

September 1956

**RADIO TRANSMITTING EQUIPMENT****TEA****FUNCTIONAL DESCRIPTION**

The TEA is designed for special counter-measures applications in the 15 to 120 megacycle range. The equipment consists of a rectifier unit, a low frequency power oscillator, and a high-frequency power oscillator which are bolted together to form a complete system.

The LF and HF modulators are interchangeable electrically, and either will modulate the LF or HF transmitter in case of failure of the other modulator.

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

**RELATION TO OTHER EQUIPMENT**

The TEA is the production model of the X CJ and XCK Radio Transmitting Equipments.

Equipment Required but not Supplied: (1) Panoramic Radio Adapter RCX, (1) Radio Receiver NT-46187-A, (1) Panoramic Radio Adapter RBW-2, (1) FM/AM Radio Receiver RBK-9.

**ELECTRICAL AND MECHANICAL CHARACTERISTICS****FREQUENCY RANGE**

LF OSCILLATOR UNIT: 15 to 54.5 mc.

HF OSCILLATOR UNIT: 40 to 120 mc.

TYPE OF EMISSION: A1, A2, A9 (Noise).

**MODULATION FREQUENCY**

VARIABLE: Between 100, and 200000 cps.

FIXED (TONE GENERATOR): 1000, 1500, 8000,

and 12000 cps.

**POWER OUTPUT**

LF: 2.0 kw at 15 mc to 1.0 kw at 54.5 mc.

HF: 1.2 kw at 40 mc to 4000W at 120 mc.

POWER SOURCE (three source required): 440 v, 3 ph, 60 cps, 9 amp at 0.9 pf; 115 v, 3 ph, 60 cps, 5 amp at 0.9 pf; 115 v, single ph, 60 cps, 2 amp at 0.9 pf.

**MANUFACTURER'S OR CONTRACTOR'S DATA**

Transmitter Equipment Mfg. Co., Inc, New York, N.Y.

Contract NXsr-55639 dated 20 January 1945.

Approximate Cost: \$16,500

**TUBE AND/OR CRYSTAL COMPLEMENT**

(3) 872A	(2) OD3	(2) 5R4GY
(1) 6X5GT	(2) 833A	(2) 955
(6) 807	(11) 6SN7GT	(8) 6AC7
(2) OB3	(1) 884	(2) 6SA7GT
(2) 8014A	(2) OA3/VR75	(1) OC3/VR105

Total Tubes: (47)

**REFERENCE DATA AND LITERATURE**

NAVSHIPS 900,329-1B: Technical Manual for Radio Transmitting Equipment Model TEA.

TYPE CLASSIFICATION  
DESIGN COGNIZANCE BUSHIPS  
PROCUREMENT COGNIZANCE BUSHIPS  
STOCK NO.

**SHIPPING DATA**

NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
1	Rectifier Power Unit NT-20ADB	40.02	32 x 35 x 62	1255
1	L.F. Power Oscillator NT-35ABN	27.5	30 x 31 x 51	465
1	H.F. Power Oscillator NT-35ABO	28.8	30 x 33 x 51	530
1	Modulator NT-50AFC	1.17		
1	Modulator NT-50AFO	1.17		
1	Modulation Generator NT-35ABP	1.17		
1	Tone Generator NT-35ABQ	1.19		

TEA

## RADIO TRANSMITTING EQUIPMENT

September 1956

## SHIPPING DATA

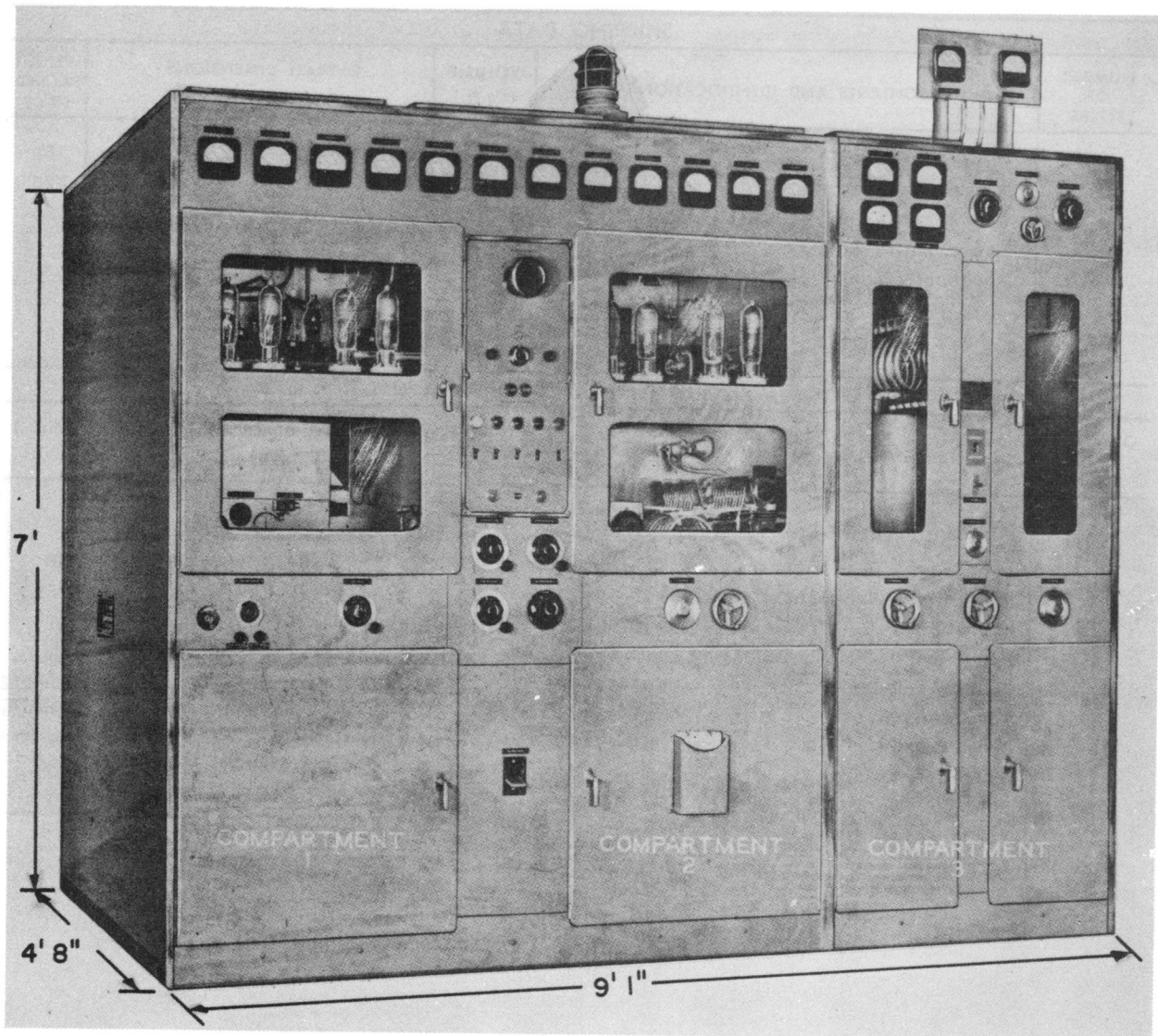
NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Fr.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
1	Dummy Load NT-10AET	1.085		58
1	Spare Parts Box #1	9.61	18 x 22 x 42	320
1	Spare Parts Box #2	8.01	15 x 22 x 42	190
1	Spare Parts Box #3			
1	Accessory Box	18.2	18 x 38 x 46	

## EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Rectifier Power Unit NT-20ADB	23 x 25-1/2 x 48-13/16	915
1	L.F. Power Oscillator NT-35ABN	23 x 23 x 48-13/16	270
1	H.F. Power Oscillator NT-35ABO	23 x 24-1/4 x 48-13/16	334
1	Modulator NT-50AFC	9-1/4 x 14 x 15-5/8	28
1	Modulator NT-50AFD	9-1/4 x 14 x 15-5/8	28
1	Modulation Generator NT-35ABP	9-1/4 x 14 x 15-5/8	15-1/2
1	Tone Generator NT-35ABQ	9-1/4 x 14-1/4 x 15-5/8	19-3/4
1	Dummy Load NT-10AET	9-1/8 x 11-1/8 x 18-1/2	29
1	Spare Parts Box #1	16 x 20 x 38	250
1	Spare Parts Box #2	13 x 20 x 38	140
1	Spare Parts Box #3		
1	Accessory Box	18 x 38 x 46	

# RADIO TRANSMITTING EQUIPMENT

TEB



*Radio Transmitting Equipment TEB*

## FUNCTIONAL DESCRIPTION

The Navy Model TEB is designed for shore-based installation to effect communication from shore-to-ship or point-to-point. It is designed for radio telegraph or frequency shift operation in the 4000 to 21000 kilocycle frequency range and can be keyed at speeds better than 400 words per minute and still maintain good wave form. It contains provisions for connecting an external frequency shift keyer unit for teleprinter operation.

No field changes in effect at time of preparation (29 April 1958).

## ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 4000 to 21000 kc.  
POWER OUTPUT: 15 kw.  
FREQUENCY CONTROL: Crystal oscillator.  
EMISSION: A1, F1.  
KEYING SPEED: 400 wpm.

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Radio-Transmitters

TEB

## RADIO TRANSMITTING EQUIPMENT

FREQUENCY STABILITY: Better than 1 cps per mc per deg C at 60 deg C ambient temperature.

OUTPUT IMPEDANCE: 550 to 650 ohm balanced two-wire transmission line.

POWER REQUIREMENTS: 207 to 253 v, 57 to 63 cps, 3 ph, 35 kw, 94.5% pf.

(7) 575A (1) 6H6GT (2) 6J5  
 (2) 6V6GT (2) 807 (8) 872A  
 Total Tubes: (36)

(6) NT-40000C  
 Total Crystals: (6)

## MANUFACTURER'S OR CONTRACTOR'S DATA

Press Wireless Mfg Corp, Long Island City, N.Y.

Contract NXsr-55605, dated 31 March 1944.

Contract NXsr-83381, dated 26 November 1944.

Contract N5sr-10537, dated 19 July 1945.

Contract N5sr-17791, dated 1 December 1945.

Approximate Cost: \$38500.00 with equipment spares.

## REFERENCE DATA AND LITERATURE

NAVSHIPS 900352(A): Technical Manual for Radio Transmitting Equipment Navy Model TEB.

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

## TUBE AND/OR CRYSTAL COMPLEMENT

(2) HF300 (1) OD3W (2) 2A3  
 (4) 3B28 (3) 4C22/HF10 (2) 5667

## SHIPPING DATA

NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
1	Transmitter Unit NT-52353 including: (2) Technical Manual NAVSHIPS 900352(A)	509	71 X 100 X 124	8215
1	Main Plate Transformer	37	26 X 46 X 54	1800
1	PA Tank Assembly	44	29 X 46 X 57	810
1	Main Filter Choke	2	10 X 15 X 18	145
1	PA Filament Transformer(2)	4	16 X 17 X 28	323
1	Antenna Capacitor Assembly	5	12 X 23 X 34	105
1	IPA Tank Assembly	17	23 X 32 X 40	214
1	Antenna Meter Panel Assembly including: (1) Set of Misc Operating Parts	8	16 X 22 X 40	147
1	Set of Operating Accessories and Crystals	14	18 X 31 X 42	188
1	Operating Vacuum Tubes(34)	13	19 X 33 X 37	135
1	Operating PA Vacuum Tubes(2)	16	23 X 29 X 42	220
1	Equipment Spares	15	21 X 31 X 42	265
1	Equipment Spares	14	18 X 31 X 42	290
1	Equipment Spares	14	18 X 31 X 42	290
1	Spare Vacuum Tubes(68)	27	26 X 32 X 58	317
1	Equipment Spares (Transformers and Chokes)	16	22 X 31 X 41	700
1	Spare PA vacuum Tubes(2)	20	25 X 31 X 45	309
1	Spare PA vacuum Tubes(2)	20	25 X 31 X 45	325
1	Spare Blower Including: (1) Spare Main Filter Choke (1) Spare Main Filter Capacitor	15	21 X 24 X 51	515
1	Glass Ventilating Filters(57)	23	26 X 27 X 55	250



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## RADIO TRANSMITTING EQUIPMENT

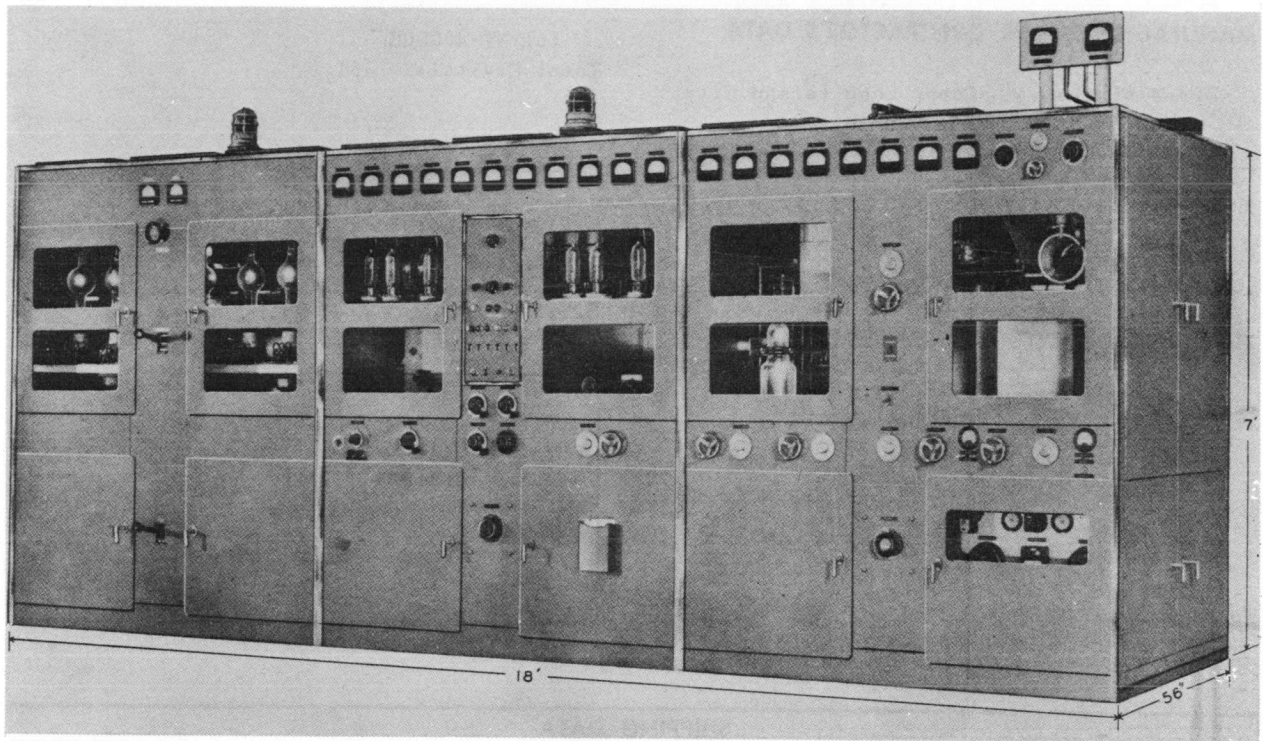
TEB

## EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radio Transmitter NT-52353	56 X 84 X 109	6365
1	Set of Operating Accessories and Crystals	15 X 28 X 38	90
1	Set of Vacuum Tubes		508
1	Set of Equipment Spares		1641
2	Technical Manual NAVSHIPS 900352(A)	3/4 X 9 X 11-1/2	

