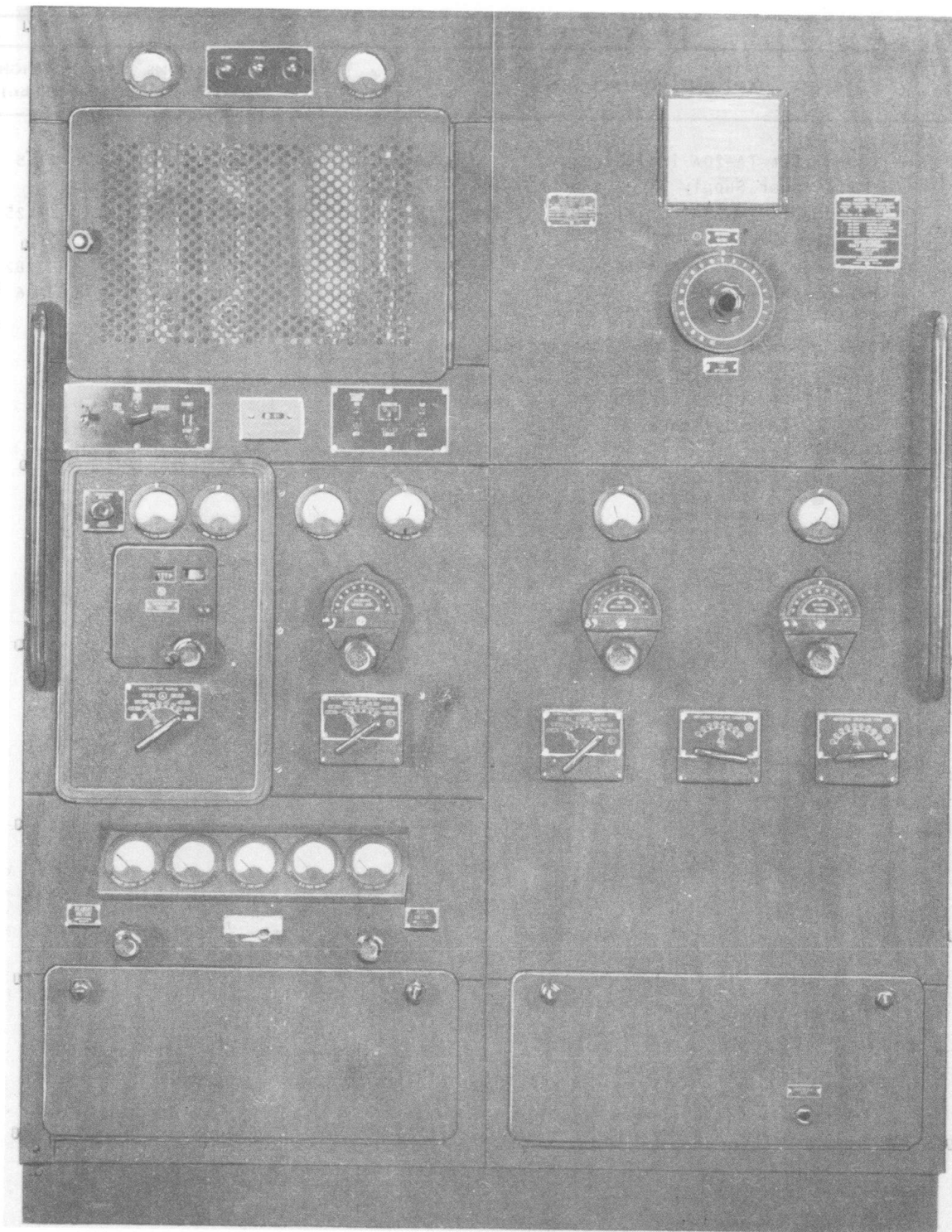


RADIO TELEGRAPH TRANSMITTING EQUIPMENT

Radio-Transmitters
TAB, TAB-2 thru 7

AUL-AT

HALE
SS
UDP



Radio Telegraph Transmitter TAB-5

Radio-Transmitters

TAB, TAB-2 thru 7

**RADIO TELEGRAPH TRANSMITTING
EQUIPMENT**

FUNCTIONAL DESCRIPTION

The TAB, TAB-2 thru 7 are high power radio telegraph transmitters designed for shore station installation to provide A1 and A2 emission at low and medium frequencies. These transmitters may be operated locally or remotely controlled by means of a control line. An antenna selector switch makes possible a quick change from one antenna to another when two antennas are used to cover the frequency range.

The TAB Series are all similar. TAB-6 and 7 differ from the others in that they use a dry disk type rectifier as their power supply instead of a motor generator type supply as do the others, though a motor generator is available for use in addition to the rectifier power unit.

Data on this sheet reflects the following field changes: FC1 (TAB-6); FC1, 2 (TAB-7).

RELATION TO OTHER EQUIPMENT

Equipment Required but not Supplied: Standard Navy keying equipment. Antennas as required. For Models TAB-6, -7: (1) Frequency Standard. Also the following are available for use in addition to the Rectifier Power Unit: (1) Motor Generator Set NT-21503. (1) Magnetic Controller NT-21500 or NT-21502.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

- FREQUENCY RANGE: 100 to 555 kc.
 POWER OUTPUT: 1 to 2 kw depending upon frequency and antenna characteristics.
 TYPE OF EMISSION: A1, A2.
 FREQUENCY CONTROL: Master oscillator.
 KEYING SPEED
 TAB, TAB-2, -3, -4: 100 wpm relay keying.
 TAB-5, -6, -7: 100 wpm relay keying; 500 wpm vacuum tube keying.
 POWER REQUIREMENTS
 TAB: 220 v, 60 cps, 2 or 3 ph, 6.3 kw.
 TAB-2: 115/120 v DC or 220/230 v DC or 220 v, 60 cps, 3 ph or 440 v, 25 cps, 3 ph.
 TAB-3: 220 v, 60 cps, 3 ph, 6.3 kw.
 TAB-4: 120 v DC or 220 v, 60 cps, 3 ph or 440 v, 25 cps, 3 ph.
 TAB-5: 220 v, 60 cps, 3 ph or 220/440 v,

25 cps, 3 ph, 7.2 kw.
 TAB-6, -7: 220 v, 60 cps, 3 ph, 7.5 kw.

MANUFACTURER'S OR CONTRACTOR'S DATA

- General Electric Co., Schenectady, N.Y.
 (TAB, TAB-4).
 Contract NOS-19885 (TAB-4).
 Westinghouse Electric and Mfg Co., Chicopee Falls, Mass.
 Contract 8777, dated 1928, (TAB-2).
 Contract 9900, dated 1928, (TAB-2).
 Contract 12981, dated 1929 (TAB-3).
 Westinghouse Electric and Mfg Co., Baltimore, Maryland.
 Contract 74868, dated 29 June 1940 (TAB-5).
 Contract NXss-5647, dated 21 May 1942 (TAB-6, -7).
 Contract NXss-16812, dated 7 November 1942 (TAB-6, -7).
 Approximate Cost: \$15450.00 with equipment spares.

TUBE AND/OR CRYSTAL COMPLEMENT

TAB	TAB-2, -3, -4
(5) 24	(4) 860
(2) 851	(2) 851
Total Tubes: (7)	Total Tubes: (6)
	TAB-5, -6, -7
(3) 803	(1) OC3W
(1) 5Z3	(2) 807
Total Tubes: (9)	
No Crystals used.	

REFERENCE DATA AND LITERATURE

- Technical Manual for Navy Model TAB-2 Radio Telegraph Transmitter.
 NAVSHIPS 95285: Technical Manual for Navy Model TAB-3 Radio Telegraph Transmitter.
 NAVSHIPS 95286: Technical Manual for Navy Model TAB-4 Radio Telegraph Transmitting Equipment.
 NAVSHIPS 95287: Technical Manual for Navy Model TAB-5 Radio Telegraph Transmitting Equipment.
 NAVSHIPS 900379: Technical Manual for Navy Model TAB-6, -7 Radio Telegraph Transmitting Equipment.
 NAVSHIPS 900379-1: Supplement to Technical Manual for Navy Model TAB-6, -7 Radio Telegraph Transmitting Equipment.

TYPE CLASSIFICATION
 DESIGN COGNIZANCE BUSHIPS
 PROCUREMENT COGNIZANCE
 STOCK NO.

April 1958

Radio-Transmitters

RADIO TELEGRAPH TRANSMITTING EQUIPMENT

TAB, TAB-2 thru 7

SHIPPING DATA

NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
	TAB-5			
1	Radio Transmitter	135.53	42 X 68 X 82	1558
1	Land Line Control Unit	7.7	17 X 27 X 29	120
1	Power Transfer Panel	12.75	17 X 27 X 48	182
2	Magnetic Controller	7.46	17 X 23 X 33	300
2	Motor Generator	39.39	26 X 34 X 77	2880
1	Antenna Selector Switch	4.66	14 X 24 X 24	45
1	Set of Equipment Spares	4.78	17 X 18 X 27	188
1	Vacuum Tubes	5.32	16 X 23 X 25	50
	TAB-6			
1	Radio Transmitter	131.12	42 X 65 X 83	1649
1	Land Line Control Unit	6.7	17 X 26 X 30	140
1	Power Transfer Panel	12.75	17 X 27 X 48	210
2	Rectifier Power Unit	123.42	30 X 45 X 79	2908
1	Antenna Selector Switch	10.26	22 X 26 X 31	105
1	Radio Frequency, Tuner TN-199A/FRT	90	36 X 51-1/2 X 83-3/4	800
1	Vacuum Tubes			
	Box 1	4.51	17 X 17 X 27	12
	Box 2	4.51	17 X 17 X 27	12
	Box 3	2.70	9 X 20 X 26	30
1	Set of Equipment Spares	9.74	18 X 28 X 33	270
	TAB-7			
1	Radio Transmitter	131.12	42 X 65 X 83	1649
1	Land Line Control Unit	6.7	17 X 26 X 30	140
1	Rectifier Power Unit	61.71	30 X 45 X 79	1459
1	Antenna Selector Switch	10.26	22 X 26 X 31	105
1	Radio Frequency Tuner TN-199A/FRT	90	36 X 51-1/2 X 83-3/4	800
1	Vacuum Tubes			
	Box 1	4.51	17 X 17 X 27	12
	Box 2	4.51	17 X 17 X 27	12
	Box 3	2.70	9 X 20 X 26	30
1	Set of Equipment Spares	9.74	18 X 28 X 33	270

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
	TAB-2		
1	Radio Transmitter CAY-3438	30 X 48 X 76	895
1	Antenna Transfer Switch CAY-3439	16-1/2 in. lg	
2	Motor Generator Set (for 115/120 v DC operation) consisting of: Motor CAY-3442	18-1/2 X 30-5/8 X 73-1/2	2220

TAB, TAB-2 thru 7

RADIO TELEGRAPH TRANSMITTING
EQUIPMENT

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
	Generator CAY-3444 or Motor Generator Set (for 220/230 v DC operation) consisting of: Motor CAY-3445 Generator CAY-3444 or	18-1/2 X 30-5/8 X 73-1/2	2220
	Motor Generator Set (for 220 v, 60 cps operation) consisting of: Motor CAY-3447 Generator CAY-3444 Exciter-Generator CAY-3449 or	18-1/2 X 29-7/8 X 80-11/16	1580
	Motor Generator Set (for 440 v, 25 cps operation) consisting of: Motor CAY-3450 Generator CAY-3444A Exciter-Generator CAY-3449A	18-1/2 X 29-7/8 X 90-5/16	2040
1	Motor Starter CAY-3443 (for 115/120 v DC operation) or CAY-3446 (for 220/230 v DC operation) or CAY-3448 (for 220 v, 60 cps operation) or CAY-3451 (for 440 v, 25 cps operation)	18 X 22 X 30-7/8 18 X 22 X 30-7/8	
1	Motor Generator Transfer Switch CAY-3452 TAB-3	12-11/16 X 28-5/8 X 30-5/8	125
1	Radio Transmitter CAY-3438A	30-3/16 X 49-5/32 X 76-1/16	895
1	Antenna Transfer Switch CAY-3439	16-1/2 in. lg	
2	Motor Generator Set consisting of: Motor CAY-3447 Generator CAY-3444B Exciter-Generator CAY-3449	18-1/2 X 25-3/4 X 80-11/16	1580
1	Motor Starter CAY-3448		
1	Motor Generator Transfer Switch CAY-3452A TAB-4	15 X 28-1/2 X 30	
1	Radio Transmitter CG-4225 (for 220 v, 60 cps operation) or CG-4225A (for 440 v, 25 cps operation) or CG-4225B (for 120 v DC operation)	35-31/32 X 58-15/16 X 76 35-31/32 X 58-15/16 X 76 35-31/32 X 58-15/16 X 76	1105 1098 1039
1	Motor Generator Set (for 220 v; 60 cps operation) consisting of: Motor CG-4063 Generator CG-4066 Exciter-Generator CG-4068 or	19-3/4 X 23-5/8 X 79-3/16	1616
	Motor Generator Set (for 440 v, 25 cps operation) consisting of: Motor CG-4069 Generator CG-4072 Exciter-Generator CG-4073 or	23-3/4 X 24-15/16 X 88-11/16	2216

April 1958

RADIO TELEGRAPH TRANSMITTING EQUIPMENT

TAB, TAB-2 thru 7

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIP	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
	Motor Generator Set (for 120 v DC operation) consisting of: Motor CG-3810 Generator CG-3811 Exciter-Generator CG-3812	22-7/8 X 23-5/8 X 73-7/8	1732
1	Motor Starter CG-4228 (for 220 v, 60 cps operation) or CG-4228A (for 440 v, 25 cps operation) or CG-4228B (for 120 v DC operation)	18-3/16 X 19-9/16 X 24-5/16	55
1	Antenna Transfer Switch CG-4227		
1	Generator Fuse and Filter Box CG-4226 (for 220 v, 60 cps operation) or CG-4226A (for 440 v, 25 cps operation) or CG-4226B (for 120 v DC operation)	15-5/8 X 17-1/2 X 22-1/4	
1	Motor Generator Transfer Switch CG-4451		
1	Line Switch M-7460208 (for 220 v, 60 cps operation) or M-7460680 (for 440 v, 25 cps operation) TAB-5		
1	Radio Transmitter NT-52164 (for 220 v, 60 cps operation) or NT-52165 (for 220 or 440 v, 25 cps operation)	37 X 57-1/2 X 76	1065
1	Land Line Control Unit NT-23216 (for 220 v, 60 cps operation) or NT-23217 (for 220 or 440 v, 25 cps operation)	10-3/8 X 20-7/16 X 20-11/16	54
1	Power Transfer Panel NT-24084 (for 220 v, 60 cps operation) or NT-24084A (220 or 440 v, 25 cps operation)	11 X 20-1/4 X 39-13/16	77
2	Magnetic Controller NT-21500 (for 220 v, 60 cps operation) or NT-21501 (for 220 v, 25 cps, operation) or NT-21502 (for 440 v, 25 cps operation)	11-7/16 X 17 X 26-3/4	200
2	Motor Generator Set NT-21503 (for 220 v, 60 cps operation) or NT-21507 (for 220 or 440 v, 25 cps operation)	22 X 25-5/16 X 71 22 X 25-5/16 X 72-1/2	2450 2450
1	Antenna Selector Switch NT-24082	7-3/4 X 17-1/2 X 20-7/8	20
1	Set of Equipment Spares TAB-6		146
1	Radio Transmitter NT-52273	37 X 57-1/2 X 76	1133
1	Land Line Control Unit NT-23216	10-3/8 X 20-7/16 X 20-11/16	81
1	Power Transfer Panel NT-24084A	11 X 20-1/4 X 39-13/16	108
2	Rectifier Power Unit NT-20167	24 X 34 X 72	1170
1	Antenna Selector Switch NT-24145	9-1/4 X 17-1/2 X 20-7/8	23
1	Radio Frequency Tuner TN-199A/FRT	34-15/16 X 49-15/16 X 81-3/4	510
1	Equipment Spares		238
2	Instruction Books		

TAB, TAB-2 thru 7

**RADIO TELEGRAPH TRANSMITTING
EQUIPMENT**

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
2	Supplementary Instruction Books TAB-7		
1	Radio Transmitter NT-52273	37 X 57-1/2 X 76	1133
1	Land Line Control Unit NT-23216	10-3/8 X 20-7/16 X 20-11/16	81
1	Rectifier Power Unit NT-20167	24 X 34 X 72	1170
1	Antenna Selector Switch NT-24145	9-1/4 X 17-1/2 X 20-7/8	23
1	Radio Frequency Tuner TN-199A/FRT	34-15/16 X 49-15/16 X 81-3/4	510
1	Equipment Spares		238
2	Instruction Books		
2	Supplementary Instruction Books		



EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)

RADIO TELEGRAPH TRANSMITTER

TAB-1

FUNCTIONAL DESCRIPTION

The TAB-1 is designed for service at coastal radio traffic stations, radio compass stations or aircraft stations. It may be controlled either locally, or from some remote point over a single wire telegraph line.

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

ELECTRICAL AND MECHANICAL CHARACTERISTICS

TYPE OF EMISSION: Type A1, A2 emission.

TRANSMITTER SPEED: Up to 100 words per minute.

OPERATING FREQUENCY RANGE: 100 to 555 kc.

POWER OUTPUT: 2 kw.

MANUFACTURER'S OR CONTRACTOR'S DATA

Westinghouse Electronic Mfg Co., Chicopee Falls, Mass.

TUBE AND/OR CRYSTAL COMPLEMENT

(6) 211W (2) 851

Total Tubes: (8)

No. Crystals used.

REFERENCE DATA AND LITERATURE

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

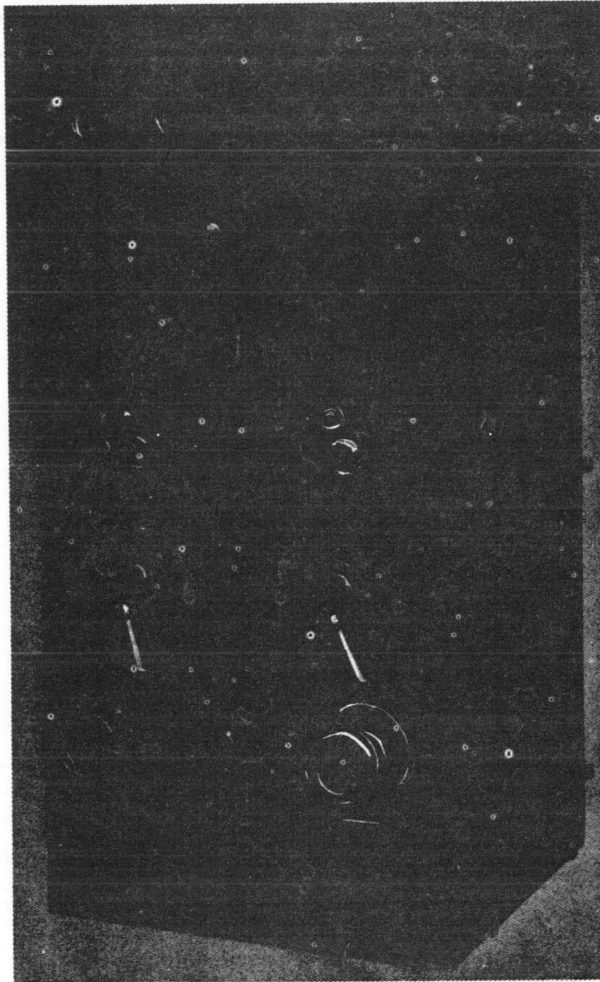
TYPE CLASSIFICATION (NAVY)
DESIGN COGNIZANCE NAVY BUSHIPS
PROCUREMENT COGNIZANCE
STOCK NO.
R.D.B. IDENT. NO.

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radio Telegraph Transmitter TAB-1	33-3/16 X 49-5/32 X 76-1/16	

RADIO TELEGRAPH TRANSMITTING EQUIPMENT

TAD-1



Radio Telegraph Transmitting Equipment TAD-1

FUNCTIONAL DESCRIPTION

The Model TAD-1 and associated equipment is designed primarily for service on vessels of the Navy where a compact, low power, high frequency transmitter is required. It is designed to provide operation on continuous wave or interrupted continuous wave and covers a continuous frequency range of 2000 to 3000 kilocycles. Under favorable antenna conditions an output in excess of 100 watts will be obtained, while under less favorable antenna conditions an output somewhat lower than 100 watts may be expected. The output

on interrupted continuous wave telegraph will be approximately 40 percent of the corresponding output obtained on continuous wave telegraphy.

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

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 2000 to 3000 kc.

POWER OUTPUT: Approx 100 W.

MODULATION FREQUENCY: 800 cps.

POWER REQUIREMENTS: 120 v DC, 240 v DC, 220 v, 3 ph, 25 or 60 cps, 1.8 kw.

ANTENNA REQUIREMENTS

EFFECTIVE CAPACITANCE: 0.00015 to 0.00032 ufd.

EFFECTIVE INDUCTANCE: 11 to 20 uh.

RF RESISTANCE: 2 to 8 ohms.

MANUFACTURER'S OR CONTRACTOR'S DATA

General Electric Company, Schenectady, N.Y.
Contract NOs-8766.

Approximate Cost: \$1000.00 with equipment spares.

TUBE AND/OR CRYSTAL COMPLEMENT

(3) 215A

(2) 860

Total Tubes: (5)

REFERENCE DATA AND LITERATURE

Technical Manual for Model TAD-1 Radio Telegraph Transmitting Equipment.

TYPE CLASSIFICATION	
DESIGN COGNIZANCE	BUSHIPS
PROCUREMENT COGNIZANCE	
STOCK NO.	

TAD-1

RADIO TELEGRAPH
TRANSMITTING EQUIPMENT

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radio Telegraph Transmitting Equipment Model TAD-1, DL-3655956(RT-19-C)(120VDC) or DL-3655958(RT-19-D) (240VDC) or DL-3655961(RT-19-E)(120VDC, 220v, 3ph, 25 94 60 cps)	22-1/4 X 24-7/8 X 44-7/8	240
1	Set of Automatic Starters consisting of:		
	(1) Type CG-3193 (120 v DC) or	12-3/16 X 14-1/2 X 17	50
	(1) Type CG-3193A (240 v DC) or	12-3/16 X 14-1/2 X 17	50
	(1) Type CG-1393 (120 v DC) and	12-3/16 X 14-1/2 X 17	50
	Type CG-3194A (220v, 3ph, 60 cps)	12-3/16 X 16-1/2 X 19	60
	(1) Type CG-3193 (120VDC) and	12-3/16 X 14-1/2 X 17	50
	Type CG-3194 (220v, 3ph, 25 cps)	12-3/16 X 16-1/2 X 19	60
1	Crystal Frequency Indicator Unit Type SE-2953C	8 X 10-1/16 X 18-7/16	31
1	Motor Generator Set (120 v DC) or	14 X 17-1/4 X 32-1/8	400
	Motor Generator Set (240 v DC) or	14 X 17-1/4 X 32-1/8	400
	Motor Generator Set (120 v DC, 220 v, 3ph, 60 cps) or Motor Generator Set (120 v DC, 220 v, 3 ph, 25 cps)	15-1/2 X 17-5/8 X 62-7/8	750
		15-1/2 X 17-5/8 X 65-1/16	850
1	Start-Stop Switch K-3804398G1		
1	Telegraph Key Type SE-4361		
6	Tuning Chart NP-41297		

January 1958

Radio-Transmitters

TRANSMITTING EQUIPMENT

TAD-2

FUNCTIONAL DESCRIPTION

The TAD-2 transmitter and associated equipment is designed primarily for service on vessels of the U.S. Navy where a compact low power, high frequency transmitter is required.

The following equipments were furnished under Contract NOs 13114 with General Electric Co. (4) Transmitting Equipments, serial numbers 11661, 11662, 11663 and 11664, designed for a power source of 220 v, 60 cycles per second, three phase, (8) Transmitting Equipments for 230 volts direct current power supply for use on Light Cruisers 28, 29, 31, bearing serial numbers 11665 to 11672, both inclusive. (2) Transmitting Equipments for 115 volt direct current power supply for vessels built; serial numbers 11673 and 11674.

No field changes in effect at time of preparation (26 September 1957).

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 2000 to 3010 kc.

POWER OUTPUT: 100 W.

EMISSION: CW and ICW.

ANTENNA CHARACTERISTICS

EFFECTIVE CAPACITANCE: 0.00015 to 0.00032 uf.

EFFECTIVE INDUCTANCE: 11 to 20 uh.

RADIO FREQUENCY RESISTANCE: 2 to 8 ohms.

POWER SOURCE REQUIRED: 220 v, 60 cps, 3-ph or 230 v DC or 115 v DC.

TRANSMITTER CONSTRUCTION: The framework of the transmitter is constructed throughout of duraluminum angle for sufficient strength with minimum weight. The top of the transmitter has a hinged door used to

replace vacuum tubes. Shielding is used where necessary.

PRESENTATION AND CONTROLS: All controls are on the front panel. 3-1/2 in. meters furnish antenna current, filament voltage, total plate current and plate voltage. Controls include antenna coupling, antenna tuning, antenna loading switch, master oscillator tuning, band change switch, filament voltage, plate voltage, off-on motor generator switch, Local-Remote switch, on-off plate generator field, Signal switch.

MANUFACTURER'S OR CONTRACTOR'S DATA

General Electric Co.

Contract NOs 13114.

Approximate Cost: 1000.00 with equipment spares.

TUBE AND/OR CRYSTAL COMPLEMENT

(2) UX-860 (3) 215A
Total Tubes: (5)

REFERENCE DATA AND LITERATURE

Technical Manual for Model TAD-2 100 Watt Radio Telegraph Transmitting Equipment.

TYPE CLASSIFICATION
DESIGN COGNIZANCE BUSHIPS
PROCUREMENT COGNIZANCE
STOCK NO.

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Transmitter Unit TAD-2	22-1/4 X 24-7/8 X 44-7/8	270
1	Automatic Motor Starter 3661 or	13-1/8 X 16-1/2 X 19	60
1	Automatic Motor Starter 3659 or	13-1/8 X 14-1/2 X 17	50
1	Automatic Motor Starter 3656	13-1/8 X 14-1/2 X 17	50
1	Crystal Frequency Indicator Unit 3657	8 X 9-9/16 X 18-7/16	31
1	Motor 3662		
1	Generator and Exciter 3663 or		
1	Motor-Generator Set 3660 or	12 X 17-1/4 X 32	400
1	Motor-Generator Set 3658	12 X 17-1/4 X 32	400
1	Start-Stop Switch		
1	Telegraph Key		
6	Tuning Charts		
1	Generator Protective Fuse Box	3-13/16 X 5-3/4 X 9	4-3/4
1	Power Indicator Lamp		

June 1957

Radio-Transmitters

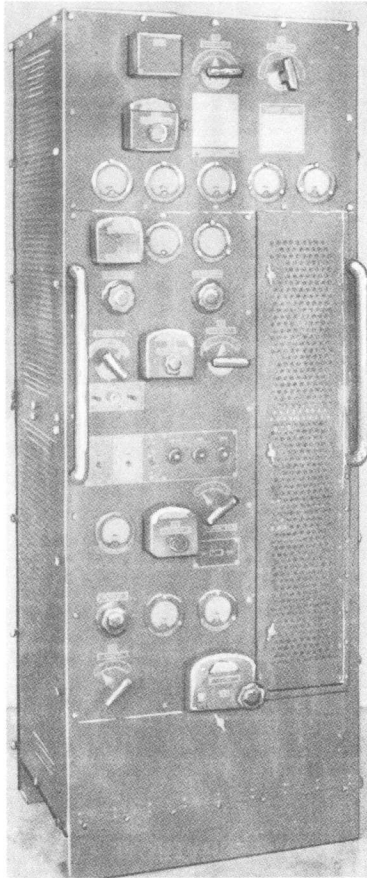
TAG

RADIO TELEGRAPH TRANSMITTING EQUIPMENT

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Water Cooling Unit NT-3096		
1	Motor-Generator Set Consisting of:		
1	Motor NT-3090		
1	Generator NT-3091		
1	Generator NT-3092		
1	Motor Generator Set consisting of:		
1	Motor NT-3094		
1	Generator NT-3095		
1	Automatic Starter NT-3229		
1	Automatic Starter NT-3093		
1	Automatic Starter NT-3248		
1	Low Power MG Filters Unit		
1	Protective and Filter Unit (for 7500 v gen.)		
1	External Monitor Lamp and Resistor		
1	Transmitter Start-Stop Switch		
1	Telegraph Key Mesco No. 80		
	SHORE BASED		
1	Radio Transmitting Equipment TAG consisting of:		
1	Transmitter NT-3079		
1	Water Cooling Unit NT-3096A		
1	Motor-Generator Set consisting of:		
1	Motor NT-3097		
1	Generator NT-3091		
1	Generator NT-3092		
1	Motor-Generator Set Consisting of:		
1	Motor NT-3099		
1	Generator NT-3095		
1	Generator NT-3100		
1	Automatic Starter NT-3105		
1	Automatic Starter NT-3098		
1	Automatic Starter NT-3247		
1	Low Power M.G. Filter Unit		
1	Protective and Filter Unit (for 7500 v Gen.)		
1	Telegraph Key Mesco No. 80		

RADIO TELEGRAPH TRANSMITTING EQUIPMENT TAJ,TAJ-1 thru -19



Model TAJ-8 Transmitter

FUNCTIONAL DESCRIPTION

The Navy Model TAJ series are designed primarily for use on shipboard except for Models TAJ-13 and TAJ-17 which are for use at shore installations. They operate with medium power output at low frequencies, with the emitted frequency continuously variable throughout the low frequency and medium frequency range. They provide continuous-wave

telegraphic operation at any keying speed up to 100 words per minute, and are also capable of transmitting a modulated telegraphic signal over the same frequency band at any keying speed up to 50 words per minute. They may be operated from the front panel, or from a remote location, by use of a Navy standard four-wire or six-wire remote control unit.

The Models TAJ-3 thru TAJ-19 are electrically and mechanically similar with the exception of power supply units. Models prior to the TAJ-3 have a separate filter unit. A crystal-controlled oscillator unit is furnished with all models prior to the TAJ-4. The TAJ-4 and TAJ-5 only are supplied with a rectifier unit, while the other models utilize a motor-generator set.

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

RELATION TO OTHER EQUIPMENT

Equipment Required but not Supplied: (1) Remote Control Unit NT-23005 or NT-23146.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE

TAJ THRU TAJ-3: 195 to 600 kc.

TAJ-4 THRU TAJ-19: 175 to 600 kc.

EMISSION: A1, A2.

POWER OUTPUT

A1

TAJ: 300 W.

TAJ-1 THRU TAJ-19: 500 W.

A2

TAJ-1 THRU TAJ-19: 250 W.

KEYING SPEED

A1: 100 wpm.

A2: 50 wpm.

FREQUENCY CONTROL: Master oscillator.

POWER REQUIREMENTS

TAJ THRU TAJ-3: 115 or 230 v DC, 3 kw.

TAJ-4: 230 v, 60 cps, 3 ph, 2.82 kw.

TAJ-5: 440 v, 60 cps, 3 ph, 2.65 kw.

TAJ-6, -7, -9: 440 v, 60 cps, 3 ph, 4.5 amps.

TAJ-8, -11, -12, -14, -16, -18, -19: 115 v DC, 28 amps or 230 v DC, 15 amps or 220 v, 60 cps, 3 ph, 8.2 amps or 440 v, 60 cps, 3 ph, 4.1 amps.

TAJ-10: 115 v DC, 28 amps or 230 v DC, 15 amps or 440 v, 60 cps, 3 ph, 4.1

April 1958

Radio-Transmitters

TAJ, TAJ-I thru-19

RADIO TELEGRAPH TRANSMITTING EQUIPMENT

amps.

TAJ-13: 220 v, 60 cps, 3 ph, 8.7 amps.

TAJ-15: 230 v DC, 15 amps.

TAJ-17: 220 v, 60 cps, 3 ph, 8.2 amps or
220 v, 50 cps, 3 ph, 7.9 amps.

MANUFACTURER'S OR CONTRACTOR'S DATA

Westinghouse Electric and Mfg Co, Chicopee
Falls, Mass.Contract NOS-6616, dated 1 February
1928 (TAJ).Contract NOS-12856, dated 29 June 1929
(TAJ-1).Contract NOS-36091, dated 8 May 1934
(TAJ-5).

General Electric Co, Schenectady, N.Y.

Contract NOS-20727 (TAJ-2).

Contract NOS-47390, dated 18 March 1936
(TAJ-6).Contract NOS-58412, dated 3 January
1938 (TAJ-7).Contract NOS-71756, dated 15 February
1940 (TAJ-9).

Contract NOS-80656 (TAJ-10).

Contract NOS-97255, dated 14 January
1942 (TAJ-11, -13).Contract NXs-4843, dated 21 May 1942
(TAJ-14).Contract NXss-18530, dated 19 February
1943 (TAJ-15).Contract Tcg-34571, dated 9 June 1942
(TAJ-16).Contract NXss-18530, dated 28 November
1942 (TAJ-17).Contract NXss-33082, dated 26 June 1943
(TAJ-18).Contract NXsr-36960, dated 8 September
1943 (TAJ-19).RCA Victor Div of Radio Corp of America,
Camden, N.J.Contract NOS-27519, dated 28 June 1932
(TAJ-3).Contract NOS-31197, dated 3 May 1933
(TAJ-4).

Bendix Radio Corp, Baltimore, Maryland.

Contract NOS-66778, dated 31 May 1939

(TAJ-8).

Approximate Cost: \$9,200.00 with e-
quipment spares.

