

## RADIO RECEIVING EQUIPMENT

Radio-Receivers  
**RBO, RBO-1, -2,  
-2a, -3, -4**



Radio Receiving Equipment RBO, RBO-1, -2, -2a, -3, -4

### FUNCTIONAL DESCRIPTION

The RBO, RBO-1, RBO-2, RBO-2a, RBO-3 and RBO-4 are superheterodyne receivers for entertainment use aboard ships of all types and for shore installations. The RBO series is specifically designed to provide optimum performance and high quality reception of voice or tone modulated signals on all frequency bands covered. Provision is made for head telephone or loudspeaker reception. The equipment is designed to minimize radiation from the high frequency oscillator and is considered safe for use in combat areas.

The RBO, RBO-1, RBO-2, RBO-3 and RBO-4 are identical except for minor component differences, the addition of a noise limiter in the RBO-1 and RBO-2 and other minor circuit modifications. The RBO-2a is the RBO-2 modified for the purpose of causing it to operate from a 115 v, 60 cps source instead of a 115 v, 400 cps source. To accomplish this certain leads were shielded, a crystal rectifier was substituted for a vacuum tube diode rectifier and a cathode by-pass capacitor was added.

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

### RELATION TO OTHER EQUIPMENT

Equipment Required but not Supplied: 600 ohm headphones or loudspeaker with coupling transformer to match 600 or 5000 ohms, power cord, and antenna.

### ELECTRICAL AND MECHANICAL CHARACTERISTICS

**FREQUENCY RANGE:** Three bands; 0.53 to 1.60, 5.55 to 9.55 mc and 9.2 to 15.6 mc.

**RECEPTION:** A2 and A3.

**POWER OUTPUT:** 30 mw into 600 ohm load; 2 w max undistorted power into 600 ohm or 5000

ohm load.

**INPUT IMPEDANCE:** Antenna input circuit includes a 2-position switch for operation of the receiver with a long or short, single wire antenna.

#### OUTPUT IMPEDANCE

RBO: 600 and 5000 ohms.

RBO-1, 2, 2a, 3: 600 and 60, 600 or 5000 ohms (late RBO-3's have balanced output).

RBO-4: 600 to 30 ohms (variable), and 600 ohms balanced or unbalanced.

**SENSITIVITY:** 12 uv.

**SIGNAL TO NOISE RATIO:** 20 db.

**POWER SOURCE REQUIRED:** 115 v, 600 cps, single ph, 85w for RBO, RBO-1, RBO-2, RBO-3 and RBO-4; 115 v 400 cps, single ph, 85w for RBO-2a.

#### ANTENNA

**INPUT:** Concentric antenna jack 49120 mounted at rear of receiver for RF connection.

**MOUNTING:** Rack or shock mounting to table or bench at shore installations; shock mounting aboard ship.

### MANUFACTURER'S OR CONTRACTOR'S DATA

E.H. Scott Radio Labs, Inc, Chicago, Ill.;  
Contract NOs 99260, dated 18 March 1952  
(RBO).

Contract NXss 20313 (RBO-1).

Contract NXsr 38078 (RBO-2 and 3).

Contract NXsr 95080 (RBO-4).

Maryland and Electronics Mfg Corp, College Park, Maryland.

Contract NObsr 43407 (RBO-2a).

Approximate Cost: \$800.00 ea. with equipment spares.

### TUBE AND/OR CRYSTAL COMPLEMENT

(2) 6X5GT*	(1) 6V6GT
(1) 6SJ7	(1) 6SA7
(2) 5Y3GT**	(1) 6V6GT***
(-2) S6K7	(1) 6H6
(1) 6E5	(1) 6K7
(2) 6J5	

Total Tubes: (15)

(1) 1N34\*\*\*\*

Total Crystals: (1)

August 1957

Radio-Receivers

**RBO, RBO-1, -2,  
-2a, -3, -4****RADIO RECEIVING EQUIPMENT****REFERENCE DATA AND LITERATURE**

NAVSHIPS 95249(A): Technical Manual for Radio Receiving Equipment Model RBO-2 and RBO-3.

NAVSHIPS 95247: Technical Manual for Model RBO Receiving Equipment.

NAVSHIPS 95248: Technical Manual for Radio Receiving Equipment RBO-2.

NAVSHIPS 95249: Technical Manual for Radio Receiving Equipment RBO-2.

NAVSHIPS 91290: Technical Manual of Complementary Instruction Radio Receiving Equipment Navy Model RBO-2a.

<b>TYPE CLASSIFICATION</b> <b>DESIGN COGNIZANCE BUSHIPS</b> <b>PROCUREMENT COGNIZANCE</b> <b>STOCK NO.</b>
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**SHIPPING DATA**

NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
1	Radio Receiver NT-46139 * or NT-46224 * or NT-46225 ** or NT-46225-A *** or NT-46279 **** with equipment spares			115

NOTES: \* RBO only.  
\*\* RBO-2 and 2a only.  
\*\*\* RBO-3 only.  
\*\*\*\* RBO-4 only

**EQUIPMENT SUPPLIED DATA**

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radio Receiver NT-46139 * or NT-46224 * or NT-46225 ** or NT-46225-A *** or NT-46279 ****	13-3/4 X 18-1/2 X 20-1/2 13-3/4 X 18-1/2 X 20-1/2 13-3/4 X 18-1/2 X 20-1/2 13-3/4 X 18-1/2 X 20-1/2 13-3/4 X 18-1/2 X 20-1/2	103 103 104 104 104
1	Set of Equipment Spares	13-3/4 X 18-1/2 X 20-1/2	

NOTES: \* RBO-1 only.  
\*\* RBO-2 and 2a only.  
\*\*\* RBO-3 only.  
\*\*\*\* RBO-4 only.