## RADIO TRANSMITTING EQUIPMENT

TEC



Radio Transmitting Equipment Model TEC

### FUNCTIONAL DESCRIPTION

The Navy Model TEC is a shore based equipment designed for radiotelegraph operation in the 4000 to 21000 kilocycle frequency range. It can be keyed at speeds up to 400 words per minute and maintain good wave form. It contains provisions for connecting an external frequency shift keyer unit for teletype operation, and can be used in conjunction with a single sideband transmitter to allow the second I.P.A. and its driver and exciter circuits to be operated as an independent transmitter.

Its control circuit affords overload protection in both the driver and power amplifier stages. An automatic control feature functions to shut down the transmitter in the event it is not keyed for 15 minutes. The operator can eliminate or adjust this automatic control feature to operate from 2 to 30 minutes. During single sideband operation this automatic control feature only controls the exciter circuit. The exciter and driver

circuits of the transmitter may be controlled manually.

No field changes in effect at time of preparation (25 April 1958).

### ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 4000 to 21000 kc.

#### POWER OUTPUT

A1, F1: 40 kw.

A3: 30 kw.

FREQUENCY CONTROL: Crystal oscillator or external oscillator.

EMISSION: A1, A3, F1.

KEYING SPEED: 400 wpm.

FREQUENCY STABILITY: Less than 2 cps per mc at 20 deg C ambient temperature.

OUTPUT IMPEDANCE: 550 to 650 ohms balanced transmission line.

POWER REQUIREMENTS: 207 to 253 v, 60 cps, 3 ph, 95 kw, 95% pf.

HEAT DISSIPATION: 30 kw.

Radio-Transmitters

TEC

RADIO TRANSMITTING EQUIPMENT

MANUFACTURER'S OR CONTRACTOR'S DATA

Press Wireless Mfg Corp, Long Island City,  
N.Y.

Contract NXsr-55605, dated 2 January  
1945.

Contract N5sr-807, dated 23 April 1945.

Approximate Cost: \$38800.00 with e-  
quipment spares.

(6) NT-40000C

Total Crystals: (6)

REFERENCE DATA AND LITERATURE

NAVSHIPS 900212: Technical Manual for Radio  
Transmitting Equipment Navy Model TEC.

TUBE AND/OR CRYSTAL COMPLEMENT

- |               |           |
|---------------|-----------|
| (2) HF300     | (1) OD3W  |
| (2) 2A3       | (4) 2X2A  |
| (4) 3B2B      | (2) 3Z    |
| (3) 4C22/HF10 | (1) 6H6GT |
| (2) 6J5       | (2) 6V6GT |
| (1) 6X5WGT    | (2) 807   |
| (7) 869B      | (10) 872A |
| (2) 880       |           |

Total Tubes: (45)

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	Power Rectifier Section	362	71 X 88 X 100	4460
1	Exciter Section	362	71 X 88 X 100	5310
1	Power Amplifier Section	362	71 X 88 X 100	4550
1	Transmitter Base, Steel	35	4 X 68 X 224	960
1	Water Cooling Unit	342	66 X 88 X 102	4085
1	Power Amplifier Tank Condenser Assembly	44	29 X 45 X 58	900
1	Main Power Supply Plate Transformer	90	34 X 60 X 76	4565
2	Lapp Hose Reel	9	22 X 22 X 32	150
1	Power Amplifier Filament Transformer	9	14 X 30 X 39	620
1	Main Power Supply Filter Choke	8	17 X 23 X 34	350
1	Porcelain Tubes and Pipe Fittings	9	15 X 27 X 37	200
1	Power Amplifier Tank Coil including: Shorting Bars Antenna Coils	6	14 X 24 X 33	110
1	Antenna Coupling Condenser Assembly	5	12 X 23 X 34	115
1	HF300 Condenser Assembly	17	29 X 32 X 39	206
1	Set of Front Lower Panels including: Molding HV Cable Interconnecting Cable	19	13 X 21 X 118	440
1	Single Sideband Assembly	15	25 X 32 X 33	262
1	Bias Chassis including: Pulse Amplifier Chassis	9	16 X 20 X 47	325
1	Bias Choke	5	14 X 22 X 26	295
1	Main Power Amplifier Supply Filter Condenser	6	14 X 26 X 29	300
1	Lengths of Copper Tubing (2)	7	9 X 37 X 38	135

**RADIO TRANSMITTING EQUIPMENT**

**TEC**

**SHIPPING DATA**

NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
1	Antenna Meter Panels	18	18 X 26 X 66	285
1	Operating Tubes	13	22 X 25 X 42	125
1	Operating Tubes	22	21 X 40 X 45	140
1	Operating Tubes	20	24 X 34 X 42	130
1	Operating Tubes	7	19 X 19 X 35	80
1	Set of Accessories	22	27 X 27 X 54	358
1	Equipment Spares	17	23 X 31 X 42	407
1	Equipment Spares	17	23 X 31 X 41	410
1	Equipment Spares	14	18 X 31 X 42	335
1	Equipment Spares	15	18 X 34 X 42	228
1	Equipment Spares	28	25 X 44 X 45	656
1	Equipment Spares	9	15 X 29 X 36	278
1	Equipment Spares	6	14 X 24 X 32	215
1	Equipment Spares	14	24 X 24 X 42	380
1	Equipment Spares	14	18 X 32 X 43	651
1	Equipment Spares	27	25 X 34 X 54	313
1	Equipment Spares	39	26 X 52 X 52	540
1	Equipment Spares	32	30 X 32 X 57	380
4	Equipment Spares	27	24 X 44 X 45	284
3	Equipment Spares	32	32 X 36 X 48	295
1	Equipment Spares	17	25 X 31 X 37	166
4	Equipment Spares	16	24 X 26 X 44	195
1	Equipment Spares	13	24 X 24 X 42	329

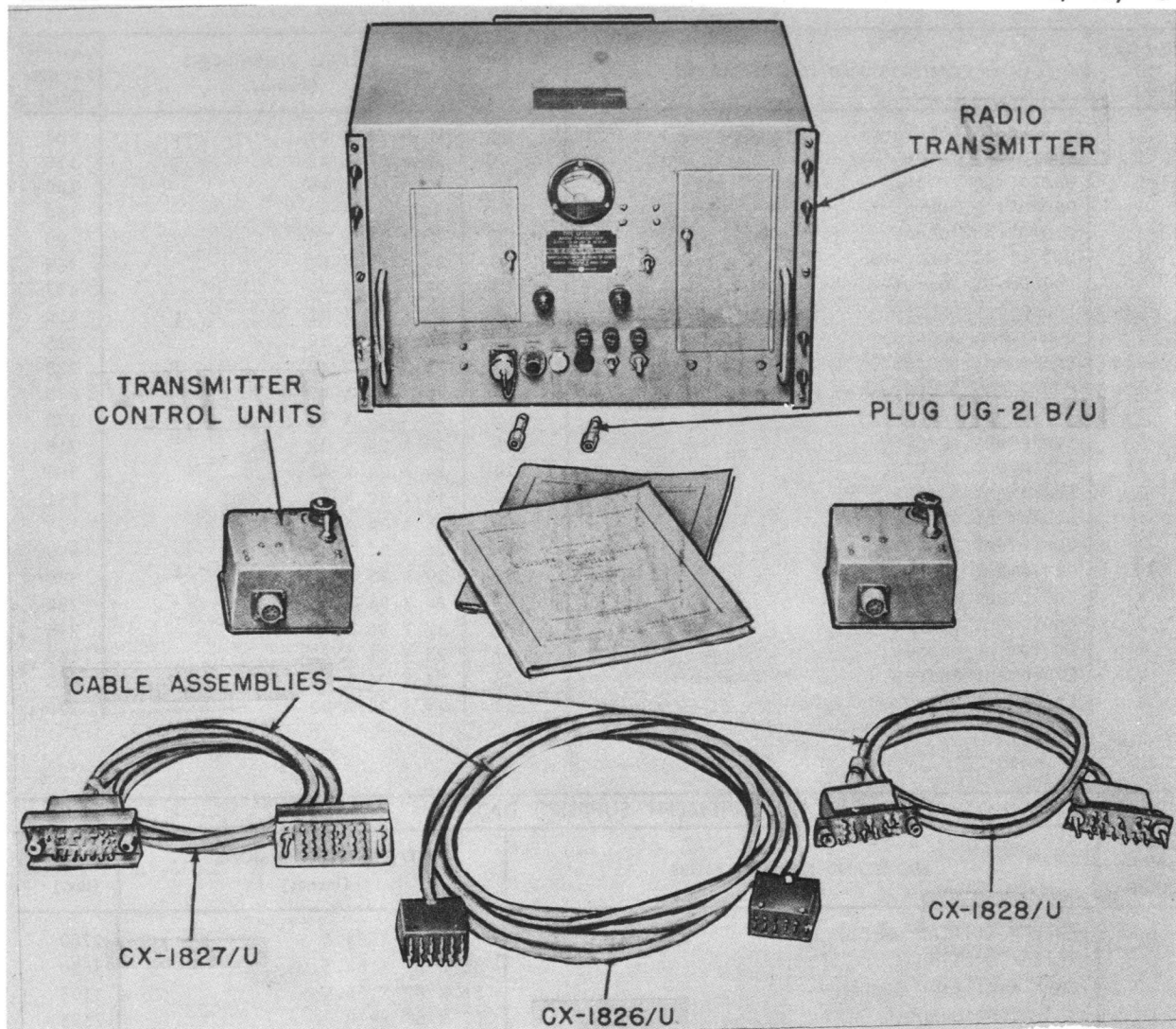
**EQUIPMENT SUPPLIED DATA**

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Power Rectifier Section	56 X 82 X 84.5	2780
1	Exciter Section	56 X 82 X 84.5	3650
1	Power Amplifier Section	56 X 82 X 84.5	3105
1	Water Cooling Unit	57 X 69 X 78	2695
1	Set of Accessories		234
1	Set of Equipment Spares		4518

April 1958

## RADIO TRANSMITTING EQUIPMENT

Radio-Transmitter

TED, TED-1,  
-2, -4, -6

Radio Transmitting Equipment TED, TED-1, 2

## FUNCTIONAL DESCRIPTION

The TED, TED-1, TED-2, TED-4 and TED-6 are single channel, low power, ultra high frequency (UHF) radiotelephone communication transmitters used primarily for ship and shore aircraft traffic control. Normally the range limit of these equipments is line-of-sight transmission such as ship-to-ship, ship-to-aircraft and harbor communications. Interrupted continuous wave (CW), amplitude modulated continuous wave (MCW) or voice amplitude modulated continuous wave (VOICE) transmission can be used. When voice transmission is used special circuits in the transmitter modulator section provide higher speech in-

telligibility for a given carrier level than is obtained with conventional circuits.

These transmitters operate in conjunction with the standard Navy shipboard remote control system and are associated with the AN/URR-13 Radio Receiving Set.

The TED, TED-1, TED-2, TED-4 and TED-6 are identical except for the remote control unit supplied with the TED only, for use in land operation and for differences in components.

The equipments may be installed in the cabinet supplied or they may be mounted in a standard 19 inch relay rack. The test cables supplied are for bench test or maintenance use only.

Data on this sheet reflects the following field changes: FC No. 3 (20 February 1958).



Radio-Transmitter

TED, TED-1,  
-2, -4, -6

## RADIO TRANSMITTING EQUIPMENT

April 1958

## RELATION TO OTHER EQUIPMENT

Equipment Required but not Supplied: Remote Radiophone Units NT-23500 or equivalent, (1) Hand Telephone Assembly NT-51081 or Chestset NT-51090, (1) Antenna AT-150/SRC, AS-390/SRC, AS-468/B (TED, TED-1, -2 only) or NT-66147 (TED-4, -6) and (1) Set of Crystal Units CR-24/U and Interconnecting Cables.