TUBE AND/OR CRYSTAL COMPLEMENT

TAJ, TAJ-1	TAJ-2, -3
(1) 10Y	(2) 860
(2) 860	(1) 861
(1) 861	(1) 864
Total Tubes: (4)	Total Tubes: (4)
TAJ-4, -5	TAJ-6, -7, -9, -10, -11
(4) 3B28	-14, -15, -16, -17, -18, -19
(2) 83	(3) 860
(2) 860	(1) 861
(1) 861	
(6) 872A	
Total Tubes: (15)	Total Tubes: (4)
TAJ-8, -12	TAJ-13
(3) 803	(1) 5Z3
(1) 861	(2) 807
	(3) 860
	(1) 861
Total Tubes: (4)	Total Tubes: (7)
No Crystals used.	

REFERENCE DATA AND LITERATURE

- Technical Manual for Radio Telegraph Trans-
mitting Equipment Navy Model TAJ.
- Technical Manual for Radio Telegraph Trans-
mitting Equipment Navy Model TAJ-1.
- Technical Manual for Radio Telegraph Trans-
mitting Equipment Navy Model TAJ-2.
- Technical Manual for Radio Telegraph Trans-
mitting Equipment Navy Model TAJ-3.
- Technical Manual for Radio Telegraph Trans-
mitting Equipment Navy Model TAJ-4.
- Technical Manual for Radio Telegraph Trans-
mitting Equipment Navy Model TAJ-5.
- Technical Manual for Radio Telegraph Trans-
mitting Equipment Navy Model TAJ-6.
- Technical Manual for Radio Telegraph Trans-
mitting Equipment Navy Model TAJ-7.
- NAVSHIPS 900295: Technical Manual for Radio
Telegraph Transmitting Equipment Navy
Model TAJ-8.
- NAVSHIPS 95288: Technical Manual for Radio
Telegraph Transmitting Equipment Navy
Model TAJ-9.
- NAVSHIPS 900428: Technical Manual for Radio

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Radio-Transmitters

RADIO TELEGRAPH TRANSMITTING EQUIPMENT

TAJ,TAJ-1 thru -19

Telegraph Transmitting Equipment Navy Model TAJ-10.
 NAVSHIPS 900863: Technical Manual for Radio Telegraph Transmitting Equipment Navy Models TAJ-11, -13, -16, -17.
 NAVSHIPS 900554: Technical Manual for Radio Telegraph Transmitting Equipment Navy Model TAJ-12.
 NAVSHIPS 900833: Technical Manual for Radio Telegraph Transmitting Equipment Navy Models TAJ-14, -15, -18.
 NAVSHIPS 900492: Technical Manual for Radio Telegraph Transmitting Equipment Navy Model TAJ-19.

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.)
	TAJ,TAJ-1,-2,-3,-4,-5,-6,-7,-8,-9,-10,-12 Shipping Data Not Available			
	TAJ-11,-16			
1	Radio Transmitter	96.0	44 X 48 X 80	1198
1	Motor-Generator Set NT-21758	32.8	25 X 27 X 84	1155
1	Motor-Generator Set NT-21757 or NT-21756	32.8	25 X 27 X 84	1265
1	Magnetic controller	13.7	20 X 32 X 37	170
1	Equipment Spares	3.1	12 X 15 X 30	214
1	Equipment Spares	3.1	12 X 15 X 30	164
1	Equipment Spares	3.1	12 X 15 X 30	219
	TAJ-13			
1	Radio Transmitter	96.0	44 X 48 X 80	1190
2	Motor-Generator Set NT-21758	32.8	25 X 27 X 84	1155
1	Motor-Generator Set NT-21757 or NT-21756	32.8	25 X 27 X 84	1265
2	Magnetic Controller	13.7	20 X 32 X 37	170
1	Power Transfer Switch	3.1	13 X 17 X 24	48
1	Land Line control Unit	25.0	27 X 32 X 51	320
1	Equipment Spares	3.1	12 X 15 X 30	214
1	Equipment Spares	3.1	12 X 15 X 30	164
1	Equipment Spares	3.1	12 X 15 X 30	219
	TAJ-14,-15,-18			
1*	Radio Transmitter			
1	Motor-Generator Set NT-21956	32.8	25 X 27 X 84	1210
1	Motor-Generator Set NT-21757A	32.8	25 X 27 X 84	1285
1	Magnetic Controller	13.7	20 X 32 X 37	185
1	Equipment Spares	2.9	12 X 14 X 30	175
1	Equipment Spares	2.9	12 X 14 X 30	151
1	Equipment Spares	2.9	12 X 14 X 30	227
1	Equipment Spares	2.9	12 X 14 X 30	191
	TAJ-17			

April 1958

Radio-Transmitters

TAJ,TAJ-1 thru -19

RADIO TELEGRAPH TRANSMITTING
EQUIPMENT

SHIPPING DATA

NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
1	Radio Transmitter	96.0	44 X 48 X 80	1198
1	Motor-Generator Set NT-21758	32.8	25 X 27 X 84	1155
1	Motor-Generator Set NT-21757 or NT-21756	32.8	25 X 27 X 84	1265
1	Motor-Generator Set NT-21956	32.8	25 X 27 X 84	1155
2	Magnetic Controller	13.7	20 X 32 X 37	170
1	Power-Transfer Switch	3.1	13 X 17 X 24	48
1	Equipment Spares	3.1	12 X 15 X 30	214
1	Equipment Spares	3.1	12 X 15 X 30	164
1	Equipment Spares	3.1	12 X 15 X 30	219
	TAJ-19			
1	Radio Transmitter NT-52241A	101.0	46 X 48 X 80	1140
1	Radio Transmitter NT-52240A	101.0	46 X 48 X 80	1150
1	Motor-Generator Set	32.8	25 X 27 X 84	1140
1	Magnetic Controller NT-211088 or NT-211089	7.8	22 X 22 X 28	120
1	Magnetic Controller NT-211086 or NT-211087	7.8	22 X 22 X 28	130

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
	TAJ		
1	Radio Transmitter NT-3334-A	17 X 26-1/8 X 46	425
1	Motor-Generator Set NT-3689(115 v DC) or NT-3690(230 v DC)	18 X 20-5/16 X 36	1200
1	Magnetic controller NT-3415(115 v DC) or NT-3416(230 v DC)	13-11/16 X 21-1/8 X 25-3/8	135
2	Set of Vacuum Tubes		
1	Set of Equipment Spares		358
	TAJ-1		
1	Radio Transmitter NT-3334	17-1/4 X 27-1/8 X 47-3/4	426
1	Motor-Generator Set NT-3422(115 v DC) or NT-3423(230 v DC)	16-1/2 X 20 X 35	590
1	Magnetic Controller NT-3415(115 v DC) or NT-3416(230 v DC)	13-11/16 X 21-1/8 X 25-3/8	135
1	Filter Unit NT-3335 or NT-3335A	12-1/8 X 14 X 27-7/8 12-1/8 X 14 X 27-7/8	91 100
1	Crystal Frequency Indicator NT-3336	8-7/8 X 10 X 11-1/2	24
2	Set of vacuum Tubes		
1	Set of Equipment Spares		358
	TAJ-2		
1	Radio Transmitter NT-4440(115 v DC) or NT-4444(230 v DC)	19 X 26-7/8 X 70	450
1	Motor-Generator Set NT-4084(115 v DC) or NT-4083(230 v DC)	14 X 15-3/8 X 36	485
1	Magnetic controller NT-4443(115 v DC) or NT-4445(230 v DC)	14-1/2 X 16-1/2 X 22-3/4	75

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Radio-Transmitters

RADIO TELEGRAPH TRANSMITTING EQUIPMENT

TAJ,TAJ-1 thru -19

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Filter Unit NT-4442	7-9/16 X 18-1/2 X 25-1/2	90
1	Crystal Frequency Indicator NT-4441	14-3/4 X 16-3/8 X 19	45
2	Set of Vacuum Tubes		
1	Set of Equipment Spares		358
	TAJ-3		
1	Radio Transmitter NT-52009	20 X 26-3/4 X 70	370
1	Motor-Generator Set NT-21044 (115 v DC) or NT-21045 (230 v DC)	18 X 18 X 33-3/8	527
1	Magnetic Controller NT-21042 (115 v DC) or NT-21043 (230 v DC)	13-7/8 X 15 X 24-7/8	85
1	Crystal Frequency Indicator NT-74007		87
2	Set of Vacuum Tubes	9-29/32 X 10-5/16 X 16	27
1	Set of Equipment Spares		358
	TAJ-4		
1	Radio Transmitter NT-52022	20 X 27 X 72	375
1	Rectifier Unit NT-20007	21 X 23-1/2 X 72	650
2	Set of Vacuum Tubes		
1	Set of Equipment Spares		358
	TAJ-5		
1	Radio Transmitter NT-52029	20 X 27 X 71-7/8	375
1	Rectifier Unit NT-20018	22-7/8 X 23-15/16 X 71-7/8	975
2	Set of Vacuum Tubes		
1	Set of Equipment Spares		358
	TAJ-6		
1	Radio Transmitter NT-52069	24 X 27 X 72	645
1	Motor-Generator Set Including: AC Motor NT-21255 DC Generator NT-21256 DC Generator and Exciter NT-21257	17-1/4 X 22-1/2 X 72	850
1	Magnetic Controller NT-21258	7-3/4 X 10-1/8 X 17-15/16	22
2	Set of Vacuum Tubes		
1	Set of Equipment Spares		358
	TAJ-7		
1	Radio Transmitter NT-52078	24-3/16 X 27 X 72-1/4	605
1	Motor-Generator Set including: Motor NT-21296 Generator NT-21297 Generator NT-21298	17 X 19-29/32 X 71-3/4	860
1	Magnetic Controller NT-21258	7-3/4 X 10-1/8 X 17-15/16	22
2	Set of Vacuum Tubes		
1	Set of Equipment Spares		358
	TAJ-8		
1	Radio Transmitter NT-52142 (115-230 v DC) or NT-52143 (220-440 v AC)	24 X 27 X 72-1/4	610

April 1958

Radio-Transmitters

TAJ,TAJ-1 thru -19

RADIO TELEGRAPH TRANSMITTING
EQUIPMENT

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Motor-Generator Set NT-21466(115 v DC) or	16-5/8 X 19-5/16 X 75	775
	NT-21467(230 v DC) or	16-5/8 X 19-5/16 X 75	775
	NT-21468(220-440 v AC)	16-5/8 X 19-13/32 X 70-7/16	775
1	Magnetic Controller NT-21457(115 v DC) or	16-11/16 X 24 X 26	105
	NT-21458(230 v DC) or	16-11/16 X 24 X 26	105
	NT-21459(220 v AC) or	15-13/16 X 20-11/16 X 28	111
	NT-21460(440 v AC)	15-13/16 X 20-11/16 X 28	111
2	Set of Vacuum Tubes		
1	Set of Equipment Spares		358
	TAJ-9		
1	Radio Transmitter NT-52140	24-3/16 X 27 X 72-1/4	605
1	Motor-Generator Set NT-21468	18-5/8 X 19-7/8 X 71-3/4	860
1	Magnetic Controller NT-21455	10-1/4 X 20-1/4 X 22-1/8	65
2	Set of Vacuum Tubes		
1	Set of Vacuum Tubes		358
	TAJ-10		
1	Radio Transmitter NT-52167(115-230 v DC) or	24-1/8 X 27 X 72	550
	NT-52189(220-440 v AC)		
1	Motor-Generator Set NT-21456A(220-440 v AC)	18 X 18-1/2 X 71-5/8	800
	or NT-21571(115 v DC) or	13 X 18 X 64-3/4	950
	NT-21572(230 v DC)	12-3/4 X 18 X 64-3/4	960
1	Magnetic Controller NT-21455(440 v AC) or	10-1/4 X 20-1/4 X 22-1/8	65
	NT-21567(115 v DC) or	13-1/4 X 14-1/4 X 25	75
	NT-21568(230 v DC)	11 X 14-1/4 X 22	75
2	Set of Vacuum Tubes		
1	Set of Equipment Spares		358
	TAJ-11		
1	Radio Transmitter NT-52240(115-230 v DC) or	25 X 27 X 74	540
	NT-52241(220-440 v AC)		
1	Motor-Generator Set NT-21756(115 v DC) or	18-3/4 X 20 X 76-1/2	960
	NT-21757(230 v DC) or	18-3/4 X 20 X 76-1/2	960
	NT-21758(220-440 v AC)	18-3/4 X 20 X 72	850
1	Magnetic Controller NT-21752(115 v DC) or	13-1/4 X 14-1/4 X 25	70
	NT-21753(230 v DC) or	13-1/4 X 14-1/4 X 22-3/4	70
	NT-21754(220 v AC) or	9 X 20 X 21-7/8	70
	NT-21755(440 v AC)	9 X 20 X 21-7/8	70
2	Set of Vacuum Tubes		
1	Set of Equipment Spares		358
	TAJ-12		
1	Radio Transmitter NT-52259(115-230 v DC) or	24 X 27 X 72-1/4	610
	NT-52260(220-440 v AC)	24 X 27 X 72-1/4	610
1	Motor-Generator Set NT-21783(220-440 v AC)	18 X 18-3/4 X 57-7/8	
	or NT-21784(115 v DC) or	18 X 18-3/4 X 62-1/8	
	NT-21785(230 v DC)	18 X 18-3/4 X 52-1/8	
1	Magnetic Controller NT-21874(115 v DC) or	14 X 14-1/2 X 24-3/8	102

RADIO-TELEGRAPH TRANSMITTING EQUIPMENT

TAJ,TAJ-1 thru -19

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
	NT-21875(440 v AC) or	12-1/4 X 18-1/4 X 22	102
	NT-21880(230 v DC) or	14-1/4 X 14-1/2 X 24-3/8	102
	NT-21891(220 v AC)	12-1/4 X 18-1/4 X 22	102
2	Set of Vacuum Tubes		
1	Set of Equipment Spares		358
	TAJ-13		
1	Radio Transmitter NT-52241	25 X 27 X 74	540
2	Motor-Generator Set NT-21758	18-3/4 X 20 X 72	850
2	Magnetic controller NT-21754	9 X 20 X 21-7/8	70
1	Land Line Control Unit NT-23269	14-1/4 X 24 X 42-1/8	165
1	Power Transfer Switch NT-24092	9-1/4 X 12-1/4 X 16	26
2	Set of Vacuum Tubes		
1	Set of Vacuum Tubes(Land Line Control Unit)		3
1	Set of Equipment Spares		358
	TAJ-14		
1	Radio Transmitter NT-52240(115-230 v DC) or NT-52241(220-440 v AC)	25 X 27 X 74	540
1	Motor-Generator Set NT-21756A(115 v DC) or NT-21757A(230 v DC) or NT-21956(220-440 v AC)	18-3/4 X 20 X 76-1/2 18-3/4 X 20 X 76-1/2 18 X 20 X 72	1040 1040 850
1	Magnetic controller NT-21752(115 v DC) or NT-21753(230 v DC) or NT-21754(220 v AC) or NT-21755(440 v AC)	13-1/4 X 14-1/4 X 25 13-1/4 X 14-1/4 X 22-3/4 9 X 20 X 21-7/8 9 X 20 X 21-7/8	70 70 70 70
2	Set of Vacuum Tubes		
1	Set of Equipment Spares		358
	TAJ-15		
1	Radio Transmitter NT-52240	25 X 27 X 74	540
1	Motor-Generator Set NT-21757A	18-3/4 X 20 X 76-1/2	1040
1	Magnetic controller NT-21753	13-1/4 X 14-1/4 X 22-3/4	70
2	Set of Vacuum Tubes		
1	Set of Equipment Spares		358
	TAJ-16		
1	Radio Transmitter NT-52240(115-230 v DC) or NT-52241(220-440 v AC)	25 X 27 X 74	540
1	Motor-Generator Set NT-21756(115 v DC) or NT-21757(230 v DC) or NT-21758(220-440 v AC)	18-3/4 X 20 X 76-1/2 18-3/4 X 20 X 76-1/2 18-3/4 X 20 X 72	960 960 850
1	Magnetic controller NT-21753(230 v DC) or NT-21752(115 v DC) or NT-21754(220 v AC) or NT-21755(440 v AC)	13-1/4 X 14-1/4 X 22-3/4 13-1/4 X 14-1/4 X 25 9 X 20 X 21-7/8 9 X 20 X 21-7/8	70 70 70 70
2	Set of Vacuum Tubes		
1	Set of Equipment Spares		358

April 1958

Radio-Transmitters

TAJ,TAJ-1 thru -19

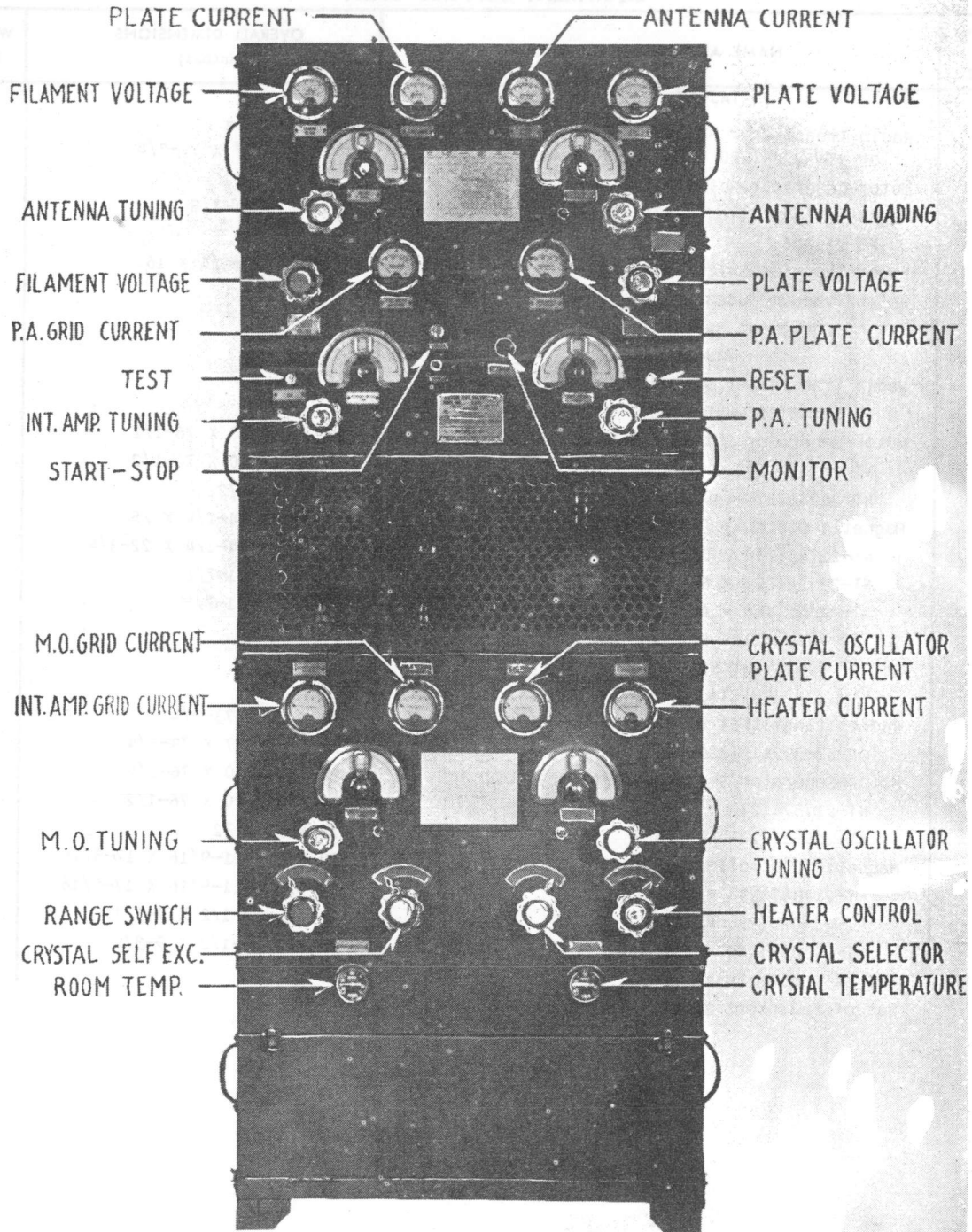
RADIO TELEGRAPH TRANSMITTING
EQUIPMENT

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
	TAJ-17		
1	Radio Transmitter NT-52241(220 v, 60 cps) or NT-52293(220 v, 50 cps)	25 X 27 X 74 24-1/2 X 27 X 73-3/4	540 540
2	Motor-Generator Set NT-21956	18 X 20 X 72	850
2	Magnetic Controller NT-211005(220 v, 50 cps) or NT-211006	9 X 20 X 21-7/8	70
1	Power Transfer Switch NT-24092	9-1/4 X 12-1/4 X 16	26
2	Set of Vacuum Tubes		358
1	Set of Equipment Spares		
	TAJ-18		
1	Radio Transmitter NT-52240(115-230 v DC) or NT-52241(220-440 v AC)	25 X 27 X 74	540
1	Motor-Generator Set NT-21756A(115 v DC) or NT-21757A(230 v DC) or NT-21956(220-440 v AC)	18-3/4 X 20 X 76-1/2 18-3/4 X 20 X 76-1/2 18 X 20 X 72	1040 1040 850
1	Magnetic Controller NT-21752(115 v DC) or NT-21753(230 v DC) or NT-21754(220 v AC) or NT-21755(440 v AC)	13-1/4 X 14-1/4 X 25 13-1/4 X 14-1/4 X 22-3/4 9 X 20 X 21-7/8 9 X 20 X 21-7/8	70 70 70 70
2	Set of Vacuum Tubes		358
1	Set of Equipment Spares		
	TAJ-19		
1	Radio Transmitter NT-52240A(115-230 v DC) or NT-52241A(220-440 v AC)	24 X 27 X 73-3/4 24-1/8 X 27 X 73-3/4	560 560
1	Motor-Generator Set NT-21756A(115 v DC) or NT-21757A(230 v DC) or NT-21956(220-440 v AC)	18-3/4 X 20 X 76-1/2 18-3/4 X 20 X 76-1/2 18 X 20 X 72	1040 1040 850
1	Magnetic Controller NT-211086(115 v DC) or NT-211087(230 v DC) or NT-211088(220 v AC) or NT-211089(440 v AC)	10-5/8 X 11-9/16 X 17-5/16 10-5/8 X 11-9/16 X 17-5/16 7-1/2 X 7-1/2 X 9-3/4 7-1/2 X 7-1/2 X 9-3/4	55 55 45 45
2	Set of Vacuum Tubes		358
1	Set of Equipment Spares		

RADIO TRANSMITTER

TAK



Radio Transmitter TAK

Radio-Transmitters

TAK

RADIO TRANSMITTER

FUNCTIONAL DESCRIPTION

The TAK is designed for installation on battle ships or other major fleet units and at certain shore stations. The transmitter will operate with precision, reliability and frequency stability effecting communication with aircraft in the 3000 to 4525 kilocycle band, without the necessity for preliminary calling and with a minimum of interference with other units of a naval duplex installation afloat.

The transmitter can be operated at a keying speed of 100 words per minute without corona, or brush discharge.

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

ELECTRICAL AND MECHANICAL CHARACTERISTICS

TRANSMITTER KEYING SPEED: 100 words per minute max.

NUMBER OF CHANNELS: 6 channels.

OPERATING FREQUENCY RANGE: 3000 to 4525 kc.

OPERATING POWER RQMT

AC MOTOR GENERATOR: 220 v, 3 ph, 60 cps, 1750 rpm, 5.5 hp.

DC MOTOR GENERATOR: 240 v, 3.3 hp, 1750 rpm.

OUTPUT POWER: 500 watts.

TYPE OF EMISSION: A1.

MANUFACTURER'S OR CONTRACTOR'S DATA

Westinghouse Electric Mfg Co., Chicopee Falls, Mass.
Contract No. 7556.

TUBE AND/OR CRYSTAL COMPLEMENT

(1) 10Y (1) 860 (1) 864

Total Tubes: (3)

No Crystals used.

REFERENCE DATA AND LITERATURE

Technical Manual for Model TAK Radio Transmitter.

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

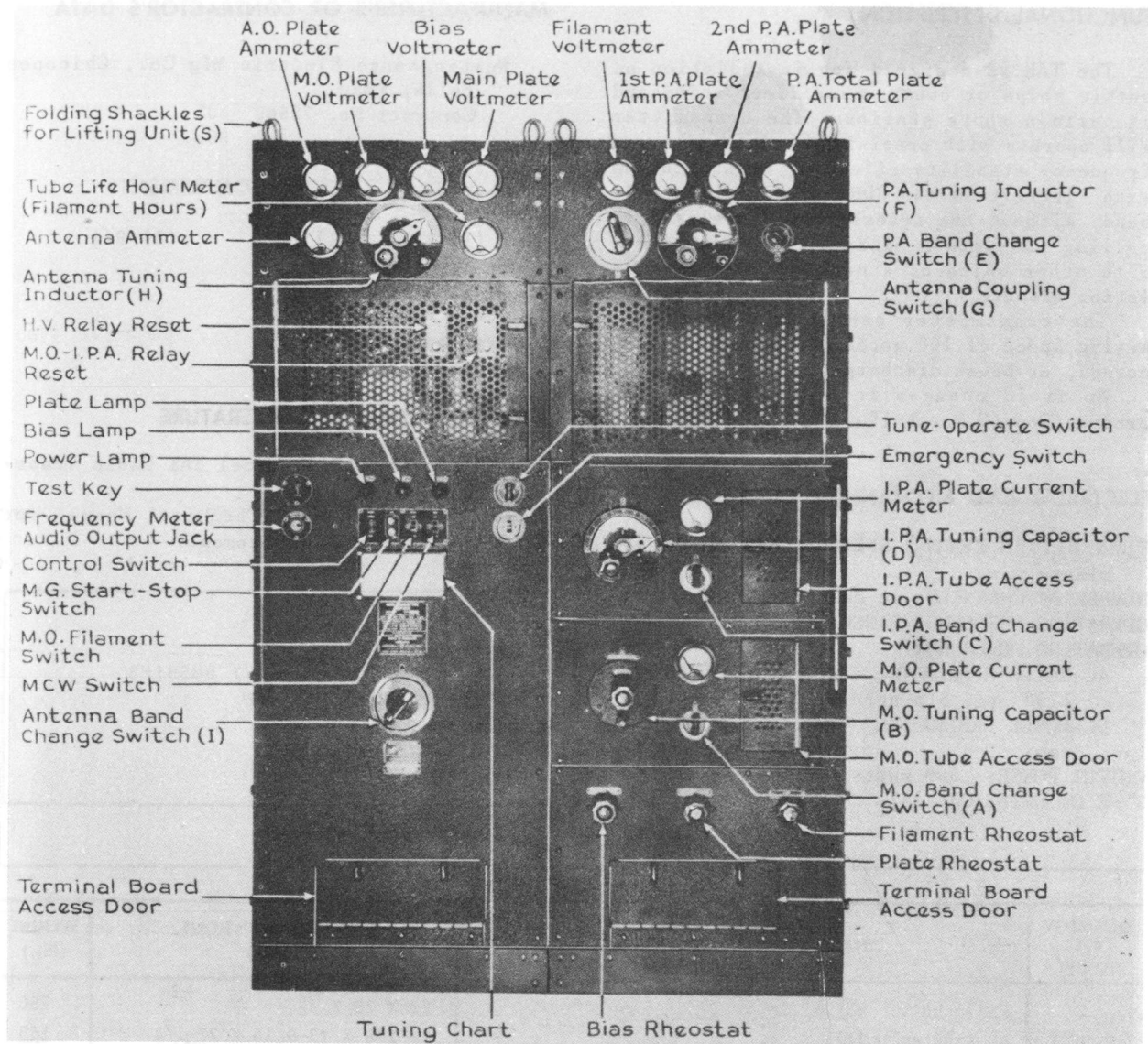
TYPE CLASSIFICATION
DESIGN COGNIZANCE NAVY BUSHIPS
PROCUREMENT COGNIZANCE
STOCK NO.
R.D.B. IDENT. NO.

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radio Unit	22 X 28 X 72	750
1	AC Starter Unit	13-1/8 X 13-9/16 X 22-1/4	165
1	AC Motor Generator Set	18 X 24-5/16 X 59-11/16	1200
1	DC Starter Unit	13-11/16 X 21-1/8 X 25-3/8	130
1	DC Motor Generator	18 X 20-5/16 X 51-3/4	940

RADIO TELEGRAPH TRANSMITTING EQUIPMENT

TAQ-1,-7,-8



Radio Transmitter, Navy Type CG-52115

FUNCTIONAL DESCRIPTION

The Navy Models TAQ-1, TAQ-7, and TAQ-8 are designed primarily for shipboard use to provide continuous-wave and modulated continuous-wave transmission in the 175 to 600 kilocycle frequency range. They will provide keying speeds up to 100 words per minute at all frequencies within the frequency band specified, and are also designed to be capable of transmitting a modulated telegraphic

signal over the same frequency band and at the same keying speed.

The Navy Model TAQ-1 is designed for use as the main intermediate-frequency transmitting equipment on Battleships and Light Cruisers while Navy Models TAQ-7 and TAQ-8 consist of Navy Models TAQ-5 and TAQ-6 respectively, modified for shore station use. The Models TAQ-7 and TAQ-8 also provide vacuum tube keying at any speed up to 500 words per minute.

Radio-Transmitters

TAQ-1,-7,-8

RADIO TELEGRAPH TRANSMITTING EQUIPMENT

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

TUBE AND/OR CRYSTAL COMPLEMENT

TAQ-1	TAQ-7, -8
(2) NT-2172	(1) 5Z3
(1) NT-2566	(2) 807
(4) NT-3119	(3) 803
	(2) 851

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 175 to 600 kc.
POWER OUTPUT: 2 kw max.
EMISSION: A1, A2.
FREQUENCY CONTROL: Master Oscillator.
MODULATION FREQUENCY: 800 cps.
KEYING SPEEDS

TAQ-1: 100 wpm.
TAQ-7, -8: 100 and 500 wpm.

POWER REQUIREMENTS

TAQ-1: 230 v DC.
TAQ-7, -8: 220 v, 60 cps, 3 ph.

Total Tubes: (7) Total Tubes: (8)

(10) Operating
Crystal

Total Crystals: (10) No Crystals used.

MANUFACTURER'S OR CONTRACTOR'S DATA

Westinghouse Electric and Mfg Co., Chicopee Falls, Mass.
Contract NOS-13816, dated 4 September 1929 (TAQ-1).
General Electric Co., Schenectady, N.Y. (TAQ-7, -8).
Contract NOS-62958, dated 21 September 1938.
Contract NOS-70094, dated 18 September 1939.
Contract NOS-80836, dated 14 January 1941.
Contract NOS-81885, dated 13 February 1941.

REFERENCE DATA AND LITERATURE

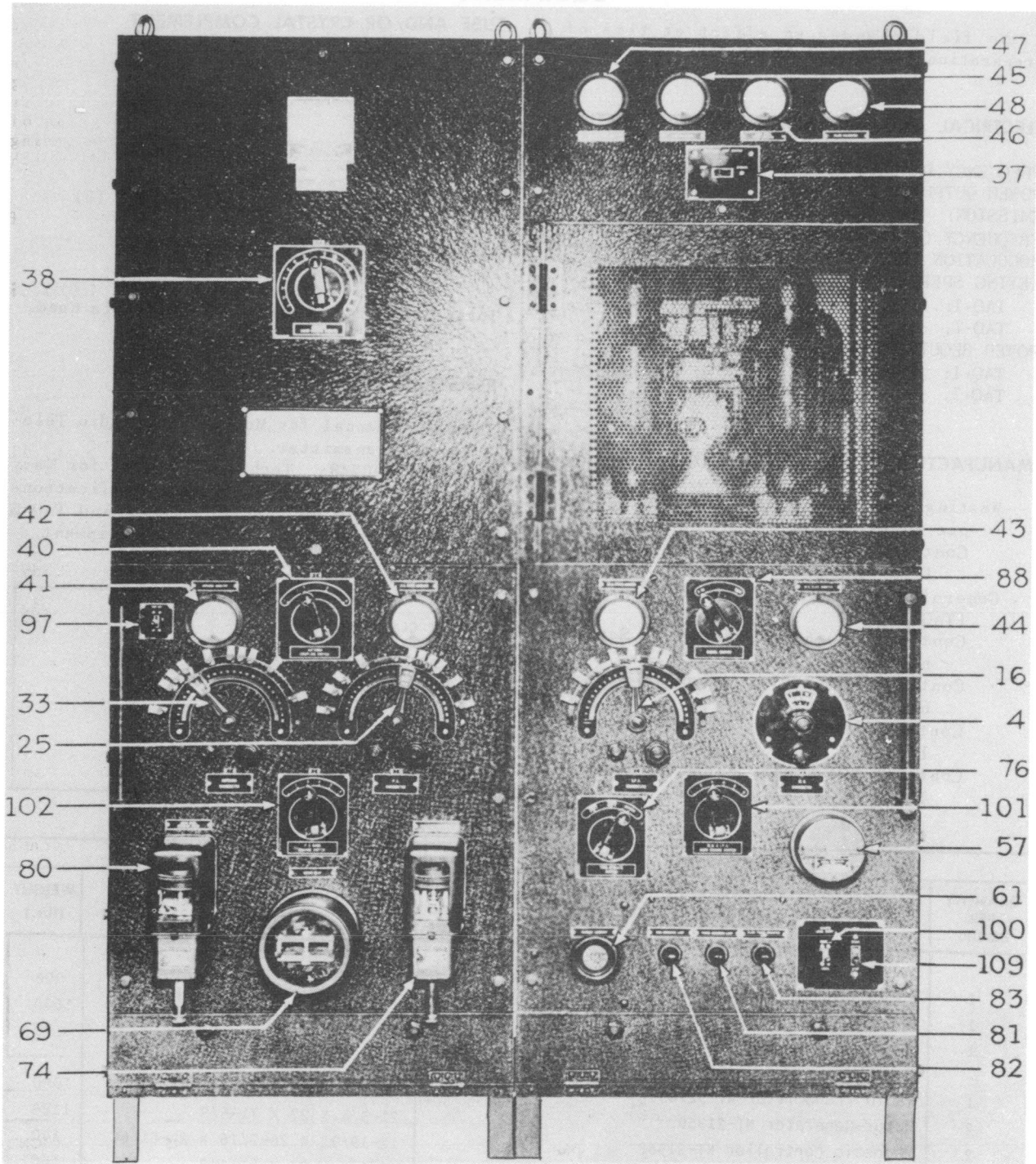
Technical Manual for Model TAQ-1 Radio Telegraph Transmitter.
NAVSHIPS 900248: Technical Manual for Navy Models TAQ-5 and TAQ-6 and Modifications TAQ-5a, TAQ-6a, TAQ-6b, TAQ-7 and TAQ-8 Radio Telegraph Transmitting Equipment.

