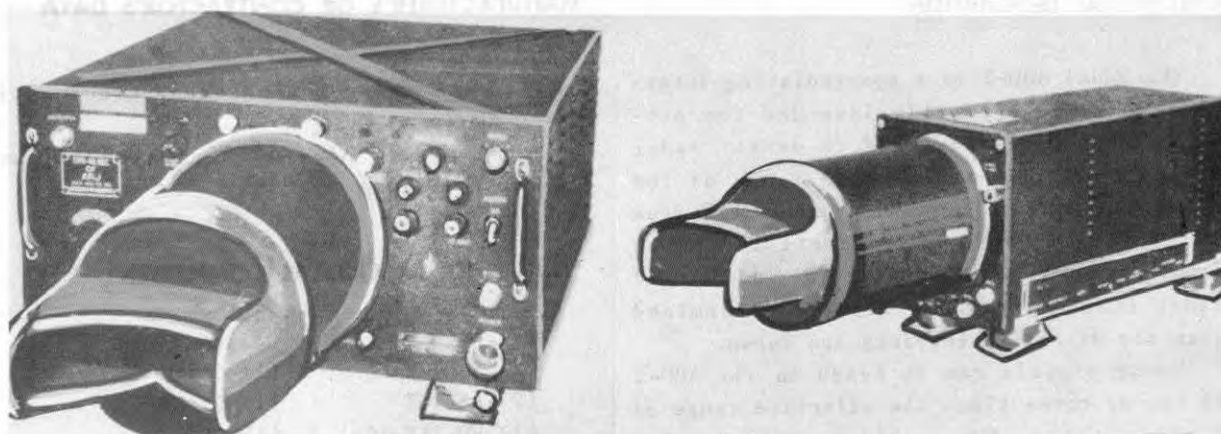
EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Aircraft Radio Receiving Equipment Model ARD-2 consist of:		
1*	Antenna and Detector NT-66AFH	3-7/8 X 5-1/4 X 32	4.8
1	Amplifier NT-50 ADC including Shock Mount NT-10229	5-5/8 X 9-1/4 X 22-5/8	27.68
1	Test Oscillator NT-60 ABG-1	4-1/4 X 4-5/8 X 5-5/8	3.3
1	Set of Accessories		5.53
1	Set of Equipment Spares		

*Excluding dim. of Antenn. Rods.

AIRCRAFT RADIO RECEIVING EQUIPMENT

ARJ



Aircraft Radio Receiving Equipment ARJ

FUNCTIONAL DESCRIPTION

The ARJ is an aircraft radio television receiver designed for use with the ATJ radio television transmitter. It may be adjusted to operate on any one of five different frequency channels, permitting simultaneous operation of up to five separate sets of equipments within the same general area. Under favorable operating conditions, scenes clearly visible at the transmitting aircraft may be reproduced in the receiving aircraft at a distance of at least ten miles.

No field changes in effect at time of preparation (24 October 1956).

RELATION TO OTHER EQUIPMENT

Equipment Required but not Supplied:
Test Equipment is required.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

PRESENTATION: 7 in. CR tube in receiver and monitor units.

RESOLUTION: 230 scanning lines vertical and horizontal.

TYPE RECEIVER: Superheterodyne.

INTERMEDIATE FREQUENCY: 23.5 mc.

IF BANDWIDTH: 8 mc.

INPUT IMPEDANCE: 50 ohms.

POWER REQUIREMENTS

RECEIVER: 27 to 31 v DC, 10 amps at 28.6 v DC.

MONITOR: 27 to 31 v DC, 4 amps at 28.6 v DC.

TUBE AND/OR CRYSTAL COMPLEMENT

(8) 6AC7	(1) 6SN7GT
(1) 6AG7	(2) 8016
(10) 12SN7GT	(1) 6J6
(1) 955	(1) 6H6
(2) 807	(1) 12SL7GT
(2) 1811P1/7CP1	(2) VR105-30

Total Tubes: (32)

REFERENCE DATA AND LITERATURE

NAVAER 08-5S-45: Technical Manual for Navy Models ATJ and ARJ Aircraft Radio Equipments.

NAVAER 08-5S-79: Technical Manual for Navy Models ATJ-ATK Aircraft Radio Transmitter Equipments and ARJ-ARK Aircraft Radio Receiver Equipment

TYPE CLASSIFICATION
DESIGN COGNIZANCE BUAER
PROCUREMENT COGNIZANCE
STOCK NO.

ARJ

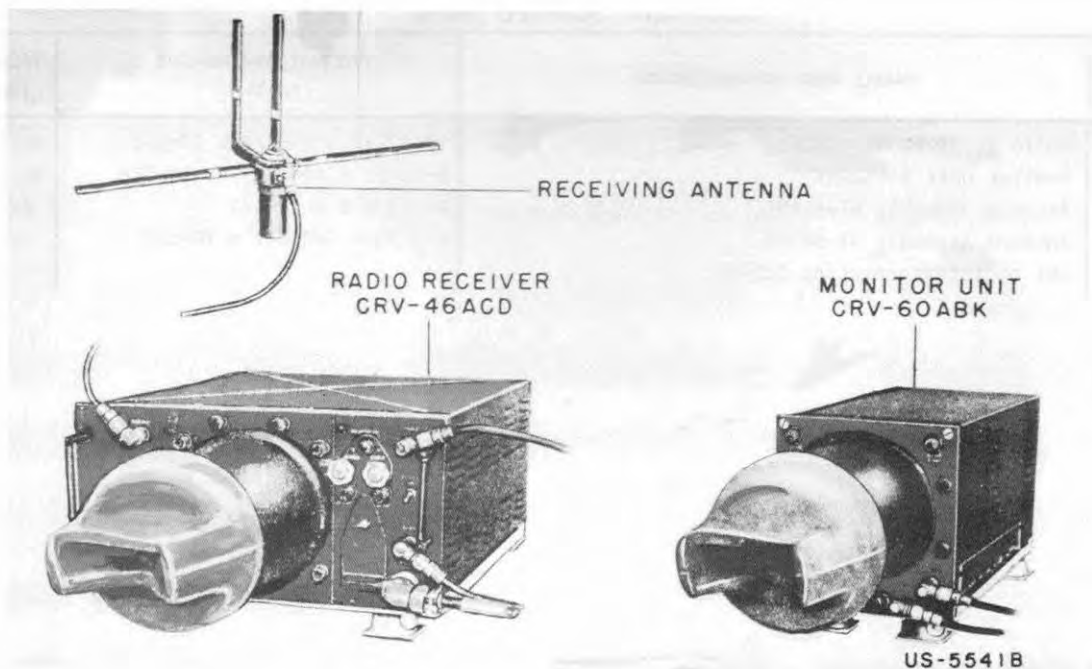
AIRCRAFT RADIO RECEIVING EQUIPMENT

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radio Receiver NT-46ACC	10-13/32 x 17-7/8 x 22-3/8	53.75
1	Monitor Unit NT-60ABK	8-21/32 x 10-17/32 x 19-5/8	30
1	Antenna Assembly NT-66ADT	4-1/4 x 8 x 20-1/2	2.5
1	Antenna Assembly NT-66AFW	4-5/32 x 7-29/32 x 20-1/2	1.8
1	Set of Interconnecting Cables		

AIRCRAFT RADIO RECEIVER

ARK



Aircraft Radio Receiver ARK

FUNCTIONAL DESCRIPTION

The ARK and ATK Aircraft Transmitting Equipment comprise a complete radio television system for use in aircraft. Scenes visible from an aircraft making use of the ATK may be reproduced at a distance in another aircraft utilizing the ARK receiving equipment. Up to ten separate sets of equipment may be operated simultaneously within the same general area.

The ARK is the receiver for the complete ARK and ATK system.

No field changes in effect at time of preparation (7 May 1958).

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 264 to 372 mc in 10 channels (preset).

PRESENTATION: Television scan on 7 in. CR tubes in receiver and monitor units.

VERTICAL RESOLUTION: 330 scanning lines.

HORIZONTAL RESOLUTION: Equipment to vertical resolution.

TYPE OF RECEIVER: Superheterodyne.

INTERMEDIATE FREQUENCY: 50 mc.

IF BANDWIDTH: 8 mc.

INPUT IMPEDANCE: 50 ohms.

RANGE: 10 miles or more under favorable conditions.

POWER SOURCE REQUIRED

RADIO RECEIVER: Dynamotor requires 286

W at 27 to 31 v DC from a regulated power source.

MONITOR UNIT: Dynamotor requires 115 W at 27 to 31 v DC.

MANUFACTURER'S OR CONTRACTOR'S DATA

RCA Victor Div of RCA, Camden, N. J.
Contract NXs 6722.

Approximate Cost: \$500.00 with equipment spares.

TUBE AND/OR CRYSTAL COMPLEMENT

(2) 0C3	(9) 12SN7GT	(2) 6AC7	(6) 6AG5
(1) 6AG7	(1) 6H6	(2) 6J6	(2) 7CP1
(2) 8016	(1) 6SL7GT	(3) 6SN7GT	(2) 807

Total Tubes: (33)

No Crystals Used.

REFERENCE DATA AND LITERATURE

AN 16-45-69: Technical Manual for Navy Models ATK and ARK Aircraft Radio Equipments.

TYPE CLASSIFICATION
DESIGN COGNIZANCE BUAER
PROCUREMENT COGNIZANCE
STOCK NO.

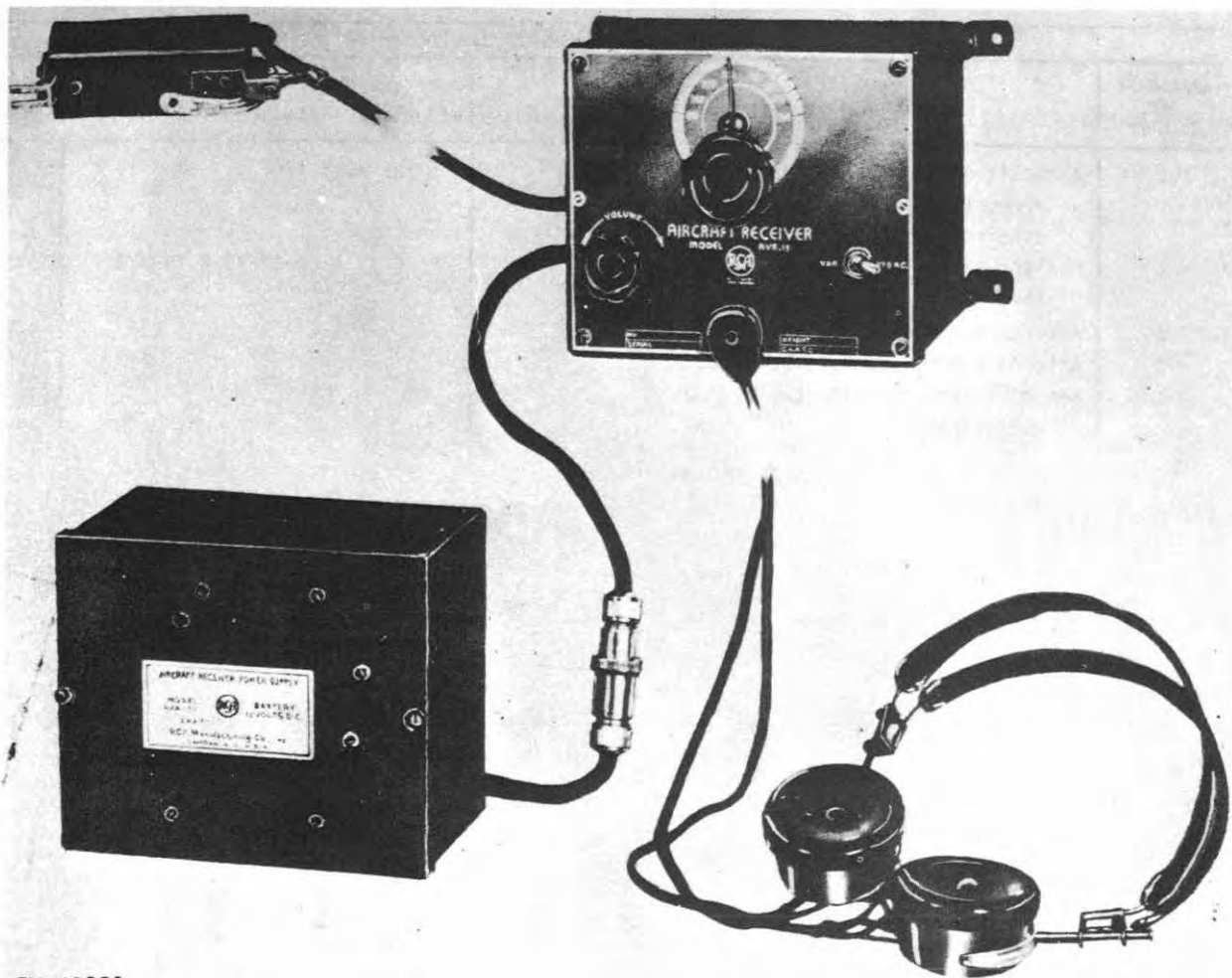
ARK

AIRCRAFT RADIO RECEIVER

EQUIPMENT SUPPLIED DATA			
QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Aircraft Radio Receiver Navy Type 46ACD w/Mounting base Navy Type 10164 for Aircraft Radio Receiver	10-13/32 X 17-7/8 X 22-3/8	55.0
1	Monitor Navy Type 60ABK w/Mounting Base Navy Type 10169 for Monitor	8-21/32 X 10-17/32 X 18-5/8	31.25
1	Antenna Assembly Navy Type 66AFW		1.8
1	Antenna Assembly Navy Type 66ADU		1.6
1	Set of Interconnecting cables and Accessories		

RECEIVER UNIT

AVR-15



PH-48325

Receiver Unit AVR-15

FUNCTIONAL DESCRIPTION

The model AVR-15 (RCA) in conjunction with the AVA-51 power supply unit is designed to be operated from a 12-volt storage battery system. The receiver is designed for the reception of radio beacon, weather and traffic control transmissions. The receiver has a tuning range of 200 to 400 kc. By use of a toggle selector switch the receiver may be quickly changed from continuously variable operation to reception at a fixed frequency of 278 kc which is used for airport traffic control.

No field changes in effect at time of preparation (22 April 1957).

RELATION TO OTHER EQUIPMENT

Similar to Model AVR-15A (RCA) except for operating voltage of associated power supply.

Equipment Required but not Supplied: Aircraft storage battery, Antenna system, Ignition shield harness (if not previously installed by motor manufacturer), Miscellaneous hardware and battery fuse: Power Supply Unit).

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 200 to 400 kc.

TYPE: Superheterodyne.

Radio-Receivers

AVR-15

RECEIVER UNIT

PRETUNED FREQUENCY: (by selector switch):
278 kc.
INTERMEDIATE FREQUENCY: 95 kc.
AVERAGE SELECTIVITY 2.8 kc OFF RESONANCE:
25 db.
POWER OUTPUT: 300 milliwatts.

REFERENCE DATA AND LITERATURE

Technical Manual for Aircraft Radio Beacon
Receivers Models AVR-15 and AVR-15A.

MANUFACTURER'S OR CONTRACTOR'S DATA

HCA Manufacturing Co., Inc., Camden, N.J.

TUBE AND/OR CRYSTAL COMPLEMENT

(2) 6F7 (1) 6K8

Total Tubes: (3)

TYPE CLASSIFICATION
DESIGN COGNIZANCE Commercial
PROCUREMENT COGNIZANCE
STOCK NO.

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Receiver Unit	4-7/8 X 5-3/8 X 6-1/4	

April 1958

RADIO RECEIVERS

Radio-Receivers
BC-1004-B,C,D

Radio Receivers BC-1004-B,C,D

FUNCTIONAL DESCRIPTION

The BC-1004-B, C, and D are radio receivers operating in the medium and high frequency bands, and intended for use at fixed stations, although mountings for vehicular use may be provided. They are designed for reception of A1, A2, or A3 signals. Storage batteries may be used as a power source in an emergency. Communications may be established with Radio Sets SCR-177, AN/MRC-2A, SCR-188, SCR-193, SCR-399, SCR-499, AN/VRC-1, SCR-543, AN/GRC-9, SCR-536, and SCR-694. The receiver is a component of Radio Sets SCR-244-A, SCR-244-B, and AN/FRP-4. When table installation is required, Cabinet CH-104-A may be used.

No field changes in effect at time of preparation (8 May 1958).

RELATION TO OTHER EQUIPMENT

The BC-1004-B, C, and D are functionally identical to Radio Receivers BC-779-A, BC-799-B, BC-794-A, BC-794-B, and R-129/U, the only difference is in the frequency range covered.

Equipment Required but not Supplied:
Power Supply Unit RA-74, RA-84, or RA-94-A.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 0.54 to 20.0 mc in five bands.

FREQUENCY CONTROL: Crystal.

RECEPTION: A1, A2, A3.

TYPE: Superheterodyne.

IF: 465 kc.

POWER SOURCE REQUIRED: 95 to 260 v, 25/60 cps, 180 W (when used with one of the recommended power supply units).

EMERGENCY POWER SOURCE: 6 v storage battery, (1) 45 v C battery, and (5) 45 v B batteries.

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

MANUFACTURER'S OR CONTRACTOR'S DATA

Hammarlund Mfg Co; New York, N. Y.

Approximate Cost: \$368.00 with equipment spares.

TUBE AND/OR CRYSTAL COMPLEMENT

(1) 6C5	(3) 6F6
(2) 6H6	(1) 6J7
(3) 6K7	(1) 6L7
(1) 6N7	(1) 6SJ7
(3) 6SK7WA	

Total Tubes: (16)

(1) M1-19453

Total Crystals: (1)

REFERENCE DATA AND LITERATURE

TM11-866: Radio Receivers BC-779-A, BC-779-B, BC-794A, BC-794-B, BC-1004-B, BC-1004-C, BC-1004-D, and R-129/U.

TYPE CLASSIFICATION	
DESIGN COGNIZANCE	TASSA
PROCUREMENT COGNIZANCE	
STOCK NO.	

BC-1004-B,C,D

RADIO RECEIVERS

SHIPPING DATA

NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
1	Radio Receiver BC-1004-B, BC-1004-C, or BC-1004-D	4.3	15-1/8 X 20-1/2 X 24-1/8	90

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radio Receiver BC-1004-B, BC-1004-C, or BC-1004-D	10-1/2 X 15-3/8 X 19	55

FUNCTIONAL DESCRIPTION

The BC-1206-C is a small lightweight air-borne radio receiver covering the beacon and weather band, frequency range from 195 to 405 kc. It operates directly from the 24 to 28 volt DC aircraft battery and the use of a superneterodyne circuit provides good sensitivity and ample selectivity. Tubes operate on 28 volts DC for both plate and screen supply eliminating the need for a high voltage power supply. It is designed so that the capacity of the antenna employed is not critical within wide frequency limits.

No field changes in effect at time of preparation (25 May 1956).

MANUFACTURER'S OR CONTRACTOR'S DATA

Setchell Carlson Corp., New Brighton, Minn.
Model 524 Beacon Receiver.

TUBE COMPLEMENT

(2) 14A7 (1) 14J7 (1) 14R7 (1) 28D7

Total Tubes: (65).

REFERENCE DATA AND LITERATURE

T.O. 16-40BC1206-2: Technical Manual for Radio Receiver BC-1206-().

RELATION TO OTHER EQUIPMENT

Mechanically and electrically interchangeable as a unit with BC-1206-A, BC-1206-B and BC-1206-D.

Equipment Required but not Supplied: (1) Battery, Aircraft, 24 to 28 volt; (1) Headset, HS-23 or HS-33; (1) Signal Generator E-72-() or TS-413/U.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

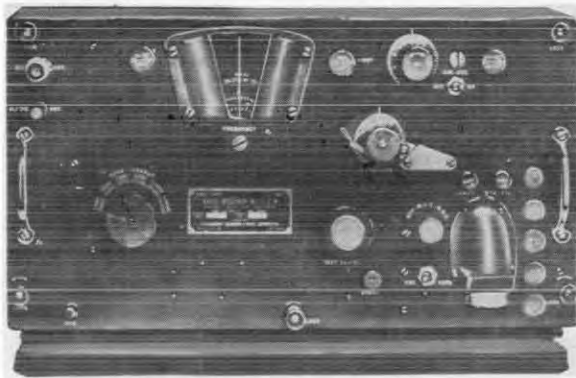
FREQUENCY RANGE: 195 to 405 kc.
POWER OUTPUT: Approx 200 mw.
ALIGNMENT FREQUENCY (IF): 135 kc.
SENSITIVITY: Approx 5 uv for 10 mw output.
CURRENT DRAIN: 0.9 to 1.0 amp.
OUTPUT IMPEDANCE: 300 or 4000 ohm.

TYPE CLASSIFICATION
DESIGN COGNIZANCE TASSA
PROCUREMENT COGNIZANCE
STOCK NO.

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Receiver, Radio BC-1206-C	4 X 4 X 6-5/8	3-7/8
1	Cable, Antenna	120 lg	
1	Transformer, Antenna Matching		13/16
1	Cable, Battery		

RADIO RECEIVER



Radio Receiver BC-312, F, HX

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 1500 to 18000 kc.
RECEPTION: A1, A2, A3.
TYPE RECEIVER: Superheterodyne.
POWER INPUT
BC-312: 90 to 100 W.
BC-312-F, BC-312-HX: 50 to 60 W.
INTERMEDIATE FREQUENCY: 470 kc.
POWER REQUIREMENTS:
BC-312, BC-312-F: 12 to 14 v DC.
BC-312-HX: 24 to 28 v DC.
ANTENNA: Whip or straight wire type.

MANUFACTURER'S OR CONTRACTOR'S DATA

Farnsworth Television and Radio Corp, Fort
Wayne, Ind.

FUNCTIONAL DESCRIPTION

The BC-312, BC-312-F and BC-312-HX are superheterodyne receivers intended for general field usage and are suitable for vehicular, portable, or fixed operation. They are highly sensitive and selective and are designed for the reception of either continuous-wave or amplitude-modulated voice or tone signals in the frequency range of 1500 to 18,000 kilocycles. They are designed for operation from storage batteries power source and are identical in size, in general external and internal construction and appearance, and in the fundamental arrangement of their electrical circuits.

No field changes in effect at time of preparation (18 December 1956).

RELATION TO OTHER EQUIPMENT

Similar to BC-312 balance of series, and to BC-342 series which operate from AC power source

Equipment Required but not Supplied: (1) Power Cord, (1) Headset HS-30 with Cords, (1) Antenna, Whip or Long-Wire, (1) Storage Battery, (1) Set of Tubes.

TUBE AND/OR CRYSTAL COMPLEMENT

BC-312, F	BC-312-HX
(2) 6C5	(2) 6C5
(4) 6K7	(4) 6K7
(1) 6L7	(1) 6L7
(1, 6F6	(1) 6R7
(1) 6R7	(1) 12A6
Total Tubes: (9) BC-312, BC-312-F	
Total Tubes: (9) BC-312-HX	
(1) DC-6-A	(1) DC-6-A
Total Crystals: (1) BC-312, BC-312-F	
Total Crystals: (1) BC-312-HX	

REFERENCE DATA AND LITERATURE

TM11-850: Technical Manual for Radio Receivers BC-312-(*), BC-342-(*), BC-314-(*), BC-344-(*).

TYPE CLASSIFICATION
DESIGN COGNIZANCE TASSA
PROCUREMENT COGNIZANCE
STOCK NO.

August 1957

BC-312,F,HX

RADIO RECEIVER

SHIPPING DATA

NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
1	Radio Receiver BC-312 or BC-312-F or BC-312-HX including: (2) Technical Manual TM11-850 (1) Mounting FT-162 (1) Set of Spare Parts	4.6	14-3/8 X 21-7/8 X 25-3/8	120

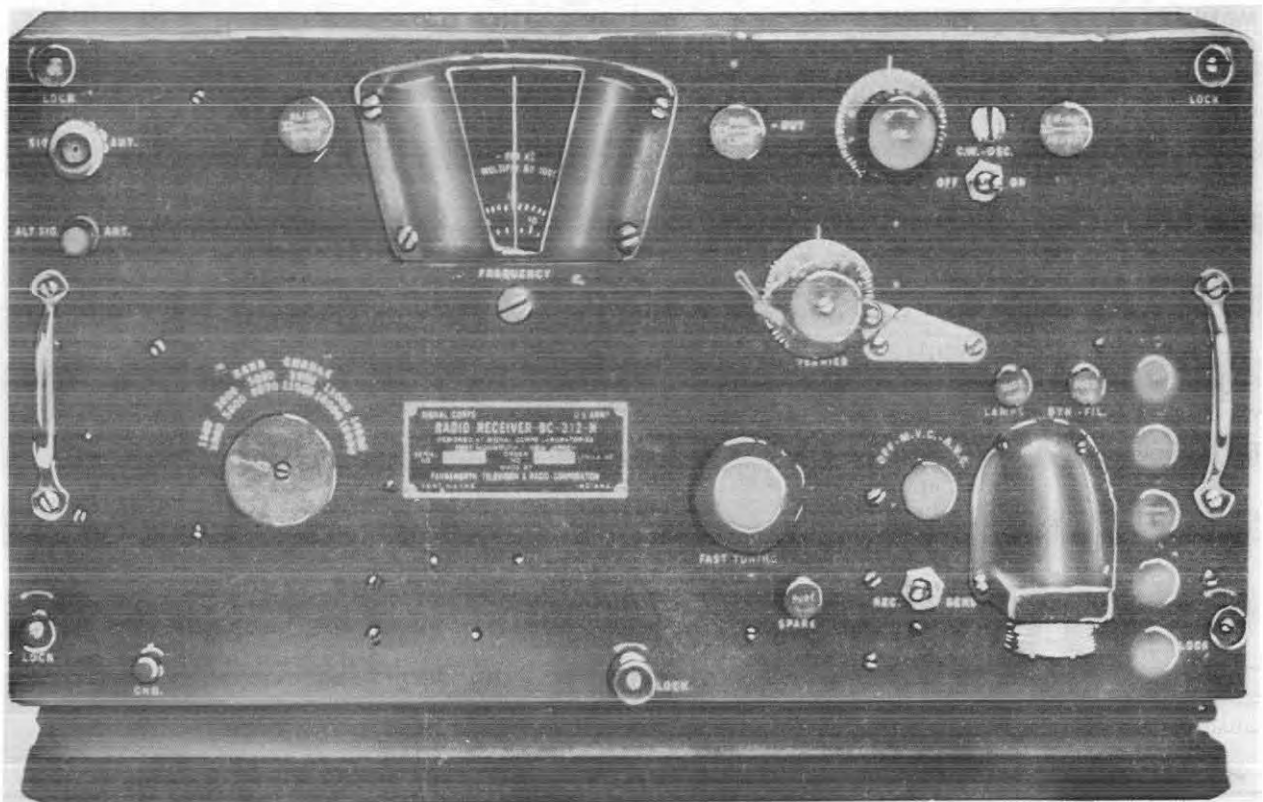
EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radio Receiver BC-312 or BC-312-F or BC-312-HX	9-1/16 X 10 X 18-1/16	58
1	Dynamotor DM-21-() DM-21-CX	3-1/4 X 5-1/2 X 6	7
1	Mounting FT-162	1-1/4 X 6-7/8 X 18	3.75
1	Set of Spare Parts		

April 1958

RADIO RECEIVER

BC-312-M,N,BC-342,-N



Radio Receiver BC-312-N

FUNCTIONAL DESCRIPTION

The BC-312-M, N, and BC-342 and BC-342-N are multi-band, integral-coil superheterodyne receivers suitable for vehicular, portable, or fixed operation. They are highly sensitive and selective and receive A1, A2 or A3 transmissions. They operate in the same frequency range and are identical in size, construction and arrangement of electrical circuits.

No field changes in effect at time of preparation (30 April 1958).

RELATION TO OTHER EQUIPMENT

The BC-312 Series, BC-342 Series, Radio Receiver BC-314 Series, and Radio Receiver BC-344 Series are identical in size, construction, and arrangement of electrical circuits. The BC-312 Series and the BC-342 Series equipments operate in the 1.5 to 18.0 mc frequency range while the BC-314 and BC-344 receivers tune over the 150 to 1500 kc

range. The BC-342 Series and BC-344 Series use an AC power source, while the BC-312 Series and BC-314 Series use storage batteries. The receivers vary slightly in weight depending upon the type power source used.

Equipment Required but not Supplied: Antenna, battery or alternator, headset, power cord, tubes.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

RECEPTION: A1, A2, A3.

RECEIVER TYPE: Superheterodyne.

FREQUENCY RANGE: 1500 to 18,000 kc; in 6 bands.

IF: 470 kc.

POWER INPUT

BC-312-M, N: 50 to 60 W.

BC-342, N: 100 and 75, respectively.

POWER REQUIREMENTS

BC-312-M, N: 12 to 14 v dc.

BC-342, N: 110 to 120 v, 50 to 60 cps, single ph.

ANTENNA TYPE: Whip or straight wire.

BC-312-M,N,BC-342,-N

RADIO RECEIVER

MANUFACTURER'S OR CONTRACTOR'S DATA

Farnsworth Television and Radio Corp.,
Fort Wayne, Ind.

REFERENCE DATA AND LITERATURE

TM-11-850: Radio Receivers BC-312, -A, -C, -D, -E, -F, -G, -J, -L, -M, -N, -HX, and -NX; BC-342, -A, -C, -D, -F, -J, -L, -M, and -N; BC-314, -C, -D, -E, -F, and -G; BC-344, and -D; and Radio Receiver Assemblies OA-65/MRC-2 and OA-65A/MRC-2.