Contract: NObsr-52036, dated 25 September 1951 (TED-1)  
Westinghouse Electric Corp, Baltimore, Md.  
Contract: NObsr-49237 dated 22 June 1950 (TED-2).  
Contract: NObsr-52310 (TED-2)  
Rauland-Borg Corp, Chicago, Ill.  
Contract: NObsr-59584 dated 19 December 1952.  
Approximate Cost: \$2200.00 with equip-

## ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 225 to 400 mc.  
FREQUENCY CONTROL: Crystal.  
TYPE OF EMISSION AND MODULATION  
A2: 100%.  
A3: 100%.  
POWER OUTPUT: 15 W.  
INPUT IMPEDANCE: 600 ohms.  
OUTPUT IMPEDANCE: 50 ohms.  
RANGE: Line-of-sight.  
AUDIO INPUT VOLTAGE: -25 db to +5 db from a 0.006 W reference level (0.1 to 3.4 volts).  
FREQUENCY STABILITY  
TED, TED-1, -2:  $\pm 0.01\%$ .  
TED-4, -6: 0.007%.  
AUDIO FREQUENCY RESPONSE: Flat within  $\pm 3$  db from 1000 cps response level, from 300 to 3500 cps.  
POWER SOURCE REQUIRED: 115 or 230 v, 50 to 60 cps, single ph.  
HEAT DISSIPATION: 725 W.

## MANUFACTURER'S OR CONTRACTOR'S DATA

Federal Telephone and Radio Corp, Clifton, N.J.  
Contract: NObsr-39187 dated 24 October 1947 (TED)  
Contract: NObsr-43268, dated 14 July 1949 (TED)

## TUBE AND/OR CRYSTAL COMPLEMENT

(3) 12AT7WA	(2) 3B28
(2) 5726/6AL5W	(1) 6AT6
(4) 12AU7	(3) 4X150A
(1) 5749/6BA6W	(2) 807
Total Tubes: (18)	
(1) 1N21B	
Total Crystals: (1)	

## REFERENCE DATA AND LITERATURE

NAVSHIPS 91357, Technical Manual for Radio Transmitting Equipment Model TED.  
NAVSHIPS 91475, Technical Manual for Radio Transmitting Equipment Navy Model TED-1.  
NAVSHIPS 91585(A), Technical Manual for Radio Transmitting Equipment Navy Model TED-2.  
NAVSHIPS 92118, Technical Manual for Radio Transmitting Equipment Navy Model TED-4.  
NAVSHIPS 92320, Technical Manual for Radio Transmitting Equipment Navy Model TED-6.

TYPE CLASSIFICATION	
DESIGN COGNIZANCE	BUSHIPS
PROCUREMENT COGNIZANCE	MIL-T-15244A(SHIPS)
STOCK NO.	

## SHIPPING DATA

NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
1	Radio Transmitting Equipment TED, TED-1 or TED-2	5.75	16-1/4 X 21-3/4 X 28-1/2	220
1	Set of Equipment Spares	9.00	17-5/8 X 18-7/8 X 47-1/8	226
1	Set of Equipment Spares or	4.25	13-5/8 X 18-7/8 X 29-1/8	111
1	Radio Transmitting Equipment TED-4 or TED-6	8.4	20 X 24 X 25	212
1	Set of Equipment Spares	1.5	12-1/4 X 16-1/4 X 16-1/4	51

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## RADIO TRANSMITTING EQUIPMENT

Radio-Transmitter

TED, TED-1,  
-2, -4, -6

## EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radio Transmitter-52373 or -52373-C	13-23/32 X 15** X 19**	145
1*	Control Transmitter -23555	3-5/16 X 4-7/16 X 5-13/16	4
1	Cable Assembly, Special Purpose, Electrical CX-1826/U		
1	Cable Assembly, Special Purpose, Electrical CX-1827/U		
1	Cable Assembly, Special Purpose, Electrical CX-1828/U		
***1	Cable Assembly, Special Purpose, Electrical CX-3154/U		
1	Radio Frequency Plug UG-21B/U		
1	Set of Equipment Spares	15-1/8 X 16-3/8 X 43-1/8	139
1	Set of Equipment Spares	12-1/8 X 16-3/8 X 25-1/8	60
***1	Set of Equipment Spares	12-1/4 X 16-1/4 X 16-1/4	51
2	Technical Manuals		

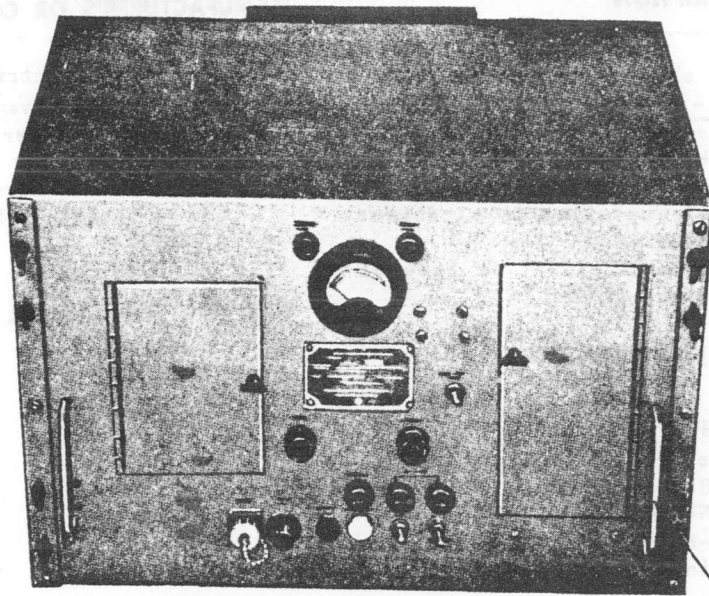
## NOTES:

\*TED only

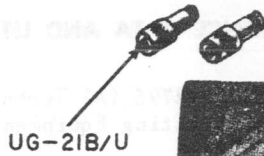
\*\*Add 2 inches to width or depth, dependent upon location of terminal box

\*\*\*TED-4, -6 only

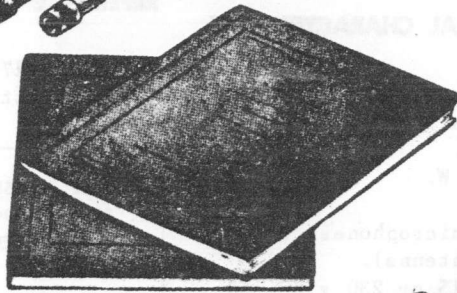
# RADIO TRANSMITTING EQUIPMENT



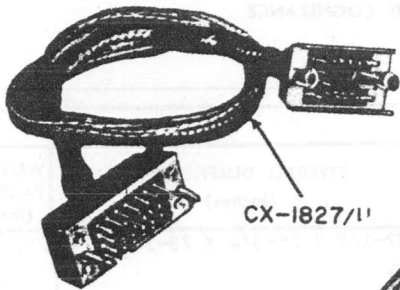
TRANSMITTER  
CAY-52373-B



UG-21B/U



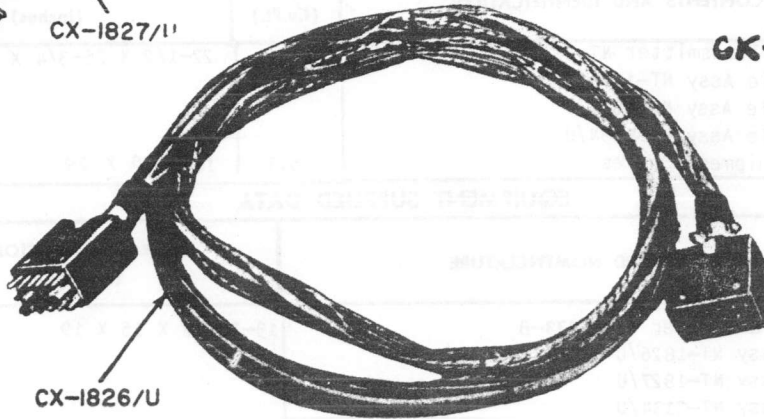
TEST CABLE  
ASSEMBLIES



CX-1827/U



GK-3134/U



CX-1826/U

*Radio Transmitting Equipment TED-3*

TED-3

## RADIO TRANSMITTING EQUIPMENT

March 1957

## FUNCTIONAL DESCRIPTION

The TED-3 is a short range communications equipment suitable for use in ships, submarines or shore stations, its range is generally "line-of-sight" distances. The equipment is suitable for mounting in a standard 19 inch relay rack or installed in a cabinet supplied for its housing.

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

## RELATION TO OTHER EQUIPMENT

Equipment Required but not Supplied:  
Remote Radio-Phone Unit NT-23500, Hand Telephone Assy NT-51081 or Chestset NT-51090, Loudspeaker Unit NT-49546, Amplifier Unit NT-50210, Antenna NT-66147, AT-150/SRC, AS-390/SRC, Interconnecting Cables, Crystal Unit NT-CR-24/U.

## ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 225 to 400 mc.

FREQUENCY CONTROL: Crystal.

TYPE OF EMISSION: A2, A3.

CARRIER OUTPUT: 12 to 15 W.

IMPEDANCE

INPUT: 600 ohms (for microphones).

OUTPUT: 50 ohms (to antenna).

POWER SOURCE REQUIRED: 115 or 230 v AC, 50 to 60 cps, single phase.

## MANUFACTURER'S OR CONTRACTOR'S DATA

Westinghouse Electric Corporation, Pittsburgh, Pennsylvania.

Contract: NObsr-52310 dated 15 March 1951.

Contract: NObsr-64599.

Approximate Cost \$2040.00 with equipment spares.

## TUBE AND/OR CRYSTAL COMPLEMENT

(2) 3B28 (3) 4X150A

(2) 5726/6AL5W (1) 6AT6

(1) 5749/63A6W (2) 807

(3) 12AT7WA (4) 5B14/12AU7

Total Tubes: (18)

(1) 1N21B

Total Crystals: (1)

## REFERENCE DATA AND LITERATURE

NAVSHIPS 91796 (A) Technical Manual for Radio Transmitting Equipment for Model TED-3.

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 Transmitter NT-52373/B including: Cable Assy NT-1826/U Cable Assy NT-1827/U Cable Assy NT-3134/U	9.4	22-1/2 X 25-3/4 X 28-1/2	212
1	Set Equipment Spares	5.3	16 X 20 X 29	119

## EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radio Transmitter NT-52373-B	13-23/32 X 15 X 19	144
1	Cable Assy NT-1826/U		
1	Cable Assy NT-1827/U		
1	Cable Assy NT-3134/U		
2	Plug NT-215B/U		
2	Technical Manuals NAVSHIPS 91796 (A)		
1	Set Equipment Spares	12-1/8 X 16-1/2 X 25-1/4	89

June 1961

## RADIO TRANSMITTING EQUIPMENT

## FUNCTIONAL DESCRIPTION

The TED-5 is designed as a short-range communications equipment that can be used in ships or in shore installations. Its effective range is normally limited to "line-of-sight" distances. A1, A2, or A3 transmission can be used. When voice transmission is used, special circuits in the transmitter modulator section provide higher speed intelligibility for a given carrier level than is obtained with conventional circuits.

Data on this sheet reflects the following Field Changes: Field Change No. 3.

## RELATION TO OTHER EQUIPMENT

The TED-5 is the same as the AN/URT-7 except that it was modified by change in the R. F. head.

## ELECTRICAL AND MECHANICAL CHARACTERISTICS

TYPE OF EMISSION: A1, A2, (MCW) 90%; A3 (phone) 100%.

TYPE OF FREQUENCY CONTROL: Crystal.

NOMINAL CARRIER OUTPUT: 12 to 15 W.

FREQUENCY STABILITY:  $\pm 0.007\%$  under any condition or combination of conditions.

## IMPEDANCE

INPUT: 600 ohms.

OUTPUT (TO ANTENNA): 50 ohms.

HEAT DISSIPATION: 725 W.

FREQUENCY RANGE: 225 to 400 mc.

OPERATING POWER RQMT: 115 to 230 v AC, 50 to 60 cps, single ph.

## MANUFACTURER'S OR CONTRACTOR'S DATA

Rauland-Borg Corporation, Chicago, Ill.  
Contract NObsr-64599.

## TUBE AND/OR CRYSTAL COMPLEMENT

(3) 12AT7WA	(2) 3B28
(3) 4X150A	(2) 5726-6AL5W
(1) 5749-6BA6W	(4) 5814A
(1) 6AT6	(2) 807

Total Tubes: (18)

## SEMI-CONDUCTORS

(1) 1N21C

Total Semi-Conductors (1)

Crystal Data not available.

## REFERENCE DATA AND LITERATURE

Nomenclature Card TED-5 for Radio Transmitting Equipment.

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

TYPE CLASSIFICATION (NAVY)
DESIGN COGNIZANCE NAVY BUSHIPS
PROCUREMENT COGNIZANCE
STOCK NO.

## EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radio Transmitter TED-5	13-23/32 X 17 X 21	144

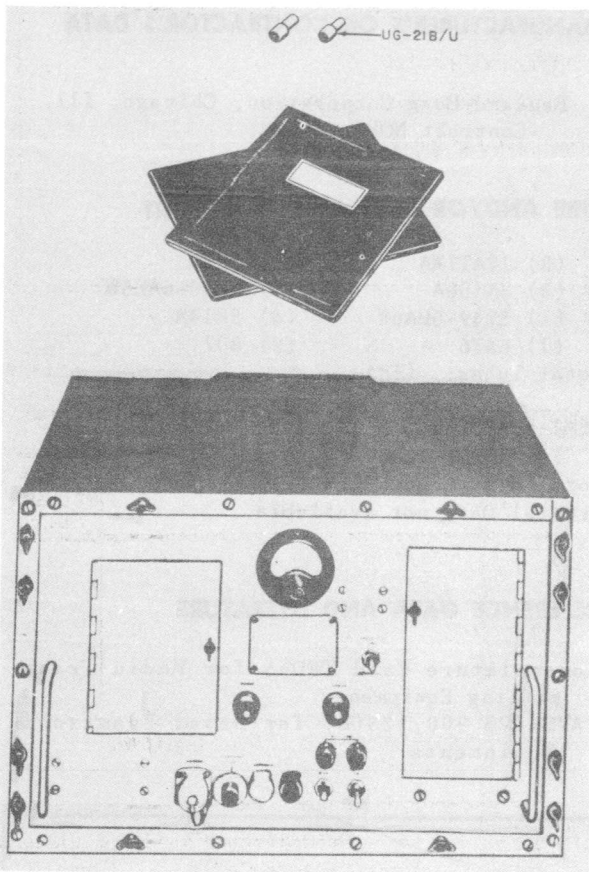


April 1959

Radio-Transmitters

## RADIO TRANSMITTER

TED-7



Radio Transmitting Equipment, Navy Model  
TED-7

## FUNCTIONAL DESCRIPTION

The Navy Model TED-7 is designed as a short-range communication equipment that can be used in ships or in shore installations. Its effective range is normally limited to "line-of-sight" distances since it operates in the frequency band of 225 to 400 megacycles (mc) per second. A2 or A3 transmission can be used. When voice transmission is used, special circuits in the transmitter modulator section provide higher speech intelligibility for a given carrier level than is obtained with conventional circuits. Standard Navy Shipboard remote control units can be used to operate the transmitter.

