13 December 1961

Cog Service: Navy FSN:

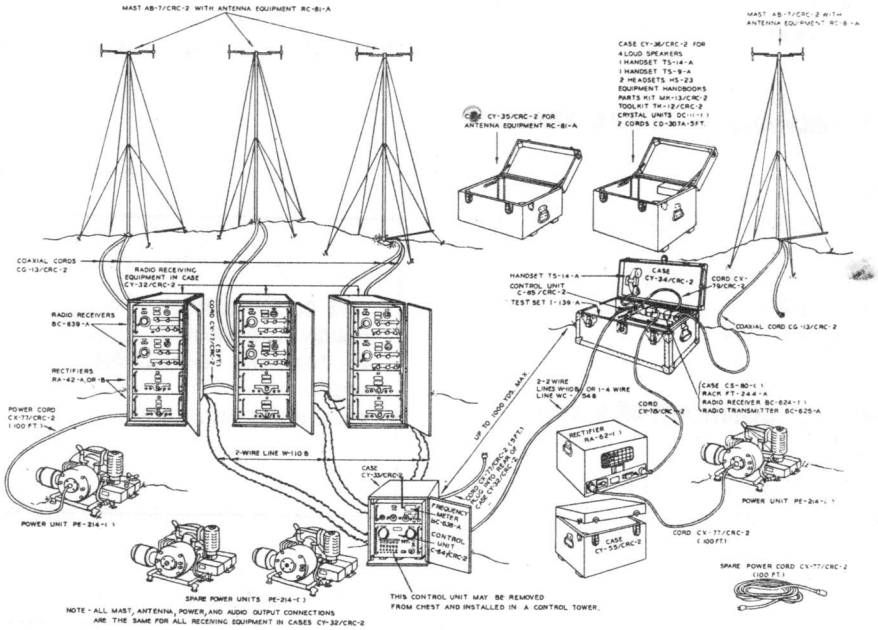
RADIO SET AN/CRC-2

Functional Class: None

USA	USN	USAF
Used by	Used by	

TYPE CLASS:

MANUFACTURER'S NAME/CODE NUMBER: Noblitt Sparke Industries, Inc., (43896).



Radio Set AN/CRC-2

FUNCTIONAL DESCRIPTION:

The Radio Set AN/CRC-2 is used as a Very-High-Frequency (VHF) airdrome control system, and is designed for operation in the frequency range of 100 to 156 megacycles (MC).

The Radio Set AN/CRC-2 is designed and packaged for, air transportation for use in combat areas; where it can be easily assembled. It provides the following facilities:

(1) Two-way radio communication between the airdrome control tower and aircraft in flight.
(2) Maintenance of the above-described communication on four (4) pre-set channels.
(3) Continuous monitoring of six (6) radio channels.
(4) Two spare receiving channels.
(5) Pre-setting of the receivers to the desired channels.

No field changes in effect at time of preparation (20 October 1961).

AN/CRC-2 RADIO SET

TECHNICAL CHARACTERISTICS:

TYPE OF INSTALLATION: Ground; air-transportable.
EQUIPMENT PURPOSE: VHF airdrome control system.
NUMBER OF CHANNELS: Six preset channels.
FREQUENCY RANGE: 100 to 156 mc.
OPERATING POWER RQMT: 110 v ac, 50 to 60 cps, single ph, 300 W.

RELATION TO OTHER EQUIPMENT:

The Radio Set AN/CRC-2 is designed to be used with Radio Set SCR-522( ).

EQUIPMENT REQUIRED BUT NOT SUPPLIED: None.

MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (INCHES)	WEIGHT (LBS)
1	Monitoring Equipment consists of:			
1	Case CY-33/CRC-2		15 x 21-23/32 x 22-1/2	34
1	Frequency Meter BC-638-A		7 x 11-1/2 x 19	35
1	Control Unit C-64/CRC-2		10-1/2 x 10-1/2 x 19	31.5
1	Cord CX-77/CRC-2		1/2 dia x 60 lg	1
3	Radio Receiver Equipment consists of:			
1	Case CY-32/CRC-2		15-1/2 x 22-5/16 x 39-1/2	52
2	Radio Receiver BC-639-A		10-1/2 x 13-1/2 x 19	38.5
2	Rectifier RA-42A or RA-42B		7 x 8-3/4 x 19	25.5
1	Cord CX-77/CRC-2		1/2 dia x 60 lg	1
1	Radio Receiving & Transmitting Equipment consists of:			
1	Case CY-34/CRC-2		17 x 14 x 34-1/4	31
1	Transmitter-Receiver Ass'y consists of:			
1	Case CS-80A		10 x 12-1/2 x 16	75
1	Rack FT-244-A			
1	Radio Receiver BC-624-A			
1	Radio Transmitter BC-625-A			
1	Control Unit C-65/CRC-2		3-3/8 x 13-7/8 x 9	16
1	Handset TS-14		2-1/2 x 3 x 8-3/4	
1	Test Set I-139		2 x 3 x 3	1.2
1	Cord CX-78/CRC-2		1/2 dia x 120 lg	1.6
1	Cord CX-79/CRC-2		5/8 dia x 30 lg	1
1	Spare Tube			4.5
1	Power Supply Equipment consists of:			
1	Case CY-55/CRC-2		15 x 15-3/4 x 20-3/4	32
1	Rectifier RA-62-C		10 x 11-1/4 x 11-3/4	70
4	Power Unit PE-214-A w/Carrying Case		16 x 20 x 23-1/2	86
1	Cable Equipment consists of:			
1	Case CY-165/CRC-2		19 x 19 x 45-3/4	73

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (INCHES)	WEIGHT (LBS)
8	Cord CG-13/CRC-2		5/8 dia x 1020 lg	23
3	Cord CX-77/CRC-2		1/2 dia x 1200 lg	15
1	Antenna Equipment consists of:			
1	Case CY-35/CRC-2		12-1/4 x 21 x 31	35
8	Antenna Equipment RC-81-A			8
1	Miscellaneous Equipment consists of:			
1	Case CY-36/CRC-2		21 x 21 x 21-1/4	20.5
4	Loudspeaker			4.9
12	Crystal Unit DC-11-A			3
1	Handset TS-14		2-1/2 x 3 x 8-3/4	1.2
2	Cord CD-307-A			
1	Handset TS-9-AQ		2-1/2 x 3 x 8-3/4	.6
2	Headset HS-23-A			
1	Parts Kit MK-13/CRC-2			9.6
1	Tool Kit TK-13/CRC-2			
5	Technical Manual Radio Set AN/CRC-2		1/4 x 8-1/2 x 11	
2	Technical Manual Radio Set SCR-522-A		1/2 x 8-1/2 x 11	
5	Technical Manual Mast AB-7/CRC-2		3/16 x 8-1/2 x 11	
5	Technical Manual Control Unit C-64/CRC-2		3/16 x 8-1/2 x 11	
5	Technical Manual Control Unit C-65/CRC-2		3/16 x 8-1/2 x 11	
2	Technical Manual Radio Receiver BC-639-A		1/4 x 8-1/2 x 11	
2	Technical Manual Frequency Meter BC-638-A		3/16 x 8-1/2 x 11	
2	Technical Manual Rectifier RA-42-A & RA-42-B		1/8 x 8-1/2 x 11	
2	Technical Manual Rectifier RA-62C		3/16 x 8-1/2 x 11	
2	Technical Manual Antenna Equipment RC-81-A		1/8 x 8-1/2 x 11	
4	Mast AB-7/CRC-2 packed as follows:			315
1	Chest w/Mast Sections & Anchor Rods		9 x 9 x 135	160
1	Chest w/Guy Ropes & Spare Parts		11 x 16 x 25	155

REFERENCE DATA AND LITERATURE:

AN-08-30CRC2-2: Technical Manual for Radio Set AN/CRC-2.

TUBE, CRYSTAL AND/OR SEMI-CONDUCTOR DATA

TUBES: (1) 6SQ7 (1) 6SK7 (1) 832 (1) 6X5GT (1) 12A6 (1) 12J5GT (1) 6K6GT
(1) 12C8 (1) 6G6GT (1) 6SS7 (1) 9002 (1) 9003 (1) 5V4G (1) 12AH7GT
(1) 12SG7 (1) 6SG7 (1) 6L5G (1) 6E5 (1) 5U4G

CRYSTALS: None used.

AN/CRC-2 RADIO SET

SEMI-CONDUCTORS: None used.

SHIPPING DATA

PKGS	VOLUME (CU FT)	WEIGHT (LBS)

PROCUREMENT DATA

PROCURING SERVICE: BuWeps
SPEC &/OR DWG:

DESIGN COG: BuWeps

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX. UNIT COST
Noblitt Sparke Industries, Inc.	Columbus, Indiana	1366-MPD-4, (PP44-4175; PP44-3077A)	

RADIO SET AN/CRC-3

FUNCTIONAL DESCRIPTION

The AN/CRC-3 Radio Set is an air transportable and man transportable radio set for use with Aircraft Warning Set.

No field changes in effect at time of preparation (17 June 1958).

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 30 to 40 mc.
POWER REQUIREMENTS: 110 v, 60 cps.

TUBE AND/OR CRYSTAL COMPLEMENT

Electron Tubes and Crystal Data not available.

REFERENCE DATA AND LITERATURE

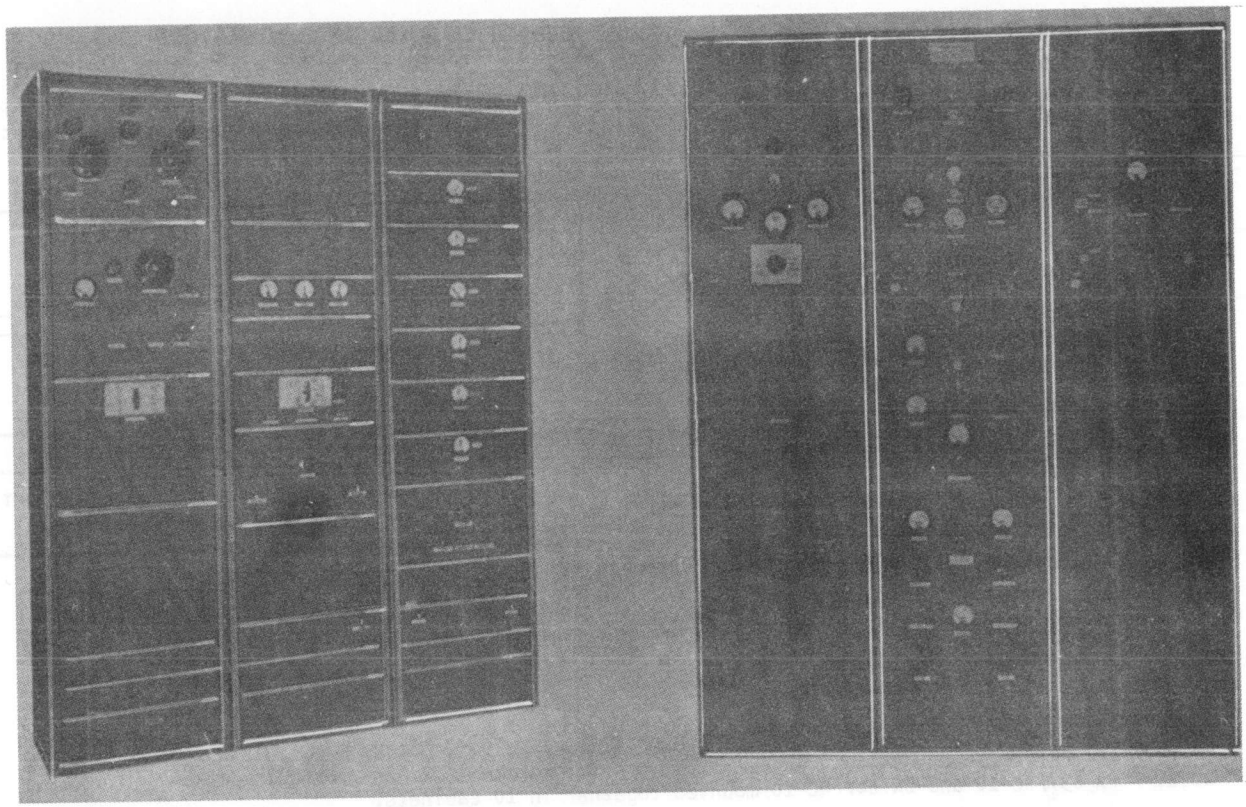
Nomenclature Card for Radio Set AN/CRC-3.