TUBE AND/OR CRYSTAL COMPLEMENT

(2) 6C5 (1) 6R7
 (4) 6K7 (1) 5W4(RA-20 only)
 (1) 6F6 (1) 5Y3GT(RA-20-A, B only)
 (1) 6L7 (1) OA2(RA-20-A, B only)
 Total Tubes: (9) (BC-312-M, N)
 Total Tubes: (10) (BC-342, N w/Rectifier)
 (1) DC-6-A
 Total Crystals: (1)

TYPE CLASSIFICATION
 DESIGN COGNIZANCE TASSA
 PROCUREMENT COGNIZANCE
 STOCK NO.

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	BC-312-M or -N Radio Receiver	9-1/16 X 10 X 18-1/16	58
1	Dynamotor DM-21 or equivalent	3-1/4 X 5-1/2 X 6	7
3	Fuse FU-21-A		
2	Lamp LM-27		
1	Mounting FT-162	1-1/4 X 6-7/8 X 18	3.75
1	BC-342, -N Radio Receiver	9-1/16 X 10 X 18-1/16	61.5
1	Rectifier RA-20 or RA-20-A or RA-20-B	3-1/4 X 6-1/8 X 6-1/2	10.5
1	Fuse FU-27		
3	Fuse FU-21-A		
2	Lamp LM-27		
1	Mounting FT-162	1-1/4 X 6-7/8 X 18	3.75

April 1958

RADIO RECEIVER

BC-348-E,-H,-J,-K,-L,-M,-N,
-O,-P,-Q,-R,-S

Radio Receiver BC-348-0

FUNCTIONAL DESCRIPTION

The BC-348-() series are locally controlled, six-band superheterodyne receivers intended for use in aircraft. All controls are located on the front panel where they may be easily operated by aircraft personnel, and no provisions have been made for remote control of these receivers. They are capable of voice, tone, or continuous-wave reception in the 200 to 500 kilocycle and 1.5 to 18 megacycle frequency ranges. They provide either manual or automatic volume control as well as a choice of either normal or extreme selectivity.

They are designed to operate from a 28 volt power source, and have a dowel pin fastened to the chassis to prevent accidental installation of a 14 volt dynamotor.

No field changes in effect at time of preparation (15 November 1957).

RELATION TO OTHER EQUIPMENT

The BC-348-() series equipments are similar to the BC-224-() series equipments, differing only in that the BC-348-() series is

designed for a 28 volt power source, while the BC-224-() series equipments are designed for a 14 volt power source.

Equipment Required but not Supplied: (1) Headset HS-33 or equivalent.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 200 to 500 kc and 1.5 to 18 mc.

RECEPTION: A1, A2, A3.

TYPE RECEIVER: Superheterodyne.

IF: 915 kc.

SELECTIVITY

NORMAL: Varies with operating frequencies.

EXTREME: Adjustable from 800 to 3000 cps at 20 db down from resonance.

AUDIO OUTPUT: 10 mw.

POWER REQUIREMENTS: 28 v DC.

POWER CONSUMPTION: 56 to 60 W.

MANUFACTURER'S OR CONTRACTOR'S DATA

Radio Corporation of America, Camden, N.J.
(BC-348-E, -M, -O, -P, -S).

Radio-Receivers

**BC-348-E,-H,-J,-K,-L,-M,-N,
-O,-P,-Q,-R,-S** **RADIO RECEIVER**

April 1958

Wells Gardner and Company, Chicago, Ill.
(BC-348-J, -N, -Q).
Belmont Radio Corp, Chicago, Ill. (BC-348
-H, -K, -L, -R).

REFERENCE DATA AND LITERATURE

AN08-10-209: Technical Manual for Radio Re-
ceivers BC-348-E, BC-348-M, BC-348-O,
BC-348-P, BC-348-S, BC-224-E, BC-224-G,
BC-224-H, and BC-224-L.
AN16-40BC224-2: Technical Manual for Radio
Receivers BC-224-F, BC-224-K, BC-348-H,
BF-348-K, BC-348-L, and BC-348-R.
AN08-10-112: Technical Manual for Radio Re-
ceivers BC-348-J, BC-348-N, and BC-348-Q.

TUBE AND/OR CRYSTAL COMPLEMENT

BC-348-E, -M, -O, -P, -S
(1) 41 (1) 6B8 (1) 6C5
(1) 6F7 (3) 6K7
Total Tubes: (7)

BC-348-J, -N, -Q
(1) 6K6GT (1) 6SA7 (1) 6SJ7
(4) 6SK7WA (1) 6SR7
Total Tubes: (8)

BC-348-R
(1) 6B8G (1) 6C5 (1) 6F7
(1) 6J7 (1) 6K6GT (3) 6K7
Total Tubes: (8)

BC-348-() Series
(1) Crystal Filter
Total Crystals: (1)

TYPE CLASSIFICATION
DESIGN COGNIZANCE TASSA
PROCUREMENT COGNIZANCE
STOCK NO.

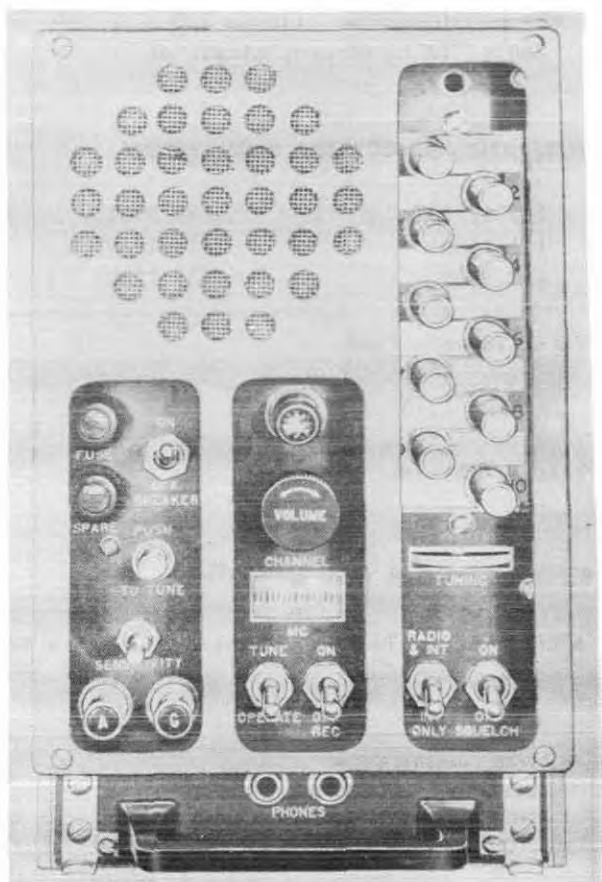
EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	BC-348-E, -M, -O, -P, -S Radio Receiver BC-348-() including: (1) Dynamotor DM-28-() (1) Mounting (1) Plug PL-P103 or PL-Q103	9-9/16 X 10-7/16 X 18	40.2
1	BC-348-J, -N, -Q Radio Receiver BC-348-() including: (1) Dynamotor DM-28-() (1) Mounting FT-154-()	9-1/2 X 10-1/2 X 18	38.0
1	Plug PL-P103 or Plug PL-Q103	1-5/8 X 2-1/8 X 2-7/8 2 X 2-1/8 X 3	0.312 0.38
1	BC-348-K, -L, -R Radio Receiver BC-348-() including: (1) Dynamotor DM-28-()	9-1/2 X 10-1/2 X 18	35.5
1	Mounting FT-154-()	1-3/8 X 8-1/2 X 18	3.8
1	Plug PL-P103 or Plug PL-Q103 or PL-Q103-A	2-5/32 X 2-5/16 X 2-9/16 2-1/16 X 2-5/32 X 3	0.34 0.41

June 1957

RADIO RECEIVERS

Radio-Receivers
**BC-603,-A,-AM,
 -C,-CM,-D,-DM**



Radio Receivers

BC-603,-A,-AM,-C,-CM,-D,-DM

FUNCTIONAL DESCRIPTION

The BC-603,-A,-AM,-C,-CM,-D,-DM provide frequency-modulated radiotelephone reception facilities for car, platoon, company battalion, and regimental commanders, and for staff officers and commanders in higher echelon. The receiver may be installed and operated in combat vehicles such as tanks, scout cars, half-tracks and command cars.

The BC-603 Series is a component of Radio Sets SCR-508 Series, SCR-528 Series, SCR-538 Series, AN/VRC-5 and AN/TRR-3.

RELATION TO OTHER EQUIPMENT

The BC-603,-A,-C,-D is the same as the BC-603-AM,-CM,-DM when a minor modification is made.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 20 to 27.9 mc.
 NUMBER OF PRESET CHANNELS: 10.
 CONTROL OF CHANNELS: Local only.
 SENSITIVITY: 1 uv.
 INTERMEDIATE FREQUENCY: 2.65 mc nominal.
 BAND WIDTH: 80 kc.
 POWER OUTPUT
 SPEAKER: 2 W.
 HEADSET: 0.2 W.
 NOISE SUPPRESSION: Squelch.
 POWER REQUIREMENTS: 12 or 24 v vehicular battery.

TUBE AND/OR CRYSTAL COMPLEMENT

(3) 6AC7Y	(2) 6SL7GT
(1) 6H6	(1) 6V6GT
(1) 6J5	(2) 12SG7Y
Total Tubes: (10)	

REFERENCE DATA AND LITERATURE

TM11-4033: Technical Manual for Radio Receivers BC-603,-A, C,-D,-AM,-CM,-DM-Repair Instructions.

TYPE CLASSIFICATION
 DESIGN COGNIZANCE TASSA
 PROCUREMENT COGNIZANCE
 STOCK NO.

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radio Receiver-BC-603 or BC-603,-A,-AM,-C,-CM,-D,-DM	6-3/4 x 11-1/2 x 12-5/8	

October 1957

Radio-Receivers

RADIO RECEIVER**BC-624-A****FUNCTIONAL DESCRIPTION**

POWER REQUIREMENTS: 110 to 130 v or 230 to 260 v, 40 to 60 cps, single ph.

The BC-624-A is a sensitive superheterodyne receiver employing a heterodyne oscillator whose frequency is controlled by any one of four crystals, allowing four crystal controlled channels in the 100 to 156 megacycle frequency range. It is controlled only by remote control selection of any one of the four channels, provided the channels have been pretuned and the tuning controls locked.

It is a part of the Transmitter-Receiver Assembly of Radio Set SCR-624-A.

No field changes in effect at time of preparation (22 April 1957).

TUBE AND/OR CRYSTAL COMPLEMENT

(1) 12J5GT	(3) 9003
(1) 12C8	(1) 12AH7GT
(1) 9002	(3) 12SG7

Total Tubes: (10)

(4) DC-11-A

Total Crystals: (4)

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 100 to 156 mc.

FREQUENCY CONTROL: Crystal controlled oscillator.

TYPE RECEIVER: Superheterodyne.

SENSITIVITY: 3 to 4 uv for 10 db signal-to-noise ratio.

INTERMEDIATE FREQUENCY: 12 mc.

OUTPUT IMPEDANCE: 50, 300, 4000 ohms.

REFERENCE DATA AND LITERATURE

AN08-10-185: Technical Manual for Radio Set SCR-624-A.

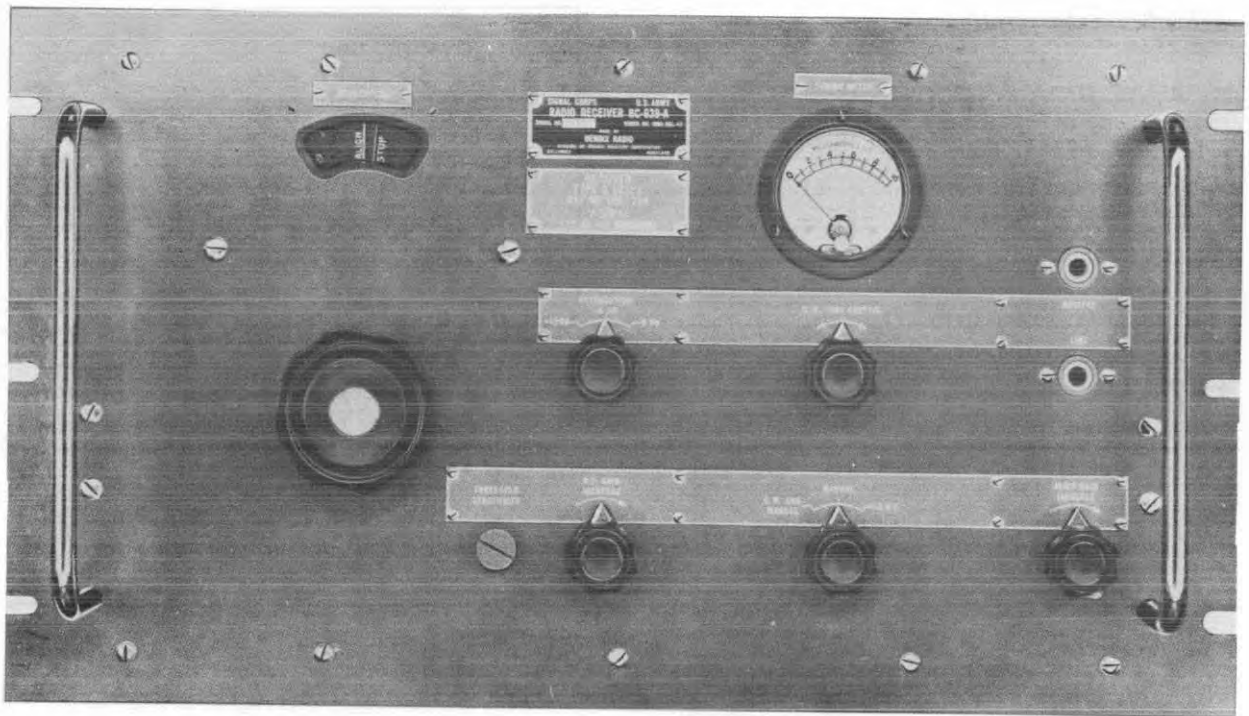
TYPE CLASSIFICATION
DESIGN COGNIZANCE TASSA
PROCUREMENT COGNIZANCE
STOCK NO.

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radio Receiver BC-624-A	5-7/8 x 8-3/4 x 15-3/8	

RADIO RECEIVER

BC-639-A



FUNCTIONAL DESCRIPTION

The BC-639-A is a superheterodyne receiver designed for reception of signals on the ultra-high frequency band from 100 to 156 megacycles. Complete coverage of the band is accomplished without switching, using a slow-motion drive dial. The receiver is used at ground stations for reception of both radio-telephone communication and direction finding signals from aircraft.

No field changes in effect at time of preparation (30 April 1958).

RELATION TO OTHER EQUIPMENT

The BC-639-A is electrically and mechanically interchangeable with Radio Receivers BC-639 and BC-639-B.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 100 to 156 mc.
 TYPE: Superheterodyne.
 IF: 12 mc.
 RESPONSE: Flat from 600 to 3000 cps.
 RECEPTION: A1, A2, A3.
 OUTPUT IMPEDANCE: 600 ohms.

POWER OUTPUT: 1 W, less than 15% distortion.
 POWER REQUIREMENTS: 180 to 240 v dc, 60 ma,
 and 6.3 v ac or dc, 3.5 amp.

ANTENNA REQUIREMENTS

TYPE: 1/2 wave dipole or special directional antenna.

OUTPUT IMPEDANCE: 70 ohms coaxial transmission line.

MANUFACTURER'S OR CONTRACTOR'S DATA

Bendix Radio, Division of Bendix Aviation Corp, Baltimore, Md.

Order No. 1082-SCL-42.

Order No. 2406-SCL-42.

Order No. 11960-SCL-42.

Order No. 3-SCGDL-42.

Order No. 1659-SCGDL-42.

Order No. 1660-SCGDL-42.

Order 626-ARL-43.

Approximate Cost: \$525.00 with equipment spares.

TUBE AND/OR CRYSTAL COMPLEMENT

(1) 6K6GT	(1) 6SQ7	(3) 9003
(4) 6SG7Y	(1) 9002	
Total Tubes: (10)		

April 1958

BC-639-A**RADIO RECEIVER**

No Crystals used.

REFERENCE DATA AND LITERATURE

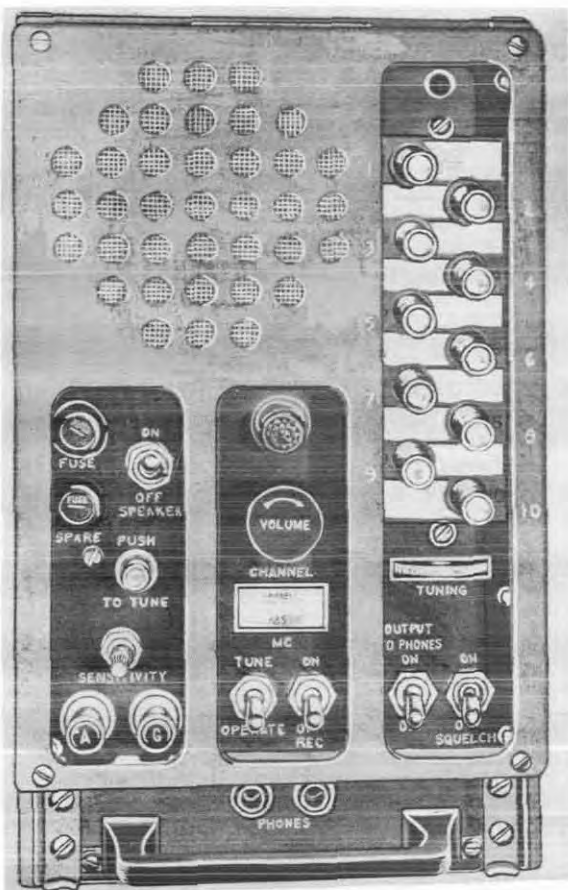
Temporary Instructions for Radio Receivers
BC-639-A.
Preliminary Maintenance Instructions for Ra-
dio Receiver BC-639-A.

TYPE CLASSIFICATION
DESIGN COGNIZANCE TASSA
PROCUREMENT COGNIZANCE
STOCK NO.
R.D.B. IDENT. NO.

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radio Receiver BC-639-A including:	10-15/32 x 13-9/16 x 19	38
1	Rectifier RA-42-A or RA-42-B or	6-31/32 x 8-23/32 x 19	26
1	Dynamotor Unit PE-100-A	8-11/16 x 10-15/32 x 19	24
1	Case CS-142 (for table mtg Rectifier)		

RADIO RECEIVER



Radio Receiver BC-683-A

FUNCTIONAL DESCRIPTION

The BC-683-A, B and BM are components of Radio Sets SCR-608 and SCR-628. These receivers provide F3 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 BC-683-A differs from the BC-683-B and BM in that the BC-683-B and BC-683-BM can be used with remote interphone control equipment and incorporate minor circuit

changes. The overall performance of the receivers is the same.

No field changes in effect at time of preparation (2 May 1958).

RELATION TO OTHER EQUIPMENT

Equipment Required but not Supplied: Whip antenna, dynamotor, and accessories.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

- FREQUENCY RANGE: 27.0 to 38.9 mc.
- NUMBER OF CHANNELS: 10 preset channels.
- BANDWIDTH: 80 kc.
- IF: 2.65 mc.
- RECEPTION: F3.
- SENSITIVITY: 1 uv.
- OUTPUT POWER
 - SPEAKER: 2 W.
 - HEADSET: 0.2 W.
- POWER REQUIREMENTS: 12 v DC vehicular batt through Dynamotor DM-34; or 24 v DC vehicular batt through Dynamotor DM-36.
- ANTENNA: 10 ft whip.

TUBE AND/OR CRYSTAL COMPLEMENT

- (3) 6AC7
 - (1) 6J5
 - (2) 12SG7
 - (1) 6H6
 - (1) 6V6GT
 - (2) 6SL7GT
- Total Tubes: (10)

No Crystals used.

REFERENCE DATA AND LITERATURE

TM-11-4036: Radio Receivers BC-683-A, -B, and -BM Repair Instructions.

TYPE CLASSIFICATION
 DESIGN COGNIZANCE TASSA
 PROCUREMENT COGNIZANCE
 STOCK NO.

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPY	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radio Receiver BC-683-A, -B, or -BM	6-3/4 X 11-1/2 X 12-1/2	35

RADIO RECEIVER

BC-779-A,-B



Radio Receiver BC-779-A,-B

FUNCTIONAL DESCRIPTION

The BC-779-A and BC-779-B are radio receivers operating in the medium and high frequency bands, and intended for use at fixed stations, although mountings for vehicular use may be provided. They provide for reception of either A1, A2, or A3 signals. In an emergency, storage batteries may be used as a power supply.

No field changes in effect at time of preparation (2 May 1958).

RELATION TO OTHER EQUIPMENT

The BC-779-A and BC-779-B are functionally identical to Radio Receivers BC-794-A, BC-794-B, BC-1004-B, BC-1004-C, BC-1004-D, and R-129/U, the only difference is in the frequency range covered.

Equipment Required but not Supplied: (1) Power Supply Unit RA-74-B,-C; RA-84-A,-B; or RA-94-A.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

TYPE: Superheterodyne.
 FREQUENCY RANGE: 100 to 400 kc, and 2.5 to 20 mc (in 5 bands).
 RECEPTION: A1, A2, A3.
 FREQUENCY CONTROL: Crystal.
 IF: 465 kc.
 POWER REQUIREMENTS: 95-260 v, 25/60 cps, 180 W.
 EMERGENCY POWER SOURCE: 6 v storage battery, 45 v C batt and (5) 45 v B Batt.
 ANTENNA: Doublet antenna with balanced transmission line, or single wire and ground.

MANUFACTURER'S OR CONTRACTOR'S DATA

Hammarlund Mfg Co, New York, N.Y.
 Approximate Cost: \$400.00 with equipment spares.

TUBE AND/OR CRYSTAL COMPLEMENT

(3) 6SK7	(1) 6N7	(1) 6SJ7
(3) 6K7	(1) 6L7	(3) 6F6
(2) 6H6	(1) 6J7	(1) 6C5

Total Tubes: (16)

(1) 465kc
 Total Crystals: (1)

REFERENCE DATA AND LITERATURE

TM-11-866: Technical Manual for Radio Receivers BC-779-A,-B; BC-794-A,-B; BC-1004-B,-C,-D; and R-129/U.

TYPE CLASSIFICATION
 DESIGN COGNIZANCE TASSA
 PROCUREMENT COGNIZANCE
 STOCK NO.

SHIPPING DATA

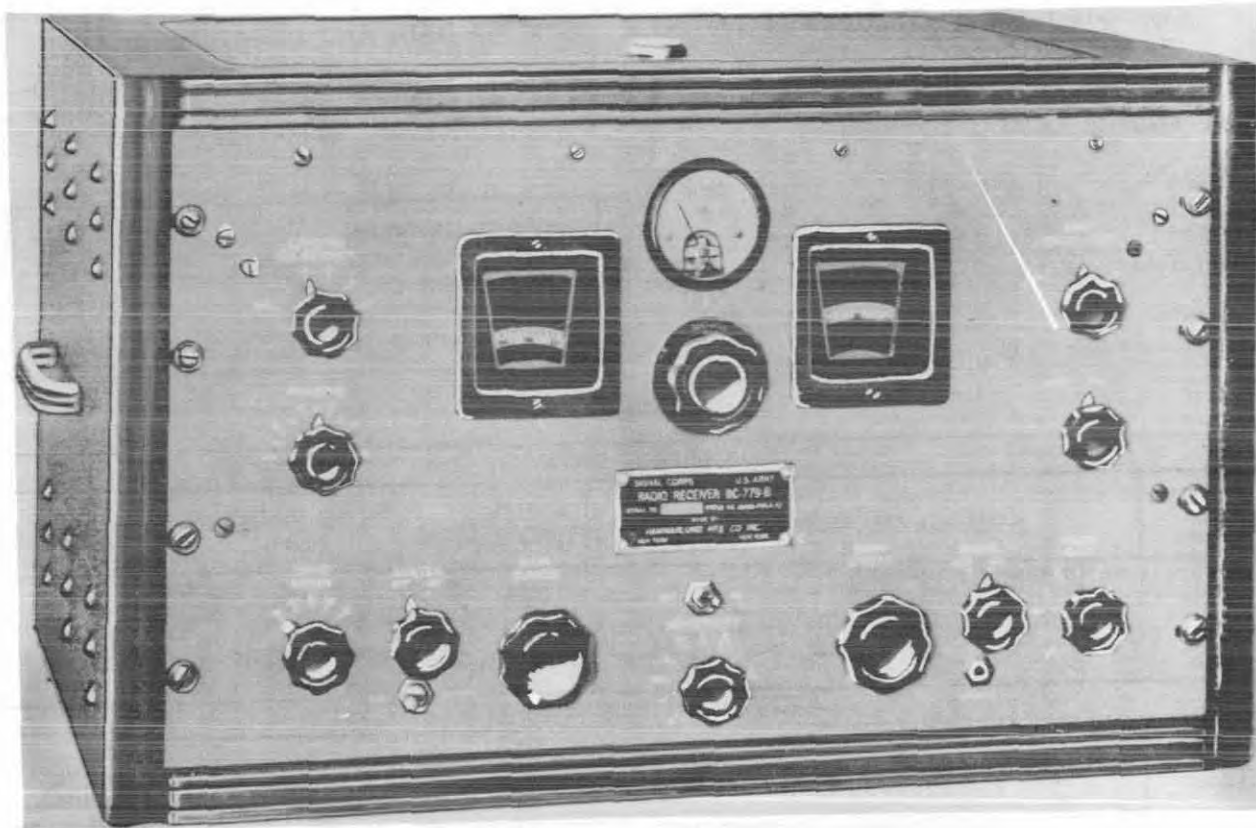
NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
1	Radio Receiver BC-779-A or -B	4.3	15-1/8 X 20-1/2 X 24-1/8	90

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radio Receiver BC-779-A, or -B with power and battery cables and dust cover or	10-1/2 X 15-3/8 X 19	55
	Radio Receiver BC-779-A, or -B with power and battery cables and Cabinet CH-104-A	12-1/4 X 16-1/2 X 23	73

RADIO RECEIVER

BC-794-B



Radio Receiver BC-794-B

FUNCTIONAL DESCRIPTION

The BC-794-B is intended for use at fixed stations although mountings for vehicular use may be supplied. It provides reception of either A1, A2, or A3 signals. In an emergency, storage batteries may be used as a power supply.

No field changes in effect at time of preparation (2 May 1958).

RELATION TO OTHER EQUIPMENT

The BC-794-B is functionally identical to Radio Receivers BC-779-A, BC-779-B, BC-1004-B, BC-1004-C, BC-1004-D, and R-129/U, the only difference being in the frequency range covered.

Equipment Required but not Supplied: (1) Power Supply Unit RA-74-B, -C; RA-84-A, -B; or RA-94-A.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

TYPE: Superheterodyne.

FREQUENCY RANGE: 1.25 to 40.0 mc in five bands.

RECEPTION: A1, A2, A3.

FREQUENCY CONTROL: Crystal.

IF: 465 kc.

POWER REQUIREMENTS: 95-260 v, 25/60 cps, 180 W.

EMERGENCY POWER SOURCE: 6 v storage batt, 45 v C batt, and (5) 45 v B batt.

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

MANUFACTURER'S OR CONTRACTOR'S DATA

Hammarlund Mfg Co, New York, N.Y.
Procurement Order No: 16863-Phila-43.
17141-Phila-43, 16206-Phila-43.

BC-794-B

RADIO RECEIVER

Approximate Cost: \$750.00 with equipment spares.

REFERENCE DATA AND LITERATURE

TM-11-866: Technical Manual for Radio Receivers BC-779-A, -B; BC-794-A, -B; BC-1004-B, -C, -D; and R-129/U.

TUBE AND/OR CRYSTAL COMPLEMENT

(3) 6SK7Y (1) 6N7 (1) 6SJ7
(3) 6K7 (1) 6L7 (3) 6F6
(2) 6H6 (1) 6J7 (1) 6C5
Total Tubes: (16)

(1) 465KC
Total Crystals: (1)

TYPE CLASSIFICATION
DESIGN COGNIZANCE TASSA
PROCUREMENT COGNIZANCE
STOCK NO.
R.D.B. IDENT. NO.

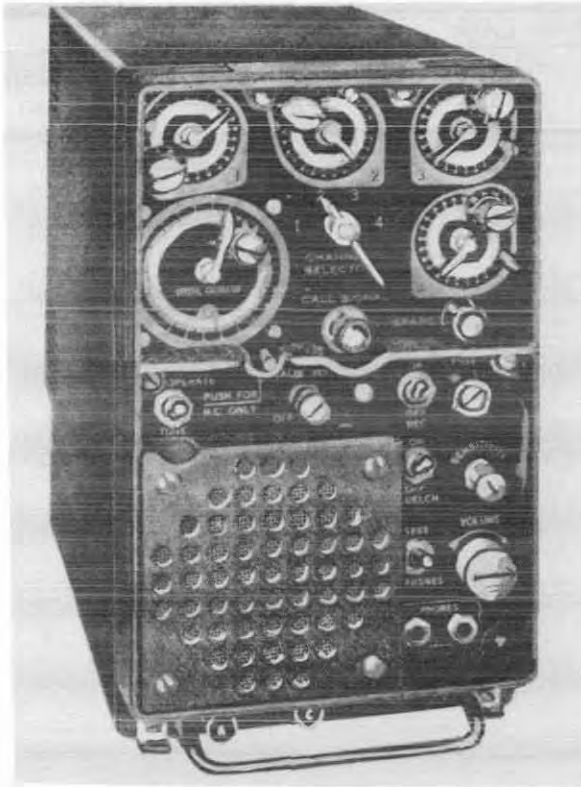
SHIPPING DATA

NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
1	Radio Receiver BC-794-B	4.3	15-1/8 x 20-1/2 x 24-1/8	90

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radio Receiver BC-794-B with power and Battery Cables and dust cover or	10-1/2 x 15-3/8 x 19	55
	Radio Receiver BC-794-B with power and Battery Cables and Cabinet CH-104-A	12-1/4 x 16-1/2 x 23	73

April 1958

RADIO RECEIVER**BC-923-A***Radio Receiver BC-923-A***FUNCTIONAL DESCRIPTION**

The BC-923-A is a frequency-modulated radiotelephone receiver that is provided with four sets of tuning controls so that it can be preset to four predetermined channels. It employs a crystal calibrator unit which supplies accurate reference signals every 100 kilocycles across the entire frequency range of the receiver.

