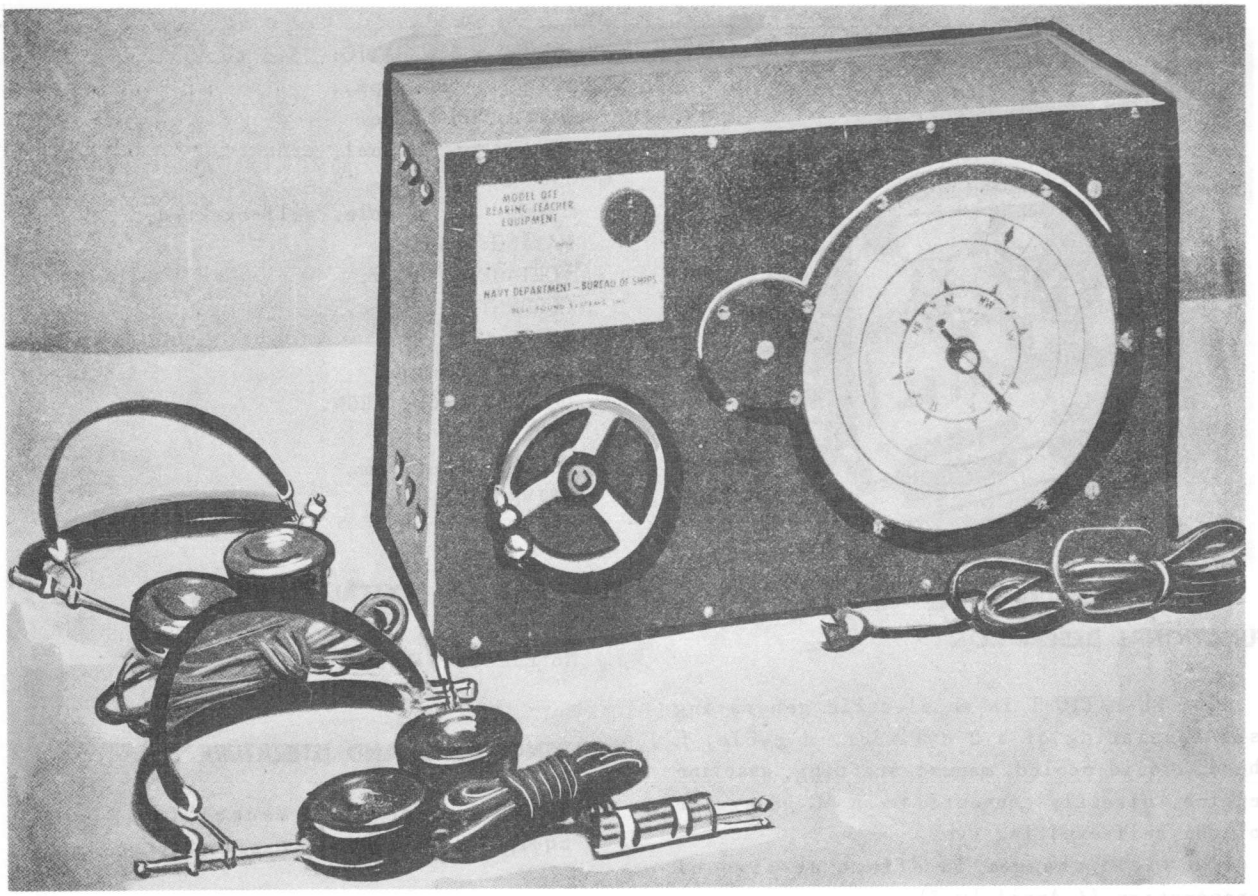
December 1956

BEARING TEACHER EQUIPMENT

QFE



Bearing Teacher Equipment QFE

FUNCTIONAL DESCRIPTION

The QFE is designed to train student underwater sound operators in the highly important, yet difficult to acquire, skill of keeping the QC projector directed on a submarine or moving target and of reporting its bearing.

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

ELECTRICAL AND MECHANICAL CHARACTERISTICS

OPERATING POWER: 110 v, 60 cps.

MANUFACTURER'S OR CONTRACTOR'S DATA

Bell Sound Systems, Inc., Columbus, Ohio
Contract NXss-17438, dated 16 November 1942.

Approximate Cost: $370.00 with equipment spares.

TUBE AND/OR CRYSTAL COMPLEMENT

(1) 50Y6GT (4) 9002

Total Tubes: (5)

REFERENCE DATA AND LITERATURE

NAVSHIPS 95629: Instructions for Model QFE Bearing Teacher Equipment.

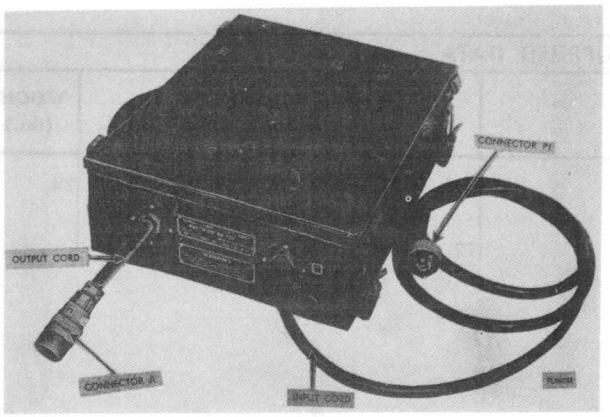
TYPE CLASSIFICATION	
DESIGN COGNIZANCE	BUSHIPS
PROCUREMENT COGNIZANCE	
STOCK NO.	

BEARING TEACHER EQUIPMENT

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Bearing Teacher NT-55109	7-1/2 X 10-1/2 X 16-1/2	24
2	Crystal Head Telephone Sets NT-49187		
1	AC Cord	72 lg	

RECTIFIER



Rectifier RA-120

FUNCTIONAL DESCRIPTION

The RA-120 is used to furnish the plate and filament voltages for the operation of Radio Receiver and Transmitter BC-620 of Radio Set SCR-510 and Radio Receiver and Transmitter BC-659 of Radio Set SCR-610. It may be attached to either of the above Radio Receivers and Transmitters by means of trunk fasteners and electrically connected by means of a short length of cable and an Amphenol connector. A toggle switch allows the input windings of the power transformer to be connected for either 115 or 230 v operation.

No field changes in effect at time of preparation (22 May 1956).

RELATION TO OTHER EQUIPMENT

The RA-120 is housed in a case similar to that used for PLATE SUPPLY UNITS PE-117 and PE-97. It is also similarly attached and electrically connected.

Equipment Required but not Supplied: (2) Power Cables and (2) Connectors Electrical.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

POWER SOURCE: 105 to 125 v AC 9.7 amp; 210 to 250 v AC 0.35 amp.
OUTPUT CHARACTERISTICS
- FILAMENT CIRCUIT (BC-620): 1.6 v DC at 0.650 amps.
- FILAMENT CIRCUIT (BC-659): 1.6 v DC at 0.925
- PLATE CIRCUIT IN RECEIVER (Receiver in Operation): 95 v DC at 0.033 amp.
- PLATE CIRCUIT IN RECEIVER (Transmitter in Operation): 85 v DC at 0.045 amp.
- FILAMENT CIRCUIT IN TRANSMITTER (Transmitter in Operation): 6.85 v DC at 0.255 amp.
- PLATE CIRCUIT IN TRANSMITTER (Transmitter in Operation): 148 v DC at 0.045 amp.

TUBE COMPLEMENT

(1) 1007 (1) OB3/VR90
Total Tubes: (2)

REFERENCE DATA AND LITERATURE

TM-11-953: War Department Technical Manual for Rectifier-RA-120.

TYPE CLASSIFICATION	
DESIGN COGNIZANCE	TASSA
PROCUREMENT COGNIZANCE	ARMY SPEC NO. 71-3154
STOCK NO.	

SHIPPING DATA

NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (cu Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
1	Rectifier, RA-120		10 X 18 X 20	40

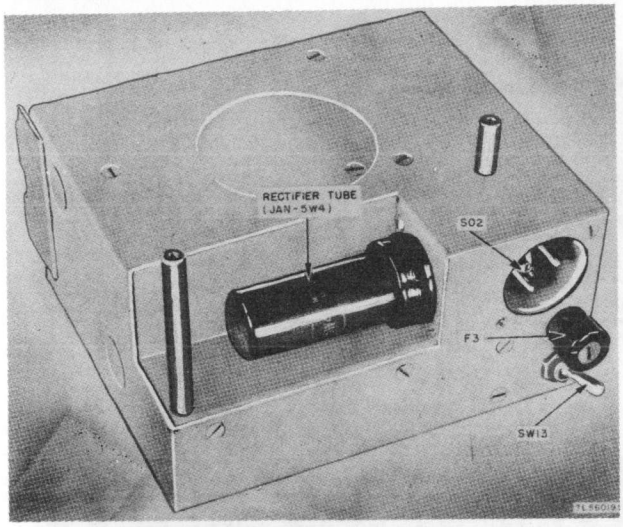
EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Rectifier-RA-120	5.000 X 14.000 X 15.000	30 lb.

December 1956

RECTIFIER

Radio-Auxiliary
RA-20



Rectifier RA-20

FUNCTIONAL DESCRIPTION

The RA-20 produces the required filament and plate voltages for Radio Receivers BC-312-A, -C, -D, -E, -F, -G, -H, -L, -M, -N, -HX and -NX and BC-342-A, -C, -D, -F, -J, -L, -M and -N. It operates from a 110 to 120 v AC supply. The rectifier is secured to the underside of the receiver chassis. Under full load conditions, the rectifier draws approximately 0.7 amp at 120 volts alternating current with a DC output of approximately 95 milliamperes at 260 volts, A filter has been added to emiminate Radio frequency interference between receivers operating from a common AC supply.

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

ELECTRICAL AND MECHANICAL CHARACTERISTICS

INPUT: 110 to 120 v, 60 cps, single phase.
OUTPUT: 12 v AC, 260 v DC.
RECTIFICATION: Full wave.
TYPE: Electronic.

TUBE AND/OR CRYSTAL COMPLEMENT

(1) 5W4
Total Tubes (1)

REFERENCE DATA AND LITERATURE

TM11-850 Wat Dept.: Technical Manual for 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.
SIG 7 & 8 -RA-20.
T016-40RA20-5.
Army and Air Force Technical Manual for maintenance allowance and stockage guide for rectifier RA-20, RA-20-A, -B.