TYPE CLASSIFICATION
DESIGN COGNIZANCE 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	TAQ-1 Radio Transmitter NT-3473-A	30 X 48 X 76	900
1	Motor-Generator NT-3474-A	17 X 20 X 50-1/2	1000
1	Motor Starter NT-3446	10 X 22 X 30-1/8	170
1	TAQ-7,-8 Radio Transmitter NT-52185	34-1/8 X 49-1/4 X 73-3/8	1050
2	Motor-Generator NT-21360	21-3/4 X 27 X 71-5/8	1185
2	Magnetic controller NT-21368	12-19/32 X 26-7/16 X 24-61/64	140
1	Land-Line Control Unit NT-23213	15-3/4 X 24 X 42-1/8	160
1	Power Transfer Switch NT-24077	9 X 11-1/2 X 14-5/16	14

RADIO TELEGRAPH TRANSMITTING EQUIPMENT



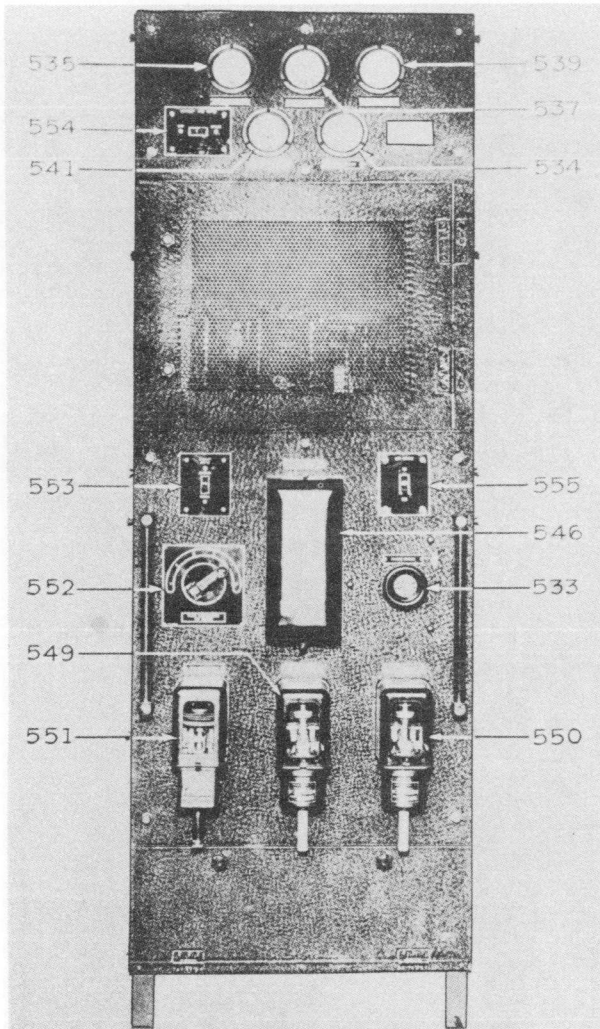
Telegraph Transmitter TAQ-4

August 1957

Radio-Transmitters

TAQ-4

RADIO TELEGRAPH TRANSMITTING EQUIPMENT



Rectifier Unit TAQ-4

FUNCTIONAL DESCRIPTION

The Model TAQ-4 is designed for service on Naval vessels where a compact, medium power, intermediate frequency transmitter is required. It is capable of operation at any frequency in the 175 to 600 kilocycle range. It provides continuous-wave telegraphic operation at any keying speed up to 100 words

per minute at all frequencies within the frequency range, and is also capable of transmitting a modulated telegraphic signal over the same frequency band and at the same keying speed. A reduction of power output results during modulated transmission to a value of not less than 50 percent of the corresponding value for continuous-wave operation, with modulation of 70 percent or more being provided.

No field changes in effect at time of preparation (4 January 1957).

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 175 to 600 kc.

POWER OUTPUT: 2 kw.

EMISSION: CS, MCW.

FREQUENCY CONTROL: Continuously variable.

MODULATED FREQUENCY: 800 cps.

KEYING SPEED: 100 wpm max.

POWER REQUIREMENTS: 440 v, 60 cps, 3 ph, 11 amps, 7500 W.

MANUFACTURER'S OR CONTRACTOR'S DATA

General Electric Company, Schenectady, N.Y.

Contract NOs-37323, dated 16 July 1934.

TUBE AND/OR CRYSTAL COMPLEMENT

(4) 3B28

(2) 4B27

(2) 851

(4) 860

(6) 872A

Total Tubes: (18)

REFERENCE DATA AND LITERATURE

Technical Manual for 2 KW Radio Telegraph Transmitting Equipment Model TAQ-4.

TYPE CLASSIFICATION

DESIGN COGNIZANCE BUSHIPS

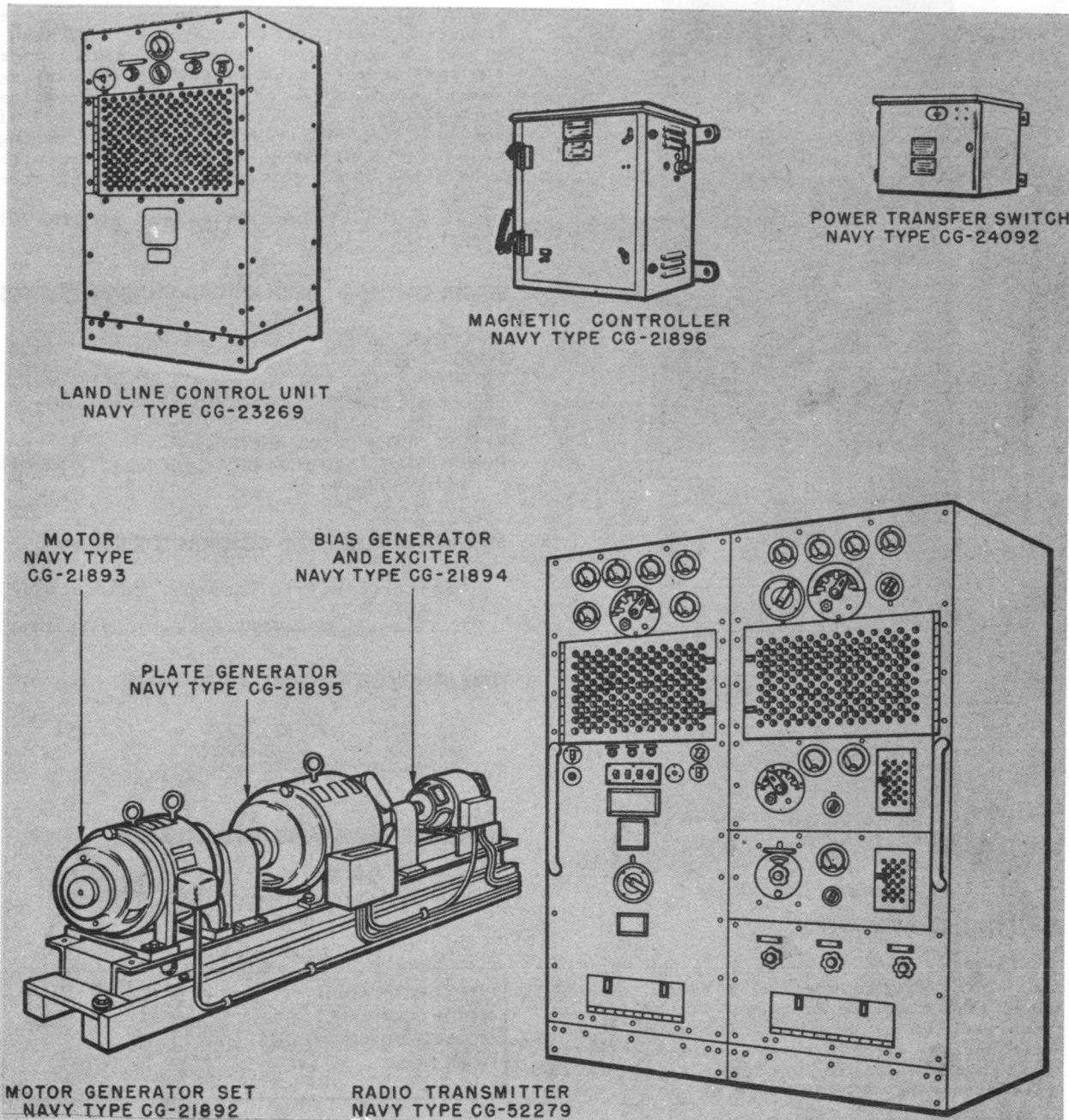
PROCUREMENT COGNIZANCE

STOCK NO.

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIP	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Transmitter NT-52036	35-3/8 X 49 X 72	940
1	Rectifier Unit NT-20009	23-5/8 X 35-3/4 X 72	965
1	Set of Tubes		11

2KW TRANSMITTING EQUIPMENT TAQ-5,-6,-6b,-9,-10



2KW Transmitting Equipment TAQ-5,-6,-6b,-9,-10

FUNCTIONAL DESCRIPTION

The TAQ-5, -6, -6b, and -9 are for installation on Naval vessels, but the TAQ-10 is for shore station use. The units are cap-

able of providing A1 and A2 telegraphic operation at any keying speed from fifty to 100 words per minute at all frequencies within the 175 to 600 kc range. They are compact, medium powered units that may be controlled

Radio-Transmitters

TAQ-5,-6,-6b,-9,-10 2KW TRANSMITTING EQUIPMENT

locally at the transmitter, or from a remote location with a four, or six-wire remote control unit, or a land line control unit. The TAQ Series are electrically and mechanically similar, with the exception of the TAQ-10 which has been modified and supplied with a land line control unit.

No field changes in effect at time of preparation (22 April 1958).

Contract NXs-4843, dated 21 May 1942 (TAQ-10).

Approximate Cost: \$12000.00 with equipment spares.

RELATION TO OTHER EQUIPMENT

Equipment Required but not Supplied: Telegraph Key and four or six wire remote control unit.

TUBE AND/OR CRYSTAL COMPLEMENT

TAQ-5, -6, -6b, -9
 (3) 803 (2) 851
 Total Tubes: (5)

TAQ-10
 (1) 5Z3 (3) 803
 (2) 807 (2) 851
 Total Tubes: (8)

No Crystals used.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY

RANGE: 175 to 600 kc.

CONTROL: MO.

EMISSION: A1, A2.

POWER OUTPUT: 2 kw on A1; 1 kw on A2.

KEYING DATA

TAQ-5, -6, -6b, -9: Relay keying; 100 wpm max.

TAQ-10: Vacuum tube keying; 500 wpm on A1. Relay keying 100 wpm on A1, 50 wpm on A2.

POWER SOURCE REQUIRED: 115 or 230 v DC, 8.6 kw or 220 or 440 v, 60 cps, 3 ph, 8 kw.

REFERENCE DATA AND LITERATURE

NAVSHIPS 900248: Technical Manual for Navy Models TAQ-5, -6 and Modifications for TAQ-5a, -6a, -6b, -7, -8 Radio Telegraph Transmitting Equipment.

NAVSHIPS 900273: Technical Manual for Navy Model TAQ-9 Radio Telegraph Transmitting Equipment.

NAVSHIPS 900549: Technical Manual for Radio Telegraph Transmitting Equipment Navy Model TAQ-10.

MANUFACTURER'S OR CONTRACTOR'S DATA

General Electric Co, Schenectady, N.Y.
 Contract NOs-62958, dated 21 September 1938 (TAQ-5, -6, -6b).
 Contract NOs-70094, dated 18 September 1939 (TAQ-5, -6, -6b, -9).

TYPE CLASSIFICATION	
DESIGN COGNIZANCE	BUSHIPS
PROCUREMENT COGNIZANCE	TAQ-5;-9 Spec RE13A351J;
STOCK NO.	TAQ-6; Ships S-500-1257; TAQ-10; Ships S-500-4372

SHIPPING DATA

NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
1	Radio Transmitter			1816
1	Motor-Generator			1440
1	Magnetic Controller			222
1	Power Transfer Switch			60
1	Land Line Control Unit			280
	Equipment Spares			1100
	Vacuum Tubes			12

April 1958

Radio-Transmitters

2KW TRANSMITTING EQUIPMENT TAQ-5,-6,-6b,-9,-10

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radio Transmitter		
	CG-52113* (TAQ-5,-6,-6B)	72 X 49-1/4 X 34-1/8	985
	CG-52114** (TAQ-5,-6,-6B)	72 X 49-1/4 X 34-1/8	970
	CG-52115*** (TAQ-5,-6,-6B)	72 X 49-1/4 X 34-1/8	1050
	CG-52182# (TAQ-9)	72 X 49-1/4 X 34-1/8	985
	CG-52183*** (TAQ-9)	72 X 49-1/4 X 34-1/8	1050
	CG-52279 (TAQ-10)	72 X 49-1/4 X 34-1/8	960
1	Motor-Generator		
	CG-21358* (TAQ-5,-6,-6B,-9)	27 X 78-3/8 X 22-1/4	1325
	CG-21358A* (TAQ-9)	27 X 78-3/8 X 22-1/4	1325
	CG-21359** (TAQ-5,-6,-6B,-9)	27 X 78-3/8 X 22-1/4	1325
	CG-21359A** (TAQ-9)	27 X 78-3/8 X 22-1/4	1325
	CG-21360*** (TAQ-5,-6,-6B,-9)	27 X 78-3/8 X 22-1/4	1185
	CG-21360A*** (TAQ-9)	27 X 78-3/8 X 22-1/4	1185
	CG-21892*** (TAQ-10)	26-11/16 X 71-5/8 X 21-1/2	1200
1	Magnetic Controller		
	CA0-21366* (TAQ-5,-6,-6B,-9)	22-1/2 X 16-1/2 X 14-1/2	109
	CA0-21367** (TAQ-5,-6,-6B,-9)	22-1/2 X 13-1/2 X 14-1/2	74
	CG-21368*** (TAQ-5,-6,-6B,-9)	26-7/16 X 27 X 12-19/32	140
	CG-21369*** (TAQ-5,-6,-6B,-9)	26-7/16 X 27 X 12-19/32	140
	CG-21896*** (TAQ-10)	27 X 25 X 10-7/8	100
1	Power Transfer Switch		
	CG-24092 (TAQ-10)	16 X 12-1/2 X 9-1/4	26
1	Land Line Control Unit		
	CG-23269 (TAQ-10)	14-1/2 X 42-1/8 X 24	165
1	Set of Vacuum Tubes		
1	Set of Equipment Spares		
1	Set of Conversion Parts##		

*For 115 v Operation.

**For 230 v DC Operation.

***For 220/440 v AC Operation.

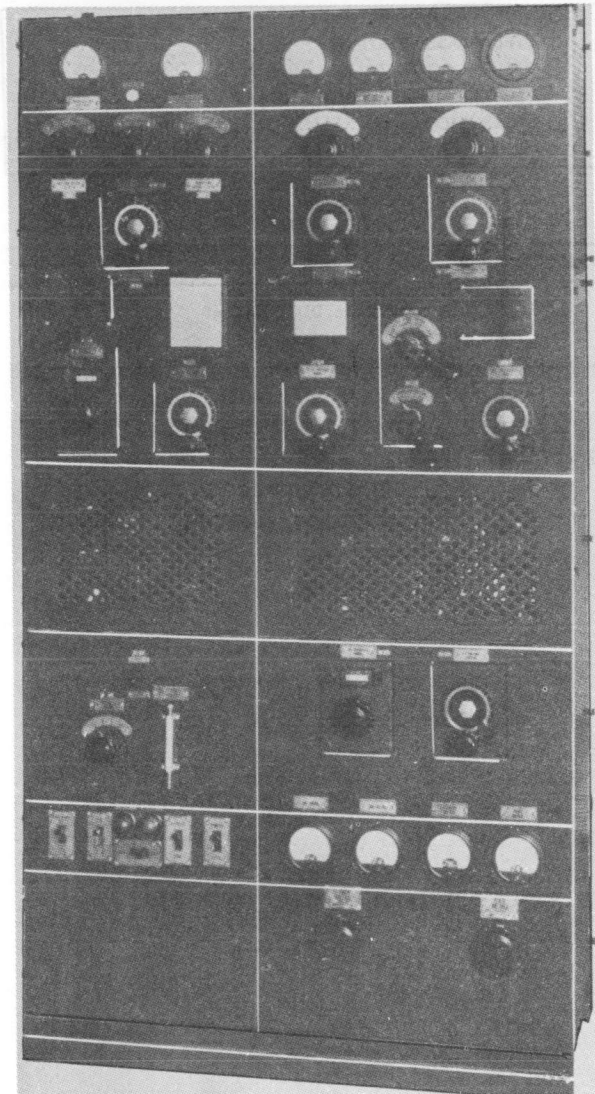
#For 115/230 v DC Operation.

##For Converting 115 v DC to 230 v DC.

August 1957

RADIO TELEGRAPH TRANSMITTING EQUIPMENT

Radio-Transmitters

TAR-2

Radio Telegraph Transmitting Equipment TAR-2

FUNCTIONAL DESCRIPTION

The Model TAR-2 is designed for installation on certain classes of submarines. It is a complete equipment and includes everything necessary for taking power from a 120 or 230 volt direct-current ships power supply and delivering it to the antenna in the form of telegraphically keyed pure continuous wave and modulated continuous radio frequency energy in the 300 to 600 kilocycle band, and pure continuous wave radio frequency energy in all other bands.

It has been designed for a minimum of weight and to give maximum output in the extremely small space allowed.

No field changes in effect at time of preparation (3 January 1957).

RELATION TO OTHER EQUIPMENT

Equipment Required but not Supplied: (1) Crystal Frequency Indicator NT-3942.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE

INTERMEDIATE: 300 to 600 kc.

HIGH

BAND 1: 4000 to 4525 kc.

BAND 2: 8000 to 9050 kc.

BAND 3: 12000 to 13575 kc.

BAND 4: 16000 to 18100 kc.

POWER OUTPUT: 200 W.

EMISSION

INTERMEDIATE FREQUENCY: CW, MCW.

HIGH FREQUENCY: CW.

FREQUENCY CONTROL

INTERMEDIATE FREQUENCY: Master oscillator.

HIGH FREQUENCY: Crystal or master oscillator.

MODULATION FREQUENCY: 800 cps.

KEYING SPEED: 40 wpm max.

POWER REQUIREMENTS: 120 or 230 v DC.

ANTENNA REQUIREMENTS

TYPE: Flat top or single loop.

MANUFACTURER'S OR CONTRACTOR'S DATA

Westinghouse Electric and Manufacturing Company, Chicopee Falls, Mass.
Contract NOs-18078, dated 30 June 1930.

TUBE AND/OR CRYSTAL COMPLEMENT

(4) 860 (1) 38111A

Total Tubes: (5)

(4) Operating Crystals

Total Crystals: (4)

TAR-2

RADIO TELEGRAPH TRANSMITTING EQUIPMENT

UNCLASSIFIED

August 1957

REFERENCE DATA AND LITERATURE

Technical Manual for Navy Model TAR-2 Intermediate and High Frequency Radio Telegraph Transmitting Equipment.

TYPE CLASSIFICATION	
DESIGN COGNIZANCE	BUSHIPS
PROCUREMENT COGNIZANCE	
STOCK NO.	

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Transmitter NT-4218	14-3/16 X 32 X 60	470
1	Filter Unit NT-4222	13-1/2 X 13-7/8 X 15-13/16	42
1	Motor-Generator NT-3865 (120 v DC) or NT-4490 (230 v DC)	15 X 17-7/8 X 36-3/8	500
1	Starter NT-4492 (120 v DC) or NT-4491 (230 v DC)	11-1/16 X 14-1/8 X 19-7/16	75
1	Set of Spare Parts		

UNCLASSIFIED

April 1959

Radio-Transmitter

RADIO TELEGRAPH TRANSMITTING EQUIPMENT

TAW-a

FUNCTIONAL DESCRIPTION

The Navy Model TAW-a Radio Telegraph Transmitting Equipment is designed for continuous service under telegraphic operating conditions. It includes all necessary apparatus and control devices to take power from either of duplicate incoming 11,500 volt, 3 phase, 60 cycle power lines; convert this power to radio frequency power at the desired frequency, and transmit this radio frequency power by the use of the antenna system.

The auxiliary equipment includes the devices used to supply and control input power air and water to cool the transmitter. This includes switchgear, plate transformers, auxiliary transformers, filament motor generators, bias motor-generators, water pumps, water tanks, heat exchangers, and air blowers.

The equipment was designed originally for use in the permanent Naval radio shore station at Lualualei, T. H.

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

RELATION TO OTHER EQUIPMENT

Similar to Navy Model TAW except for modification to permit operation within range 15 to 34 kilocycles.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 15 to 34 kilocycles.
FREQUENCY STABILITY: $\pm 0.07\%$ after ten minute warm up period.

KEYING: Locally or remotely keyed at speeds up to 200 words per minute.

POWER REQUIREMENTS: 11,500 volts, 60 cycles, 3 phase, 1090 kilowatts.

COOLING SYSTEM: Air and water

EMISSION: A1.

MANUFACTURER'S OR CONTRACTOR'S DATA

General Electric Co., Schenectady, N. Y.
Contract NOs-36484 dated 31 May 1934
and Supplementary Contract NOs-36484
dated 26 June 1934.

TUBE AND/OR CRYSTAL COMPLEMENT

(1) 6X4	(1) 10Y
(6) 3B28	(1) 6C
(2) 845W	(3) 858
(8) 862A	(6) 870A

Total Tubes: (28)

No Crystals used.

REFERENCE DATA AND LITERATURE

GEI Technical Manual for Model TAW-a Radio Telegraph Transmitting Equipment.

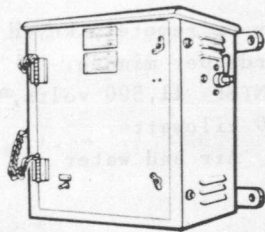
TYPE CLASSIFICATION
DESIGN COGNIZANCE BUSHIPS
PROCUREMENT COGNIZANCE
STOCK NO.
R.D.B. IDENT. NO.

UNCLASSIFIED

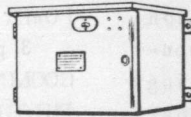
1.6 TAW-a: 1

RADIO TELEGRAPH TRANSMITTING EQUIPMENT

TBA Series



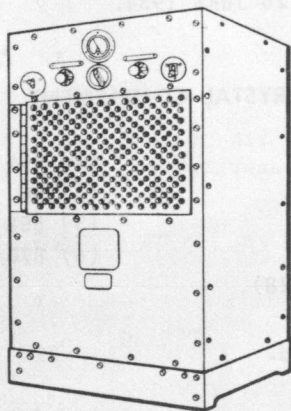
MAGNETIC CONTROLLER
NAVY TYPE CG-21897
OR
NAVY TYPE CG-21898



POWER TRANSFER SWITCH
NAVY TYPE CG-24092

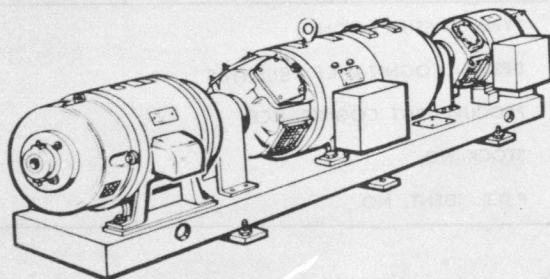
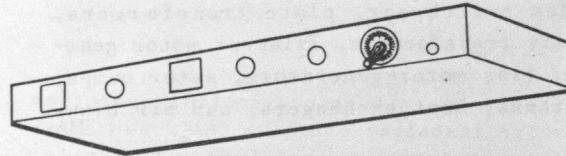


REMOTE CONTROL UNIT
NAVY TYPE CG-23401

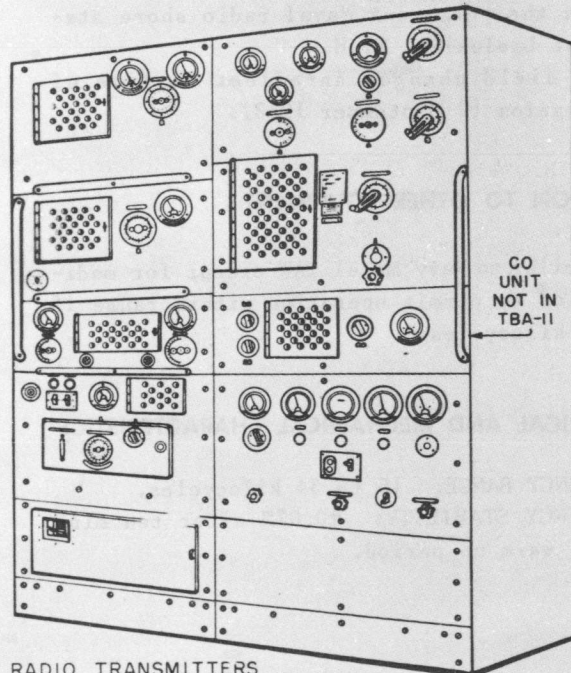


LAND LINE CONTROL UNIT
NAVY TYPE CG-23269

TRANSMISSION LINE COUPLING UNIT
NAVY TYPE CG-50118
NOT USED WITH TBA-9



MOTOR GENERATOR SET
NAVY TYPE CG-21899



RADIO TRANSMITTERS
NAVY TYPE CG-52281-A(TBA-12,-13),
[NAVY TYPE CG-52281(TBA-9) AND
NAVY TYPE CG-52280-A(TBA-11) ARE
SIMILAR IN APPEARANCE.]

CG UNIT
NOT IN
TBA-11

Radio Telegraph Transmitting Equipment TBA Series

January 1958

Radio-Transmitters

RADIO TELEGRAPH TRANSMITTING EQUIPMENT

TBA Series

FUNCTIONAL DESCRIPTION

The Model TBA Series equipments are high-frequency radio telegraph transmitters designed for use on large Naval vessels or at shore stations. They have a nominal power output of one kilowatt, the frequency being continuously variable over the range of 4 to 26 megacycles. Relay keying speeds of up to 100 words-per-minute are possible throughout the frequency range of these equipments and 500 word-per-minute vacuum tube keying is provided in the TBA-8, TBA-10 and TBA-11.

The TBA equipments are similar in appearance and performance, but differ mainly in the power supply equipment furnished for different line voltages. The TBA-8, 10, and 11 are supplied with land-line control units for shore use, while the TBA-4 is a TBA-3 modified to permit remote control operation for shore installations. The TBA-2 and TBA-5 are furnished with a rectifier power units, while the other models of the series are furnished with motor-generator sets.

No field changes in effect at time of preparation (6 August 1957).

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 4 to 26 mc.

POWER OUTPUT (NOMINAL): 1 kw.

EMISSION: A1.

KEYING SPEED

RELAY KEYING: 100 wpm max for all models.

VACUUM TUBE KEYING: 500 wpm max for TBA-8, 10, and 11 only.

FREQUENCY CONTROL

TBA, TBA-1, 2, 5, 9, 12, 13: Crystal or master oscillator.

TBA-1A, 3, 6, 8, 10, 11: Master oscillator.

POWER REQUIREMENTS

TBA: 230 v DC, 6.3 kw operating, 13.5 kw starting.

TBA-1: 115 or 230 v DC, 6.4 kw operating, 14 kw starting or 220 v, 60 cps, 3 ph, 6.5 kw operating, 14 kw starting or 440 v, 25 cps, 3 ph, 5.9 kw operating, 14 kw starting.

TBA-1A: 230 v DC, 6.4 kw operating, 14 kw starting.

TBA-2: 440 v, 60 cps, 3 ph, 5.28 kw operating, 5.76 kw starting.

TBA-3: 220 or 440 v, 60 cps, 3 ph, 4.98 kw operating, 30.2 kw starting or 230 v DC.

TBA-4: 220 or 440 v, 60 cps, 3 ph, 4.98 kw operating, 30.2 kw starting.

TBA-5: 440 v, 60 cps, 3 ph, 5.28 kw operating, 5.76 kw starting.

TBA-6: 115 or 230 v DC, 5.3 kw operating, 12 kw starting or 440 v, 60 cps, 3 ph, 4.6 kw operating, 30 kw standing.

TBA-8: 220 or 440 v, 60 cps, 3 ph, 4.6 kw operating, 57.5 amps for 440 v, 115 amps for 220 v starting.

TBA-9: 440 v, 60 cps, 3 ph, 4.6 kw operating, 57.5 kw starting.

TBA-10: 220 v, 60 cps, 3 ph, 4.6 kw operating, 30 kw starting.

TBA-11: 220 or 440 v, 60 cps, 3 ph, 4.6 kw operating, 57.5 amps for 440 v, 115 amps for 220 v starting.

TBA-12, 13: 220 v, 50 or 60 cps, 3 ph, 4.6 kw operating, 115 amps starting.

MANUFACTURER'S OR CONTRACTOR'S DATA

General Electric Company, Schenectady, N.Y.

Contract NOs-22697, dated 29 June 1931 (TBA).

Contract NOs-25521, dated 6 February 1932 (TBA-1, 1A).

Contract NOs-36942, dated 19 June 1934 (TBA-2).

Contract NOs-64824, dated 24 January 1939 (TBA-3, 4, 6, 10).

Contract NOs-74717, dated 27 June 1940 (TBA-5).

Contract NXs-4843, dated 21 May 1942 (TBA-8, 9).

Contract NXss-17380, dated 9 June 1943 (TBA-11).

Contract NXss-LL-18954, dated 9 June 1943 (TBA-12).

Contract NXss-LL-24746, dated 3 March 1943 (TBA-13).

Approximate Cost: \$22,000.00 with equipment spares.

TUBE AND/OR CRYSTAL COMPLEMENT

	TBA, 1,	
(1) 10Y	(5) 860	(2) 861
(2) 865		
Total Tubes: (10)		

RADIO TELEGRAPH TRANSMITTING EQUIPMENT

Radio-Transmitters

TBA Series

TBA-1A

(5) 860 (2) 861 (3) 865

Total Tubes: (10)

TBA-2

(1) 10Y (4) 3B28 (1) 4B27

(4) 860 (1) 861 (2) 865

(6) 872A

Total Tubes: (19)

TBA-3, 6, 12

(3) 803 (2) 833A (4) 837

Total Tubes: (9)

TBA-4, 8, 10, 11

(1) 5Z3 (3) 803 (2) 807

(2) 833A (4) 837

Total Tubes: (12)

TBA-5

(1) 10Y (4) 3B28 (1) 4B27

(5) 860 (2) 861 (2) 865

(6) 872A

Total Tubes: (21)

TBA-9, 13

(3) 803 (2) 833A (5) 837

Total Tubes: (10)

High Frequency Radio Telegraph Transmitting Equipment Model TBA.

NAVSHIPS 95290: Technical Manual for 1 KW High Frequency Radio Technical Transmitting Equipment Models TBA-1 and TBA-1A.

NAVSHIPS 95291: Technical Manual for 1-KW Radio Telegraph Transmitting Equipment Model TBA-2.

NAVSHIPS 900398-1B: Technical Manual for Navy Models TBA-3 and TBA-4 Radio Telegraph Transmitting Equipment.

NAVSHIPS 900406: Technical Manual for Navy Models TBA-6 and TBA-10 Radio Telegraph Transmitting Equipments. Technical Manual for 1-KW Radio Telegraph Transmitting Equipment Model TBA-5.

NAVSHIPS 900290-1B: Technical Manual for Navy Model TBA-8 Radio Telegraph Transmitting Equipment.

NAVSHIPS 900454: Technical Manual for Radio Telegraph Transmitting Equipments Navy Models TBA-9, TBA-11, TBA-12, and TBA-13.

TYPE CLASSIFICATION
DESIGN COGNIZANCE BUSHIPS
PROCUREMENT COGNIZANCE
STOCK NO.