Data on this sheet reflects the following field changes: Field Change No. 1 dated 23 January 1957.

## EQUIPMENT REQUIRED BUT NOT SUPPLIED

(4) Remote Radio-phone Unit Navy Type No. 23500, (1) Hand Telephone Ass'y Navy Type No. 51081, or (1) Chestset Navy Type No. 51090, (1) Antenna Navy Type No. 66147 or AT-150/SRC or AS-390/SRC, (1) Crystal Unit CR-24/U.

## ELECTRICAL AND MECHANICAL CHARACTERISTICS

TYPE OF FREQUENCY CONTROL: Crystal  
 TYPES OF EMISSION AND MODULATION CAPABILITY:  
 A2 (MCW) 90%; A3 (phone) 100%.  
 NOMINAL CARRIER OUTPUT: 12 to 15 w.  
 FREQUENCY STABILITY: Plus or minus 0.007%  
 under any conditions or combination of  
 conditions.

## IMPEDANCE

INPUT: 600 ohms.  
 OUTPUT: (to antenna) 50 ohms.  
 AUDIO INPUT VOLTAGE: Minus 25 db to plus 5  
 db from a 0.006 watt reference level (0.1  
 to 3.4 volts).  
 AUDIO FREQUENCY RESPONSE CHARACTERISTICS:  
 Flat within plus or minus 3 db from a 1000  
 cps response level, from 300 to 3,500 cps.  
 HEAT DISSIPATION: 725 w.

## POWER SUPPLY DATA

MAXIMUM LINE VOLTAGE VARIATION:  $\pm 10\%$ .  
 INPUT POWER: 750 w.  
 POWER FACTOR: 0.85.  
 OPERATING POWER REQUIREMENT: 115 to 230  
 v AC, 50 to 60 cps, single ph.

## MANUFACTURER'S OR CONTRACTOR'S DATA

CBS Columbia, Long Island City, N.Y.  
 Contract NObsr-59925, dated 10 Decem-  
 ber 1954.  
 Contract NObsr-64800, dated 24 June  
 1955.  
 Approximate Cost: \$87,691.10 with e-  
 quipment spares.

## TUBE AND/OR CRYSTAL COMPLEMENT

(2) 3B28	(3) 4X150A
(1) 6AT6	(3) 12AT7WA
(2) 807	(2) 5726/6AL5W
(1) 5749/6BA6W	(4) 5814/12AU7
Total Tubes: (18)	

## TED-7

## RADIO TRANSMITTER

No Crystals used.

## REFERENCE DATA AND LITERATURE

NAVSHIPS 92701: Technical Manual for Radio  
Transmitter Navy Model TED-7.

## TYPE CLASSIFICATION

DESIGN COGNIZANCE BUSHIPS

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 Transmitting Set	8.4	20 X 24 X 25	212
**1	Cable Ass'y CX-1826/U			
**1	Cable Ass'y CX-1827/U			
1	Cable Ass'y CX-3154/U			
2	Set of Equipment Spares			

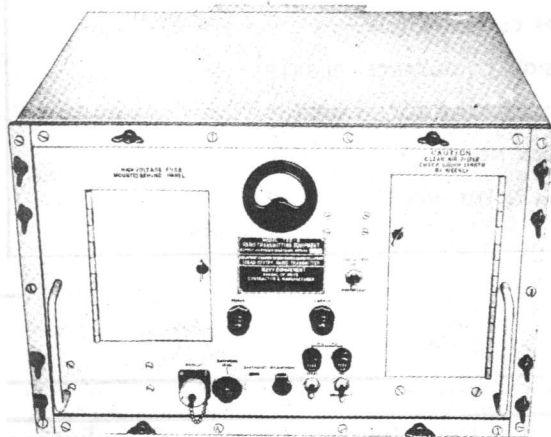
NOTE: \*\*These cables are packed in same box with radio transmitter, and are included as part Radio Transmitting Equipment Navy Model TED-7 except in those equipments supplied for use in U.S. Naval ship and shore installations.

## EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radio Transmitter Navy Type 52373-E	13-23/32 X 15 X 19	144
**1	Cable Ass'y CX-1826/U		1-3/4
**1	Cable Ass'y CX-1827/U		1-1/2
**1	Cable Ass'y CX-3154/U		1
2	Plug Type UG-21B/U	1/2 X 8-23/32 X 11-1/2	1/2
2	Technical Manual		3
1	Set of Equipment Spares		12-1/4 X 16-1/4 X 16-1/4

NOTE: \*\*Not included with equipment supplied for use in U.S. Naval ship and shore installations.

March 1957

**RADIO TRANSMITTING EQUIPMENT****TED-8**

Radio Transmitting Equipment TED-8

**FUNCTIONAL DESCRIPTION**

The TED-8 is a short range communications equipment that can be used in or in shore installations. Its effective range is normally limited to "line of sight distances" since it operates in the frequency band of 225 to 400 mc. A2 or A3 transmission can be used. When voice transmission is used, special circuits in the transmitter modulator section provide higher speech intelligibility for a given carrier level than is obtained with conventional circuits.

Standard Navy shipboard remote control units can be used to operate the transmitter. Transmitter Control Unit Navy Type-23555 (not supplied) can be used when limited control of the equipment is desired from a remote point not normally equipped with Standard Navy shipboard remote control units. The TED-8 may be installed in the cabinet supplied or it may be mounted in a standard 19 inch relay rack.

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

**RELATION TO OTHER EQUIPMENT**

Similar to other models in the TED series except for changes in component parts.

Equipment Required but not Supplied: Remote Control-Phone Unit NT-23500, Hand Telephone Assy NT-51081 or Chestset NT-51090, Antenna NT-66147 or NT-AT-150/SCR or NT-AS-390/SCR, Crystal Unit NT-CR-24/U Cable Assy NT-1826/U, Cable Assy NT-1827/U Cable Assy

NT-3154/U.

**ELECTRICAL AND MECHANICAL CHARACTERISTICS**

FREQUENCY RANGE: 225 to 400 mc.  
 TYPE OF FREQUENCY CONTROL: Crystal.  
 EMISSION: MCW and voice.  
 MODULATION CAPABILITY: 100%.  
 NOMINAL CARRIER OUTPUT: 12 to 15 W.  
 FREQUENCY STABILITY:  $\pm 0.007\%$ .  
 INPUT IMPEDANCE: 600 ohms.  
 OUTPUT IMPEDANCE: 50 ohms.  
 AUDIO INPUT VOLTAGE: -25 db to +5 db from a 0.006 W reference level.  
 AUDIO FREQUENCY RESPONSE: Flat within  $\pm 3$  db from a 1000 cps response level from 300 to 3500 cps.  
 POWER SOURCE: 115 or 230 v, 50 to 60 cps, single phase.  
 POWER FACTOR: 0.85  
 INPUT POWER: 750 W.  
 MAX PERMISSABLE LINE VOLTAGE VARIATION:  $\pm 10\%$ .  
 HEAT DISSIPATION: 725 W.

**MANUFACTURER'S OR CONTRACTOR'S DATA**

Rauland-Borg Corporation, Chicago, Ill.  
 Contract NObsr 71106, dated 28 November 1955.

**TUBE AND/OR CRYSTAL COMPLEMENT**

(2) 3B28                    (3) 4X150A            (1) 6AT6  
 (2) 5726/6AL5W        (3) 12AT7WA        (2) 807  
 (1) 5749/6BA6W        (4) 5814/12AU7  
 Total Tubes: (18)  
  
 (1) 1N21B  
 Total Crystals: (1)

**REFERENCE DATA AND LITERATURE**

NAVSHIPS 92703: Technical Manual for Radio Transmitting for Model TED-8.

TYPE CLASSIFICATION  
 DESIGN COGNIZANCE BUSHIPS  
 PROCUREMENT COGNIZANCE  
 STOCK NO.

TED-8

## RADIO TRANSMITTING EQUIPMENT

March 1957

## SHIPPING DATA

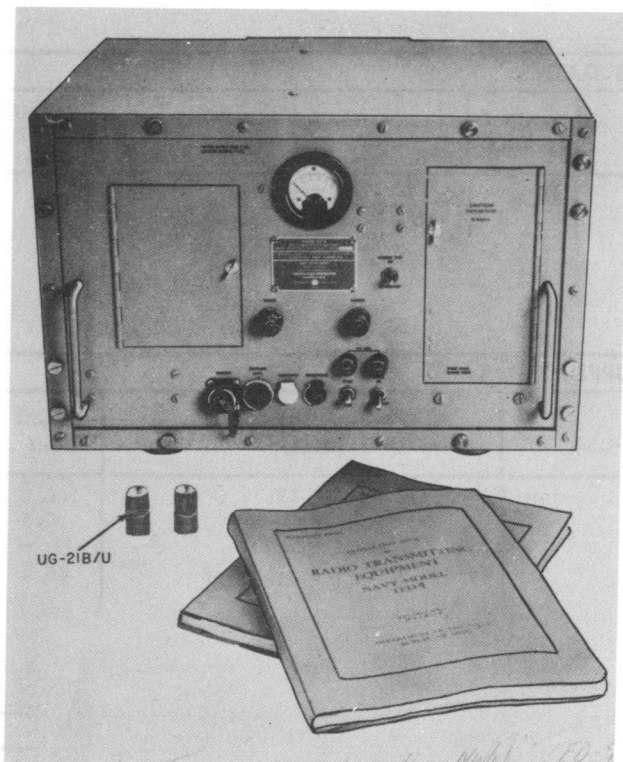
NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
1	Radio Transmitting Equipment TED-8	16.4	19-1/4 X 23-1/4 X 25	221
1	Set Equipment Spares		10-3/4 X 16-3/8 X 16-3/8	45

## EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radio Transmitter NT-52373-F	13-23/32 X 15 X 19	144
2	Plug NT-UG-210/U		0.5
2	Technical Manuals NAVSHIPS 92703		
1	Set Equipment Spares	10-3/4 X 16-3/8 X 16-3/8	45

April 1959

Radio-Transmitters

**RADIO TRANSMITTING SET****TED-9**

Radio Transmitting Set Model TED-9

**FUNCTIONAL DESCRIPTION**

The Navy Model TED-9 is designed as a short-range communications equipment that can be used in ship or in shore installations. Its effective range is normally limited to "line-of-sight" distance since it operates in the frequency band of 225 to 400 megacycles (mc) per second. Modulated continuous wave (mcw) A2 or voice transmission A3 can be used. When voice transmission is used, special circuits in the transmitter modulator section provide higher speech intelligibility for a given carrier level than is obtained with conventional circuits.

No field changes in effect at time of preparation (5 November 1958).

**RELATION TO OTHER EQUIPMENT**

The Navy Model TED-9 is similar to earlier models of the TED series.

**EQUIPMENT REQUIRED BUT NOT SUPPLIED**

(4) Remote Radio-Phone Unit NT-23500 or equivalent, (1) Hand Telephone Ass'y or Chest Set NT-51081 or NT-51090 or equivalent, (1) Antenna NT-66147 or AT-150/SRC or AS-390/SRC, \*(1) Cable Ass'y Type CX-1826/U, \*(1) Cable Ass'y Type CX-1827/U, \*(1) Cable Ass'y Type CX-3154/U, (1) Crystal Unit Type CR-24/U, NOTE: \*These Cables are required only when bench testing units of this equipment.

**ELECTRICAL AND MECHANICAL CHARACTERISTICS**

TYPE OF FREQUENCY CONTROL: Crystal.  
 TYPE OF EMISSION AND MODULATION CAPABILITY:  
 A2 (MCW) 90%; A3 (phone) 100%.  
 NOMINAL CARRIER OUTPUT: 12 to 15 watts.  
 FREQUENCY STABILITY: Plus or minus 0.007% under any conditions or combination of conditions.  
 IMPEDANCE  
 INPUT: 600 ohms.  
 OUTPUT (TO ANTENNA): 50 ohms.  
 AUDIO INPUT VOLTAGE: -25 db to +5 db at a 0.006 W reference level 0.1 to 3.4 volts.  
 AUDIO FREQUENCY RESPONSE CHARACTERISTICS: Flat within plus or minus 3 db at a 1000 cps response level, from 300 to 3500 cps.  
 OPERATING FREQUENCY RANGE: 225 to 400 mc.  
 OPERATING POWER REQUIREMENT: 115/230 v, 50 to 60 cps, AC, single ph, 0.35 power factor, input power 75 watts, max permissible line voltage variation plus or minus 10%.

**MANUFACTURER'S OR CONTRACTOR'S DATA**

Navada Air Products, Rena, Nevada.  
 Contract NObsr-71861, dated 28 June 1957.

**TUBE AND/OR CRYSTAL COMPLEMENT**

(4) 5814A	(1) 5749/6BA6W
(2) 5726/6AL5W	(2) 5933
(3) 12AT7WA	(1) 6AT7
(3) 4X150A	(2) 3828

Total Tubes: (18)



April 1959

Radio-Transmitters

**TED-9****RADIO TRANSMITTING SET**

(4) CR-24/U

Total Crystals: (4)

**REFERENCE DATA AND LITERATURE**

Technical Manual Navy Model TED-9 for the  
Radio Transmitting Equipment.