The BC-923-A is a component of Radio Sets SCR-808-A and SCR-828-A which are intended for use in mobile coast artillery batteries.

No field changes in effect at time of preparation (13 November 1957).

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 27.0 to 38.9 mc.

RECEPTION: F3.

TYPE RECEIVER: Double superheterodyne.

BANDWIDTH: 50 kc.

SENSITIVITY: 1 uv.

IF: 2.85 mc.

POWER OUTPUT

SPEAKER: 3 W.

HEADSET: 180 mw.

POWER REQUIREMENTS: 12 or 24 v battery.

MANUFACTURER'S OR CONTRACTOR'S DATA

Zenith Radio Corp., Chicago, Illinois.
Order No. 7880-Phila-43.

TUBE AND/OR CRYSTAL COMPLEMENT

(1) 0D3W	(2) 6AC7WA
(1) 12SA7Y	(1) 6H6
(3) 12SC7	(1) 6SJ7
(2) 12SG7Y	(2) 6SL7WGT
(2) 12SJ7	(1) 6V6GTY

Total Tubes: (16)

(1) 1MC

Total Crystals: (1)

REFERENCE DATA AND LITERATURE

TM11-601: Technical Manual for Radio Sets
SCR-808-A and SCR-828-A.

TYPE CLASSIFICATION
DESIGN COGNIZANCE TASSA
PROCUREMENT COGNIZANCE
STOCK NO.

SHIPPING DATA

NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
1	Radio Receiver BC-923-A	2.2	9-3/4 x 14-1/8 x 26-5/8	42
1	Dynamotor DM-64-A or DM-66-A			

Radio-Receivers

BC-923-A

RADIO RECEIVER

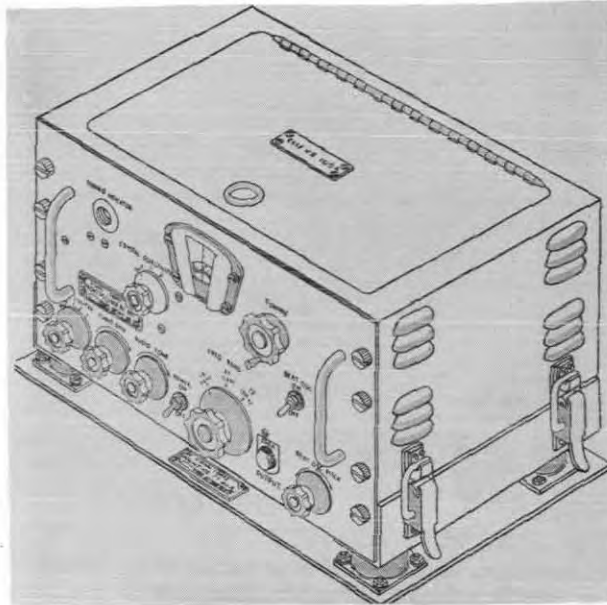
April 1958

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radio Receiver BC-923-A	6-3/4 x 11-1/2 x 12-3/4	42
1	Dynamotor DM-64-A(12 v) or Dynamotor DM-66-A(24 v)	3-1/4 x 4-1/4 x 6-5/8	5.25

June 1957

Radio-Receivers

RADIO RECEIVER**BC-969-A,B**

Radio Receiver BC-969-A,B

FUNCTIONAL DESCRIPTION

The BC-969 A, B Radio Receivers enclosed in Case CS-109-A are low frequency super-heterodyne communication sets used for intercept purposes. They receive continuous wave, modulated tone and voice signals. There is no operational differences between the two models.

No field changes in effect at time of preparation (8 November 1956).

RELATION TO OTHER EQUIPMENT

Equipment Required but not Supplied: (1) Power Supply Unit RA-61-A, PE-223 or Batteries.

ELECTRICAL AND MECHANICAL CHARACTERISTICS**FREQUENCY RANGES**

BC-969-A: 15 to 30, 30 to 67.5, 67.5 to 150 kc.

BC-969-B: 15 to 31, 31 to 73, 73 to 150 kc.

PHONE OUTPUT JACK IMPEDANCE

BC-969-A: 250 ohms.

BC-969-B: 250 or 4000 ohms.

INPUT IMPEDANCE: 100 ohms balanced antenna or 30 ft whip type antenna.

AUDIO OUTPUT: 2 W max undistorted.

POWER REQUIREMENTS

FILAMENT: 12.6 v AC or DC, 1.95 amp.

PLATE: 250 v DC, 120 ma.

POWER SUPPLY: Power Supply Unit RA-61-A, PE-223 or batteries.

TUBE AND/OR CRYSTAL COMPLEMENT

(3) 12SK7

(1) 12SA7

(2) 12J5GT

(2) 12H6

(1) 12SQ7

(1) 12A6

(1) 1629

(1) 003/VR-150

Total Tubes: (12)

(1) 455kc

Total Tubes: (1)

REFERENCE DATA AND LITERATURE

TM11-4013 Technical Manual for Radio Receiver BC-969-A and -B.

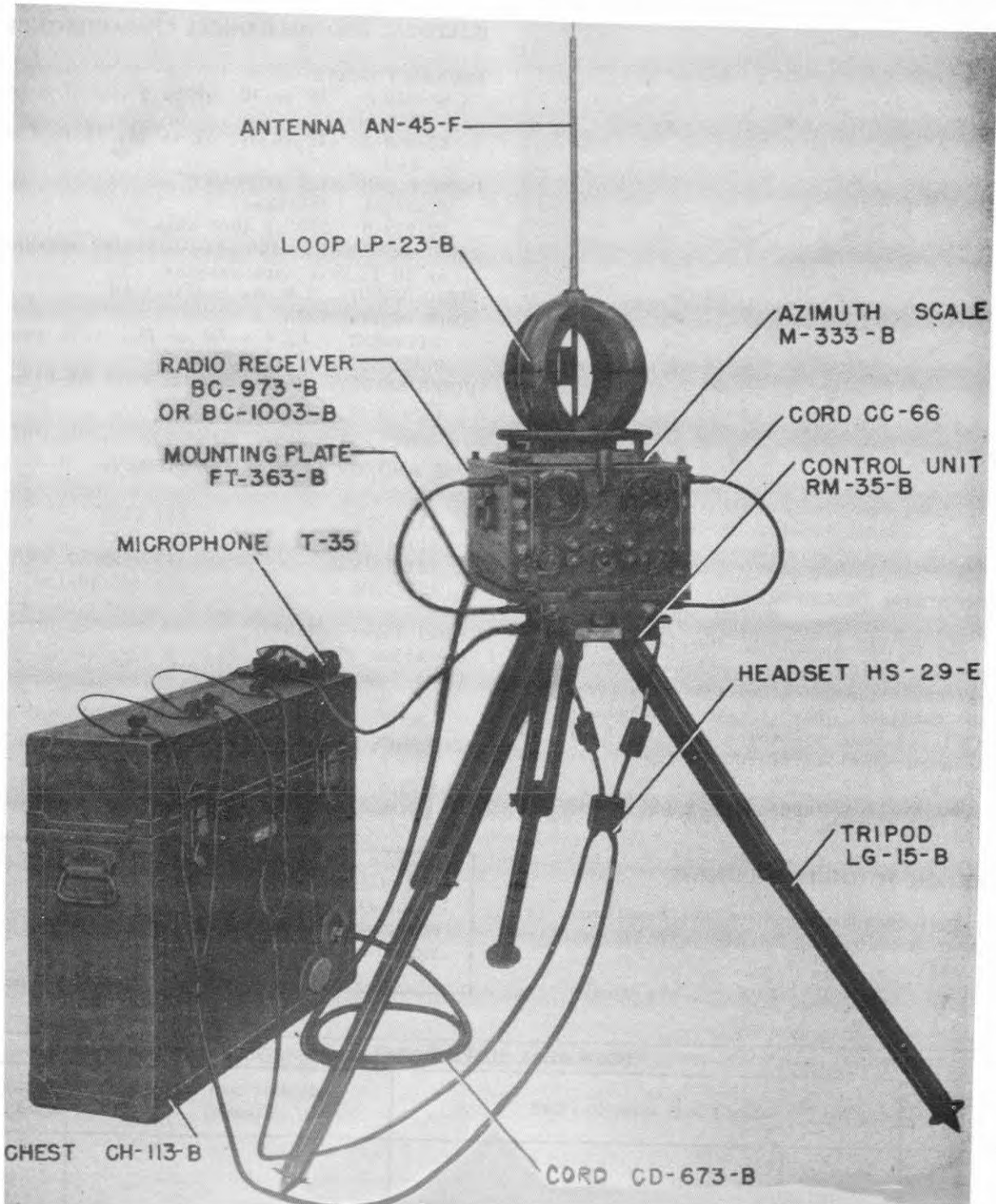
TYPE CLASSIFICATION
DESIGN COGNIZANCE TASSA
PROCUREMENT COGNIZANCE
STOCK NO.

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radio Receiver BC-969-A or BC-969-B including:		
1	Case CS-109-A		
1	Mounting FT-411-A		

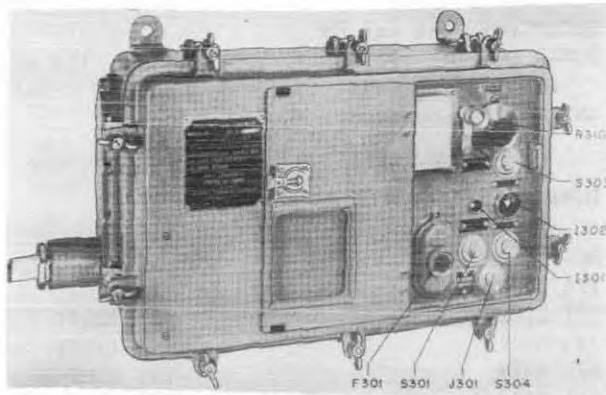
RADIO RECEIVER

Radio-Receivers
BC-973-A,-B

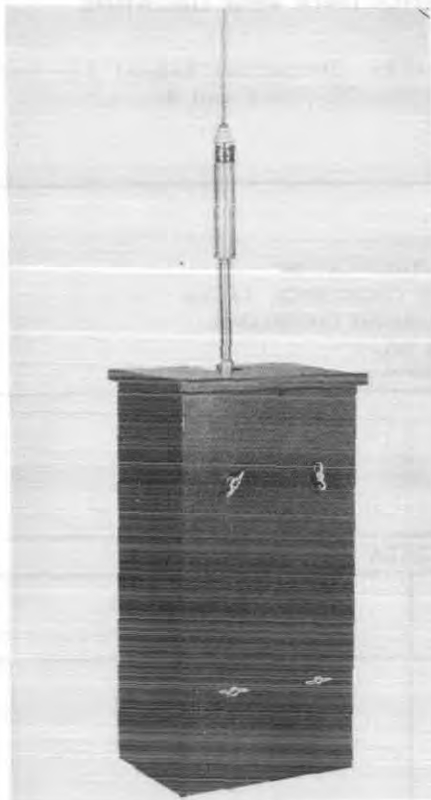


Radio Receiver BC-973-B

December 1956

RADIO RECEIVING EQUIPMENT**BF**

Receiver Control Unit Type CG-23AAD



Receiver, Type CG-48AAD with Antenna, Type CG-66AAB and Sunshield Assembled

Radio Receiving Equipment BF

FUNCTIONAL DESCRIPTION

The BF is basically radio receiving equipment for shipboard or shore installation use, designed to be used with model BE radio transmitting equipment.

It 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.

No field changes in effect at time of preparation (23 July 1956).

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY: 470 mc.

INTERMEDIATE FREQUENCY: 40 mc.

REPLY SIGNAL: Indicating lamp and warning buzzer.

CIRCUIT: Superheterodyne.

ANTENNA DESCRIPTION: Vertically polarized dipole.

POWER SOURCE REQUIRED: 115 v AC, 60 cps, single phase.

MANUFACTURER'S OR CONTRACTOR'S DATA

General Electric Co., Bridgeport, Connecticut.

Contract NOs 82256, dated 22 February 1941.

TUBE AND/OR CRYSTAL COMPLEMENT

(2) 7F7	(2) 7N7	(1) CD2005CL
(1) 7C6	(1) 1V	(1) 5W4GT
(2) 955	(4) 7H7	(1) 7E6

Total Tubes: (15)

REFERENCE DATA AND LITERATURE

Technical Manual for Radio Equipment BF.

TYPE CLASSIFICATION
DESIGN COGNIZANCE BUSHIPS
PROCUREMENT COGNIZANCE
STOCK NO.

FUNCTIONAL DESCRIPTION

The BC-973-A and BC-973-B are designed to determine the direction or azimuth of radio transmitters operating within the frequency bands of the receivers.

The equipment consists of a portable direction finding radio designed for amplitude-modulated or continuous-wave signals. The receiver is powered by a storage battery and a dynamotor power supply.

A control unit provides means for connecting the output of the radio receiver to a telephone line and also provides means for connecting the operator's microphone and headset to a telephone line for communication with a remote station.

Each direction finding radio receiver consists of two loop antennas mounted at an angle of 90° to each other. They feed two identical superheterodyne circuits, a sense circuit, and a direction indicator, which compares the outputs of the two circuits.

The BC-973-A differs in tube replacement and chassis layout and circuitry but functionally the same.

No field changes in effect at time of preparation (9 January 1957).

RECEPTION: AM and CW.
 POWER OUTPUT: 750 mw w/control unit, 375 mw w/o control unit.
 ANTENNA: Loop type.

TUBE AND/OR CRYSTAL COMPLEMENT

BC-973-A	BC-973-B
(2) 12SJ7	(2) 12SJ7
(2) 12SA7	(2) 12SA7
(4) 12SG7	(4) 12SG7
(2) 12C8	(2) 12C8
(1) 12A6	(1) 6V6GT
Total Tubes: (11)	

REFERENCE DATA AND LITERATURE

TM11-4028, Technical Manual for Radio Receivers BC-973-A and B.

TYPE CLASSIFICATION
 DESIGN COGNIZANCE TASSA
 PROCUREMENT COGNIZANCE
 STOCK NO.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 1 to 3 mc in two bands.

EQUIPMENT SUPPLIED DATA

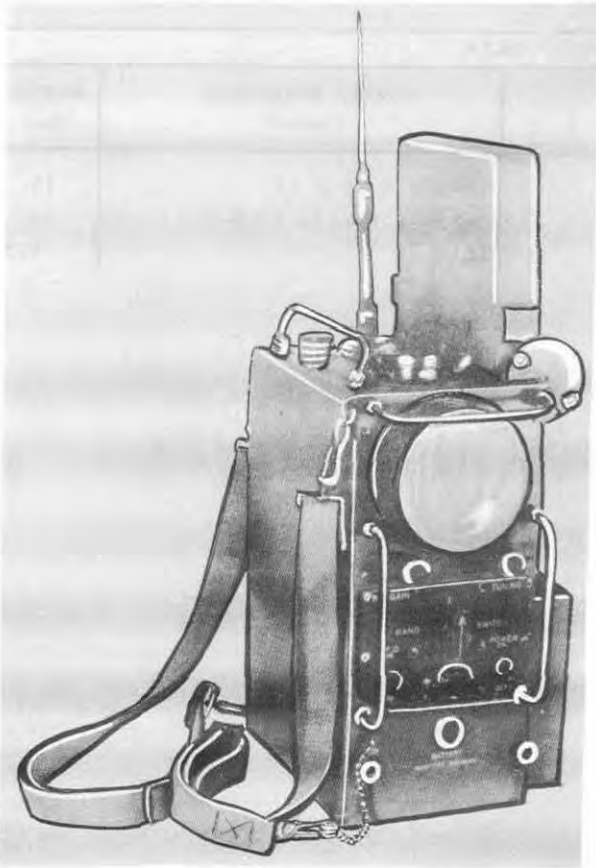
QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Antenna AN-45-F		
1	Loop LP-23-B		
1	Radio Receiver BC-973-B or -A		
1	Mounting Plate FT-363-B		
1	Azimuth Scale M-333-B		
1	Cord CC-66		
1	Control Unit RM-35-B		
1	Headset HS-29-E		
1	Tripod LG-15-B		
1	Cord CD-673-B		
1	Microphone T-35		
1	Chest CH-113-B		

BF

RADIO RECEIVING EQUIPMENT

December 1956

EQUIPMENT SUPPLIED DATA			
QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Receiver Unit CG-46AAD	13-3/8 X 36 X 48	25
1	Receiver Control Unit CG-23AAD	7-3/4 X 12-1/4 X 19-1/2	36
1	Receiver Antenna CG-66AAB	16	0.35

DIRECTION FINDER, PACK SET, RADIO, HF**CXJA**

CXJA Direction Finder, Pack Set, Radio, HF

FUNCTIONAL DESCRIPTION

The CXJA is a portable direction finder capable of obtaining a bearing on any radio signal of sufficient strength between 1.8 and 21 mc. It may be used to obtain a direction on frequency modulated signals, but the signal will not be readable. A beat frequency oscillator is included to permit reception of unmodulated cw. A compass is included for obtaining magnetic bearings on a signal.

No field changes in effect at time of preparation (12 July 1956).

ELECTRICAL AND MECHANICAL CHARACTERISTICS

POWER SOURCE REQUIRED: 6 v DC (battery NT-19046).

TUNING BANDS

- BAND 1: 1.8 to 4.6 mc.
- BAND 2: 4.3 to 9.8 mc.
- BAND 3: 9.4 to 21.0 mc.

POWER OUTPUT: 6 milliwatts with signal strength plus 30% modulation of 50 microvolts per meter into 600 ohm impedance headphones.

INTERMEDIATE FREQUENCY: 912 kc.

CONTINUOUS DUTY CYCLE: 3 to 4 hours.

TYPE OF SIGNAL WHICH MAY BE RECEIVED

READABLE: AM, voice and cw.

NOT READABLE: FM.

OUTPUT IMPEDANCE: 600 ohms.

POWER SUPPLY DATA

TYPE: Vibrator power pack NT-20221-A modified.

VIBRATOR TYPE: Synchronous.

VOLTAGE DATA

INPUT VOLTAGE: 6 v DC.

OUTPUT VOLTAGES: B plus, positive 90 v DC at 0.03 amps, and C minus, positive plus 4.5.

MANUFACTURER'S OR CONTRACTOR'S DATA

Airplane and Marine Instruments Inc.,
Clearfield, Pennsylvania.

Contract NXsr-88882, dated 27 February
1945.

Approximate Cost: \$9000.00 with equip-
ment spares.

TUBE AND/OR CRYSTAL COMPLEMENT

(3) 1L4 (1) 1R5 (2) 3S4 (1) 1S5

Total Tubes: (7)

REFERENCE DATA AND LITERATURE

NAVSHIPS 95615: Technical Manual for Model
CXJA Direction Finder, Pack Set, Radio,
HF.

TYPE CLASSIFICATION
DESIGN COGNIZANCE BUSHIPS
PROCUREMENT COGNIZANCE
STOCK NO.

CXJA

DIRECTION FINDER, PACK SET, RADIO, HF

December 1956

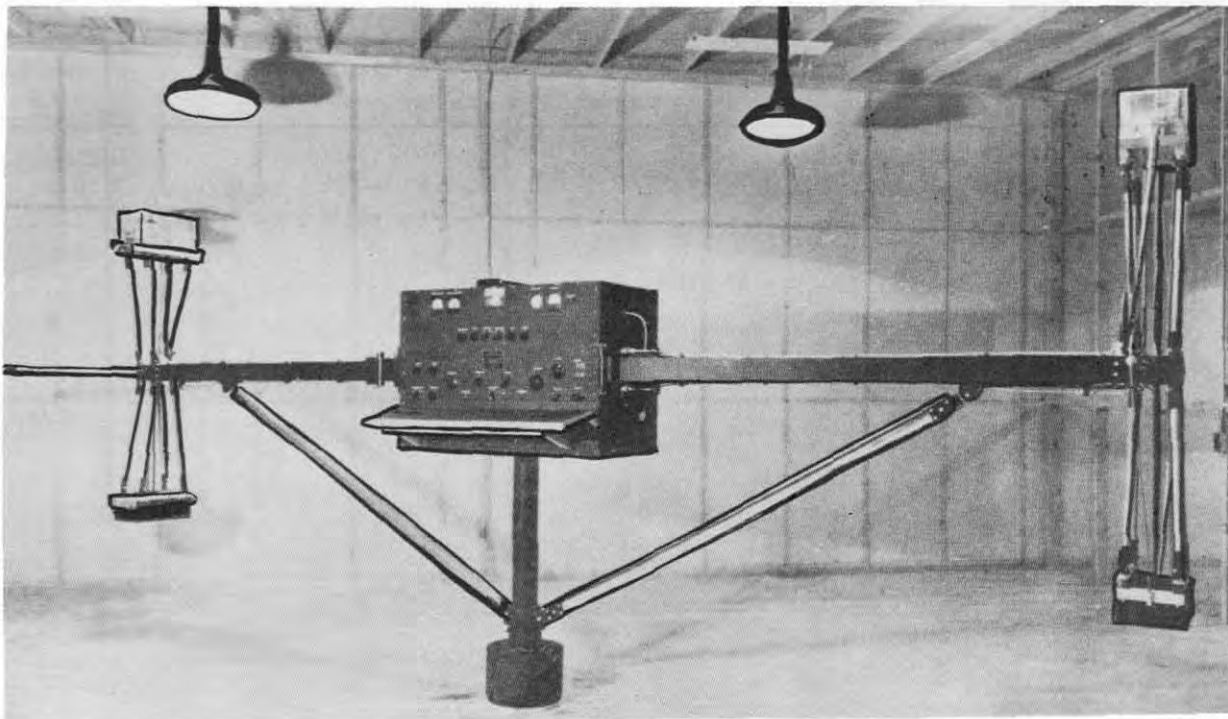
EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Receiver	6 x 9 x 12-1/2	10-1/4
1	Power Supply NT-20221-A Modified	1-7/8 x 3-3/4 x 4-1/4	1-3/4
1	Storage Battery NT-19046	1-7/8 x 2-3/8 x 3-5/8	1-1/4
1	Headphone NT-49507-A		7/8
1	Extension Cord for Headphone NT-491510	36	
1	Whip Antenna	36	7/16
1	Case (Including following permanently mounted components):	7-1/2 x 8 x 13-1/2 *	7
1	Loop Antenna	1-1/4 x 6 x 8	1-1/4
1	Magnetic Compass		
1	Shoulder Straps (adjustable)		

* Loop Down

RADIO DIRECTION FINDER EQUIPMENT

DAB-3



Radio Direction Finder Equipment DAB-3

FUNCTIONAL DESCRIPTION

The Model DAB is suitable for use at fixed land stations and is designed to indicate the direction of arrival of the normally polarized component of radio waves of the frequency range from 2 to 18.1 mc. The equipment is of the manually rotatable visual indicating type.

Bearings are indicated by two horizontal traces on the screen of a cathode-ray oscilloscope tube. The direction finder is "on bearing" when the two horizontal traces are adjacent to each other, forming a single horizontal line.

Provisions are made for 3 additional wires to be connected to the direction finder through the slip ring assembly in the base of the equipment. These wires may be used for communication or control circuits as required.

No field changes in effect at time of preparation (8 November 1956).

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 2 to 18.1 mc.

UNCLASSIFIED

BAND DATA

BAND 1: 1950 to 3550 kc.

BAND 2: 3370 to 6150 kc.

BAND 3: 5850 to 10,650 kc.

BAND 4: 10,150 to 18,300 kc.

SENSITIVITY DATA: 15 uv/m at 2 mc; 8 uv/m at 4 mc; 5 uv/m at 6 mc; 3 uv/m at mc; 2 uv/m at 12 mc; 1 uv/m at 16 and 18 mc.

ROTATIONAL RESPONSE: $\pm 1^\circ$ from "on bearing" position based on above signal strengths.

SELECTIVITY

REJECTION RATIO: 100 to 1 at 10 kc off resonance.

IMAGE REJECTION RATIO: 100 db at 2 mc; 80 db at 4 mc; 70 db at 6 mc; 55 db at 10 mc; 40 db at 18 mc.

POWER SOURCE REQUIRED: 105, 110, 115 or 120 v, 60 cps, single phase, 10% max regulation, 270 W.

MANUFACTURER'S OR CONTRACTOR'S DATA

Collins Radio Company, Cedar Rapids, Iowa.

June 1957

Radio-Receivers

DAB-3

RADIO DIRECTION FINDER EQUIPMENT

Contract NOs 91550, dated 10 September 1941.

Contract NOs 98643, dated 16 February 1942.

Approximate Cost: \$12,000 with equipment spares.

REFERENCE DATA AND LITERATURE

NAVSHIPS 95073: Technical Manual for Navy Model DAB-3 Radio Direction Finder Equipment.

TUBE AND/OR CRYSTAL COMPLEMENT

(13) 6SK7	(5) 6SJ7
(13) 6J5	(1) 6SA7
(5) 6H6	(3) 5U4G
(2) VR-150/30	(1) 902

Total Tubes: (43)

TYPE CLASSIFICATION
DESIGN COGNIZANCE BUSHIPS
PROCUREMENT COGNIZANCE
STOCK NO.

SHIPPING DATA

NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
1	Screwdrivers, Wrenches, Technical Manuals and Accessories			
1	Main Cabinet and base assembly			
1	Beams, compression members, arm rests and handles			
1	Injector Loops and Main Loop Assemblies, Units P and Q			
1	Tuner, R.F. (Unit A)			
1	R.F. Tuner (Unit B)			
1	Oscillator (Unit C)			
1	Mixer (Unit D)			
1	I.F. Amplifier (Unit E) and Monitor Unit (Unit J)			
1	Power Supply (Unit F)			
1	Audio Amplifier (Unit H)			
1	Set of Spare Parts			

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Model DAB Radio Direction Finding Equipment c/o 1 Tuner Unit (A) 1 Tuner Unit (B) 1 Oscillator Unit (C) 1 Mixer Unit (D) 1 I-F Amplifier (E)	16 ft 7 in X 5 ft 10-3/4 in. X 7 ft 2-3/8 in.	852

RADIO DIRECTION FINDER EQUIPMENT

DAB-3

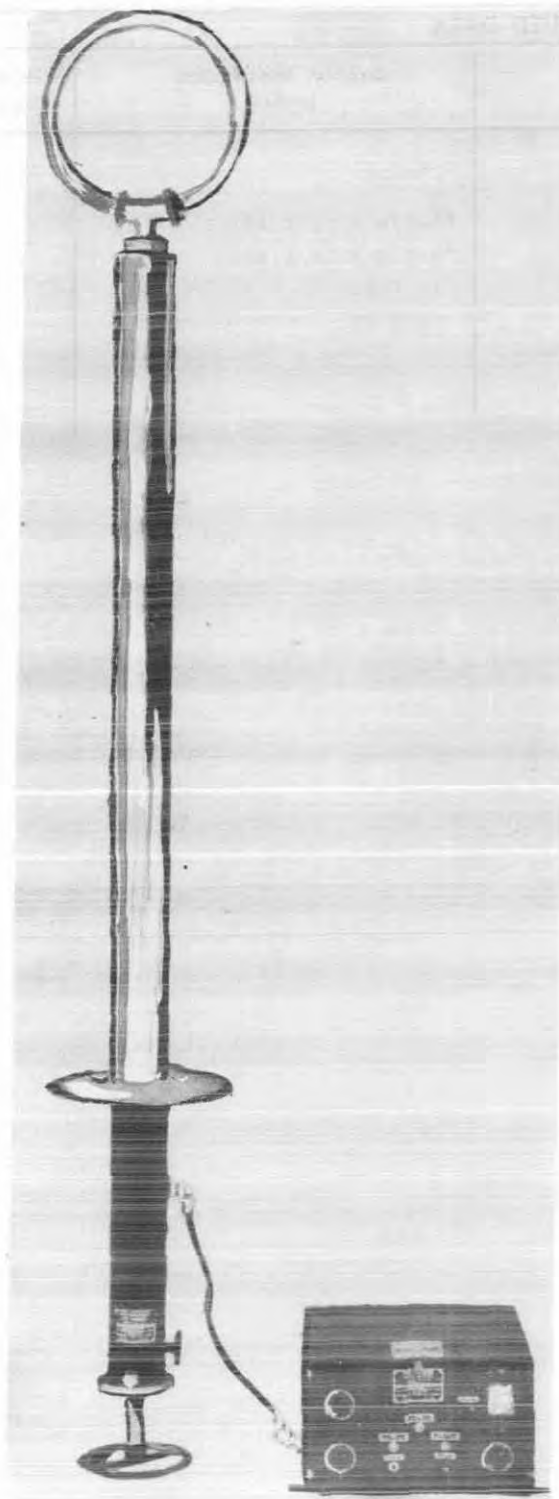
EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
	1 Power Supply (F)		
	1 Commutator 347E-2 (G)		
	1 Audio Amplifier (H)		
	1 Monitor Unit (J)		
	1 Meter Panel (K)		
	1 Control Panel (L)		
	1 Oscilloscope Amp and Motor Relay (N)		
	1 Miscellaneous Equipment (M)		
	1 Right Loop Assembly (P)		
	1 Left Loop Assembly (Q)		
1	Set of Spare Parts		
2	Technical Manuals		
1	Pair 273N3 Headphones		
1	Phone Plug		
2	Unit Hooks		
1	Tuning Tool		
1	Hydraulic Zerk Fitting		
1	Convenience Outlet Plug		
1	No. 1 Phillips Screw Driver		
1	No. 2 Phillips Screw Driver		
1	No. 10 Bristo Wrench		
1	No. 8 Bristo Wrench		
1	No. 6 Bristo Wrench		
1	No. 6 Bristo Screw Driver		
1	No. 8 Bristo Screw Driver		
1	No. 10 Bristo Screw Driver		
1	Arm rest		

NOTES: * Serial number 17 and above use Commutator Unit G, part no. 347E-3.
Serial number 62 and above have omitted the switch on the clutch gear box.