REFERENCE DATA AND LITERATURE

NAVSHIPS 95289: Technical Manual for 1-KW

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
	TBA		
1	Transmitter NT-4613	33-5/32 X 49 X 72	1010
1	Motor-Generator Set G.E. Model 12A396	23-3/8 X 23-11/16 X 80-3/8	1660
1	Magnetic Controller NT-4615	14-1/2 X 16-1/2 X 23-3/4	76
1	Filter Unit NT-4614	6-5/16 X 17 X 25-1/8	82
1	Set of Equipment Spares		
	TBA-1		
1	Transmitter NT-52011(220 v, 3 ph, 60 cps) or	33-5/32 X 49 X 72	1105
	NT-52012(440 v, 3 ph, 25 cps) or	33-5/32 X 49 X 72	1215
	NT-52007(230 v DC) or	33-5/32 X 49 X 72	1040
	NT-52010(115 v DC)	33-5/32 X 49 X 72	1034
1	Motor-Generator Set G.E. Model 12A445(220 v, 3 ph, 60 cps) or		1835
	G.E. Model 12A444(440 v, 3 ph, 25 cps) or		2030
	G.E. Model 12A442(230 v DC) or		1745
	G.E. Model 12A443(115 v DC)		1745
1	Magnetic Controller NT-4228(220 v, 3 ph, 60 cps)		168

**RADIO TELEGRAPH TRANSMITTING
EQUIPMENT**

TBA Series

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
	or NT-4228A(440 v, 3 ph, 25 cps) or NT-21014(230 v DC) or NT-21011(115 v DC)		178 86 178
1	Filter Unit NT-53007(220 v, 3 ph, 60 cps) or NT-53008(440 v, 3 ph, 25 cps) or NT-53005(230 v DC) NT-53003(115 v DC)		80
1	Line Switch G.E. No. T-3873511G-2(220 v, 3 ph, 60 cps) or G.E. No. T-3873511-G1 (440 v, 3 ph, 25 cps)		38
1	Set of Equipment Spares TBA-1A		
1	Transmitter NT-52007A	33-5/32 X 49 X 72	1150
1	Motor-Generator Set G.E. Model 12A442		1745
1	Magnetic Controller NT-21014		86
1	Filter Unit NT-53005		80
1	Set of Equipment Spares TBA-2		
1	Transmitter NT-52040	33-5/32 X 49 X 72	1090
1	Rectifier NT-20027	23 X 33-3/4 X 72	1000
1	Set of Equipment Spares TBA-3(220 or 440 v AC)		
1	Transmitter NT-52116	31-1/8 X 48-3/8 X 72	975
1	Motor Generator Set NT-21375	16 X 17-9/16 X 70-7/16	815
1	Magnetic Controller NT-21373(220 v) or NT-21374(440 v)	10-1/4 X 20-1/4 X 22-1/8	65
1	Set of Equipment Spares TBA-3(230 v DC)		
1	Transmitter NT-52116	31-1/8 X 48-3/8 X 72	975
1	Motor-Generator Set G.E. Model 15A25	16 X 19-29/32 X 75-3/16	875
1	Magnetic Controller G.E. No. 6932902G14 for Motor-Generator	6-29/32 X 6-13/16 X 9-1/2	
1	Magnetic Controller G.E. No. 6932902G8 for Inverter	6-29/32 X 6-13/16 X 9-1/2	
1	Push-Button Station G.E. No. CR2943-A200K	2-15/32 X 2-15/16 X 4-9/16	
1	Auxiliary Relay G.E. No. CR2820-1097CS54	4 X 4-11/16 X 8	
1	Inverter G.E. Model 5H224A1		
1	Set of Equipment Spares TBA-4(220 or 440 v AC)		
1	Transmitter NT-52160	31-1/8 X 48-3/8 X 72	975
2	Motor-Generator Set NT-21375	16 X 17-9/16 X 70-7/16	815
2	Magnetic Controller NT-21373	10-1/4 X 20-1/4 X 22-1/8	65
1	Land Line Control Unit NT-23213	15-3/4 X 24 X 42-1/8	160
1	Power Transfer Switch NT-24077	9 X 11-1/2 X 14-9/16	14
1	Set of Equipment Spares TBA-5		
1	Transmitter NT-52040	33-5/32 X 49 X 72	1090
1	Rectifier NT-20027	23 X 33-3/4 X 72	1000
1	Set of Equipment Spares TBA-6		
1	Transmitter NT-52197(440 v AC) or NT-52195(115 v DC) or NT-52196(230 v DC)	24-7/8 X 49 X 72 24-7/8 X 49 X 72 24-7/8 X 49 X 72	953 953 953
1	Motor-Generator Set NT-21375A(440 v AC) or NT-21595(115 v DC) or NT-21596(230 v DC)	16 X 17-9/16 X 70-7/16 18-5/8 X 19-13/16 X 63-5/8 18-5/8 X 19-13/16 X 63-5/8	815 915 915
1	Magnetic controller NT-21374(440 v AC) or NT-21591(115 v DC) or NT-21592(230 v DC)	10-1/4 X 20-1/4 X 22-1/8 15-1/4 X 17-9/32 X 22 15-1/4 X 17-9/32 X 22	65 65 65

RADIO TELEGRAPH TRANSMITTING EQUIPMENT

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Set of Equipment Spares TBA-8(220 or 440 v AC)		135
1	Transmitter NT-52280	31-1/8 X 49 X 81-7/16	1091
2	Motor-Generator Set NT-21899	18-1/8 X 19-15/16 X 71-5/16	815
2	Magnetic Controller NT-21897	9-1/16 X 21-7/16 X 23-7/8	70
1	Land Line Control Unit NT-23269	15-3/4 X 24 X 42-1/8	160
1	Power Transfer Switch NT-24092	9-1/4 X 12-1/2 X 16	14
1	Transmission Line Coupling Unit NT-50118	9-1/4 X 28-1/2 X 48-3/8	116
1	Control Switch Assembly, 6-Wire, G.E. No. K-7878133		
1	Set of Equipment Spares TBA-9		1044
2	Transmitter NT-52281	31-1/8 X 49 X 72	820
2	Motor-Generator Set NT-21899	16-5/8 X 19-15/16 X 71-5/16	74
2	Magnetic Controller NT-21898	9-1/16 X 21-7/16 X 23-7/8	328
1	Set of Equipment Spares TBA-10		953
1	Transmitter NT-52282	24-7/8 X 49 X 72	815
2	Motor Generator Set NT-21375A	16 X 17-9/16 X 70-7/16	65
2	Magnetic Controller NT-21373	10-1/4 X 20-1/4 X 22-1/8	165
1	Land Line Control Unit NT-23269	15-3/4 X 24 X 42-1/8	26
1	Power Transfer Switch NT-24092	9-1/4 X 12-1/4 X 16	237
1	Set of Equipment Spares TBA-11(220 or 440 v AC)		1128
1	Transmitter NT-52280A	34-1/8 X 49-1/4 X 72	820
2	Motor-Generator Set NT-21899	16-5/8 X 19-5/16 X 71-5/16	80
2	Magnetic Controller NT-21897	10-7/8 X 24-7/8 X 26-15/16	165
1	Land Line Control Unit NT-23269	15-3/4 X 24 X 42-1/8	26
1	Power Transfer Switch NT-24092	9-1/4 X 12-1/4 X 16	196
1	Set of Equipment Spares TBA-12(220 v, 50 or 60 cps)		1128
1	Transmitter NT-52281A	34-1/8 X 49-1/4 X 72	820
2	Motor-Generator Set NT-21899	15-5/8 X 19-5/16 X 71-5/16	80
2	Magnetic Controller NT-21897	10-7/8 X 24-7/8 X 26-15/16	26
1	Power Transfer Switch NT-24092	9-1/4 X 12-1/4 X 16	40
1	Set of Crystals and Holders		227
1	Set of Equipment Spares TBA-13(220 v, 50 or 60 cps)		1128
1	Transmitter NT-52281A or NT-52301	34-1/8 X 49-1/4 X 72	820
2	Motor-Generator Set NT-21899	16-5/8 X 19-5/16 X 71-5/16	80
2	Magnetic Controller NT-21897 or NT-211036	10-7/8 X 24-7/8 X 26-15/16	26
1	Power Transfer Switch NT-24092	9-1/4 X 12-1/4 X 16	10
1	Set of Crystals and Holders		227
1	Set of Equipment Spares		

April 1958

RADIO-TRANSMITTING EQUIPMENT

TBC-1 THRU -5

FUNCTIONAL DESCRIPTION

The TBC-1 thru -5 equipments are shore-based HF radiotelegraph transmitters for shore-to-ship communication. Provision is made for facsimile transmission also.

The TBC-1 thru -5 are similar in operation; however, the TBC-2 thru -4 are considerable improvements over the TBC-1, the former having a higher power output and better keying facilities.

No field changes in effect at time of preparation (21 April 1958).

RELATION TO OTHER EQUIPMENT

Equipment Required but not Supplied: External Water cooling system, and Keying units.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 4.0 to 26.0 mc.
FREQUENCY CONTROL: Crystal or MO.
EMISSION: A1, A4.

POWER OUTPUT

TBC-1: 30 W.
TBC-2 THRU -4: 50 W.

KEYING SPEED

TBC-1: 100 wpm on A1, 40 cps on A4.
TBC-2 THRU -4: 200 wpm on A1, 1000 wpm on A4.

POWER SOURCE REQUIRED

TBC-1: 220 v, 60 cps, 3 ph, 75 kw.
TBC-2: 230 v, 60 cps, 3 ph, 108 kw*.
TBC-3: 230 v, 60 cps, 3 ph, 108 kw*, or 440 v, 25 cps, 3 ph, 108 kw*.
TBC-4 AND -5: 230 v, 60 cps, 3 ph, 108 kw*.

ANTENNA

TYPE: Single vertical wire, or 2-wire balance line.

NOTE: *Does not incl power for water cooling system.

MANUFACTURER'S OR CONTRACTOR'S DATA

General Electric Co, Schenectady, N. Y.
Contract NOS-27281 (TBC-1).
Contract NOS-59957, dated 31 March 1938 (TBC-2).

Contract NOS-74717, dated 27 June 1940 (TBC-3, -4 and -5).
Contract NXsy-26956 dated 3 April 1945 (TBC-4 and-5).

TUBE AND/OR CRYSTAL COMPLEMENT

TBC-1

(6) 10Y	(1) 4B27
(2) 865	(2) 217C
(2) 858	(6) 869B
(2) 3B28	(5) 860
(8) 872A	(2) 38111A
(2) 861	

Total Tubes: (38)

TBC-2 THRU -5

(4) 3B28	(1) 84/6Z4
(1) 4B27	(8) 872A
(2) 846	(2) 893
(2) 807	(3) 860
(6) 837	(7) 869B

Total Tubes: (36)

No Crystals Used.

REFERENCE DATA AND LITERATURE

GEI-6731: Technical Manual for 30/15 kw Radio Telegraph Transmitting Equipment TBC-1.
NAVSHIPS 95614: Technical Manual for Navy Model TBC-2 Radio Telegraph Transmitting Equipment.
NAVSHIPS 900855: Technical Manual for Navy Model TBC-3 Radio Telegraph Transmitting Equipment.
NAVSHIPS 900856: Technical Manual for Navy Models TBC-4 and TBC-5 Radio Telegraph Transmitting Equipments.

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	1-KW Exciter -52177** Exciter Unit -52155** or -52168***, -52168****	212.2 215.3	58 X 62 X 102 60 X 62 X 100	3128 2380

April 1958

Radio-Transmitters

TBC-1 THRU -5

RADIO-TRANSMITTING EQUIPMENT

SHIPPING DATA

NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
1	Auxiliary Rectifier -20113** or -20108**, -20151*** or -20151-A****	183.5	56 X 57 X 102	1740
1	50/40 -KW Power Amplifier -50074**	212.2	60 X 62 X 100	2207
	Power Amplifier -50071** or -50111*** or -50111-A****	326.8	66 X 81 X 102	4382
1	Main Rectifier -20115** or -20111** or -20152*** or -20260****	233.0	60 X 67 X 100	3652
		389	74 X 87 X 103	4862
1	Contacting Unit -29089** or -29092 ** or -29174*** or -29174-A****	389	74 X 87 X 103	3486
		123.1	54 X 54 X 73	2170
1	Main Plate Transformer -30597** or -30458-A** or 30846***	129.4	55 X 57 X 71	
		231.5	50 X 80 X 105	8420
		191.7	47 X 67 X 102	6150
3	Step Down Transformer -30595**	200	48 X 60 X 126	2100
1	Exciter PA Plate Transformer -30596**	13.4	19 X 34 X 36	710
10	Cable, Reel†	571.3	253 X 261 X 366	1696
1	Water Circulating Unit††	130.5	48 X 61 X 77	2060
2	Air/Water Cooling Unit††	171.8	98 X 104 X 118	2688
2	60/50-Cycle Conversion Kit††	16.0	20 X 34 X 37	206
2	Magnetic Starters	32.0	44 X 68 X 74	436

NOTE: **TBC-3 only
 ***TBC-4 only
 ****TBC-5 only
 †TBC-3, -4, and -5 only
 ††TBC-4 and -5

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Kw Exciter CG-21006†††		1010
	Exciter Unit		
	CG-52177**	92 X 50 X 34	1314
	CG-52101††††	93-1/2 X 50 X 36-3/4	1255
	CG-52155**	92 X 50 X 34	1255
	CG-52168***	92 X 50 X 34	1255
	CG-52168-A****	92 X 50 X 34	1255
1	Auxiliary Rectifier CG-20000†††		1965
	CG-20076††††	92 X 45 X 38-5/8	1392
	CG-20113**	92 X 45 X 34	1068
	CG-20108**	92 X 45 X 34	1392
	CG-20151***	92 X 45 X 34	1392
	CG-20151A****	92 X 45 X 34	1392
1	Amplifier CG-50000†††		1904
1	50/40 Kw Amplifier		
	Power Amplifier CG-50074**	92 X 54 X 59	2474
	CG-50056††††	100-5/16 X 54 X 64	2490
	CG-50071**	92 X 54 X 59	2490
	CG-50111***	92 X 54 X 59	2490
1	Main Rectifier Power Unit		
	CG-20001††††		
	CG-20077††††	100-5/16 X 74 X 49-1/4	2635

April 1958

RADIO-TRANSMITTING EQUIPMENT

TBC-1 THRU -5

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
	CG-20115**	92 X 74 X 42	2970
	CG-20111**	92 X 74 X 42	2635
	CG-20152***	92 X 74 X 42	2635
	CG-20260****	92 X 74 X 42	2635
1	Contacting Unit CG-23002†††		1979
	CG-29033††††	65-3/8 X 46 X 44	1790
	CG-29089**	65 X 46 X 44	1790
	CG-29092**	65 X 46 X 44	1790
	CG-29174***	65 X 46 X 44	1790
	CG-29174-A****	65 X 46 X 44	1790
1	Plate Transformer CG-30000†††		3550
	CG-30458††††	94-1/2 X 58-1/2 X 40-3/4	3860
	CG-30597**	40-3/4 X 94-1/2 X 58-1/2	7000
	CG-30458-A**	40-3/4 X 94-1/2 X 58-1/2	5000
	CG-30846†	40-3/4 X 94-1/2 X 58-1/2	5000
1	Water Cooling Unit CG-10000A†††		1143
	Cooling Unit CWH-10033††††	51-1/2 X 66 X 40	1800
	Cooling Unit CVN-10107†	88 X 92-1/4 X 71-1/4	1588
1	Tank and Circulating Unit		
	CWH-10171****	53 X 67-3/8 X 42	1290
	CWH-10171-A****	53 X 67-3/8 X 42	1290
3	Step-Down Power Transformer		
3	CG-30595**	51 X 40 X 95	1935
1	Exciter PA Plate Transformer		
	CG-30596**	29-3/4 X 26-2/3 X 16-3/8	600
1	Set of Equipment Spares		1426†††

NOTE: *Does not include power for water cooling system.

**TBC-3 only.

***TBC-4 only.

****TBC-5 only.

†TBC-3, 4 and 5.

††TBC-4 and 5.

†††TBC-1 only.

††††TBC-2 only.

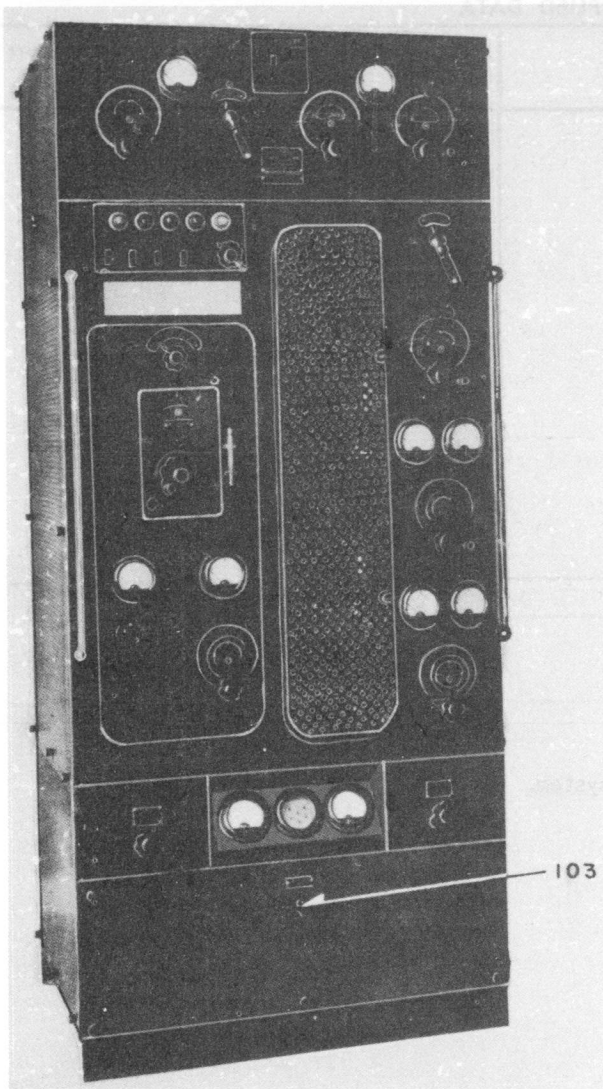
†††††TBC-4 and 5.

April 1959

Radio-Transmitters

RADIO TELEGRAPH TRANSMITTING EQUIPMENT

TBF



Transmitter, Navy Type CAY-52008

FUNCTIONAL DESCRIPTION

The Navy Model TBF is designed for use on all types of Naval vessels except certain types of submarines. It is capable of keying speeds up to 100 words per minute in the 2000 to 4525 kilocycle frequency range. It has provisions for current feeding or voltage feeding the antenna as may prove more desirable and the power output when functioning as either a 75 watt or 500 watt transmitter may be varied to a minimum value of 10 percent by means of a single control.

No field changes in effect at time of preparation (14 August 1958).

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 2000 to 4525 kc.
 POWER OUTPUT: 75 W and 500 W variable to 10%.
 FREQUENCY CONTROL: Temperature controlled master oscillator.
 KEYING SPEED: 100 wpm.
 POWER REQUIREMENTS: 220 v, 60 cps, 3 ph or 440 v, 25 cps, 3 ph or 115 v DC or 230 v DC.

MANUFACTURER'S OR CONTRACTOR'S DATA

Westinghouse Electric and Mfg Co, Chicopee Falls, Mass.
 Contract NOs-26769, dated 5 May 1932.

TUBE AND/OR CRYSTAL COMPLEMENT

(3) 860 (1) 861

Total Tubes: (4)

No Crystals used.

REFERENCE DATA AND LITERATURE

Technical Manual for Navy Model TBF Radio Telegraph Transmitting Equipment.

TYPE CLASSIFICATION

DESIGN COGNIZANCE BUSHIPS

PROCUREMENT COGNIZANCE

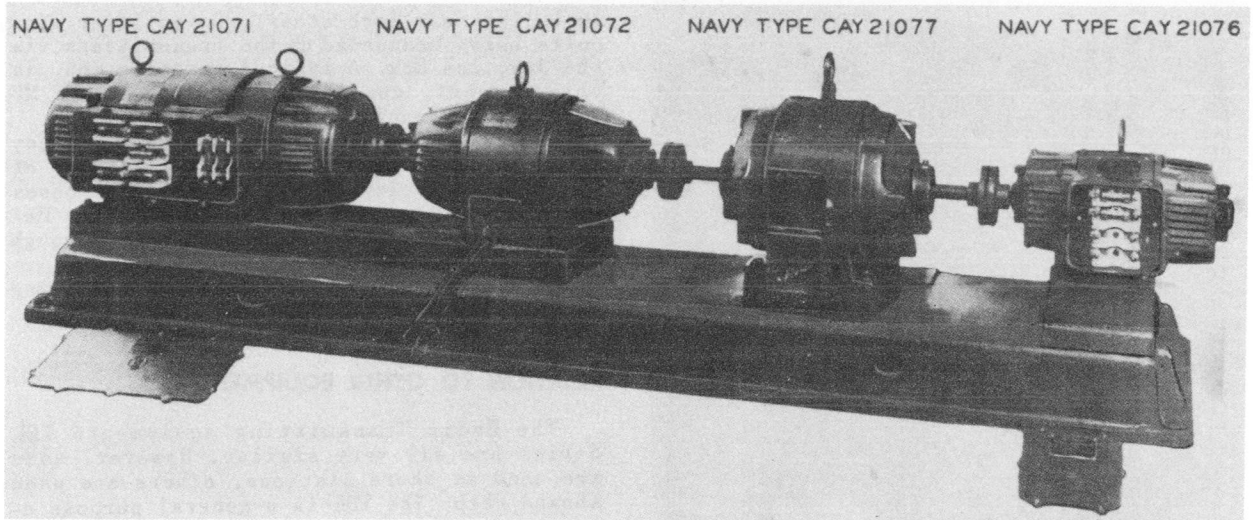
STOCK NO.

R.D.B. IDENT. NO.

Radio-Transmitters

TBF

**RADIO TELEGRAPH TRANSMITTING
 EQUIPMENT**

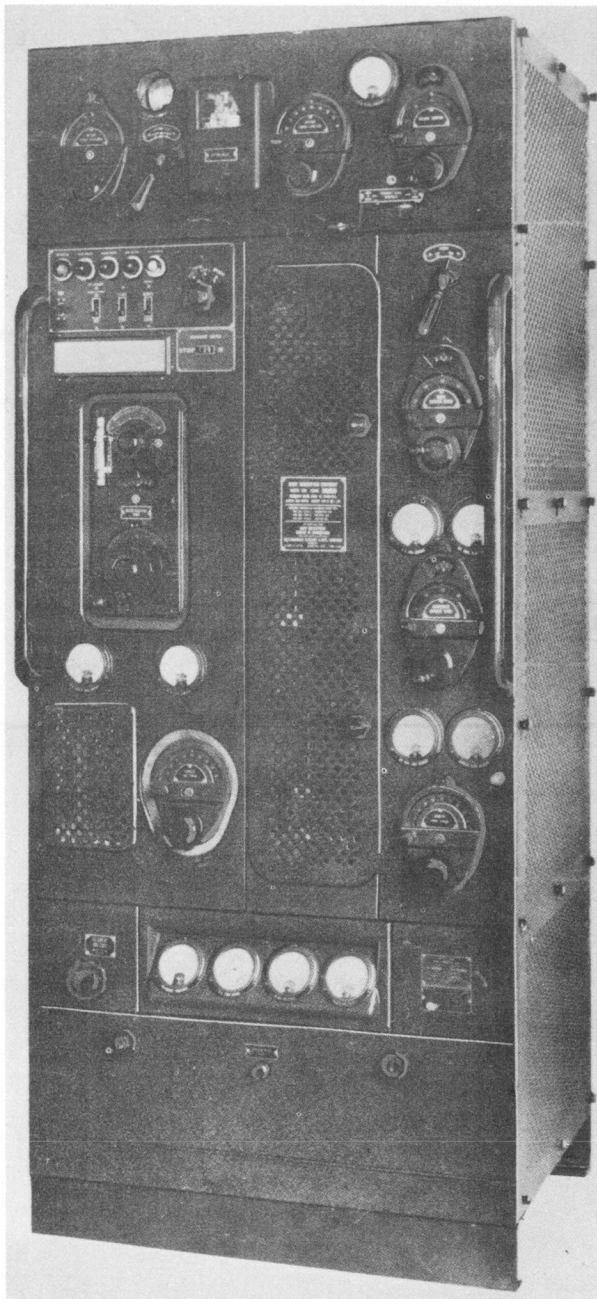


AC Motor Generator 60 Cycles

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radio Transmitter NT-52008	24 X 32 X 72	760
1	Motor-Generator Set (25 cps) or	18 X 24-1/4 X 96-13/16	1300
	Motor-Generator Set (60 cps) or	18 X 22-1/2 X 96-13/16	1150
	Motor-Generator Set (115 v DC) or	15-15/32 X 18-7/16 X 74-1/16	700
	Motor-Generator Set (230 v DC)	15-15/32 X 18-7/16 X 74-1/16	700
1	Motor Starter NT-21086(25 cps) or	6-9/16 X 10-1/2 X 17-3/8	30
	Motor Starter NT-21085(60 cps) or	6-9/16 X 10-1/2 X 17-3/8	30
	Motor Starter NT-21084(115 v DC) or	12-1/16 X 13-5/16 X 25-1/8	80
	Motor Starter NT-21038(230 v DC)	12-1/16 X 13-5/16 X 25-1/8	80
1	Set of Vacuum Tubes		
1	Set of Equipment Spares		

April 1958

RADAR TRANSMITTING EQUIPMENT**TBK, TBK-7**

Radio Transmitting Equipment TBK, TBK-7

FUNCTIONAL DESCRIPTION

The TBK, TBK-7 is a radio telegraph transmitter for ship or shore HF communications. It employs a junction box for use where two transmitters and two rectifier equipments are

installed near each other, the rectifier circuits being connected to the transmitters via the Junction Box. A typical installation, in this respect, consists of a TBK and the MF transmitting equipment TAJ.

The power output of the transmitter may be varied from full power to a low power of 75 watts for telegraphic signalling purposes by disconnecting the final RF amplifier. Remote control is possible aboard ship through use of a 4 or 6 wire system.

Data on this sheet reflects the following field changes: Field Change Number 3-TBK.

RELATION TO OTHER EQUIPMENT

The Radio Transmitting equipments TBK Series are all very similar. However, some are used at shore stations, others are used aboard ship. The TBK is a general purpose equipment.

The only other important difference is in the power equipment used; some equipments using rectifier units, others operating from motor generators.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQ RANGE: 2.0 to 18.1 mc.
 FREQ CONTROL: MO.
 EMISSION: A1.
 POWER OUTPUT: 500 W.
 KEYING SPEED: 100 words per minute.
 POWER SOURCE REQUIRED: 440 v, 60 cps, 3-ph.
 POWER SUPPLY EQUIP: Rectifier power unit.
 ANTENNA: 60 to 80 ft vert.

MANUFACTURER'S OR CONTRACTOR'S DATA

Westinghouse Electric and Mfg Co, Chicopee Falls, Mass.

Contract NOs-36091, dated 8 May 1934 (TBK).

Westinghouse Electric and Mfg Co, Baltimore, Maryland.

Contract NOs-58126, dated 15 December 1937 (TBK-7).

Approximate Cost: \$7020.00 with equipment spares (TBK-7).

TUBE AND/OR CRYSTAL COMPLEMENT

	TBK	
(4) 3B28		(1) 861
(2) 4B26		(6) 872A
(3) 860		
Total Tubes: (16)		
	TBK-7	
(1) 861		(3) 860
Total Tubes: (4)		

TBK, TBK-7

RADAR TRANSMITTING EQUIPMENT

April 1958

REFERENCE DATA AND LITERATURE

Technical Manual for Navy Model TBK Radio
Telegraph Transmitting Equipment.
Technical Manual for Navy Model TBK-7 Radio
Telegraph Transmitting Equipment.

TYPE CLASSIFICATION
DESIGN COGNIZANCE BUSHIPS
PROCUREMENT COGNIZANCE
STOCK NO.

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radio Transmitter Unit -52079** -52032*	24 X 32 X 72 24 X 32 X 72	695 695
1	Rectifier Power Unit -20018*	22-7/8 X 23-15/16 X 71-7/8	975
1	Motor Generator Unit -21242** C/O (1) High Voltage Generator -21240 (1) Low Voltage Generator and Exciter -21241	18-9/16 X 18-3/4 X 70-1/8	885
1	Motor Starter -21304**	8-1/2 X 11 X 17	30
1	Junction Box -23055*	11-7/8 X 23-7/16 X 46-1/8	150
1	Set of Equip Spares*	18 X 18-1/8 X 31-1/4	200
1	Spare Parts Box**	15-1/2 X 16-3/8 X 25-1/4	107
1	Spare Parts Box**	12-1/2 X 21-1/2 X 26-1/4	125
1	Spare Parts Box**	9-1/2 X 10-1/8 X 34-3/4	105
1	Spare Parts Box**	8-1/2 X 9 X 23-1/4	65

NOTE: *TBK only
**TBK-7 only

June 1961

Radio-Transmitters

RADIO TELEGRAPH TRANSMITTING EQUIPMENT TBK-1

FUNCTIONAL DESCRIPTION

The TBK-1 is designed for use on various types of Naval vessels or at shore stations.

The design of the transmitter unit is based on the master oscillator power amplifier principle and provision is made for current feeding or voltage feeding the antenna as may prove more desirable for the particular condition involved. The transmitter as controlled by the master oscillator is continuously variable as to the emitted frequency in the specified frequency band. The keying system provides for break-in operation and is designed for satisfactory service at keying speeds up to 100 words per minute. The power output may be varied from full power to a minimum of 25% by means of a single control on the rectifier unit.

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

ELECTRICAL AND MECHANICAL CHARACTERISTICS

TYPE OF EMISSION: A1.

KEYING SPEEDS: Up to 100 words per minute.

NOMINAL OUTPUT POWER: 75 and 500 watts

OPERATING FREQUENCY RANGE: 2,000 to 18,100 kc and 2,000 to 9,050 kc.

MANUFACTURER'S OR CONTRACTOR'S DATA

Westinghouse Electric Mfg Co., Chicopee Fall, Massachusetts.

TUBE AND/OR CRYSTAL COMPLEMENT

(4) 3B28	(6) 860
(4) 861	(6) 872A

Total Tubes: (20)

No Crystals used.

REFERENCE DATA AND LITERATURE

NAVSHIPS 900,123(B): Technical Manual for Naval Electronic Equipments.
 Technical Manual for Navy Model TBK Radio Telegraph Transmitting Equipment.

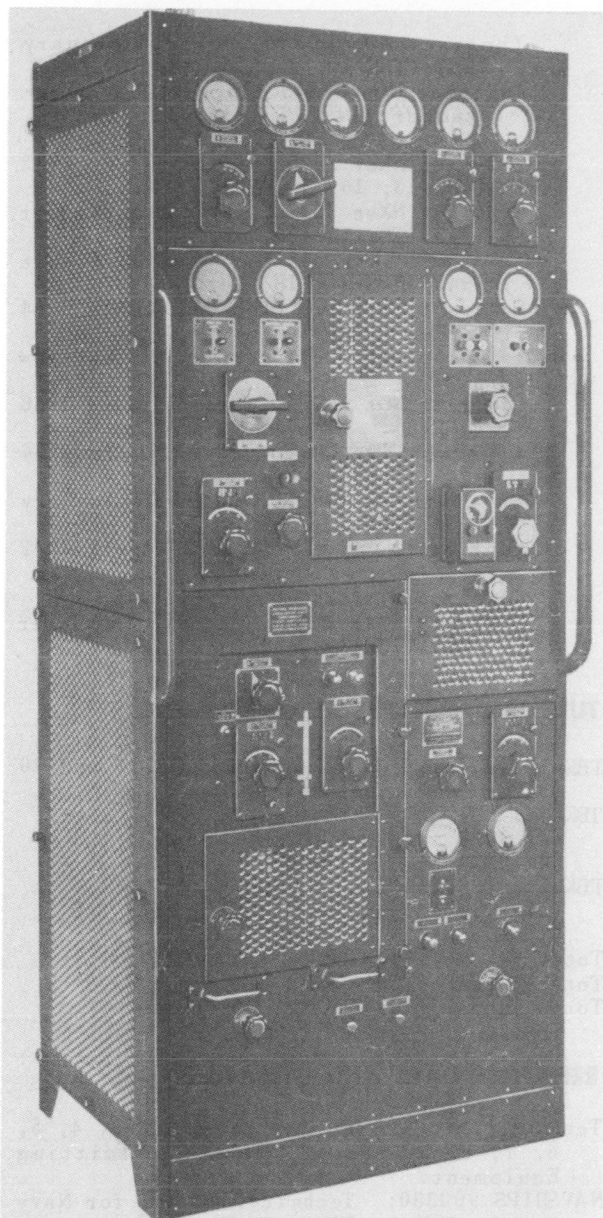
TYPE CLASSIFICATION (NAVY)
 DESIGN COGNIZANCE NAVY BUSHIPS
 PROCUREMENT COGNIZANCE
 STOCK NO.
 R.D.B. IDENT. NO.

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Transmitter	24 X 32 X 72	695
1	Rectifier	22-7/8 X 23-15/16 X 71-7/8	975
1	Junction Box	11-7/8 X 23-7/16 X 46-1/8	150
1	Set of Equipment Spares	18 X 18-1/8 X 31-1/4	200

RADIO TRANSMITTING EQUIPMENT

Radio-Transmitters
TBK-3 THRU 20



Radio Transmitting Equipment TBK-3 thru 20

FUNCTIONAL DESCRIPTION

The TBK-3, 5, 7, 8, 9, 10, 12, 13, 14, 17, 18, 19 and 20 are intended for use on all types of Naval vessels except certain types of submarines.

The TBK-6, 11, 15 and 16 are shore based equipments, while the TBK-4 is intended for use on either Naval vessels or shore bases.

All equipments are medium power HF transmitters capable of relay keying speeds up to 100 words per minute; however, the shore-

based equipments with the exception of the TBK-4 and 6, facilitate vacuum tube keying speeds up to 500 words-per-minute. The transmitter power output may be varied from full power to a minimum of 75 watts for telegraphic signaling by disconnecting the power amplifier.

Either local or remote operation is possible. Remote operation of any of the shipboard transmitters is possible by use of a standard 4 or 6 wire control system, while operation of the shore-based equipments is accomplished through use of a land line when telegraphing.

Data on this sheet reflects the following field changes, FC-1 for TBK-17, (C-2 and 3 for TBK series) (21 September 1956).