TYPE CLASSIFICATION  
DESIGN COGNIZANCE BUSHIPS  
PROCUREMENT COGNIZANCE  
STOCK NO. 4.2  
R.D.B. IDENT. NO.

**SHIPPING DATA**

NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
1	Radio Transmitting Set TED-9	8.4	20 X 24 X 25	212
1	Set of Equipment Spares	1.5	10-3/4 X 16-3/8 X 16-3/8	45

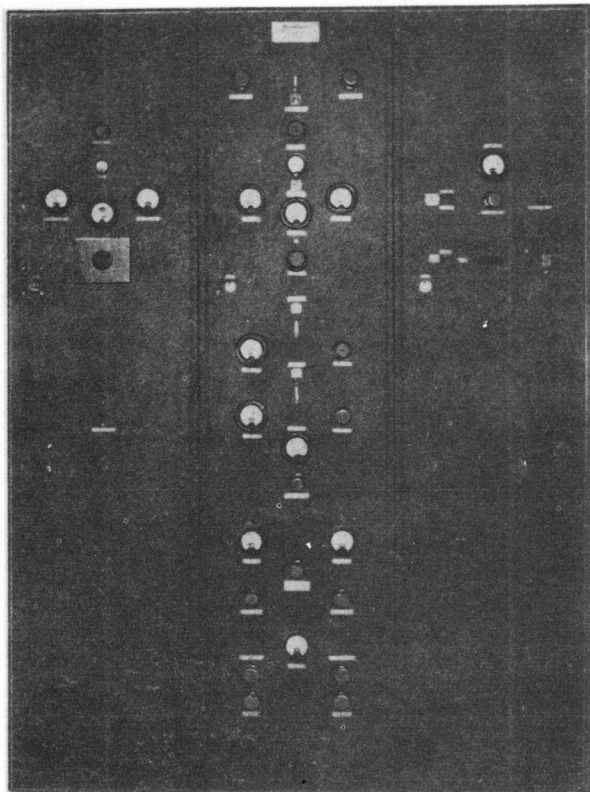
**EQUIPMENT SUPPLIED DATA**

QUANTITY PER EQUIP	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radio Transmitter Type CCSA-52373-G	13-23/32 X 15* X 19*	144
2	Plug Type UG-21B/U		1/2
2	Technical Manuals TED-9		3
1	Set of Equipment Spares	10-3/4 X 16-3/8 X 16-3/8	45

NOTE: \*Add 2 Inches to Width or Depth, dependent upon location of Terminal Box.

April 1958

Radio-Transmitter

**RADIO TRANSMITTING EQUIPMENT****TEF***Radio Transmitting Equipment TEF***FUNCTIONAL DESCRIPTION**

The TEF is a shore station shortwave transmitter for use in transoceanic telephony in the frequency range of 4.5 to 22.0 mc. It provides for the transmission of two telephone channels in a twin-channel single sideband system or, alternatively, one conventional double sideband channel. Considerable flexibility is available for disposition of the communications channels to reduce interference or interchannel cross-talk. The change from single to double sideband is accomplished by a relay operated at the transmitter or from the control terminal, and may be adjusted for any one of six frequencies.

No field changes in effect at time of preparation (28 April 1958).

**ELECTRICAL AND MECHANICAL CHARACTERISTICS**

FREQUENCY RANGE: 4.5 to 22.0 mc or by modification 4 to 20 mc.

EMISSION: A1, A2, A3.  
 FREQUENCY CONTROL: Crystal oscillator.  
 AF INPUT: 2 channels, 100 to 6000 cps.  
 SPEECH INPUT LEVEL:  $\pm 5$  db.  
 TONE INPUT: 1 mw.  
 INPUT IMPEDANCE: 600 ohms.  
 PEAK POWER OUTPUT: 2 kw.  
 AVERAGE POWER OUTPUT: 500 W.  
 SIGNAL/NOISE RATIO  
 SINGLE SIDE BAND: 50 db, plus.  
 DOUBLE SIDE BAND: 40 db, plus.  
 ANTENNA: Open-wire line, 400-800 ohms, or balanced concentric line, 200 ohms.  
 POWER SOURCE REQUIRED: 220-235 v, 50 or 60 cps, 3 ph, 5 kw.

**MANUFACTURER'S OR CONTRACTOR'S DATA**

Western Electric Co, Inc., New York, N.Y.  
 Contract NXs4-60059.

Approximate Cost: \$55,000.00 with equipment spares.

**TUBE AND/OR CRYSTAL COMPLEMENT**

(1) 212E	(2) 262B
(2) 311A	(2) 41
(1) 6L7	(2) 244A
(6) 267B	(4) 322A
(1) 6B7	(2) 76
(1) 25Z5	(1) 274A
(1) 337A	(2) 6C6
(1) 874	(7) 259A
(2) 279A	(3) 36
(2) 6D6	

Total Tubes: (43)

No Crystal Data Available.

**REFERENCE DATA AND LITERATURE**

NAVSHIPS 95356: Technical Manual for Model TEF Radio Transmitting Equipment.

TYPE CLASSIFICATION
DESIGN COGNIZANCE BUSHIPS
PROCUREMENT COGNIZANCE
STOCK NO.



## TRANSMITTING SET, RADIO

TEG

### RELATION TO OTHER EQUIPMENT

The TEG is the same as the TEG-1 except that the TEG is for use on shipboard; and the TEG-1 is for shore use.

### EQUIPMENT REQUIRED BUT NOT SUPPLIED

(1 to 4) Remote Control Unit NT No. 23211 (for shipboard installation only), (1) Carbon Microphone RE8944A, (1) Telegraph Key NT No. 26001, (1) Telegraph Key NT No. 26002, (1) Set of Cables for interconnecting various units.

### ELECTRICAL AND MECHANICAL CHARACTERISTICS

TYPE OF EMISSION: A1 (continuous wave), A2 (Modulated continuous wave), A3 (voice), F3 (frequency shift keying).

TYPE OF FREQUENCY CONTROL: Crystal.

NUMBER OF CHANNELS: 10 channels.

OPERATING FREQUENCY RANGE: 200 to 2000 kc and 2000 to 18,100 kc.

OPERATING POWER RQMT: 110 v AC, 60 cps, single ph; 220 v AC, 60 cps, single ph.

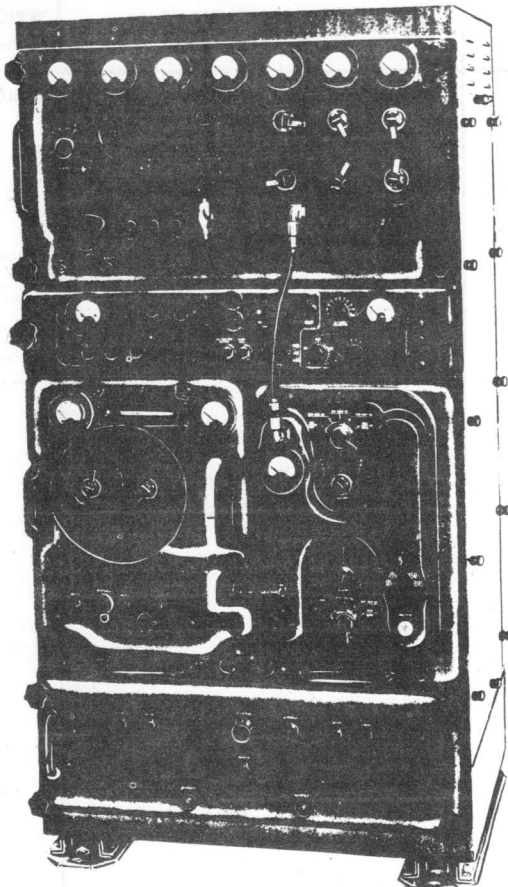
### MANUFACTURER'S OR CONTRACTOR'S DATA

Radio Corporation of America, RCA Victor Division, Camden, New Jersey.

Contract NXsr-87797, dated 12 March 1945.

### TUBE AND/OR CRYSTAL COMPLEMENT

(1) 6J5	(2) 6L6
(4) 6AC7W	(4) 6AG7
(2) 6AS7G	(2) 6SA7
(4) 6SJ7	(6) 6SK7
(6) 6SL7W	(21) 6SN7W
(2) 2E22	(4) 4E27
(4) 3B28	(8) 6X5GT/G



*Transmitting Set, Radio TEG*

### FUNCTIONAL DESCRIPTION

The TEG is designed for either local or (in conjunction with associated units) for remote control operation, either on shore or on naval vessels, under widely varying climatic conditions. This equipment effects communication with precision and reliability, without the necessity of preliminary calling. Frequency stability minimizes interference with other units of a naval duplex communication system, in the frequency range of 200 to 2000 kilocycles and 2000 to 18,100 kilocycles. (kc).

No field changes in effect at time of preparation (21 March 1960).

Radio-transmitters

UNCLASSIFIED

June 1961

## TEG

## TRANSMITTING SET, RADIO

(4) OA3/VR75 (1) 807

Total Tubes: (75)

Crystal data not available.

### REFERENCE DATA AND LITERATURE

NAVSHIPS 900,958: Technical Manual for  
Transmitting Equipment TEG and TEG-1.

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

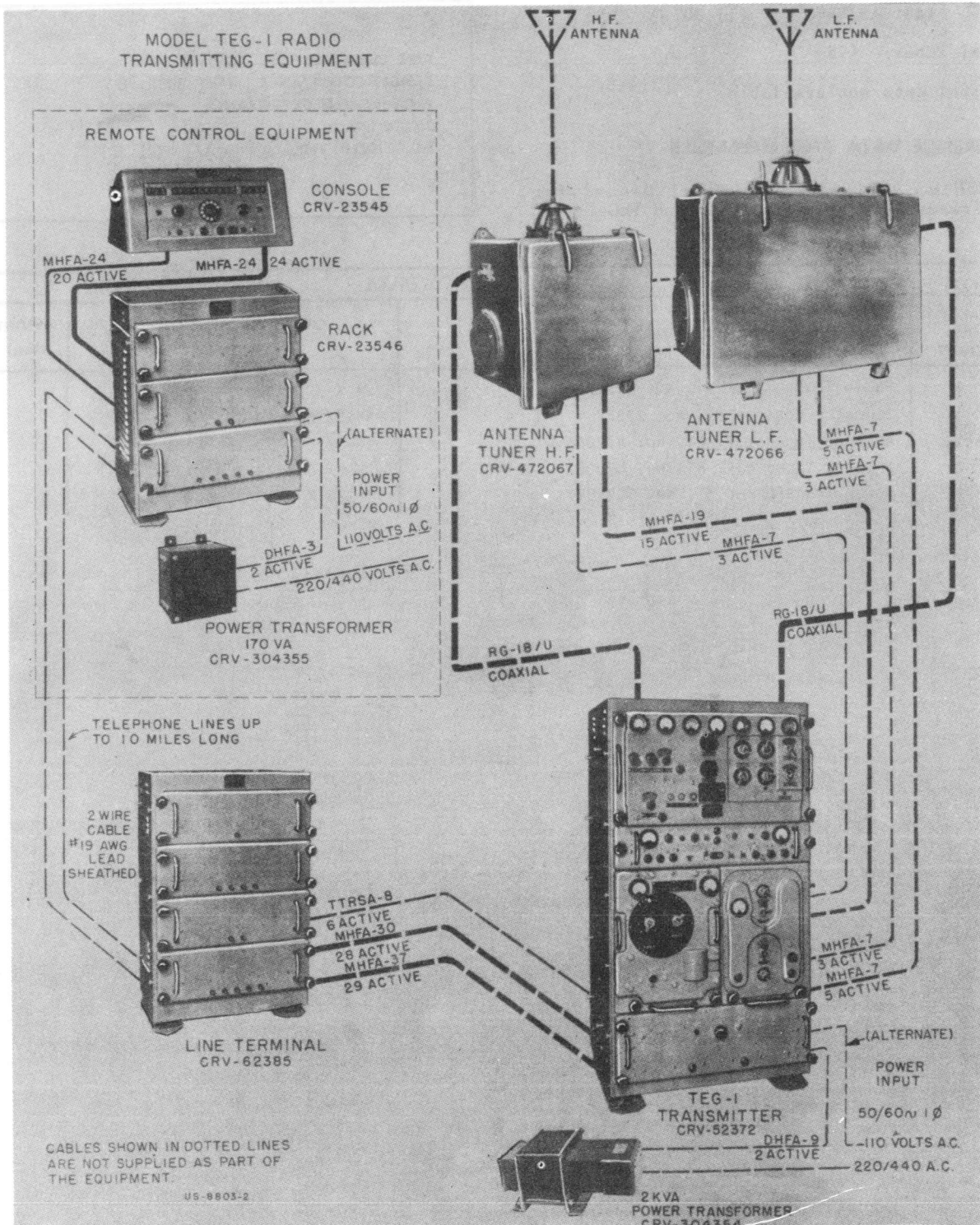
### EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radio Transmitter NT. No. 52372	24 X 30 X 57-3/8	
1	Selector Control NT. No. 23547	9-15/16 X 10-1/16 X 12-7/8	
1	Antenna Tuner L.F. NT. No. 472066	19-5/16 X 30-1/4 X 31-1/2	
1	Antenna Tuner H.F. NT. No. 472067	19-5/16 X 23-3/4 X 30-1/4	
1	Power Transformer NT. No. 304354	3-1/8 X 3-19/32 X 4-5/32	



# RADIO COMMUNICATION TRANSMITTING EQUIPMENT

## TEG-1



Radio Communication Transmitting Equipment TEG-1



June 1957

Radio-Transmitters

TEG-1

## RADIO COMMUNICATION TRANSMITTING EQUIPMENT

### FUNCTIONAL DESCRIPTION

The TEG-1 is a highly flexible radio transmitter for shore installation, with provision for local and remote operation.

At the transmitter, the control panel permits the choice of ten preset channel frequencies and one manual-controlled frequency between 200 to 18100 kc, 5 types of carrier emission with three power levels up to a maximum output of 100 W. A motor-driven frequency selector and relay switching system permits a complete transfer from one operation condition to another in less than 25 sec.