RADIO DIRECTION FINDER EQUIPMENT

DAE, DAE-1, 2



DAE-2 Radio Direction Finder Equipment

FUNCTIONAL DESCRIPTION

The DAE, DAE-1, 2 are designed for use as radio direction finder equipment. They cover the frequency range of 240 kc to 2000 kc in three bands.

No field changes in effect at time of preparation (24 July 1956).

ELECTRICAL AND MECHANICAL CHARACTERISTICS

TYPE OF RECEPTION: A1, A3 (3 bands).

FREQUENCY RANGE: 240 kc to 2000 kc.

POWER SOURCE REQUIRED

DAE, DAE-1: 115 v, 60 cycle, single phase or 115 v DC.

DAE-2: 115 v, 60 cycle, single phase.
115 v DC, 12 v DC, 24 v DC or 32 v DC.

MANUFACTURER'S OR CONTRACTOR'S DATA

Radiomarine Corporation of America, New York, N.Y.

Contract NXsr 39238, dated 2 November 1943.

Contract NXsr 53348, dated 23 March 1944.

Approximate Cost: \$500.00 with equipment spares.

TUBE AND/OR CRYSTAL COMPLEMENT

DAE, DAE-1, 2

(3) 6SG7 (1) 6SA7

(2) 6SJ7 (1) 6J5

(1) 6X5GT/G

Total Tubes: (8)

REFERENCE DATA AND LITERATURE

Technical Manuals for Radio Direction Finder Equipment DAE, DAE-1, 2.

TYPE CLASSIFICATION
DESIGN COGNIZANCE BUSHIPS
PROCUREMENT COGNIZANCE
STOCK NO.

**RADIO DIRECTION FINDER
 EQUIPMENT**

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT			NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
DAE	DAE-1	DAE-2			
1	1		Radio Receiver NT-46153	*8-3/8 X 14 X 15	
		1	Radio Receiver NT-46238	*8-3/8 X 14 X 15	
1	1		Loop Assembly NT-69074	14 O.D.	
		1	Loop Assembly NT-69092	14 O.D.	
1	1	1	Set of Vacuum Tubes		
1	1	1	Set of Spare Parts		
2	2	2	Technical Manual		

*Radio Receiver is housed in cabinet.

June 1957

RADIO DIRECTION FINDER EQUIPMENT

DAJ

FUNCTIONAL DESCRIPTION

The Model DAJ equipment is a fixed land radio direction finder which provides instantaneous visual indications of the bearings of received signals in the frequency range at 1.5 to 30 megacycles. The equipment is composed of four independent antenna arrays spaced over a fairly large area, underground connecting cables, a control building and four similar sets of operating equipment.

The equipment is separated into four independent direction finders as follows:

Band 1 Model DAL Direction Finder, 1.5 to 3.75 MC.

Band 2 Model DAM Direction Finder, 3.75 to 7.5 MC.

Band 3 Model DAN Direction Finder, 7.5 to 15 MC.

Band 4 Model DAO Direction Finder, 15 to 30 MC.

All four direction finders can operate simultaneously and each is capable of talking accurate bearings within its own band.

No field changes in effect at time of preparation (13 October 1956).

RELATION TO OTHER EQUIPMENT

Same as DAJ-a except that this equipment provides visual automatic bearings only.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

SIGNAL RECEPTION: CW, MCW and ICW.

BEARING INDICATIONS: Instantaneous, automatic, visual.

FREQUENCY RANGE: 1.5 to 30 mc in 4 bands.

TYPE OF RECEIVER CIRCUIT: Superheterodyne.

RECEIVER FREQUENCY RANGE: 1.25 to 40 mc.

INTERMEDIATE FREQUENCY: 465 kc.

RECEIVER SENSITIVITY: 2 uv for a 10:1 signal to noise ratio.

RECEIVER IF SELECTIVITY: 3 to 16 kc.

AUDIO POWER OUTPUT: 3 W.

MANUFACTURER'S OR CONTRACTOR'S DATA

Federal Telephone and Radio Corporation,
Newark, N.J.

Contract NXs-1748, dated 31 March 1942.

Approximate Cost: \$25,500.00 with equipment spares.

TUBE AND/OR CRYSTAL COMPLEMENT

(4) 1851	(8) 6K7
(4) 6L7	(4) 6J7
(12) 6SK7	(8) 6H6
(4) 6N7	(4) 6SJ7
(4) 6C5	(12) 6F6
(8) 6AC7	(4) 5Z3
(8) 80	(4) 2X2/879
(4) 5NPI	(8) 7V7
(4) 5U4G	(1) 3B7/1291

Total Tubes: (105)

REFERENCE DATA AND LITERATURE

SHIPS 382: Technical Manual for Model DAJ High Frequency Radio Direction Finder Equipment.

TYPE CLASSIFICATION DESIGN COGNIZANCE BUSHIPS PROCUREMENT COGNIZANCE STOCK NO.

SHIPPING DATA

NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
1	Antenna Mast Pedestal	70.2	97 X 50 X 25	1072
1	Lead Cups	0.97	5 X 12 X 28	77
1	Iron Balls, Guy Braces	4.8	14 X 18 X 33	222
1	Anchor Rods, Ground Rods	7.3	10 X 10 X 125	723
7	Base Insulators	1.9	8 X 15 X 28	87
1	Base Insulators	1.04	8 X 15 X 15	44
2	Base Insulators	2.2	8 X 14 X 34	102
1	Guy Wires	19.6	15 X 27 X 84	375
1	Guy Wires	14.4	11 X 27 X 84	381
1	Guy Wires	15.8	13 X 27 X 78	278
1	Guy Wires, Base, Strain, Egg and Spool Insulators	12.5	14 X 20 X 58	257
1	Wire Netting	20.8	25 X 36 X 40	306
1	Copper Strip	0.6	5 X 14 X 14	32
1	Phase Inverters, Termination Components	17.5	23 X 33 X 40	406

Radio-Receivers

June 1957

DAJ

RADIO DIRECTION FINDER EQUIPMENT

SHIPPING DATA

NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
1	Junction Box Filters	27	24 X 26 X 76	220
1	Miscellaneous Antenna Material	12.5	19 X 27 X 43	267
1	Misc Antenna Material	22	27 X 28 X 51	259
1	Dehydrator	11.7	27 X 27 X 28	92
3	Co-AX Cable (1500 ft)	127.5	58 X 62 X 62	3900
1	8-Conductor Cable (1010 ft)	26.7	23 X 45 X 45	1300
1	8-Conductor Cable (2020 ft)	26.7	23 X 45 X 45	2260
1	22-Conductor Cable (2000 ft)	68	37 X 57 X 57	3945
1	Pipe Fittings	1.9	13 X 14 X 18	67
1	Installation Materials	19.7	25 X 26 X 53	465
1	Installation Materials	3.6	15 X 18 X 23	75
1	Tools, Antenna Spares	5.6	14 X 17 X 41	81
1	Coax Cable (1500 ft)	127.5	58 X 62 X 62	3900
1	Base Insulators	1.9	8 X 15 X 28	87
4	Radio Receiver Rack	23.5	25 X 34 X 48	349
4	Rectifier Power Rack	23.5	25 X 34 X 48	370
4	Bearing Indicator	28	24 X 31 X 66	317
1	Interconnecting Cables	6	16 X 18 X 36	134
1	Tubes, Lamps	23.5	25 X 35 X 47	187
5	Antenna Pipe	7.6	6 X 9 X 24.5	295
1	Antenna Pipe	8.2	7 X 16 X 125	411
1	Antenna Pipe	6.1	7 X 12 X 125	300
1	Antenna Pipe	10	6 X 17 X 172	462
1	Antenna Pipe	5.8	6 X 8 X 208	320
1	Spare Electrical Parts	20	21 X 29 X 58	536
1	Test Equipment	29	26 X 29 X 68	584
1	Target Transmitter	7.6	17 X 25 X 31	196
1	Tripod	3.7	10 X 10 X 64	122
1	Spare Units	14.3	23 X 27 X 40	400
1	Spare Units	17.7	21 X 29 X 51	514
1	Spare Goniometers and Cables	16.2	25 X 29 X 39	200

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
4	Radio Receiver Assembly NT-46184	21-1/8 X 24-3/8 X 32	115
1	Sense Coil 1.25 to 2.5 mc NT-47235	2 X 3 X 5-1/4	0.5
2	Sense Coil 2.5 to 5 mc NT-47236	2 X 3 X 5-1/4	0.5
2	Sense Coil 5 to 10 mc NT-47237	2 X 3 X 5-1/4	0.5
2	Sense Coil 10 to 20 mc NT-47238	2 X 3 X 5-1/4	0.5
1	Sense Coil 20 to 40 mc NT-47239	2 X 3 X 5-1/4	0.5
4	Receiver Power Unit NT-20159	8-1/2 X 8-3/4 X 19	50
4	Indicator Power Units NT-20160	10-1/2 X 13-1/2 X 19	40
4	Automatic Bearing Unit NT-55084	12-1/2 X 24 X 45-1/2	95
4	Corner Antenna Assembly NT-66057		
4	Corner Antenna Assembly NT-66059		
4	Corner Antenna Assembly NT-66061		
4	Corner Antenna Assembly NT-66063		
1	Central Antenna Assembly NT-66058		
1	Central Antenna Assembly NT-66080		
1	Central Antenna Assembly NT-66062		
1	Central Antenna Assembly NT-66064		
20	Phase Inverter and Housing	5-1/8 X 6-3/8 X 16-3/4	20
4	Power and RF Transmission		
4	Field Power Junction Box NT-62059	4 X 7-1/2 X 15-3/16	15
4	RF Junction Box NT-62057	5 X 8-1/4 X 12-1/4	25
4	Power Junction Box NT-62058	3-1/2 X 5-3/4 X 7	3-1/2

June 1957

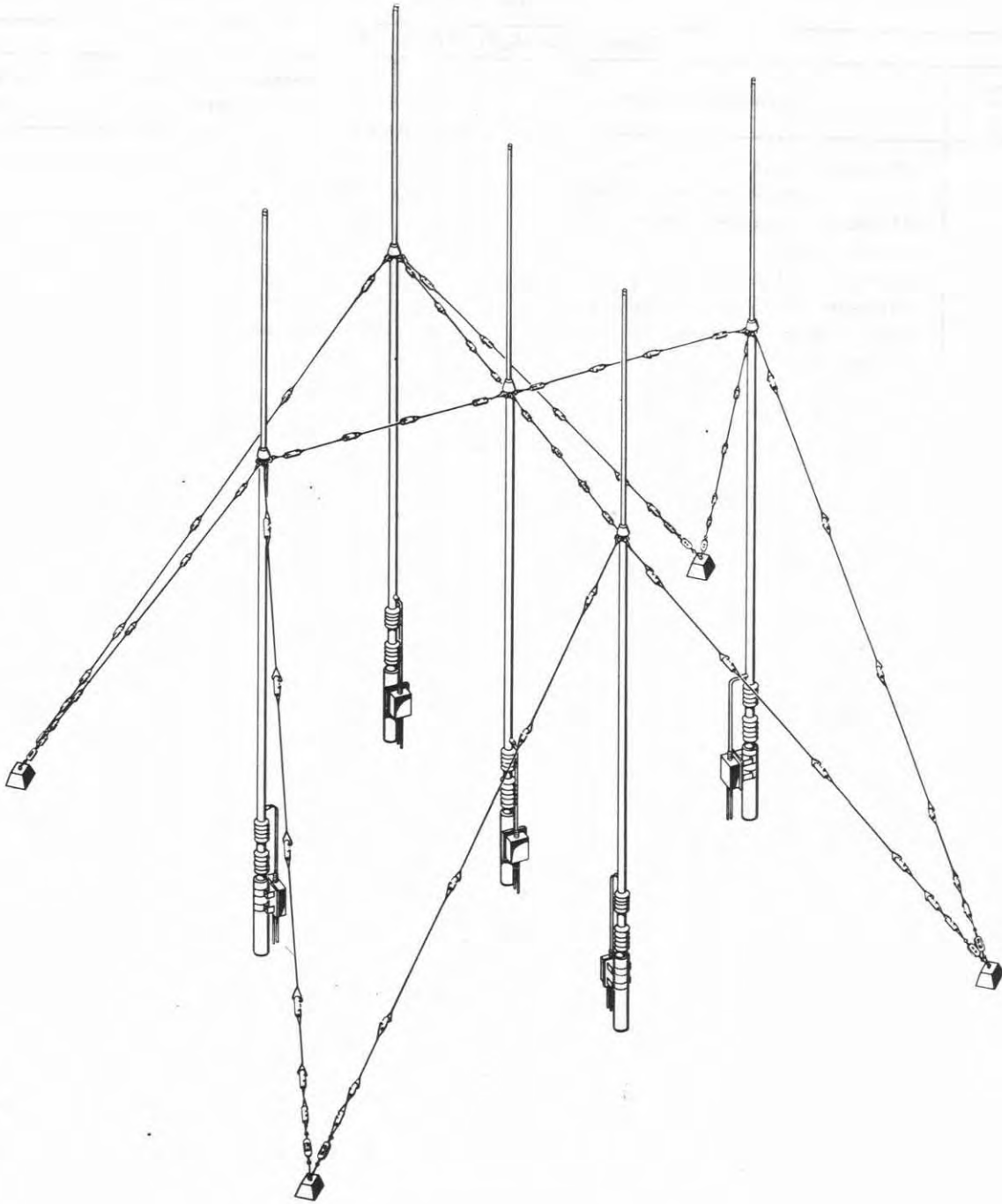
RADIO DIRECTION FINDER EQUIPMENT

DAJ

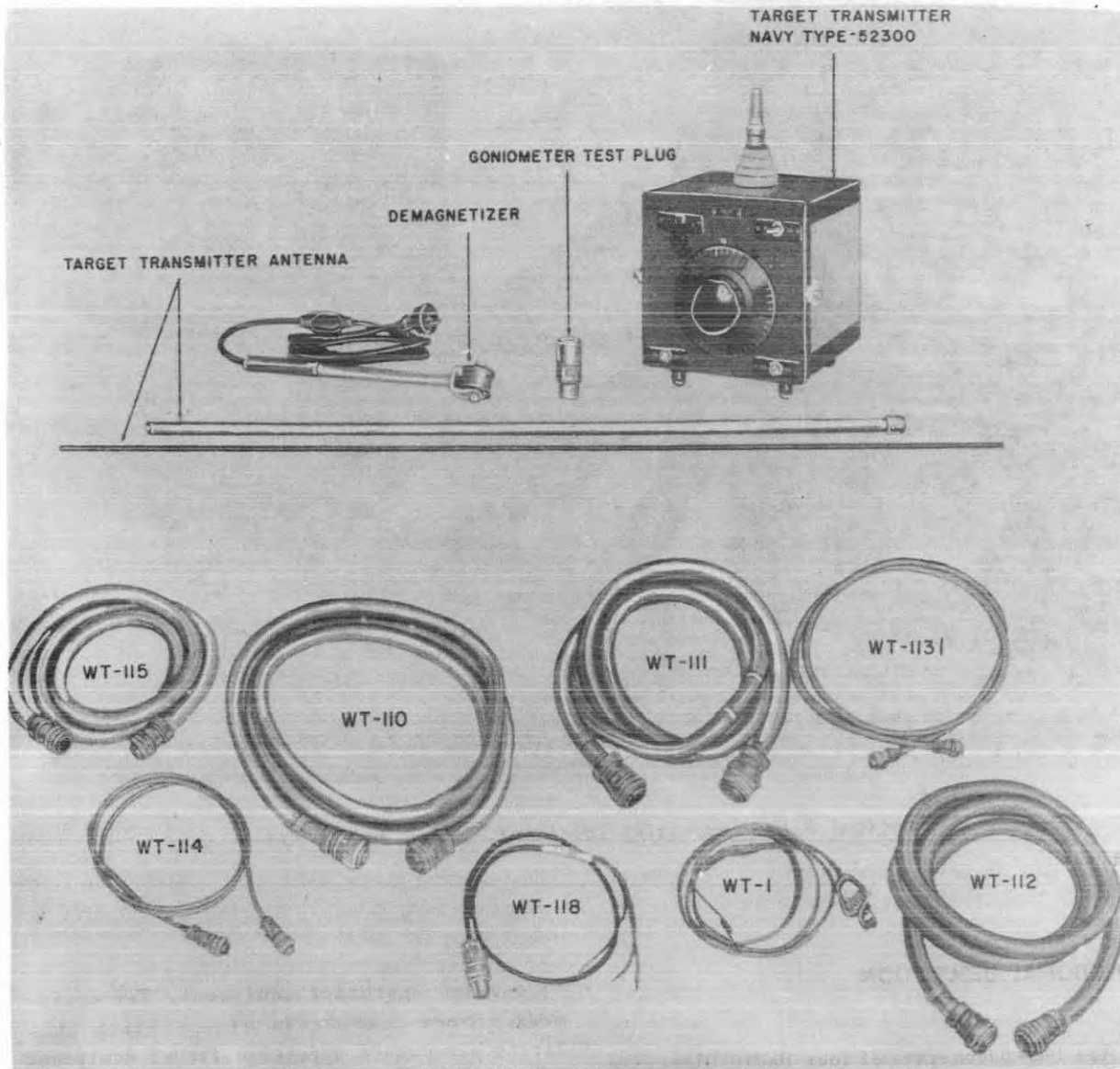
EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Dehydrating Assembly NT-10AAJ	12 X 15-3/4 X 22	84
4	Phase Inverter Power Unit NT-20158	8-3/4 X 12-1/4 X 19	40
1	Goniometer 1.5 to 3.75 mc NT-47231	6-7/8 X 8-7/8 X 9	7
1	Goniometer 3.75 to 7.5 mc NT-47232	6-7/8 X 8-7/8 X 9	7
1	Goniometer 7.5 to 15 mc NT-47233	6-7/8 X 8-7/8 X 9	7
1	Goniometer 15 to 30 mc NT-47234	6-7/8 X 8-7/8 X 9	7
1	Target Transmitter Assembly NT-52365	36 X 45 X 146	55
1	Demagnetizer		

RADIO DIRECTION FINDER EQUIPMENT



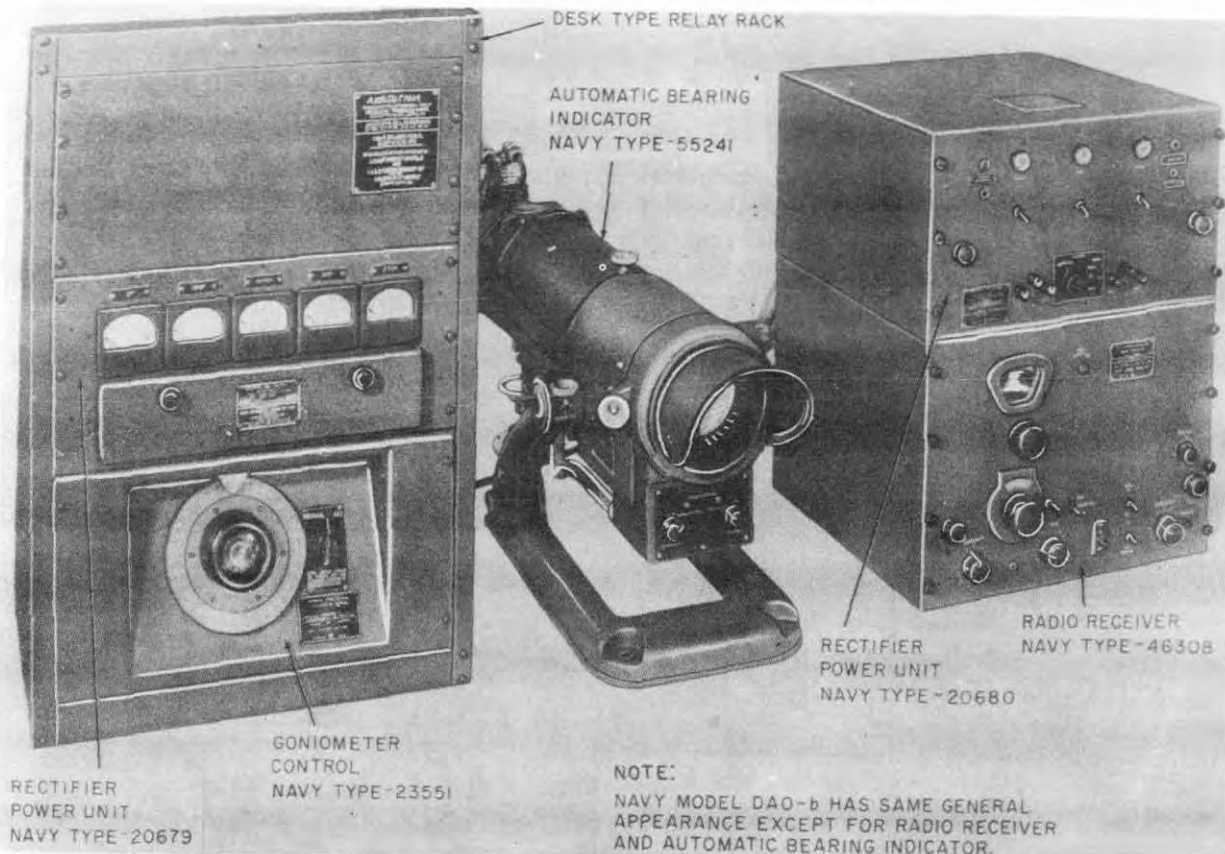
Typical Antenna Array DAJ-b



Tools and Test Equipment DAJ-b

- | | | | |
|--------|------------------------------------|--------|-----------------------------|
| WT-1 | TARGET TRANSMITTER GROUNDING CABLE | WT-113 | AMPLIFIER INPUT TEST CABLE |
| WT-110 | HIGH-VOLTAGE POWER TEST CABLE | WT-114 | SCANNER INPUT TEST CABLE |
| WT-111 | LOW-VOLTAGE POWER TEST CABLE | WT-115 | POWER AND RELAY TEST CABLE |
| WT-112 | CONTACTOR TEST CABLE | WT-118 | GONIOMETER INPUT TEST CABLE |

RADIO DIRECTION FINDER EQUIPMENT



Typical Set of Operating Equipment, DAL-b, DAM-b, DAN-b

FUNCTIONAL DESCRIPTION

The DAJ-b consists of four Radio Direction Finder Equipments, Navy Model DAL-b, DAM-b, DAN-b, and DAO-b, each of which is designed to cover a given portion of the frequency band of 1.5 to 30 mc. In the DAJ-b, the direction of arrival of the radio waves is measured by utilizing the characteristic response of the U-Adcock antennas. The actual bearing (sense-of-direction) of the sources of radio transmission is determined from the combined response of two U-Adcock antennas and a non-directional monopole antenna. The resultant antenna signals are converted into either visual or aural indications by

associated operating equipment. The equipment covers four bands of operation utilizing a separate direction finder equipment for each band. Each direction finder model may be used for direction finding or frequency scanning through the prescribed frequency ranges. All four direction finder models can operate simultaneously.

Except for the antennas and their associated cabling and accessories, all equipment is housed in a control building.

No field changes in effect at time of preparation (12 June 1956).

RELATION TO OTHER EQUIPMENT

BASIC DIFFERENCES BETWEEN DAJ SERIES EQUIPMENT

MODEL	TUNING BANDS	TYPE OF PRESENTATION	EQUIPMENT IN CONTROL BUILDING	ANTENNA SYSTEM
DAJ	Band 1: 1.5-3.75 mc Band 2: 3.75-7.5 mc Band 3: 7.5-15 mc Band 4: 15-30mc	Automatic visual bearings	Modified Commercial Receiver; Sense Amplifier; Sense Control Panel; Automatic Bearing Indicator with optical system; Receiver Power Unit; Indicator Power Unit; Rectifier Power Unit (Phase Inverters)	Crossed U-Adcock Antenna Array; Phase Inverter and Phase Inverter Housing; pressurized system of r-f transmission lines and boxes.
DAJ-a	Band 1: 1.5-3.1 mc Band 2: 3.1-6.6 mc Band 3: 6.6-14 mc Band 4: 14-30 mc	1. Automatic visual bearings. 2. Manual aural bearings. 3. Dual width visual panoramic.	Modified DAU Receiver, Rectifier Power Unit, and Automatic Bearing Indicator; modified DAU Rectifier Power Unit (Phase Inverters); Goniometer Control (for manual bearings); DAU Goniometers in the DAL-a, DAM-a, DAN-a equipments.	Similar to DAJ except for: Improved r-f transmission lines and boxes used in a non-pressurized system; Terminal Box housings for Phase Inverters; improved antenna components and guy wire system.
DAJ-b	Same as DAJ-a	Same as DAJ-a	Similar to DAJ-a except for: Modified Receivers and Goniometers in the DAL-b, DAM-b, DAN-b equipments; Modified Rectifier Power Unit (Phase Inverters).	Similar to DAJ-a except for: New r-f boxes for use in pressurized system; improved ground mat system.

Equipment Required but not Supplied: (4) Radio Operating Tables, (4) Headset NT-49016; RF Transmission Line RG-145/U; 8 and 22 Conductor Armored Cable as Required.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 1.5 to 30 mc.
OPERATING BANDS
BAND 1 (DAL-b): 1.5 to 3.1 mc.
BAND 2 (DAM-b): 3.1 to 6.6 mc.
BAND 3 (DAN-b): 6.6 to 14 mc.
BAND 4 (DAO-b): 14 to 30 mc.
RECEIVER TYPE: Superheterodyne.
TYPE OF RECEPTION: A1, A2 and A3.

INTERMEDIATE FREQUENCY

RECEIVER: 455 kc.
SCANNER: 150 kc.
RECEIVER AUDIO OUTPUT: 1.5 W into 600 ohm load at the speaker output jack.
TYPE OF INDICATIONS
SIZE: 5 in. CRT.
DIRECTION FINDING
AUTOMATIC: Instantaneous, visual, continual.
MANUAL: visual and aural
FREQUENCY SCANNING: Visual panoramic presentations, 100 kc or 40 kc in bandwidth, for frequencies centered about tuned frequency of the receiver in each band.
POWER REQUIREMENTS: 115 v, 60 cps, single ph.

RADIO DIRECTION FINDER EQUIPMENT

POWER CONSUMPTION
TOTAL: 2000 W.
PER MODEL: 500 W.

REFERENCE DATA AND LITERATURE

NAVSHIPS 92200: Technical Manual for High
Frequency Radio Direction Finder Equip-
ment Model DAJ-b,

MANUFACTURER'S OR CONTRACTOR'S DATA

New York Naval Shipyard
Brooklyn, New York

TUBE AND/OR CRYSTAL COMPLEMENT

- | | |
|-----------|----------------|
| (1) 1R5 | (3) 6SG7 |
| (4) 2x2A | (5) 6SH7 |
| (1) 3B7 | (8) 6SJ7 |
| (4) 5NP1 | (16) 6SK7 |
| (12) 5U4G | (4) 6SQ7 |
| (8) 6AC7 | (4) 6V6/GT |
| (8) 6H6 | (40) 7V7 |
| (4) 6J6 | (4) OC3/VR-105 |
| (8) 6AG7 | (8) OD3/VR-150 |
| (8) 6SA7 | (4) 10-4A |

Total Tubes: (154)

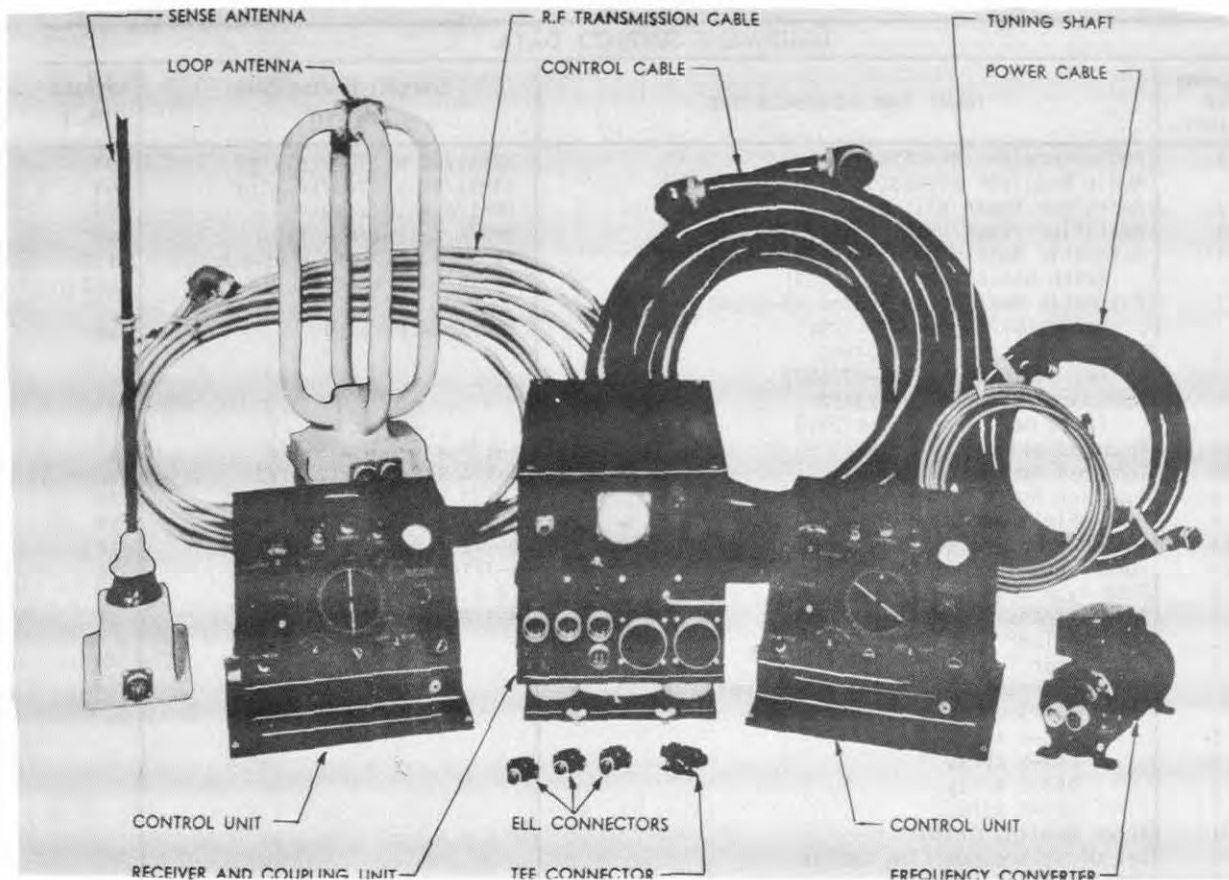
TYPE CLASSIFICATION
DESIGN COGNIZANCE BUSHIPS
PROCUREMENT COGNIZANCE
STOCK NO.