RELATION TO OTHER EQUIPMENT

All TBK and TBM series equipments are basically similar, the principle difference being the TBK's are strictly A1 radio telegraph transmitters, and therefore are not equipped with modulators. In addition, there is some flexibility in the type power equipment used with the various transmitters.

Equipment Required but not Supplied:
Antenna as required.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 2000 to 18100 kc.

FREQUENCY CONTROL: Master oscillator.

EMISSION: A1.

POWER OUTPUT: 75 or 500 W.

KEYING SPEED

SHORE: 500 wpm max (except TBK-4 and 6).

SHIPBOARD: 100 wpm max (includes TBK-4 and 6).

ANTENNA DATA: 80 ft max length outside trunk.

POWER REQUIREMENT DATA

TBK-3: 115 v DC (Motor NT-21160, Generators NT-21071 and 21072).

230 v DC (Motor NT-21161, Generators NT-21036 and 21037).

TBK-4: 440 v, 60 cps, 3 ph (Rectifier NT-20018).

TBK-5: 115 v DC (Motor NT-21243, Generators NT-21240 and 21241).

230 v DC (Motor NT-21244, Generators NT-21240 and 21241).

440 v, 60 cps, 3 ph (Motor NT-21242, Generators NT-21240 and 21241).

TBK-6: 220 or 440 v, 25 cps, 3 ph (Motor NT-21248, Generators NT-21246 and 21247).

220 v, 60 cps, 2 ph (Motor NT-21245, Generators NT-21240 and 21241).

TBK-6: 220 v, 60 cps, 3 ph (Motor NT-21242, Generators NT-21240 and 21241).

Radio-Transmitters
TBK-3 THRU 20

RADIO TRANSMITTING EQUIPMENT

230 v DC (Motor NT-21244, Generators NT-21240 and 21241).
 TBK-7: 440 v, 60 cps, 3 ph (Motor NT-21242, Generators NT-21240 and 21241).
 TBK-8: 115 v DC (Motor-Generator NT-21330, A, B or C).
 230 v DC (Motor-Generator NT-21331, A, B or C).
 220 or 440 v, 60 cps, 3 ph (Motor Generator NT-21332, A, B, or C).
 TBK-9: 115 v DC (Motor-Generator NT-21401).
 230 v DC (Motor-Generator NT-21402).
 220 or 440 v, 60 cps, 3 ph (Motor Generator NT-21403).
 TBK-10: Same as TBK-8.
 TBK-11: 220 v, 60 cps, single ph (Motor Generator NT-21671).
 220 v, 60 cps, 3 ph (Motor-Generator NT-21522).
 220 or 440 v, 25 cps, 3 ph (Motor-Generator NT-21521).
 TBK-12: Same as TBK-8.
 TBK-13: 115 v DC (Motor-Generator NT-21675).
 230 v DC (Motor-Generator NT-21676).
 220 or 440 v, 60 cps, 3 ph (Motor-Generator NT-21677).
 TBK-14: Same as TBK-8.
 TBK-15: 220 v, 60 cps, 3 ph (Motor-Generator NT-21677).
 TBK-16: 220 or 440 v, 50 or 60 cps, 3 ph (Rectifier Power Unit NT-20228).
 TBK-17: Same as TBK-8.
 TBK-18: 440 v, 60 cps, 3 ph (Motor-Generator NT-21677).
 TBK-19: 230 v DC (Motor-Generator NT-211340).
 220 or 440 v, 60 cps, 3 ph (Motor-Generator NT-211286).
 TBK-20: 115 v DC (Motor-Generator NT-21675).
 230 v DC (Motor-Generator NT-21676).

Contract NOs 80646, dated 8 January 1941 (TBK-11, 13, 15, 18, 20).
 Contract NOs 80646 sup, dated 21 September 1942 (TBK-11, 13, 15, 18, 20).
 Contract NXsr 18237, dated 1 July 1943 (TBK-13, 16, 18, 20).
 Contract NXsr 38688, dated 28 September 1943 (TBK-13, 16, 18, 20).
 Contract NXsr 36550, dated 23 August 1943 (TBK-13, 18, 20).
 Contract NXsr 51573, dated 14 July 1944 (TBK-13, 18, 20).
 Radio Corporation of America, Camden, New Jersey.
 Contract NOs 16006, dated 15 June 1938 (TBK-8).
 Contract NOs 70875, dated 10 January 1940 (TBK-10).
 Contract NOs 80750, dated 14 January 1941 (TBK-12).
 Contract NXs-655, dated 20 April 1942 (TBK-14).
 Contract NXss-28616 (TBK-17).
 Contract NXsr 38496, dated 30 September 1943 (TBK-19).

TUBE AND/OR CRYSTAL COMPLEMENT

TBK-3, 5, 6, 7, 8, 9, 10, 12, 13, 14, 17, 18, 19 and 20
 (3) 860 (1) 861
 TBK-4
 (4) 3B28 (2) 4B26 (1) 861
 (6) 872A (3) 860
 TBK-11, 15 and 16
 (1) OC3W (1) 5Z3 (3) 860
 (1) 861 (2) 807
 Total Tubes: (4) TBK-3, etc.
 Total Tubes: (16) TBK-4
 Total Tubes: (8) TBK-11, 15 and 16

REFERENCE DATA AND LITERATURE

Technical Manuals for Navy Model TBK-3, 4, 5, 6, 7, 8, 10 and 17, Radio Transmitting Equipment.
 NAVSHIPS 900380: Technical Manual for Navy Models TBK-9, TBM-4 Radio Transmitting Equipment.
 NAVSHIPS 900386: Technical Manual for Models TBM-6, 8, TBK-11, 15 Radio Transmitting Equipments.
 NAVSHIPS 95293: Technical Manual for Radio-Telegraph Transmitting Equipment Model TBK-12.
 NAVSHIPS 900388: Technical Manual for Navy Models TBM-5, 7, 9, 11, TBK-13, 18, 20 Radio Transmitting Equipment.
 NAVSHIPS 95294: Technical Manual for Navy Model TBK-14 Radio-Telegraph Transmitting Equipment.
 NAVSHIPS 900387: Technical Manual for Navy

MANUFACTURER'S OR CONTRACTOR'S DATA

Westinghouse Electric and Mfg. Company, Baltimore, Maryland.
 Contract NOs 36091, dated 8 May 1934 (TBK-3).
 Contract NOs 44507, dated 8 October 1935 (TBK-4).
 Contract NOs 47498, dated 25 March 1936 (TBK-5, 6).
 Contract NOs 58126, dated 15 December 1937 (TBK-7).
 Contract NOs 67051, dated 12 June 1939 (TBK-9, 11, 15).
 Contract NOs 72975, dated 8 May 1940 (TBK-9, 11, 13, 15, 18, 20).

RADIO TRANSMITTING EQUIPMENT

Radio-Transmitters
TBK-3 THRU 20

Models TBM-10, TBK-16 Radio Transmitting Equipments.
NAVSHIPS 900482: Technical Manual for Navy Model TBK-19 Radio-Telegraph Transmitting Equipment.

TYPE CLASSIFICATION
DESIGN COGNIZANCE
PROCUREMENT COGNIZANCE
STOCK NO.

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
	TBK-3 (115 or 230 v DC)		
1	Radio Transmitter 52031	24 X 32 X 72	760
1	Motor Generator (115 or 230 v DC)	15-15/32 X 18-7/16 X 74-1/16	700
1	Motor Starter 21158 (115 v DC) or 21159 (230 v DC)	12-9/16 X 14 X 25-1/8	80
1	Transmitter Spare Parts Box	18 X 18-1/8 X 31-1/4	155
1	Motor Generator Armature Box	9-1/2 X 21-3/4 X 33-1/2	185
1	Motor Generator Field Coil Box	9-1/2 X 11-1/2 X 34	83
	TBK-4 (440 v, 60 cps, 3 ph)		
1	Radio Transmitter 52032	24 X 32 X 72	688
1	Rectifier Power Unit 20018	22-7/8 X 23-15/16 X 71-7/8	976
1	Junction Box 23055	11-7/8 X 23-7/16 X 46-1/8	117
1	Remote Control Unit 23084	12-15/16 X 19 X 20	88
1	Auto Transformer 30286	9-3/4 X 11-13/16 X 21-3/4	171
1	Spare Parts Box (w/o junction box spares) or (with junction box spares)	18 X 18-1/8 X 31-1/4	213
		18 X 18-1/8 X 31-1/4	217
	TBK-5 (115 or 230 v DC)		
1	Radio Transmitter 52066	24 X 32 X 72	662
1	Motor Generator Unit	18-9/16 X 18-3/4 X 75	900
1	Starter 21250 (115 v DC) or 21251 (230 v DC)	14-1/2 X 15-1/4 X 28-1/2	90
1	Set of Spare Tubes		
1	Spare Parts Box	15-1/2 X 16-3/8 X 25-1/4	107
1	Spare Parts Box	14-1/2 X 21-1/2 X 33-3/8	164
1	Spare Parts Box	9-1/2 X 10-1/8 X 34-3/4	105
1	Spare Parts Box	8-1/2 X 9 X 23-1/4	65
1	Spare Parts Box	9-3/4 X 10-1/8 X 27	79
	TBK-5 (440 v, 60 cps, 3 ph)		
1	Radio Transmitter 52064	24 X 32 X 72	695
1	Motor Generator Unit	18-9/16 X 18-3/4 X 70-1/8	885
1	Starter 21249	9 X 10-5/8 X 18-3/4	30
1	Set of Spare Tubes		2
1	Spare Parts Box	15-1/2 X 16-3/8 X 25-1/4	107
1	Spare Parts Box	12-1/2 X 21-1/2 X 26-1/4	125
1	Spare Parts Box	9-1/2 X 10-1/8 X 34-3/4	105
1	Spare Parts Box	8-1/2 X 9 X 23-1/4	65
	TBK-6 (230 v DC)		
1	Radio Transmitter 52066	24 X 32 X 72	662
2	Motor Generator Unit	18-9/16 X 18-3/4 X 75	900
2	Starter 21251	14-1/2 X 15-1/4 X 28-1/2	90
1	Power Transfer Unit 23102	11 X 20-1/4 X 39-13/16	75

RADIO TRANSMITTING EQUIPMENT

EQUIPMENT SUPPLIED DATA			
QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Remote Control Unit 23100	12-15/16 X 19 X 20	53
1	Set of Spare Tubes		2
1	Spare Parts Box	15-1/2 X 16-3/8 X 25-1/4	115
1	Spare Parts Box	14-1/2 X 22-1/2 X 31-3/8	164
1	Spare Parts Box	9-1/2 X 10-1/8 X 34-3/4	105
1	Spare Parts Box	8-1/2 X 9 X 23-1/4	65
1	Spare Parts Box	9-3/4 X 10-1/8 X 27	79
	TBK-6 (220 v, 60 cps, 2 or 3 ph)		
1	Radio Transmitter 52064	24 X 32 X 72	695
2	Motor Generator Unit (2 or 3 ph)	18-9/16 X 18-3/4 X 70-1/8	885
2	Starter 21252 (3 ph) or 21253 (2 ph)	9 X 10-5/8 X 18-3/4	30
1	Power Transfer Unit 23101	11 X 20-1/4 X 39-13/16	75
1	Remote Control Unit 23099	12-15/16 X 19 X 20	91
1	Set of Spare Tubes		2
1	Spare Parts Box	15-1/2 X 16-3/8 X 25-1/4	110
1	Spare Parts Box	12-1/2 X 21-1/2 X 26-1/4	125
1	Spare Parts Box	9-1/2 X 10-1/8 X 34-3/4	105
1	Spare Parts Box	8-1/2 X 9 X 23-1/4	65
	TBK-6 (220 or 440 v, 25 cps, 3 ph)		
1	Radio Transmitter 52065	24 X 32 X 72	711
2	Motor Generator Unit (220 or 440 v)	18-1/2 X 22-1/16 X 72-1/8	1250
2	Starter 21254 (440 v) or 21259 (220 v)	9 X 10-5/8 X 18-3/4	30
1	Power Transfer Unit 23101	11 X 20-1/4 X 39-13/16	75
1	Remote Control Unit 23099	12-15/16 X 19 X 20	91
1	Set of Spare Tube		2
1	Spare Parts Box	15-1/2 X 16-3/8 X 25-1/4	115
1	Spare Parts Box	12-1/2 X 21-1/2 X 26-1/4	125
1	Spare Parts Box	9-1/2 X 10-1/8 X 34-3/4	105
1	Spare Parts Box	8-1/2 X 9 X 23-1/4	65
	TBK-7 (440 v, 60 cps, 3 ph)		
1	Radio Transmitter 52079	24 X 32 X 72	695
1	Motor Generator Unit	18-9/16 X 18-3/4 X 70-1/8	885
1	Starter 21304	8-1/2 X 11 X 17	30
1	Set of Spare Tubes		2
1	Spare Parts Box	15-1/2 X 16-3/8 X 25-1/4	107
1	Spare Parts Box	12-1/2 X 21-1/2 X 26-1/4	125
1	Spare Parts Box	9-1/2 X 10-1/8 X 34-3/4	105
1	Spare Parts Box	8-1/2 X 9 X 23-1/4	65
	TBK-8, 10, 12 (115 or 230 v DC)		
1	Radio Transmitter 52103 (115 v DC) or 52104 (230 v DC)	24-9/16 X 31-5/8 X 72	629
1	Motor Generator Unit 21330 (115 v DC) or 21331 (230 v DC)	19 X 23 X 74-1/4	1170
1	Magnetic Controller 21333 (115 v DC) or 21334 (230 v DC)	13 X 17 X 20-21/32	80

RADIO TRANSMITTING EQUIPMENT

EQUIPMENT SUPPLIED DATA			
QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
	TBK-8, 10, 12 (115 or 230 v DC)		
1	Spare Parts Box	18 X 18 X 36	165
1	Spare Parts Box	8 X 12 X 29	107
1	Spare Parts Box	6 X 6 X 22	47
1	Spare Parts Box	11 X 11 X 33	161
1	Spare Parts Box	9-1/2 X 9-1/2 X 21	92
	TBK-8, 10, 12 (220 or 440 v, 60 cps, 3 ph)		
1	Radio Transmitter 52105	24-9/16 X 31-5/8 X 72	664
1	Motor Generator Unit 21332	19 X 23 X 71-1/16	1150
1	Magnetic Controller 21335 (220v) or 21336 (440v)	9 X 16 X 19-21/32	48
1	Spare Parts Box	18 X 18 X 36	165
1	Spare Parts Box	8 X 12 X 23	87
1	Spare Parts Box	6 X 6 X 22	47
1	Spare Parts Box	11 X 11 X 33	161
	TBK-9 (115 or 230 v DC)		
1	Radio Transmitter 52126 (115 v) or 52127 (230 v)	24 X 32 X 72	720
1	Motor Generator Unit 21401 (115 v) or 21402 (230 v)	20-1/4 X 20-1/2 X 78-7/8	1062,
1	Starter 21409 (115 v) or 21410 (230 v)	16-7/8 X 17-1/2 X 26-1/4	110
		15-7/8 X 17-1/2 X 26-1/4	95
1	Set of Spare Tubes		2
1	Spare Parts Boxes	15-3/4 X 16-3/4 X 25-3/8	117
1	Spare Parts Boxes	9 X 23-1/2 X 34	164
1	Spare Parts Boxes	8 X 9-1/2 X 30	103
1	Spare Parts Boxes	6-5/8 X 8-1/4 X 24-3/4	54
1	Spare Parts Boxes	10-1/4 X 12-3/4 X 32	106
	TBK-9 (220 or 440 v, 60 cps, 3 ph)		
1	Radio Transmitter 52128	24 X 32 X 72	720
1	Motor Generator Unit 21403	20-3/8 X 20-1/2 X 78-7/8	1033
1	Starter 21411 (220 v) or 21412 (440 v)	11-5/8 X 17 X 24-1/4	80
		11-5/8 X 15 X 21-1/4	50
1	Set of Spare Tubes		2
1	Spare Parts Box	15-3/4 X 16-3/4 X 25-3/8	122
1	Spare Parts Box	9 X 23-1/2 X 34	110
1	Spare Parts Box	8 X 9-1/2 X 30	103
1	Spare Parts Box	6-5/8 X 8-1/4 X 24-3/4	54
	TBK-11 (220 or 440 v, 25 cps, 3 ph)		
1	Radio Transmitter 52169	24 X 32 X 72	810
1	Land Line Control Unit 23217	10-3/8 X 20-7/16 X 20-11/16	81
1	Power Transfer Panel 24084-A	11 X 20-1/4 X 39-13/16	108
2	Motor Generator Unit 21521	20-1/2 X 21-3/4 X 78-1/2	1250
2	Magnetic Controller 21609 (220 v) or 21512 (440 v)	11-5/8 X 17 X 23-1/4	80
1	Set of Spare Tubes		2.5
1	Spare Parts Box	15-3/4 X 16-3/4 X 25-3/8	143

TBK-3 THRU 20

RADIO TRANSMITTING EQUIPMENT

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
	TBK-11 (220 v, 60 cps, 1 or 3 ph)		
1	Radio Transmitter 52170	24 X 32 X 72	797
1	Land Line Control Unit 23216	10-3/8 X 20-7/16 X 20-11/16	81
1	Power Transfer Panel 24084-A	11 X 20-1/2 X 39-13/16	108
2	Motor Generator Unit 21671 (1 ph) or 21522 (3 ph)	20-3/8 X 20-1/2 X 74-21/32	1100
2	Magnetic Controller 21644 (1 ph) or 21610 (3 ph)	11-5/8 X 17 X 24-1/4 11-5/8 X 17 X 23-1/4	80 80
1	Set of Spare Tubes		2.5
1	Spare Parts Box	15-3/4 X 16-3/4 X 25-3/8	143
	TBK-13 (115 or 230 v DC)		
1	Radio Transmitter 52217 (115 v) or 52218 (230 v)	24 X 32 X 72 24 X 32 X 72	740 780
1	Motor Generator Unit 21675 (115 v) or 21676 (230 v)	20-5/16 X 20-3/8 X 78-13/16	1275
1	Magnetic Controller 21666 (115 v) or 21667 (230 v)	13-3/8 X 16 X 22-1/2	70
1	Set of Spare Tubes		2
1	Spare Parts Box	15-3/4 X 16-3/4 X 25-3/8	120
1	Spare Parts Box	11 X 17 X 28	121
1	Spare Parts Box	8-1/2 X 10 X 30	110
1	Spare Parts Box	6-3/4 X 8-1/2 X 24-1/2	55
1	Spare Parts Box	10-1/4 X 12-3/4 X 32	105
	TBK-13 (220 or 440 v, 60 cps, 3 ph)		
1	Radio Transmitter 52171	24 X 32 X 72	780
1	Motor Generator Unit 21677	20-3/4 X 22-1/8 X 74-21/32	1255
1	Magnetic Controller 21668 (220 v) or 21669 (440 v)	9-3/16 X 16-5/8 X 18-3/4	50
1	Set of Spare Tubes		2
1	Spare Parts Box	15-3/4 X 16-3/4 X 25-3/8	120
1	Spare Parts Box	11 X 17 X 28	121
1	Spare Parts Box	8-1/2 X 10 X 30	110
1	Spare Parts Box	6-3/4 X 8-1/2 X 24-1/2	55
	TBK-14 (115 or 230 v DC)		
1	Radio Transmitter 52103 (115 v) or 52104 (230 v)	24-9/16 X 31-5/8 X 72	629
1	Motor Generator Unit 21330-A, B, C (115 v) or 21331-A, B, C (230 v)	19 X 23 X 74-1/4	1170
1	Magnetic Controller 21333 (115 v) or 21334 (230v)	13 X 17 X 20-21/32	80
1	Spare Parts Box	18 X 18 X 36	165
1	Spare Parts Box	8 X 12 X 29	107
1	Spare Parts Box	6 X 6 X 22	47
1	Spare Parts Box	11 X 11 X 33	161
1	Spare Parts Box	9-1/2 X 9-1/2 X 21	92

RADIO TRANSMITTING EQUIPMENT

EQUIPMENT SUPPLIED DATA

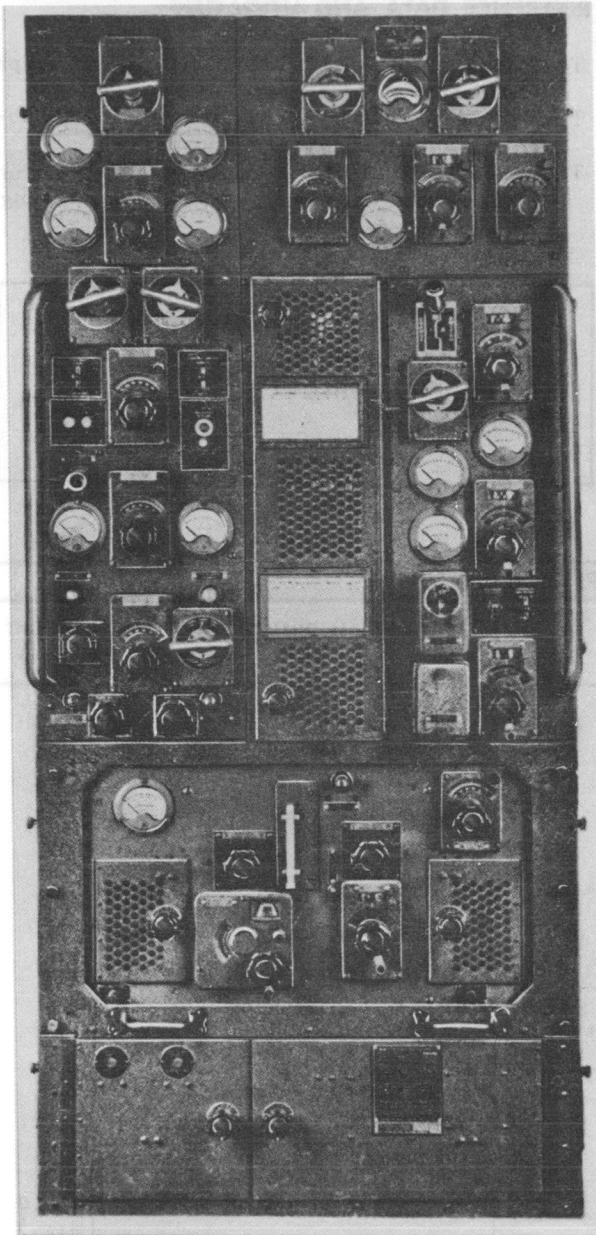
QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
	TBK-14 (220 or 440 v, 60 cps, 3 ph)		
1	Radio Transmitter 52105	24-9/16 X 31-5/8 X 72	664
1	Motor Generator Unit 21331-A, B, C	19 X 23 X 71-1/16	1150
1	Magnetic Controller 21336	9 X 16 X 19-21/32	48
1	Spare Parts Box	18 X 18 X 36	165
1	Spare Parts Box	8 X 12 X 23	87
1	Spare Parts Box	6 X 6 X 22	47
1	Spare Parts Box	11 X 11 X 33	161
	TBK-15 (220 v, 60 cps, 3 ph)		
1	Radio Transmitter 52170	24 X 32 X 72	797
1	Land Line Control Unit 23216	11-1/16 X 20-5/16 X 20-3/4	81
1	Power Transfer Panel 24084-A	11 X 20-1/4 X 39-13/16	108
2	Motor Generator Unit 21677	20-3/8 X 20-1/2 X 74-21/36	1105
2	Magnetic Controller 21668	9-3/16 X 16-5/8 X 18-3/4	50
1	Set of Spare Tubes		2.5
1	Spare Parts Box	15-3/4 X 16-3/4 X 25-3/8	140
	TBK-16 (220 or 440 v, 50 or 60 cps, 3 ph)		
1	Radio Transmitter 52170	24 X 32 X 72	789
1	Land Line Control Unit 23216	11 X 20-3/4 X 21-5/16	81
1	Rectifier Power Unit 20228	24 X 32 X 72	1000
1	Set of Spare Tubes		2.6
1	Spare Parts Box	29-1/4 X 24 X 36	123
1	Spare Parts Box	15-7/8 X 18 X 24	80
	TBK-17 (115 or 230 v DC)		
1	Radio Transmitter 52103 (115 v or 52104 (230 v))	24-9/16 X 31-5/8 X 72	629
1	Motor Generator Unit 21330-A (115 v) or 21331-A (230 v)	19 X 23 X 73-3/8	1170
1	Magnetic Controller 211104 (115 v) or 211105 (230 v)	10-1/2 X 20-1/2 X 23	95
		10-1/2 X 15-1/2 X 23	85
1	Spare Parts Box	15 X 18 X 18	
1	Spare Parts Box	8 X 12 X 29	105
1	Spare Parts Box	6 X 6 X 22	47
1	Spare Parts Box	11 X 11 X 33	161
1	Spare Parts Box	9-1/2 X 9-1/2 X 21	92
	TBK-17 (220 or 440 v, 60 cps, 3 ph)		
1	Radio Transmitter 42105	24-9/16 X 31-5/8 X 72	664
1	Motor Generator Unit 21332-A	18-7/8 X 22-9/16 X 70-1/8	1150
1	Magnetic Controller 211106 (220v) or 211107 (440v)	8-5/16 X 9-3/4 X 14	40
1	Spare Parts Box	15 X 18 X 18	
1	Spare Parts Box	8 X 12 X 23	87
1	Spare Parts Box	6 X 6 X 22	47
1	Spare Parts Box	11 X 11 X 33	161

RADIO TRANSMITTING EQUIPMENT

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
	TBK-18 (440 v, 60 cps, 3 ph)		
1	Radio Transmitter 52171	24 X 32 X 72	780
1	Motor Generator Unit 21677	20-3/4 X 22-1/8 X 74-21/32	1255
1	Magnetic Controller 21669	9-3/16 X 16-5/8 X 18-3/4	50
1	Set of Spare Tubes		2
1	Spare Parts Box	15-3/4 X 16-3/4 X 25-3/8	108
1	Spare Parts Box	11-3/4 X 14-3/4 X 17-3/4	93
1	Spare Parts Box	8-1/2 X 10 X 30	110
1	Spare Parts Box	6-3/4 X 8-1/2 X 24-1/2	55
	TBK-19 (230 v DC)		
1	Radio Transmitter 52104	24-9/16 X 31-5/8 X 72	629
1	Motor Generator Unit 211340	18-1/16 X 18-1/8 X 62-3/8	769
1	Magnetic Controller 211105	10-1/2 X 15-1/2 X 23	63
1	Spare Parts Box	15 X 19 X 25	150
1	Spare Parts Box	9-3/4 X 19 X 19-3/4	86
2	Spare Parts Box	9 X 10 X 24-1/2	78
1	Spare Parts Box	9 X 10 X 24-1/2	66
	TBK-19 (220 or 440 v, 60 cps, 3 ph)		
1	Radio Transmitter 52105	24-9/16 X 31-5/8 X 72	664
1	Motor Generator Unit 211286	17-13/16 X 18-1/8 X 58	727
1	Magnetic Controller 211106 (220 v) or 211107 (440 v)	8-5/16 X 10-3/8 X 14	30
1	Spare Parts Box	15 X 19 X 25	150
1	Spare Parts Box	9-3/4 X 19 X 19-3/4	86
2	Spare Parts Box	9 X 10 X 24-1/2	78
	TBK-20 (115 or 230 v DC)		
1	Radio Transmitter 52217 (115 v) or 52218 (230 v)	24 X 32 X 72 24 X 32 X 72	740 780
1	Motor Generator Unit 21675 (115v) or 21676 (230v)	20-5/16 X 20-3/8 X 78-13/16	1275
1	Magnetic Controller 211231 (115v) or 211232 (230v)	10-3/16 X 15 X 20-1/4 10-3/16 X 15 X 20-1/4	68 76
1	Set of Spare Tubes		2
1	Spare Parts Box	15-3/4 X 16-3/4 X 25-3/8	123
1	Spare Parts Box	11-3/4 X 17-3/4 X 17-3/4	123
1	Spare Parts Box	8-1/2 X 10 X 30	110
1	Spare Parts Box	6-3/4 X 8-1/2 X 24-1/2	55
1	Spare Parts Box	10-1/4 X 12-3/4 X 32	107

April 1958

RADIO TRANSMITTING EQUIPMENT**TBL,TBL-2,-3**

Radio Transmitting Equipment TBL, TBL-2,3

FUNCTIONAL DESCRIPTION

The TBL, TBL-2 and TBL-3 are medium power, medium frequency and high frequency transmitters for shipboard use. The transmitter incorporates two separate radio frequency circuits to permit coverage of the medium frequency and high frequency bands, only one

of which is used at a time. In the model TBL the medium frequency band is controlled by a crystal oscillator, and the high frequency band is controlled by a master oscillator. The TBL-2 and -3 employ master oscillator control of both medium and high frequency bands. With the use of suitable speech input equipment the TBL-2 and -3 provide A3 transmission throughout their respective frequency range.

Data on this sheet reflects the following Field Changes #3, # and #4 for TBL-2, -3 only.

RELATION TO OTHER EQUIPMENT

The TBL, TBL-2 and -3 are similar to Radio Transmitting Equipments TBL-4 thru -9 and TBL-12 and -13 except for differences in power supply voltages and modifications of power equipment.

Equipment Required but not Supplied: Speech input equipments for TBL-2 and -3.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 175 to 600 kc and 2.0 to 18.1 mc.

FREQUENCY CONTROL

TBL: Crystal or MO.

TBL-2 and -3: MO.

EMISSION

TBL: A1, A2.

TBL-2 and -3: A1,A2,A3 (when modulator is used).

POWER OUTPUT

TBL: 200 W.

TBL-2 and -3: A1, 200 W; A2, 100 W; A3 (when modulator is used), 50 W.

POWER SOURCE REQUIRED

TBL: 115 v or 230 v DC.

TBL-2,-3: 440 v, 60 cps, 3 ph, 3.4 kw; or 115 or 230 v DC, 3.2 KW.

MANUFACTURER'S OR CONTRACTOR'S DATA

RCA Victor Co Inc, Camden, N.J. (TBL).

Contract NOs-37173, dated 2 July 1934.

Westinghouse Electric Mfg Co, Chicopee Falls Works, Chicopee Falls Mass (TBL-2).

Contract NOs-47359 dated 16 March 1936.

Westinghouse Electric and Mfg Co, Baltimore, Md (TBL-3).

Radio-Transmitters

TBL,TBL-2,-3**RADIO TRANSMITTING EQUIPMENT**

April 1958

Contract NOs-58115, dated 14 December 1937.

REFERENCE DATA AND LITERATURE

Technical Manual for Model TBL Radio-Telegraph Transmitting Equipment.

Technical Manual for Model TBL-2 Radio-Telegraph Transmitting Equipment.

Technical Manual for Navy Model TBL-3 Radio Telephone and Telegraph Transmitting Equipment.

TUBE AND/OR CRYSTAL COMPLEMENT

TBL

(2) 2A3	(1) 84-6Z4
(1) 5Z3	(4) 860
(2) 6D6	(2) 803

Total Tubes: (12)

TBL-2,-3

(2) 803	(4) 860
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Total Tubes: (6)

No Crystals.

TYPE CLASSIFICATION

DESIGN COGNIZANCE BUSHIPS

PROCUREMENT COGNIZANCE

STOCK NO.

