

ADMIRALTY
AIR MINISTRY

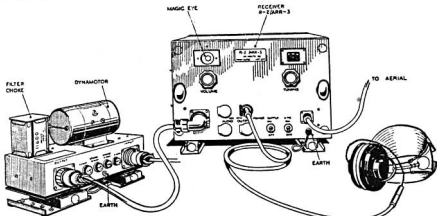
Stores Ref. No. 110D/990
Stores Ref. No. 110D/991
Stores Ref. No. 110D/1053

For further information see
A.P.2552D.

SONOBUOY, ARI.5286

Receiver R-2/ARR-3 supplied with AN/ARR-3A
Receiver R-2A/ARR-3 supplied with AN/ARR-3B
Sonobuoy transmitter equipment AN/CRT-1

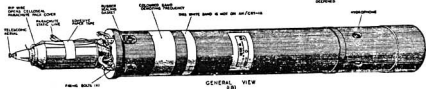
CONCISE DETAILS OF RADIO EQUIPMENT (AIRBORNE)
This is A.L. No. 21 to A.P. 2276A(2), Volume 1
Section 2. List of Sheets: delete " (to be issued later) " after the title of
Sheet 29 and write " (A.L. 21) " in the outer margin against the deletion.
Insert this Sheet 29 to follow Sheet 25.
Record the incorporation of this A.L. in the Amendment Record Sheet.



TYPICAL RECEIVER WITH POWER SUPPLY AND HEAD-SET

NOTE TO INCREASE HEARING RANGE: LISTEN TO THE
BASS END OF THE SPECTRUM

CAUTION: WHEN WEARING HEAD-SET IN CRYSTAL TRANSMITTER
MODE, USE EAR-PIECE AND SPEAKER SEPARATELY. HOLDING BOTH
EARS TOGETHER INCREASES HEARING RANGE AND DECREASES
SPEAKER DEEPNESS



TRANSMITTER AN/CRT-1B

Function of transmitters

Transmit by radio the waterborne sounds of submerged submarines to aircraft or ship. Sonobuoy is launched from aircraft by self-contained parachute

Frequency range

AN/CRT-1A (Black band) 67.7 to 71.7 Mc/s in six bands
AN/CRT-1B (White band) 62.9 to 66.9 Mc/s in six bands

Aerial

30 in. telescopic

Duration of signal

Two to four hours

Type of wave

Frequency modulation

Sonic listening range

Range varies with condition of sea and depth of submarine. Slow-moving submarines $\frac{1}{2}$ to 1 mile from buoy, fast-moving submarine up to $3\frac{1}{2}$ miles.

RESTRICTED

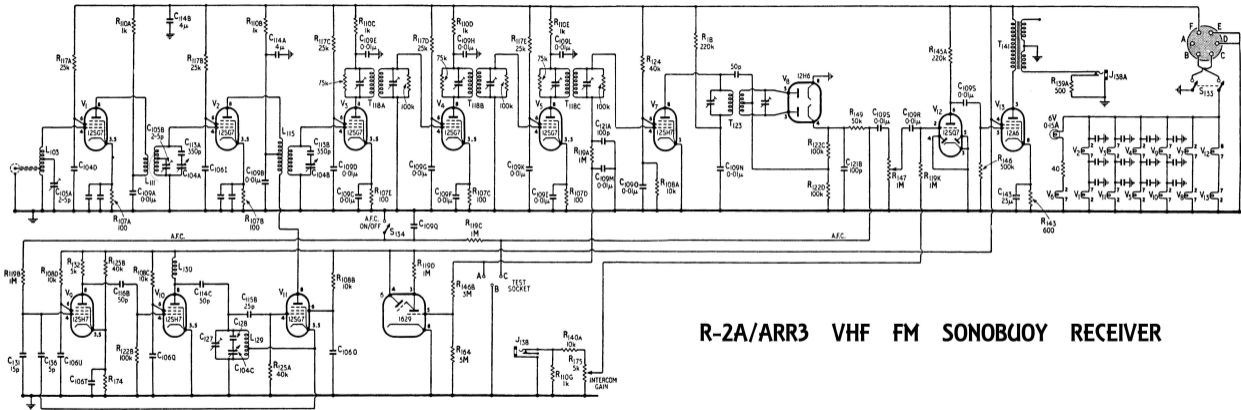
Power supply	4 batteries, BA-30 1.5 volt, 2 batteries BA-51 67.5 volt														
Dimensions and weight	<table border="0"> <tr> <td>Length (aerial collapsed)</td> <td>45 in.</td> </tr> <tr> <td>Length (aerial extended)</td> <td>75 in.</td> </tr> <tr> <td>Diameter</td> <td>4½ in.</td> </tr> <tr> <td>Weight (including batteries)</td> <td>13½ lb.</td> </tr> <tr> <td>Batteries, one set</td> <td>2½ lb.</td> </tr> <tr> <td>Carton containing 3 units and batteries</td> <td>63½ lb.</td> </tr> <tr> <td>Carton containing 1 unit and batteries</td> <td>18 lb.</td> </tr> </table>	Length (aerial collapsed)	45 in.	Length (aerial extended)	75 in.	Diameter	4½ in.	Weight (including batteries)	13½ lb.	Batteries, one set	2½ lb.	Carton containing 3 units and batteries	63½ lb.	Carton containing 1 unit and batteries	18 lb.
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Functions of receivers	To enable members of aircraft crews or ships to listen by radio to the waterborne sounds of submerged submarines as transmitted from Sonobuoys														
Frequency range	<p>R2/ARR-3 : continuously variable from below 67.7 Mc/s to above 71.7 Mc/s</p> <p>R2A/ARR-3 : continuously variable from below 62.9 Mc/s to above 71.7 Mc/s</p>														
Type of demodulator	FM discriminator														
Aerial	Retractable whip														
Radio receiving range	Sonobuoy to aircraft receiver varies from 10 miles when the aircraft is at 400 ft. to 35 miles when the aircraft is at 5,000 ft. but the usable range is considered to be between 5 and 10 miles.														
Receiver differences	<p>R-2/ARR-3. Tuning range 67.2 to 72.0 Mc/s in six channels. Four output jacks are provided on the front panel. Locally controlled superheterodyne. Will receive the FM signals of transmitter AN/CRT-1A</p> <p>R-2A/ARR-3. Tuning range 62.4 to 72.0 Mc/s in twelve channels. Two output headphone jacks are provided on the front panel, also an interphone input jack and a gain control. Will receive the FM signals of transmitters AN/CRT-1A and 1B</p>														
Power supply HT	<p>Rotary transformer (Dynamotor)</p> <p>Input 1.5A at 28 volts from aircraft 24-volt supply</p> <p>Output 100 mA at 190 volts</p> <p>RPM 3,600</p>														