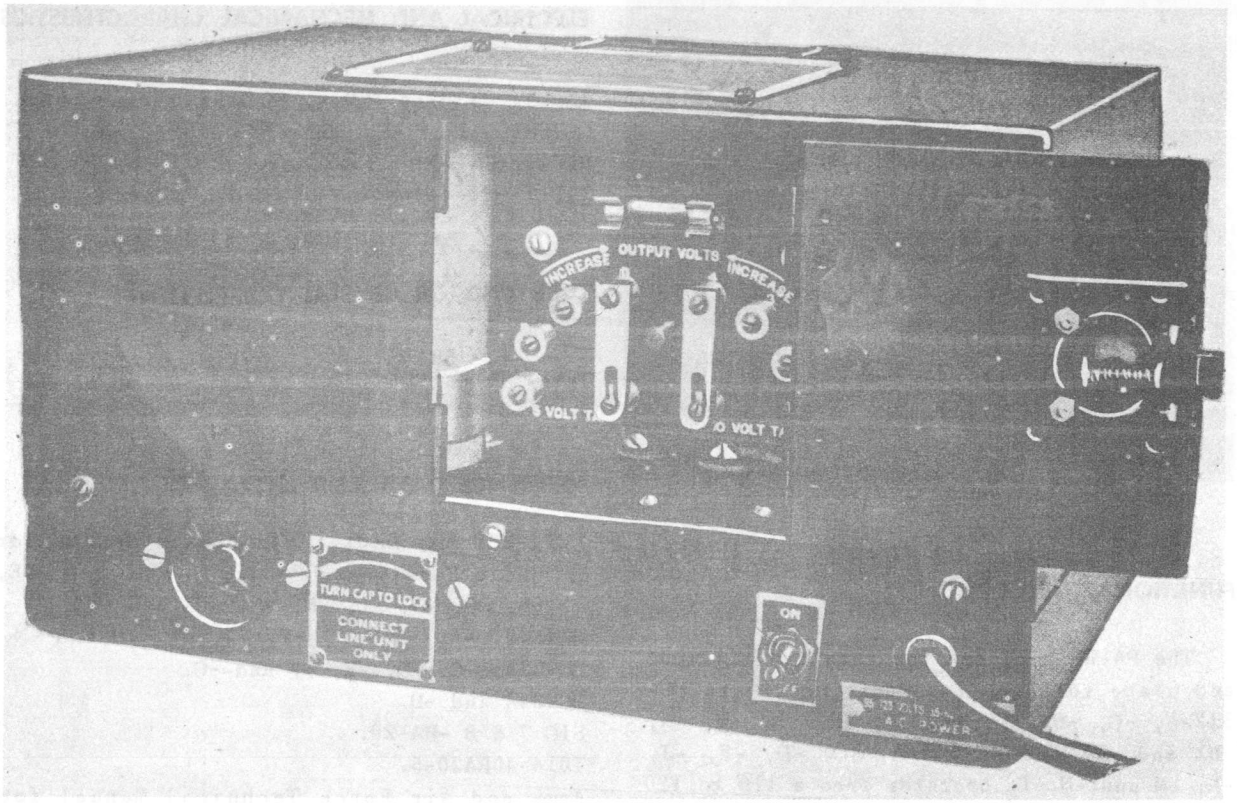
TYPE CLASSIFICATION	
DESIGN COGNIZANCE	TASSA
PROCUREMENT COGNIZANCE	TASSA
STOCK NO.	

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Rectifier - RA-20	3-1/4 X 6-1/8 X 6-1/2	
1	Cable Assy	72	

March 1957

POWER SUPPLY



Power Supply RA-37

FUNCTIONAL DESCRIPTION

The RA-37 is a portable full-wave selenium disc type rectifier designed to convert electric power from standard power lines for operating teletypewriter line units. It is transported in a chest which may be used as a support when setting voltage taps and to keep the unit off damp ground and out of dust and dirt.

No field changes in effect at time of preparation (4 October 1956).

ELECTRICAL AND MECHANICAL CHARACTERISTICS

OUTOUT: 115 v DC, 0.4 amp max.
RIPPLE VOLTAGE: 0.5% max at rated load.
POWER REQUIREMENTS: 95 to 125 v, 55 to 65 cps, single ph, 90 W.

MANUFACTURER'S OR CONTRACTOR'S DATA

Approximate Cost: $580.00 with equipment spares.

TUBE AND/OR CRYSTAL COMPLEMENT

No Electron Tubes.

REFERENCE DATA AND LITERATURE

TM-11-955: Technical Manual for Rectifier RA-37.

TYPE CLASSIFICATION	
DESIGN COGNIZANCE	TASSA
PROCUREMENT COGNIZANCE	
STOCK NO.	

Radio-Auxiliary

RA-37 POWER SUPPLY

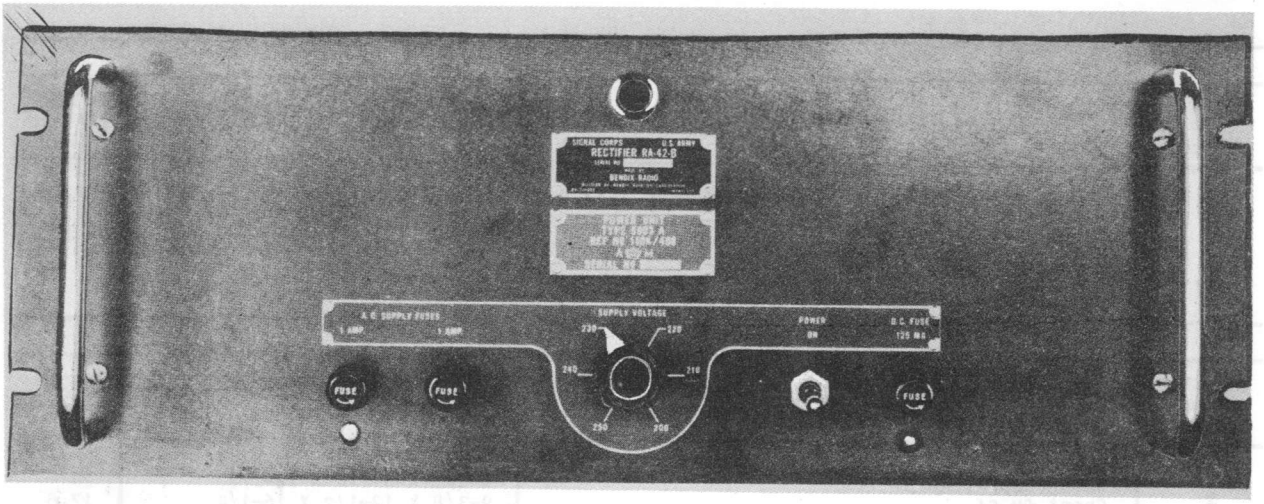
March 1957

SHIPPING DATA

NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
1	Power Supply RA-37 in Chest CH-51	1.1	9-3/8 X 12-1/2 X 16-1/4	41.5

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Power Supply RA-37	6-1/2 X 8-1/4 X 12-1/2	24
1	Chest CH-51	9-3/8 X 12-1/2 X 16-1/4	17.5



Rectifier RA-42-B

FUNCTIONAL DESCRIPTION

The RA-42-B is a power supply unit to supply all vacuum tube power to Radio Receiver BC-639-A. The instrument operates from either 90 to 140 volts 50 to 60 cps or 200 to 250 volts 50 to 60 cps. A tapped primary transformer and supply voltage switch makes this possible and also enables the station operator to keep the output voltage constant at 210 volts, 60 ma DC and 6.3 volts, 3.5 amperes AC over a wide range of input voltages.

The rectifier is built on a shelf type chassis for rack mounting or a table mounted navy adaption can be obtained which replaces the usual dust cover with Cabinet CS-135. This cabinet provides four shockmounts for mounting on or under a table or other flat surface.

No field changes in effect at time of preparation (27 July 1956).

RELATION TO OTHER EQUIPMENT

Similar to RA-42-A except that the panel is not drilled for a voltmeter or milliameter. Rectifier RA-42-A has such meters mounted on its front panel.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

OPERATING POWER REQUIREMENTS: 90 to 140 v, 50 to 60 cps or 200 to 250 v, 50 to 60 cps.
OUTPUT: 6.3 v, AC at 3.5 amp, 580 to 290 v DC at 0.060 amp.
RECTIFICATION: Full wave.
TYPE: Electronic.

MANUFACTURER'S OR CONTRACTOR'S DATA

Radio Div of Bendix Aviation Corp. Baltimore, Maryland.
Type Number 5003A.

TUBE AND/OR CRYSTAL COMPLEMENT

(1) 5V4G
Total Tubes (1)

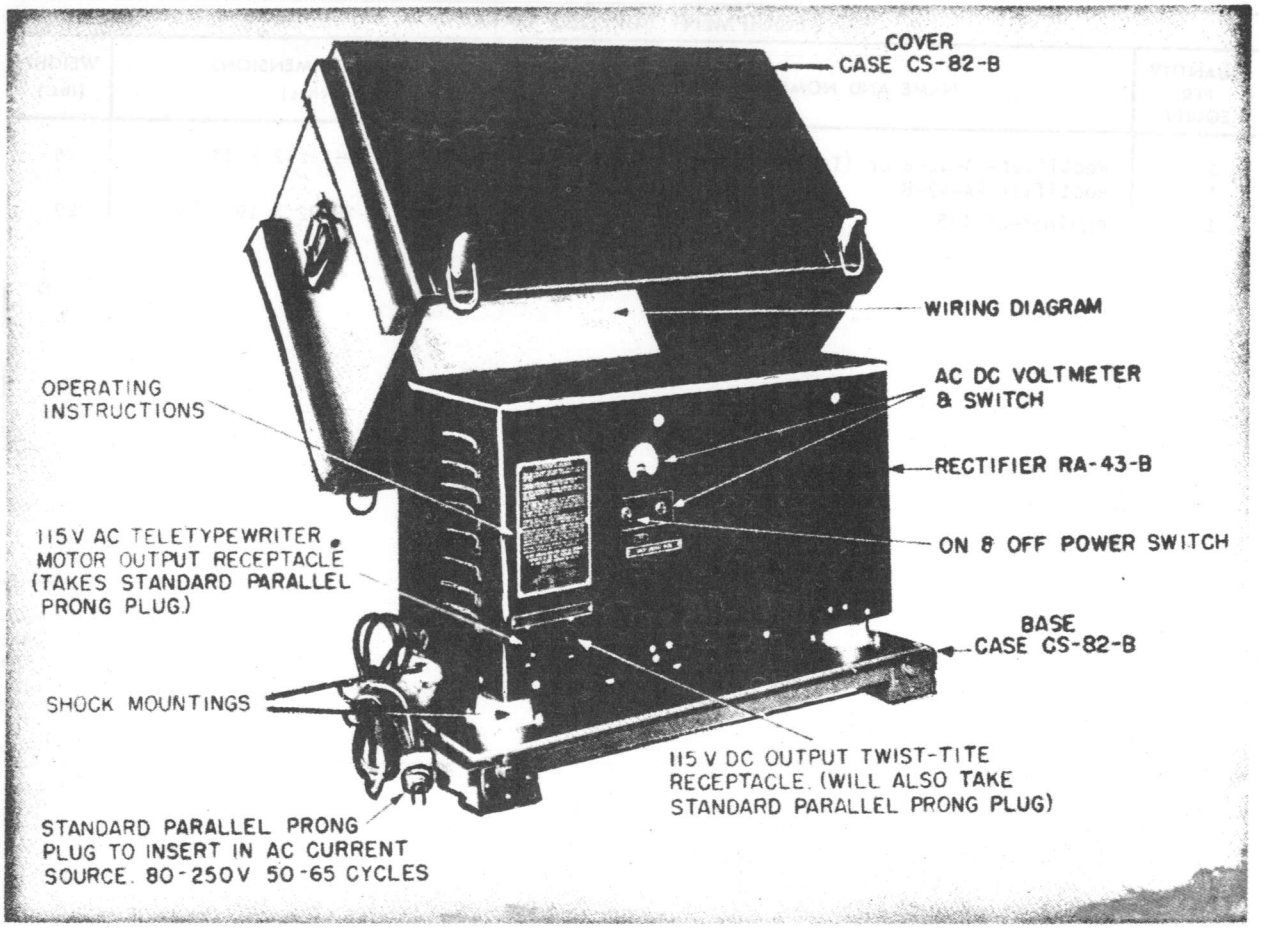
REFERENCE DATA AND LITERATURE

TO-08-10-191: Technical Manual for Operation and Maintenance of Rectifier RA-42-A and Rectifier RA-42-B (and Table mounted Navy Adaptations).

TYPE CLASSIFICATION	
DESIGN COGNIZANCE	BUSHIPS
PROCUREMENT COGNIZANCE	BUSHIPS
STOCK NO.	

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Rectifier-RA-42-B or (Table Mounted Model)	6-31/32 X 8-23/32 X 19	26
1	Rectifier RA-42-B		
1	Cabinet-CS-135	8-1/4 X 8-13/32 X 19	29



Rectifier RA-43-B

FUNCTIONAL DESCRIPTION

The RA-43-B is a portable, self-contained power unit for converting alternating current to direct current of 115 volts at up to 4.55 amperes for the operation of teletypewriter equipment used with Switchboard BD-100. It also supplies approximately 115 volts at 1.3 amperes (depending upon line voltage) for the operation of one teletypewriter motor. The equipment is operated fromaan AC source of 80 to 100 volts, 100 to 125 volt or 200 to 250 volt, 50 to 65 cps, single phase power.