Data on this sheet reflects the following field changes, FC-1 (5 December 1956).

### RELATION TO OTHER EQUIPMENT

Equipment Required but not supplied: (\*) Carbon, Microphone, (\*) Handset, (\*) Telegraph Key NT-26001, (\*) Telegraph Key NT-26012, (1) Set Interconnecting Cables. (\*) Quantity as required.

### ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 200 to 2000 kc and 2000 to 18100 kc.

PRESET FREQUENCY

200 to 2000 KC: 1.

2000 to 18100 KC: 9 preset and 1 manual.

TYPE CONTROL: Crystal.

TYPE EMISSION: A1, A2, A3, F.

CARRIER OUTPUT

A1: 100 W.

A2 and A3: 80 W.

POWER FACTOR: Not less than 90%.

POWER SUPPLY: 115 v, 50 to 60 cps, single ph.

POWER INPUT: 1.6 kw max, key locked position.

HEAT DISSIPATION: 1475 W.

### MANUFACTURER'S OR CONTRACTOR'S DATA

Radio Corporation of America Div RCA  
Victor, Camden, N.J.

Contract NObsr 39339, dated 25 June  
1947.

Approximate Cost: \$44500.00 with  
equipment spares.

### TUBE AND/OR CRYSTAL COMPLEMENT

(2) 2E22	(4) 3B28
(4) 4E27	(4) 6AC7W
(4) 6AG7W	(2) 6AS7W
(2) 6L6GA	(1) 6J5
(2) 6SA7	(2) 6SJ7
(8) 6SK7	(7) 6SL7W
(20) 6SN7W	(8) 6X5GT/G
(1) 807	(4) OA3/VR75

Total Tubes: (75)

(3) 1N34

Total Crystals: (3)

### REFERENCE DATA AND LITERATURE

NAVSHIPS 91167.1: Technical Manual for radio  
Transmitting Equipment TEG-1.

TYPE CLASSIFICATION DESIGN COGNIZANCE BUSHIPS 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 Transmitter 52372	72.5	39 x 46 x 72	1510
1	Antenna Tuner L.F. 472066	25.6	27 x 41 x 42	337
1	Antenna Tuner H.F. 472067	22.5	28 x 35 x 40	332
1	Line Terminal 62385	32.5	28 x 40 x 52	470

# RADIO COMMUNICATION TRANSMITTING EQUIPMENT

TEG-1

## SHIPPING DATA

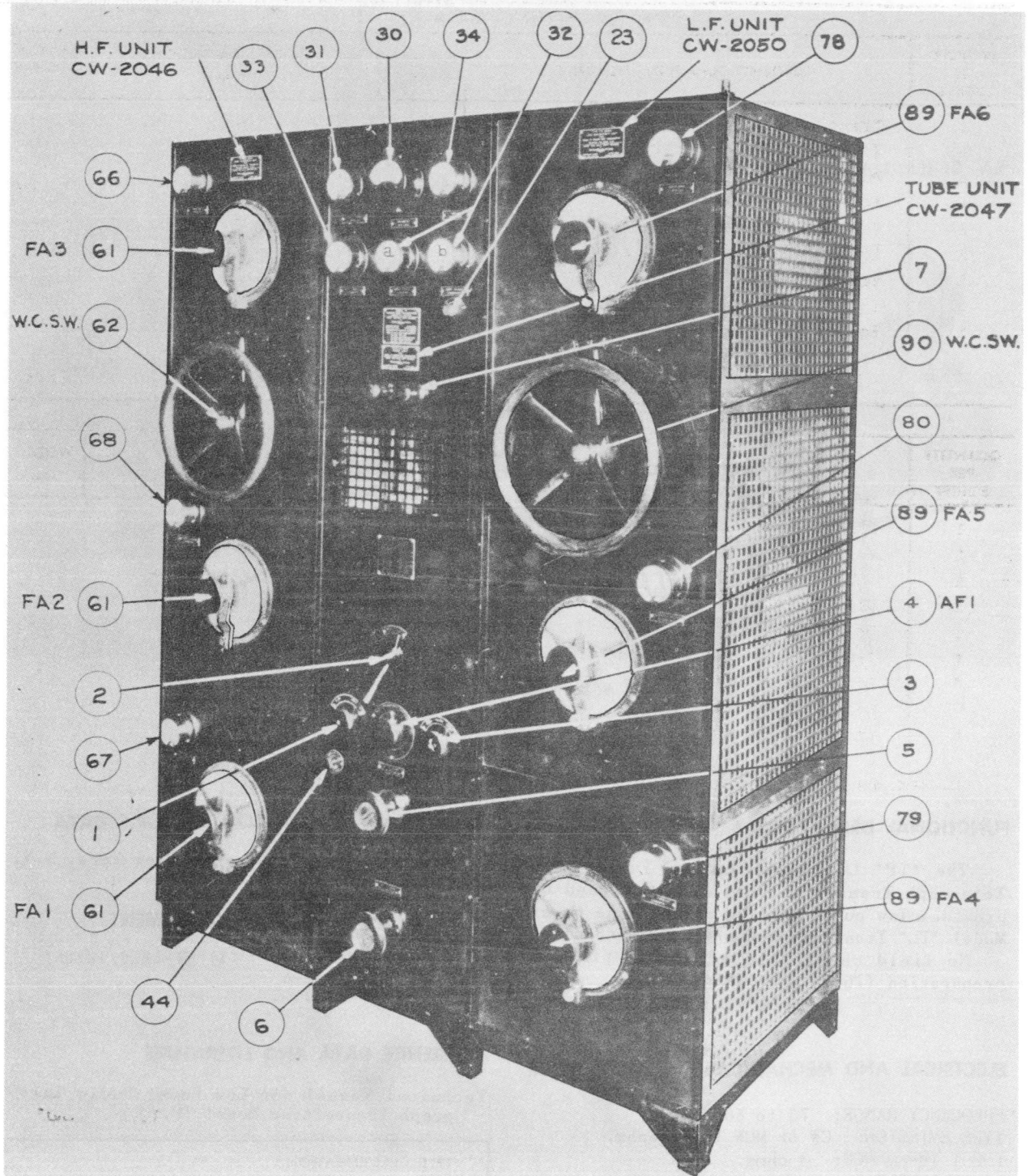
NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
1	Transmitter Control 23546	28	27 x 40 x 45	368
1	Transmitter Control 23545	4.4	16 x 17 x 28	69
1	Power Transformer 304354	3.7	13 x 18 x 24	148
1	Power Transformer 304355	1.8	13 x 14 x 17	45
1	Equipment Spares	7	18 x 23 x 29	244
1	Equipment Spares	7	18 x 23 x 29	233
1	Equipment Spares	7	18 x 23 x 29	217
1	Equipment Spares	7	18 x 23 x 29	182
1	Equipment Spares	7	18 x 23 x 29	180

## EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radio Transmitter 52372	24 x 30 x 57-3/8	1190
1	Antenna Tuner L.F. 472 066	19-3/8 x 30-7/8 x 32	232
1	Antenna Tuner H.F. 472 067	19-3/8 x 24-1/4 x 30-7/8	220
1	Line Terminal 62385	17 x 24-3/8 x 37-1/2	265
1	Transmitter Control 63546	17 x 24-3/8 x 30	195
1	Transmitter Control 23545	11-1/4 x 12 x 23	53
*	Power Transformer 304354	7-3/8 x 10-1/8 x 17-3/8	110
*	Power Transformer 304355	8-3/4 x 10-1/4 x 10-3/4	35
1	Cable for Remote Control		

\* Used when power supply is 220 or 440 v AC.

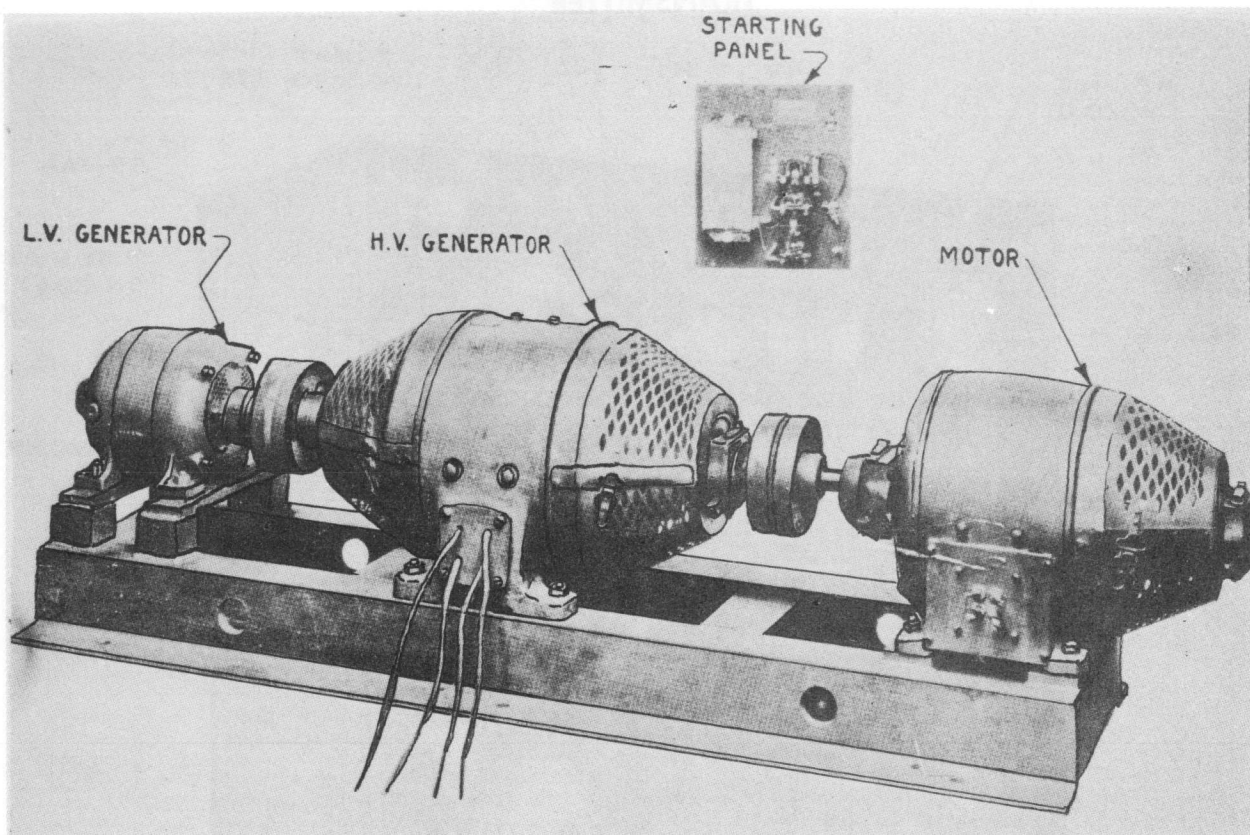
# LOWER POWER RADIO TELEGRAPH TRANSMITTER



Low Power Radio Telegraph Transmitter TP

TP

## LOWER POWER RADIO TELEGRAPH TRANSMITTER



*Motor Generator Set*

### FUNCTIONAL DESCRIPTION

The "TP" Low Power Vacuum Tube Radio Telegraph Transmitter has been designed to provide a low power unit to relieve the power Model "TL" Transmitter of short range traffic.

No field changes in effect at time of preparation (16 October 1956).

### ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 75 to 600 kc.  
 TYPE EMISSION: CW or MCW telegraphy.  
 INPUT IMPEDANCE: 3 ohms.  
 POWER SUPPLY

INPUT: 120 or 240 v DC.

OUTPUT: 110 v, 60 cps, single phase and  
 1500 v DC.

### MANUFACTURER'S OR CONTRACTOR'S DATA

Western Electric Company, New York, N.Y.

### TUBE AND/OR CRYSTAL COMPLEMENT

(2) NT-1819 (1) NT-1818/1818A

(1) NT-931/931-A

Total Tubes: (4)

### REFERENCE DATA AND LITERATURE

Technical Manual for Low Power Radio Telegraph Transmitter Model TP.

TYPE CLASSIFICATION DESIGN COGNIZANCE PROCUREMENT COGNIZANCE STOCK NO.
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UNCLASSIFIED

June 1957

Radio-Transmitters

# LOWER POWER RADIO TELEGRAPH TRANSMITTER

TP

## EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Tube Unit NT-2047	16 X 24 X 59	448
1	H. F. Tuning Unit NT-2046	18 X 24 X 61-5/8	484
1	L. F. Tuning Unit NT-2050	18 X 24 X 61-5/8	550
1	Base for Above 3 Units	4 X 23-5/8 X 52-1/8	43
1	Motor-Generator NT-2051	19-1/2 X 21-1/4 X 74	985
1	Spare Part Box NT-2055	15-3/4 X 28-1/2 X 41	340

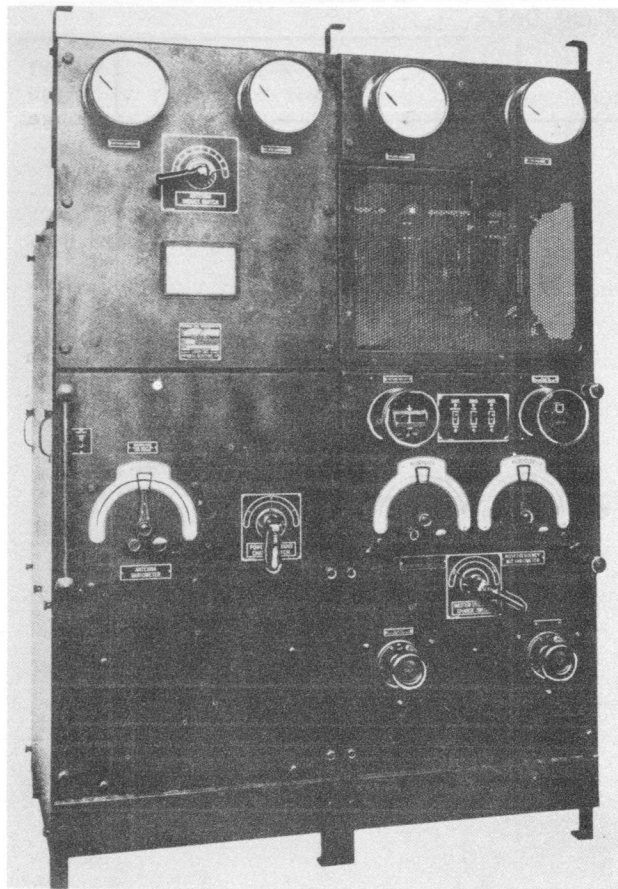


WORK	REMARKS	DATE

UNCLASSIFIED



## RADIO TELEGRAPH TRANSMITTING EQUIPMENT



*Radio Telegraph Transmitting  
Equipment TU-4*

a compact medium-power medium-frequency transmitter providing continuous wave (CW) and interrupted continuous wave (ICW) transmission is required.