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 Set, AN/CRC-3		

RADIO SET AN/FRC-10



Radio Set

FUNCTIONAL DESCRIPTION

The AN/FRC-10 is a long-range, h-f, fixed-station, v-f carrier telegraph system designed for single side-band operation and used with v-f carrier telegraph equipment. The Single-Side Band Radio Receiving Equipment model REA is a h-f single side-band triple detection receiver designed to operate as a companion to Radio Transmitting Equipment TEF. It is designed for transoceanic telephone in the frequency range of from 4.5 to 22 mc. It provides for the reception of either one or both of two telephone channels arranged as a twin-channel system.

Radio Transmitting Equipment Model TEF is a short-wave transmitter designed for transoceanic telephony in the frequency range from 4.5 to 22 mc. The complete transmitter provides for transmission of two telephone channels in a twin-channel single side-band system or, alternatively, one conventional double side-band channel. It may also be used as an exciter for Press Wireless PW-40 transmitter arranged for operation as a linear amplifier. This is part of an entire terminal for single side-band reduced carrier radio telephone system for twin-channel operation, giving six two-way telegraph circuits over one two-way radio-telephone circuit. The entire terminal consists of a radio transmitter, distortion measuring set, a single side-band receiver, including its associated testing and measuring equipment and v-f carrier telegraph equipment.

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

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 4.5 to 22 mc (may be converted to 4 to 20 mc range).
PRESET FREQUENCIES: 6.
ANTENNA: Rhombic or fixed station type.
TYPE MODULATION: Amplitude (single side-band).
FREQUENCY CONTROL: Crystal.
POWER SOURCE REQUIRED
TEF: 220 v, 50 to 60 cps, 3 ph, 5 KW.

AN/FRC-10 RADIO SET

REA: 115 v, 50 to 60 cps, single ph, 600 W.
CARRIER TERMINALS OA-63/FRC-10 and OA-64/FRC-10: 115 v, 50 to 60 cps, single ph, 3 KW.
POWER OUTPUT: 2-1/2 KW.
INSTALLATION: Fixed station.
TYPE OF SIGNAL: Voice and telegraph.

TUBE AND/OR CRYSTAL COMPLEMENT

No Electron Tubes.

REFERENCE DATA AND LITERATURE

TM11-487A: Directory of Signal Corp Equipments, Radio Communication Equipment, Page 9.

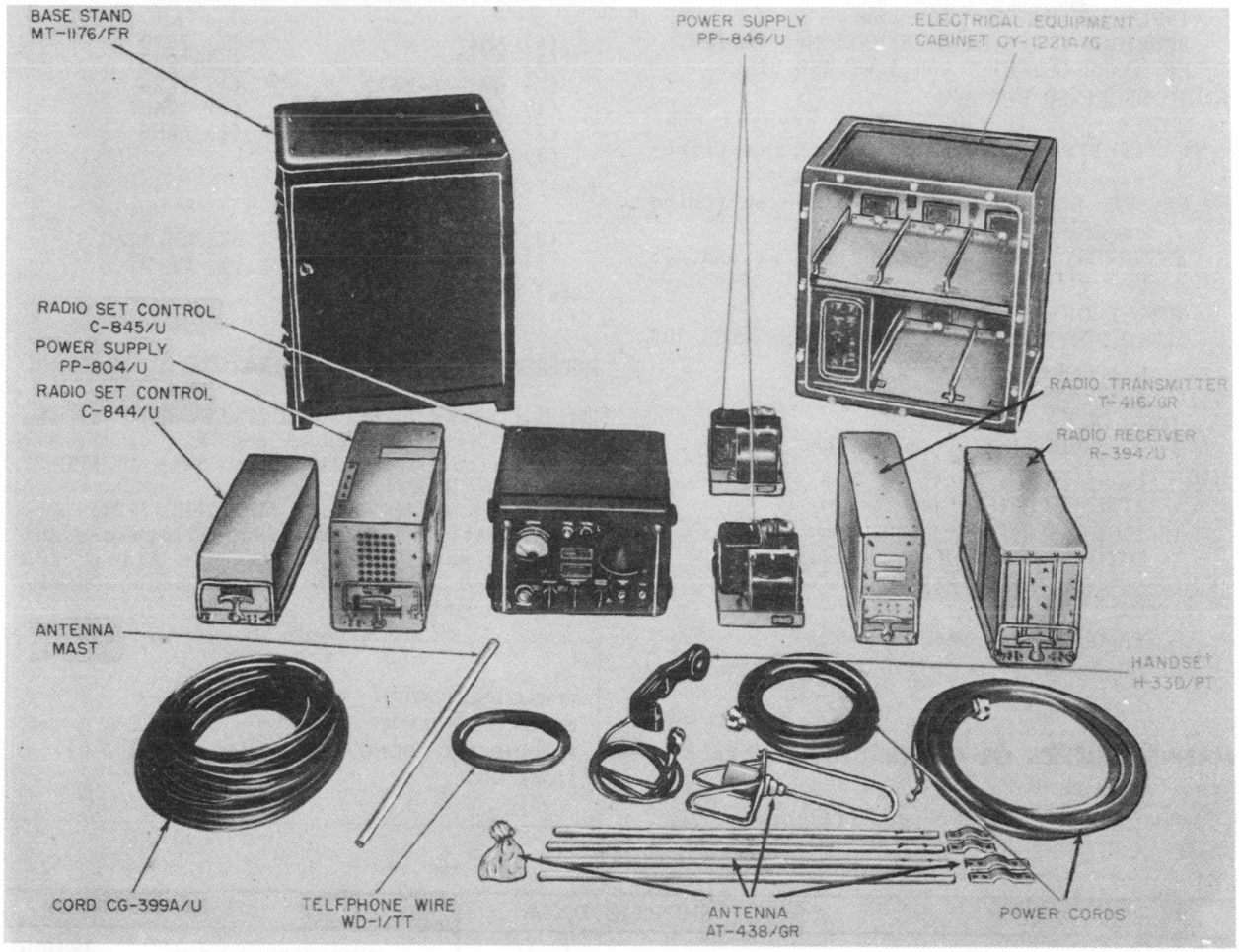
TYPE CLASSIFICATION	
DESIGN COGNIZANCE	TASSA
PROCUREMENT COGNIZANCE	
STOCK NO	

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
	Single Side-Band Radio Receiving Equipment REA (mounted in 3 cabinets)	15-1/4 X 64-3/4 X 84	1436
	Radio Transmitting Equipment (mounted in 3 cabinets cabinets)	27 X 64-3/4 X 89	2428
	Carrier Terminal OS-63/FRC-10*	17 X 84 X 220-1/4	5260
	Carrier Terminal OA-64/FRC-10*		

NOTE: *PA-63/FRC-10 and OA-64/FRC-10 mounted together in 10 Cabinets.

RADIO SET AN/FRC-27



Radio Set AN/FRC-27

FUNCTIONAL DESCRIPTION

The AN/FRC-27 is a preset crystal controlled fixed station FM transmitter and receiver suitable for local or remote operation. It is usually used for simplex operation in either the local or remote position. With the addition of a second receiver and antenna, duplex and retransmission operation can be obtained from the local position.

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

RELATION TO OTHER EQUIPMENT

Similar to AN/TRC-34 except for components and shipping data.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 152 to 174 mc; not continuous.
POWER SOURCE REQUIRED: 115 v or 230 v, 50 to 65 cps, 230 va.
AMBIENT TEMPERATURE RANGE: −40 °C to +65 °C.
RADIO TRANSMITTER T-416/GR
- TYPE: Crystal controlled FM.
- DISTANCE RANGE: Line of sight.
- TYPE OF MODULATION: FM, as derived from Phase modulation.
- FREQUENCY DEVIATION: 15 kc for 100% at 1000 cps.
- TYPE OF TRANSMISSION: Voice.
- CRYSTAL FREQUENCY RANGE: 4750 to 5437.5 kc.
- MULTIPLICATION FACTOR: 32
- FREQUENCY SEPARATION: 1 mc.

OUTPUT IMPEDANCE: 50 ohms.
INPUT IMPEDANCE: 600 ohms.
SPURIOUS EMISSION ATTENUATION: 70 db.
RF POWER OUTPUT: 20W low; 45W high.

RADIO RECEIVER R-394/U
TYPE: Double conversion, crystal controlled superheterodyne, preset, frequency.
CRYSTAL RANGE: 24.033 to 27.700 mc (third overtone).
INTERMEDIATE FREQUENCIES: 7.8 mc and 455 kc.
OUTPUT IMPEDANCE: 8 ohms.
AUDIO POWER OUTPUT: .5W at less than 10% distortion.

ANTENNA AT-438/GR
IMPEDANCE: 50 ohms.
TYPE: Modified ground plane.

RADIO SET CONTROL C-844/U
AF ATTENUATION: 0 to 30 db.
AF INPUT IMPEDANCE: 600 ohms.
AF OUTPUT IMPEDANCE: 600 ohms.

RADIO SET CONTROL C-845/U
SIGNAL: AF.
POWER OUTPUT: .5W.
AF RESPONSE: +2 db 300 to 3500 cps.

MANUFACTURER'S OR CONTRACTOR'S DATA

Motorola, Inc., Chicago, Illinois

TUBE AND/OR CRYSTAL COMPLEMENT

(6) AD4	(17) 5678
(3) 5672	(1) 5783
(2) 3B4-(6AK6)2	(1) 2E26
(1) 5894	(1) 12AU7
(1) 6AK5	(1) 6AK6
(1) 5840	

Total Tubes: (35)

(3) IN19B	(1) CR-32/U
(1) CR-18/U(7345 kc)	(3) CR-27/U

Total Crystals: (7)

REFERENCE DATA AND LITERATURE

TM11-226-and TO16-30FRC27-5: Dept of the Army Technical Manual and Dept of the Air Technical Order for Radio Sets AN/FRC-27 and AN/TRC-34.

Sig. 7 & 8 AN/FRC-27 to 31R2-2FRC27-24: Organizational Maintenance Allowances and Field and Depot Maintenance Allow, and Field & Depot Maintenance Stock Guide-Radio Set AN/FRG-27.

TYPE CLASSIFICATION
DESIGN COGNIZANCE TASSA
PROCUREMENT COGNIZANCE MIL-N-11539(Sig C)
STOCK NO.