An extra transformer tap helps the rectifier operate properly even under conditions of abnormally low line voltage. This tap is used for an input voltage range of 80 to 100 and can be selected by means of a toggle switch. With a full DC load and with one teletypewriter motor connected the equipment requires an input of approximately 1000 watts.

It employs an electronic type full wave rectifier.

No field changes in effect at time of preparation (27 July 1956).

RELATION TO OTHER EQUIPMENT

The RA-43-B is not interchangeable with RA-43-C and does not use standard ASA components.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

OPERATING POWER REQUIREMENTS: 80 to 100 v, 100 to 125 v, 200 to 250 v, 50 to 65 cps single ph, 1000 W.

OUTPUT DATA: 115 v DC at 4.55 amperes, 115 v AC at 1.3 amp. 50 to 60 cps, single ph.

RA-43-B RECTIFIER

RECTIFICATION: Full wave.

TIME DELAY SWITCH OPERATING TIME: Adjustable, 1-1/4 minutes nominal.

MANUFACTURER'S OR CONTRACTOR'S DATA

Approximate Cost $500 with Equipment Spares

TUBE AND/OR CRYSTAL COMPLEMENT

(3) C6J (2) 6F6G

Total Tubes: (5)

REFERENCE DATA AND LITERATURE

TM11-954: War Dept. Technical Manual for Rectifier RA-43-B

TM11-4702: War Dept. Technical Manual Repair Instructions for Rectifier RA-43-B.

TYPE CLASSIFICATION
DESIGN COGNIZANCE TASSA
PROCUREMENT COGNIZANCE TASSA
STOCK NO.

SHIPPING DATA

NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
1	Rectifier RA-43-B 1 Set Spare Tubes Case CS-82-B 2 Technical Manuals TM11-954 1 AC Power Cord			

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Rectifier RA-43-B with base of case CS-82-B	16-1/2 X 16-1/2 X 27-1/2	145
1	Top Cover of Case CS-82-B	16-1/2 X 16-1/2 X 29-1/2	41
1	AC Power Cord		

September 1956

RECTIFIER UNIT

RA-62-B,62-C

FUNCTIONAL DESCRIPTION

The RA-62-B and RA-62-C are ruggedized full wave combination electronic and metallic type rectifiers designed to operate from 110 or 220 volts, single phase, 40 to 60 cps and to supply direct currents of 300 volts at 230 milliamperes, 150 volts at 8 milliamperes and 13.4 volts at 3.9 amperes for operation of Radio Transmitter SCR-624. An automatic carbon pile voltage regulator is included in the 13.4 volt heater supply output and sufficient filtering is provided in all outputs to materially reduce radio interference in the transmitter equipment. A line voltage selector switch is mounted on the front panel which permits selection of the proper transformer turns ratio for proper voltage output over the input ranges of the rectifier. A time delay feature is also incorporated in the high voltage output circuits which prevents the application of plate and bias voltage to the radio equipment until the tube filaments have come up to the proper heat.

The RA-62-B and RA-62-C are electrically and mechanically interchangeable except for the metallic rectifier, input receptacle and other minor component parts.

No field changes in effect at time of preparation (27 July 1956).

ELECTRICAL AND MECHANICAL CHARACTERISTICS

OPERATING POWER REQUIREMENTS: 110 or 220 v, 40 to 60 cps, single ph.
POWER OUTPUT: 300 v DC at 230 ma, 150 v DC at 8 ma, 13.4 v DC at 3.9 amp.
REGULATION
  PLATE SUPPLY: 5% or better in the range 190 to 220 ma.
  BIAS SUPPLY: 10% or better with loads between 5 and 15 ma.
  HEATER SUPPLY: +4 to -5% with loads between 2.75 and 5 amp.
RIPPLE
  PLATE SUPPLY: 0.5% or better at 220 ma.
  BIAS SUPPLY: 0.25% max at 15 ma.
  HEATER SUPPLY: 2% max.
VOLTAGE SELECTION TAPS: 105, 115, 125, 230 and 250 v.
TIME DELAY RELAY
  FILAMENT HEATING TIME: 10 to 15 sec.
  BIAS LOSS OPERATION
    CLOSING CURRENT: 10 ma.
    OPENING CURRENT: 4 ma.
AMBIENT TEMPERATURE RANGE: -50° to +70° C.
-50°C OPERATION: Ripple voltage of the high voltage and bias voltage will not increase more than 60%; The low voltage ripple will not increase more than 150%.
HUMIDITY: 95%.
VIBRATION RATING: 10 g while mounted on 4 to 12 lb shock mounts for 4 hrs.

MANUFACTURER'S OR CONTRACTOR'S DATA

P.R. Mallory & Co., Inc., Indianapolis, Ind.
Approximate Cost: $250.00 with equip- spares. RA-62-B, RA-62-C.

TUBE AND/OR CRYSTAL COMPLEMENT

RA-62-B or RA-62-C
(1) 6X5GT (2) 5U4G
Total Tubes (3)

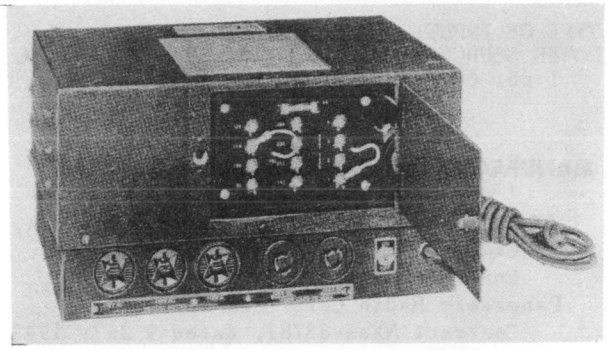
REFERENCE DATA AND LITERATURE

Operating and Maintenance Instructions for Rectifier Unit RA-62-B.
Operating and Maintenance Instructions for Rectifier Unit RA-62-C.

TYPE CLASSIFICATION
DESIGN COGNIZANCE TASSA
PROCUREMENT COGNIZANCE TASSA
STOCK NO.

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Rectifier Unit RA-62-B	10-5/8 X 11-5/32 X 16	75
1	Cable Assy	300	
	or		
1	Rectifier Unit RA-62-C	10-5/8 X 11-5/32 X 16	75
1	Cable Assy	300	



Rectifier RA-87

FUNCTIONAL DESCRIPTION

The type RA-87 converts 95 to 125 v or 190 to 250 v, 50 to 60 cycle AC power to 115 v DC power for operation of teletypewriter line circuits. In addition it provides 115 v AC power for the operation of teletypewriter motors. It has facilities for supplying power to three teletypewriter motors and two teletypewriter line circuits. A tap-changing panel allows adjustment of both input and output voltages.

No field changes in effect at time of preparation (29 May 1956).

ELECTRICAL AND MECHANICAL CHARACTERISTICS

POWER CHARACTERISTICS

INPUT: The max input power is approximately 600 W with full load on both the AC and DC output circuits. The input circuit can be arranged on the tap-changing panel for approximate power source voltages of 95, 105, 115, 125, 190, 210, 230 and 250 v at 50 to 60 cycles.

OUTPUT

DC: Up to 46 W, 400 ma at 115 v.

ADJUSTMENT: Four taps numbered 1 to 4 provide adjustment in steps of 3 to 4 v each on DC output.

AC: Up to 500 W, 4.35 amps at 115 v.

RIPPLE VOLTAGE: Less than 0.5 v with any fixed resistance load.

TYPE OF RECTIFICATION: Fullwave, selenium crystal, bridge rectifier circuit.

MANUFACTURER'S OR CONTRACTOR'S DATA

Approximate Cost: $550.00 Including equipment spares.

TUBE AND/OR CRYSTAL COMPLEMENT

No Electron Tubes.

REFERENCE DATA AND LITERATURE

SIG 7 & 8 RA-87: Dept. of the Army Supply Manual for rectifier RA-87, RA-87A.

TM-11-957: War Dept. Technical Manual for rectifier RA-87.

TYPE CLASSIFICATION
DESIGN COGNIZANCE TASSA
PROCUREMENT COGNIZANCE ARMY SPEC 71-1586
STOCK NO.

SHIPPING DATA

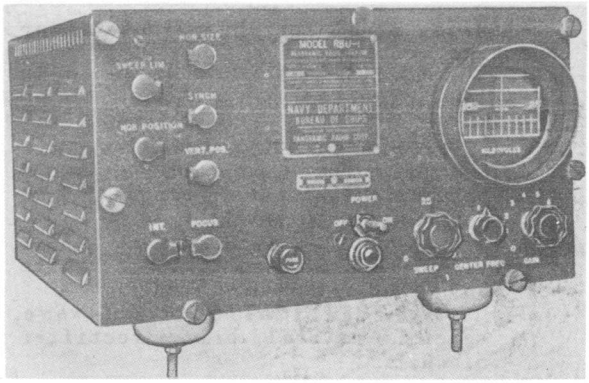
NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
1	Rectifier-RA-87	1.45	10-3/4 X 12-5/8 X 18-1/2	58-1/2

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Rectifier RA-87	7-1/2 X 8-3/8 X 14-9/16	40 lb
1	Chest CH-158	10-3/4 X 12-5/8 X 18-1/2	18-1/2 lb
1	Power Cable Assembly		

Radio-Auxiliary

PANORAMIC RADIO ADAPTOR RBU, RBU-1, -2



Panoramic Radio Adaptor RBU,RBU-1,-2

FUNCTIONAL DESCRIPTION

The RBU, RBU-1 and 2 Panoramic Radio Adaptors, when connected to a suitable radio receiver, enable an operator to see simultaneously as vertical deflections upon a cathode ray tube, all stations receivable within a band which extends approximately 25 kc above and below the frequency to which the receiver is tuned. This allows quick interception of stations appearing on the air even for short periods of time.

These equipments indicate the frequency of a signal with respect to the station to which the receiver is tuned, tell roughly the strength of the signals that are shown on the screen, and reveal the character of the signal and type of modulation, whether A1 or A3, AM, FM, pulsed, etc.

No field changes in effect at time of preparation (15 April 1958).

RELATION TO OTHER EQUIPMENT

The RBU-1 and 2 are essentially identical to the RBU except for greater sensitivity. The RBU-1 and 2 are designed for use with the Radio Receiving Equipment RBB Series.

Equipment Required but not Supplied: (1) 10563 Coupling Kit, AC power cord with plug, and RG-11/U Radio Frequency Cable for RF input cable.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

PRESENTATION: 3 in. CR tube.
INPUT FREQUENCY: 400 kc.
MAXIMUM SWEEPWIDTH: 50 kc.
SWEEP FREQUENCY: 30 cps.
SENSITIVITY: 50 uv input for deflection amplitude more than 1/4 in.
TYPE OF INPUT: Cathode follower.
POWER SOURCE REQUIRED: 115/230 v, 50-70 cps, 1 ph, 60 W.

MANUFACTURER'S OR CONTRACTOR'S DATA

RCA Victor Div, Radio Corp of America, Camden, N.J.
Contract NXsr-43377 (RBU).
Panoramic Radio Corp, New York, N.Y.
Contract NXss-33781, dated 9 July 1943 (RBU-1).
Warwick Mfg Corp, Chicago, Ill.
Contract NXsr-90839, dated 20 February 1945 (RBU-2).
Approximate Cost: $615.00 with equipment spares.

TUBE AND/OR CRYSTAL COMPLEMENT

RBU

(1) OC3W	(2) 6AC7WA	(2) 6SL7WGT
(1) OD3W	(1) 6J5GT	(2) 6SN7WGTA
(1) 2X2A	(1) 6SA7Y	(1) 6SQ7
(1) 3BP1	(1) 6SG7Y	(1) 6X5WGT

Total Tubes: (15)

RBU-1,-2

(1) OC3W	(1) 6SA7Y	(1) 6X5WGT
(1) 2X2A	(1) 6SG7Y	(1) 3BP1
(2) 6SL7WGT	(2) 6AC7WA	(1) 6SQ7

Total Tubes: (11)

No Crystals used:

REFERENCE DATA AND LITERATURE

NAVSHIPS 900,288-1B: Technical Manual for Panoramic Radio Adaptors Navy Models RCX, RCX-1, RBV-1, RBU-1, RBW-2, RBW-2M.
NAVSHIPS 900717: Technical Manual for Panoramic Radio Adaptors Navy Models RBU-2, RBV-2, RBW-3.
NAVSHIPS 900,501-1B: Technical Manual of Installation Instructions for Panoramic Coupling Kits for Models RBU/RBV Panoramic Adaptors for use with Models RBB/RBC Receivers.