No field changes in effect at time of preparation (23 July 1957).

### ELECTRICAL AND MECHANICAL CHARACTERISTICS

#### ANTENNA

EFFECTIVE CAPACITANCE: 0.001 to 0.0014.

EFFECTIVE RESISTANCE: 3 to 8 ohms.

EFFECTIVE INDUCTANCE: 20 to 30 uh.

FREQUENCY RANGE: 155 to 565 kc.

POWER OUTPUT: 2 kw.

TRANSMISSION: CW and ICW.

POWER SOURCE REQUIRED: 125 v DC at 8 kw.

### MANUFACTURER'S OR CONTRACTOR'S DATA

General Electric Corp, Schenectady, N.Y.

### TUBE AND/OR CRYSTAL COMPLEMENT

Tubes and Crystals: Not Available.

### REFERENCE DATA AND LITERATURE

Technical Manual for Radio Telegraph Transmitting Equipment Model TU-4.

TYPE CLASSIFICATION  
DESIGN COGNIZANCE BUSHIPS  
PROCUREMENT COGNIZANCE  
STOCK NO.

### FUNCTIONAL DESCRIPTION

The TU-4 transmitting equipment is designed for service in any installation where

### EQUIPMENT SUPPLIED DATA

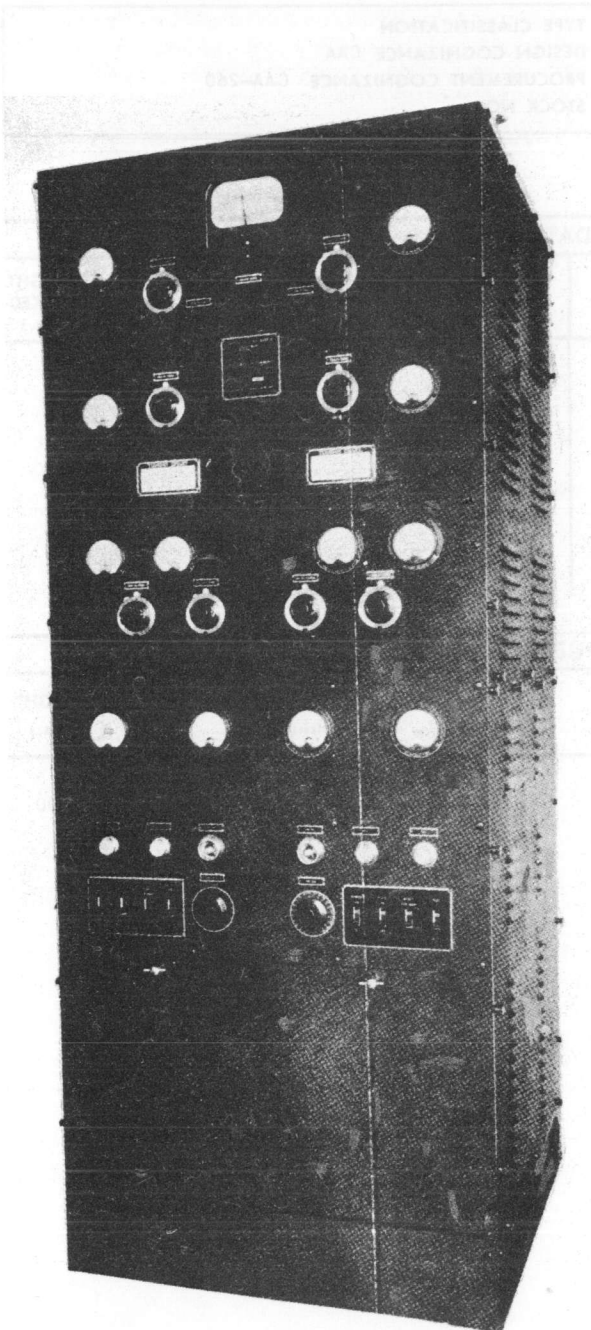
QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Transmitter TU-4 incl 6 tuning charts	36-1/4 X 65-1/8 X 76	100
1	Start-Stop Switch		
1	Telegraph Key		
1	Automatic Motor Starter	13-1/2 X 13-11/16 X 23-3/4	98
1	3-Unit Motor Generator Set c/o	22-9/16 X 23-5/8 X 74	1250
	(1) Motor NT-3195A		
	(1) Plate Generator NT-3196A		
	(1) Bias Generator NT-3197		



March 1957

## STATION LOCATION MARKER EQUIPMENT

TZO



Station Location Marker  
Equipment TZO

## FUNCTIONAL DESCRIPTION

The TZO is designed to radiate a vertical beam directly above a radio range station to mark definitely the location of the range station.

It is designed for unattended operation, and only one of the two separate transmitters, housed in the same frame, is normally operated at one time. If the main transmitter fails for an reason, the standby Transmitter is automatically started and the defective transmitter shut down. Failure of the standby transmitter will not cause a changeover, but either transmitter can be made the main transmitter by manual control.

No field changes in effect at time of preparation (6 September 1956).

## RELATION TO OTHER EQUIPMENT

## FREQUENCY

CARRIER: 75 mc.  
MODULATION: 3000 cps.

## FREQUENCY STABILITY

CARRIER:  $\pm 7500$  cps.  
MODULATION:  $\pm 15$  cps.

## POWER OUTPUT

UNMODULATED CARRIER: 3-1/3 W.  
CARRIER, 100% MODULATED: 5 W.  
MODULATION OF CARRIER: 120% max.  
POWER REQUIREMENTS: 95 to 130 v, 50 to 60 cps, 4.7 amps, 432 va, 85% pf.

FREQUENCY CONTROL: Crystal

## ANTENNA DATA

TYPE (4) horizontal antennas at right angles to each other mtg 1/4 wave length above center of wire-mesh counterpoise.

## MANUFACTURER'S OR CONTRACTOR'S DATA

Farnsworth Television and Radio Corp.,  
Fort Wayne, Indiana.  
Contract Cca-6644, dated 6 February 1941.

Approximate Cost: \$8000.00 with equipment spares.

## TUBE AND/OR CRYSTAL COMPLEMENT

(6) 6F6	(2) 6H6
(6) 807	(12) 5Z3
(4) 6V6G	

Total Tubes: (30)

(2) 4687.5KC  
Total Crystals: (2)

# TZO STATION LOCATION MARKER EQUIPMENT

March 1957

## REFERENCE DATA AND LITERATURE

Technical Manual for Station Location Marker  
Equipment Type TZO.

TYPE CLASSIFICATION DESIGN COGNIZANCE CAA PROCUREMENT COGNIZANCE CAA-260 STOCK NO.
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## SHIPPING DATA

NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
1	Transmitter including: (3) Crystals			
1	Counterpoise and Antenna Accessories			
1	Transmission Line including: Technical Manuals and Test Data Book			
1	Phasing Section including: Columns for Radiator Supports, Couplings and Fittings			

## EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Station Location Marker Equipment TZO	30 X 30 X 76	1000
1	RF Transmission Line		
1	Radiating System		

June 1961

## RADIO TRANSMITTING EQUIPMENT

X-TDZ-2

## FUNCTIONAL DESCRIPTION

The X-TDZ-2 is designed and constructed in accordance with naval specifications to fulfill the need for a general communication transmitter for use aboard ship, in vehicular units, and at stationary installations. It provides remote or local selection of any one of ten pre-set communication channels in the Very-High-Frequency (VHF) and Ultra-High-Frequency (UHF) range. Channel selection is accomplished by means of a telephone dial. If desired, channel selection may be accomplished manually. The available types of emission are A2 Modulated Continuous Wave (MCW) and A3 (Phone). A minimum power output of thirty watts with carrier unmodulated is obtainable over the complete frequency range of the transmitter.

No field changes in effect at time of preparation (8 March 1960).

## ELECTRICAL AND MECHANICAL CHARACTERISTICS

TYPE OF EMISSION: A3, A2, F2, and F3 types of emission.

NUMBER OF CHANNELS: 10 channels.

OPERATING FREQUENCY RANGE: 225 to 400 mc.

TYPE OF CONTROL: Crystal frequency control.

OPERATING POWER RQMT: 110 v AC, 60 cps, single ph; 220 v AC, 60 cps singleph;

440 v AC, 60 cps, single ph.

## TUBE AND/OR CRYSTAL COMPLEMENT

(4) 2C39A (4) 3C23 (2) 6AG7Y

(1) 6SN7WGTA (1) 6H6 (1) 6SG7Y

(2) 6V6GTY (3) 807 (1) 829B

(1) 9006

Total Tubes: (20)

Crystal data not available.

## REFERENCE DATA AND LITERATURE

NAVSHIPS 900,809: Technical Manual for Navy Model TDZ Radio Transmitting Equipment.

TYPE CLASSIFICATION (NAVY)  
DESIGN COGNIZANCE NAVY 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	Radio Transmitter NT52342(Mod)	24-3/4 X 25-11/16 X 32-1/16	760
1	Control Unit NT23445	4-7/8 X 6-7/8 X 6-7/8	7
1	R.F. Filter NT53349	1-5/16 X 5-7/8 X 7-1/2	
1	Set of Equipment spares		

December 1956

**LOCALIZER BEACON EQUIPMENT****YA****FUNCTIONAL DESCRIPTION**

The YA is a complete radio transmitter designed for use as an airport localizer and for traffic control on voice, it may be used to transmit either tone modulated or voice modulated signals in the band of 300 to 550 kc.

No field changes in effect at time of preparation (21 August 1956).

**ELECTRICAL AND MECHANICAL CHARACTERISTICS**

FREQUENCY RANGE: 300 to 550 kc.

TYPE OF EMISSION: A2 and A3.

**POWER OUTPUT**

BEACON: 25 to 100 W.

VOICE: 10 to 20 W.

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

**MANUFACTURER'S OR CONTRACTOR'S DATA**

Communication Development Corp., Newark,  
N. J.

TYPE CLASSIFICATION  
DESIGN COGNIZANCE BUSHIPS  
PROCUREMENT COGNIZANCE  
STOCK NO.

Contract NOs 64894, dated 30 January 1939.

Approximate Cost: \$30200.00 with equipment spares.

**TUBE AND/OR CRYSTAL COMPLEMENT**

(3) 38111A	(5) 807	(1) 6N7
(1) 2A5	(2) 5Z3	(4) 866A

Total Tubes: (16)

(2) Crystals

Total Crystals: (2)

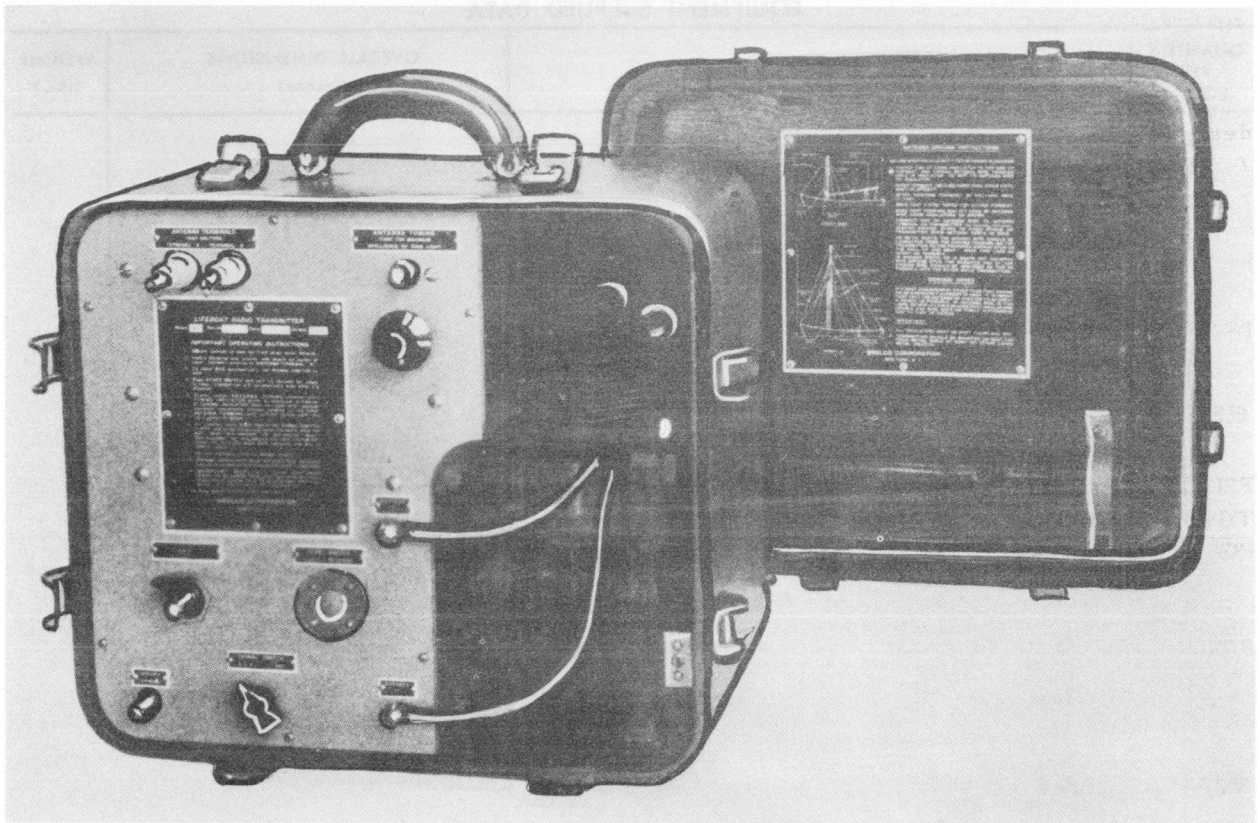
**REFERENCE DATA AND LITERATURE**

Technical Manual for Localizer Beacon Equipment for Model YA.