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
	TBL(115 v DC)		
1	Transmitter Unit -52043	24 x 32 x 72	800
1	Motor -21154	15 x 16-1/8 x 20-7/8	730
1	Generator -21156 or -21157	15 x 13 x 18	
1	Motor Starter -21070A	12-1/2 x 13-1/8 x 22-1/2	35
1	Set of Equip Spares		592
	TBL(230 v DC)		
1	Transmitter Unit -52042	24 x 32 x 72	800
1	Motor -21155	15 x 16-1/8 x 20-7/8	730
1	Generator -21156 or -21157	15 x 13 x 18	
1	Motor Starter -21069A	12-1/2 x 13-1/8 x 22-1/2	35
1	Set of Equip Spares		592
	TBL-2(115 v DC)		
1	Transmitter Unit -52059	24 x 32 x 72	800
1	Motor -21229	15 x 16-1/8 x 20-7/8	730
1	Generator -21232 or -21233	12-7/8 x 15-13/16 x 19-5/8	
1	Motor Starter -21234	12-7/8 x 15-13/16 x 19-5/8	
1	Motor Starter -21234	11-1/2 x 12-1/2 x 17-1/2	60
1	Filter Unit -53036	9-3/16 x 13-1/2 x 18-1/2	56.0
1	Set of Equip Spares		416
	TBL-2(230 v DC)		
1	Transmitter Unit -52060	24 x 32 x 72	800
1	Motor -21230	15 x 16-1/8 x 20-7/8	730
1	Generator -21232 or -21233	12-7/8 x 15-13/16 x 19-5/8	
11	Motor Starter -21235	12-7/8 x 15-13/16 x 19-5/8	
1	Motor Starter -21235	11-1/2 x 12-1/2 x 17-1/2	60
1	Filter Unit -53036	9-3/16 x 13-1/2 x 18-1/2	56.0
1	Set of Equip Spares		416
	TBL-2(440 v, 60 cps, 3 ph)		
1	Transmitter Unit -52061	24 x 32 x 72	800

April 1958

RADIO TRANSMITTING EQUIPMENT

Radio-Transmitters

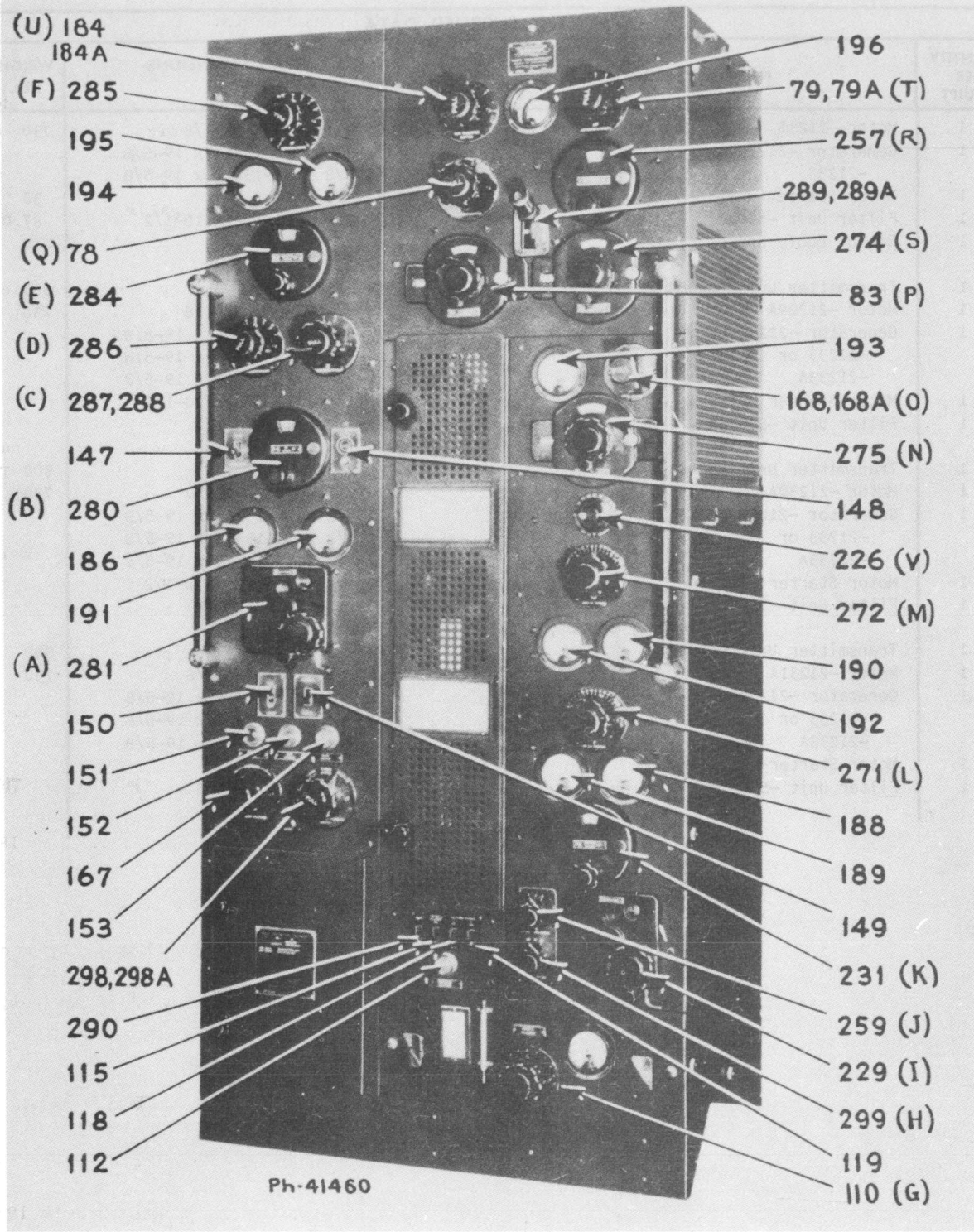
TBL,TBL-2,-3

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Motor -21231	15 x 16-1/8 x 20-7/8	730
1	Generator -21232 or -21233	12-7/8 x 15-13/16 x 19-5/8 12-7/8 x 15-13/16 x 19-5/8	
1	Motor Starter -21236	8 x 10 x 14	30
1	Filter Unit -53037	9-3/16 x 13-1/2 x 18-1/2	87.0
1	Set of Equip Spares TBL-3(115 v DC)		416
1	Transmitter Unit -52084	24 x 32 x 72	800
1	Motor -21229A	15 x 16-1/8 x 20-7/8	730
1	Generator -21232 or -21233 or -21233A	12-7/8 x 15-13/16 x 19-5/8 12-7/8 x 15-13/16 x 19-5/8 12-7/8 x 15-13/16 x 19-5/8	
1	Motor Starter -21234A	12-1/4 x 13-1/2 x 20-1/2	
1	Filter Unit -53036A TBL-3(230 v DC)	9 x 13-1/4 x 18-1/2	
1	Transmitter Unit -52083	24 x 32 x 72	800
1	Motor -21230A	15 x 16-1/8 x 20-7/8	730
1	Generator -21232 or -21233 or -21233A	12-7/8 x 15-13/16 x 19-5/8 12-7/8 x 15-13/16 x 19-5/8 12-7/8 x 15-13/16 x 19-5/8	
1	Motor Starter -21235A	12-1/4 x 13-1/2 x 20-1/2	
1	Filter Unit -53036A TBL-3(440 v, 60 cps, 3 ph)	9 x 13-1/4 x 18-1/2	
1	Transmitter Unit -52082	24 x 32 x 72	800
1	Motor -21231A	15 x 16-1/8 x 20-7/8	730
1	Generator -21232 or -21233 or -21233A	12-7/8 x 15-13/16 x 19-5/8 12-7/8 x 15-13/16 x 19-5/8 12-7/8 x 15-13/16 x 19-5/8	
1	Motor Starter -21236A	8-1/2 x 11 x 17	
1	Filter Unit -53037A	9 x 13-1/4 x 18-1/2	

RADIO TELEGRAPH TRANSMITTING EQUIPMENT

TBL-1

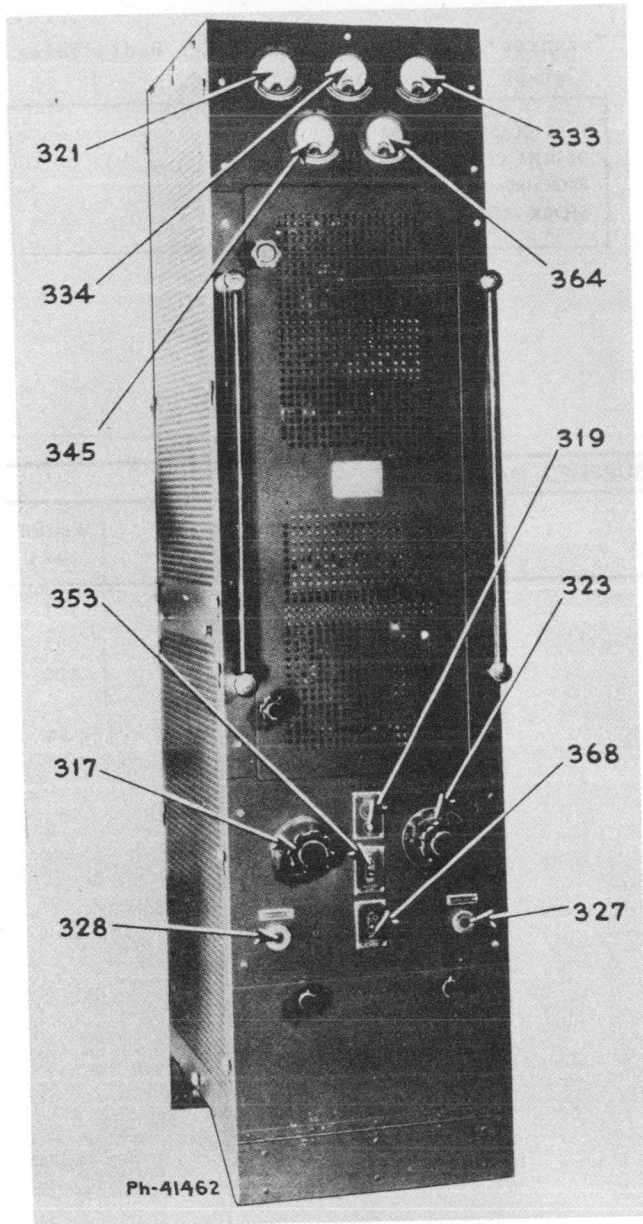


Transmitter Unit TBL-1

TBL-1

RADIO TELEGRAPH
TRANSMITTING EQUIPMENT

FUNCTIONAL DESCRIPTION



Rectifier Unit TBL-1
Radio-Telegraph
Transmitting-Equipment TBL-1

The Model TBL-1 is designed primarily for service on certain types of submarines, destroyers, cruisers and similar types of vessels, and is capable of reliable communication in both the intermediate and high-frequency ranges. It is capable of either CW or MCW in the 175 to 600 kilocycle range, and of CW in the 2000 to 18100 kilocycle range. In the high frequency range the operation may be either crystal controlled or master oscillator controlled.

Automatic, high speed break-in operation is provided by the addition of Antenna Control C-1281/U to equipments installed in submarines by Field Change No. 3 to models TBL and TBL-1.

Data on this sheet reflects the Following Field Changes, FC-3 (28 December 1956).

RELATION TO OTHER EQUIPMENT

Similar to other models of TBL series.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 170 to 600 kc and 2 to 18.1 mc.

POWER OUTPUT: 200 W.

EMISSION: CW, MCW.

FREQUENCY CONTROL: Crystal or master oscillator.

POWER REQUIREMENTS: 440 v, 60 cps, 3 ph, 3 kw, 4.5 amps max per ph.

MANUFACTURER'S OR CONTRACTOR'S DATA

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

Contract NOs-37173, dated 2 July 1934.

Approximate Cost: \$9480.00 with equipment spares.

RADIO TELEGRAPH TRANSMITTING EQUIPMENT

TBL-1

TUBE AND/OR CRYSTAL COMPLEMENT

(1) 865 (4) 3B28
(1) 10Y (2) 83
(4) 860 (6) 872A
Total Tubes: (18)
(9) NT-40000
Total Tubes: (9)

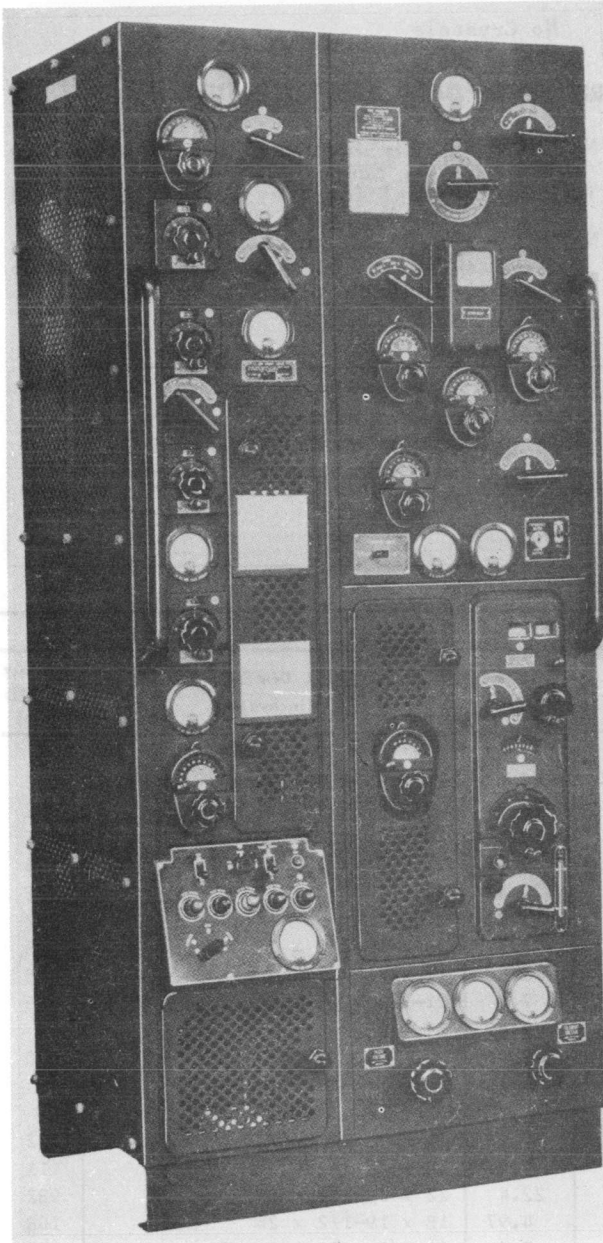
Technical Manual for Model TBL-1 Radio-Telegraph Transmitting Equipment.

TYPE CLASSIFICATION
DESIGN COGNIZANCE BUSHIPS
PROCUREMENT COGNIZANCE
STOCK NO.

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Transmitter Unit NT-52041	24 X 32 X 72	741
1	Rectifier Unit NT-20030	18 X 24 X 72	595
1	Set of Spare Parts	18-5/8 X 19-1/4 X 37	184

April 1958

RADIO TRANSMITTING EQUIPMENT**TBL-4 THRU -13**

Radio Transmitting Equipment TBL-4 thru-13

FUNCTIONAL DESCRIPTION

The TBL-4,-5,-6,-7,-8,-9,-12,-13,-11,-10 are medium power, medium frequency and high frequency radio telegraph transmitters. The -4 thru -9 are designed for use aboard ship while the Model -10 and -11 of the series are for use at shore based installations where space is at a premium.

The equipment may be operated locally, or from a remote station by use of a standard 4 or 6 wire control system. Keying speeds up to 100 words per minute are possible and if suitable speech input equipment is provided A3 transmission is possible throughout the frequency range. The transmitter incorporates two separate master-oscillator controlled radio frequency circuits to cover the medium frequency and high frequency bands. Only one band may be used at a time.

These equipments are all very similar in design; modifications are mainly mechanical.

Data on this sheet reflects the following field changes. FC No. 3,4 and 5.

RELATION TO OTHER EQUIPMENT

Similar to Model TBL, TBL-2,-3 except for changes in front panel design.

Equipment Required but not Supplied: Remote Control Units and speech input equipment.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 175 to 600 kc and 2.0 to 18.1 mc.

FREQ CONTROL: MO

EMISSION: A1,A3 (entire range).

A2 (175 to 600 kc only).

POWER OUTPUT

A1: 200 W.

A2: 100 W.

A3: 50 W.

KEYING DATA: 100 wpm, relay keying.

POWER SOURCE REQUIRED

TBL-4: 115/230 v DC, 3.3/3.5 kw; or 220/440 v, 60 cps, 3.4 kw.

TBL-8: 440 v, 60 cps, 3 ph, 3.4 kw or 115/230 v DC, 3.3/3.5 kw or 250 v DC, 3.6 kw.

TBL-9: 220 v, 60 cps, 3 ph, 3.4 kw.

TBL-5,-6,-7,-12,-13: 115/230 v DC, 3.4 kw or 220/440 v, 60 cps, 3 ph, 3.2 kw.

TBL-10,-11: 220/440 v, 50 to 60 cps, 3 ph, 3.5 kw.

POWER SUPPLY EQUIP

TBL-4,-5,-6,-7,-8,-9,-12,-13: Motor Generator Set.

TBL-10,-11: Dry disk rectifier.

MANUFACTURER'S OR CONTRACTOR'S DATA

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

Contract NOs-60970, dated 2 June 1938 (TBL-4,-8,-9).

Contract NOs-98591, dated 26 March 1942 (TBL-4,-8,-9).

Westinghouse Electric and Mfg Co, Baltimore, Md.

Radio-Transmitters

TBL-4 THRU -13 RADIO TRANSMITTING EQUIPMENT

April 1958

Contract NOs-69919 dated 22 November 1939 (TBL-5 and -6).

Contract NOs-97922, dated 28 September 1942 (TBL-7,-12,-13).

Contract NOs-97922, (Sup) dated 28 September 1942 (TBL-10,-11).

Contract NXss-17132, dated 26 May 1943 (TBL-10,-11).

Approximate Cost: \$11,929.00 with equipment spares.

No Crystals

REFERENCE DATA AND LITERATURE

NAVSHIPS 900373, Technical Manual for Radio Transmitting Equip TBL Series.
 Technical Manual for Navy Models TBL-10 and TBL-11 Radio Telegraph Transmitting Equip.
 NAVSHIPS 900381, Technical Manual for Navy Models TBL-5,-6,-7,-12 and -13 Radio Telegraph Transmitting Equip.

TUBE AND/OR CRYSTAL COMPLEMENT

TBL-4,-5,-6,-7,-8,-9,-12,-13
 (2) 803 (4) 860
 Total Tubes: (6)

TBL-10,-11
 (1) OC3W (2) 803
 (4) 860 (1) 807
 (1) 5Z3
 Total Tubes: (9)

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	TBL-4,-5,-6,-8 Radio Transmitter (TBL-4,-8)	50.0	29 x 38 x 78-1/2	1142
1	Radio Transmitter (TBL-5,-6)	56.87	30 x 42 x 78	1092
1	Filter Unit (TBL-4,-8)	5.83	18 x 20 x 28	111
1	Filter Unit (TBL-5,-6)	5.58	17 x 21 x 27	148
1	Motor Generator Set (TBL-4,-8)	22.4	22 x 23 x 73	982
1	Motor Generator (TBL-5,-6)	16.84	21 x 21 x 66	822
1	Magnetic Controller (TBL-4,-8)	4.97	18 x 19-1/2 x 24	108
1	Magnetic Controller (TBL-5,-6)	5.58	17 x 21 x 27	115
1	Vacuum Tube (TBL-4,-8)	7.6	21-1/2 x 23-1/2 x 26	68
1	Vacuum Tube (TBL-5,-6)	9.49	23 x 25 x 31	
5*	Equip Spares (TBL-4,-8) (-5,-6)	22.06		590
4**	Equip Spares (TBL-4,-8) (-5,-6)			
	TBL-9			
1	Radio Transmitter	50.0	29 x 38 x 78-1/2	1142
1	Filter Unit	5.83	18 x 20 x 28	111
1	Motor Generator Set	22.4	22 x 23 x 73	982
1	Magnetic Controller	4.97	18 x 19-1/2 x 24	108
1	Vacuum Tube	7.6	21-1/2 x 23-1/2 x 26	68
5*	Equip Spares	22.06		590
4**	Equip Spares			
	TBL-7,-12-13			
1	Radio Transmitter	56.87	30 x 42 x 78	1092
1	Filter Unit and Magnetic Controller			
1	Vacuum Tube	9.49	23 x 25 x 31	
5*	Equip Spares	11.2		585
4**	Equip Spares			
	TBL-10			
1	Radio Transmitter -52249	56.87	30 x 42 x 78	1096
1	Land Line Control Unit -23216	7.61	17 x 30 x 140	140

April 1958

RADIO TRANSMITTING EQUIPMENT

TBL-4 THRU -13

SHIPPING DATA

NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
1	Power Transfer Panel -24084-A	12.74	17 x 27 x 48	210
2	Rectifier Power Units -20195	50.0	30 x 37 x 78	1080
1	Vacuum Tubes	10.64	23 x 25 x 31	65
1	Set of Spare Parts TBL-11	8.45	18 x 27 x 30	250
1	Radio Transmitter - 52249	56.87	30 x 42 x 78	1096
1	Land Line Control Unit -23216	7.61	17 x 30 x 140	140
1	Rectifier Power Unit -20195	50.0	30 x 37 x 78	1080
1	Set of Vacuum Tubes	10.64	23 x 25 x 31	65
1	Set of Spare Parts	8.45	18 x 27 x 30	215

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
	TBL-4(115 v DC)		
1	Radio Transmitter -52178	24-1/2 x 32-1/4 x 72	850
1	Filter Unit -53073	7-3/4 x 17 x 18-1/4	80
1	Motor Generator Set -21546* or -21546**	15-1/2 x 64 x 18 13 x 20-3/8 x 64	970 970
1	Magnetic Controller -21541	14 x 17 x 21	93
1	Set of Equip Spares		448
	TBL-4(230 v DC)		
1	Radio Transmitter -52179	24-1/2 x 32-1/4 x 72	850
1	Filter Unit -53073	7-3/4 x 17 x 18-1/4	80
1	Motor Generator Set -21547* or -21547**	15-1/2 x 18 x 64 13 x 20-3/8 x 64	970 970
1	Magnetic Controller -21542	14 x 17 x 21	93
1	Set of Equip Spares		448
	TBL-4(250 v DC)		
1	Radio Transmitter -52180	24-1/2 x 32-1/4 x 72	850
1	Filter Unit -53073	7-3/4 x 17 x 18-1/4	80
1	Motor Generator Set -21547* -21547**	15-1/2 x 18 x 64 13 x 20-3/8 x 64	970 970
1	Magnetic Controller -21542	14 x 17 x 21	93
1	Set of Spare Parts		538
	TBL-4(220 v AC)		
1	Radio Transmitter -52181	24-1/2 x 32-1/4 x 72	841
1	Filter Unit -53074	7-3/4 x 17 x 18-1/4	80
1	Motor Generator Set -21340*	15-1/2 x 18 x 60-1/2	847
1	Magnetic Controller -21543	9 x 17 x 19-5/8	45
1	Motor Generator Set -21340**	13 x 20-3/8 x 60-1/2	847
1	Set of Equipment Spares		448
	TBL-4(440 v AC)		
1	Radio Transmitter -52181	24-1/2 x 32-1/4 x 72	841
1	Filter Unit -53074	7-3/4 x 17 x 18-1/4	80
1	Motor Generator Set -21340* or -21340**	15-1/2 x 18 x 60-1/2 13 x 20-3/8 x 60-1/2	847 847
1	Magnetic Controller -21341	9 x 17 x 19-5/8	45
1	Set of Equipment Spares		448
	TBL-5(115 v DC)		
1	Radio Transmitter -52131	23-5/8 x 31-3/4 x 72	820
1	Filter Unit -53036A	10-1/8 x 16-1/4 x 18-1/4	56
1	Motor Generator Unit -21426* or -21426**	15-1/4 x 16-1/8 x 60-11/16 13 x 18-1/8 x 60-11/16	800 800
1	Magnetic Controller -21234A	12-1/4 x 13-1/2 x 20-1/2	60

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Set of Vacuum Tubes		3-1/4
1	Set of Equipment Spares TBL-5(230 v DC)		
1	Radio Transmitter -52132	23-5/8 x 31-3/4 x 72	820
1	Filter Unit -53036A	10-1/8 x 16-1/4 x 18-1/4	56
1	Motor Generator Unit -21427**	13 x 18-1/8 x 60-11/16	800
1	Magnetic Controller -21235A	12-1/4 x 13-1/2 x 20-1/2	60
1	Set of Vacuum Tubes		3-1/4
1	Set of Equip Spares		
1	Motor Generator Unit -21427* (TBL-5)440 v AC	15-1/4 x 16-1/8 x 15-1/4	800
1	Radio Transmitter -52133	23-5/8 x 31-3/4 x 72	829
1	Filter Unit -53037A	10-1/8 x 16-1/4 x 18-1/4	56
1	Motor Generator Unit -21428** or -21428*	13 x 18-1/8 x 55-1/8 15 x 18-1/2 x 55-1/8	680 680
1	Magnetic Controller -21425	11-5/8 x 15 x 21-1/4	50
1	Set of Vacuum Tubes		3-1/4
1	Set of Equip Spares TBL-6(115 v DC)		
1	Radio Transmitter Unit -52131A	23-5/8 x 31-3/4 x 72	820
1	Filter Unit -53036A	10-1/8 x 16-1/4 x 18-1/4	56
1	Motor Generator Unit -21426A** or -21426A*	13-1/4 x 20 x 61 16 x 16-3/4 x 61	745 745
1	Magnetic Controller -21713	11-15/16 x 13 x 20-13/16	60
1	Set of Vacuum Tubes		3-1/4
1	Set of Equip Spares TBL-6(230 v DC)		
1	Radio Transmitter Unit -52132A	23-5/8 x 31-3/4 x 72	820
1	Filter Unit -53036A	10-1/8 x 16-1/4 x 18-1/4	56
1	Motor Generator Unit -21427A** or -21427A*	13-1/4 x 20 x 61 16 x 16-3/4 x 61	745 745
1	Magnetic Controller -21714	13 x 11-15/16 x 20-13/16	60
1	Set of Vacuum Tubes		3-1/4
1	Set of Equip Spares TBL-6(440 v AC)		
1	Radio Transmitter Unit -52133A	23-5/8 x 31-3/4 x 72	829
1	Filter Unit -53037A	10-1/8 x 16-1/4 x 18-1/4	87
1	Motor Generator Unit -21428A** or -21428A*	13-1/4 x 20 x 55-3/4 16 x 16-3/4 x 55-3/4	680 680
1	Magnetic Controller -21715	9-3/16 x 16-5/8 x 18-3/4	50
1	Set of Vacuum Tubes		3-1/4
1	Set of Equip Spares TBL-7,-12,(115 v DC)		
1	Radio Transmitter -52247	24-1/2 x 32 x 72	820
1	Filter Unit -53036A	10-1/8 x 16-1/4 x 18-1/4	56
1	Motor-Generator Unit -21426A** or 21426A*	13-1/4 x 20 x 61 16 x 16-3/4 x 61	822 822
1	Magnetic Controller -21713	11-15/16 x 13 x 20-13/16	60
1	Set of Vacuum Tubes		3-1/4
1	Set of Equip Spares TBL-7,-12(230 v DC)		414
1	Radio Transmitter -52248	24-1/4 x 32 x 72	820
1	Filter Unit -53036A	10-1/8 x 16-1/4 x 18-1/4	56
1	Motor-Generator Unit -21427A** or -21427A*	13-1/4 x 20 x 61 16-3/4 x 16 x 61	745 745
1	Magnetic Controller -21714	11-15/16 x 13 x 20-13/16	60
1	Set of Vacuum Tubes		3-1/4
1	Set of Equip Spares TBL-7,-12(440 v AC)		
1	Radio Transmitter -52249	24-1/4 x 32 x 72	829

April 1958

RADIO TRANSMITTING EQUIPMENT

TBL-4 THRU -13

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Filter Unit -53037A	10-1/8 x 16-1/4 x 18-1/4	87
1	Motor-Generator Unit -21428A** or -21428A*	13-1/4 x 20 x 55-3/4 16 x 16-3/4 x 55-3/4	680 680
1	Magnetic Controller - 21716	9-3/16 x 16-5/8 x 18-29/32	50
1	Set of Vacuum Tubes		3-1/4
1	Set of Equip Spares TBL-8(115 v DC)		300
1	Radio Transmitter -52178	24-1/2 x 32-1/4 x 72	850
1	Filter Unit -53073	7-3/4 x 17 x 18-1/4	67
1	Motor-Generator Set -21948** or -21948	15-1/2 x 18 x 64 13 x 20-3/8 x 64	910 910
1	Magnetic Controller -21541	14 x 17 x 21	93
1	Set of Vacuum Tubes		538
1	Set of Equip Spares TBL-8(230 v DC)		
1	Radio Transmitter -52179	24-1/2 x 32-1/4 x 72	850
1	Filter Unit -53073	7-3/4 x 17 x 18-1/4	67
1	Motor-Generator Set -21949* or -21949**	15-1/2 x 18 x 64 13 x 20-3/8 x 64	910 910
1	Magnetic Controller -21542	14 x 17 x 21	93
1	Set of Equip Spares TBL-8(250 v DC)		538
1	Radio Transmitter -52180	24-1/2 x 32-1/4 x 72	850
1	Filter Unit -53073	7-3/4 x 17 x 18-1/4	67
1	Motor-Generator Set -21949* or -21949**	15-1/2 x 18 x 64 13 x 20-3/8 x 64	910 910
1	Magnetic Controller -21542	14 x 17 x 21	93
1	Set of Equip Spares TBL-8(230 v DC)***		538
1	Radio Transmitter -52179	24-1/2 x 32-1/4 x 72	850
1	Filter Unit -53073	7-3/4 x 17 x 18-1/4	67
1	Motor-Generator Set -21949	15-1/2 x 18 x 64	910
1	Magnetic Controller -211105	10-1/2 x 15-1/2 x 23	63
1	Set of Equip Spares TBL-8(440 v AC)		538
1	Radio Transmitter -52181	24-1/2 x 32-1/4 x 72	841
1	Filter Unit -53074	7-3/4 x 17 x 18-1/4	80
1	Motor-Generator Set -21950* or -21950	15-1/2 x 18 x 60-1/2 13 x 20-3/8 x 60-1/2	910 910
1	Magnetic Controller -21341	9 x 17 x 19-5/8	45
1	Set of Spare Parts TBL-8(440 v AC)***		448
1	Radio Transmitter -52181	24-1/2 x 32-1/4 x 72	841
1	Filter Unit -53074	7-3/4 x 17 x 18-1/4	80
1	Motor Generator Set -21950A	15-1/2 x 18 x 60-1/2	910
1	Magnetic Controller -211107	8-1/4 x 9-3/4 x 14	26
1	Set of Equip Spares TBL-9(220 v AC)		448
1	Radio Transmitter -52181	24-1/2 x 32-1/4 x 72	841
1	Filter Unit -53074	7-3/4 x 17 x 18-1/4	80
1	Motor Generator Set -21950* or -21950**	15-1/2 x 18 x 60-1/2 13 x 20-3/8 x 60-1/2	910 910
1	Magnetic Controller -21543	9 x 17 x 19-5/8	45
1	Set of Equip Spares TBL-10(220/440 v AC)		448
1	Radio Transmitter Unit -52249	24-3/8 x 32 x 72	829
1	Land Line Control Unit -23216	11-1/16 x 20-3/4 x 21-3/16	81
1	Power Transfer Panel -24084A	10-3/8 x 20-1/4 x 39-7/8	108
2	Rectifier Power Units -20195	23-9/16 x 27-1/8 x 71-5/8	819

Radio-Transmitters

TBL-4 THRU -13

RADIO TRANSMITTER EQUIPMENT

April 1958

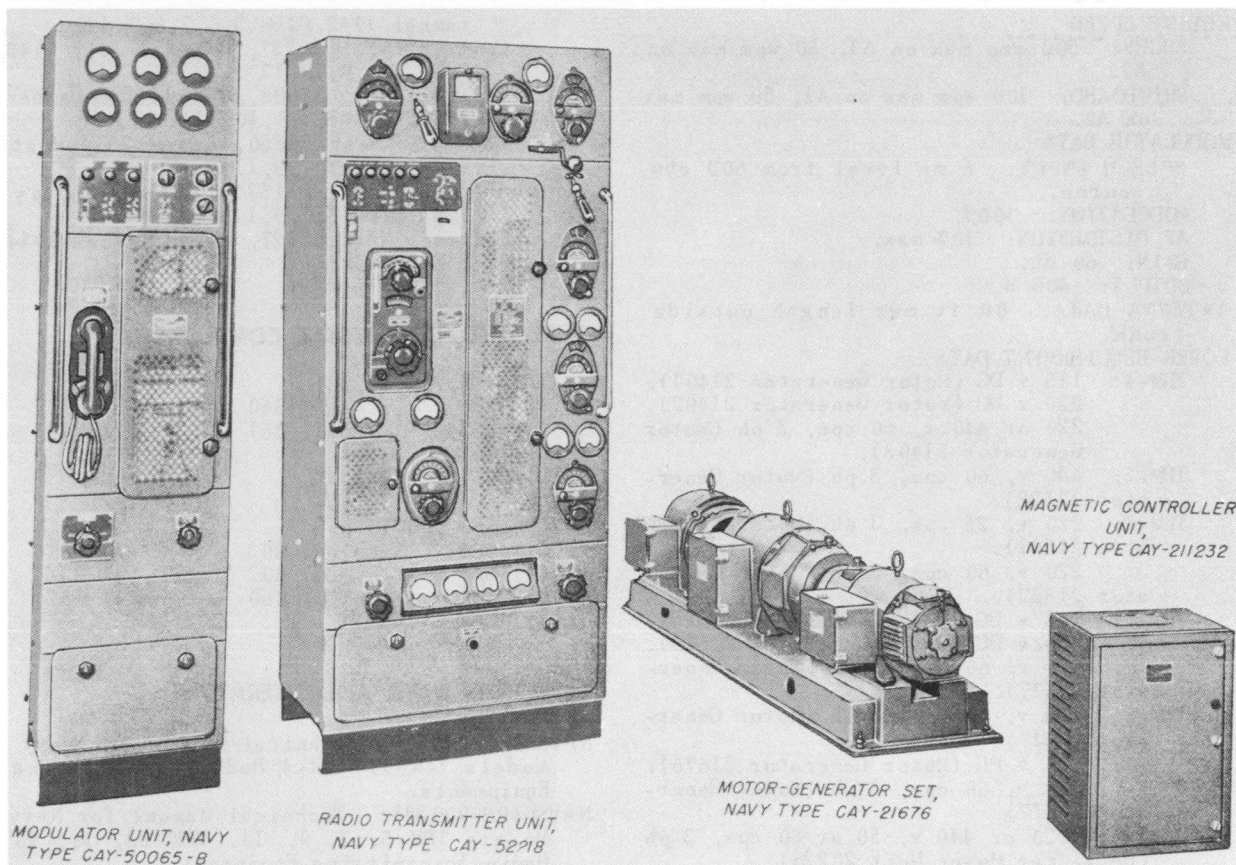
EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Set of Electron Tubes		3-3/16
1	Set of Equip Spares TBL-11(220/440 v AC)		200
1	Radio Transmitter Unit -52249	24-3/8 x 32 x 72	829
1	Land Line Control Unit -23216	11-1/16 x 21-3/16 x 20-3/4	81
1	Rectifier Power Unit -20195	23-9/16 x 27-1/8 x 71-5/8	819
1	Set of Electron Tubes		3-3/16
1	Set of Equip Spares TBL-13(115 v DC)		165
1	Radio Transmitter -52247	24-1/4 x 32 x 72	820
1	Filter Unit -53036A	10-1/8 x 16-1/4 x 18-1/4	56
1	Motor-Generator Unit -21426A** or -21426A*	13-1/4 x 20 x 61 16 x 16-3/4 x 61	822 822
1	Magnetic Controller -211226	9-13/16 x 11-11/16 x 18-3/4	45
1	Set of Electron Tubes		3-1/4
1	Set of Equip Spares TBL-13(230 v DC)		414
1	Radio Transmitter -52248	24-1/4 x 32 x 72	820
1	Filter Unit -53036A	10-1/8 x 16-1/4 x 18-1/4	56
1	Motor-Generator Unit -21427A** or -21427A*	13-1/4 x 20 x 61 16 x 16-3/4 x 61	745 745
1	Magnetic Controller -211227	9-13/16 x 11-11/16 x 18-3/4	45
1	Set of Electron Tubes		3-1/4
1	Set of Equip Spares TBL-13(440 v AC)		414
1	Radio Transmitter -52249	24-1/4 x 32 x 72	820
1	Filter Unit -53037A	10-1/8 x 16-1/4 x 18-1/4	87
1	Motor-Generator Unit -21428A** or -21428A*	13-1/4 x 20 x 55-3/4 16 x 16-3/4 x 55-3/4	680 680
1	Magnetic Controller -211228	6-3/4 x 8-7/32 x 11-9/32	18
1	Set of Electron Tubes		3-1/4
1	Set of Equip Spares		300

NOTES: *Terminal box on side
 **Terminal box on top
 ***Supplied under Contract NXss-33180

RADIO TRANSMITTING EQUIPMENT

TBM-4 THRU 12

**FUNCTIONAL DESCRIPTION**

The TBM-4, 5, 7, 9, 11 and 12 are intended for use on all types of Naval vessels except certain types of submarines.