TYPE CLASSIFICATION	
DESIGN COGNIZANCE	BUSHIPS
PROCUREMENT COGNIZANCE	
STOCK NO.	

RBU, RBU-1, -2 PANORAMIC RADIO ADAPTOR

SHIPPING DATA

NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
1	Panoramic Radio Adaptor CPN-55088*			
1	Panoramic Radio Adaptor CPN-55088-A**			
	and Equipment Spare Parts	10.4		151
1	Panoramic Adaptor CWF-55185***			
	and Equipment Spare Parts	7.1	20-1/2 X 22-3/4 X 26-1/4	138

*RBU
**RBU-1
***RBU-2

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Panoramic Radio Adaptor CPN-55088*	5-1/2 X 11 X 11-7/8	40
	CPN-55088-A**	8-3/4 X 13-1/2 X 15	44
1	Panoramic Adaptor CWF-55185***	7-1/2 X 13 X 16	38
1	Set of Equipment Spares		

*RBU
**RBU-1
***RBU-2

April 1958

Radio-Auxiliary

PANORAMIC RADIO ADAPTOR RBV, RBV-1,-2

Panoramic Radio Adapter RBV,RBV-1,-2

FUNCTIONAL DESCRIPTION

The RBV, RBV-1 and -2 Panoramic Radio Adaptors when connected to suitable radio receivers, enable an operator to see simultaneously as vertical deflections upon a cathode ray tube, all stations receivable within a band which extends approximately 50 kc above and below the frequency to which the receiver is tuned. This allows quick interception of stations appearing on the air, even for short periods of time. The adaptor tells the frequency of a signal with respect to the station to which the receiver is tuned, tells roughly the strength of the signals that are shown on the screen, and reveals the character of the signal and type of modulation whether A1, A2, A3, pulse etc.

No field changes in effect at time of preparation (15 April 1958).

RELATION TO OTHER EQUIPMENT

The RBV, RBV-1 and -2 are essentially identical, however, the RBV-2 has greater sensitivity. The RBV series equipments are designed for use with Radio Receiving Equipment RBC Series.

Equipment Required but not Supplied: (1) -10563 Coupling Kit, (1) power cord w/plug and radio frequency cable RG-11/U for RF input.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

PRESENTATION: 3 in. cathode ray tube.
INPUT FREQUENCY: 400 kc (±5 kc only).
MAX SWEEPWIDTH: 100 kc.
SWEEP FREQUENCY: 30 cps.
SENSITIVITY: 50 uv input for more than 1/4 in. deflection amplitude.
INPUT IMPEDANCE: 50 ohms.

POWER SOURCE REQUIRED: 115 or 230 v, 50 to 70 cps, single ph, 60 W.

MANUFACTURER'S OR CONTRACTOR'S DATA

RCA Victor Division, Radio Corp of America, Camden, N.J. (RBV).
Contract NXsr-43377, dated 8 December 1943.
Panoramic Radio Corp, New York, N.Y. (RBV-1).
Contract NXss-33781, dated 9 July 1943.
Warwick Manufacturing Corp, Chicago, Ill.
Contract NXsr-90839, dated 20 February 1945.
Approximate Cost: $552.00 with equipment spares. (RBV-1).
Approximate Cost: $742.00 with equipment spares. (RBV-2).

TUBE AND/OR CRYSTAL COMPLEMENT

RBV

(1) 0C3W	(1) 6J5GT	(1) 6SQ7GT
(2) 6AC7WA	(1) 6SQ7	(1) 3BP1
(2) 6SN7WGTA	(1) 2X2A	(1) 6X5WGT
(1) 0D3W	(1) 6SA7Y	(1) 6SG7Y

Total Tubes: (14)

RBV-1,-2

(1) 0C3W	(1) 2X2A	(2) 6SL7WGT
(1) 6SA7Y	(1) 6SG7Y	(2) 6AC7WA
(1) 6X5WGT	(1) 3BP1	(1) 6SQ7GT

Total Tubes: (11)

No Crystals used.

REFERENCE DATA AND LITERATURE

NAVSHIPS 900,288-1B: Technical Manual for Panoramic Radio Adaptors Navy Models RCX, RCX-1, RBV-1, RBU-1, RBW-2, RBW-2M.
NAVSHIPS 900501-1B: Technical Manual for Panoramic Coupling Kits for Models RBU/RBV Panoramic Adaptors for use with Models RBB/RBC Receivers.
NAVSHIPS 900,717: Technical Manual for Panoramic Radio Adaptors Navy Models RBU-2, RBV-2, RBW-3.

TYPE CLASSIFICATION
DESIGN COGNIZANCE BUSHIPS
PROCUREMENT COGNIZANCE
STOCK NO.

Radio-Auxiliary

RBV, RBV-1,-2 PANORAMIC RADIO ADAPTOR

SHIPPING DATA

NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
1	Panoramic Adaptor CPN-55090-A, and Equipment Spares*	10.4	20-1/2 x 22-3/4 x 26-1/4	151
1	Panoramic Adaptor CWF-55186, and Equipment Spares**	7.1		138

NOTES: *Supplied w/RBV
**Supplied W/RBV-1

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Panoramic Adaptor		
	CDN-55089*	7-1/4 x 13 x 13-1/4	46
	CPN-55090-A**	8-3/4 x 13-1/2 x 15	44
	CWF-55186***	7-1/2 x 13 x 16	38
	Set of Equipment Spares		
	*RBV		
	**RBV-1		
	***RBV-2		

September 1960

Radio-Auxiliary

PANORAMIC ADAPTER RBW-1

FUNCTIONAL DESCRIPTION

The RBW-1 is a device which allows the operator to visualize the radio spectrum on a two-dimensional surface. On the horizontal axis of the screen (base line) frequencies are shown, and on the vertical axis the signal amplitudes are shown. The entire strip represents the portion of the radio-frequency spectrum covered by the tuning range of the receiver.

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

ELECTRICAL AND MECHANICAL CHARACTERISTICS

OPERATING FREQUENCY DATA: ±500 kc sweep; 5.25 mc frequency.

OPERATING POWER RQMT: 115/230 v, 50 to 70 cps, single ph.

TUBE AND/OR CRYSTAL COMPLEMENT

(1) OC3W	(1) 2X2A	(1) 3AP1
(2) 6AC7WA	(1) 6SA7Y	(1) 6SG7Y
(1) 6SL7WGT	(1) 6SQ7	(1) 6X5WGT

Total Tubes: (10)

No Crystals used.

REFERENCE DATA AND LITERATURE

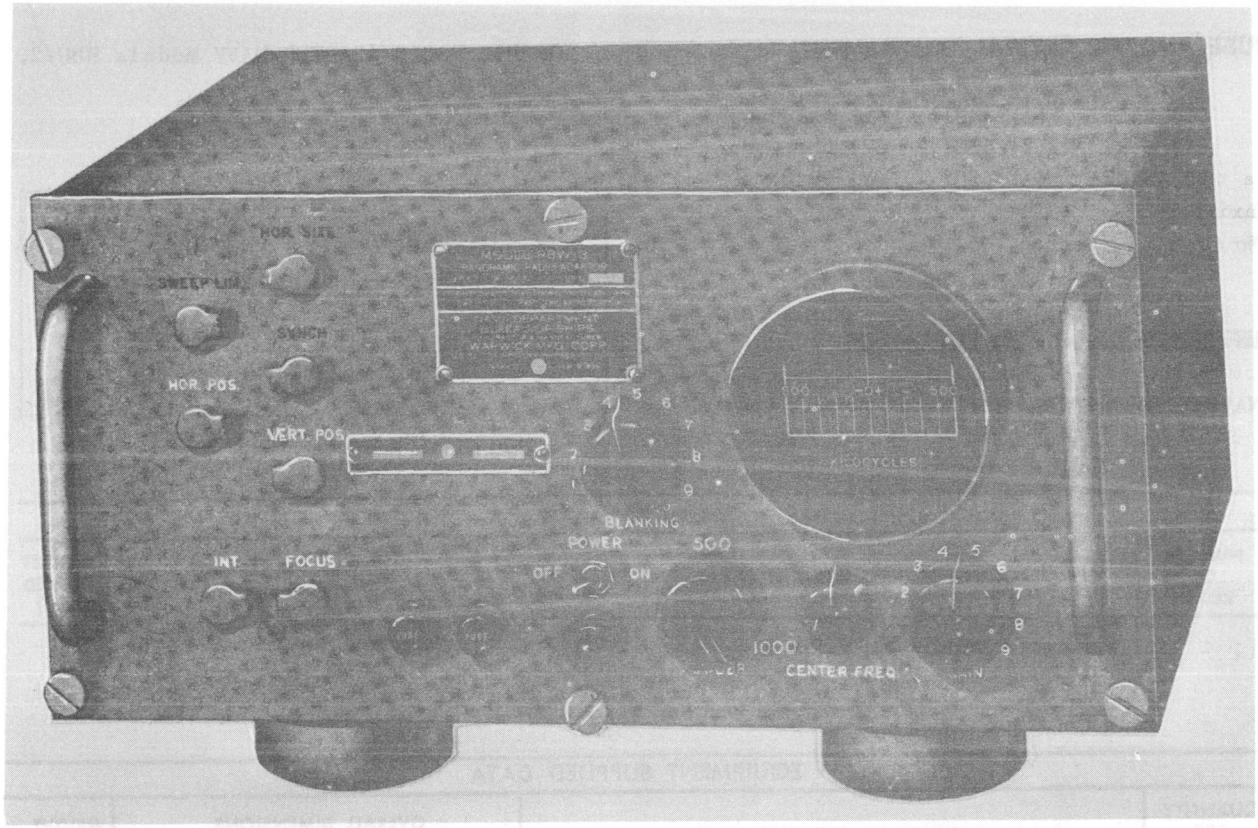
NAVSHIPS 900,123(B): Technical Manual for Naval Electronic Equipments.

TYPE CLASSIFICATION (NAVY)
DESIGN COGNIZANCE USN, BUSHIPS
PROCUREMENT COGNIZANCE
STOCK NO.
R.D.B. IDENT. NO.

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Panoramic Adapter RBW-1	8-3/4 X 13-1/2 X 15	43

PANORAMIC RADIO ADAPTER RBW-3



Panoramic Radio Adapter RBW-3

FUNCTIONAL DESCRIPTION

Panoramic Radio Adapter RBW-3 is a cathode-ray tube oscilloscope used with radio receiving equipment to indicate simultaneously as vertical deflections on the screen, all stations receivable within a band that extends approx. 500 kc above and below the frequency to which the receiver is tuned. This permits quick interception of stations appearing on the air for short periods of time. The adapter indicates the frequency of a signal with respect to the station to which the receiver is tuned, indicates roughly the strength of the signal, and reveals the character of the signal and type of modulation-continuous wave, voice, amplitude modulation, frequency modulation, pulse, etc.

No field changes in effect at time of preparation (29 August 1960).

EQUIPMENT REQUIRED BUT NOT SUPPLIED

(1) Radio Receiver.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

PRESENTATION: 3 inch cathode-ray tube.
INPUT FREQUENCY: 5.25 mc.
MAXIMUM SWEEP WIDTH: 1,000 kc.
SENSITIVITY: 40 uv.
INPUT IMPEDANCE: Feed through a 24,000 ohm resistor.
SWEEP FREQUENCY: 30 cps.
POWER REQUIREMENTS: 60 W, 115/230 v, 50 to 70 cyc, single ph, AC.

MANUFACTURER'S OR CONTRACTOR'S DATA

Warwick Mfg Co., Chicago, Illinois.
Contract NXsr-90839, dated 20 February 1945.