**EQUIPMENT SUPPLIED DATA**

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Transmitter NT-52112	19 X 22-5/8 X 74	640
1	Remote Control Unit NT-23141	5-1/4 X 9 X 19	22
1	Loop Antenna Coupler NT-14001	13-1/2 X 19-1/4 X 21	60
1	Voice Antenna Tuning Unit NT-14000	10-1/2 X 13-1/2 X 21	32
1	Coaxial Transmission Line (3/8" X 75')		
1	Coaxial Transmission Line (1/4" X 75')		
1	Spare Parts Box		

## PORTABLE LIFE BOAT RADIO TRANSMITTER



*Portable Life Boat Radio Transmitter 265*

### FUNCTIONAL DESCRIPTION

The 265 is designed to transmit distress signals efficiently when operated under adverse conditions in an open life boat at sea.

The transmitter will send SOS distress signals for approximately 2-1/2 minutes, after which it shuts itself off automatically, to conserve the battery. A telegraph Key is provided for use by an experienced operator.

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

### ELECTRICAL AND MECHANICAL CHARACTERISTICS

OPERATING POWER: 6 v battery.

### MANUFACTURER'S OR CONTRACTOR'S DATA

Brelco Corporation, New York, N. Y.

### TUBE AND/OR CRYSTAL COMPLEMENT

(1) 7N7                      (1) 7B7                      (1) 807  
Total Tubes: (3)

### REFERENCE DATA AND LITERATURE

Technical Manual for Portable Lifeboat Radio Transmitter Model 265.

TYPE CLASSIFICATION  
DESIGN COGNIZANCE  
PROCUREMENT COGNIZANCE  
STOCK NO.

June 1957

265

## PORTABLE LIFE BOAT RADIO TRANSMITTER

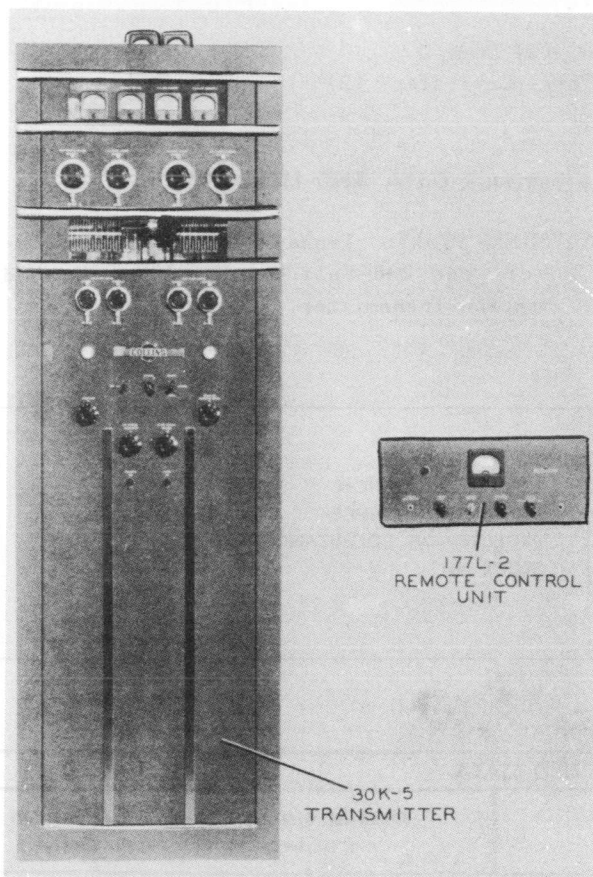
### EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Battery		
1	Dynamotor		
1	R.F. Oscillator		
1	R.F. Power Amplifier		
1	A.F. Oscillator		
1	Modulator		
1	Antenna Coil		
1	Automatic SOS		
1	Manual Key		
1	Self Releasing Switch		
1	Test Antenna		
1	Antenna		
1	Battery Charging Panel		



## GROUND STATION EQUIPMENT

30K-5



Ground Station Transmitter 30K-5

## FUNCTIONAL DESCRIPTION

The 30K-5 (Collins Radio) is a self contained dual channel transmitter designed for general applications where service is intermittent, such as police service, aeronautical ground stations or general point-to-point communication. It contains a flexible pi network output circuit arrangement which permits the use of a variety of antenna types.

Remote operation can be provided by using Remote Control Unit Type 177L-2 which provides filament and plate power controls, keying, microphone pre-amplifier and channel switching functions. It can also be converted for use with a 50 cycle power source or it can be converted from 230 to 115 volt operation.

No field changes in effect at time of preparation (21 November 1956).

## RELATION TO OTHER EQUIPMENT

Equipment Required but not Supplied: (1) Telegraph Key and Standard Phone Plug, (2) Cables, No. 10 AWG or larger, Antenna(s).

## ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 2 to 30 mc in 2 channels.

EMISSION: AM or CW.

POWER OUTPUT (NOMINAL)

2 to 15 MC: 300 W CW, 250 W AM.

15 to 24 MC: 250 W CW, 200 W AM.

24 to 30 MC: 225 W CW, 150 W AM.

TYPE SERVICE: Attended, intermittent duty. Capable of continuous duty with addition of cooling fan.

## OPERATING CONDITIONS

AMBIENT TEMPERATURE RANGE: 0 to 50 deg C.

AMBIENT HUMIDITY RANGE: 0 to 95% relative.

ALTITUDE: Sea level to 6000 ft (higher with 75% of nominal power output).

FREQUENCY STABILITY: Within 0.004%.

HARMONIC AND SPURIOUS RADIATION: At least 30 db below carrier level at the output terminals.

## KEYING DATA

SPEED: 32 dot cycles per second (80 wpm) max.

PULSE WIDTH DISTORTION: 20% max.

TRANSIENT DIP: 25% max.

MODULATION CAPABILITY: 100% with sine wave or voice.

AUDIO INPUT LEVEL: 0.005 v sufficient for 100% modulation at 1000 cps, without clipper.

AUDIO FREQUENCY RESPONSE: Within 3 db from 150 to 3000 cps, without clipper, 25 db or more down at 4000 cps. Reference is 90% modulation at 1000 cps.

AUDIO FREQUENCY DISTORTION: Less than 10% at 1000 cps with 100% modulation, without clipper.

AUDIO PEAK CLIPPER: Cuts off sharply at 4000 cps. Both positive and negative clipped.

CARRIER SHIFT: 5% max.

OUTPUT IMPEDANCE: Adjustable in 1-turn steps for matching any unbalanced load with a resistive component of 70 to 2000 ohms, providing the total load impedance does not require a higher voltage than does the 2000 ohms pure resistance. Above 4 mc the lower resistance limit may be

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## 30K-5

## GROUND STATION EQUIPMENT

reduced to 50 ohms. A series load coil will permit matching 50 ohms from 2 to 4 mc.

POWER REQUIREMENTS: 230 v, 60 cps, single ph, 1350 W max.

(2) HC-6/U

Total Crystals: (2)

## MANUFACTURER'S OR CONTRACTOR'S DATA

Collins Radio Company, Cedar Rapids, Iowa.  
Contract NObsr 71045, dated 26 September 1955.

Approximate Cost: \$3460.00 with equipment spares.

## REFERENCE DATA AND LITERATURE

NAVSHIPS 92867: Technical Manual for 115-Volt and 230-Volt Models 30K-5 Ground Station Transmitter.

## TUBE AND/OR CRYSTAL COMPLEMENT

(1) 6AG7	(1) 807
(1) 4-125A	(1) 6SJ7
(1) 6SN7	(1) 6H6
(1) 6B4G	(2) 75TH
(2) 5R4GY	(2) 866A

Total Tubes: (13)

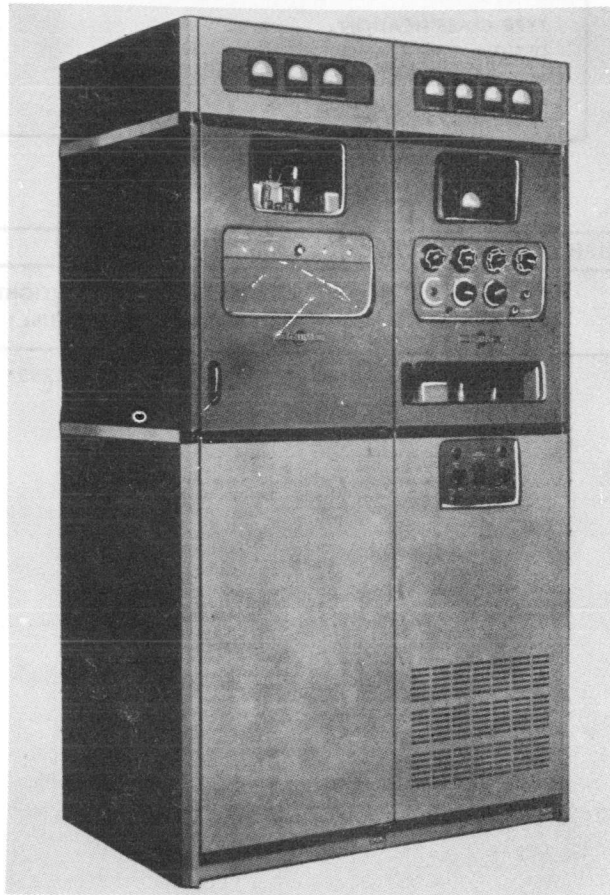
TYPE CLASSIFICATION	
DESIGN COGNIZANCE	COMMERCIAL
PROCUREMENT COGNIZANCE	
STOCK NO.	

## EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Transmitter Type 30K-5 including: Set of Tools and Microphone Connector	20 X 22 X 70	385
2	Microphone		
2	Technical Manual		
1	Set of Equipment Maintenance Parts		
1	Set of Vacuum Tubes		
1	Set of Crystals		
1	Set of Coils		

## COMMUNICATIONS TRANSMITTER

431D-1



Communications Transmitter 431D-1

## FUNCTIONAL DESCRIPTION

The 431D-1 (Collins Radio) is designed to provide continuous-wave radiotelegraphy and radiotelephony. Frequency-shift keying may be used with this transmitter by the installation of a Collins Radio Type 709E-1 Frequency-Shift Oscillator Unit. Power output for these types of transmission is 1.0 kilowatt within the frequency range of 2.0 to 30.0 megacycles.

It may be used for numerous applications such as in shore-to-ship communication, ground station-to-aircraft, or in similar applications of point-to-point communications.

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

## ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 2 to 30 mc.  
 POWER OUTPUT: 1.0 kw.  
 AUTOTUNE CHANNELS: 10.  
 AUTOTUNE CYCLE TIME: Less than 8 sec (approx-  
 8 sec with 50 cps supply).  
 FREQUENCY STABILITY: Better than 0.002%.  
 KEYING SPEED

CW: 200 wpm.

FSK: 240 dot cycles per sec.

## IMPEDANCE DATA

OUTPUT: 50 to 70 ohms with a max SWR of  
 2 to 1.

RF INPUT: 50 to 70 ohms.

## AUDIO CHARACTERISTICS

INPUT IMPEDANCE: 600 ohms.

INPUT LEVEL: -20 to +10 dbm.

FREQUENCY RESPONSE: Within 3 db at 350  
 to 27000 cps.

DISTORTION (TOTAL HARMONIC): Less than 5%  
 at 1000 cps and 90% modulation, when  
 clipping is not used.

NOISE: At least 40 db below 100% modulation.

## OPERATING CONDITIONS

AMBIENT TEMPERATURE RANGE: 0 to 50 deg C.

RELATIVE HUMIDITY: 95% max.

ELEVATION: 10000 ft max above sea level  
 for satisfactory operation.

POWER REQUIREMENTS: 208 to 230 v, 60 cps,  
 single ph,  $\pm 5\%$  line voltage and line fre-  
 quency variation, 4150 W max.

RF INPUT POWER REQUIRED: Approx 0.5 W  
 (2W max) from external source.

## MANUFACTURER'S OR CONTRACTOR'S DATA

Collins Radio Company, Cedar Rapids, Iowa-  
 Contract NObsr 71045, dated 25 September  
 1955.

Approximate Cost: \$12721.00 with equip-  
 ment spares.

## TUBE AND/OR CRYSTAL COMPLEMENT

(1) 6AK5	(4) 12AU7
(7) 5763	(1) OB2
(1) 4-65A	(2) 866A/866
(1) 4-1000A	(2) 872A/872
(4) OA2	(2) 4-400A
(2) 5Y3GT	(1) 6X4

Total Tubes: (28)

(10) CR-18/U

Total Crystals: (10)

Radio-Transmitters

June 1957

431D-1

## COMMUNICATIONS TRANSMITTER

## REFERENCE DATA AND LITERATURE

NAVSHIPS 92869: Technical Manual for Collins  
Radio Co. 431D-1 Communications Transmitter.

TYPE CLASSIFICATION  
DESIGN COGNIZANCE COMMERCIAL  
PROCUREMENT COGNIZANCE  
STOCK NO.

## EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radio Transmitter Collins Type 431D-1	33 x 48 x 84	1250
1	Tube Kit		
1	RF Connector, Male Plug		
1	Set of Crystals		
1	Set of Coils		
2	Microphone		
2	Technical Manual		
1	Set of Equipment Parts		