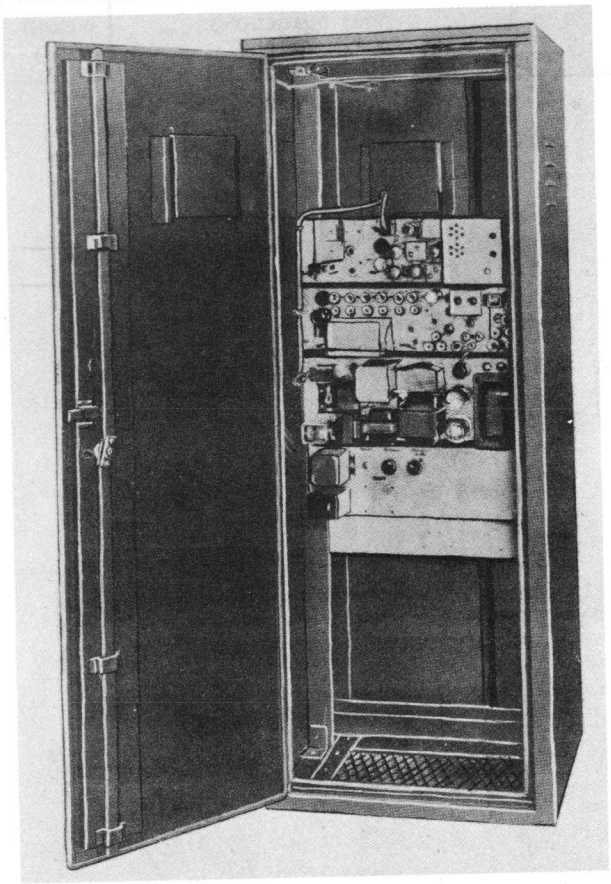
SHIPPING DATA

NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
	For Export Packaging			
1	Electrical Equipment Cabinet CY-1221/G, CY-1221A/G with components installed and accessories.	16.72	22 X 27-3/4 X 47-5/16	310
1	Base Stand-MT-1176/FR	8.94	20-7/8 X 26-1/4 X 28	130
1	Antenna	1.42	8 X 9 X 34	18
1	Antenna Mast	.59	4 X 4 X 64	15
	For Domestic Packaging			
1	Electrical Equipment Cabinet-CY-1221/G, CY-1221A/G with components installed	9.56	22-1/2 X 26-1/4 X 27-7/8	143
1	Base Stand-MT-1176/FR	8.0	20-1/8 X 23-3/4 X 29	94
1	Accessories	4.55	12-3/4 X 22-1/4 X 27-3/4	92
1	Antenna	0.77	6 X 7 X 32	10
1	Antenna Mast	0.13	2 X 61	7

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radio-Receiver-R-394/U	5-3/4 X 8-1/2 X 14-1/2	19
2	Power Supply-PP-846/U	5-1/8 X 6-1/4 X 7-1/16	10
1	Radio Transmitter-T-416/GR	4-1/2 X 8-1/2 X 14-1/2	9
1	Power Supply-PP-804/U	7 X 8-5/8 X 14-1/2	40
1	Radio Set Control-C-845/U	8-7/16 X 13-1/2 X 13-3/4	17-1/2
1	Radio Set Control-C-844/U	5-7/8 X 8-3/4 X 14-3/4	10
1	Electrical Equipment Cabinet-CY-1221/G and CY-1221A/G	16-7/8 X 20-1/2 X 21-1/4	58
1	Antenna-AT-438/GR	5-1/2 X 6-1/2 X 31	10
1	Handset H-33D/PT	2 X 2-1/4 X 7	1-1/16
1	Kit, running spares	4 X 6 X 6	10
1	Cables, set	7-1/2 X 12-1/4 X 15-1/4	31
1	Base Stand-MT-1L76/FR	17 X 21-3/4 X 23-1/2	74
2	Technical Manual for radio set	1/2 X 8-1/2 X 11	1
2	Instruction Manual for Radio Receiver-R-394/U	1/2 X 8-1/2 X 11	1
2	Instruction Manual for Radio Transmitter-T-416/GR	1/2 X 8-1/2 X 11	1
2	Instruction Manual for Power Supply-PP-804/U or TM11-5072	1/2 X 8-1/2 X 11 1/8 X 6 X 9-1/4	1 1/4
4	Instruction Manual for Power Supply-PP-846/U	1/2 X 8-1/2 X 11	1

RADIO SET



Radio Set AN/FRC-36

FUNCTIONAL DESCRIPTION

The AN/FRC-36 is an FM-two way radio base station designed for operation on a specific crystal controlled frequency within the 30 to 42 mc frequency range. The unit consists basically of a transmitter, receiver, power supply, and control chassis assembled in an upright metal cabinet suitable for either outdoor or indoor installations. Transmitter RF power output is a nominal 50 watts. The complete station assembly is designed to operate from a 117 v, 50 to 60 cps primary power source. With associated accessories, this station will provide dependable two-way communications with mobile and/or other base stations operating within range on the same specific frequency.

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

RELATION TO OTHER EQUIPMENT

Same as Model X51A-1 (Motorola).
Equipment Required but not Supplied: (1) Speaker or headset (1) Microphone.
Test Sets for calibration and checking.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 30 to 42 mc.
AMBIENT TEMPERATURE RANGE: -30°C to 460°C.
MODULATION ACCEPTANCE: ±15 kc at -6 db.
RECEIVER
- SENSITIVITY: Less than 0.45 uv for 20 db quieting.
- INPUT IMPEDANCE: 50 to 72 ohms.
- SPURIOUS RESPONSE ATTENUATION: 100 db.
- FREQUENCY STABILITY: ±750 cps.
- SQUELCH THRESHOLD SENSITIVITY: 0.2 uv.
- AUDIO OUTPUT: 1 W.
- POWER CONSUMPTION
  - OPERATE: 40 W.
  - MUTED: 30 W.

TRANSMITTER
- CRYSTAL FREQUENCY MULTIPLICATION: 16 times.
- POWER OUTPUT: 50 W.
- OUTPUT IMPEDANCE: 50 to 72 ohms.
- SPURIOUS EMISSION ATTENUATION: -60 db.
- FREQUENCY STABILITY: ±750 cps.
- MODULATION: ±15 kc for 100% at 1000 cps.
- INPUT IMPEDANCE: 500 ohms.
- AUDIO INPUT LEVEL: -20 db.
- POWER CONSUMPTION
  - STANDBY: 70 W.
  - TRANSMIT: 400 W.

PRIMARY POWER SOURCE: 117 v, 50 to 60 cps single ph.

MANUFACTURER'S OR CONTRACTOR'S DATA

Motorola, Inc., Chicago, Ill.
Model-X-51A1
Contract NObsr-64259, dated 30 June 1954.

TUBE AND/OR CRYSTAL COMPLEMENT

(2) 12AT7	(2) 5R4WGYA
(3) 6AB4	(1) 6BC5
(7) 6BH6	(2) 7V7
(1) 6BJ6	(2) 7C5
(3) 6AL5	(1) 2E26
(1) 6AQ5	(1) 6AK6WA
(1) 6AK5	(1) 829B

Total Tubes: (28)

(1) CR-28/U (2) Operating

Total Crystals: (3)

REFERENCE DATA AND LITERATURE

68P836250-0: Instruction Manual by Motorola-The "Research" Line of Radio Communications Equipment-AN/FRC-36 FM2-Way Radio Fixed Stations

TYPE CLASSIFICATION	
DESIGN COGNIZANCE	BUSHIPS
PROCUREMENT COGNIZANCE	BUSHIPS
STOCK NO.	

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Transmitter Chassis		
1	Receiver Chassis		
1	AC Power Supply Chassis		
1	Remote Control Chassis		
1	Spare Fuse and AC Panel		
1	Cable Kit		
1	Cabinet Kit		
1	Tuning Tool Kit		
1	Receiver IF Crystal-3185 KC		

RADIO SET AN/FRC-37(XN-1)

FUNCTIONAL DESCRIPTION

The AN/FRC-37(XN-1) is a transmitting and receiving set for use in shore-based radio relay link systems. It is a microwave system consisting of one bay of equipment and its associated antenna and voltage regulator which may be utilized in various ways to meet different operations requirements. The equipment is capable of transmitting and receiving pulsed AM signals and has been designed to operate with the Multiplexer Set C-1X or the Navy model UQ multiplex PTM equipment (Modulator Group OA-502/FRC, Demodulator Group OA-504/FRC, and Demodulator-Modulator Group OA-505/FRC). The set is capable of operation as a repeater in a radio relay system consisting of as many as 5 hops and is designed to net on a video basis with the Navy Model UQ r-f equipment (Radio Terminal Group OA-501/FRC, Radio Repeater Grpup OA-503/FRC, and Radio Repeater Group OA-510/FRC).

The Equipment operates in the 1700 to 2400 mc frequency band, communication between stations being limited to line of sight operation. Highly directional parabolic antennas are used to effectively increase the power output of the transmitter. Two transmitters and two receivers are normally operated in a parallel path arrangement on the same frequency but separated on a polarization basis. Relatively unattended operation is possible by the elimination of switch over equipment.

No field changes in effect at time of preparation (18 February 1957).

ELECTRICAL AND MECHANICAL CHARACTERISTICS

TRANSMITTER
- TYPE OF MODULATION: Pulse.
- CARRIER FREQUENCY RANGE: 1700 to 1970 mc and 1970 to 2400 mc.
- FREQUENCY STABILITY: 0.005% max.
- CARRIER BANDWIDTH: 6 mc.
- VIDEO INPUT IMPEDANCE: 70 ohms ominal.
- INPUT PULSE VOLTAGE: 2 to 15 v peak.
- INPUT PULSE CHARACTERISTIC: 0.3 usec max rise time; 0.2 usec wide.
- POWER OUTPUT: 25 w peak.
- DUTY CYCLE: 20% max (0.8 to 10%).
- OUTPUT IMPEDANCE: 50 ohms.

RECEIVER
- FREQUENCY RANGE: 1700 to 2400 mc.
- FREQUENCY STABILITY: ±0.02%.
- INPUT IMPEDANCE: 50 ohms.
- NOISE FIGURE: 12 db.
- IMAGE REJECTION: 65 db.
- INTERMEDIATE FREQUENCY: 30 mc.
- BANDWIDTH: 7.0 ± 1 mc between 3 db points
- OVER-ALL GAIN: 109 db.
- VIDEO OUTPUT: 7 to 10 v peak.
- OUTPUT IMPEDANCE: 70 ohms.
- WAVEMETER ACCURACY: 0.02%.
- INPUT SENSITIVITY: 35 uv.

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

MANUFACTURER'S OR CONTRACTOR'S DATA

Federal Telecommunication Labs, Nutley, N.J.
Contract NObsr-64145, dated 30 March 1954.

TUBE AND/OR CRYSTAL COMPLEMENT

(18) 5654-6AK5W	(2) -6J4WA	(16) 5670
(2) 6AG7	(4) 5726-6AL5W	(2) 6BM6
(6) 5686	(10) 2C39A	(2) 6080
(4) 5Y3WGTA	(8) OA2	(4) 5R4WGA
(8) 3B28		

Total Tubes: (86)

(4) 1N21B	(1) 1N21D	(9) 1N69
(3) 1N38A	(2) 1N213	(2) CR-32/U

Total Crystals: (21)

REFERENCE DATA AND LITERATURE

NAVSHIPS-92834: Technical Manual for Radio Set-AN/FRC-37(XN-1).