Radio-Auxiliary

RBW-3 PANORAMIC RADIO ADAPTER

TUBE AND/OR CRYSTAL COMPLEMENT

(1) 2X2	(1) 3BP1	(1) 6X5GT/G
(1) 6SA7	(1) 6SG7	(2) 6SL7GT
(2) 6AC7	(1) 6SQ7	(1) VR105/30

Total Tubes: (11)

No Crystals used.

ORAMIC RADIO ADAPTER NAVY Models RBU-2, RBV-2, RBW-3.

TYPE CLASSIFICATION (NAVY)
DESIGN COGNIZANCE USN, BUSHIPS
PROCUREMENT COGNIZANCE
STOCK NO.
R.D.B. IDENT. NO.

REFERENCE DATA AND LITERATURE

NAVSHIPS 900,717: Technical Manual for PAN-

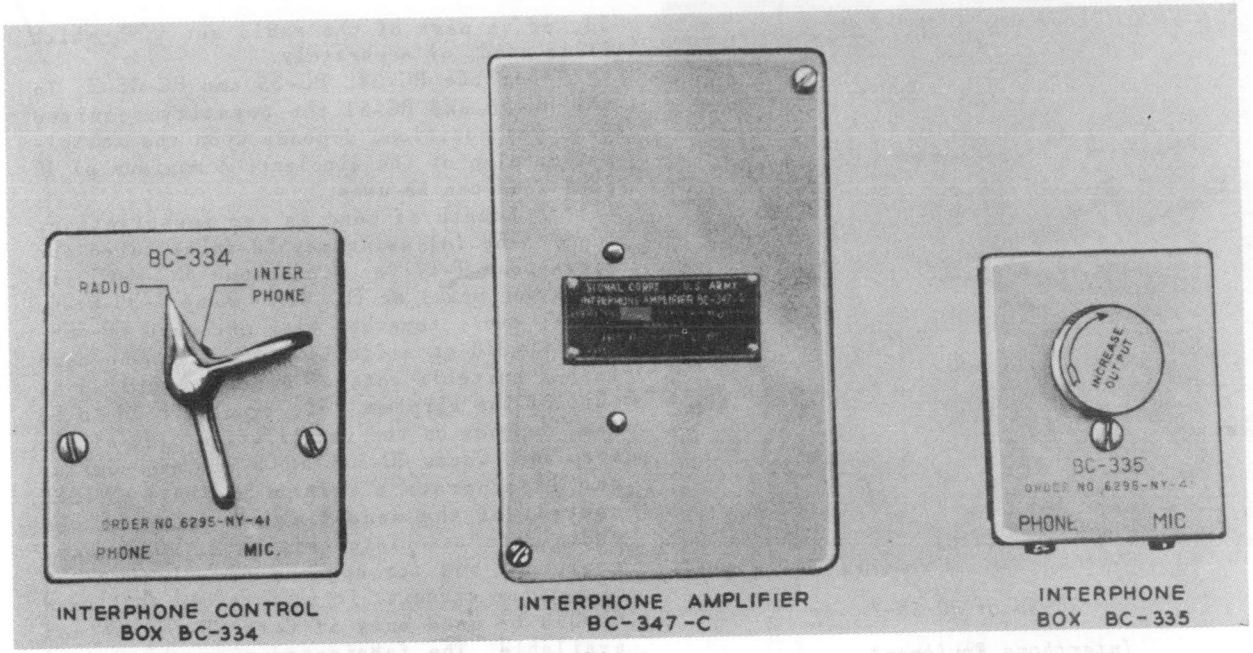
SHIPPING DATA

NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
1	Panoramic Radio Adapter RBW-3	7.1	20-1/2 x 22-3/4 x 26-1/4	138

EQUIPMENT SUPPLIED DATA

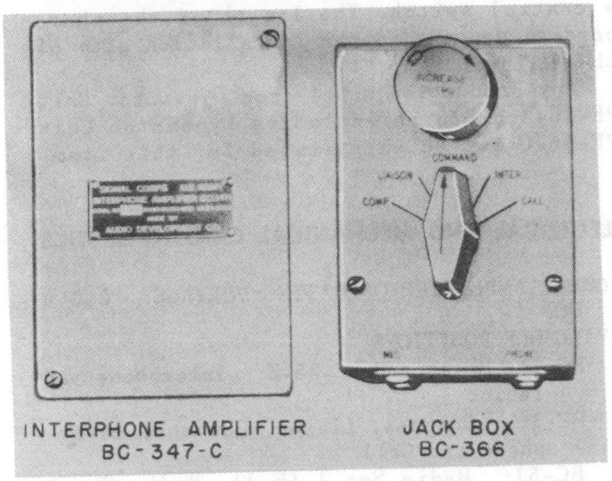
QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Panoramjc Radio Adapter RBW-3 including:		
1	Panoramic Radio Adapter 55187	7-1/2 x 13 x 16	38
1	Power Plug AN/3106-14S-7S		
1	Fuse		
1	Allen Wrench		
1	Isolating Resistor (24,000 ohm)		
1	Receptacle NT-49194		
2	Plugs NT-49195		

INTERPHONE EQUIPMENT RC-34,-35,-35-Z,-36,-51



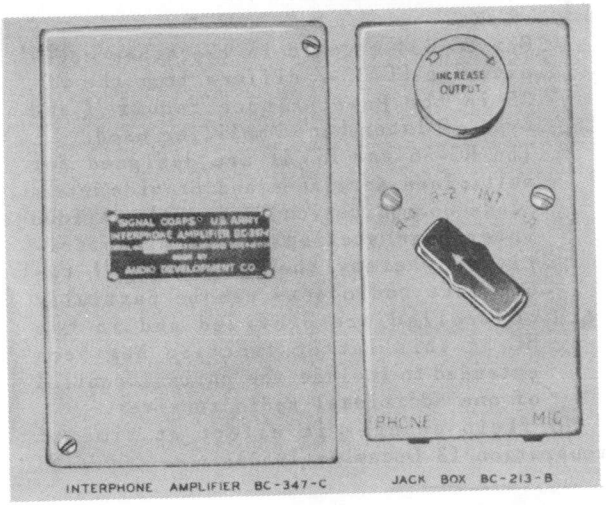
INTERPHONE CONTROL BOX BC-334 — INTERPHONE AMPLIFIER BC-347-C — INTERPHONE BOX BC-335

RC-34



INTERPHONE AMPLIFIER BC-347-C — JACK BOX BC-366

RC-36



INTERPHONE AMPLIFIER BC-347-C — JACK BOX BC-213-B

RC-51

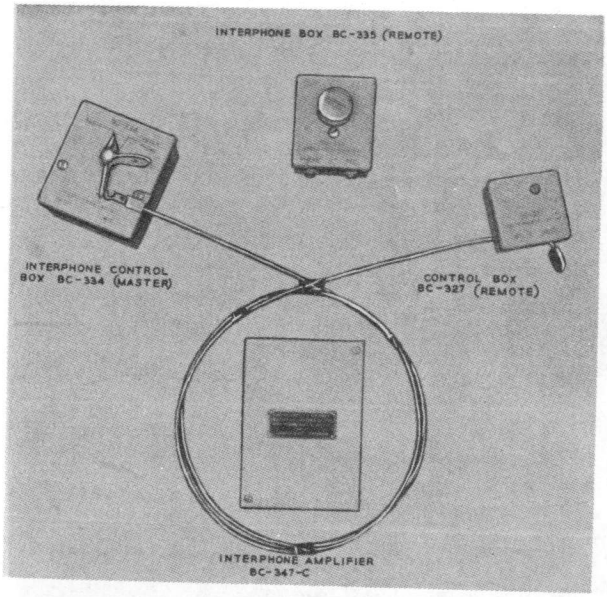
FUNCTIONAL DESCRIPTION

The RC-34, RC-35, RC-35-Z, RC-36 and RC-51, are used basically to provide a means of voice communication between various crew members of an airplane and to provide a means of remote control of radio sets for tactical purposes from the members established positions in the airplane. These equipments differ principally in the extent to which the basic function can be performed, as follows:

a. The RC-34 is a two-place interphone equipment for tactical use.

b. The RC-35 and RC-35-Z are two-place interphone equipments for basic training air-craft. They are electrically identical to the RC-34 but differ mechanically in that they have a remote-control switch which allows the occupant of the cockpit in which the remote Interphone Box BC-335 is installed to mechanically operate the switch on the Master Interphone Control

RC-34,-35,-35-Z,-36,-51 INTERPHONE EQUIPMENT



RC-35 or RC-35-Z

Interphone Equipment

RC-34,35,35-Z,36,51

Box BC-334 mounted in the other cockpit. The RC-35-Z differs from the RC-35 in the Power source required and type of Interphone Amplifier used.

c. The RC-36 and RC-51 are designed for multiplace airplanes and provide intraplane communication between the various interphone stations. Switching facilities whereby the operation of two complete radio sets can be partially controlled are provided and in the RC-36 this latter function has been extended to include the partial control of one additional radio receiver.

No field changes in effect at time of preparation (3 December 1956).

RELATION TO OTHER EQUIPMENT

Equipment Required but not Supplied: 2** Cord-307-A (Headset Extension)***, 2** Headset HS-33 and Headset Adapter MC-385-() or Headset HS-38 and Headset Adapter MC-385-() or Headset HS-18 or HS-23, 2**Microphone T-17****. 1 Tube GF8G or VT-99, 1 Dynamotor Unit PE-86-A+.

NOTES: *These units may be supplied as part of RC-34, RC-35, RC-35-Z, RC-36 or RC-51, or as part of the radio set with which it is used, or separately.

**For the RC-34, RC-35 and RC-35-Z. In the RC-36 and RC-51 the quantity required (one per position) depends upon the installation plan of the airplane. A maximum of 12 positions can be used.

*** Length of Cord as per installation.

****The following may be substituted for Microphone T-17:(a) Microphone ANB-M-C1 (in an oxygen mask) or (b) Microphone T-30-0,-Q,-S,-V, etc., together with one cord CD-508, cord CD-318 or a fabricated microphone cord with a suitable control switch, supplied as part of the airplane. The type of cord to be used depends on the installation plan of the airplane. Cords CD-508 and CD-318 are similar and incorporate a switch for both ON-OFF control of the send-receive relay of the radio sets associated with this interphone equipment and for opening and closing the microphone circuit. It is intended that cord CD-318 be used only if Cord CD-508 is not available. The fabricated microphone cord may consist of Jack JK-48, Plug PL-68, and Cordage CD-219 plus Cordage CO-122-A or CD-122-B (or some of these items) together with a control switch. The length of the above cordage depends on the installation plan of the airplane.

Any production model from Dynamotor Unit PE-86-A up to an including Dynamotor Unit PE-86-Q may be substituted for this item.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

NORMAL AMPLIFIER OPERATING VOLTAGE: 250 v DC.

AVAILABLE POSITIONS

RC-34, RC-35 and RC-35-Z: Interphone and radio.

RC-36: Compass, Liason, Command, Interphone and Call.

RC-51: Radio Set 1 (R-1), Radio Set 2 (R-2), Interphone, Interphone and Radio (I-R).

POWER SOURCE REQUIRED: 24 to 28 v DC except for RC-35-Z which requires 12 to 14 v DC.

TUBE AND/OR CRYSTAL COMPLEMENT

(1) 6F8G

Total Tubes: (1)

INTERPHONE EQUIPMENT RC-34,-35,-35-Z,-36,-51

REFERENCE DATA AND LITERATURE

AN-09-10-248: Technical Manual for Interphone Equipments RC-34, RC-35-Z, RC-36, RC-51.

TYPE CLASSIFICATION
DESIGN COGNIZANCE TASSA
PROCUREMENT COGNIZANCE
STOCK NO.