SHIPPING DATA

NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
1	(4) Desk Type Relay Rack (4) Rectifier Power Unit NT-20679 (3) Goniometer Control NT-23551 (3) Goniometer NT-472557 (1) Goniometer Control NT-23552 (1) Goniometer NT-47234	11.0	19 x 27 x 37	190
1	(3) Automatic Bearing Indicator NT-55241 (3) Goniometer NT-472557 (1) Automatic Bearing Indicator NT-55240 (1) Goniometer NT-47234	11.3	17 x 22 x 52	195
1	(3) Radio Receiver NT-46308 (3) Rectifier Power Unit NT-20680 (1) Radio Receiver NT-46309 (1) Rectifier Power Unit NT-20680	11.6	25 x 25 x 32	275
1	(20) Phase Inverter (4) Set of Interconnecting Cables			
2	Expanded Metal Sheets for Ground Mats			
1	Pedestals			
1	Base Insulators			
2	Antenna Mast Sections			
1	Guy Wire Assemblies			
1	Plate and Clamps (for attaching NT-62508)			
1	Terminal Box NT-62508			
1	Anchor Rods including: Ground Strap Ground Rods Copper Bus Bars			
1	Power Field Junction Box NT-62507 including: Junction Box NT-62509 Interconnecting Box NT-62505 Power Junction Box Thimbles and Clamps			
1	Accessory Box	5.21	10 x 15 x 60	100

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
3	Radio Receiver NT-46308	13-31/32 x 17-9/16 x 19	97
1	Radio Receiver NT-46309	13-31/32 x 17-9/16 x 19	97
4	Rectifier Power Unit NT-20680	10-1/2 x 17 x 19	50
4	Rectifier Power Unit NT-20679	8-3/4 x 12-1/4 x 19	40
3	Automatic Bearing Indicator NT-55241 (with Goniometer NT-472557)	11-5/16 x 17-1/4 x 45-3/4	110
1	Automatic Bearing Indicator NT-55240 (with Goniometer NT-47234)	11-15/16 x 17-1/4 x 48-1/4	112
3	Goniometer Control NT-23551 (with Goniometer NT-472557)	10-1/2 x 11 x 19	28
1	Goniometer Control NT-23552 (with Goniometer NT-47234)		
20	Phase Inverter	4-1/4 x 4-1/4 x 5-3/8	1
20	Terminal Box NT-62508	6-3/4 x 8-1/8 x 22-1/2	20
8	Junction Box NT-62509	5-1/2 x 14-1/2 x 18-1/2	29
4	Power-Field Junction Box NT-62507	5-1/2 x 9-3/4 x 18-3/4	19
12	Interconnecting Box NT-62505	5-1/2 x 9-3/4 x 14-1/2	16
4	Power Junction Box NT-62506	5-7/16 x 9-5/8 x 11	10
4	Desk Type Relay Rack	12 x 22-1/2 x 32-1/2	23
1	Target Transmitter NT-52300	8-3/8 x 8-3/8 x 10-3/4	21
1	Demagnetizer		
1	Goniometer Test Plug		
	Antenna Arrays (including ground mats) consisting of:		
1	DAL-b Array		
1	DAM-b Array		
1	DAN-b Array		
1	DAO-b Array		
1	Armor Bending Clamp		
1	Set of Interconnecting Cables		
1	Set of Test Cables		
2	Technical Manual NAVSHIPS 92200		

RADIO DIRECTION FINDER**DBD***Radio Direction Finder DBD***FUNCTIONAL DESCRIPTION**

The DBD is basically a highly sensitive radio receiver using a superheterodyne circuit with the addition of certain essential circuits necessary for radio compass operation.

No field changes in effect at time of preparation (8 November 1956).

RELATION TO OTHER EQUIPMENT

Equipment Required but not Supplied: (25 ft) Guy Cables, (6) Strain Insulators, (1) Receiver Mounting Unit FT-213-A, (100) Conduit Hangers, (75) Transmission Line Hangers, (as required) Mounting Bolts, (2) Special Brackets.

ELECTRICAL AND MECHANICAL CHARACTERISTICS**FREQUENCY RANGE**

BAND 1: 200 to 410 kc.
BAND 2: 410 to 850 kc.

BAND 3: 850 to 1750 kc.
SIGNAL RECEPTION: CW, MCW, ICW.
BEARING INDICATIONS: Automatic visual, matched line visual, aural null, visual null.
TYPE RECEIVER: Superheterodyne.
INTERMEDIATE FREQUENCY: 142.50 kc.
SENSITIVITY
BAND 1: 30 mv/m.
BAND 2: 35 mv/m.
BAND 3: 50 mv/m.
IMAGE REJECTION RATIO
200 to 620 kc: Not less than 100,000 to 1.
840 to 1750 kc: Not less than 5000 to 1.
IF REJECTION RATIO: Not less than 100,000 to 1.
HUNTING: Not more than ± 2 deg.
OPERATING POWER: 115 v, 60 cps, single phase, 140 W.

MANUFACTURER'S OR CONTRACTOR'S DATA

Lear Inc., Grand Rapids, Michigan
Contract NXsr 62280, dated 20 April 1944.

Radio-Receivers

June 1957

DBD**RADIO DIRECTION FINDER**

Approximate Cost: \$8,000.00 with equipment spares.

REFERENCE DATA AND LITERATURE

NAVSHIPS 900,851: Technical Manual for Radio Direction Finder DBD.

TUBE AND/OR CRYSTAL COMPLEMENT

(1) 6C5	(2) 6SC7	(7) 6SK7
(1) 5Z4	(1) 6V6G	(1) 6SA7
(3) 6H6	(3) 6AC7	(2) 5X5
	(1) 6B8	(2) 2AP1

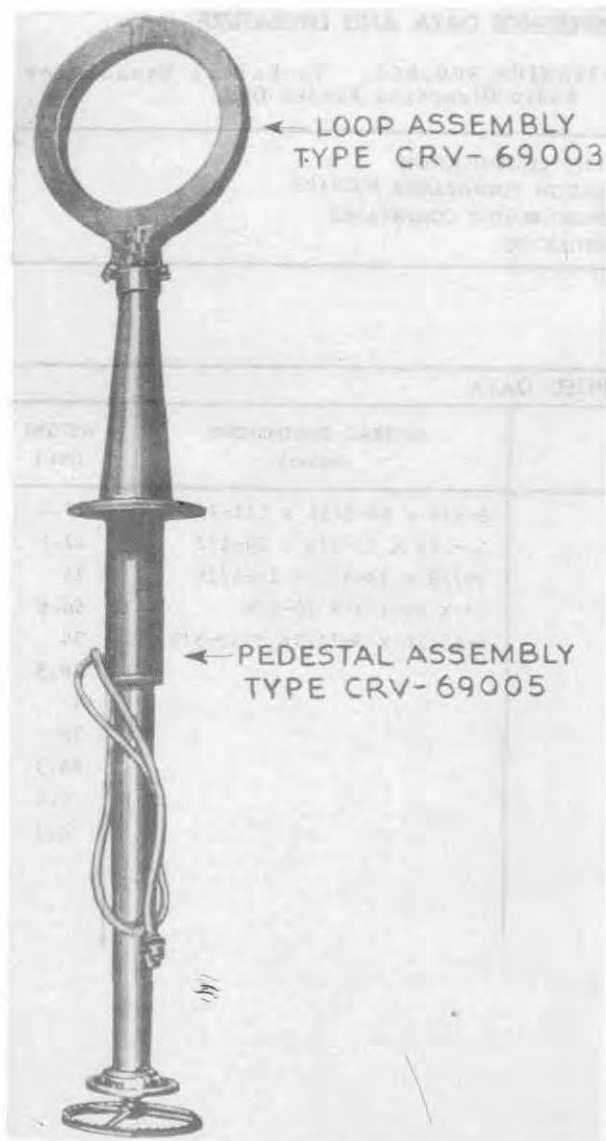
Total Tubes: (24)

TYPE CLASSIFICATION
DESIGN COGNIZANCE BUSHIPS
PROCUREMENT COGNIZANCE
STOCK NO.

EQUIPMENT SUPPLIED DATA

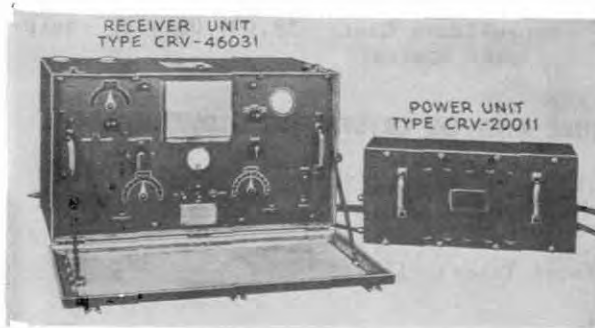
QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Sense Antenna	6-3/4 x 10-5/16 x 111-7/8	13.4
1	Loop Antenna	11-1/2 x 11-3/8 x 24-1/2	12.1
2	Control Unit NT-23505	9-7/8 x 13-1/2 x 14-1/16	16
1	Receiver and Coupling Unit	12 x 14-3/4 x 20-1/4	66.6
1	Frequency Converter NT-211545A	5-15/16 x 9-11/16 x 12-3/8	34
3	RF Cable		28.3
3	Flexible Shaft		4
1	Power Cable		12
2	Control Cable		66.3
3	E11 Shaft Connector		0.1
1	Tee Shaft Connector		0.3
1	Spare Parts Kit		
3	Maintenance Cable		
1	Maintenance Shaft		

RADIO DIRECTION FINDER EQUIPMENT

Radio-Receivers
DO*Loop and Pedestal Assembly DO***FUNCTIONAL DESCRIPTION**

The Model DO is a superheterodyne type equipment designed to accurately indicate the direction of propagation of pure or modulated continuous-wave signals, either keyed or unkeyed, at any frequency in the range of 100 to 1500 kilocycles. It is designed to be installed on Naval vessels for the purpose of determining the ships bearing in conjunction with a beacon transmitter.

UNCLASSIFIED

*Receiver and Power Unit DO*

No field changes in effect at time of preparation (28 December 1956).

RELATION TO OTHER EQUIPMENT

Similar to Models DO-1, 2, and 3. The Chief difference is that the Model DO is DC operated while the other models are AC operated.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 100 to 1500 kc.

RECEPTION: CW, MCW.

TYPE RECEIVER: Superheterodyne.

POWER REQUIREMENTS: 115 v DC.

ANTENNA DATA

TYPES: Loop and single wire.

CAPACITY

SENSE ANTENNA (SINGLE WIRE): 150 to 250 uuf.

MANUFACTURER'S OR CONTRACTOR'S DATA

Radio Corporation of America, Victor Division, Camden, N.J.

Contract NOs-31569, dated 24 May 1933.

Approximate Cost: \$500.00 with equipment spares.

TUBE AND/OR CRYSTAL COMPLEMENT

(2) 36 (2) 37 (4) 39-44
Total Tubes: (8)

DO

RADIO DIRECTION FINDER EQUIPMENT

REFERENCE DATA AND LITERATURE

Technical Manual for Model DO Radio Direction
Finder Equipment.

TYPE CLASSIFICATION
DESIGN COGNIZANCE BUSHIPS
PROCUREMENT COGNIZANCE
STOCK NO.

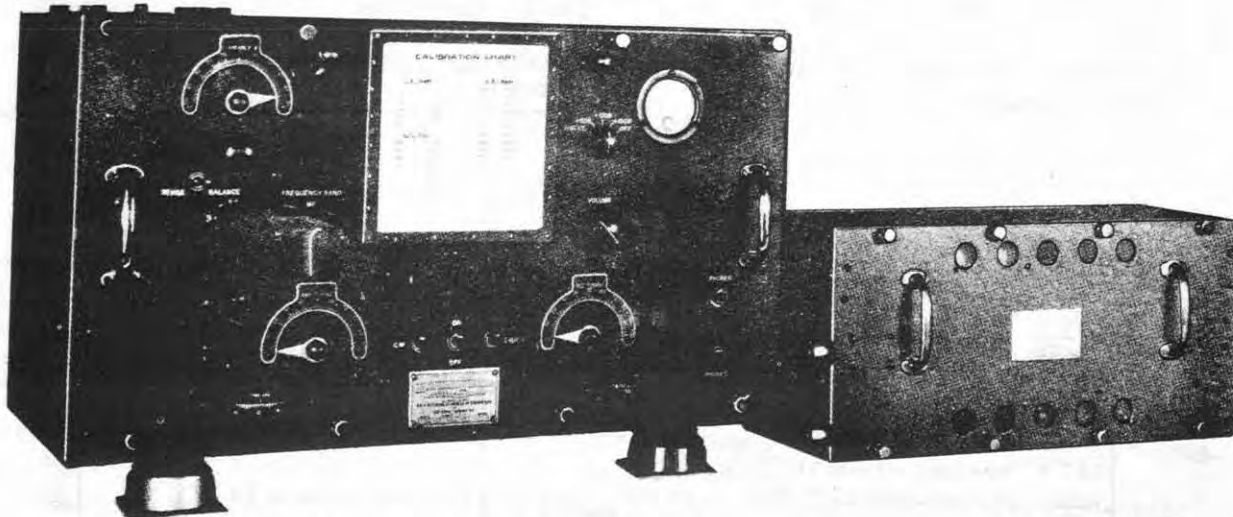
EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Loop Assembly NT-69003	24 dia	14.75
1	Pedestal Assembly NT-69005	18 dia X 94-13/16	72.5
1	Radio Receiver NT-46031	14-3/4 X 16-7/16 X 25-3/8	119
1	Power Unit NT-20011	8-1/4 X 9-3/8 X 19	38
1	Set of Spare Parts		
1	Set of Accessories		
2	Technical Manual		

March 1957

RADIO DIRECTION FINDER EQUIPMENT

DP,DP-1,2,3



RECEIVER UNIT, CRV-46038, 46039

POWER UNIT, CRV-20026

Radio Direction Finder Equipment DP, DP-1, DP-2, DP-3, DQ.

FUNCTIONAL DESCRIPTION

The DP, DP-1, 2 and 3 are radio direction finder equipment designed to operate in the 100 to 1500 kc frequency range.

The chief differences in the DP, DP-1, 2 and 3 are in the mounting or drive arrangement of the loop and operating pedestals.

No field changes in effect at time of preparation (26 July 1956).

Approximate Cost: \$6100.00 for DP-3 with equipment spares.

TUBE AND/OR CRYSTAL COMPLEMENT

(2) 36 (2) 37 (1) 80 (4) 39-44
Total Tubes: (9)

ELECTRICAL AND MECHANICAL CHARACTERISTICS

TYPE OF RECEPTION: A1, A2 (3 bands).

FREQUENCY RANGE: 100 to 1500 kc.

POWER SOURCE REQUIRED: 115 v AC, 60 cps, single ph.

REFERENCE DATA AND LITERATURE

Technical Manual for Radio Direction Finder Equipment DP,DP-1,2 and 3.

MANUFACTURER'S OR CONTRACTOR'S DATA

RCA Victor Company, Inc., Camden, N.J.
Contract NOs 38492, dated 3 October 1934.
Approximate Cost: \$6000.00 for DP,DP-1,2 with equipment spares.

TYPE CLASSIFICATION
DESIGN COGNIZANCE BUSHIPS
PROCUREMENT COGNIZANCE
STOCK NO.

DP,DP-1,2,3

RADIO DIRECTION FINDER EQUIPMENT

March 1957

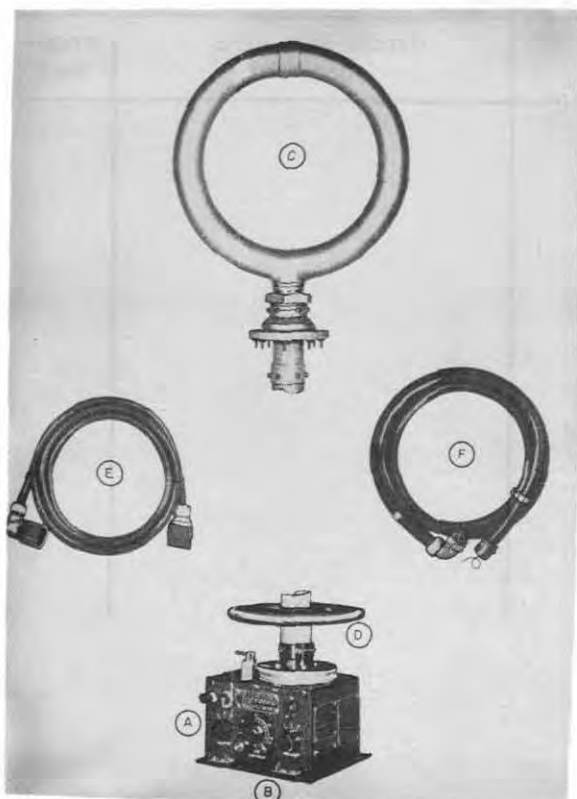
EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT				NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
DP	DP-1	DP-2	DP-3			
1	1	1	1	Loop Assembly NT-69006		
1	1	1	1	Loop Pedestal NT-69007		
	1	1	2	Deck Bearing NT-69008		
		2		Universal Joint NT-69010		
1	1	1	1	Operating Pedestal NT-69011		
1	1	1	1	Handwheel NT-69012		
1	1	1	1	Azimuth Scale NT-69013		
	1	1	1	Loop Output Transformer NT-47081		
	1	1	1	Receiver Input Transformer NT-47082		
1	1	1	1	Receiver NT-46038		
1	1	1	1	Power Unit NT-20026		
1	1	1	1	Submarine Loop Assembly NT-49014		
1	1	1	1	Spare Parts		
1				Loop-Cable Assembly		
1	1	1	1	Accessories		

December 1956

RADIO DIRECTION FINDER EQUIPMENT

DW-1



Radio Direction Finder Equipment DW-1

FUNCTIONAL DESCRIPTION

The DW-1 is a direction finding equipment designed to take accurate unilateral and bilateral bearings when used in conjunction with ratio receiving equipment RU series.

It is intended for installation on the larger type of Naval aircraft, such as patrol and transport planes, where the loop may be plugged into a shaft which extends directly up through the skin of the ship from the direction finder coupling unit in the radio

compartment.

No field changes in effect at time of preparation (25 July 1956).

RELATION TO OTHER EQUIPMENT

Equipment Required but not Supplied: Radio receiving equipment of the RU series including 22 to 30 v DC primary power source, antenna collector of substantially non-directional characteristics, operators headphones, etc.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

TYPE OF RECEPTION: A1, A2 (3 bonds).
FREQUENCY RANGE: 200 to 1600 kc.
POWER SOURCE REQUIRED: 22 to 30 v DC.

MANUFACTURER'S OR CONTRACTOR'S DATA

Bendix Radio Div. of Bendix Aviation Corp., Baltimore, Maryland.

Contract NOs 72173, dated 28 April 1942.

Approximate Cost: \$500.00 with equipment spares.

TUBE AND/OR CRYSTAL COMPLEMENT

(2) 12SK7
Total Tubes: (2)

REFERENCE DATA AND LITERATURE

NA 08-5Q-12 Technical Manual for Aircraft Radio Direction Finding Equipment DW-1.

TYPE CLASSIFICATION
DESIGN COGNIZANCE BUAER
PROCUREMENT COGNIZANCE
STOCK NO.

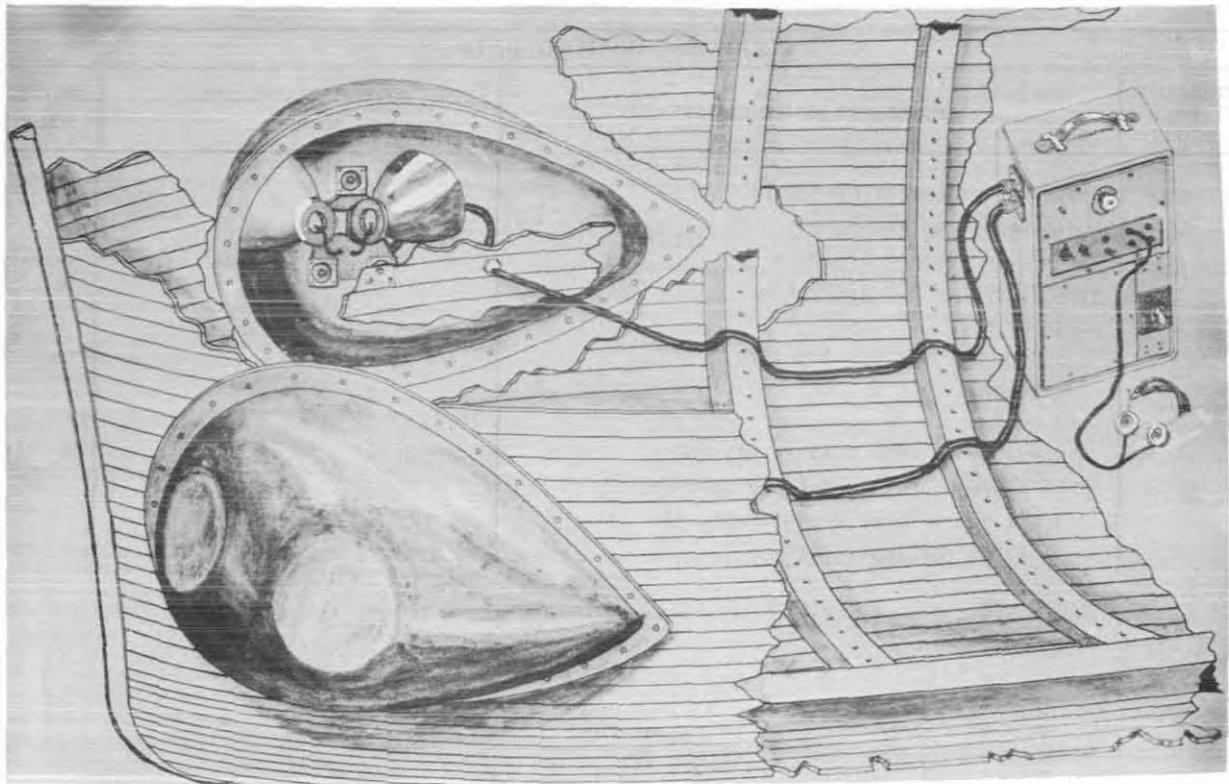
EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Coupler Unit NT-50061		3.9
1	Coupler Mounting Base NT-50062		0.4
1	Plug-in Loop NT-69052		2.2
1	Azimuth Scale and Rotating Mechanism		5.7
1	Power Cable		1.7
1	Receiver Coupling Cable		1.9
2	Instruction Books		17.3

December 1956

UNDERWATER SOUND RECEIVING EQUIPMENT

JO



Under Water Sound Receiving Equipment-JO.

FUNCTIONAL DESCRIPTION

The JO is intended for semi-permanent installations on shipboard. It is used to permit an operator on shipboard to listen to sounds being transmitted through the water and thus detect the presence of other ships, submarines, or torpedoes in the vicinity.

No field changes in effect at time of preparation (14 August 1956).

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 500 to 10,000 cps.

MANUFACTURER'S OR CONTRACTOR'S DATA

The Brush Electronics Co., Cleveland,
Ohio.

Contract NXs-4346, dated 30 April 1942.

TUBE AND/OR CRYSTAL COMPLEMENT

(2) 6SJ7 (1) 6J5 (1) 6X5GT
Total Tubes: (4)

REFERENCE DATA AND LITERATURE

Serial No 225 Installation, Operation and
Maintenance Instructions for Model JO-
Underwater Sound Receiving Equipment-
Frequency Range: 500 to 10,000 cycles.

TYPE CLASSIFICATION	BUSHIPS
DESIGN COGNIZANCE	
PROCUREMENT COGNIZANCE	
STOCK NO.	
R.D.B. IDENT. NO.	

JO

UNDERWATER SOUND RECEIVING EQUIPMENT

December 1956

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
2	Hydrophone Assembly NT-51035		72 each
1	Audio Amplifier NT-50115		40
2	Streamline Housing NT-10112		96 each
1	Head Telephone Set NT-49187A		3/8
1 set	Accessories:		
	1 Canvas Cover for Amplifier		1-1/2
	8 Plugs		
	2 Cables	75 ft	10
	1 Box containing 1 spare Crystal microphone Unit for Hydrophones		15
	1 Set Spare Tubes Replacement Parts for Amplifier		

RECEIVER GROUP

OA-192/GR



Receiver Group OA-192/GR

FUNCTIONAL DESCRIPTION

The OA-192/GR is supplied for Radio AN/GRC-29 installations and includes Radio Receiver R-278/GR or R-278A/GR or R-278B/GR.

The R-278/GR is a ground station receiver designed to provide reception of AM radio-telephone and radiotelegraph signals on any one of 1750 channels in the frequency range of 225.0 to 399.9 megacycles and simultaneously on one fixed-tuned channel in the 238 to 248 megacycle range for the purpose of ground-to-air and ground-to-ground communications and direction finding.

The R-278A/GR has the added feature of supplying a 30 cps detected signal for use in conjunction with Radio Direction Finder AN/CRD-6. Although the R-278/GR guard and multichannel receivers will likewise have a 30 cps output when receiving signals modulated with 30 cps, this output does not meet the requirements of the direction finding system.

The R-278B/GR, which supersedes the R-278A/GR, does not incorporate the guard channel receiver.

No field changes in effect at time of preparation (19 April 1957).

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE

MULTI CHANNEL RECEIVER: 225.0 to 399.9 mc.

GUARD CHANNEL RECEIVER: 238.0 to 248.0 mc.

FREQUENCY CONTROL: Crystal controlled oscillator.

OPERATING FREQUENCIES

MULTI CHANNEL RECEIVER: 1750 at 0.1 mc intervals.

GUARD CHANNEL RECEIVER: 1 fixed tuned.

QUANTITY PRESET CHANNELS: 10.

CHANNEL CHANGE TIME: 5 sec max.

TYPE RECEIVER

MULTI CHANNEL RECEIVER: Triple-conversion superheterodyne.

GUARD CHANNEL RECEIVER: Double-conversion superheterodyne.

SENSITIVITY: 6 uv signal 30% modulated at 1000 cps will produce not less than 1 W output at not less than 10 db signal-to-noise ratio.

SELECTIVITY

R-278/GR: Bandwidth 85 kc min at 6 db, 225 kc max at 60 db attenuation.

R-278A/GR and R-278B/GR: bandwidth 65 kc min at 6 db, 185 kc max at 60 db attenuation.

FREQUENCY STABILITY: Response Frequency ± 10 kc.

IMAGE FREQUENCY REJECTION: More than 60 db below signal input level.

INTERMEDIATE FREQUENCY REJECTION: More than 80 db below signal frequency input level.

TYPE RECEPTION: A2, A3.

ANTENNA INPUT IMPEDANCE: 52 ohms.

OUTPUT CHARACTERISTICS

MAIN OUTPUT: 3 W to 600 ohm balanced load.

AUXILIARY OUTPUT: +10 dbm to 600 ohm termination.

AUDIO FREQUENCY RESPONSES

BROAD: Flat within 4 db from 200 to 20000 cps.

NARROW: Greater than 10 db at 200 and 5000 cps, less than 5 db at 400 and 3000 cps, 0 db at 1000 cps.

DISTORTION: Less than 5% at 30% modulation and 3 W output.

OA-192/GR

RECEIVER GROUP

AVC CHARACTERISTIC: Audio output constant within ± 2 db for signal input from 10 uv to 0.1 v, within ± 6 db for signal input from 0.1 v to 2 v.

POWER REQUIREMENTS: 115 v or 230 v, 50 to 60 cps, 95% pf.

POWER CONSUMPTION

NORMAL OPERATION: 385 W during first 10 min, 265 W after first 10 min.

CHANNEL SELECTION PERIOD: 470 W during first 10 min, 350 W after first 10 min.

MANUFACTURER'S OR CONTRACTOR'S DATA

Collins Radio Company, Cedar Rapids, Ia.
Contract AF33(038)-6135.