LT

24 volts (nominal) from aircraft installation

	Unit	Nomenclature	Dimensions	Weight lb.	Stores	Ref.
Main items of installation, weight and dimensions	Radio receiver	R-2/ARR-3 or R-2A/ARR-3	14½ in. x 11½ in. x 9½ in. 14½ in. x 11½ in. x 9½ in.	18.72 18.72	110D/990 110D/991	
	Receiver mounting	MT-11/ARR-3	13 in. x 10½ in. x 2½ in.	1.22	110A/1144	
	Dynamotor unit	DY-5A/ARR-3	8 ⅞ in. x 6 ⅞ in. x 5 ⅞ in.	6.91	110K/1601	
	Mounting Dynamotor	MT-13/ARR-3	8 ⅞ in. x 4 ⅞ in. x 2½ in.	0.84	110A/1145	
	Aerial	AT-3A/ARR-3		2.23	110B/510	
	Headsets	H-3A/ARR-3		1.06	110A/1146	
	Headset cords	CX-3/ARR	5ft. 0in.	0.31	110H/4011	
	Plug, receiver power input	AN-3108-22-55		0.23	105X/839	
	Plug, dynamotor output	AN-3106-22-5P		0.14	125X/1113	
	Plug, dynamotor input	AN-3106-20-55		0.14	110X/1148	
	Plug, co-axial	C-49195		0.05	105X/1846	
	Adapter, angle co-axial plug	C-49192		0.08	110H/1332	
	Cable, 2-wire	NAF-47024-216	20ft.	0.122 per ft.		
	Cable, 4-wire	NAF-47024-405	20ft.	0.125 per ft.		

	Unit	Nomenclature	Dimensions	Weight lb.	Stores	Ref.
Main items of installation, weight and dimensions (contd.)	RF cable, co-axial	RG-11/U	20ft.	0.096 per ft.		
	Clamps, cable	AN-3057-12		0.061	105X	1404
	Handbook of operating instructions	AN-08-30 ARR 3-2		0.19		
Test equipment		Wavemeter Type LMB				Ref. No. 110T/33
		Hockok test meter Type 133B				Ref. No. 1105/NIV
Variants of sonobuoy		Transmitter Type T.1596				Ref. No. 10D/2782
		T.1596 is a conversion of existing equipment, AN/CRT-1A or 1B, converted by kits, conversion, Type T.1596 Ref. No. 10D/2783. The conversion increases the period of transmission from 3 hours to 3 days and renders the equipment suitable for launching from surface vessels. At end of 3 days flooding device causes buoy to sink				
		Transmitter Type T.1901				Ref. No. 10D/17127,
		T.1901 is a conversion of existing equipment AN/CRT-1A or 1B converted by kits conversion, Type T.1901. Ref. No. 10D/17128. The conversion increases the period of transmission from 3 hours to 3 days. When air-launched, parachute is jettisoned on impact with water. Rod aerial less than quarter-wave fitted to specially designed aerial insulator. At end of transmission flooding direct causes buoy to sink				
		Sonobuoy AN/CRT-4				Ref. No. 110D/1138.
		AN/CRT-4 is a directional transmitter which indicates the direction of the submarine. It is longer than the non-directional type and transmits over a range of twelve frequencies, one frequency to each buoy. Air-launched either manually or automatically. Contains fluorescent dye marker. Operates for 2 to 4 hours, powered by batteries, sinks at end of transmission				



R-2A/ARR3 VHF FM SONOBUOY RECEIVER