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Interphone Amplifier BC-347, BC-347-A, BC-347-B or BC-347-C	2-3/8 X 4 X 5-7/8	
1	Interphone Amplifier BC-347-CZ++	2-3/8 X 4 X 5-7/8	
1	Interphone Control Box BC-334 (Master)+++	3-1/4 X 3-3/8 X 3-7/8	0.87
1	Interphone Box BC-335 (Remote)+++	2 X 2-3/4 X 3-3/8	0.38
1	Control Box BC-327 (Remote)++++	1-3/16 X 2-1/2 X 3-5/8	0.25
1	Control Shaft MC-166	6 ft. long	0.43
1per pos***	Jack Box BC-366*	3-1/16 X 3-1/4 X 4-11/16	0.1
1per pos***	Jack Box BC-213, BC-213-A or BC-213-B**	2-3/32 X 2-29/33 X 5-15/32	0.9

NOTES:

++RC-35-Z only.

+++RC-34, RC-35 and RC-35-Z only.

++++RC-35, and RC-35-Z only.

*RC-36 only.

**RC-51 only.

***Quantity Required (one per position) as per installation. Max of 12 positions can be used.

Radio-Auxiliary

ANTENNA EQUIPMENT

RC-81-A

FUNCTIONAL DESCRIPTION

The RC-81-A consists of a dipole antenna and matching stub for matching an unbalanced transmission line, such as a coaxial cable to a balanced antenna system. The antenna dipoles are mounted at the end of, and at the right angles to, a round bakelite housing, the other end of the housing is provided with a connector so that it may be connected to the coaxial transmission line and fastened to the cross-arm bracket which supports the antenna. The antenna dipole rods are screwed into the stubs at the bakelite housing and each equipment is provided with 3 sets of dipole rods, each set of different length, to provide complete frequency range coverage from 100 to 156 megacycles.

The coaxial cable supplied with this equipment consists of 200 ft of No. 13 untinned stranded conductor, 7 strands of No. 21 wire, special low loss solid insulation, copper braid and plastex jacket with female terminals at each end. The antenna end has a special bronze bracket for attaching the cable to the end of the antenna cross-arm.

No field changes in effect at time of preparation (5 December 1956).

RELATION TO OTHER EQUIPMENT

Used with Radio Transmitters BC-640-A.

Equipment Required but not Supplied: Interconnecting Cables from the Coaxial cable entrance box to the Radio Transmitters.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 100 to 156 mc.
DIPOLE ROD LENGTH VERSUS FREQUENCY: 49 in. lg. 100 to 125 mc; 43 in. lg. 116 to 140 mc; 38-1/2 in. 133 to 156 mc.
CHARACTERISTICS IMPEDANCE OF CABLE: 72 ohms.
ANTENNA TYPE: Dipole.

MANUFACTURER'S OR CONTRACTOR'S DATA

Bendix Radio Division of Bendix Aviation Corporation.

TUBE AND/OR CRYSTAL COMPLEMENT

No Electron Tubes.

REFERENCE DATA AND LITERATURE

Technical Manual for Antenna Equipment RC-81-A and Associated Coaxial Cable Equipment.

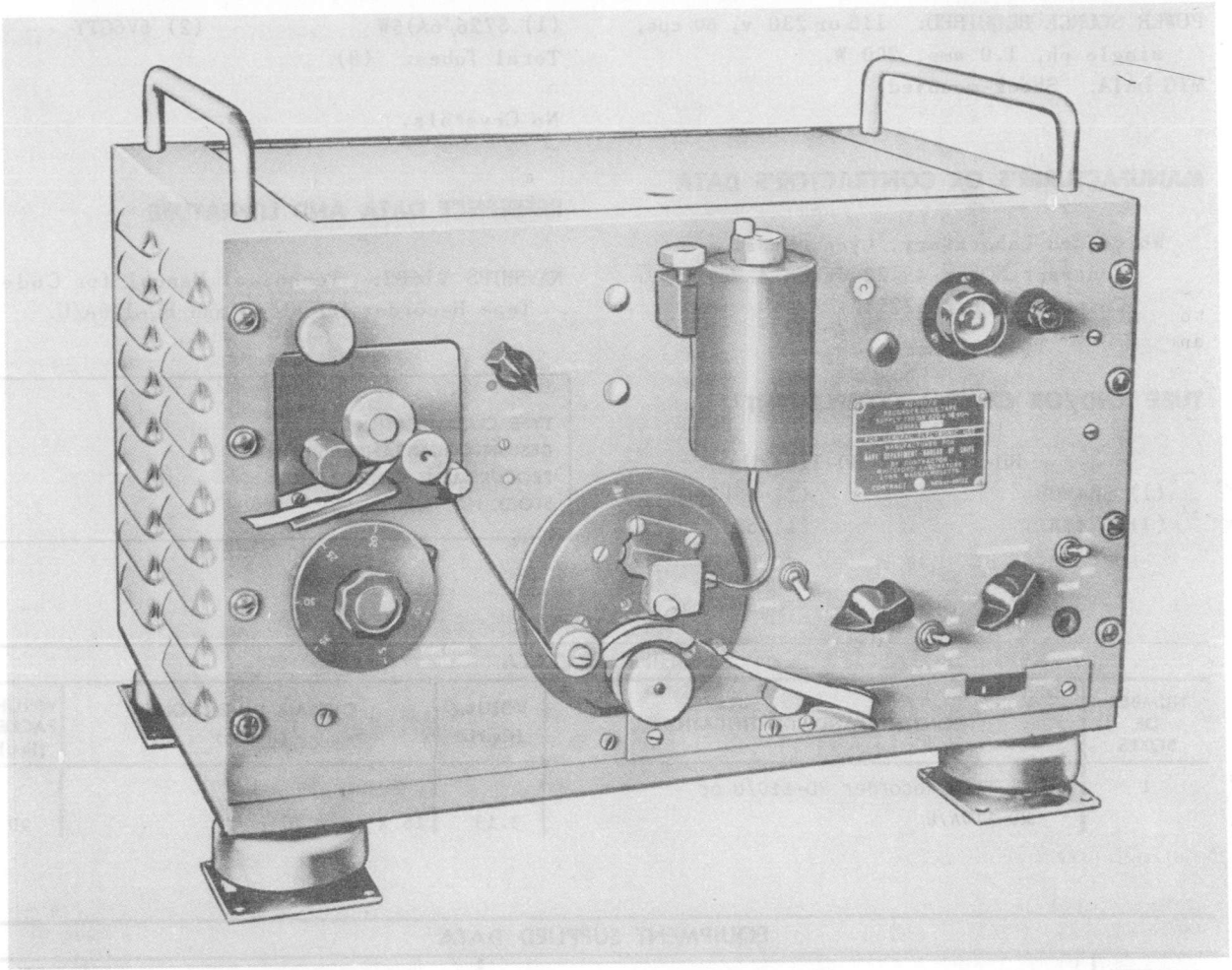
TYPE CLASSIFICATION	
DESIGN COGNIZANCE	TASSA
PROCUREMENT COGNIZANCE	
STOCK NO.	
R.D.B. IDENT. NO.	

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Antenna Equipment RC-81-A		
1	Coaxial Cable and Connectors	200 ft. lg.	

April 1958

TAPE CODE RECORDER RD-110/U,RD-110A/U



Tape Code Recorder RD-110/U,RD-110A/U

FUNCTIONAL DESCRIPTION

The RD-110/U and RD-110A/U are used to record signal code from several types of radio-receiver outputs, or from the output of an automatic (transmitting) typewriter. The recorder inscribes an ink trace of International Morse or similarly coded signals on paper tape suitable for manual transcription. Automatic transcription from the tape is possible in conjunction with automatic typewriters and suitable tape scanning devices. The RD-110A/U differs from the RD-110/U in the possession of an automatic tape feed unit.

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

RELATION TO OTHER EQUIPMENT

Equipment Required but not Supplied: A tape-scanning device and an automatic typewriter (receiving) are required for automatic transcription.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

INPUT VOLTAGE RANGE: 0.07 thru 7.0 v at 600 ohms impedance.
OUTPUT AMPLITUDE: Constant at above voltage conditions.
OPERATING FREQ
W/O FILTER: 1000 to 3000 cps.
W/FILTER: 1875 cps (all other freq and noise rejected).

Radio-Auxiliary

RD-110/U,RD-110A/U TAPE CODE RECORDER

April 1958

POWER SOURCE REQUIRED: 115 or 230 v, 60 cps, single ph, 1.0 amp, 200 W.
MTG DATA: Shock-mounted.

MANUFACTURER'S OR CONTRACTOR'S DATA

Whiteford Laboratory, Lynn, Mass.
Contract NObsr-49122 dated 4 May 1950.
Contract NObsr-57254.

TUBE AND/OR CRYSTAL COMPLEMENT

RD-110/U or RD-110A/U

(1) 5R4WGB
(1) 6X4WA
(2) 6SL7WGT
(1) 6E5
(1) 5726/6A)5W
(2) 6V6GTY
Total Tubes: (8)

No Crystals.

REFERENCE DATA AND LITERATURE

NAVSHIPS 91682: Technical Manual for Code, Tape Recorder RD-110/U and RD-110A/U.

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	Code, Tape Recorder RD-110/U or RD-110A/U	3.13	15 x 18 x 20	90

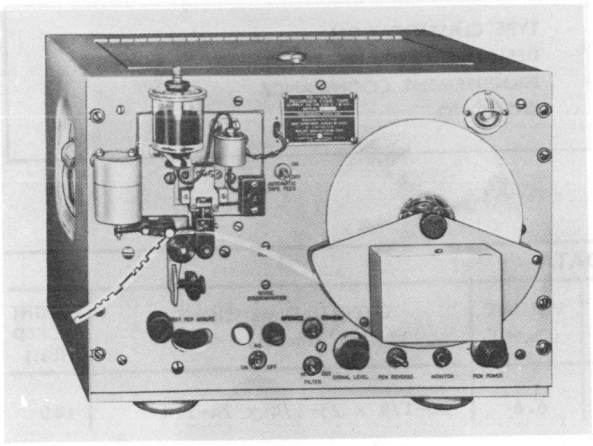
EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Code, Tape Recorder RD-110/U or RD-110A/U	10-15/32 x 15-1/2 x 19	80
1	Technical Manual NavShips 91682		

April 1958

Radio-Auxiliary

TAPE CODE RECORDER RD-112/U,RD-112A/U



Tape Code Recorder RD-112A/U

FUNCTIONAL DESCRIPTION

The RD-112/U and RD-112A/U are self-contained undulating type ink-slip recorders capable of converting radio telegraph code information from the normally transient, audible form to its visual equivalent in a permanently written form. The written information is recorded with ink on standard paper recording tape drawn through an electronically operated recording mechanism by a mechanically operated tape puller powered by a synchronous electric motor. Amplification of the radio telegraph code information and conversion to its final form is accomplished by means of a specialized type of amplifier contained in the unit. Both amplifier and tape puller are designed to operate from a common source of 115 or 230 v, 50 to 60 cps, single ph alternating current.

An automatic tape feed feature has been provided such that during periods of automatic operation, tape will not be drawn through the tape puller in the absence of keying signal or with constant carrier. The return of keying signal, however, will cause tape feeding to commence in such a manner that not more than one dot will be missed.

The recorder is capable of recording radio telegraph code signals through a continuously variable speed range of 0 to 350 words per minute when its input terminals are properly connected to the correct output terminals of a communications type radio receiver or other suitable signal source.

The RD-112A/U is similar to the RD-112/U except for the addition of an Automatic Ink Valve and Automatic Tape Feed.

No field changes in effect at time of preparation (30 December 1957).