TUBE AND/OR CRYSTAL COMPLEMENT

R-278A/GR, R-278B/GR

(5) 6J4	(1) 6X4W	(7) 12AU7
(9) 6AK5W	(1) 6C4	(2) 12AX7
(5) 6BA6	(2) 6AQ5	(2) 3B22
(4) 6AL5W	(3) 12AT7	(1) OA2
(2) 6AU6		

Total Tubes: (44)

R-278/GR

(5) 6J4	(1) 6X4W	(7) 12AU7
(9) 6AK5W	(1) 6C4	(2) 12AX7
(3) 6AU6	(2) 6AQ5	(2) 3B22
(4) 6BA6	(3) 12AT7	(1) OA2
(4) 6AL5W		

Total Tubes: (44)

R-278/GR, R-278A/GR

(20) CR-32/U (10) CR-23/U (10) CR-18/U

Total Crystals: (40)

R-278B/GR

(18) CR-32/U (10) CR-23/U (10) CR-18/U

Total Crystals: (38)

REFERENCE DATA AND LITERATURE

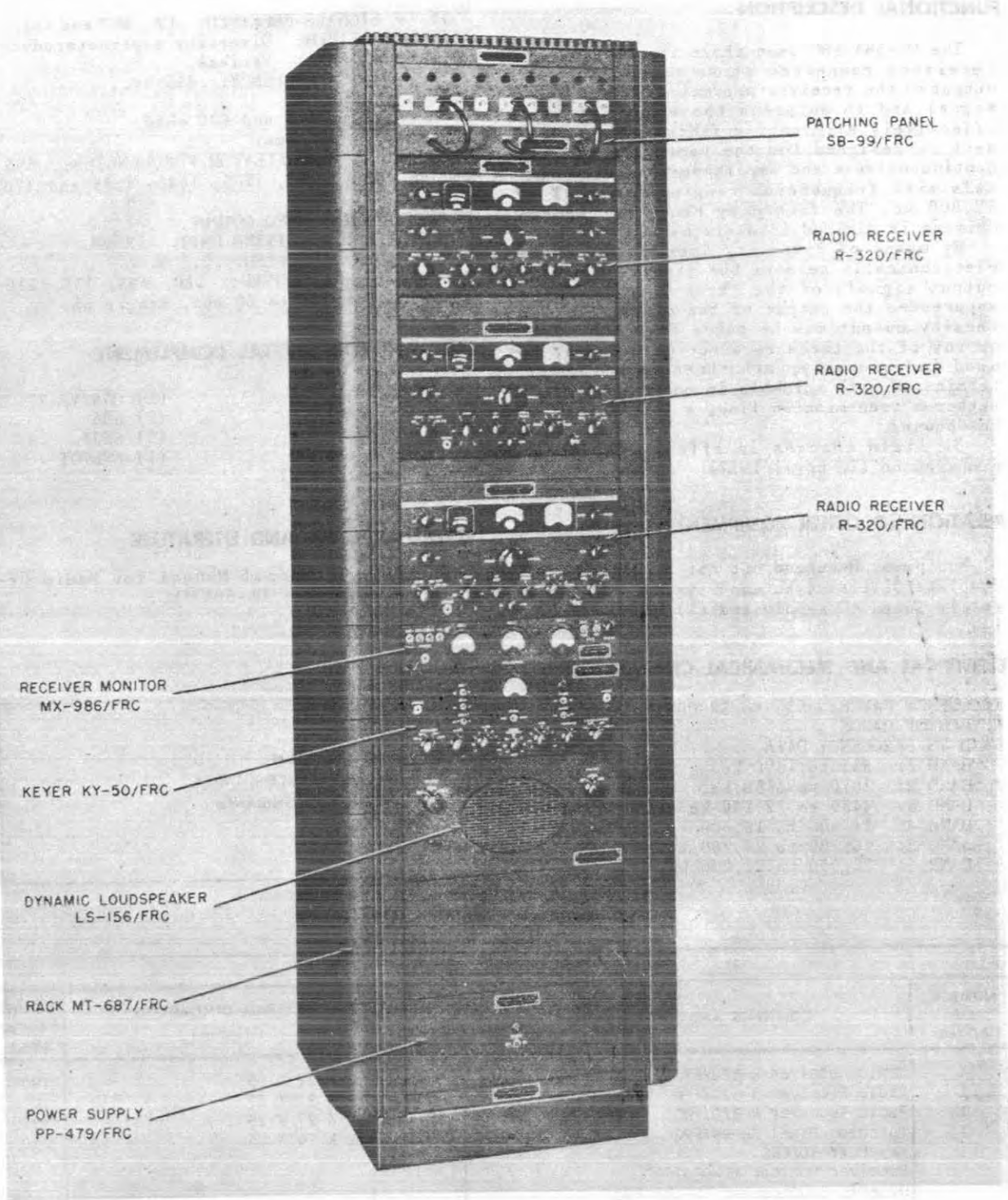
T.O. 16-350A192-3: Technical Manual for receiver Group OA-192/GR including Radio Receivers R-278/GR, R-278A/GR and R-278B/GR.

TYPE CLASSIFICATION
DESIGN COGNIZANCE USAF
PROCUREMENT COGNIZANCE
STOCK NO.

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radio Receiver R-278/GR or R-278A/GR or R-278B/GR	12-1/4 X 19 X 20	115
1	Headset NT-49507		0.75
1	Cord CD-307	60 lg	0.25
1	Power Cable Assembly CX-1174/U	120 lg	2.5
1	Case CY-722/GR	17 X 23 X 29	66

RADIO RECEIVER ASSEMBLY



- PATCHING PANEL SB-99/FRC
- RADIO RECEIVER R-320/FRC
- RADIO RECEIVER R-320/FRC
- RADIO RECEIVER R-320/FRC
- RECEIVER MONITOR MX-986/FRC
- KEYER KY-50/FRC
- DYNAMIC LOUDSPEAKER LS-156/FRC
- RACK MT-687/FRC
- POWER SUPPLY PP-479/FRC

Radio Receiver Assembly OA-58A/FRC

OA-58A/FRC

RADIO RECEIVER ASSEMBLY

FUNCTIONAL DESCRIPTION

The OA-58A/FRC uses three identical radio receivers connected so as to utilize the output of the receiver producing the strongest signal and to suppress the other two thus effectively eliminating fading. The equipment is designed for the reception of both continuous-wave and amplitude-modulated signals with frequencies ranging from 535 to 32,000 kc. The frequency range of the receivers is divided into six bands.

By means of diversity action, the keyer electronically selects the strongest of the output signals of the three receivers and suppresses the output of the other two. Diversity output may be taken from the keyer or any of the three receiver outputs may be used individually; all three receivers are terminated with suitable impedances to match either a transmission line, a loudspeaker or headphones.

No field changes in effect at time of preparation (16 April 1957).

RELATION TO OTHER EQUIPMENT

Equipment Required but not Supplied: (1) Complete diversity antenna system, (1) separately fused AC supply and (1) Headset P-18.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 535 to 32,000 kc.

NUMBER OF BANDS: 6.

BAND VS FREQUENCY DATA.

- BAND 1: 535 to 1600 kc.
- BAND 2: 1570 to 4550 kc.
- BAND 3: 4450 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.

TYPE OF SIGNALS RECEIVED: CW, MCW and Voice.
 TYPE OF RECEIVER: Diversity superheterodyne.
 TYPE OF ANTENNA: Various.
 INTERMEDIATE FREQUENCY: 455 kc.
 OUTPUT IMPEDANCE.
 RECEIVER: 2.5 and 600 ohms.
 KEYER: 600 ohms.
 RECEIVER TON OSCILLATOR FREQUENCIES: 595, 765, 935, 1105, 1275, 1445, 1615 and 1785 cps.
 MAXIMUM UNDISTORTED OUTPUT.
 KEYER AND COMBINING UNIT: 12 MW.
 RECEIVER AMPLIFIER: 2.5 W.
 POWER SOURCE REQUIRED: 110, 125, 150, 210 and 240 v, 50 to 60 cps, single ph.

TUBE AND/OR CRYSTAL COMPLEMENT

- (2) OD3/VR-150
 - (2) 5Y3GT
 - (1) 6SG7
 - (2) 6SN7GT
 - (1) OA3/VR-75
 - (2) 6H6
 - (1) 6SJ7
 - (1) 6SL7GT
- Total Tubes: (12)

REFERENCE DATA AND LITERATURE

TM11-889A, Technical Manual for Radio Receiver Assembly OA-58A/FRC.

TYPE CLASSIFICATION
 DESIGN COGNIZANCE TASSA
 PROCUREMENT COGNIZANCE
 STOCK NO.

SHIPPING DATA

NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
1	Radio Receiver R-320/FRC	8.61	19 X 27 X 29	190
1	Radio Receiver R-320/FRC	8.61	19 X 27 X 29	190
1	Radio Receiver R-320/FRC	8.61	19 X 27 X 29	190
1	Patching Panel SB-99/FRC Keyer KY-50/FRC Receiver Monitor MX-986/FRC Dynamic Loudspeaker LS-156/FRC Power Supply PP-479/FRC	7.64	22 X 24 X 25	210
1	Set of interconnecting Cables Rack MT-687/FRC	51.122	30 X 32 X 92	595

RADIO RECEIVER ASSEMBLY

OA-58A/FRC

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Rack MT-687/FRC	21-1/2 X 28 X 84-7/8	250
1	Patching Panel SB-99/FRC	1-9/16 X 7 X 19	5
3	Radio Receiver R-320/FRC	10-1/2 X 19 X 19-1/8	80
1	Receiver Monitor MX-986/FRC	7 X 7-3/4 X 19	26
1	Keyer KY-50/FRC	7 X 12-1/2 X 19	10
1	Dynamic Loudspeaker LS-156/FRC	4-3/4 X 8-3/4 X 19	10
1	Power Supply PP-479/FRC	7 X 7-1/8 X 19	20
1	Cord CG-409/U	26 lg	
1	Cord CG-409/U	36 lg	
1	Cord CG-409/U	38 lg	
1	Special Purpose Cable Assembly CX-1273/U	8 lg	
1	RF Cable Assembly CG-622/U	46-5/16 lg	
1	RF Cable Assembly CG-622/U	58-5/16 lg	
1	RF Cable Assembly CG-622/U	70-5/16 lg	
1	RF Cable Assembly CG-623/U	40 lg	
1	RF Cable Assembly CG-623/U	52 lg	
1	RF Cable Assembly CG-623/U	65 lg	
1	Power Cable Assembly CX-1272/U	115-5/8 lg	

27 August 1962

RADIO, RECEIVER R-1016/URR

Cog Service:

FSN:

Functional Class:

USA

USN

USAF

TYPE CLASS:

MANUFACTURER'S NAME/CODE NUMBER: Radio Corporation of America, Industrial Products Division,
Radio Marine Products.

(No Illustration Available)

FUNCTIONAL DESCRIPTION:

The Radio, Receiver R-1016/URR is a general-purpose, single-sideband set for reception between 80 kilocycle (KC) and 30 megacycle (MC), with eighteen (18) bands. It is a triple conversion superheterodyne receiver with continuous tuning range from 80 kc to 30 mc. The receiver incorporates highly selective, sensitive and stable circuitry, and is suitable for applications aboard ship or on shore where a modern high performance receiver is required.

No field changes in effect at time of preparation (16 May 1961).

TECHNICAL CHARACTERISTICS:

TYPE OF INSTALLATION: Aboard ship or shore.

TYPE OF RECEIVER: Triple conversion superheterodyne.

TYPE OF TUNING: Continuous tuning over freq range of 80 kc to 30 mc.

TYPE OF EMISSION: A1, A2, A3, SSB with or without carrier suppression.

IMPEDANCE: 600 ohms.

TYPE OF CONTROL: Automatic Gain Control.

NUMBER OF BANDS: 18 bands.

FREQUENCY RANGE: 80 kc to 30 mc.

BAND ONE: 80 to 200 kc.

BAND TWO: 200 to 520 kc.

BAND THREE: 520 to 1300 kc.

BAND FOUR: 1.2 to 3 mc.

BAND FIVE: 2 to 4 mc.

BAND SIX: 4 to 6 mc.

BAND SEVEN: 6 to 8 mc.

BAND EIGHT: 8 to 10 mc.

BAND NINE: 10 to 12 mc.

BAND TEN: 12 to 14 mc.

BAND ELEVEN: 14 to 16 mc.

BAND TWELVE: 16 to 18 mc.

BAND THIRTEEN: 18 to 20 mc.

BAND FOURTEEN: 20 to 22 mc.

BAND FIFTEEN: 22 to 24 mc.

BAND SIXTEEN: 24 to 26 mc.

BAND SEVENTEEN: 26 to 28 mc.

BAND EIGHTEEN: 28 to 30 mc.

OPERATING POWER RQMT: 115 v ac, 45 to 60 cps, single ph.

R-1016/URR RADIO, RECEIVER**RELATION TO OTHER EQUIPMENT:**

The R-1016/URR is the same as RCA's Commercial Model AR-8516.

EQUIPMENT REQUIRED BUT NOT SUPPLIED: None.

MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (INCHES)	WEIGHT (LBS)
1	Radio Receiver R-1016/URR		11-3/8 x 17-1/2 x 22	

REFERENCE DATA AND LITERATURE:

Nomenclature Card for Radio, Receiver R-1016/URR.

TUBE, CRYSTAL AND/OR SEMI-CONDUCTOR DATA:

TUBES: Data not available.

CRYSTALS: Data not available.

SEMI-CONDUCTORS: Data not available.

SHIPPING DATA

PKGS	VOLUME (CU FT)	WEIGHT (LBS)

PROCUREMENT DATA

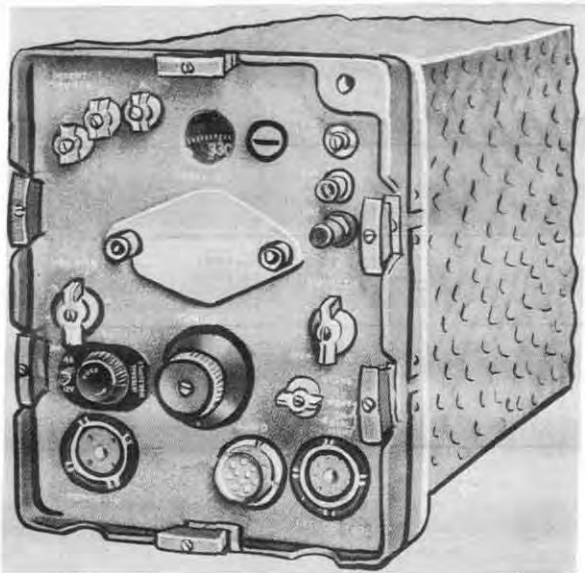
PROCURING SERVICE:

DESIGN COG: USN, BuShips

SPEC &/OR DWG:

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX. UNIT COST
Radio Corporation of America, Industrial Pro- ducts Division, Radio Marine Products Model no. AR-8516	Camden, N. J.	N0bsr-81528, 28 June 1960	\$1,103.05

December 1956

RADIO RECEIVER**R-108/GRC,
109/GRC,110/GRC**

Radio Receiver R-108/GRC, 109/GRC, 110/GRC

FUNCTIONAL DESCRIPTION

The 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, those components that determine the frequency range, and the bias source for the squelch oscillator.

They are provided with continuously variable tuning, and 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.

No field changes in effect at time of preparation (17 July 1956).

RELATION TO OTHER EQUIPMENT

Equipment Required but not Supplied: (1) Power Supply PP-281/GRC, PP-282/GRC or PP-448/GR (for vehicular installation only), (1) Antenna, (1) Headset Cables, and Connectors as Required, Tools and Test Equipment as Required.

ELECTRICAL AND MECHANICAL CHARACTERISTICS**FREQUENCY RANGE**

R-108/GRC: 20 to 28 mc.
R-109/GRC: 27 to 39 mc.

R-110/GRC: 38 to 55 mc.

CHANNEL DATA
R-108/GRC: 80 channels.
R-109/GRC: 120 channels.
R-110/GRC: 170 channels.

CHANNEL SPACING: 100 kc.

TYPE TUNING: Continuously variable, and detent selection of 3 preset frequencies.

RECEIVER TYPE: FM, single-conversion, superheterodyne.

TYPE SIGNALS RECEIVED: Voice-modulated or tone.

INTERMEDIATE FREQUENCY: 4.3 mc.

CALIBRATION DATA
METHOD OF TUNING DIAL: Built-in 4.3 mc crystal controlled oscillator.
FREQUENCIES: Multiples of 4.3 mc.
ACCURACY: Approx $\pm 0.01\%$.

CURRENT DRAIN
BATTERY (6 VOLT): 3.5 amp.
BATTERY (12 VOLT): 2 amp.
BATTERY (24 VOLT): 1.5 amp.

SENSITIVITY: Over 25 db signal plus noise-to-noise ratio at 0.5 uv (all ranges). deviation ± 15 kc, 1000 cps.

HF OSCILLATOR RANGE
R-108/GRC: 24.3 to 32.3 mc.
R-109/GRC: 31.3 to 43.3 mc.
R-110/GRC: 42.3 to 59.3 mc.

BANDWIDTH
6 DB DOWN: 85 kc ± 15 kc.
40 DB DOWN: 195 kc max.

AUDIO OUTPUT
LOUDSPEAKER: 500 mw.
EARPHONES: 40 mw.
FIXED LEVEL: 20 min ± 3 mw.
IMPEDANCES (EACH): 600 ohm unbalanced

SQUELCH CIRCUIT DATA: Continuously variable control adjusts squelch sensitivity to open on signals from approx 0.3 uv to 75 uv. Off position of control disables squelch circuit.

EXTERNAL RELAY: Receiver provides 5 ma current for operation; controlled by squelch circuit.

POWER SUPPLY DATA
BATTERY (6 v): PP-448/GR.
BATTERY (12 v): PP-281/GRC.
BATTERY (24 v): PP-282/GRC.
EXTERNAL: 6.3 v DC and 130 v DC (emergency supply).

ANTENNA DATA
TYPE: Portable whip.

MANUFACTURER'S OR CONTRACTOR'S DATA

Lewyt Corp., Brooklyn, New York.
Contract DA-36-039-SC3769, dated 19 June 1950 (R-108/GRC).
Contract DA-36-039-SC12102 (R-109/GRC).
Federal Telephone and Radio Corp., Newark, N. J.

**R-108/GRC,
109/GRC,110/GRC****RADIO RECEIVER**

December 1956

Contract Mlpr 881-53060, dated 25 Sept 1951 (R-110/GRC).

Approximate Cost: \$570.00 with equipment spares. (R-110/GRC)

Approximate Cost: \$440.00 with equipment spares. (R-108/GRC) and (R-109/GRC)

R-110/GRC

(1) 1A3

(2) 5654/6AK5W

(1) 1L4

(2) 3A5

(2) 1S5

(2) 3Q4

(4) 1U4

Total Tubes: (14)

(1) CR-18/U

Total Crystals: (1)

TUBE AND/OR CRYSTAL COMPLEMENT

R-108/GRC

(1) 1A3

(2) 5654/6AK5W

(1) 1L4

(2) 3A5

(2) 1S5

(2) 3Q4

(4) 1U4

Total Tubes: (14)

(1) CR-18/U

Total Crystals: (1)

R-109/GRC

(1) 1A3

(2) 5654/6AK5W

(1) 1L4

(2) 3A5

(2) 1S5

(2) 3Q4

(4) 1U4

Total Tubes: (14)

(1) CR-18/U

Total Crystals: (1)

REFERENCE DATA AND LITERATURETM-898: Technical Manual for Radio Receivers
R-108/GRC, R-109/GRC and R-110/GRC.

TYPE CLASSIFICATION
DESIGN COGNIZANCE TASSA
PROCUREMENT COGNIZANCE
STOCK NO.

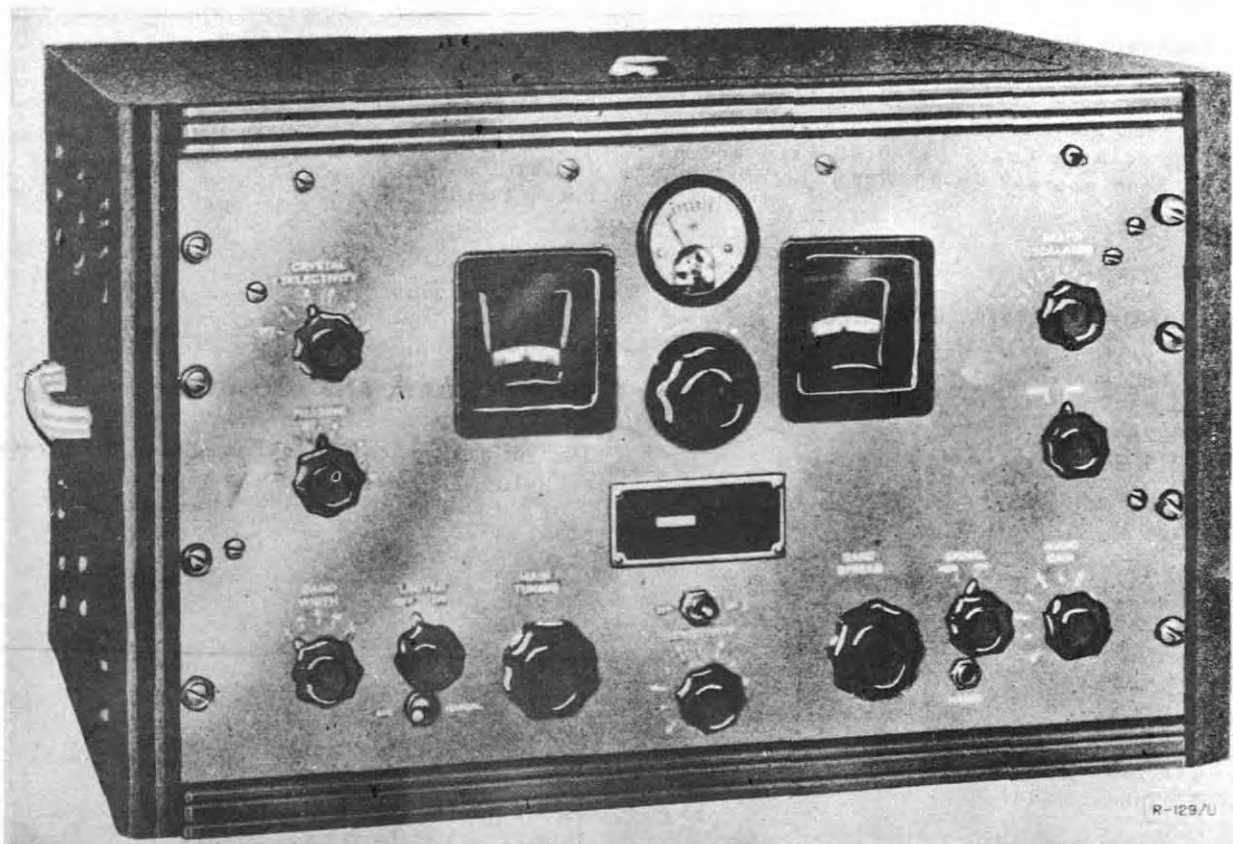
SHIPPING DATA

NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
1	Radio Receiver R-108/GRC, R-109/GRC, or R-110/GRC	0.69	8-1/4 X 10 X 14-1/4	38.6

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radio Receiver R-108/GRC	7-1/4 X 9 X 12-13/16	20.25
1	Radio Receiver R-109/GRC	7-1/4 X 9 X 12-13/16	20.25
1	Radio Receiver R-110/GRC	7-1/4 X 9 X 12-13/16	20.25
1	Tube Puller, Kellem type 11-16		
1	Circuit Label		
2	Technical Manuals TM11-898		
1	Set Allen wrenches No. 8, 6 and 4		

RADIO RECEIVER



Radio Receiver R-129/U

FUNCTIONAL DESCRIPTION

The R-129/U is a general purpose receiver designed for the reception of continuous-wave, amplitude modulated voice or tone signals in the frequency range of 0.3 to 10 megacycles. It is intended primarily for fixed-station use, although mountings for vehicular installation may be utilized. It uses an external power source, but in an emergency can be operated from batteries.

No field changes in effect at time of preparation (25 February 1957).

RELATION TO OTHER EQUIPMENT

The R-129/U is the same as Radio Receivers BC-779-A, BC-794-A, BC-794-B, BC-1004-B, C, and D except in frequency coverage.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 0.3 to 10 mc.

RECEPTION: A1, A2, A3.

TYPE RECEIVER: Superheterodyne.

POWER REQUIREMENTS: 95 to 260 v, 25 to 60 cps, 180 W or (1) 6 v storage battery, (5) 45 v B batteries, (1) 45 v C battery.

TUBE AND/OR CRYSTAL COMPLEMENT

(4) 6SK7	(1) 6L7	(1) 6J7
(1) 6K7	(3) 6H6	(2) 6SJ7
(1) 6N7	(1) 6C5	(2) 6F6

Total Tubes: (16)

(1) 465KC

Total Crystals: (1)

Radio-Receivers
R-129/U

RADIO RECEIVER

REFERENCE DATA AND LITERATURE

TM11-487A: Technical Manual for Directory of Signal Corps Equipments, Radio Communication Equipment.

TYPE CLASSIFICATION
DESIGN COGNIZANCE TASSA
PROCUREMENT COGNIZANCE
STOCK NO.

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radio Receiver R-129/U	10-1/2 X 15-3/8 X 19	55
1	Power Supply Unit RA-74 or RA-84 or RA-94-A	10 X 10-1/2 X 19	60

RADIO RECEIVER

Radio-Receivers
R-203/SR,203A/SR

Accessories for Radio Receiver R-203A/SR

FUNCTIONAL DESCRIPTION

The R-203/SR and R-203A/SR are designed especially for shipborne fixed-station use as a component of the ship's radio installation, and provide reception of continuous-wave or amplitude-modulated radio signals from shore stations, aircraft, or other ships over a range which depends upon the power and location of the transmitting station.

The R-203/SR is essentially the same as the R-203A/SR, the major external difference being the inclusion of a separate power off-on switch on the R-203A/SR and calibration markings on the two receivers are superficially different from each other.

No field changes in effect at time of preparation (24 October 1956).

RELATION TO OTHER EQUIPMENT

Equipment Required but not Supplied: (1) Antenna Wire, 100 ft, Cables and Installation Material as required, Test Equipment as required.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 85 to 550 kc and 1.9 to 25 mc in 5 bands.

RECEPTION: CW, MCW, AM.

TUNING: Manual.

AUDIO OUTPUT: 2 W max, 750 mw undistorted.

TYPE RECEIVER: Superheterodyne.

HF OSCILLATOR RADIATION: 400 uuw max.

POWER REQUIREMENTS: 115 or 230 v AC or DC, 45 W at 115 v, 90 W at 230 v.

ANTENNA DATA: Horizontal doublet, 35 ft each side of center.

Radio-Receivers

R-203/SR,203A/SR**RADIO RECEIVER***Radio Receiver R-203A/SR***MANUFACTURER'S OR CONTRACTOR'S DATA**

Radiomarine Corporation of America, New York, N.Y.

Approximate Cost: \$500.00 with equipment spares

REFERENCE DATA AND LITERATURE

TM11-875: Technical Manual for Radio Receivers R-203/SR and R-203A/SR.

TUBE AND/OR CRYSTAL COMPLEMENT

(5) 6SG7 (2) 6J5 (1) 6SQ7

(1) 25L6GT (1) 25Z6GT

Total Tubes: (10).

TYPE CLASSIFICATION
DESIGN COGNIZANCE TASSA
PROCUREMENT COGNIZANCE
STOCK NO.

SHIPPING DATA

NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
1	Radio Receiver R-203/SR or R-203A/SR	11	23 X 23 X 36	145

RADIO RECEIVER

Radio-Receivers
R-203/SR,203A/SR

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
	R-203/SR		
1	Radio Receiver R-203/SR	11-3/4 X 13-1/16 X 21	65
1	Line Filter Radjmarine Type RM-8	3-5/8 X 6-7/8 X 7-1/4	6
1	Fixed Resistor Radiomarine Type RM-9	2-5/8 X 2-7/8 X 11-3/8	1.5
2	Technical Manual	3/4 X 7-7/8 X 10-1/4	2
1	Set of Spare Parts	5 X 5 X 7	2
	R-203A/SR		
1	Radio Receiver R-203A/SR	11-3/4 X 13-1/16 X 21	65
1	Electrical Noise Suppressor F-91/U	3-5/8 X 6-7/8 X 7-1/4	6
1	Fixed Resistor MX-1024/U	2-5/8 X 2-7/8 X 11-3/8	1.5
1	Headset with Cord and Plug		0.5
2	Technical Manual	3/4 X 7-7/8 X 10-1/4	2
1	Set of Spare Parts	5 X 5 X 7	2

RADIO RECEIVER

R-212/SR



Radio Receiver R-212/SR

FUNCTIONAL DESCRIPTION

The R-212/SR is a radio-telegraph receiver designed for use on ships and also at fixed stations.

This receiver is of the tuned radio-frequency type having on stage of radio frequency amplification, a regenerative detector, and two stages of audio amplification. It is designed to cover the intermediate and low frequency bands and can be used for the reception of both code (CW or ICW) and modulated (MCW) signals.

The receiver is intended to be used with a single-wire antenna and ground. Provision has also been made for connecting an emergency antenna which can be quickly selected by means of a change-over switch on the panel.

No field changes in effect at time of preparation (19 December 1956).

RELATION TO OTHER EQUIPMENT

Identical to the Marine Radio Receiver type 128-AY.

Equipment Required but not Supplied: (1) Single-Wire antenna and ground wire (1) Set of headphones.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 15 to 650 kc.

BAND VS FREQUENCY DATA

BAND A: 15 to 41 kc.

BAND B: 37 to 105 kc.

BAND C: 95 to 260 kc.

BAND D: 240 to 650 kc.