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.)
2	1/2 Section of 10 ft Parabolic Reflector	159.8		375 ea
1	Base Assy for Parabolic Reflector	39.1		203
1	Center Section of 10 ft Parabolic Reflector: 1 Aluminum Strut	12.3	1/16 X 2-1/2 X 2-1/2	117

AN/FRC-37(XN-1) RADIO SET

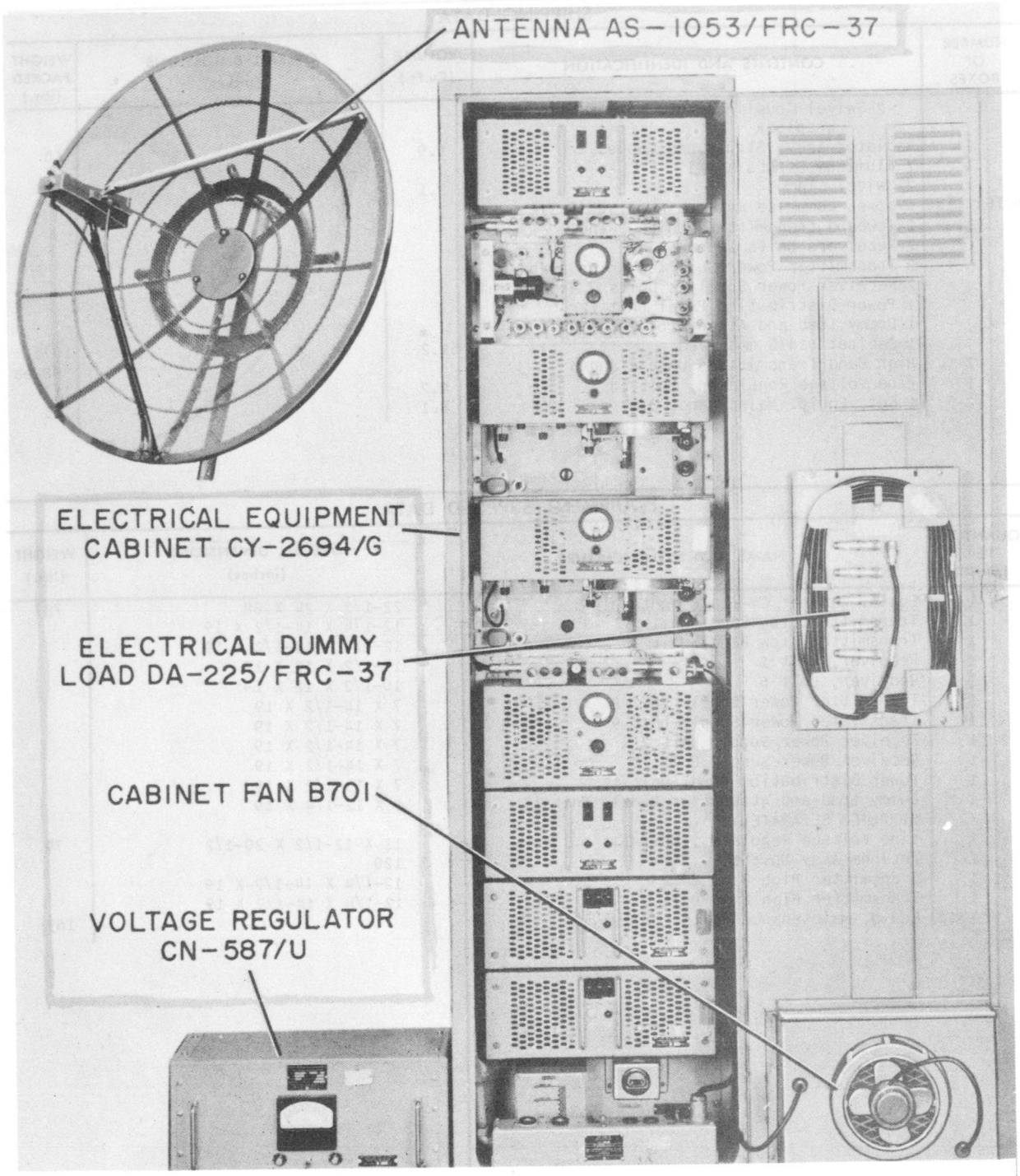
SHIPPING DATA

NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
	2 Swivel Couplings Nuts, bolts, 1 case wraplock			
1	Radiator Assy, Struts and Cables	1.9		60
1	2 Aluminum Struts and 2 Swivel Clamps	2.1	2-1/2 X 6	40
NOTE: 1st	6 boxes comprise Antenna Assy. UNIT 11			
1	2 lowband transmitters Units 2 and 3 2 Receivers Units 1 and 6 2 Transmitter Power Supplies Units 8 and 9 2 Receiver Power Supplies units 7 and 10 1 Power Distribution Panel Unit 12 1 Dummy Load and Attenuator Panel Unit 13 1 Cabinet 614/G modified	51.2		1075
2	High Band Transmitters Unit 4 and 5			98 ea
1	Line Voltage Regulator, Unit 14	4.2		117
1	1 Set, Equip. Maintenance Spares	8.1		163

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Equip. Cabinet CY-614/G containing:	22-1/2 X 24 X 88	787
1	Transmitter, Low Band, Unit 2	12-1/4 X 14-1/2 X 19	
1	Transmitter, Low Band, Unit 3	12-1/4 X 14-1/2 X 19	
1	Receiver, Unit 1	10-1/2 X 12 X 19	
1	Receiver, Unit 6	10-1/2 X 12 X 19	
1	Transmitter Power Supply Unit 8	7 X 14-1/2 X 19	
1	Transmitter Power Supply Unit 9	7 X 14-1/2 X 19	
1	Receiver Power Supply Unit 7	7 X 14-1/2 X 19	
1	Receiver Power Supply Unit 10	7 X 14-1/2 X 19	
1	Power Distribution Panel Unit 12	7 X 13-1/2 X 19	
1	Dummy Load and Attenuator Panel, Unit 13	1 X 12-1/4 X 19	
	SUPPLIED SEPARATELY:		
1	Line Voltage Regulator, Unit 14	11 X 12-1/2 X 20-1/2	79
1	Antenna Assy Unit 11	120	
1	Transmitter High Band Unit 4	12-1/4 X 14-1/2 X 19	
1	Transmitter High Band Unit 5	12-1/4 X 14-1/2 X 19	
1 SET	Equip. Maintenance Parts		163

RADIO SET AN/FRC-37



Radio Set AN/FRC-37

Radio-Transceivers

AN/FRC-37 RADIO SET

FUNCTIONAL DESCRIPTION

Radio Set AN/FRC-37 is part of a voice communication link used in a microwave radio relay system. The single highly directional parabolic antenna supplied with the equipment is used for both transmitting and receiving. This equipment operates in the 1700 MC to 2400 MC frequency band, which limits communication to line-of-sight operation between stations. This equipment can transmit and receive a pulsed RF carrier within the 1700 MC to 2400 MC frequency band. The two transmitters of the equipment are normally operated in parallel on the same frequency, as are the two receivers. This type of operation provides uninterrupted communications in case any one unit of the equipment should fail. The signals are distinguished by their polarization: that is, one transmitter-receiver combination operates on horizontally polarized signals; the other transmitter-receiver combination operates on vertically polarized signals. The pulsed output from one transmitter is fed into a band-pass band-rejection filter (duplexer) and then into a transmission line which is connected to one of the horn inputs of the parabolic antenna for horizontally polarized radiation. The associated receiver input is also connected to the antenna through the same duplexer and transmission line. The other transmitter-receiver combination is connected to the second input of the parabolic antenna through a similar duplexer and transmission line for vertically polarized operation. This method of signal separation provides high system reliability, eliminates the need for switch-over equipment, and makes possible relatively unattended operation of the equipment.

No field changes in effect at time of preparation (3 November 1959).

EQUIPMENT REQUIRED BUT NOT SUPPLIED

(1) Multiplex Set AN/FCC-15.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

TRANSMITTER

- TYPE OF MODULATION: Pulse modulation.
- CARRIER FREQUENCY RANGE: 1700 to 2400 MC.
- FREQUENCY STABILITY: 0.02% max.
- CARRIER BANDWIDTH: 6 MC.
- VIDEO INPUT IMPEDANCE: 70 ohms nominal.
- INPUT PULSE VOLTAGE: 3 to 15 volts peak-to-peak at J301.
- INPUT PULSE CHARACTERISTIC: 0.28 usec rise time maximum 0.1 usec wide minimum.
- POWER OUTPUT: 30 watts peak, minimum.
- DUTY CYCLE: 20% maximum (0.8 to 10%).
- OUTPUT IMPEDANCE: 50 ohms.

RECEIVER

- CARRIER FREQUENCY RANGE: 1700 to 2400 MC.
- FREQUENCY STABILITY: ±0.02% of received carrier frequency. Local oscillator controlled by carrier-follower type AFC.
- INPUT IMPEDANCE: 50 ohms.
- NOISE FIGURE: (-12.5 db) (excluding duplexer).
- IMAGE REJECTION (INCLUDING DUPLEXER FILTER): 65 db minimum.
- INTERMEDIATE FREQUENCY: 30 MC ±1 MC.
- BANDWIDTH: 7.0 ±1 MC between 3 db points.
- OVERALL GAIN: 109 db minimum.
- VIDEO OUTPUT: 7 to 9 volts peak.
- OUTPUT IMPEDANCE: 70 ohms.
- WAVEMETER ACCURACY: 0.02%.
- INPUT SENSITIVITY: Less than 35 microvolts to equal noise.

TRANSMITTER POWER SUPPLY

- INPUT VOLTAGE: 115 volts ±4%.
- LINE FREQUENCY: 50/60 cps ±5%.
- PHASE: Single phase.
- INPUT POWER (FULL LOAD): 480 VA.
- NOMINAL EXTERNAL LOAD: -1000 VDC at 100 MA, +250 VDC at 300 MA, -105 VDC at 30 MA, 6.3 V AC at 5.6 amperes, 5.5 V AC at 1 ampere, 5.5 V AC at 1 ampere, 5.4 V AC at 3 amperes, 115 V AC at 0.2 ampere.

RECEIVER POWER SUPPLY

- INPUT VOLTAGE: 115/220 volts ±10%.
- LINE FREQUENCY: 50/60 cps ±5%.
- PHASE: Single phase.
- INPUT POWER (FULL LOAD): 190 VA.
- NOMINAL EXTERNAL LOAD: +250 VDC at 50 MA, +140 VDC at 110 MA, -300 VDC at 15 MA, -600 VDC at 1 MA, 6.3 V AC klystron filament at 600 MA, 6.3 V AC external filament at 3.6 amperes.

MANUFACTURER'S OR CONTRACTOR'S DATA

Kellogg Switchboard and Supply Co., Chicago, Illinois.
Contract NObsr-75740.

RADIO SET AN/FRC-37

TUBE AND/OR CRYSTAL COMPLEMENT

(8) OA2
(8) 3B28
(4) 5R4WGA
(18) 5654/6AK5W
(6) 5686
(2) 6BM6
(2) 6080
(10) 2C39WA
(4) 5726/6AL5W
(4) 5Y3WGTA
(16) 5670
(2) 6AG7
(2) 6J4WA

Total Tubes: (86).
No Crystals used.

REFERENCE DATA AND LITERATURE

Technical Manual for RADIO SET AN/FRC-37.

TYPE CLASSIFICATION (NAVY)
DESIGN COGNIZANCE USN, BUSHIPS
PROCUREMENT COGNIZANCE SPEC: MIL-G-18050(MC)
STOCK NO.
R.D.B. IDENT. NO.

SHIPPING DATA

NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
1	Antenna AS-1053/FRC-36 (Dissembeled) 3 - Segments of 10 ft dish 1 - Rear Mtg Assy 1 - Vertex Plate 1 - Mtg Clamp 1 - Mtg Ring Assy 1 - Feed Leg Assy 1 - Feed and Cable Assy All necessary hardware for Assy	192	48 X 66 X 108	971
1	Equipment Cabinet Cabinet 2 - Radio Transmitters T-742/FRC-37 2 - Radio Receivers R-951/FRC-37 2 - Power Supply PP-2435/FRC-37 2 - Power Supply PP-2434/FRC-37 1 - Power Distribution Panel SB-1065/FRC-37 1 - Electrical Dummy Load DA-225/FRC-37 1 - Electrical Equipment Cabinet CY-2694/G	46.2	30 X 31 X 95	1085
1	Voltage Regulator CN-587/U	4.4	17 X 20 X 25	110
1	Set Equipment Maintenance Parts	17	29 X 29 X 35	150

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Cabinet, Electrical Equipment CY-2694/G including:	22-1/2 X 24 X 88	785
2	Transmitter, Radio T-742/FRC-37	12-1/4 X 14-1/2 X 19	
2	Receiver, Radio R-951/FRC-37	10-1/2 X 12 X 19	
2	Power Supply (Transmitter) PP-2435/FRC-37	7 X 14-1/2 X 19	
2	Power Supply (Receiver) PP-2434/FRC-37	7 X 14-1/2 X 19	
1	Power Distribution Panel SB-1065/FRC-37	1 X 12-1/4 X 19	
1	Voltage Regulator CN-587/U	12 X 13 X 20	80
1	Antenna AS-1053/FRC-37	44 X 62 X 104	371
1	Dummy Load, Electrical DA-225/FRC-37		

FUNCTIONAL DESCRIPTION

The AN/FRC-42 is a general purpose, fixed station two-way communication set which may be used in conjunction with Radio Sets AN/VRC-32 and AN/PRC-33.