RELATION TO OTHER EQUIPMENT

Equipment Required but not Supplied: (1) Roll (8 in. dia) Tape, 3/8 in. paper Recorder (1) 8 oz bottle of Eternal Black Fountain Pen Quality ink.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

OPERATING FREQ RANGE: 500 to 5000 cps.
INPUT IMPEDANCE: 300 ohm single, 600 ohm single and 600 ohm balanced line.
INPUT SENSITIVITY: 0.07 v rms.
TAPE SPEED: 5 to 35 ft per min; a detent has been provided at a tape speed of 25 feet per minute.
RECORDING SPEED: 0 to 350 words per minute.
AUTOMATIC TAPE FEED*: A mechanism is provided that will automatically start tape feeding upon receipt of a keyed signal with a signal-to-noise ratio as low as 1:1. Tape feeding is automatically stopped in the absence of a keyed signal.
PEN STROKE: Adjustable from 1/32 to 3/16 of an inch.
TAPE TYPE: Std 3/8 in. wide recorder tape.
INK TYPE: Std "eternal black" ink of fountain pen quality.
INPUT FILTER: 1875 cps.
INPUT POWER REQUIREMENTS: 115 or 230 v, 50 to 60 cps, single ph.
POWER CONSUMPTION: 100 W.
NOTE: *Applicable to RD-112A/U only.

MANUFACTURER'S OR CONTRACTOR'S DATA

McElroy Mfg Corp, Littleton, Mass.
Contract NObsr-52163 dated 11 January 1951 (RD-112/U).
Contract NObsr-63346 dated 10 April 1953.

TUBE AND/OR CRYSTAL COMPLEMENT

RD-112/U

(2) 5726/6AL5W	(2) 6005/6AQ5W
(1) 6X4WA	(2) 6AG5
(2) 5749/6BA6W	(1) 6E5

Total Tubes: (10)

RD-112A/U

(1) OA2WA	(1) 6005/6AQ5W
(2) 5749/6BA6W	(1) 5R4WGB
(1) 6L6WGB	(1) 6AH6
(1) OB2WA	(3) 5726/6AL5W
(1) 5814A	(1) 6E5

Total Tubes: (13)

(1) 1N34A*
Total Crystals: (1)
NOTE* applicable to RD-112A/U only.

Radio-Auxiliary

RD-112/U,RD-112A/U TAPE CODE RECORDER

April 1958

REFERENCE DATA AND LITERATURE

NAVSHIPS 91781: Technical Manual for Code Tape Recorder RD-112/U.
NAVSHIPS 92138: Technical Manual for Code Tape Recorder RD-112A/U.

TYPE CLASSIFICATION
DESIGN COGNIZANCE BUSHIPS
PROCUREMENT COGNIZANCE
STOCK NO.

SHIPPING DATA

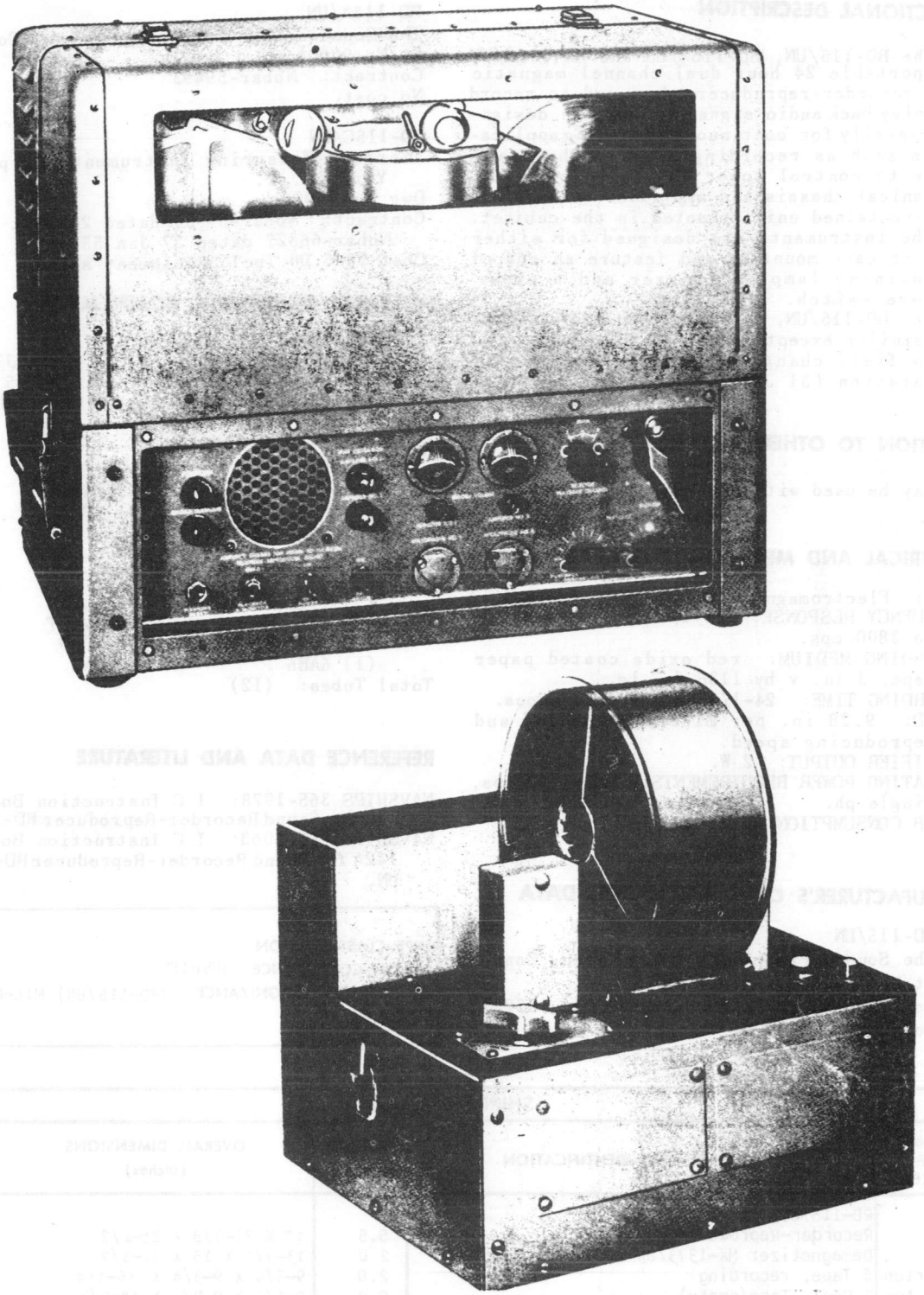
NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
1	Code Tape Recorder RD-112/U or RD-112A/U	6.6	20-1/4 x 23-1/4 x 24-1/4	140

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Tape Code Recorder RD-112/U or RD-112A/U	14 x 16-1/2 x 19	78
1	Power Input Cable		1
1	Set of Spare Parts	1-1/2 x 2-1/2 x 4	0.4

March 1957

SOUND RECORDER-REPRODUCER RD-115/UN,115A/UN, 115C/UN



Sound Recorder-Reproducer RD-115/UN, 115A/UN, 115C/UN

RD-115/UN,115A/UN, 115C/UN SOUND RECORDER-REPRODUCER

March 1957

FUNCTIONAL DESCRIPTION

The RD-115/UN, RD-115A/UN and RD-115C/UN are portable 24 hour dual channel magnetic tape recorder-reproducers designed to record and play back audio signals. They are designed primarily for continuous recording applications such as recording ship to shore and plane to control tower conversations. The mechanical chassis and amplifier chassis are self-contained units mounted in the cabinet.

The instruments are designed for either rack or case mounting and feature an end of tap warning lamp and buzzer and a power failure switch.

The RD-115/UN, RD-115A/UN and RD-115C/UN are similar except for component parts.

No field changes in effect at time of preparation (31 July 1956).

RELATION TO OTHER EQUIPMENT

May be used with Demagnetizer MX-1373/UN.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

TYPE: Electromagnetic.
FREQUENCY RESPONSE: ±1-1/2 db from 400 cps to 3800 cps.
RECORDING MEDIUM: red oxide coated paper tape, 3 in. v by 1136 ft. lg.
RECORDING TIME: 24-1/4 hr max continuous.
SPEED: 9.28 in. per minute recording and reproducing speed.
AMPLIFIER OUTPUT: 2 W.
OPERATING POWER REQUIREMENTS: 115 v, 60 cps, single ph.
POWER CONSUMPTION: 125 W.

MANUFACTURER'S OR CONTRACTOR'S DATA

RD-115/UN
The Soundscriber Corp., New Haven, Conn.
Pt/No-9000A
Contract NObsr-54469 dated 26 Dec 1952.
No cost.

RD-115A/UN
The Soundscriber Corp., New Haven, Conn.
Pt/No-9000A
Contract: Nobsr-59493
No cost.

RD-115C/UN
American Measuring Instruments Corp., New York, N. Y.
Dwg No-25000
Contract: Nobsr-59739 dated 24 Sept 55 and Nobsr-66527 dated 27 Jan 55.
Cost $865.00 Incl. Equipment spares.

TUBE AND/OR CRYSTAL COMPLEMENT

RD-115/UN

(2) 5Y3	(5) 6SJ7
(3) 6V6	(2) 6F5
(1) 6C4	(1) 12AU7

Total Tubes: (14)

RD-115A/UN

(2) 5Y3	(3) 6SJ7
(2) 12AY7	(3) 6V6
(2) 6F5	(1) 6C4W
(1) 5814/12AU7	

Total Tubes: (14)

RD-115C/UN

(2) 12AY7	(2) 12AT7
(2) 6E5	(2) 6V6GT
(1) 5Y3WGTA	(1) 6080
(1) 6AH6	(1) OA2

Total Tubes: (12)

REFERENCE DATA AND LITERATURE

NAVSHIPS 365-1978: I C Instruction Book No. 142 for Sound Recorder-Reproducer RD-115/UN.
NAVSHIPS 365-3063: I C Instruction Book No. 142A for Sound Recorder-Reproducer RD-115A/-UN.

TYPE CLASSIFICATION	
DESIGN COGNIZANCE	BUSHIPS
PROCUREMENT COGNIZANCE	(RD-115/UN) MIL-R-17054
STOCK NO.	

SHIPPING DATA

NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
	RD-115/UN			
1	Recorder-Reproducer RD-115/UN	5.5	17 X 21-7/8 X 25-1/2	84-1/2
1	Demagnetizer MX-1373/UN	2 0	13-1/2 X 15 X 17-1/2	46
1 Carton	5 Tape, recording	2.0	9-3/4 X 9-3/4 X 36-1/4	33
1 Carton	2 Reel, Tape(empty)	0.8	9-1/2 X 9-3/4 X 14-3/4	3-7/8
1	Maintenance parts Kit	2.0	12 X 12-3/4 X 22	41