August 1957

Radio-Receivers

R-212/SR**RADIO RECEIVER**

OUTPUT IMPEDANCE: 10,000 to 20,000 ohms.
 POWER OUTPUT: 100 milliwatts with low distortion, 150 milliwatts max without regard to distortion.
 ANTENNA: Single-wire type, change-over switch and connections for emergency antenna.
 MEAN AVERAGE SENSITIVITY: 32.5 uv with regeneration, MCW and 4 v output.
 SIGNAL TO NOISE RATIO: 20 to 1.
 POWER SOURCE REQUIRED: 115 v, 60 cps, single ph, 36 W or 115 v DC at 170 ma and 6.3 v DC at 1.9 amps or 90 v DC at 7 to 12 ma and 6.3 at 19 amps.
 MOUNTING: Shock mounted to operating table.

REFERENCE DATA AND LITERATURE

TM11-868, Technical Manual for Radio Receiver 128-AY.

TUBE AND/OR CRYSTAL COMPLEMENT

(1) 6SK7 (1) 35Z5-GT
 (1) 6J5 (1) 6K6-G
 (2) 6SJ7

Total Tubes: (6)

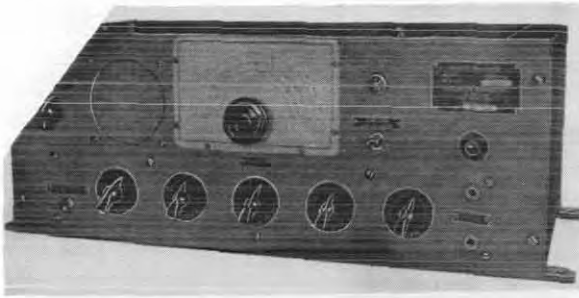
TYPE CLASSIFICATION
 DESIGN COGNIZANCE TASSA
 PROCUREMENT COGNIZANCE
 STOCK NO.

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radio Receiver R-212/SR	10-3/4 x 13-1/2 x 17	43

August 1957

Radio-Receivers

RADIO RECEIVER**R-215/SR***Radio Receiver R-215/SR*

ANTENNA: Long-wire of shipboard
 RANGE: Short to medium
 TYPE OF SIGNAL: AM, MCW and CW.
 INSTALLATION: Fixed or shipboard.
 POWER SOURCE REQUIRED: 6 and 90 v DC, or
 110 v DC or 115 v, 60 cps at 35 W.

MANUFACTURER'S OR CONTRACTOR'S DATA

Radio Marine Corp. of America

FUNCTIONAL DESCRIPTION

The R-215/SR (RMCA Model AR-8510) is designed for use on ship board to communicate from ship-to-ship or from ship-to-shore. Encased in a steel cabinet, it contains integral coils, a built-in 3-inch speaker, a charging panel and headphones. This receiver is operated by external power supply batteries and is designed for reception of signals from stations on shore and ship-board.

No field changes in effect at time of preparation (18 December 1956).

TUBE AND/OR CRYSTAL COMPLEMENT

(4) 6SK7WA (1) 6V6GT
 Total Tubes: (5)

REFERENCE DATA AND LITERATURE

TM11-487A, Directory of Signal Corp Equipments Radio Communication Equipment, Page 153.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 0.015 to 0.65 mc in 4 bands.

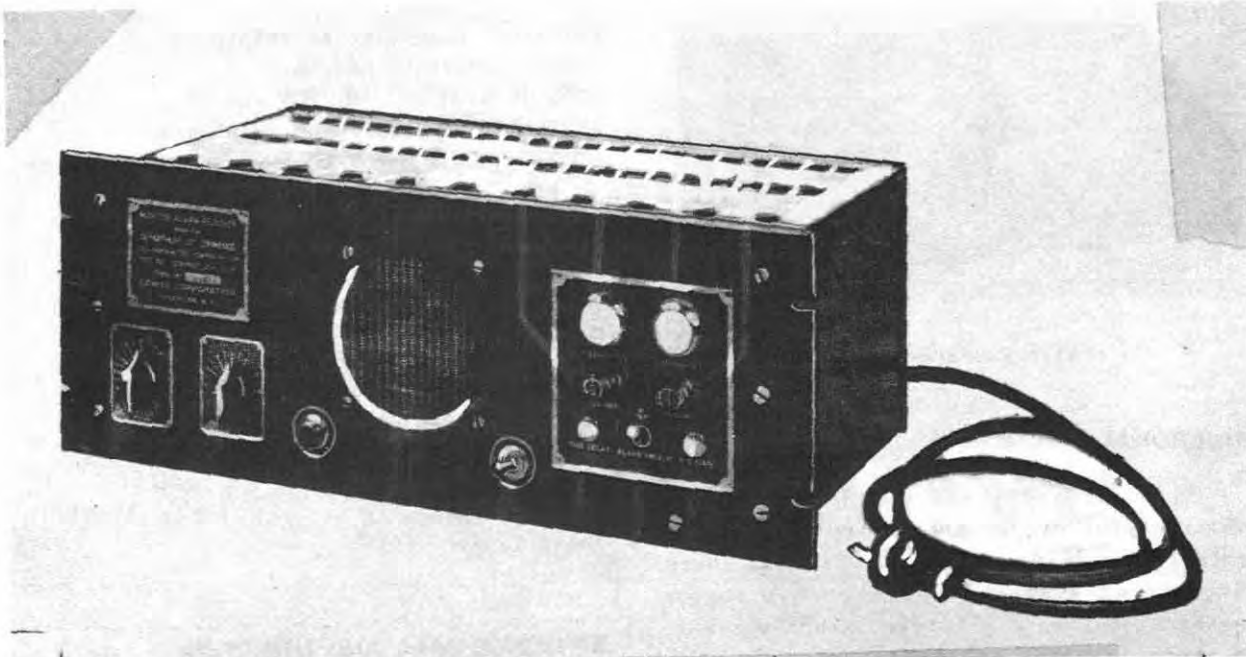
BAND DATA

BAND 1: 0.015 to 0.038 mc.
 BAND 2: 0.038 to 0.1 mc.
 BAND 3: 0.1 to 0.25 mc.
 BAND 4: 0.25 to 0.65 mc.

TYPE CLASSIFICATION
 DESIGN COGNIZANCE TASSA
 PROCUREMENT COGNIZANCE
 STOCK NO.

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radio Receiver	8-1/4 x 13 x 22	39
1	Power Supply	8-5/8 x 9-1/4 x 11-3/8	21.5



Fixed-Tuned Monitor Receiver R-247/URR (RIU)

FUNCTIONAL DESCRIPTION

The R-247/URR(RIU) is a fixed-tuned monitor alarm receiver intended specifically for the monitoring of compass locator station transmitters in the 200 to 550 kc frequency band. The TRF receiver has "instantaneous" and "time-delay" alarm circuits which operate an alarm buzzer and signal lamps whenever the signal drops below a certain level, except that if the "time-delay" feature is in operation, a delay of ten to fifteen seconds is provided to permit keying of an identifying signal by the transmitter without undesired operation of the alarm. Each of the three RF stages is individually tuned from the rear of the receiver.

No field changes in effect at time of preparation (11 September 1956).

RELATION TO OTHER EQUIPMENT

Equipment Required but not Supplied: (1)
Receiving Antenna.

UNCLASSIFIED

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 200 to 550 kc.

RECEPTION: A3, A3.

POWER OUTPUT: 0.5 W into 20,000 ohm load;
0.2 W into 600 ohm load.

OUTPUT IMPEDANCE

HEADPHONES: 600 ohms.

SPEAKER: 20000 ohms.

SENSITIVITY: 10 uv input for 0.5 W output.

ANTENNA: Single wire.

OPERATING POWER: 115 v, 60 cps, single ph,
48 W.

MOUNTING: Standard relay rack.

MANUFACTURER'S OR CONTRACTOR'S DATA

Lewyt Corp, Brooklyn, N.Y.

Contract CAA 25755, dated 30 July 1947.

Approximate Cost: \$1000.00 with equip-
ment spares.

TUBE AND/OR CRYSTAL COMPLEMENT

(2) 84

(3) 6SK7

(1) 6SR7

(1) 6V6

Total Tubes: (7)

R-247/URR (RIU)

FIXED-TUNED MONITOR RECEIVER

March 1957

REFERENCE DATA AND LITERATURE

NAVSHIPS 91084: Technical Manual for Fixed-Tuned Monitor Receiver with Carrier-Interruption Alarm.

TYPE CLASSIFICATION
DESIGN COGNIZANCE BUSHIPS
PROCUREMENT COGNIZANCE
STOCK NO.

SHIPPING DATA

NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
1	Radio Receiver and Spares			40

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radio Receiver R-247/URR	6-31/32 X 9-1/8 X 19	35
1	Set Equipment Spares		

April 1959

RADIO COMMUNICATION RECEIVERRadio-Receiver
R-274/FRR*Radio Receiver R-274/FRR***FUNCTIONAL DESCRIPTION**

The R-274/FRR is designed to receive Amplitude Modulated (AM) signals. It can be adjusted for reception of both Continuous Wave (CW) and Modulated Continuous Wave (MCW) voice or tone signals. A connection is provided to allow a carrier-shift type of radioteletype signal to be taken off and fed to terminal radioteletype equipment such as Radio Terminal Equipment such as AN/FGC-(*) or Dual Diversity Converter CV-31(*)/TRA-7.

No field changes in effect at time of preparation (22 April 1959).

RELATION TO OTHER EQUIPMENT

The R-274/FRR is the same as the R-274D/FRR in operation, but differs in equipment supplied; in the R-274D/FRR the remote standby circuit is replaced by an antenna disabling circuit.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

TYPE OF RECEIVER: Superheterodyne, single or double conversion.

TYPE OF SIGNALS USED: CW, ICW, MCW (tone and voice), and carrier shift radiotele-

type.

ANTENNA INPUT: Balanced input 50 to 200 ohms.

NUMBER OF BANDS: 6 bands.

FREQUENCY RANGE: 0.54 to 54 mc.

BAND ONE: 540 to 1,270 kc.

BAND TWO: 1.27 to 3 mc.

BAND THREE: 3 to 7 mc.

BAND FOUR: 7 to 13.8 mc.

BAND FIVE: 13.8 to 29.7 mc.

BAND SIX: 29.7 to 54 mc.

OPERATING POWER RQMT

LINE RATING: 95, 105, 117, 130, 190, 210, 234 and 260 v taps, 50 to 60 cps.

POWER CONSUMPTION: 120 W approx.

MANUFACTURER'S OR CONTRACTOR'S DATA

Hallicrafter Co., Chicago, Illinois.

Dwg No. 1X816.

Contract Order No. 18566-PHILA-49-7.

TUBE AND/OR CRYSTAL COMPLEMENT

(2) 6AG5	(8) 6BA6	(2) 6BE6
(1) 6C4	(1) 6AT6	(1) 6V6G
(2) 6AL5	(1) 5U4G	(1) 0C-3VR105

Total Tubes: (19)

No Crystals used.

REFERENCE DATA AND LITERATURE

TM11-897: Technical Manual for Radio Receiver R-274/FRR and R-274D/FRR.

TYPE CLASSIFICATION
DESIGN COGNIZANCE TASSA
PROCUREMENT COGNIZANCE 71-3340 (ARMY)
STOCK NO.
R.D.B. IDENT. NO.

R-274/FRR

RADIO COMMUNICATION RECEIVER

SHIPPING DATA

NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
1	Radio Receiver R-274/FRR	2.5	13-5/8 X 21-7/8 X 27	105

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radio Receiver R-274/FRR Including:	10-15/32 X 18-1/8 X 19	58
1	Electrical Power Cable CX-1855/U	72 lg	

April 1959

Radio-Receivers

RADIO COMMUNICATION RECEIVER**R-274B/FRR**

Radio Communication Receiver R-274B/FRR

FUNCTIONAL DESCRIPTION

The R-274B/FRR is designed as a twenty (20) tube Radio Communications Receiver with self contained power supply. The receiver is suitable for either headphone or loudspeaker reception of Amplitude Modulation (AM) radio telephone, Continuous Wave (CW) telegraph, Amplitude Modulation (AM) Modulated Continuous Wave (MCW) telegraph signals and for diversity applications.

No field changes in effect at time of preparation (21 April 1959).

RELATION TO OTHER EQUIPMENT

The R-274B/FRR is the same as Hammarlund Mfg Co Inc., Commercial Model SP-600-JX-6.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

NUMBER OF BANDS: 6 bands.

OUTPUT IMPEDANCE

SPLIT WINDINGS: 600 ohms-balanced.

PHONE JACK WINDING: Delivers 15 mw to an 8000 ohm resistive load, when the audio output to the 600 ohm power load is adjusted to 500 mw.

SENSITIVITY: 2.3 microvolts, or better, throughout the entire frequency range,

for a signal to noise ratio of 10 db, at 20 mw output and with the R.F. Gain Control at max.

IMAGE REJECTION RATIO: Better than 74 db throughout the frequency range.

INTERMEDIATE FREQUENCY REJECTION RATIO: At 600 kc is 2700 to 1.

POWER OUTPUT: 2.0 W, with less than 10% distortion.

FREQUENCY RANGE: 0.54 to 54 mc.

BAND ONE: 0.54 to 1.35 mc.

BAND TWO: 1.35 to 3.45 mc.

BAND THREE: 3.45 to 7.40 mc.

BAND FOUR: 7.40 to 14.8 mc.

BAND FIVE: 14.80 to 29.7 mc.

BAND SIX: 29.70 to 54.0 mc.

OPERATING POWER RQMT

LINE RATING: 95, 105, 117, 130, 190, 210, 234 and 260 v taps, 50 to 60 cps.

POWER CONSUMPTION: 130 W, 1.25 amps at 117 v max.

MANUFACTURER'S OR CONTRACTOR'S DATA

The Hammarlund Mfg Co., Inc., New York, New York.

Model SP-600-JX-6.

Contract NObsr-52039, dated 19 October 1954.

TUBE AND/OR CRYSTAL COMPLEMENT

(7) 6BA6	(3) 6C4	(1) 6AC7
(2) 6BE6	(3) 6AL5	(1) 12AU7
(1) 6V6GT	(1) 5R4GY	(1) 0A2

Total Tubes: (20)

No Crystals Used.

REFERENCE DATA AND LITERATURE

NAVSHIPS 91661: Technical Manual for Communication Receiver R-274B/FRR.

TYPE CLASSIFICATION

DESIGN COGNIZANCE TASSA

PROCUREMENT COGNIZANCE 71-3340 (ARMY)

STOCK NO.

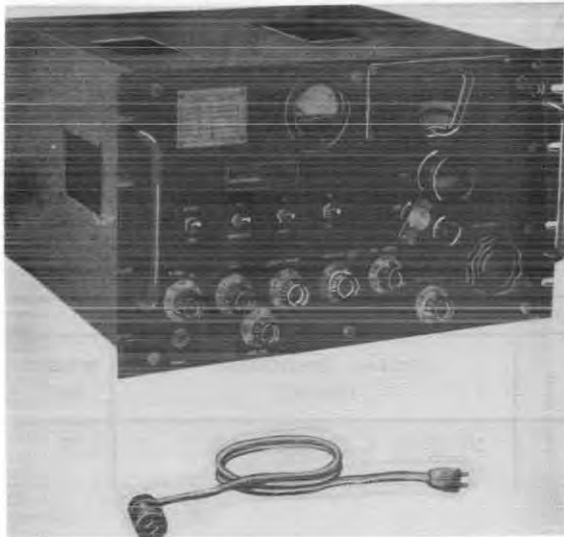
R.D.B. IDENT. NO.

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radio Communication Receiver R-274B/FRR (Rack Model) or	10-1/2 X 16-1/2 X 19	66
1	Radio Communication Receiver R-274B/FRR (Table Model)	12-3/4 X 17-1/8 X 21-3/8	87-1/2

April 1959

Radio-Receiver

RADIO COMMUNICATION RECEIVER**R-274D/FRR**

Radio Receiver R-274-D/FRR

FUNCTIONAL DESCRIPTION

The R-274D/FRR is designed to receive Amplitude Modulated (AM) signals. It can be adjusted for reception of both Continuous Wave (CW) and Modulated Continuous Wave (MCW) voice or tone signals. A connection is provided to allow a carrier-shift type of radioteletype signal to be taken off and fed to terminal radioteletype equipment such as Radioteletype Terminal Equipment such as AN/FGC-(*) or Dual Diversity Converter CV-31(*)/TRA-7.

No field changes in effect at time of preparation (21 April 1959).

RELATION TO OTHER EQUIPMENT

The R-274D/FRR is similar in operation as the R-247/FRR, R-274A/FRR, R-274B/FRR and the R-274C/FRR but differ in equipment supplied and electrical circuitry.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

TYPE OF RECEIVER: Superheterodyne, single

or double conversion.

TYPE OF SIGNALS USED: CW, ICW, MCW (tone and voice), and carrier shift radioteletype.

ANTENNA INPUT: Balanced input 50 to 200 ohms.

NUMBER OF BANDS: 6 bands.

FREQUENCY RANGE: .54 to 54 mc.

BAND ONE: 540 to 1,270 kc.

BAND TWO: 1.27 to 3 mc.

BAND THREE: 3 to 7 mc.

BAND FOUR: 7 to 13.8 mc.

BAND FIVE: 13.8 to 29.7 mc.

BAND SIX: 29.7 to 54 mc.

OPERATING POWER RQMT

LINE RATING: 95, 105, 117, 130, 190, 210, 234 and 260 v taps, 50 to 60 cps.

POWER CONSUMPTION: 120 W approx.

MANUFACTURER'S OR CONTRACTOR'S DATA

Hallicrafter Co., Chicago, Illinois.

Dwg No. 1X1387.

Contract Order No. 3464-PHILA-52-06-c.

TUBE AND/OR CRYSTAL COMPLEMENT

(2) 6AG5	(8) 6BA6	(2) 6BE6
(1) 6C4	(1) 6AT6	(1) 6V6G
(2) 6AL5	(1) 5U4G	(1) OC-3VR105

Total Tubes: (19)

No Crystals Used.

REFERENCE DATA AND LITERATURE

TM11-897: Technical Manual for Radio Receiver R-274/FRR and R-274D/FRR.

TYPE CLASSIFICATION
DESIGN COGNIZANCE TASSA
PROCUREMENT COGNIZANCE 71-3340 (ARMY)
STOCK NO.
R.D.B. IDENT. NO.

R-274D/FRR

RADIO COMMUNICATION RECEIVER

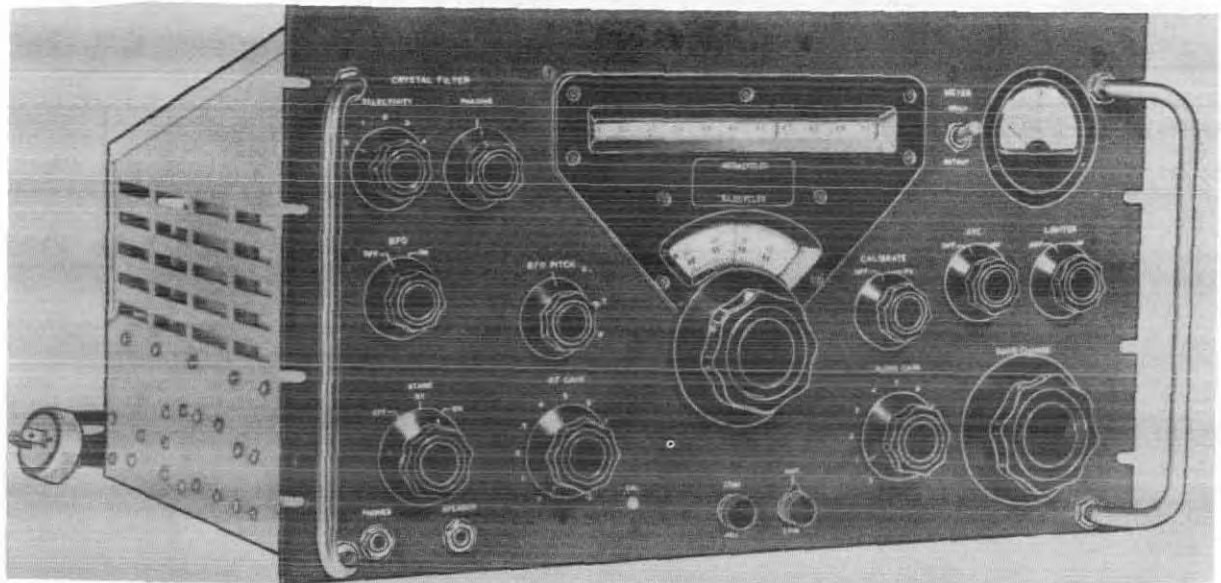
SHIPPING DATA

NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
1	Radio Receiver R-274D/FRR	2.5	13-5/8 X 21-7/8 X 27	105

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radio Receiver R-274D/FRR Including:	10-15/32 X 18-1/8 X 19	58
1	Electrical Power Cable CX-1855/U	72 lg	

December 1956

RADIO RECEIVER**R-388/URR***Radio Receiver R-388/URR***FUNCTIONAL DESCRIPTION**

The R-388/URR is a communications receiver having exceptional frequency stability and calibration accuracy.

The receiver covers the frequency range from 0.5 to 30.5 mc; its accuracy and stability makes it especially useful where it is desired to receive known frequencies without searching or frequent readjustment, and for the reception of frequency-shift keying transmissions.

No field changes in effect at time of preparation (20 July 1956).

RELATION TO OTHER EQUIPMENT

Equipment Required but not Supplied: (1) Antenna, (1) Headset or loudspeaker, (1) Cabinet Rack.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

TYPE OF RECEPTION: A1, A2, A3 and F1.
 FREQUENCY RANGE: 0.5 to 30.5 mc (30 bands).
 TUNING: Linear, divided into thirty 1 mc tuning steps.
 CALIBRATION: Built-in crystal oscillator (100 kc).
 ANTENNA INPUT IMPEDANCE: Unbalanced to match short whip antenna, 50 ohms, 100 uuf.

POWER SOURCE REQUIRED: 115 v or 230 v, 45 to 70 cycles, single phase.

MANUFACTURER'S OR CONTRACTOR'S DATA

Contract MIPR 881-47159.

Approximate Cost: \$845.00 with equipment spares.

TUBE AND/OR CRYSTAL COMPLEMENT

(2) 6AK5	(3) 6BE6
(7) 6BA6	(2) 12AX7
(1) 12AU7	(1) 6AQ5
(1) 5V4G	(1) 0A2

Total Tubes: (18)

Total Tubes: (18)

(10) CR-18/U (1) CR-7/U (1) 100KC
 Total Crystals: (12)

REFERENCE DATA AND LITERATURE

TM11-854, T016-35R-388-5: Technical Manual for Radio Receiver R-388/URR.

TYPE CLASSIFICATION
DESIGN COGNIZANCE TASSA
PROCUREMENT COGNIZANCE
STOCK NO.

UNCLASSIFIED

1.4 R-388/URR: 1.

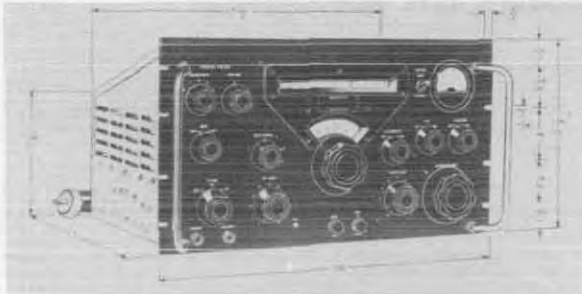
R-388/URR**RADIO RECEIVER**

December 1956

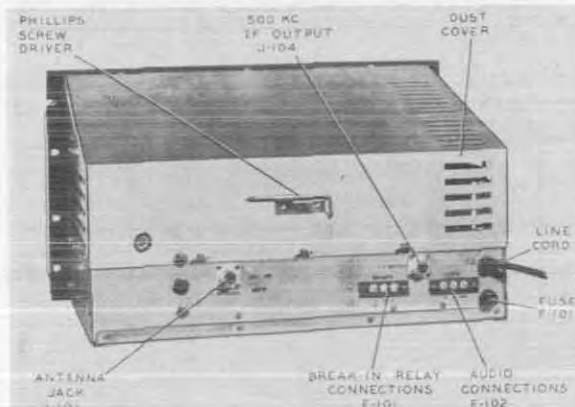
EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radio Receiver R-388/URR		
1	Set Spare Parts		
2	Technical Manuals TM11-854		

April 1959

COMMUNICATIONS RECEIVER**R-388A/URR**

Front Communications Receiver R-388A/URR



Rear Communications Receiver R-388A/URR

FUNCTIONAL DESCRIPTION

The R-388A/URR is the Collins Radio Company's Type 51J-4 designed as a Radio Communications Receiver for Communication applications where stability and dial accuracy of the highest order are the prime requisites. Under normal operating conditions, the receiver operates in the range of 540 kc to 30.5 megacycles (mc) with a total setting error and drift of less than kilocycles (kc) at any frequency within its range. The receiver is designed for amplitude modulated (AM) and continuous wave (cw) reception, although its accuracy and stability make it suitable for many applications where it is desired to receive or set definite frequencies without searching or making frequent adjustments. This receiver incorporates the new mechanical filter in the intermediate frequency range to obtain the desirable rectangular shaped passband.

No field changes in effect at time of

preparation (18 November 1958).

RELATION TO OTHER EQUIPMENT

The R-388A/URR is Collins Radio Company's type 51J-4.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

TYPE OF RECEPTION: AM, CW or MCW.

CALIBRATION: Direct reading in megacycles and kilocycles.

TUNING: Linear tuning with uniform band-spread.

FREQUENCY STABILITY: Dial calibration at room temperature is within 300 cps if the nearest 100 kc calibration point is used to adjust the fiducial.

TEMPERATURE RANGE: -20° C to $+60^{\circ}$ C.

SENSITIVITY

BAND ONE: Less than 15 uv gives 1 watt with 10 db s/n.

BAND TWO TO THIRTY: Less than 5 uv gives 1 watt 10 db s/n.

SPURIOUS FREQUENCY RESPONSE: Down at least 40 db.

AUTOMATIC VOLUME CONTROL: Less than 3.5 db increase in audio power output with an increase in R.F. signals from 5 to 125,000 uv.

S-METER: Meter calibrated 20, 40, 60, 80, 100 db above AVC threshold and -10 to +6 db audio level w/6 mw as reference.

NOISE LIMITER: Series type ahead of the first audio stage.

AUDIO POWER OUTPUT: 1-1/2 W at 1000 cps w/less than 15% distortion.

AUDIO FREQUENCY RESPONSE (OVER-ALL): Not more than 3 db at 200 cps and not more than 7 db at 2500 cps when 6 kc filter is used.

AUDIO OUTPUT IMPEDANCE: 4 and 600 ohms.

INTERMEDIATE FREQUENCY OUTPUT IMPEDANCE: 50 ohms.

RADIO FREQUENCY INPUT IMPEDANCE: Designed to operate into a high impedance whip or single-ended antenna.

OPERATING FREQUENCY RANGE: 540 kc to 30.5 mc.

OPERATING POWER REQUIREMENTS: 85 watts at 115 volts 45/75 cps. Same power required when reconnected for 230 volt 45/70 cps operation.

April 1959

Radio-Receivers

R-388A/URR**COMMUNICATIONS RECEIVER****MANUFACTURER'S OR CONTRACTOR'S DATA**

Collins Radio Co., Cedar Rapids, Iowa.
Contract NObsr-69046, dated 16 November 1956.

REFERENCE DATA AND LITERATURE

Collins Radio Company Technical Manual
520 5014 00 for Communications Receiver
R-388A/URR (Same as Commercial Model
51J-4 of Collins Radio Co).

TUBE AND/OR CRYSTAL COMPLEMENT

(2) 6AK5	(4) 6BE6
(7) 6BA6	(2) 12AX7
(1) 12AU7	(1) 6AQ5
(1) 5V4	(1) OA2

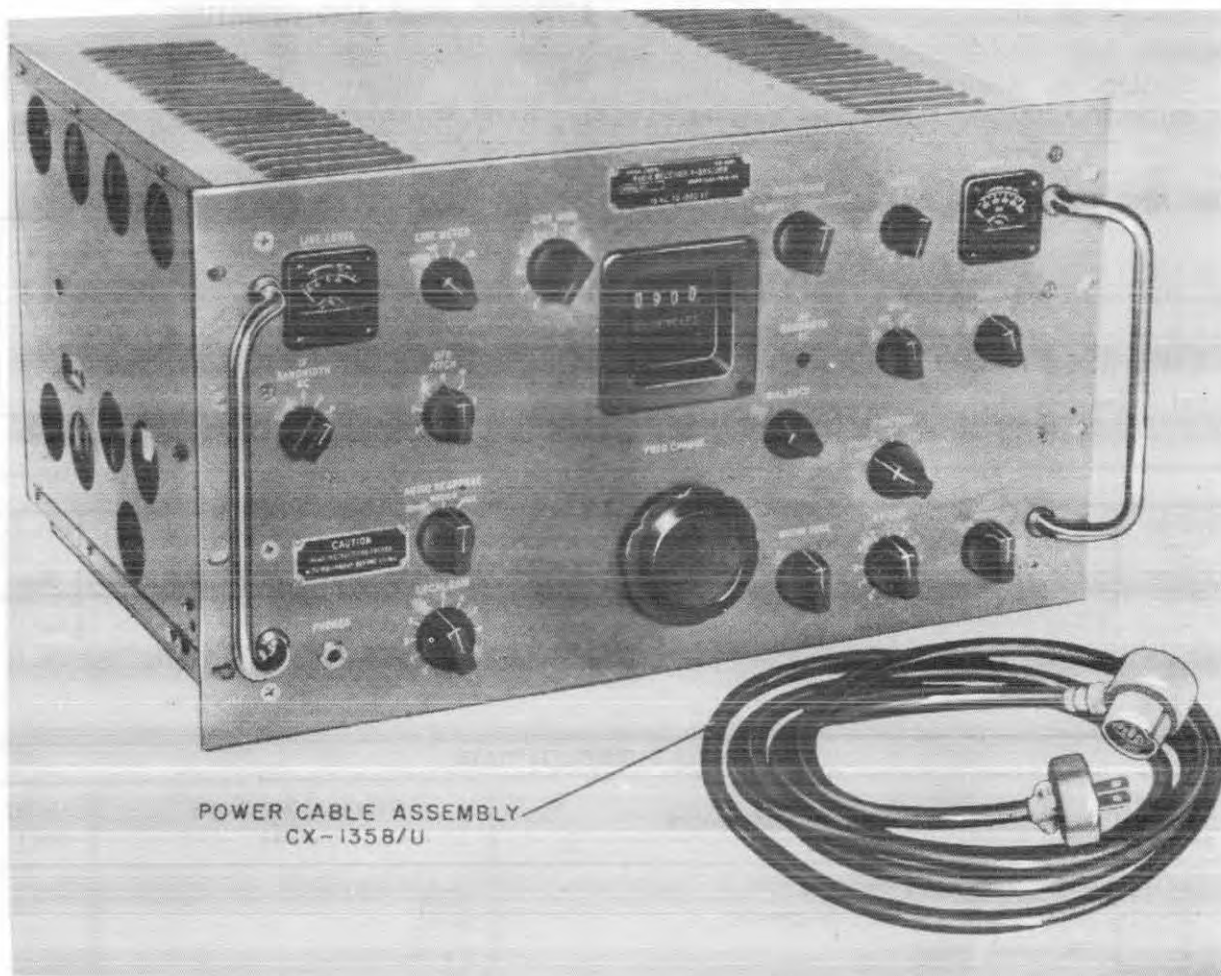
Total Tubes: (19)

No Crystals used.