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

ELECTRICAL AND MECHANICAL CHARACTERISTICS

RECEIVER
- TYPE: Wide band, double conversion superheterodyne.
- FREQUENCY RANGE: 30 to 54 mc.
- AUDIO OUTPUT: 1.5 W (less than 10% distortion).
- SENSITIVITY: 0.4 uv (20 db quieting method).
- SQUELCH: Adjustable, will open at less than 0.15 uv at critical setting.
- SELECTIVITY: 100 db ±30 kc (20 db quieting method).
- BANDWIDTH: ±15 kc at the 6 db points (swing method of measurement).
- SPURIOUS RESPONSE: At least 100 db down.
- AMBIENT TEMPERATURE: -30°C to 160°C. (outside of cabinet that houses chassis).
- FREQUENCY STABILITY
  - UNHEATED CRYSTAL: ±0.002%.
  - HEATED CRYSTAL: ±0.0005%.

AUDIO FREQUENCY: Within +2 to -8 db of a 6 db/octave de-emphasis curve from 300 to 3000 cps (1000 cps reference).

CHANNEL SEPARATION(MAX): 0.4% of operating frequency (160 kc approx), in 2, 3 or 4 channel operation.

CONTROL: Crystal

INTERMEDIATE FREQUENCIES: 3.2 mc and 290 kc.

OUTPUT: F3 phase modulation.

RADIO SET CONTROL
- PREAMPLIFIER
  - INPUT IMPEDANCE: 100000 ohms (dynamic microphone); 270 ohms (carbon microphone).
  - OUTPUT IMPEDANCE: 600 ohms nominal.
  - FREQUENCY RESPONSE: ±2 db, 400 to 3500
  - DISTORTION: Less than 5% at 1000 cps.
- LINE AMPLIFIER
  - INPUT IMPEDANCE: 600 ohms nominal.
  - OUTPUT IMPEDANCE: 3.5 ohms.
  - FREQUENCY RESPONSE: ±3 db, 400 to 3500 cps with 1 W output.
- TONE OSCILLATOR FREQUENCY: 800 cps (approx).
- CONTROL CIRCUITS
  - ONE CHANNEL CONTROL: 105 v with line terminated.
  - REMOTE SQUELCH: Max. 105 v DC with control pair open; 12 v DC with control pair terminated (for simplexing with the telephone line).
- VOLTAGE LINE TO LINE OR LINE TO GROUND: 105 v DC with control pair open or terminated (max).
- SHORT CIRCUIT LINE CURRENT: 50 ma (max).

POWER REQUIREMENTS: 117 v, 50 to 60 cps, single ph.

ANTENNA DATA
- TYPE: Folded unipole.

MANUFACTURER'S OR CONTRACTOR'S DATA

General Electric Electronics Division, Syracuse New York.
Contract NObsr 64749 dated 6 June 1955.
Approximate Cost: $628.00 with equipment spares.

TUBE AND/OR CRYSTAL COMPLEMENT

(7) 6BH6	(2) 12AU7
(1) 6U8	(2) 12AT7
(1) 6CL6	(1) 6AL5
(2) 6146	(1) 12AX7

Total Tubes: (17)

REFERENCE DATA AND LITERATURE

NAVSHIPS 92653: Technical Manual for Radio Set AN/FRC-42.

TYPE CLASSIFICATION
DESIGN COGNIZANCE BUSHIPS
PROCUREMENT COGNIZANCE
STOCK NO.

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Cabinet CY-1907/FRC-42		
1	Transmitter-Receiver-Power Supply RT-368/FRC-42		
1	Loudspeaker LS-256/U		
1	Antenna AS-759/FRC-36		
1	Control Unit C-1846/FRC-42		

January 1958

Radio-Transceivers

RADIO SET AN/FRC-43

FUNCTIONAL DESCRIPTION

The AN/FRC-43 is a SHF transmitting and receiving equipment for shore based point to point communications, designed to operate with Navy Model UQ or C-1X TDM-PTM Multiplex Equipment. The equipment except for the Antenna Assembly is mounted in two standard Navy cabinets CY-614/G.

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

RELATION TO OTHER EQUIPMENT

Used w/but not part of Navy Model UQ or C-1X Multiplex Equipments.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

EMISSION AND RECEPTION: P9f.
FREQUENCY RANGE: 4400 to 5000 mc.
POWER OUTPUT: 5 W peak.
NUMBER OF BANDS: single.
POWER SOURCE REQUIRED: 115 v, 50 to 60 cps single ph.

MANUFACTURER'S OR CONTRACTOR'S DATA

Federal Telecommunication Labs., Nutley, N. J.
Contract NObsr-72547.

TUBE AND/OR CRYSTAL COMPLEMENT

No Electron Tubes.

REFERENCE DATA AND LITERATURE

Nomenclature Card for Radio Set AN-FRC-43 amended 17 September 1956.

TYPE CLASSIFICATION
DESIGN COGNIZANCE BUSHIPS
PROCUREMENT COGNIZANCE
STOCK NO.

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Transmitting Equipment		
1	Receiving Equipment		
1	Antenna Assembly		
1	Set of Equipment Maintenance Spares		

June 1957

Radio-Transceivers

RADIO SET AN/FRC-47

FUNCTIONAL DESCRIPTION

The AN/FRC-47 employs the tropospheric forward scatter technique of communication. It will provide 12 multiplexed voice channels operating in the band of 300 to 400 mc with a power output of 50 kw. In pairs this radio Set will provide facilities for a repeater station.

No field changes in effect at time of preparation (14 December 1956).

ELECTRICAL AND MECHANICAL CHARACTERISTICS

OPERATING FREQUENCY: 300 to 400 mc, 1 band, 12 channels.
TYPE EMISSION: A3a.
TRANSMITTER POWER OUTPUT: 50 kw.
OPERATING POWER: 280 v, 60 cps, 3 ph.

TUBE AND/OR CRYSTAL COMPLEMENT

No Electron Tubes.

REFERENCE DATA AND LITERATURE

Nomenclature Card for Radio Set AN/FRC-47.

TYPE CLASSIFICATION
DESIGN COGNIZANCE
PROCUREMENT COGNIZANCE
STOCK NO.

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
2	Antenna System		
2	Transmitter		
4	Receiver		
2	Multiplexer		
1	Audio Termination Facility		
1	RF Test Stand		
1	Monitor and Cable Assy		

NAVY STOCK LIST OF THE ELECTRONICS SUPPLY OFFICE

Radio-Transceiver

RADIO SET AN/FRC-49

FUNCTIONAL DESCRIPTION

The AN/FRC-49 is a frequency modulated transmitter and receiver of voice signals in the 132 to 152 megacycle frequency range. It is used for fixed station communication.

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

ELECTRICAL AND MECHANICAL CHARACTERISTICS

TYPE OF EMISSION AND RECEPTION: F3.
FREQUENCY RANGE: 132 mc to 152 mc.
NUMBER OF BANDS: Single.
POWER SOURCE REQUIRED: 110 or 220 v, 50 to 400 cps, single ph.

TUBE AND/OR CRYSTAL COMPLEMENT

Tubes and Crystals: Not Available.

REFERENCE DATA AND LITERATURE

Nomenclature Card for Radio Set AN/FRC-49 dated 27 August 1956.

TYPE CLASSIFICATION
DESIGN COGNIZANCE BUSHIPS
PROCUREMENT COGNIZANCE
STOCK NO.

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Electrical Equipment Cabinet CY-2069/G		
1	Radio Receiver R-788/G		
1	Receiver Subassembly MX-1547/G		
1	Power Supply PP-1628/G		
1	Power Supply PP-1627/G		
1	Antenna AT-731/G		
1	Radio Transmitter T-620/G		
1	Radio Set Control C-844/U		
1	Radio Set Control C-2069/G		
1	Handset H-33/PT		
1	Base, Stand MT-1176/FR		

Radio-Transceivers

RADIO SET AN/FRC-50

FUNCTIONAL DESCRIPTION

The AN/FRC-50 provides facilities for transmission and reception over two-way microwave paths with frequency diversity on these two paths of wide band information in the frequency range of 7125 to 8100 megacycles. A radio repeater set is used when distance or terrain deems it necessary.

No field changes in effect at time of preparation (9 May 1957).

RELATION TO OTHER EQUIPMENT

Equipment Required but not Supplied: (2) Radio Transmitters T-575/GR or T-576/GR and (2) Radio Receiver R-709/GR or R-710/GR.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

TYPE OF EMISSION AND RECEPTION: F9.
TRANSMITTER POWER OUTPUT: 100 mw.
FREQUENCY RANGE: 7125 to 8100 mc.
NUMBER OF BANDS: 2.
NUMBER OF CHANNELS: 12.
POWER SOURCE REQUIRED: 115 v, 50, 60 or 400 cps, single ph.

TUBE AND/OR CRYSTAL COMPLEMENT

Tubes and Crystals: Not Available.

REFERENCE DATA AND LITERATURE

Nomenclature Card for Radio Set AN/FRC-50 dated 19 September 1956.

TYPE CLASSIFICATION
DESIGN COGNIZANCE BUSHIPS
PROCUREMENT COGNIZANCE
STOCK NO.

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Antenna Group AN/GRA-29		
2	Power Supply PP-1337/GR		
4	Power Supply PP-1338/GR		
2	Power Supply PP-1339/GR		
1	Receiver-Transmitter, Radio RT-357/GR		
1	Signal Comparator CM-81/GR		
1	Pilot Transmitter		
1	Oscilloscope OS-59/GR		
1	Electrical Equipment Rack MT-1723/TR		
1	Power Distribution Panel SB-633/GR		
1	Power Distribution Panel SB-635/GR		

Radio-Transceivers

RADIO SET AN/FRC-51

FUNCTIONAL DESCRIPTION

The AN/FRC-51 is designed as a complete operating radio set, less primary power source, designed for fixed station operation. It provides two-way communication by voice or tone with similar fixed or mobile equipment over a range of at least twenty (20) miles over open country.

The AN/FRC-51 operates in the frequency range of 32 to 42 megacycles (mc) utilizing frequency modulation (FM) with one fixed frequency output (crystal controlled).

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

RELATION TO OTHER EQUIPMENT

The AN/FRC-51 is same as AN/FRC-6A except for frequency range.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

TYPE OF EMISSION AND RECEPTION: F3 type.
NUMBER OF BANDS: One band.
TYPE OF CONTROL: Crystal controlled.
OPERATING RANGE: 20 miles minimum over open terrain.
AUDIO RESPONSE: 400 to 3000 cycles within ±3 db of the response at 1000 cycles.
TRANSMITTER
  POWER OUTPUT: 50 W.
  TYPE OF MODULATION: Frequency modulation resulting from phase modulation.
  FREQUENCY DEVIATION: ±15 kc max.
  FREQUENCY RANGE: 32 to 42 megacycles.
RECEIVER
  TYPE: Dual conversion superheterodyne with two crystal oscillators.
  TYPE OF SIGNALS RECEIVED: Frequency Modulated, voice or tone.
  FREQUENCY RANGE: 32 to 42 megacycles.
OPERATING POWER REQUIREMENTS: 110 v, 60 cps, single ph.

MANUFACTURER'S OR CONTRACTOR'S DATA

Farnsworth Electronics Co., Fort Wayne, Indiana.

TUBE AND/OR CRYSTAL COMPLEMENT

(2) 5U4G	(2) 5Y3WGTB	(1) 6C8G
(2) 6H6GT	(1) 6K6GT	(1) 6K8GT
(8) 6SG7Y	(1) 6V6GTY	(2) 7A8
(1) 7C5	(4) 7C7	(1) 7F7
(2) 807		

Total Tubes; (28)

No Crystals Used.