SOUND RECORDER-REPRODUCER RD-115/UN,115A/UN, 115C/UN

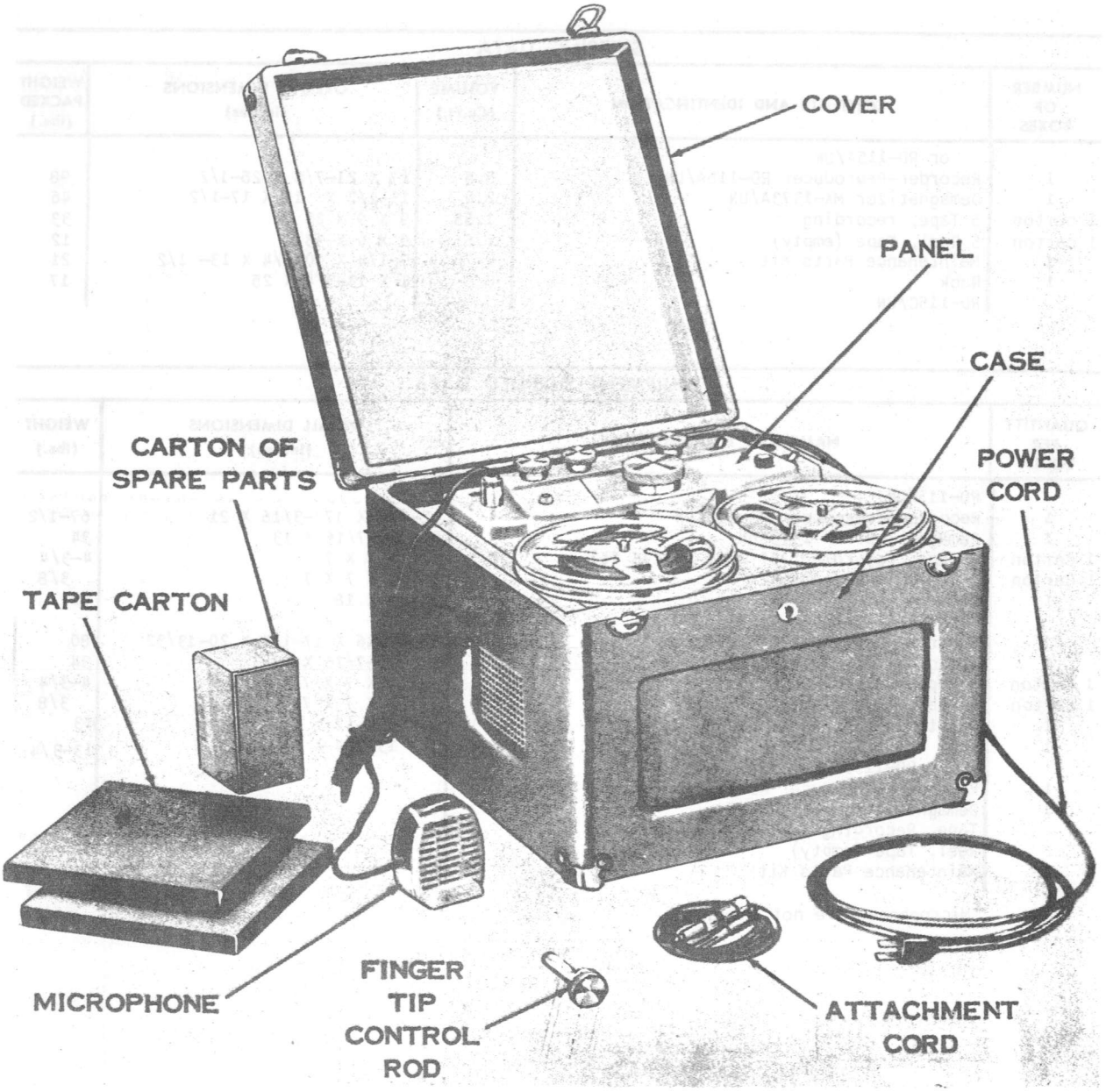
SHIPPING DATA

NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
	or RD-115A/UN			
1	Recorder-Reproducer RD-115A/UN	5.5	17 X 21-7/8 X 25-1/2	98
1	Demagnetizer MX-1373A/UN	2.0	13-1/2 X 15 X 17-1/2	46
1 carton	5 Tape, recording	1.55	9 X 9 X 33	33
1 carton	5 Reel, Tape (empty)	1.55	9 X 9 X 33	12
1	Maintenance Parts Kit	0.78	9-1/4 X 10-3/4 X 13- 1/2	21
1	Rack	0 8	4 X 13-3/4 X 25	17
	RD-115C/UN			

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
	RD-115/UN		
1	Recorder-Reproducer RD-115/UN	12-1/2 X 17 -3/16 X 21	67-1/2
1	Demagnetizer MX-1373/UN	9 X 10-7/16 X 13	34
1 Carton	5 Tape, recording (3" wide x 1136 ft)	3/4 X 7 X 7	4-3/4
1 Carton	2 Reel, Tape (empty)	3-1/4 X 7 X 7	3/8
1	Maintenance Parts Kit	9 X 9 X 18	32
	or RD-115A/UN		
*1	Recorder-Reproducer RD-115A/UN	12-11/16 X 17-1/4 X 20-13/32	80
1	Demagnetizer MX-1373A/UN	9 X 10-7/16 X 13	34
1 Carton	5 Tape, recording (3" x 1136 ft each)	3-1/4 X 7 X 7	4-3/4
1 Carton	5 Reel, Tape (empty)	3-1/4 X 7 X 7	3/8
1	Maintenance Parts Kit	6 X 9 X 12	13
1	Rack	3 X 13-1/4 X 22-1/2	13-3/4
	or RD-115C/UN		
1	Recorder-Reproducer RD-115C/UN		
1	Demagnetizer		
	Tape, Recording		
	Reel, Tape (empty)		
1	Maintenance Parts Kit		

*Microphones are not included.



Sound Recorder-Reproducer RD-133/UN

FUNCTIONAL DESCRIPTION

The RD-133/UN is a self-contained portable sound recorder-reproducer. The equipment consists of a single speed tape transport mechanism, a record-produce-erase head, a six inch permanent magnet speaker, and an amplifier, mounted in a fabric covered plywood carrying case and accessories consisting of a microphone, attachment cord, finger-tip control rod, two rolls of blank tape, an empty reel and a carton of spare parts.

It is a portable instrument designed to record sound on a thin plastic material coated with iron oxide, which can be magnetized. Provision is made for monitoring the signal. The recording may be reproduced immediately without further processing.

RD-133/UN SOUND RECORDER-REPRODUCER

March 1957

Sound recordings can be made from microphone, telephone lines, phonograph or radio by intermittent or continuous operation.

The equipment erases old recordings automatically as a new recording is made or without impressing any new signal on the tape. It can be reproduced repeatedly in part or

No field changes in effect at time of preparation (31 July 1956).

ELECTRICAL AND MECHANICAL CHARACTERISTICS

TYPE: Electromagnetic.
FREQUENCY RESPONSE: 8 db from 100 cps to 5000 cps.
RECORDING MEDIUM: Magnetically coated plastic base 1/4 in. W tape.
RECORDING TIME: 1 hr max continuous
SPEED, TAPE: 3.75 in. per sec.
AMPLIFIER OUTPUT: 2.5 W.
INPUT IMPEDANCE
RADIO-PHONO: 20,000 ohms.
MICROPHONE: 500.000 ohms.
OUTPUT IMPEDANCE
MONITOR: 3.2 ohms.
EXTERNAL SPEAKER: 3.2 ohms.
INPUT VOLTAGE LIMITS
RADIO-PHONO: 2 v max.
MICROPHONE: 2 v max.
OUTPUT LEVEL: 2.5 W.
OPERATING POWER REQUIREMENT: 115 v, 60 cps, single ph.
POWER CONSUMPTION: 106 W max.

MANUFACTURER'S OR CONTRACTOR'S DATA

Webster Electric Co., Racine, Wisc.
Dwg. No-242-19898
Contract NObsr-59781, dated 21 May 1954.
Approximate Cost: $192.00 with equipment spares.

TUBE AND/OR CRYSTAL COMPLEMENT

(1) 5726/6AL5
(1) 6005/6AQ5W
(1) 5Y3WGTB
(1) 5879
(1) 5751
(1) 6V6
(1) 6E5
Total Tubes: (7)

REFERENCE DATA AND LITERATURE

NAVSHIPS 365-2306: I C Technical Manual No. 670 for Sound Recorder-Reproducer-RD-133/UN.

TYPE CLASSIFICATION	
DESIGN COGNIZANCE	BUSHIPS
PROCUREMENT COGNIZANCE	MIL-R-17734
STOCK NO.	

EQUIPMENT SUPPLIED DATA

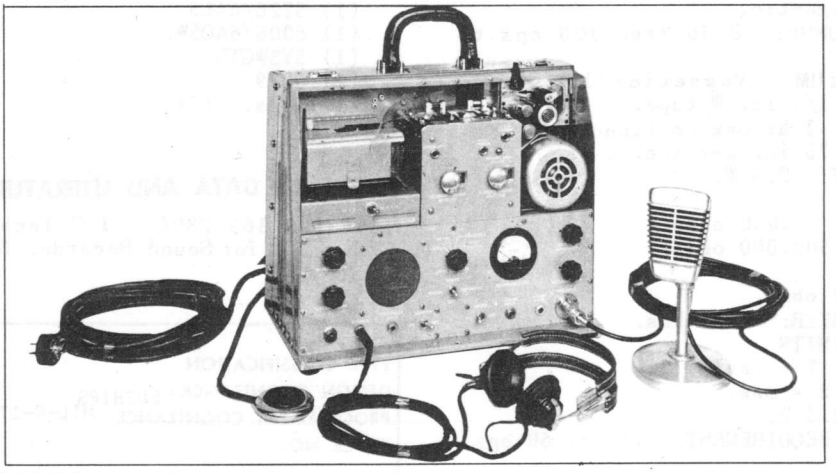
QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Recorder RD-133/UN	12 x 16-3/8 x 18-1/8	
1	Microphone	2 x 2-3/4 x 3-1/4	
1	Attachment Cord	36	
2	Plastic Base Recording Tape & Reel (Boxed)	1/2 x 7 x 7	
1	Empty Reel	3/8 x 7	
1	Spare Parts (Boxed)	3 x 3 x 6	
2	Technical Manuals NAVSHIPS 365-2306	3/8 x 8-3/4 x 11-1/4	

20 July 1962 RECORDER-REPRODUCER SOUND RD-148/SNH
Cog Service: USN FSN: Functional Class:

USA	USN	USAF

TYPE CLASS: Used by

MANUFACTURER'S NAME/CODE NUMBER: Television Associates Incorporated, (81797).



Recorder-Reproducer Sound RD-148/SNH

FUNCTIONAL DESCRIPTION:

The Recorder-Reproducer Sound RD-148/SNH is a portable, electromechanical type sound recorder and reproducer, which uses a recording medium of ethyl cellulose tape. It provides the replacement of both recording and reproducing styluses. A dual amplifier permits simultaneous recording and reproducing. A voice actuated relay institutes automatic recording. Interconnection circuits allow automatic alternate operation of two (2) interconnected machines.

No field changes in effect at time of preparation (5 January 1962).

TECHNICAL CHARACTERISTICS:

TYPE OF INSTALLATION: Portable.
TYPE OF RECORDER-REPRODUCER: Electro mechanical.
FREQUENCY RESPONSE: 6 db between 500 and 3500 cps.

RD-148/SNH RECORDER-REPRODUCER SOUND

RECORDING MEDIUM: Ethyl cellulose tape.
TAPE SIZE: 0.0075 in. thk x 1.377 in. w on a 60 ft coil.
RUNNING TIME: 4 hr 10 minutes and 6 hr 10 minutes.
RUNNING SPEED: 40 ft and 60 ft per minute.
OUTPUT: 2.5 W.
OPERATING POWER RQMT: 115 v ac, 60 cps, single ph, 1.62 amps.

RELATION TO OTHER EQUIPMENT: None.

EQUIPMENT REQUIRED BUT NOT SUPPLIED:

(1) 15 ft power cord complete w/plugs; (1) Dynamic microphone w/desk stand, 15 ft of cord & plugs; (1) 30 ft microphone extension cable w/plugs; (1) Automatic changeover, interconnection cable w/plugs and 6 ft of cable; (1) Remote control foot switch w/plug & 6 ft of cable; (1) Magnetic headset complete w/headband, cord, plug and two (2) receiver units.

MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (INCHES)	WEIGHT (LBS)
1	Recorder-Reproducer Sound RD-148/SNH		9-5/16 x 14-15/16 x 17-1/4	65.
25	Rolls Film		10 x 13-1/2 x 15-3/4	17-1/2
1 set	Accessories		7 x 8-1/2 x 16	10-1/4
1 set	Equipment Spares		12 x 13 x 24	51-1/2

REFERENCE DATA AND LITERATURE:

NAVSHIPS 365-1938: Technical Manual for Recorder-Reproducer Sound RD-148/SNH.

TUBE, CRYSTAL AND/OR SEMI-CONDUCTOR DATA:

TUBES: (1) 5Z4 (1) 6AL5 (2) 12AX7 (4) 6AQ5 (1) 12AU7 (1) 12AY7 (3) 6AU6
(1) 6BE6 (1) 5583

CRYSTALS: None used.

SEMI-CONDUCTORS: None used.

SHIPPING DATA

PKGS	VOLUME (CU FT)	WEIGHT (LBS)
1	3.0	73-3/4

PROCUREMENT DATA

PROCURING SERVICE: USN
SPEC &/OR DWG:

DESIGN COG: CS-S-313.1

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX. UNIT COST
Television Associates Inc. Type IC/VRF-6	Michigan City, Indiana	NObs 47278, November 1950	