The TBM-6, 8, and 10 are intended as shore based equipments.

All equipments are medium power HF transmitters capable of relay keying speeds up to 100 words-per-minute; however, the shore-based equipments facilitate vacuum tube keying speeds up to 500 word-per-minute. The modulator unit provides 50 words-per-minute. The modulator unit provides 50 words-per-minute MCW telegraph transmission on these equipments. Vacuum tube keying cannot be used on MCW transmissions. The transmitter power output may be varied from full power to a minimum of 75 watts for telegraphic signaling by disconnecting the power amplifier.

Either local or remote operation is possible. Remote operation of any of the shipboard transmitters is possible by use of a standard 4 or 6 wire control system, while operation of the shore-based equipments is accomplished through use of a land line when

Radio Transmitting Equipment

telegraphing.

Data on this sheet reflects the following field changes, FC-1 for TBM-4 thru 11 FC-2 and 3 for TBM series (25 September 1956).

RELATION TO OTHER EQUIPMENT

The TBM series is basically similar to the TBK series, the principle difference being the TBK's are strictly A1 radio telegraph transmitters and are not equipped with modulators. In addition, there is some flexibility in the type power equipment used with the various transmitters.

Equipment Required but not Supplied: (1) Remote Control Unit, (1) Radiophone Unit.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 2000 to 18100 kc.
 FREQUENCY CONTROL: Master oscillator.
 EMISSION: A1, A2, A3.
 POWER OUTPUT

A1: 75 or 500 W.
 A2, A3: 350 W.

Radio-Transmitters

TBM-4 THRU 12 RADIO TRANSMITTING EQUIPMENT

KEYING SPEED

SHORE: 500 wpm max on A1, 50 wpm max on A2.

SHIPBOARD: 100 wpm max on A1, 50 wpm max on A2.

MODULATOR DATA

SPEECH INPUT: 6 mw level from 600 ohm source.

MODULATION: 100%.

AF DISTORTION: 10% max.

GAIN: 60 db.

OUTPUT: 400 W.

ANTENNA DATA: 80 ft max length outside trunk.

POWER REQUIREMENT DATA

TBM-4: 115 v DC (Motor Generator 21401).
230 v DC (Motor Generator 21402).
220 or 440 v, 60 cps, 3 ph (Motor Generator 21403).

TBM-5: 440 v, 60 cps, 3 ph (Motor Generator 21522).

TBM-6: 220 v, 25 cps, 3 ph (Motor Generator 21521).

220 v, 60 cps, 3 ph (Motor Generator 21522).

TBM-7: 115 v DC (Motor Generator 21675).
230 v DC (Motor Generator 21676).
440 v, 60 cps, 3 ph (Motor Generator 21677).

TBM-8: 220 v, 60 cps, 3 ph (Motor Generator 21677).

TBM-9: 230 v DC (Motor Generator 21676).
440 v, 60 cps, 3 ph (Motor Generator 21677).

TBM-10: 220 or 440 v, 50 or 60 cps, 3 ph (Rectifier Power Unit 20228).

TBM-11: Same as TBM-7.

TBM-12: 230 v DC (Motor Generator 21676).

MANUFACTURER'S OR CONTRACTOR'S DATA

Westinghouse Electric and Mfg Co. Baltimore Md.

Contract NOS 67051, dated 12 June 1939 (TBM-4, 6, 8).

Contract NOS 72975, dated 8 May 1940 (TBM-4, 5, 6, 7, 8, 9, 11).

Contract NOS 80646, dated 8 Jan 1941 (TBM-5, 6, 7, 8, 9, 11).

Contract NOS 80646 Sup, dated 21 Sep-

tember 1942 (TBM-5, 6, 7, 8, 9, 11).

Contract NXsr 18237, dated 1 July 1943 (TBM-5, 7, 9, 10, 11).

Contract NXsr 38688, dated 28 September 1943 (TBM-5, 7, 9, 10, 11).

Contract NXsr 36550, dated 23 August 1943 (TBM-5, 7, 9, 11).

Contract NXsr 51573, dated 14 July 1944 (TBM-5, 7, 9, 11).

Contract NXsr 65327, dated 20 June 1944 (TBM-12).

TUBE AND/OR CRYSTAL COMPLEMENT

TBM-4, 5, 7, 9, 11, 12

(2) 6D6 (3) 860 (3) 807
(1) 25Z5 (1) 861 (2) 803
(1) 1616

Total Tubes: (13)

TBM-6, 8 and 10

(1) OC3W (2) 803 (1) 1616
(1) 5Z3 (5) 807 (1) 25Z5
(2) 6D6 (3) 860 (1) 861

Total Tubes: (17)

REFERENCE DATA AND LITERATURE

NAVSHIPS 900380: Technical Manual for Navy Models TBK-9, TBM-4 Radio Transmitting Equipments.

NAVSHIPS 900388: Technical Manual for Navy Models TBM-5, 7, 9, 11, TBK-13, 18, 20 Radio Transmitting Equipment.

NAVSHIPS 900386: Technical Manual for Models TBM-6, 8, TBK-11, 15 Radio Transmitting Equipments.

NAVSHIPS 900387: Technical Manual for Navy Models TBM-10, TBK-16 Radio Transmitting Equipments.

NAVSHIPS 900763: Technical Manual for TBM-12 Radio Telegraph and Telephone Transmitting Equipment.

TYPE CLASSIFICATION

DESIGN COGNIZANCE EUSHIPS

PROCUREMENT COGNIZANCE

STOCK NO.

SHIPPING DATA

NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
1	TBM-5 (440 V, 60 cps, 3 PH) Radio Transmitter NT-52171	56.87	30 X 42 X 78	1035
1	MODULATOR NT-50065	34.4	24-1/4 X 31 X 79	580
1	Motor Generator Set NT-21522	33.75	27 X 27 X 80	1280
1	Magnetic Controller NT-21412	5.84	17 X 22 X 27	108
2	Vacuum Tube Type 861	7.34	23 X 23 X 24	17

RADIO TRANSMITTING EQUIPMENT TBM-4 THRU 12

SHIPPING DATA

NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
2	Vacuum Tube Type 860 (3)	3.85	12 X 15 X 37	30
1	Set of Modulator Tubes	1.75	12 X 12 X 21	18
1	Spare Parts Box	4.96	17 X 18 X 28	165
1	Spare Parts Box	4.93	9 X 27 X 35	163
1	Spare Parts Box	2.60	11 X 12 X 34	137
1	Spare Parts Box	1.46	9 X 10 X 28	73
1	Spare Parts Box	2.87	15 X 15 X 22	78
	TBM-6 (220 V, 25 or 60 CPS, 3 PH)			
1	Radio Transmitter NT-52169 (25 cps) or NT-52170 (60 cps)	56.87	30 X 42 X 78	1192
		56.87	30 X 42 X 78	1164
1	Modulator NT-50066 (25 cps) or NT-50065 (60 cps)	31.42	24 X 29 X 78	600
1	Land Line Control NT-23217 (25 cps) or NT-23216 (60 cps)	7.67	17 X 26 X 30	140
1	Power Transfer Panel NT-24084	12.75	17 X 27 X 48	179
2	Motor Generator Set NT-21521 (25 cps) or NT-21522 (60 cps)	33.28	26 X 28 X 79	1490
		33.28	26 X 28 X 79	1340
2	Magnetic Controller NT-21511 (25 cps) or NT-21411 (60 cps)	5.15	15 X 22 X 27	135
1	Set of Installation Vacuum Tubes	15.20	24 X 32-3/4 X 36	140
1	Set of Spare Vacuum Tubes	15.20	24 X 32-3/4 X 36	140
1	Spare Parts Box	4.96	17 X 18 X 28	188
1	Spare Parts Box	2.87	15 X 15 X 22	70
	TBM-7 (115 or 230 V DC)			
1	Radio Transmitter NT-52217 (115 v) or NT-52218 (230 v)	56.87	30 X 42 X 78	1000
		56.87	30 X 42 X 78	1035
1	Modulator NT-50065-A	34.4	24-1/4 X 31 X 79	580
1	Motor Generator Set NT-21675 (115 v) or NT-21676 (230 v)	33.7	25 X 27 X 86	1474
1	Magnetic Controller NT-21666 (115 v) or NT-21667 (239 v)	5.84	17 X 22 X 27	112
2	Vacuum Tube Type 861	7.34	23 X 23 X 24	21
2	Set of Vacuum Tubes	6.67	12 X 26 X 37	65
1	Spare Parts Boxes (1 and 5)	10.0	18 X 29 X 33	232
1	Spare Parts Box (2)	5.62	11 X 21 X 42	205
1	Spare Parts Boxes (3 and 4)	4.34	13 X 17 X 34	200
1	Spare Parts Box (6)	4.25	14 X 15 X 35	152
	TBM-7 (440 V, 60 CPS, 3 PH)			
1	Radio Transmitter NT-52171	56.87	30 X 42 X 78	1035
1	Modulator NT-50065-A	34.4	24-1/4 X 31 X 79	580
1	Motor Generator Set NT-21677	31.3	25 X 27 X 80	1375
1	Magnetic Controller NT-21669	5.84	17 X 22 X 27	100
2	Vacuum Tube Type 861	7.34	23 X 23 X 24	21
2	Set of Vacuum Tubes	6.67	12 X 26 X 37	65
1	Spare Parts Boxes (1 and 5)	8.75	18 X 28 X 30	228
1	Spare Parts Box (2)	5.68	14 X 18 X 39	154
1	Spare Parts Boxes (3 and 4)	4.35	13 X 17 X 34	200
	TBM-8 (220 V, 60 CPS, 3 PH)			
1	Radio Transmitter NT-52170	56.87	30 X 42 X 78	1164
1	Modulator NT-50065-A	31.42	24 X 29 X 78	600
1	Land Line Control NT-23216	7.67	17 X 26 X 30	140
1	Power Transfer Panel NT-24084-A	12.75	17 X 27 X 48	210
2	Motor Generator Set NT-21677	33.28	26 X 28 X 79	1345
2	Magnetic Controller NT-21668	5.15	15 X 22 X 27	105
1	Set of Installation Vacuum Tubes	15.20	24 X 32-3/4 X 36	140
1	Set of Spare Vacuum Tubes	15.20	24 X 32-3/4 X 36	140
1	Spare Parts Box	10.22	19 X 30 X 31	245
	TBM-9 (230 V DC)			
1	Radio Transmitter NT-52218	53	30-1/2 X 38-1/4 X 77-1/2	1035

TBM-4 THRU 12 RADIO TRANSMITTING EQUIPMENT

SHIPPING DATA

NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
1	Modulator NT-50065-A	34.4	24-1/4 X 31 X 79	580
1	Motor Generator Set NT-21676	33.7	25 X 27 X 86	1475
1	Magnetic Controller NT-21667	5.84	17 X 22 X 27	112
1	Set of Installation Vacuum Tubes	18	25-1/2 X 34 X 36	135
1	Set of Spare Vacuum Tubes	18	25-1/2 X 34 X 36	135
1	Spare Parts Box (1)	10	21 X 22 X 37-1/4	193
1	Spare Parts Box (2)	7.3	17-3/4 X 25-1/2 X 28	174
1	Spare Parts Boxes (3 and 4)	7.8	13-3/4 X 25-1/2 X 38-1/4	208
1	Spare Parts Box (5)	4.9	17-3/4 X 19-3/4 X 24	79
1	Spare Parts Box (6)	10	21 X 22 X 37-1/4	176
	TBM-9 (440 V, 60 CPS, 3 PH)			
1	Radio Transmitter NT-52171	53	30-1/2 X 38-1/4 X 77-1/2	1035
1	Modulator NT-50065-A	34.4	24-1/4 X 31 X 79	580
1	Motor Generator Set NT-21677	31.3	25 X 27 X 80	1375
1	Magnetic Controller NT-21669	5.84	17 X 22 X 27	100
1	Set of Installation Vacuum Tubes	18	25-1/2 X 34 X 36	135
1	Set of Spare Vacuum Tubes	18	25-1/2 X 34 X 36	135
1	Spare Parts Box (1)	10	21 X 22 X 37-1/4	193
1	Spare Parts Box (2)	7.3	17-3/4 X 25-1/2 X 28	129
1	Spare Parts Boxes (3 and 4)	7.8	13-3/4 X 25-1/2 X 38-1/4	208
1	Spare Parts Box (5)	4.9	17-3/4 X 19-3/4 X 24	79
	TBM-10 (220 or 440 V, 50 or 60 CPS, 3 PH)			
1	Radio Transmitter NT-52170	56.87	30 X 42 X 78	1156
1	Modulator NT-50065-A	34.4	26 X 29 X 78	580
1	Land Line Control NT-23216	7.67	17 X 26 X 30	140
1	Rectifier Power Unit NT-20228	56.87	30 X 42 X 78	1290
1	Set of Installation Vacuum Tubes	16.35	24 X 32-3/4 X 36	140
1	Set of Spare Vacuum Tubes	16.35	24 X 32-3/4 X 36	140
1	Spare Parts Box	10.02	20-1/4 X 24 X 36	193
1	Spare Parts Box	3.95	15-7/8 X 18 X 24	120
1	Spare Parts Box	3.95	15-7/8 X 18 X 24	79
	TBM-11 (115 or 230 V DC)			
1	Radio Transmitter NT-52217 (115 v) or NT-52218 (230 v)	53	30-1/2 X 38-1/4 X 77-1/2	1000
1	Modulator NT-50065-A	34.4	30-1/2 X 38-1/4 X 77-1/2	1035
1	Motor Generator Set NT-21675 (115 v) or NT-211232 (230 V)	33.4	24-1/4 X 31 X 79	580
1	Motor Generator Set NT-21675 (115 v) or NT-211232 (230 V)	33.7	25 X 27 X 86	1475
1	Magnetic Controller NT-211231 (115 V) or NT-211232 (230 V)	7	17-1/2 X 25 X 28	123
1	Magnetic Controller NT-211231 (115 V) or NT-211232 (230 V)	7	17-1/2 X 25 X 28	131
1	Set of Installation Vacuum Tubes	18	25-1/2 X 34 X 36	135
1	Set of Spare Vacuum Tubes	18	25-1/2 X 34 X 36	135
1	Spare Parts Box (1)	10	21 X 22 X 37-1/4	193
1	Spare Parts Box (2)	7.3	17-3/4 X 25-1/2 X 28	174
1	Spare Parts Boxes (3 and 4)	7.8	13-3/4 X 25-1/2 X 38-1/4	208
1	Spare Parts Box (5)	4.9	17-3/4 X 19-3/4 X 24	79
1	Spare Parts Box (6)	10	21 X 22 X 37-1/4	176
	TBM-11 (440 V, 60 CPS, 3 PH)			
1	Radio Transmitter NT-52171	53	30-1/2 X 38-1/4 X 77-1/2	1035
1	Modulator NT-50065-A	34.4	24-1/4 X 31 X 79	580
1	Motor Generator Set NT-21677	31.3	25 X 27 X 80	1375
1	Magnetic Controller NT-211233	4.9	17-3/4 X 19-3/4 X 24	60
1	Set of Installation Vacuum Tubes	18	25-1/2 X 34 X 36	135
1	Set of Spare Vacuum Tubes	18	25-1/2 X 34 X 36	135
1	Spare Parts Box (1)	10	21 X 22 X 37-1/4	193
1	Spare Parts Box (2)	7.3	17-3/4 X 25-1/2 X 28	144
1	Spare Parts Boxes (3 and 4)	7.8	13-3/4 X 25-1/2 X 38-1/4	208
1	Spare Parts Box (5)	4.9	17-3/4 X 19-3/4 X 24	79
	TBM-12 (230 V DC)			
1	Radio Transmitter NT-52218	53	30-1/2 X 38-1/4 X 77-1/2	1030

RADIO TRANSMITTING EQUIPMENT

TBM-4 thru 12

SHIPPING DATA

NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
1	Modulator NT-50065-B	32	24-1/4 X 30 X 76-1/2	580
1	Motor Generator Set NT-21676	31.3	25 X 27 X 80	1475
1	Magnetic Controller NT-211232	7.3	17-3/4 X 25-1/2 X 28	123
1	Spare Parts Box	3.1	15 X 15 X 24	148
1	Spare Parts Box	1.5	12 X 12 X 18	50
1	Spare Parts Box	2.25	12 X 18 X 18	140
1	Spare Parts Box	2.5	9 X 16 X 30	153
1	Spare Parts Box	2.5	12 X 12 X 30	107
1	Spare Parts Box	3.1	15 X 15 X 24	156

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	TBM-4 (115 or 230 V DC) Radio Transmitter NT-52126 (115 V) or NT-52127 (230 V)	24 X 32 X 72	720
1	Modulator NT-50065	18 X 24 X 72	380
1	Motor Generator Set NT-21401 (115 V) or NT-21402 (230 V)	20-1/4 X 20-1/2 X 78-7/8 20-1/4 X 20-1/2 X 78-7/8	1062 1067
1	Motor Starter NT-21409 (115 V) or NT-21410 (230 V)	16-7/8 X 17-1/2 X 26-1/4 15-7/8 X 17-1/2 X 26-1/4	110 95
1	Set of Spare Vacuum Tubes		4.6
1	Spare Parts Box	15-3/4 X 16-3/4 X 25-3/8	117
1	Spare Parts Box	9 X 23-1/2 X 34	164
1	Spare Parts Box	8 X 9-1/2 X 30	103
1	Spare Parts Box	6-5/8 X 8-1/4 X 24-3/4	54
1	Spare Parts Box	10-1/4 X 12-3/4 X 32	106
1	Spare Parts Box	12 X 15 X 18	43
1	TBM-4 (220 or 440 V, 60 CPS, 3 PH) Radio Transmitter NT-52128	24 X 32 X 72	720
1	Modulator NT-50065	18 X 24 X 72	380
1	Motor Generator Set NT-21403	20-3/8 X 20-1/2 X 78-7/8	1033
1	Motor Starter NT-21411 (220 V) or NT-21412 (440 V)	11-5/8 X 17 X 24-1/4 11-5/8 X 15 X 21-1/4	80 50
1	Set of Spare Vacuum Tubes		4.6
1	Spare Parts Box	15-3/4 X 16-3/4 X 25-3/8	122
1	Spare Parts Box	9 X 23-1/2 X 34	110
1	Spare Parts Box	8 X 9-1/2 X 30	103
1	Spare Parts Box	6-5/8 X 8-1/4 X 24-3/4	54
1	Spare Parts Box	12 X 15 X 18	43
1	TBM-5 (440 V, 60 CPS, 3 PH) Radio Transmitter NT-52171	24 X 32 X 72	780
1	Modulator NT-50065	18 X 24 X 72	385
1	Motor Generator Set NT-21522	20-3/8 X 20-1/2 X 74-21/32	1100
1	Magnetic Controller NT-21412	11-5/8 X 15 X 21-1/4	50
1	Set of Spare Vacuum Tubes		4.6
1	Spare Parts Box	15-3/4 X 16-3/4 X 25-3/8	120
1	Spare Parts Box	6-3/4 X 26 X 30-1/2	121
1	Spare Parts Box	8-1/2 X 10 X 30	110
1	Spare Parts Box	6-3/4 X 8-1/2 X 24-1/2	55
1	Spare Parts Box	12-3/4 X 13-3/4 X 19-3/8	50
1	TBM-6 (220 V, 25 or 60 CPS, 3 PH) Radio Transmitter NT-52169 (25 cps) or NT-52170 (60 cps)	24 X 32 X 72 24 X 32 X 72	825 797
1	Modulator NT-50066 (25 cps) or NT-50065 (60 cps)	18 X 24 X 72	380

August 1957

Radio Transmitters

TBM-4 thru 12

RADIO TRANSMITTING EQUIPMENT

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Land Line Control NT-23217 (25 cps) or NT-23216 (60 cps)	10-3/8 X 20-7/16 X 20-11/16 11-1/16 X 20-5/16 X 20-3/4	81 81
1	Power Transfer Panel NT-24084	11 X 20-1/4 X 39-13/16	77
2	Motor Generator Set NT-21521 (25 cps) or NT-21522 (60 cps)	20-1/2 X 21-3/4 X 78-1/2 20-3/8 X 20-1/2 X 74-21/32	1250 1100
2	Magnetic Controller NT-21511 (25 cps) or NT-21411 (60 cps)	11-5/8 X 17 X 24-1/4 11-5/8 X 17 X 24-1/2	80 80
1	Set of Spare Vacuum Tubes		5
1	Spare Parts Box	15-3/4 X 16-3/4 X 25-3/8	143
1	Spare Parts Box	12-3/4 X 13-3/4 X 19-3/8	43
	TBM-7 (115 or 230 V DC)		
1	Radio Transmitter NT-52217 (115 v) or NT-52218 (230 v)	24 X 32 X 72 24 X 32 X 72	740 780
1	Modulator NT-50065-A	18 X 24 X 72	385
1	Motor Generator Set NT-21675 (115 v) or NT-21676 (230 v)	20-5/16 X 20-3/8 X 78-13/16	1275
1	Magnetic Controller NT-21666 (115 v) or NT-21667 (230 v)	13-3/8 X 16 X 22-1/2	70
1	Set of Spare Vacuum Tubes		4.6
1	Spare Parts Box	15-3/4 X 16-3/4 X 25-3/8	120
1	Spare Parts Box	1 X 18 X 37	168
1	Spare Parts Box	8-1/2 X 10 X 30	110
1	Spare Parts Box	6-3/4 X 8-1/2 X 24-1/2	55
1	Spare Parts Box	12-3/4 X 13-3/4 X 19-3/8	50
1	Spare Parts Box	10-1/4 X 12-3/4 X 32	117
	TBM-7 (440 V, 60 CPS, 3 PH)		
1	Radio Transmitter NT-52171	24 X 32 X 72	780
1	Modulator NT-50065-A	18 X 24 X 72	385
1	Motor Generator Set NT-21677	20-3/4 X 22-1/8 X 74-21/32	1255
1	Magnetic Controller NT-21669	9-3/16 X 16-5/8 X 18-3/4	50
1	Set of Spare Vacuum Tubes		4.6
1	Spare Parts Box	15-3/4 X 16-3/4 X 25-3/8	120
1	Spare Parts Box	11 X 15 X 34	123
1	Spare Parts Box	8-1/2 X 10 X 30	110
1	Spare Parts Box	6-3/4 X 8-1/2 X 24-1/2	55
1	Spare Parts Box	12-3/4 X 13-3/4 X 19-3/8	50
	TBM-8 (220 V, 60 CPS, 3 PH)		
1	Radio Transmitter NT-52170	24 X 32 X 72	797
1	Modulator NT-50065-A	18 X 24 X 72	380
1	Land Line Control NT-23216	10-3/8 X 20-7/16 X 20-11/16	81
1	Power Transfer Panel NT-24084-A	11 X 20-1/4 X 39-13/16	108
2	Motor Generator Set NT-21677	20-3/8 X 20-1/2 X 74-21/32	1105
2	Magnetic Controller NT-21668	9-3/16 X 16-5/8 X 18-3/4	50
1	Set of Spare Vacuum Tubes		5
1	Spare Parts Box	17-3/4 X 27-3/8 X 28-3/8	167
	TBM-9 (230 V DC)		
1	Radio Transmitter NT-52218	24 X 32 X 72	780
1	Modulator NT-50065-A	18 X 24 X 72	385
1	Motor Generator Set NT-21676	20-5/16 X 20-3/8 X 78-13/16	1275
1	Magnetic Controller NT-21667	13-3/8 X 16 X 22-1/2	70
1	Set of Spare Vacuum Tubes		4.6
1	Spare Parts Box	15-3/4 X 16-3/4 X 25-3/8	123
1	Spare Parts Box	11-3/4 X 17-3/4 X 17-3/4	123
1	Spare Parts Box	8-1/2 X 10 X 30	110
1	Spare Parts Box	6-3/4 X 8-1/2 X 24-1/2	55
1	Spare Parts Box	12-2/4 X 13-3/4 X 19-3/8	44
1	Spare Parts Box	10-1/4 X 12-3/4 X 32	107
	TBM-9 (440 V, 60 CPS, 3 PH)		
1	Radio Transmitter NT-52171	24 X 32 X 72	780

RADIO TRANSMITTING EQUIPMENT

EQUIPMENT SUPPLIED DATA

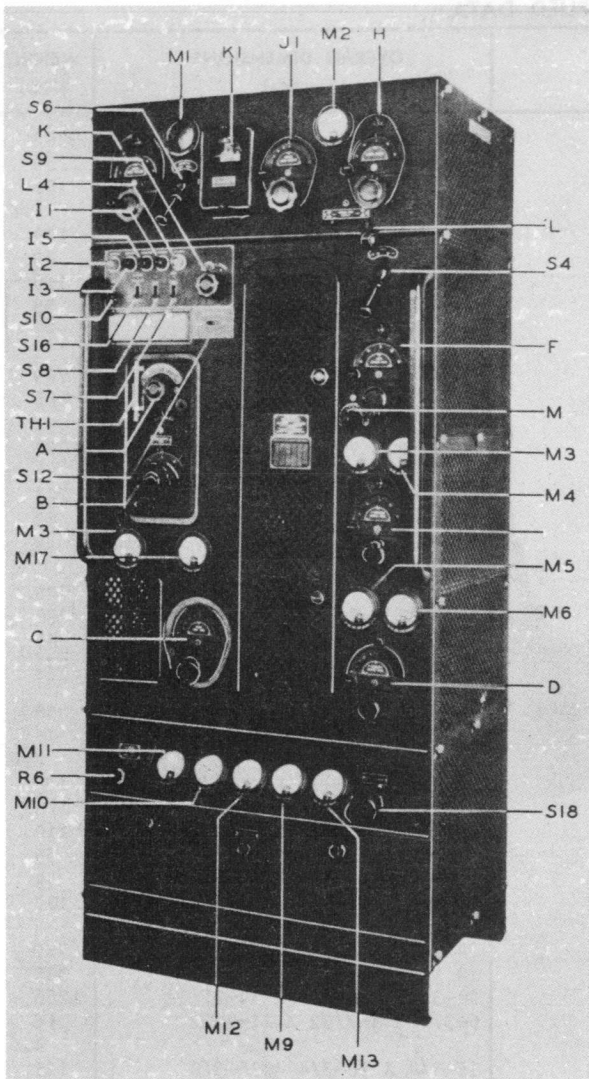
QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Modulator NT-50065-A	18 X 24 X 72	385
1	Motor Generator Set NT-21677	20-3/4 X 22-1/8 X 74-21/32	1255
1	Magnetic Controller NT-21669	9-3/16 X 16-5/8 X 18-3/4	50
1	Set of Spare Vacuum Tubes		4.6
1	Spare Parts Box	15-3/4 X 16-3/4 X 25-3/8	123
1	Spare Parts Box	11-3/4 X 14-3/4 X 17-3/4	93
1	Spare Parts Box	8-1/2 X 10 X 30	110
1	Spare Parts Box	6-3/4 X 8-1/2 X 24-1/2	55
1	Spare Parts Box	12-3/4 X 13-3/4 X 19-3/8	44
	TBM-10(220 or 440 V, 50 or 60 CPS, 3 PH)		
1	Radio Transmitter NT-52170	24 X 32 X 72	789
1	Modulator NT-50065-A	18 X 24 X 72	385
1	Land Line Control NT-23216	11 X 20-3/4 X 21-5/16	81
1	Rectifier Power Unit NT-20228	24 X 32 X 72	1000
1	Set of Spare Vacuum Tubes		5
1	Spare Parts Box	20-1/4 X 24 X 36	123
1	Spare Parts Box	15-3/8 X 18 X 24	80
1	Spare Parts Box	15-7/8 X 18 X 24	44
	TBM-11 (115 or 230 V DC)		
1	Radio Transmitter NT-52217 (115 V) or NT-52218 (230 V)	24 X 32 X 72	740
		24 X 32 X 72	780
1	Modulator NT-50065-A	18 X 24 X 72	385
1	Motor Generator Set NT-21675 (115 V) or NT-21676 (230 V)	20-5/16 X 20-3/8 X 78-13/16	1275
1	Magnetic Controller NT-211231 (115 V) or NT-211232 (230 V)	10-3/16 X 15 X 20-1/4	68
		10-3/16 X 15 X 20-1/4	76
1	Set of Spare Vacuum Tubes		4.6
1	Spare Parts Box	15-3/4 X 16-3/4 X 25-3/8	123
1	Spare Parts Box	11-3/4 X 17-3/4 X 17-3/4	123
1	Spare Parts Box	8-1/2 X 10 X 30	110
1	Spare Parts Box	6-3/4 X 8-1/2 X 24-1/2	55
1	Spare Parts Box	12-3/4 X 13-3/4 X 19-3/8	44
1	Spare Parts Box	10-1/4 X 12-3/4 X 32	107
	TBM-11(440 V, 60 CPS, 3 PH)		
1	Radio Transmitter NT-52171	24 X 32 X 72	780
1	Modulator NT-50065-A	18 X 24 X 72	385
1	Motor Generator Set NT-21677	20-3/4 X 22-1/8 X 74-21/32	1255
1	Magnetic Controller NT-211233	6-3/4 X 8-7/32 X 11-9/32	18
1	Set of Spare Vacuum Tubes		4.6
1	Spare Parts Box	15-3/4 X 16-3/4 X 25-3/8	123
1	Spare Parts Box	11-3/4 X 14-3/4 X 17-3/4	88
1	Spare Parts Box	8-1/2 X 10 X 30	110
1	Spare Parts Box	6-3/4 X 8-1/2 X 24-1/2	55
1	Spare Parts Box	12-3/4 X 13-3/4 X 19-3/8	44
	TBM-12 (230 V DC)		
1	Radio Transmitter NT-52218	24 X 32 X 72	780
1	Modulator NT-50065-B	18 X 24 X 72	385
1	Motor Generator Set NT-21676	20-1/4 X 20-1/4 X 78-13/16	1225
1	Magnetic Controller NT-211232	10-13/32 X 15 X 20-1/4	68
1	Spare Parts Box	15 X 15 X 24	148
1	Spare Parts Box	12 X 12 X 18	50
1	Spare Parts Box	12 X 18 X 18	140
1	Spare Parts Box	9 X 16 X 30	153
1	Spare Parts Box	12 X 12 X 30	107
1	Spare Parts Box	15 X 15 X 24	156

April 1959

Radio-Transmitters

RADIO TELEGRAPH AND TELEPHONE TRANSMITTING EQUIPMENT

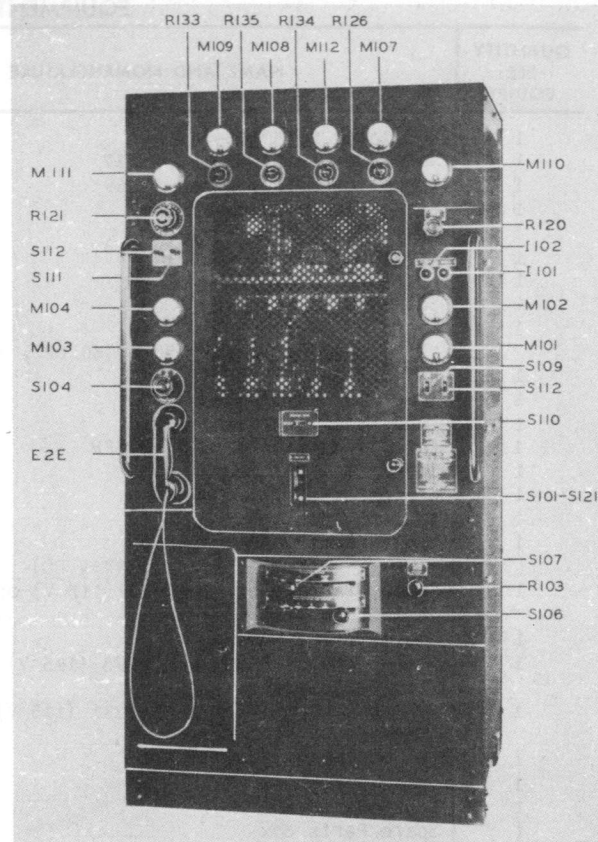
TBN-1



Transmitter Unit, Types CAY-52048

FUNCTIONAL DESCRIPTION

The Navy Model TBN-1 is designed for shore installation to provide continuous-wave, modulated continuous-wave, and radiotelephone transmission in the intermediate and high frequency ranges. It has provisions to permit simultaneous operation of the intermediate and high frequency transmitter units and for switching either transmitter to either rectifier. It provides duplicate remote control units to permit control of both transmitters for telegraph operation over land lines and speech input equipment is provided to permit remote telephone operation of the high frequency transmitter. It may also be



Rectifier-Modulator Unit Type CAY-20033

controlled and keyed using the Navy Standard 4-wire Remote Control System employing the Navy Type 23005 Remote Control Unit when supplied.