REFERENCE DATA AND LITERATURE

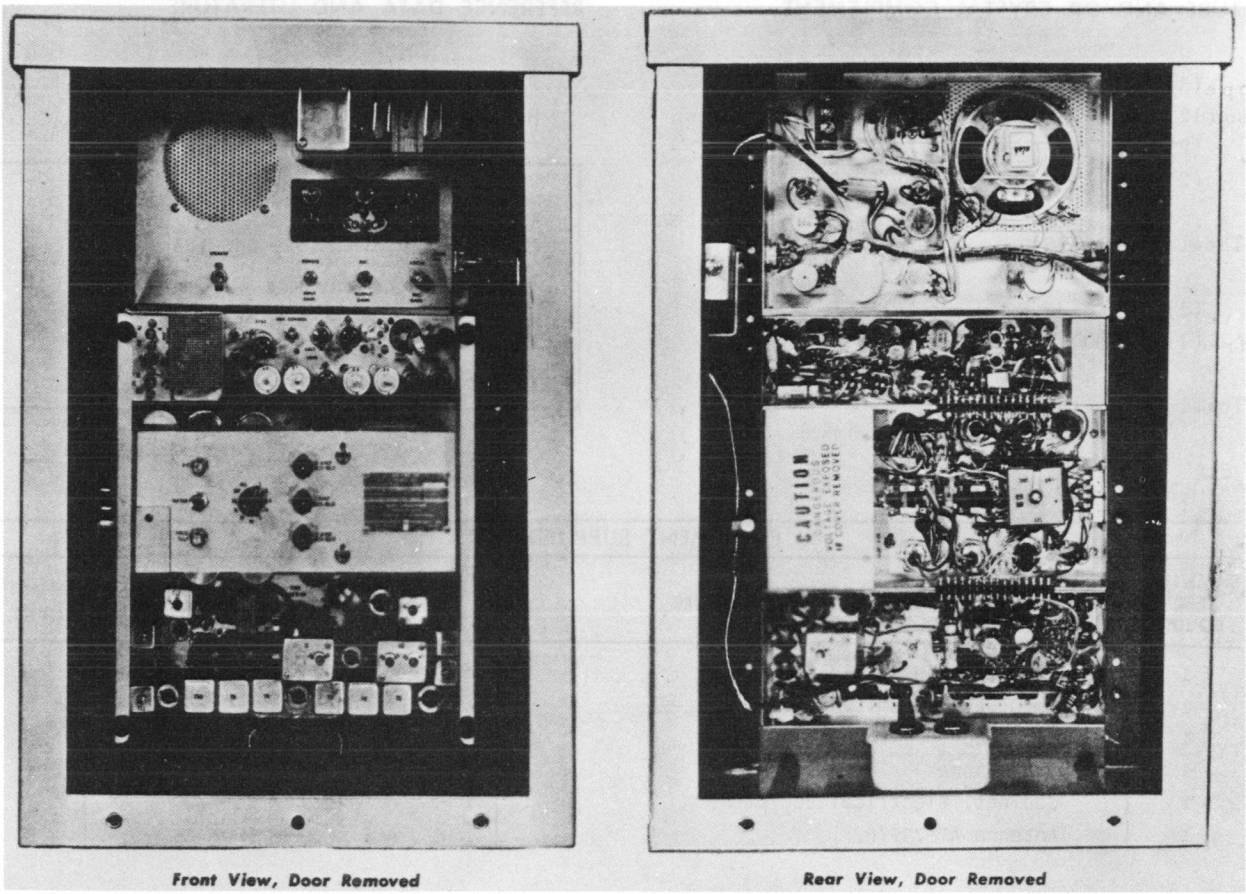
Nomenclature Card for Radio Set AN/FRC-51.

TYPE CLASSIFICATION	
DESIGN COGNIZANCE	BUAER
PROCUREMENT COGNIZANCE	
STOCK NO.	

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radio Set AN/FRC-51 Including:	15 X 22-1/2 X 68-1/8	
1	Mounting Rack MT-785/FRC-6A	15 X 22-1/2 X 68-1/8	
1	Radio Receiver R-793/FRC-51	9 X 9 X 18-1/2	
1	Radio Transmitter T-623/GRC-51	9 X 9 X 18-1/2	
1	Radio Set Control	5-3/8 X 7-11/16 X 19	

RADIO SET AN/FRC-52



Front View, Door Removed

Rear View, Door Removed

Radio Set AN/FRC-52

FUNCTIONAL DESCRIPTION

Radio Set AN/FRC-52 is a fixed-tuned, crystal controlled unit, of a preset single channel type, designed for reception and transmission of F3(FM) emission. It is designed for both local and limited remote operations and is capable of continuous operation over long periods of time.

No field changes in effect at time of preparation (1 October 1959).

RELATION TO OTHER EQUIPMENT

This equipment is identical to Communications Co. Inc Model 300-8AC-AB.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

POWER REQUIREMENTS: 117 v ±10%, 50 to 60 cy, 1 ph.
FREQUENCY RANGE: 30 to 42 mc; 1 channel.
TYPE OF EMISSION: F3.
FREQUENCY CONTROL: Crystal.
OUTPUT IMPEDANCE: 52 ohms.
POWER OUTPUT: 60 W.

MANUFACTURER'S OR CONTRACTOR'S DATA

Communications Co. Inc., Coral Gables, Florida.
Contract NObsr-71359, dated 26 June 1956.

Radio-Transceivers

AN/FRC-52 RADIO SET

TUBE AND/OR CRYSTAL COMPLEMENT

(3) 6AL5	(1) 6AQ5
(12) 6BH6	(1) 6146
(2) 12AT7	(1) 12AU7
(2) 12AX7	(1) 5763

Total Tubes (23)

(1) 30 to 42 mc	(1) CR-18/U
(1) 3450KC	

Total Crystals (3)

REFERENCE DATA AND LITERATURE

NAVSHIPS 92921(A): Technical Manual for RADIO SETS AN/FRC-52, 52A.

TYPE CLASSIFICATION (NAVY)

DESIGN COGNIZANCE USN, BUSHIPS

PROCUREMENT COGNIZANCE

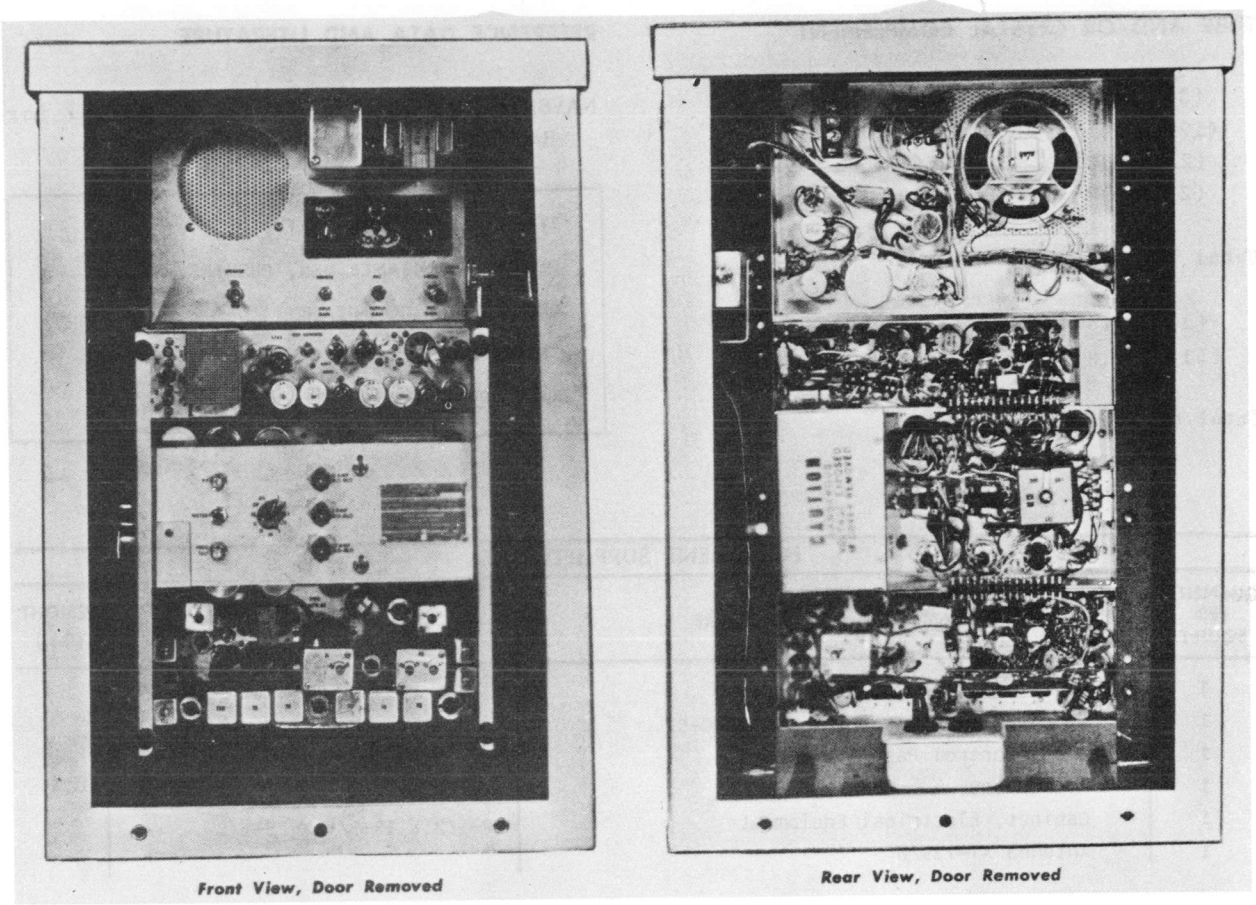
STOCK NO.

R.D.B. IDENT. NO.

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radio Set AN/FRC-52 including:		
1	Receiver-Transmitter RT-407/FRC-52		
1	Local Control Panel		
1	Microphone		
1	Cabinet, Electrical Equipment	10-1/2 X 18-3/4 X 25-1/2	
1	Antenna AT-739/U.		

RADIO SET AN/FRC-52A



Radio Set AN/FRC-52A

FUNCTIONAL DESCRIPTION

Radio Set AN/FRC-52A is a fixed-tuned, crystal controlled unit, of a preset single channel type, designed for reception and transmission of F3(FM) emission. It is designed for both local and limited remote operations and is capable of continuous operation over long periods of time. It is housed in a weather-proofed cabinet and is remotely operated by Remote Control Unit C-2099A/FRC-52.

No field changes in effect at time of preparation (1 October 1959).

RELATION TO OTHER EQUIPMENT

This equipment is identical to Communications Co. Inc. Model 300-8AC-AB modified.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

POWER REQUIREMENTS: 117 v ±10%, 50 to 60 cy, 1 ph.
FREQUENCY RANGE: 30 to 42 mc; 1 channel.
TYPE OF EMISSION: F3.
FREQUENCY CONTROL: Crystal.
OUTPUT IMPEDANCE: 52 ohms.
POWER OUTPUT: 60 W.

MANUFACTURER'S OR CONTRACTOR'S DATA

Communications Co. Inc., Coral Cables, Florida.
Contract NObsr-75322, dated 12 June 1958.

AN/FRC-52A

RADIO SET

TUBE AND/OR CRYSTAL COMPLEMENT

(3) 6AL5	(1) 6AQ5
(12) 6BH6	(1) 6146
(2) 12AT7	(1) 12AU7
(2) 12AX7	(1) 5763

Total Tubes: (23)

(1) 30 to 42 mc	(1) 3450KC
(1) CR-18/U	

Total Crystals: (3)

REFERENCE DATA AND LITERATURE

NAVSHIPS 92921(A): Technical Manual for RADIO SETS AN/FRC-52, 52A.

TYPE CLASSIFICATION (NAVY)

DESIGN COGNIZANCE USN, BUSHIPS

PROCUREMENT COGNIZANCE

STOCK NO.

R.D.B. IDENT. NO.