TYPE CLASSIFICATION
DESIGN COGNIZANCE BUSHIPS
PROCUREMENT COGNIZANCE
STOCK NO.

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Communications Receiver R-388A/URR	10-1/2 X 13 X 19	43



Radio Receiver R-389/URR

FUNCTIONAL DESCRIPTION

The R-389/URR is a stable, general purpose receiver for use in fixed service. The receiver provides reception of continuous-wave and amplitude modulated tone radio-telegraph signals, AM voice signals, and frequency shift keyed signals within the frequency range of 15 to 1500 kc.

No field changes in effect at time of preparation (7 December 1956).

RELATION TO OTHER EQUIPMENT

Equipment Required but not Supplied: (1) Antenna, Transmission Lines, (1) Headset HS-30, (1) Loudspeaker, (1) Adapter UG-970/U,

(1) Adapter UG-971/U.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 15 to 1500 kc, 2 ranges, 7 bands.

TYPE SIGNAL RECEIVED: A1, A2, A3, F1.

TYPE TUNING: Manual or motor, with automatic band switching.

AUDIO POWER OUTPUT

600 OHM UNBALANCED LINE: 500 mw.

600 OHM BALANCED LINE: 10 mw.

PHONES: 5 mw.

IF SELECTIVITY: 100 cps to 8 kc in 5 steps.

TEMPERATURE RANGE: -40 to +65 deg C.

OPERATING ALTITUDE: Up to 10,000 ft.

OPERATING POWER: 115 or 230 v, 48 to 62

cps, single ph.

REFERENCE DATA AND LITERATURE

ANTENNA

UNBALANCED: Random length.

BALANCED: 125 ohm terminating impedance.

TM11-855: Technical Manual for Radio Receiver R-389/URR.

TUBE AND/OR CRYSTAL COMPLEMENT

- | | | |
|-----------|-----------|-----------|
| (1) 12AT7 | (8) 6BJ6 | (3) 6AK6 |
| (3) 6BE6 | (2) 5749 | (2) 26Z5W |
| (1) 6C4W | (5) 12AU7 | (2) 5651 |
| (7) 6BH6 | (1) 3TF7 | (2) 6082 |

Total Tubes: (37)

TYPE CLASSIFICATION DESIGN COGNIZANCE -TASSA PROCUREMENT COGNIZANCE STOCK NO.
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SHIPPING DATA

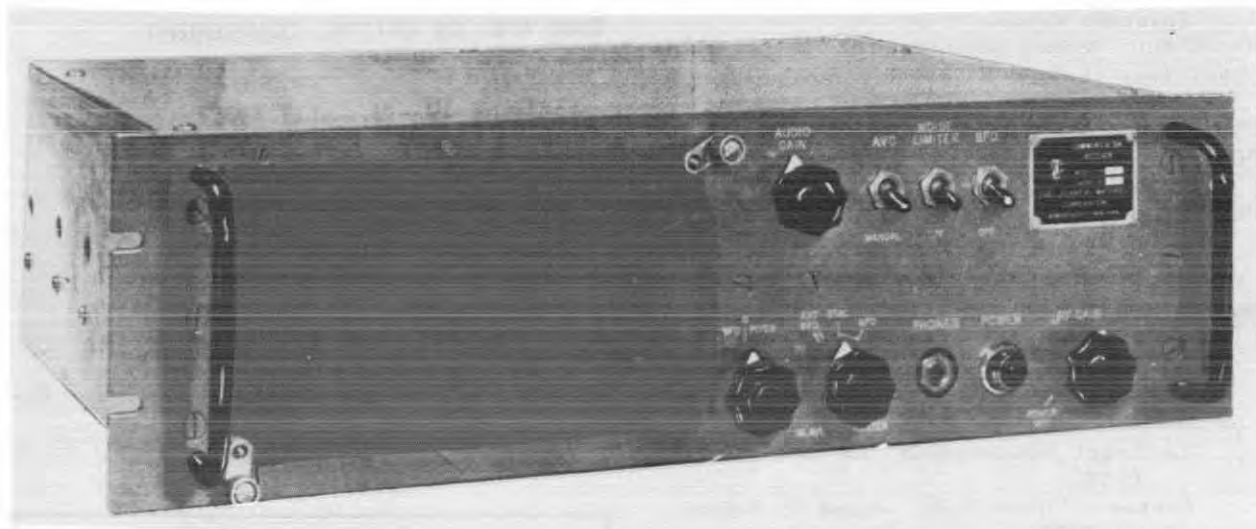
NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
1	Radio Receiver R-389/URR	12.4	21 x 32 x 32	115

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radio Receiver R-389/URR	10-1/2 x 17-1/4 x 19	82
1	Power Cable Assembly CX-1358/U	96 lg	
2	Technical Manuals	2 x 8-1/2 x 11	1.5

April 1959

COMMUNICATION RECEIVER

Radio-Receivers
R-5007/FRR-502

Communication Receiver R-5007/FRR-502

FUNCTIONAL DESCRIPTION

The R-5007/FRR-502 has been designed to fulfill the long existing need for a sturdy easily tuneable, single frequency receiver, which will provide maximum flexibility and thoroughly dependable, unattended, continuous reception of Amplitude Modulate (AM) radio telephone, continuous wave (CW) telegraph or teletype, and Modulated Continuous Wave (MCW) telegraph signals.

The design of this receiver is a departure from the conventional single channel receiver in that it provides for both crystal and VFO operation of the HFO and BFO. The front end is simply and accurately tuned by a single Frequency Tuning Dial with a vernier reduction ratio of 10 to 1, which permits maximum traverse speed and ease of operation. A specially designed input transformer provides an impedance matching circuit suitable for use with straight wire antenna, a balanced doublet, and a 75 ohms unbalanced or 300 ohms balanced line.

The R-5007/FRR-502 is available in frequencies of 50 to 400 kilocycles (kc); 500 kilocycles (kc), and 2 to 32 megacycles (mc), depending upon the tuning drawer used. The tuning drawers are sturdily built and incorporate the first radio frequency (1st RF), second radio frequency (2nd RF), VFO, and mixer circuits. This type of construction

provides excellent shielding between stages and minimizes the difficulties usually encountered with this type of receiver. Facilities for remote control applications have been provided at the rear of the receiver.

No field changes in effect at time of preparation (12 March 1959).

ELECTRICAL AND MECHANICAL CHARACTERISTICS

TYPE OF RECEPTION: AM, CW and MCW signals.

FS when used with appropriate Audio of IF type Frequency Shift Converter.

TUNING SYSTEM: Single dial control.

ANTENNA INPUT CIRCUIT

UNBALANCED: 75 ohms.

BALANCED: 300 ohms.

OSCILLATOR CIRCUIT

TYPES OF TUNING: Variable manual tuning, fixed frequency crystal, external excitation from Master Oscillator.

BFO CIRCUIT

TYPES OF TUNING: Variable manual tuning, fixed frequency crystal, external excitation from Master Oscillator.

SENSITIVITY: 1.0 micro volt for a 10 db Signal to Noise Power ratio.

IMAGE RATIO: Better than 60 db for 2 to 16 mc; not less than 40 db for 16 to 32 mc; image rejection infinite on low frequency (L.F.) heads.

AVC CHARACTERISTICS: With an 80 db change in the input signal, the output remains

April 1959

Radio-Receivers
R-5007/FRR-502**COMMUNICATION RECEIVER**

constant within 12 db.

HUM LEVEL: Across 600 ohm load, output hum not less than 34 db below 0 dbm or 66 db across 2 W.

OUTPUT POWER: 2 W maximum.

OPERATING FREQUENCIES: 50 to 400 kc, 500 kc and 2 to 32 mc.

OPERATING POWER REQUIREMENT: 110/220 volts, 50 to 60 cps, approx 85 W.

TUBE AND/OR CRYSTAL COMPLEMENT

(3) 6BA6	(1) 6AL5
(1) 6T8	(1) 6AQ5
(1) 6J6	(1) 6AG5
(1) 5Y3GT	(1) OA2

Total Tubes: (10)
No Crystals Used.**MANUFACTURER'S OR CONTRACTOR'S DATA**

The Technical Materiel Corp., Mamaroneck, N.Y.

Model FFR-2.

Contract NObsr-64820, dated 20 June 1955.

Contract NObsr-71688, dated 15 February 1957.

Approximate Cost: \$280,000.00 with equipment spares for Contract NObsr-64820.

Approximate Cost: \$479,228.12 with equipment spares for Contract NObsr-71688.

REFERENCE DATA AND LITERATURE

NAVSHIPS 92786A: Technical Manual for Radio Receiving Set.

TYPE CLASSIFICATION	
DESIGN COGNIZANCE	BUSHIPS
PROCUREMENT COGNIZANCE	
STOCK NO.	

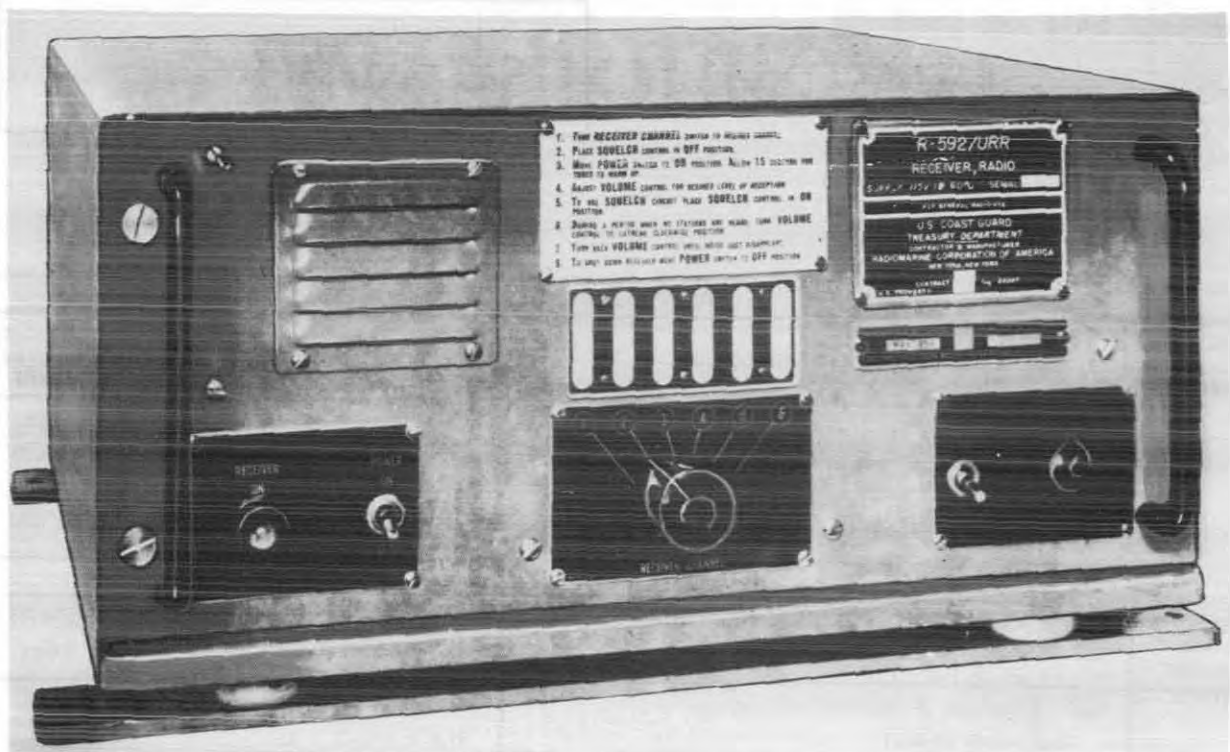
EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Communication Receiver Technical Materiel Corp Model FFR-2	5-1/4 X 15 X 19	Approx 35

April 1959

RADIO RECEIVER

R-592/URR



Radio Receiver R-592/URR

FUNCTIONAL DESCRIPTION

Radio Receiver R-592/URR is designed for medium and short distance voice reception, and provides all facilities for reception of voice modulated signals within its frequency range.

No field changes in effect at time of preparation (13 May 1959).

NUMBER OF PRESET FREQUENCIES: 6 channels in 2 to 3.8 mc, two channels may be modified for 3.8 to 6 mc or 6 to 7 mc.

TYPE RECEIVER: Superheterodyne.

INTERMEDIATE FREQUENCY: 455 kc.

RECEIVER OUTPUT: 2 W into 3.2 ohm.

OUTPUT IMPEDANCE: 3.2 ohm.

ANTENNA

AT 2000 TO 3800 KC: 20 ohms, 200 uuf.

AT 3800 TO 7000 KC: 500 ohms, 200 uuf.

EQUIPMENT REQUIRED BUT NOT SUPPLIED

(1) Antenna, (6) Crystal Unit CR-18/U,
(2) Cable, (1) Ground Lead.

MANUFACTURER'S OR CONTRACTOR'S DATA

Radiomarine Corp of America, N.Y., N.Y.
Contract Tcg-39347, dated 3 June 1953.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

POWER REQUIREMENTS: 67 W, 115 v, 60 cy, 1 ph.

FREQUENCY RANGE: 2,000 to 7,000 kc.

TUBE AND/OR CRYSTAL COMPLEMENT

(1) 6AQ5 (2) 6AV6 (4) 6BA6

(1) 6BE6 (1) 6X4

Total Tubes: (9)

No Crystals used.

R-592/URR**RADIO RECEIVER****REFERENCE DATA AND LITERATURE**

CG-273-13: Technical Manual for RADIO RECEIVER R-592/URR.

TYPE CLASSIFICATION DESIGN COGNIZANCE U.S.C.G. PROCUREMENT COGNIZANCE STOCK NO.
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SHIPPING DATA

NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
1	Radio Receiver R-592/URR	10.4	20 X 30 X 30	115

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radio Receiver R-592/URR. Including:	9-7/16 X 20-5/8 X 20-1/2	65
2	Technical Manual	3/8 X 8-1/2 X 11	2.5
1 Set	Running Spare Parts	4 X 4 X 4	1
2 Sets	Servicing Diagrams	10 X 15	
1	Field Modification Kit		0.5

September 1956

RADIO RECEIVER**R-771/ARN-51****FUNCTIONAL DESCRIPTION**

The R-771/ARN-51 provides vertical guidance during instrument landing operations. This equipment will provide ILS facilities with 20 glide slope channels. This receiver can be used separately or as part of RECEIVING SET, RADIO AN/ARN-51. This receiver is part of the miniaturized combined glide slope and localizer radio receiving set. Similar to, but not interchangeable with RECEIVER, RADIO R-626A/ARN-31 due to different power requirements and form factor.

No field changes in effect at time of preparation (30 July 1956).

OPERATION POWER: +300 v DC, 100 ma; +150 v DC, 100 ma; +28 v DC, 500 ma; -140 v DC, 10 ma; -250 v DC, 10 ma; -15 v DC, 5 ma; and 115 v AC, 500 ma, 1600 cps.

TUBE AND/OR CRYSTAL COMPLEMENT

No Electron Tubes.

REFERENCE DATA AND LITERATURE

Nomenclature Card for RADIO RECEIVER R-771/ARN-51.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 329.3 to 335.0 mc.

NUMBER FIXED CHANNELS: 20.

TYPE EMISSION: AM.

TYPE CLASSIFICATION
DESIGN COGNIZANCE
PROCUREMENT COGNIZANCE
STOCK NO.

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radio Receiver R-771/ARN-51	4 x 6 x 10	10

April 1959

Radio-Receiver

RADIO RECEIVER**R-840/URR**

Radio Receiver R-840/URR

FUNCTIONAL DESCRIPTION

The R-840/URR is a double conversion superheterodyne general purpose receiver.

No field changes in effect at time of preparation (12 June 1958).

RELATION TO OTHER EQUIPMENT

This equipment is similar to the Technical Material Corp Model GPR-90RX.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 0.54 to 31 mc, 6 bands.

TYPE OF RECEPTION: AM, CW, MCW and SSB signals.

ANTENNA INPUT CIRCUIT: 75 ohms unbalanced, 300 ohms balanced w/built-in ferrete transformer.

HFO: 1 variable and 10 crystal positions plus connector for external oscillator.

HFO EXTERNAL INPUT: Not less than 1 v into 75 ohms impedance.

SENSITIVITY: Better than 1 uv from 1.5 to

31 mc for AM, CW, MCW, SSB.

IMAGE RATIO: Average 85 db.

OUTPUT IMPEDANCE: 4, 8, 16 and 600 ohms.

HUM LEVEL: Better than 60 db down.

OUTPUT POWER: 2 Whigh quality audio output.

INPUT POWER: 115 or 230 v, 50 to 60 cps, 1 ph, 90 W.

MANUFACTURER'S OR CONTRACTOR'S DATA

The Technical Material Corp, Mamaroneck, New York.

Contract NObsr-71790.

TUBE AND/OR CRYSTAL COMPLEMENT

(1) 6AB4	(1) 6CB6	(2) 6AU6
(3) 6AG5	(1) 6BE6	(4) 6BA6
(1) 6AL5	(1) 6V6	(1) OA2
(1) 5U4G	(1) 12AX7	

Total Tubes: (17)

Crystal data not Available.

REFERENCE DATA AND LITERATURE

The Technical Materiel Corp General Catalog.

TYPE CLASSIFICATION
DESIGN COGNIZANCE BUSHIPS
PROCUREMENT COGNIZANCE
STOCK NO.

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radio Receiver R-840/URR	10-1/2 X 14 X 19	

February 1960

RADIO RECEIVER

R-924(XN-1)/SRC-17

FUNCTIONAL DESCRIPTION

Radio Receiver R-924(XN-1)/SRC-17 is an AN/URR-13 receiver modified for FSK operation with a synthesizer-controlled local oscillator input. This is achieved with no degradation of the normal AM operation with a manual or crystal-controlled local oscillator.

No field changes in effect at time of preparation (7 January 1960).

ELECTRICAL AND MECHANICAL CHARACTERISTICS

TUNING BANDS: Complete coverage of frequency with 19 turns of tuning control.

NUMBER OF PRESET FREQUENCIES

MANUAL TUNING: None.

CRYSTAL TUNING: 1.

TYPE OF FREQUENCY CONTROL: Crystal controlled oscillator.

TYPE OF RECEIVER: Superheterodyne.

IF FREQUENCY OUTPUT: 18.6 mc \pm 2 kc, 30 mv min into 90 ohm load.

OSCILLATOR INJECTION: 100 mw min into 90 ohm load.

TR GATING VOLTAGE: -12 v

FULL RECOVERY TIME: 100 usec max.

AUDIO CHANNEL MAXIMUM OUTPUT: 60 mw into 600 ohm load or 600 mw into 60 ohm load

MAXIMUM AUDIO DISTORTION: 7%.

PHONE JACK MAXIMUM OUTPUT: 60 mw into 600 ohm load.

SCANNING CHANNEL OUTPUT: 10 uv min; across 50 ohm load for input signal of 25 uv max.

TYPE OF RECEPTION: AM, voice; FM, FSK.

MAXIMUM ANTENNA INPUT WHEN TRANSMITTING: 2 W.

CRYSTAL FREQUENCIES: 20.3000 to 34.8833 mc.

SILENCING RANGE: Up to 15,000 uv min input.

SILENCER AUDIO OUTPUT REDUCTION: 40 db max.

ANTENNA INPUT IMPEDANCE: 51 ohms.

AUDIO CHANNEL OUTPUT IMPEDANCE: 600 ohms.

MANUFACTURER'S OR CONTRACTOR'S DATA

Manson Laboratories Inc, Stamford, Conn.
Contract NObsr-72730, dated 18 June 1957.

TUBE AND/OR CRYSTAL COMPLEMENT

No Electron Tube Data Available.

CR-24/U

REFERENCE DATA AND LITERATURE

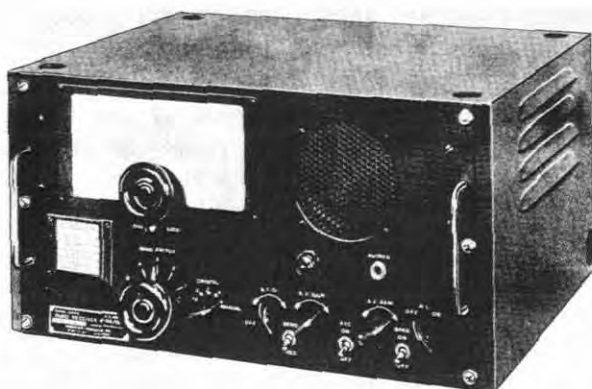
NAVSHIPS 93496: Technical Manual for RADIO RECEIVER R-924(XN-1)/SRC-17.

TYPE CLASSIFICATION (NAVY)
DESIGN COGNIZANCE USN, BUSHIPS
PROCUREMENT COGNIZANCE SPEC: SHIPS-M-2720 & ADDEND 3
STOCK NO.
R.D.B. IDENT. NO.

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radio Receiver R-924(XN-1)/SRC-17		

March 1957

RADIO RECEIVER**R-96/SR***Radio-Receiver***FUNCTIONAL DESCRIPTION**

The R-96/SR is intended for use in harbor and sea-going vessels where extreme conditions such as tropical climates and salt sea atmosphere may be prevalent, and where severe vibrations and shock may be encountered. It is designed for operation alone or in combination with a radio transmitter.

The receiver is provided with four crystal controlled channels for operation in a frequency range of 1700 to 8700 kc and a fifth position for manual tuning over the frequency ranges of 135 to 260 kc, 225 to 510 kc, 1485 to 3030 kc, 2970 to 6060 kc, and 5940 to 12, 120 kc.

The receiver uses a superheterodyn circuit for the reception of CW, MCW, and VOICE signals which may be received with either automatic or manual volume control.

Terminals are provided in the receiver to accommodate the necessary inter-connecting cables in order that send and receive operations may be secured through the action of the push-to-talk handset, and relays incorporated in the radio transmitter.

A line filter in the receiver is used to reduce generator or line noise reaching the receiver through the power source.

No field changes in effect at time of preparation (25 July 1956).

RELATION TO OTHER EQUIPMENT

Used with Radio Transmitter T-83/SR.
Equipment Required but not Supplied: Crys-

tal Units TASSA type DL-11-A or equal as required in accordance with frequency assignments for the individual installation.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 135 to 510 kc and 1485 to 12, 120 kc in five bands.

FREQUENCY RANGE FOR CRYSTAL CONTROL: 1700 to 8700 kc.

BAND AND TUNING RANGE DATA

BAND 1: 135 kc to 260 kc.

BAND 2: 255 kc to 510 kc.

BAND 3: 1.48 mc to 3.03 mc.

BAND 4: 2.97 mc to 6.06 mc.

BAND 5: 5.94 mc to 12.12 mc.

RECEPTION: CW, MCW, or VOICE.

OPERATING POWER REQUIREMENTS: 115, 50 to 60 cps or 115 v DC.

POWER CONSUMPTION: 45 W.

MANUFACTURER'S OR CONTRACTOR'S DATA

Radiation Products, Inc., Los Angeles, California.

Signal Corps order - 27546 - Philadelphia 44.

TUBE AND/OR CRYSTAL COMPLEMENT

(1) 6H6GT (1) 6SA7 (2) 6SJ7

(4) 6SK7 (1) 6SQ7GT (1) 25L6GT

(1) 25Z6GT

Total Tubes: (11)

(4) DC-11-A

Total Crystals: (4)

REFERENCE DATA AND LITERATURE

TM11-878

War Dept. Technical Manual for Radio-Receiver R-96/SR.

TYPE CLASSIFICATION
DESIGN COGNIZANCE TASSA
PROCUREMENT COGNIZANCE 69-3 (Army)
STOCK NO.

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radio Receiver R-96/SR	10 X 17-1/2 X 20-7/8	69.5
1	Spare parts box	9 X 11 X 14	18

SHIPPING DATA

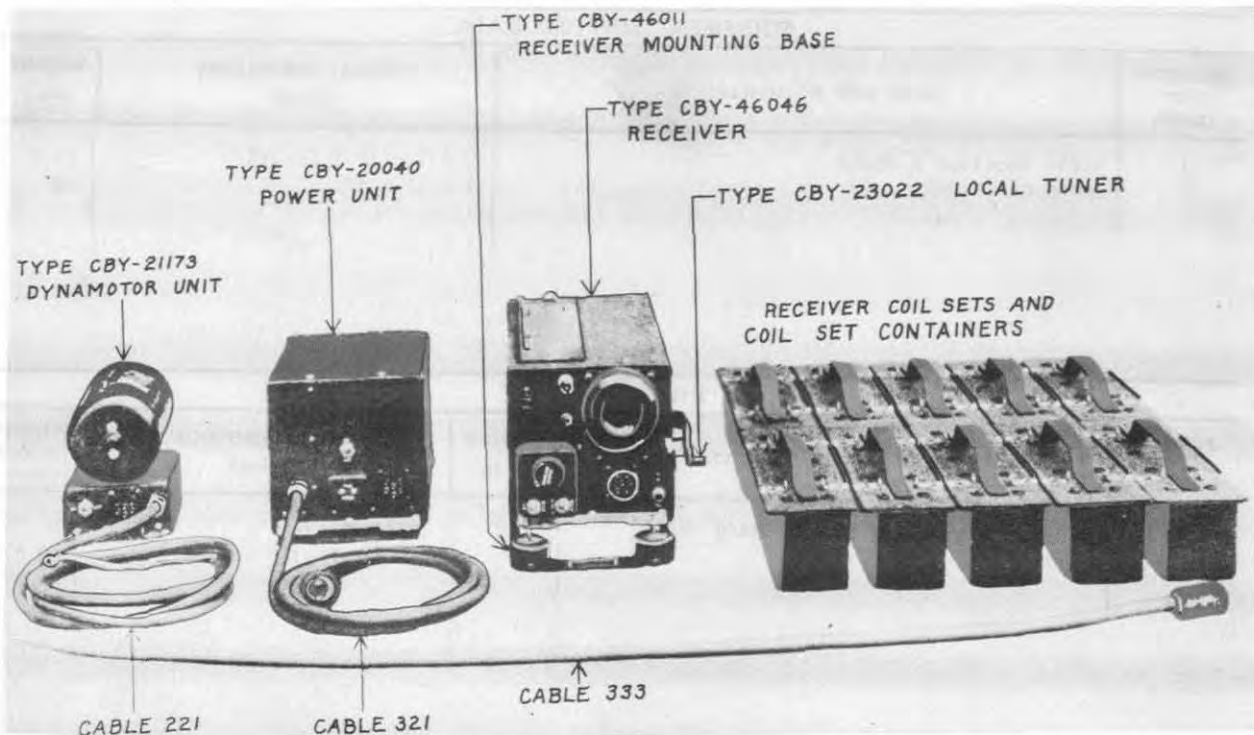
NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
1	Radio-Receiver R 96/SR and spare parts box	7.7	15-1/2 X 23-1/2 X 36-1/2	160.5

April 1959

Radio-Receiver

RAJ

RADIO RECEIVING SET

*Model RAJ Equipment***FUNCTIONAL DESCRIPTION**

The Navy Model RAJ is designed as a complete radio receiving set for operation from either 115 volt, 60 cycle mains or from a 6 volt direct current source. It may be used to receive modulated, unmodulated and damped wave signals.

For alternating current operation the receiver is energized from the power mains through Power Unit NT-20040, which is designed to supply alternating current at 6 volts for the vacuum tube heaters and approximately 250 volts for plate and screen voltages.

For operation from a direct current source the power unit is not used and the set is energized by a 6 volt direct current source

through Dynamotor Unit, NT-21173.

No field changes in effect at time of preparation (19 August 1958).

RELATION TO OTHER EQUIPMENT

The RAJ is essentially the same in circuits and operates as the RU-3. The two receivers differ only in that the vacuum tube heaters in the RAJ are wired for alternating current supply.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 224 to 13575 kc.

OPERATING POWER REQUIREMENTS: 110 or 115 v,