No field changes in effect at time of preparation (20 August 1958).

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE

IF: 300 to 2000 kc.
HF: 2000 to 18,100 kc.

POWER OUTPUT

IF: 1000 W.
HF: 500 W or 75 W nom at 2000 to 9050 kc.

EMISSION

IF: A1, A2.
HF: A1, A2, A3.

FREQUENCY CONTROL: Master oscillator.

KEYING SPEED: 100 wpm.

POWER REQUIREMENTS: 220 v, 60 cps, 3 ph,
5200 W max.

Radio-Transmitters

TBN-1

**RADIO TELEGRAPH AND TELEPHONE
TRANSMITTING EQUIPMENT**

MANUFACTURER'S OR CONTRACTOR'S DATA

Westinghouse Electric and Mfg Co., Chico-
pee Falls, Mass.
Contract NOs-38614, dated 9 October
1934.

REFERENCE DATA AND LITERATURE

Technical Manual for Navy Model TBN-1 Radio
Telegraph and Telephone Transmitting Equip-
ment.

TUBE AND/OR CRYSTAL COMPLEMENT

(2) 10Y	(2) 217C	(8) 3B28
(4) 38111A	(2) 4B26	(5) 56
(1) 80	(4) 849	(1) 851
(7) 860	(1) 861	(12) 872A

Total Tubes: (49)
No Crystals used.

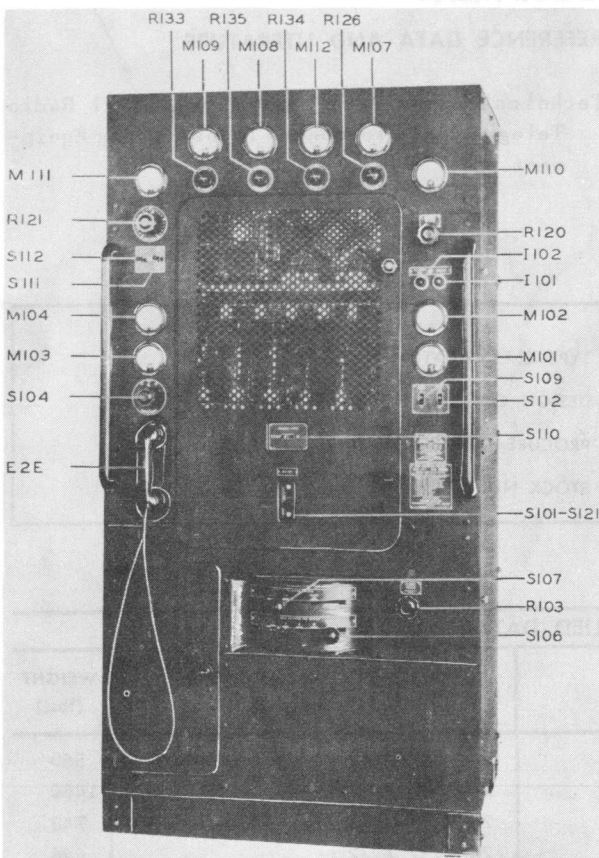
TYPE CLASSIFICATION
DESIGN COGNIZANCE BUSHIPS
PROCUREMENT COGNIZANCE
STOCK NO.

EQUIPMENT SUPPLIED DATA

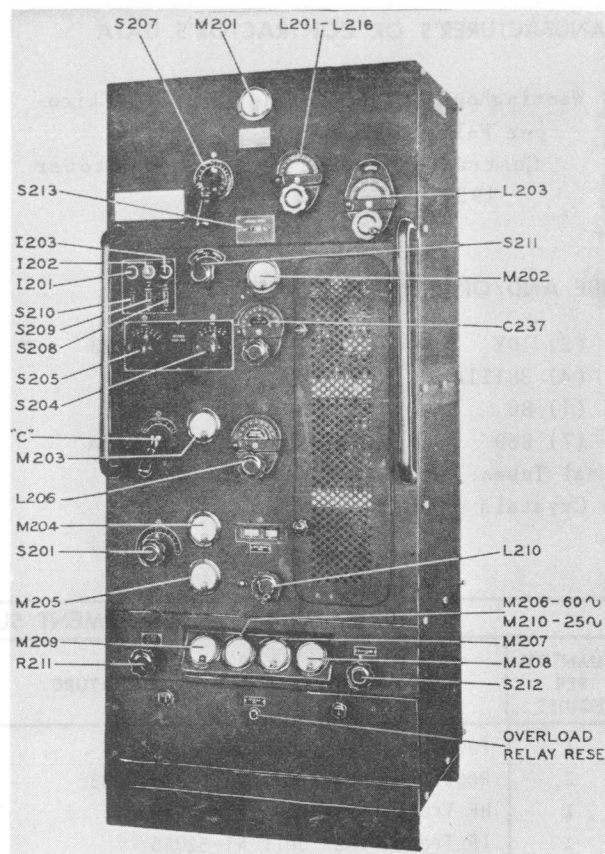
QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Power Transfer Unit NT-23078	24 X 24 X 72	550
2	Rectifier-Modulator Unit NT-20033	24 X 38 X 72	1460
1	HF Transmitter Unit NT-52048	24 X 32 X 72	748
1	IF Transmitter Unit NT-52046	24 X 32 X 72	626
2	Remote Control Unit NT-23076	12-15/16 X 19 X 20	86
1	Single Channel Speech Input Equipment consisting of: Master Monitor Unit NT-23072	11-3/4 X 12-1/4 X 13-7/8	45
	Telephone Power Unit NT-20039	12-3/8 X 13-3/8 X 15-5/8	85
	Station Control Unit NT-23070	8-1/2 X 10 X 20-15/16	38
1	Set of Vacuum Tubes		
1	Equipment Spares	16-1/2 X 17-1/2 X 31-1/2	131
1	Equipment Spares	16-1/2 X 17-1/2 X 31-1/2	161

TRANSMITTING EQUIPMENT

TBN-3



Rectifier Modulator TBN-3



Transmitter Unit TBN-3

FUNCTIONAL DESCRIPTION

The TBN-3 is designed for shipboard installation and is a combined intermediate and high frequency equipment. It consists of a 500 watt high frequency transmitter unit designed for CW, MCW Telegraph and Telephone transmission plus a 1000 watt intermediate frequency transmitter designed for CW and MCW Telegraph transmission. Suitable switching facilities are provided to permit alternate operation of either transmitter unit from a common rectifier unit. It is supplied with Single Channel Speech Input Equipment making it possible to connect the component units together to form a remote telephone operation of one high frequency transmitter. The transmitter units may be controlled and

keyed using the Navy Standard 4 wire remote control system employing the Navy Type 23005 Remote Control Unit when provided. Provisions are made in the High Frequency Transmitter Unit for low power operation with a nominal output of 75 watts in the frequency range of 2000 to 9050 kilocycles for CW and MCW telegraphic signalling.

No field changes in effect at time of preparation (7 January 1957).

RELATION TO OTHER EQUIPMENT

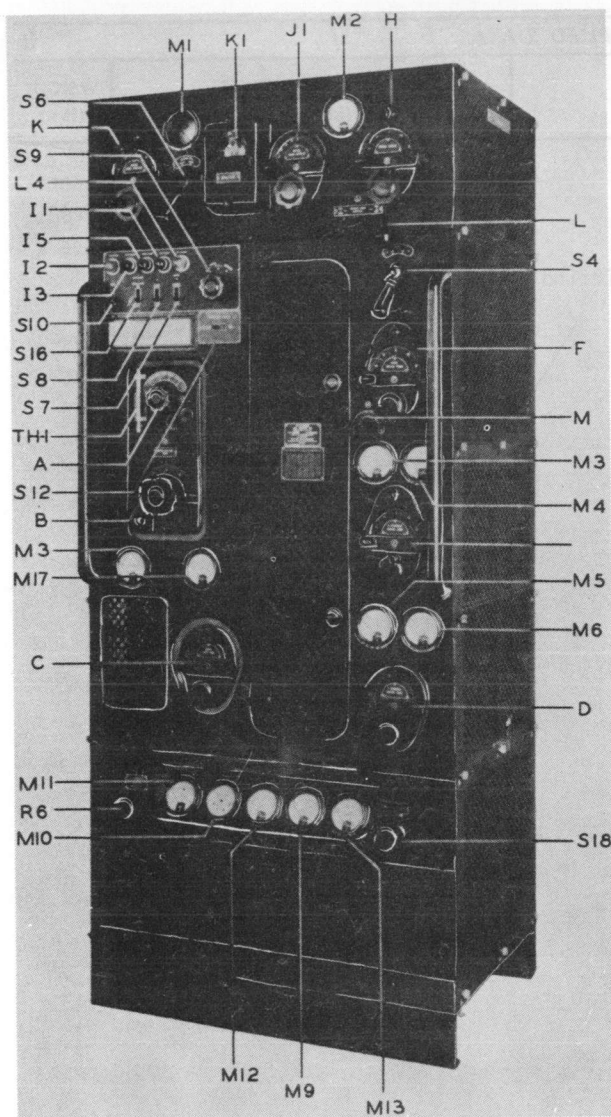
The TBN-3 is similar to other models of the TBN series. Some are used aboard ship, others are used at shore stations, and the major difference is that some models use

August 1957

Radio-Transmitters

TBN-3

TRANSMITTING EQUIPMENT



*Radio Telegraph and Telephone
Transmitting Equipment TBN-3*

rectifier units while the others operate from motor generators.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE

INTERMEDIATE: 300 to 2000 kc.

HIGH: 2000 to 18100 kc.

POWER OUTPUT

INTERMEDIATE FREQUENCY: 1000 W.

HIGH FREQUENCY: 500 W.

EMISSION

INTERMEDIATE FREQUENCY: A1, A2.

HIGH FREQUENCY: A1, A2, A3.

FREQUENCY CONTROL: Master oscillator.

KEYING SPEED

HIGH FREQUENCY TRANSMITTER: 100 wpm.

POWER REQUIREMENTS: 440 v \pm 5%, 60 cps \pm 2%,
3 ph.

MANUFACTURER'S OR CONTRACTOR'S DATA

Westinghouse Electric and Manufacturing
Company, Chicopee Falls, Mass.
Contract NOs-38614, dated 9 October 1934.

TUBE AND/OR CRYSTAL COMPLEMENT

(4) 3B28	(2) 4B26
(1) 10Y	(3) 56
(1) 80	(1) 217C
(2) 849	(1) 851
(7) 860	(1) 861
(6) 872A	(2) 38111A

Total Tubes: (31)

REFERENCE DATA AND LITERATURE

Technical Manual for Navy Model TBN-3 Radio
Telegraph and Telephone Transmitting
Equipment.

TYPE CLASSIFICATION
DESIGN COGNIZANCE BUSHIPS
PROCUREMENT COGNIZANCE
STOCK NO.

August 1957

Radio-Transmitters

TRANSMITTING EQUIPMENT

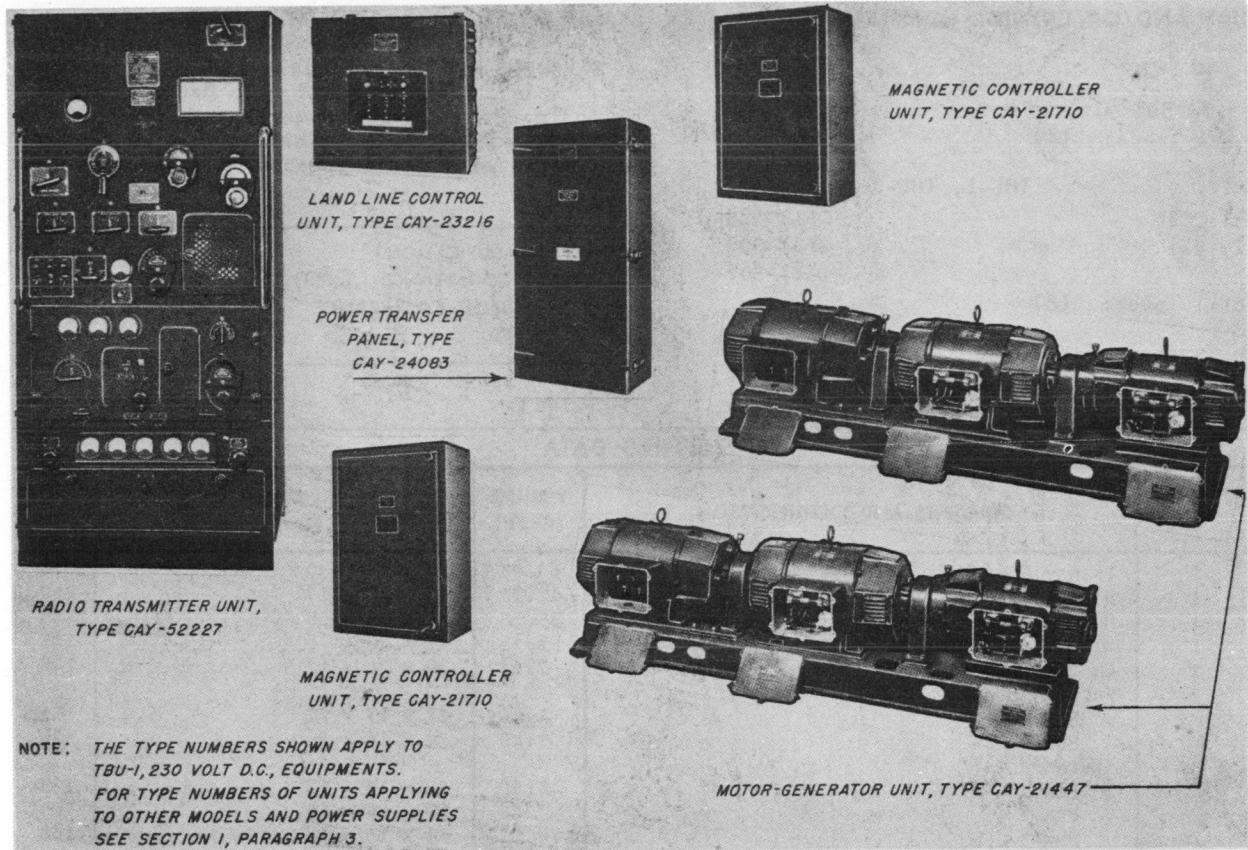
TBN-3

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Rectifier-Modulator Unit NT-20033	24 X 38 X 72	1460
1	High Frequency Transmitter Unit NT-52048	24 X 32 X 72	748
1	Intermediate Transmitter Unit NT-52046	24 X 32 X 72	626
1	Single Channel Speech Input Equipment consisting of:		
	(1) Master Monitor Unit NT-23072	11-3/4 X 12-1/4 X 13-7/8	45
	(1) Telegraph Power Unit NT-20039	12-3/8 X 13-3/8 X 15-5/8	85
	(1) Station Control Unit NT-23070	8-1/2 X 10 X 20-15/16	38
1	Spare Parts Box	16-1/2 X 17-1/2 X 31-1/2	146
1	Spare Parts Box	16-1/2 X 17-1/2 X 31-1/2	161
1	Set of Tubes		

RADIO TELEGRAPH TRANSMITTING EQUIPMENT

TBU, TBU-1,-2,-3



Radio Telegraph Transmitting Equipment TBU, TBU-1, -2, -3

FUNCTIONAL DESCRIPTION

The TBU, TBU-1, -2 and -3 are primarily designed for use on all larger types of surface vessels where medium frequency, medium power transmitters are desired. The emitted frequency is continuously variable throughout the specified frequency range. The transmitter may be operated from the front panel or from a remote location by use of a Navy standard four or six wire remote control unit.

The TBU and TBU-2 are identical to the TBU-1 and TBU-3 except that the TBU-1 and TBU-3 have been adapted for shore installations by the addition of duplicate motor-generator sets and a land line control unit.

No field changes in effect at time of preparation (24 April 1958).

RELATION TO OTHER EQUIPMENT

Equipment Required but not Supplied: (1) Navy standard four or six wire remote control unit, Navy standard keying equipment.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 300 to 2000 kc.
TYPE OF EMISSION: A1, A2.
KEYING DATA: Relay keying, 100 wpm max speed.
NOMINAL POWER OUTPUT
A1: 1000 W.
A2: 500 W. A2:
FREQUENCY CONTROL: MO.
POWER SOURCE REQUIRED: Equipments available for the following power supplies; 220 or 440 v, 60 cps, 3 ph, 230 v DC or 115 v DC (TBU-2 only).

MANUFACTURER'S OR CONTRACTOR'S DATA

Westinghouse Electric Mfg Co, Baltimore, Md.
Contract NOs-66593, dated 9 May 1939.
Contract NOs-82338, dated 24 February 1941.
Approximate Cost: \$12500.00 with equipment spares.

Radio-Transmitters

TBU, TBU-1,-2,-3 RADIO TELEGRAPH TRANSMITTING EQUIPMENT

TUBE AND/OR CRYSTAL COMPLEMENT

REFERENCE DATA AND LITERATURE

TBU, TBU-2
(3) 803 (1) 851
Total Tubes: (4)

TBU-1, TBU-3
(1) OC3W (1) 5Z3
(1) 851 (3) 803
Total Tubes: (8)
No Crystals Used.

NAVSHIPS 900384: Technical Manual for Navy Models TBU and TBU-2 Ship Radio Telegraph Transmitting Equipments and Navy Models TBU-1 and TBU-3 Shore Radio Telegraph Transmitting Equipments.

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	Transmitter Unit	60.93	78 x 45 x 30	1070
1	Power Transformer Panel	12.75	48 x 27 x 17	210
1	Motor-Generator Unit	33.28	26 x 79 x 28	1445
1	Magnetic Controller	5.15	27 x 22 x 15	125
1	Land Line Control Unit#	7.67	30 x 26 x 17	140
2	Vacuum Tubes			
	Box 1	4.48	17 x 17 x 27	12
	Box 2	1.48	20 x 16 x 8	20
5	Spare Parts** ***			
	Box 1	4.90	28 x 18 x 17	125
	Box 2	7.52	39 x 24 x 14	205
	Box 3	4.01	33 x 15 x 14	150
	Box 4	1.55	28 x 12 x 8	77
	Box 5	4.01	33 x 15 x 14	150
4	Spare Parts			
	Box 1	4.96	28 x 18 x 17	125
	Box 2	7.52	29 x 24 x 14	146
	Box 3	1.55	28 x 12 x 8	77
	Box 4	4.01	33 x 15 x 14	150

NOTES: **Equipment for 200 to 220 v, 60 cps, 3 ph operation (TBU-1)
***Equipment for 220 or 440 v, 25 cps, 3 ph operation (TBU-3)

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radio Transmitter		
	CAY-52223*	72 x 34 x 24	769
	CAY-52227**	72 x 34 x 24	769
	CAY-52224***	72 x 34 x 24	769
	CAY-52225***	72 x 34 x 24	769
2	Motor Generator Unit		
	CAY-21448*	22-1/8 x 74-21/32 x 20-3/4	1185
	CAY-21447**	20-1/4 x 77-1/15 x 20-3/8	1205
	CAY-21703#	21-3/4 x 76-3/4 x 20-1/2	1300

**RADIO TELEGRAPH TRANSMITTING
EQUIPMENT**

TBU, TBU-1,-2,-3

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
2	Magnetic Controller CAY-21695*	18-29/32 x 16-5/8 x 9-3/16	50
	CAY-21710**	22-21/32 x 16 x 13-1/4	70
	CAY-21694***	18-29/32 x 16-5/8 x 9-3/16	50
	CAY-21696***	18-29/32 x 16-5/8 x 9-3/16	50
1	Land Line Control Unit CAY-23216	20-3/4 x 21-3/16 x 11-1/16	81
1#	Land Line Control Unit CAY-23217	20-3/4 x 21-3/16 x 11-1/16	81
1	Power Transfer Panel CAY-24084-A	39-13/16 x 20-1/4 x 11	108
	CAY-24083**	39-7/8 x 20-1/4 x 10-3/8	108
1	Set of Vacuum Tubes		5.4
1	Set of Spare Parts		140 (105)#

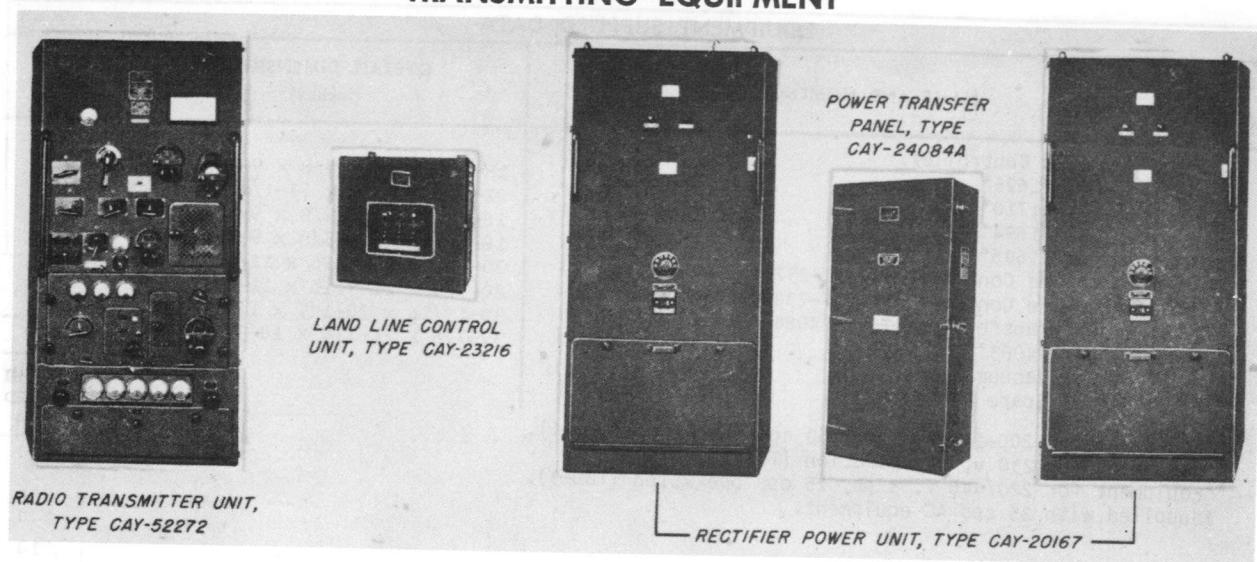
- *Equipment for 200-220 v, 3 ph, 60 cps operation (TBU-1).
- **Equipment for 230 v, DC operation (TBU-1).
- ***Equipment for 220/440 v, 3 ph, 25 cps operation (TBU-3).
- #Supplied with 25 cps AC equipment.

April 1959

Radio-Transmitters

TBU-4

SHORE RADIO TELEGRAPH TRANSMITTING EQUIPMENT



Model TBU-4 Transmitting Equipment

FUNCTIONAL DESCRIPTION

The Navy Model TBU-4 is designed to provide telegraphically keyed continuous wave or modulated continuous wave in the 300 to 2000 kilocycle frequency range. The power output can be varied from full power to less than one-quarter power and the frequency is continuously variable in the specified band. Telegraph keying speeds up to 100 words per minute may be utilized by means of the keying relay, and in addition, speeds up to 500 words per minute are available when the incorporated vacuum tube keying system is used.

It is primarily intended for shore installations and can be remotely controlled and keyed by use of a suitable keying mechanism connected to the land line control unit.

No field changes in effect at time of preparation (1 August 1958).

EQUIPMENT REQUIRED BUT NOT SUPPLIED

Interconnecting Cables as Required, (1) Remote Control Unit NT-23005 (4-wire) or Re-

mote Control Unit (standard 6-wire), (1) Antenna.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 300 to 2000 kc.
EMISSION: A1, A2.
FREQUENCY CONTROL: Master oscillator.
POWER OUTPUT: 1000 W nom.
MODULATION FREQUENCY: 800 cps.
KEYING SPEEDS: 100 and 500 wpm.
POWER REQUIREMENTS: 220 v, 60 cps, 3 ph.

MANUFACTURER'S OR CONTRACTOR'S DATA

Westinghouse Electric and Mfg Co., Radio Div, Baltimore, Md.
Contract NOs-82338, dated 4 April 1942.

TUBE AND/OR CRYSTAL COMPLEMENT

(1) OC3W	(1) 5Z3	(3) 803
(2) 807	(1) 851	

Total Tubes: (8)

Radio-Transmitters

TBU-4

**SHORE RADIO TELEGRAPH
TRANSMITTING EQUIPMENT**

No Crystals used.

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

REFERENCE DATA AND LITERATURE

NAVSHIPS 900391: Technical Manual for Model TBU-4 Shore Radio Telegraph Transmitting Equipment.

SHIPPING DATA

NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
1	Transmitter Unit NT-52272	57.0	30 x 42 x 79	1010
2	Rectifier Power Unit NT-20167	62.0	31 x 44 x 79	1410
1	Land Line Control Unit NT-23216	7.7	17 x 26 x 30	140
1	Transfer Panel NT-24084-A	12.7	17 x 27 x 48	210
1	Electron Tube Type 851	4.5	17 x 17 x 27	12
1	Set of Electron Tubes	1.5	8 x 16 x 20	20
1	Set of Equipment Spares	10.5	19 x 29 x 33	325

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIP	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radio Transmitter Unit NT-52272	24 x 34 x 72	768
2	Rectifier Power Unit NT-20167	24 x 34 x 72	1170
1	Land Line Control Unit NT-23216	10-3/8 x 20-7/16 x 20-11/16	81
1	Transfer Panel NT-24084-A	11 x 20-1/4 x 39-13/16	108
1	Set of Tubes		5.4
1	Set of Equipment Spares		270

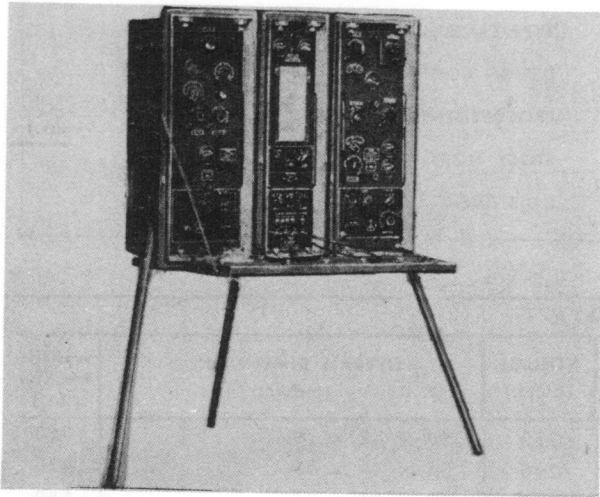
TYPE CLASSIFICATION
DESIGN COGNIZANCE BUSHI PS
PROCUREMENT COGNIZANCE
STOCK NO.

April 1958

PORTABLE RADIO TRANSMITTING EQUIPMENT

Radio-Transmitters

TBW, TBW-1 THRU -5



Portable Radio Transmitting Equipment
TBW, TBW-1 Thru -5

DC (TBW-2 only).
POWER SUPPLY EQUIPMENT: Motor-Generator Set,
 Gasoline Engine Generator.
FREQUENCY RANGE: 350 to 1000 kc; 3000 to
 18,100 kc.
TYPE OF EMISSION: A1, A2, A3.
NOMINAL POWER OUTPUT: A1, A2 - 100 W; A3 -
 25 W.
FREQUENCY CONTROL: Master Oscillator.

MANUFACTURER'S OR CONTRACTOR'S DATA

Westinghouse Electric and Mfg Co Balti-
 more, Maryland.
 Contract NOs-65690, dated 16 March 1939
 (TBW).
 Contract NOs-72056, dated 26 February
 1940 (TBW-1).
 Contract NOs-88873, dated 30 June 1941
 (TBW-2).
 Contract NXs-4744, dated 2 June 1942
 (TBW-3).
 Contract NXsa-19329, dated 21 December
 1942 (TBW-4).
 Contract NXsr-38081, dated 28 September
 1943 (TBW-5).
 Contract NXsr-51520, dated 21 March
 1944 (TBW-5).
 Approximate Cost: \$3595.00 with equip-
 ment spares.

FUNCTIONAL DESCRIPTION

The Navy Models TBW, TBW-1, TBW-2, TBW-3, TBW-4, and TBW-5, are primarily designed for use in establishing a complete advanced base radio communications station, when used in conjunction with suitable receiving equipment. The transmitting equipment operates with A1, A2, and A3 emission in two frequency ranges: 350 to 1000 kc and 3000 to 18,100 kc. The equipment is so designed that the entire system, including antenna and counterpoise, may be erected in less than one hour by a crew of six men. The transmitter is operated from the front panel position of the rectifier unit.

All the equipments in the TBW Series are functionally identical but differ electrically, principally in the power source required.

No field changes in effect at time of preparation (24 April 1958).

RELATION TO OTHER EQUIPMENT

The TBW, TBW-1, TBW-2 thru -5 when used in conjunction with Portable Radio Receiving Equipment RBM, RBM-1 thru -5 respectively form the MM, MM-1 thru -5 Semiportable Transmitting and Receiving Equipments.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

POWER SOURCE REQUIRED

EQUIPMENT AVAILABLE FOR THE FOLLOWING
POWER SUPPLIES: 115/230 v, 1 ph, 25
 cps; 115/230 v, 1 ph, 60 cps; 230 v

TUBE AND/OR CRYSTAL COMPLEMENT

All Models
 (2) 1616 (1) 5Z3 (1) 801A (2) 803
 (1) 807 (2) 837 (1) 843
 Total Tubes: (10)
 No Crystals Used.

REFERENCE DATA AND LITERATURE

NAVSHIPS 900246: Technical Manual for Navy Model TBW and TBW-1 Portable Radio Transmitting Equipment.
 NAVSHIPS 900247: Technical Manual for Navy Models TBW-2, TBW-3, TBW-4 and TBW-5 Portable Radio Transmitting Equipment.

TYPE CLASSIFICATION DESIGN COGNIZANCE BUSHIPS PROCUREMENT COGNIZANCE STOCK NO.

Radio-Transmitters

TBW,
TBW-1 THRU -5

PORTABLE RADIO TRANSMITTING
EQUIPMENT

SHIPPING DATA

NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
1	TBW-2,-3,-4,-5: Antenna-Counterpoise, Accessories and Related Equipment	24.50	83 X 24 X 28	338
1	Power Converter Equipment	10.57	37 X 26 X 19	354
1	Engine Generator Equipment CDO-73004 and CDO-73004-A CDO-73004-B	8.62	31 X 24 X 20	222
1	Transmitting Equipment	43.57	59 X 44 X 29	478
1	TBW, TBW-1: IF Transmitter, HF Transmitter, and Rectifier Unit	39.64	59 X 43 X 27	395
1	Motor Generator and Magnetic Controller	12.81	41 X 27 X 20	395
1	Gasoline-engine Generator	7.84	31 X 23 X 19	230
1	Antenna and Counterpoise	11.29	65 X 25 X 12	184
1	Accessories	5.60	27 X 19 X 19	113
1	Gasoline Oil Can	2.55	26 X 13 X 13	28
1	Equipment Spares	3.78	29 X 15 X 15	74
1	Transmitter and Rectifier Modulator Tube Complement	2.60	22 X 17 X 12	26

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	MF Transmitter Unit CAY-52119 (TBW, TBW-1)	33-1/4 X 13-7/16 X 17-1/4	56.5
	CAY-52238 (TBW-2 thru -5)	33-1/4 X 13-5/8 X 17-1/4	76.5
1	HF Transmitter Unit CAY-52120 (TBW, TBW-1)	33-1/4 X 13-7/16 X 17-1/4	86.5
	CAY-52239 (TBW-2 thru TBW-5)	33-1/4 X 13-5/8 X 17-1/4	84
1	Rectifier-Modulator (TBW Series)	33-1/4 X 10-7/8 X 17-1/4	71
1	Antenna and Counterpoise		
	Bag 1 (TBW Series)	60 X 12 dia	45
	Bag 2 (TBW Series)	60 X 12 dia	45
1	Set of Accessories (TBW Series)	28 X 18 dia	72
1	Mobile Spares CAY-10034 (TBW, TBW-1)	12-3/4 X 25-5/8 X 13-1/8	50.5
	CAY-10076 (TBW-2 thru TBW-5)	12-3/4 X 20-1/8 X 13-1/8	16.5
1	Microphone† CTE-51004A (TBW Series)		
1	Telegraph Key† RW-26001B (TBW Series)		
1	Motor Generator and Controller CDO-21652* (TBW thru TBW-5)	14-1/2 X 32-1/2 X 20-7/8	296
	CDO-21648**	14-1/2 X 32-1/2 X 20-7/8	296
	CDO-21737*** (TBW-2)		
	Gasoline Engine Generator CDO-73004 (TBW, -1, -2)	17-3/8 X 21-1/4 X 26-1/4	168
	CDO-73004 (TBW, -1, -2)	17-3/8 X 21-1/4 X 26-1/4	168
	CDO-73004A (TBW-3, -4)	17-3/8 X 21-1/4 X 26-1/4	168
	CDO-73004B (TBW-5)	16-1/2 X 11 dia	7
1	Gasoline Can 5 gal	9-1/2 X 8-3/4 dia	3.5
1	Oil Can 2 gal		

*115/230 v, 25 cps operation.
**115/230 v, 60 cps operation.
***220/330 v, DC operation.
†Mounted in Rectifier-Modulator,