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radio Set AN/FRC-52A Including:		
1	Receiver-Transmitter RT-407A/FRC-52		
1	Local Control Panel		
1	Microphone		
1	Cabinet, Electrical Equipment	10-1/2 X 18-3/4 X 25-1/2	
1	Antenna AT-739/U		

October 1957

Radio-Transceivers

COMMUNICATIONS SYSTEM AN/FRC-53

FUNCTIONAL DESCRIPTION

The AN/FRC-53 provides facilities for the transmission and reception of single side band electrical energy in the 1700 to 2400 megacycle frequency range. Each set in the system is located approximately 500 miles or more apart.

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

ELECTRICAL AND MECHANICAL CHARACTERISTICS

NUMBER OF CHANNELS: 24.
FREQUENCY RANGE: 1700 to 2400 mc.
POWER SOURCE REQUIRED: 110 to 120 v, 60 cps, single ph/3 ph.

MANUFACTURER'S OR CONTRACTOR'S DATA

Westinghouse Electric, Baltimore, Md., Contract AF30(602)-1256(R and D).

TUBE AND/OR CRYSTAL COMPLEMENT

Tubes and Crystals: Not Available.

REFERENCE DATA AND LITERATURE

Nomenclature Card for Communications System AN/FRC-53 dated 13 February 1957.

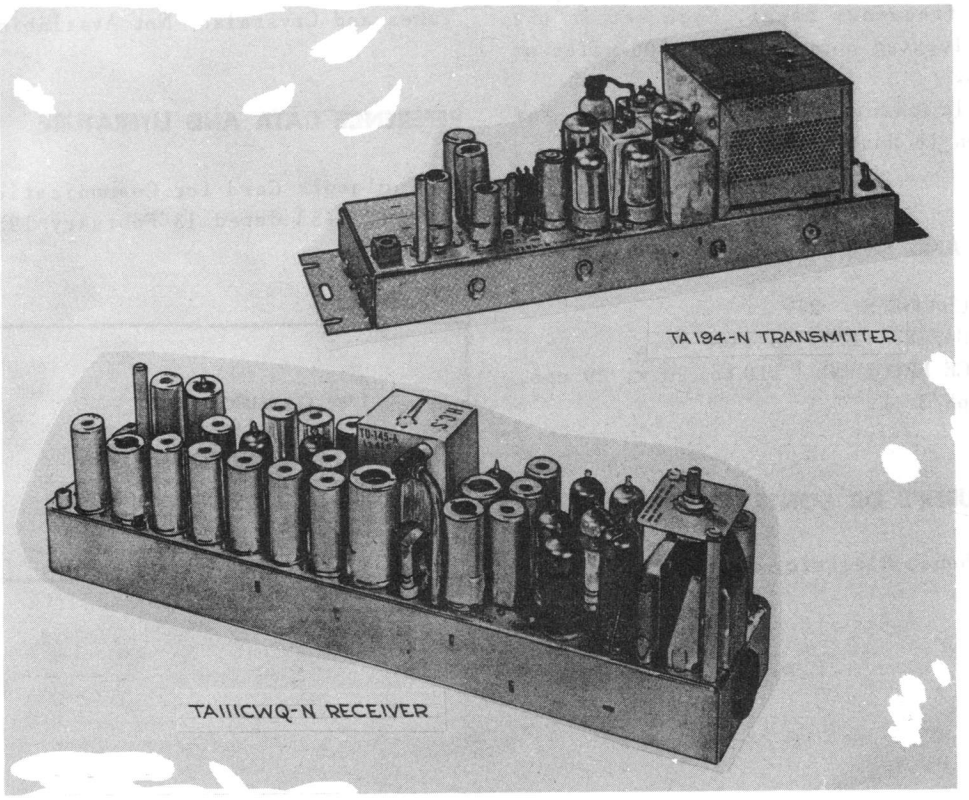
TYPE CLASSIFICATION
DESIGN COGNIZANCE USAF
PROCUREMENT COGNIZANCE
STOCK NO.

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radio Transmitting Set		
1	Radio Receiving Set		

TYPE CLASS:

MANUFACTURER'S NAME/CODE NUMBER: Motorola Incorporated.



Radio Set AN/FRC-58

FUNCTIONAL DESCRIPTION:

The Radio Set AN/FRC-58 is designed as a 30 to 42 megacycle (MC) Frequency Modulated (FM) base station radio consisting basically of the transmitter, receiver and power supply chassis assembled in an all weather outdoor type metal cabinet with associated accessories, this model provides dependable two-way communications with mobile and/or base stations.

No field changes in effect at time of preparation (23 May 1961).

TECHNICAL CHARACTERISTICS:

RECEIVER DATA

TYPE OF EMISSION: F3 type.
FREQUENCY RANGE: 30 to 42 mc.
POWER OUTPUT: 50 W.
SENSITIVITY: Less than 0.30 microvolt for 20 db quieting.

R.F. INPUT IMPEDANCE: 50 ohms.
SELECTIVITY: M100 db at porm 32 kc.
MODULATION ACCEPTANCE: Porm 15 kc.
SPURIOUS RESPONSE: 100 db or more.

TRANSMITTER DATA
TYPE OF EMISSION: F3 type.
FREQUENCY RANGE: 30 to 42 mc.
POWER OUTPUT: 50 W.
CRYSTAL FREQUENCY MULTIPLICATION: 16 times.
MODULATION: Porm 15.0 kc for 100% at 1000 cycles.
AUDIO INPUT LEVEL: 0.25 v for 100% at 1000 cycles (approx M17 db).
SPURIOUS EMISSION DATA
SPURIOUS EMISSION: Attenuated at least 70 db below carrier level.
HARMONIC RADIATIONS: Attenuated at least 60 db or more.

OPERATING POWER RQMT: 115 v ac, 60 cps, single ph.

RELATION TO OTHER EQUIPMENT: None.

EQUIPMENT REQUIRED BUT NOT SUPPLIED:

(1) Signal Generator type AN/URM-25 Series D or higher; (1) Signal Generator type AN/URM-26 Series A or higher; (1) Deviation Meter type ME-127/U Browning Laboratories, Model MD-33); (1) Multimeter type AN/PSM-4 Series (low scale 0-2.5 v dc) (VOM); (1) Multimeter type AN/USM-34 Series (low scale 0-1 v dc) (VTVM); (1) Oscilloscope type OS-8( )/U Series B or higher; (1) Audio Oscillator type TS-382( )/U Series D or higher; (1) Audio Output Meter ME-6( )/U Series D or higher; (1) R.F. Wattmeter type AN/URM-43 Series or ME-11/U.

MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (INCHES)	WEIGHT (LBS)
1	Radio Set AN/FRC-58 consists of:			
1	Radio Transmitter TA194-A		4-7/8 x 5-1/2 x 16-1/2	7
1	Radio Receiver TA111CWQ-N			
1	Power Supply P8464-N		6-1/4 x 7-1/4 x 19	38
1	Control, Radio Set C-2351/FRC (Model TA270-N)		8-11/16 x 12 x 15-5/8	
1	Cabinet Model TK592-N		18 x 20 x 54-5/16	
1	Adapter Model TK319			
1	Audio Panel TU582			
1	Cable Kit Model K-8682-C			
1	Cabinet Accessory Model TK-595			
1	Dynamic Microphone Model TU-351A-N			
1	Fuse and AC Panel Model P-8659-C			

REFERENCE DATA AND LITERATURE:

NAVSHIPS 93198: Technical Manual for Radio Set AN/FRC-58.

TUBE, CRYSTAL AND/OR SEMI-CONDUCTOR DATA:

TUBES: (2) 12AT7WA (1) 12AX7 (1) 2E26 (1) 2N206 (2) 5R4WGB (1) 5654-6AK5W
(2) 5726-6AL5W (1) 6AB4 (1) 6BH6 (1) 6AK6 (1) 6BJ6 (4) 6CB6 (1) 6C4WA
(1) 6005-6AQ5W (2) 7C5 (2) 7V7 (1) 829B

CRYSTALS: (1) CR-27/U (1) CR-32/U (1) CR-18/U

SEMI-CONDUCTORS: None used.

SHIPPING DATA

PKGS	VOLUME (CU FT)	WEIGHT (LBS)

PROCUREMENT DATA

PROCURING SERVICE: DESIGN COG: USN, BuShips
SPEC &/OR DWG:

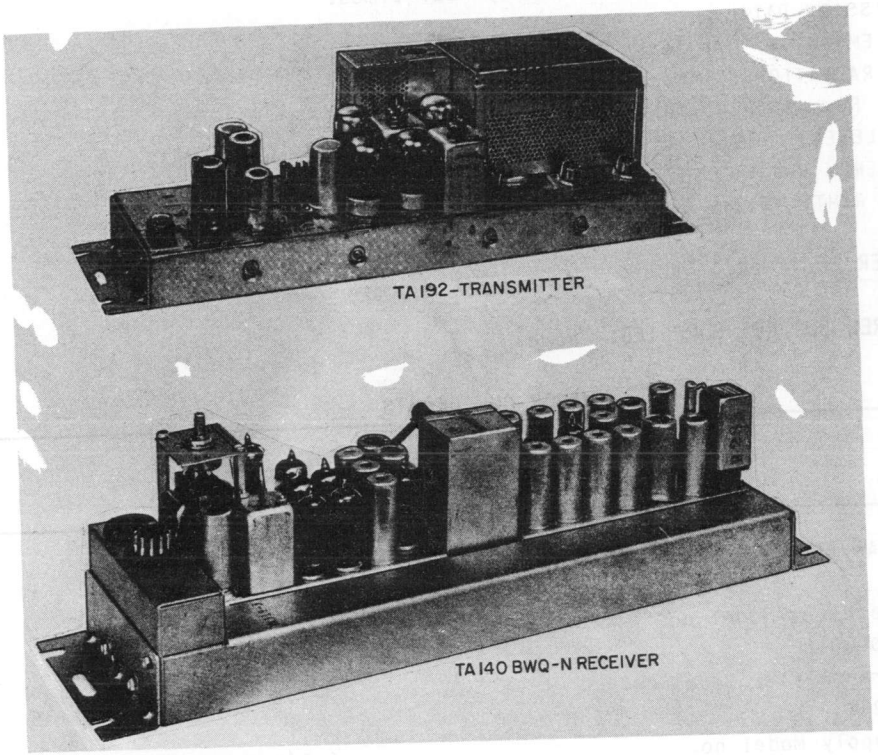
CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX. UNIT COST
Motorola Incorporated Model no. X51GAB-3	Chicago, Illinois	NObsr-71897, 30 December 1957	

27 July 1962 — 5820-615-9849
Cog Service: — FSN: 5820-615-9846 W/S — Functional Class:

USA — USN — USAF

TYPE CLASS:

MANUFACTURER'S NAME/CODE NUMBER: Motorola Incorporated.



Radio Set AN/FRC-59

FUNCTIONAL DESCRIPTION:

The Radio Set AN/FRC-59 is designed as a fixed-station, 132 to 152 megacycle (MC) Frequency Modulated (FM) base station radio set, consisting basically of the transmitter receiver and power supply chassis. With associated accessories, this model provides dependable two-way communications with mobile and/or base stations.

No field changes in effect at time of preparation (23 May 1961).

TECHNICAL CHARACTERISTICS:

TYPE OF INSTALLATION: Fixed.
RECEIVER DATA
TYPE OF EMISSION: F3 type.
POWER OUTPUT: 50 W max.
SENSITIVITY: Less than 0.50 microvolt for 20 db quieting.

R. F. INPUT: 50 ohms.
SELECTIVITY: M100 db at porm 32 kc.
MODULATION ACCEPTANCE: Porm 15 kc.
SPURIOUS RESPONSE: Attenuated 85 db or more.
AUDIO OUTPUT: 1.5 W to a 3.2 ohm speaker at 10% distortion.

TRANSMITTER DATA
TYPE OF EMISSION: F3 type.
POWER OUTPUT: 50 W max.
CRYSTAL FREQUENCY MULTIPLICATION: Twenty-four times.
SPURIOUS EMISSION DATA
SPURIOUS EMISSION: At least 70 db below carrier level.
HARMONIC RADIATIONS: Attenuated 60 db or more.
MODULATION: Porm 15.0 kc for 100% at 1000 cycles.
AUDIO INPUT LEVEL: 0.25 v for 100% at 1000 cycles (Approx M17 db).
OPERATING FREQUENCY RANGE: 132 to 152 mc.
OPERATING POWER RQMT: 117 v ac, 60 cps, single ph.

RELATION TO OTHER EQUIPMENT: None.

EQUIPMENT REQUIRED BUT NOT SUPPLIED: None.

MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (INCHES)	WEIGHT (LBS)
1	Radio Set AN/FRC-59 consists of:			
1	Radio Receiver Model no. TA140BWQ-N			
1	Radio Transmitter Model no. TA192-N		4-7/8 x 5-1/2 x 16-1/2	7
1	Power Supply Model no. P-8464-N		6-1/4 x 7-1/4 x 19	38
1	Adapter Model no. TK319			
1	Audio Panel Model no. TU582			
1	Control, Radio Set C-2351/FRC		8-11/16 x 12 x 15-5/8	
1	Cabinet Model TK-592-N		18 x 20 x 54-5/16	

REFERENCE DATA AND LITERATURE:

NAVSHIPS 93301: Technical Manual for Radio Set AN/FRC-59.

TUBE, CRYSTAL AND/OR SEMI-CONDUCTOR DATA:

TUBES: (2) 12AT7WA (1) 12AX7 (1) 2E26 (1) 2N206 (2) 5R4WGB (1) 5654-6AK5W
(2) 5726-6AL5W (1) 6AB4 (1) 6AK6 (3) 6BH6 (1) 6BJ6 (4) 6CB6 (1) 6C4WA
(1) 6005-6AQ5W (2) 7C5 (2) 7V7 (1) 829B

CRYSTALS: (1) CR-18/U (1) CR-27/U (1) CR-32/U

SEMI-CONDUCTORS: None used.

SHIPPING DATA

PKGS	VOLUME (CU FT)	WEIGHT (LBS)

PROCUREMENT DATA

PROCURING SERVICE:
SPEC &/OR DWG:

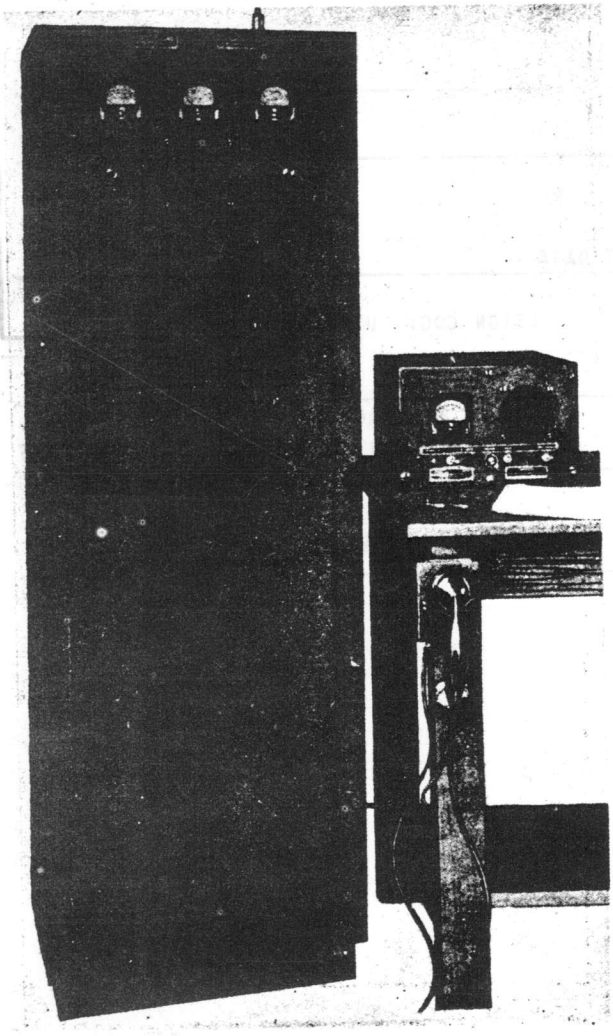
DESIGN COG: USN, BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX. UNIT COST
Motorola Incorporated Model no. X53GAB-1	Chicago, Illinois	NObsr-71897, 30 December 1957	

October 1957

Radio-Transceivers

RADIO SET AN/FRC-6, 6A



Radio Set AN/FRC-6,6A

FUNCTIONAL DESCRIPTION

The AN/FRC-6 and AN/FRC-6A are complete operating radio sets, less a primary power source, designed for fixed station operation. They are designed for fixed station operation. They are designed to provide two-way communication by voice or tone, over the frequency range of 30 to 40 megacycles, with similar fixed or mobile equipment over a range of at least 20 miles over open country. They utilize frequency modulation with one fixed frequency output, and may be operated from a remote location by means of a control line up to a maximum distance of ten miles.

The AN/FRC-6 and AN/FRC-6A differ only in type of connectors used in the transmitter and in the connections to the antenna. There are also a few minor differences between the types and values of some of the circuit components.

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

RELATION TO OTHER EQUIPMENT

Equipment Required but not Supplied: (1) Antenna AS-412/FRC-6.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

TRANSMITTER DATA
- FREQUENCY RANGE: 30 to 40 mc.
- POWER OUTPUT: 50 W.
- EMISSION: F3.
- CONTROL: Crystal.
- FREQUENCY DEVIATION: ±15 kc with 100% modulation.

RECEIVER DATA
- FREQUENCY RANGE: 30 to 40 mc.
- CONTROL: Crystal.
- RECEPTION: F2, F3.
- TYPE: Dual conversion Superheterodyne.
- AUDIO RESPONSE: 400 to 3000 cps within ± 3 db of the response at 1000 cps.

POWER REQUIREMENTS: 110 v, 60 cps, single ph, 355 W.

ANTENNA: Nondirectional modified ground plane type.

MANUFACTURER'S OR CONTRACTOR'S DATA

Galvin Manufacturing Corp, Chicago, Ill.
Sig Corp Order 23054-PH-54(AN/FRC-6).
Harvey Wells Electronics, Inc., Southbridge, Mass.
Sig Corp Order 11922-PH-48(AN/FRC-6).
Utility Electronics Corp, Newark, N.J.
Contract DA-36-039-SC-1250, dated 18 January 1950 (AN/FRC-6A).
Approximate Cost: $1200.00 with equipment spares.

AN/FRC-6, 6A RADIO SET

TUBE AND/OR CRYSTAL COMPLEMENT

(2) 5U4G (2) 5Y3WGTB
(1) 6C8G (2) 6H6GT
(1) 6K6GT (1) 6K8GT
(8) 6SG7Y (1) 6V6GT
(2) 7A8 (1) 7C5
(4) 7C7 (1) 7F7 (2) 807
Total Tubes: (28)

(3) Operating Crystals
Total Crystals: (3)

REFERENCE DATA AND LITERATURE

TM11-5506: Technical Manual for Radio Sets AN/FRC-6 and AN/FRC-6A.

TYPE CLASSIFICATION
DESIGN COGNIZANCE TASSA
PROCUREMENT COGNIZANCE Spec 71-3291 (Army)
STOCK NO.

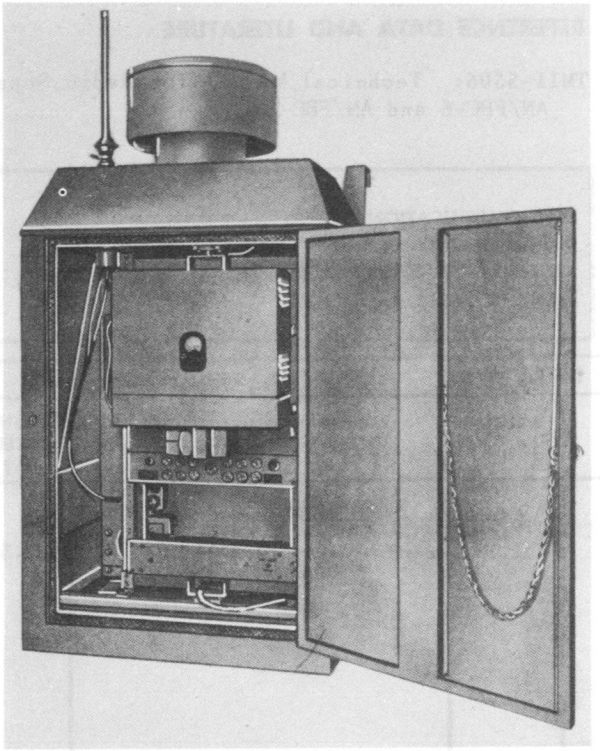
SHIPPING DATA

NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
	AN/FRC-6			
1	Rack MT-658A/FRC-6	19.7	18-1/2 X 25-3/4 X 71-1/2	160
1	Transmitter T-215A/FRC-6 including: (1) Receiver R-276A/FRC-6 (1) Radio Set Control C-560A/FRC-6 (1) Console C-559B/FRC-6 (1) Handset and Hanger Box (1) Rack Control Panel (1) Set of Cables (1) Set of Equipment Spares	12.1	22-3/4 X 24-1/4 X 38	315.5
	AN/FRC-6A			
1	Rack MT-785/FRC-6A	19.7	18-1/2 X 25-3/4 X 71-1/2	160
1	Transmitter T-264/FRC-6A including: (1) Receiver R-368/FRC-6A (1) Radio Set Control C-560B/FRC-6 (1) Console C-559B/FRC-6 (1) Handset and Hanger Box (1) Rack Control Panel (1) Set of Cables (1) Set of Equipment Spares	12.1	22-3/4 X 24-1/2 X 38	315.5

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
	AN/FRC-6		
1	Rack MT-658A/FRC-6	15 X 22-1/2 X 68-1/8	106
1	Radio Transmitter T-215A/FRC-6	9 X 9 X 18-1/2	38
1	Radio Receiver R-276A/FRC-6	9 X 9 X 18-1/2	21
1	Radio Set Control C560A/FRC-6	5-1/4 X 6 X 18-1/2	8
1	Console C-559B/FRC-6	8-3/4 X 12 X 13	33
1	Handset and Hanger Box	4-3/8 X 4-3/8 X 9	3
2	Technical Manual TM11-5506	1 X 7-7/8 X 10-1/4	1
1	Set of Equipment Spares		
	AN/FRC-6A		
1	Rack MT-785/FRC-6A	15 X 22-1/2 X 68-1/8	106
1	Radio Transmitter T-264/FRC-6A	9 X 9 X 18-1/2	38
1	Radio Receiver R-368/FRC-6A	9 X 9 X 18-1/2	21
1	Radio Set Control C-560B/FRC-6	5-1/4 X 6 X 18-1/2	8
1	Console C-559B/FRC-6	8-3/4 X 12 X 13	33
1	Handset and Hanger Box	4-3/8 X 4-3/8 X 9	3
2	Technical Manual TM11-5506	1 X 7-7/8 X 10-1/4	1
1	Set of Equipment Spares		

RADIO SET AN/FRC-7



Radio Set AN/FRC-7

FUNCTIONAL DESCRIPTION

The AN/FRC-7 is designed as a fixed station installation, provides Very High Frequency (VHF) radio communication link system for Amplitude Modulated (AM) reception and transmission. The receiver and transmitter are mounted in an outdoor metal cabinet or a standard 19-inch rack. This equipment is used as a radio link suitable for multichannel telegraph, using voice frequency (VF) tones and combination voice and telegraph with suitable carrier equipment.

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

RELATION TO OTHER EQUIPMENT

The AN/FRC-7 is similar to the AN/FRC-17 except for inside installation. The AN/FRC-7 is used with but not part of Terminal Equipment WECO type number 42B1.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

TYPE OF INSTALLATION: Fixed.
TYPE OF MODULATION: Amplitude.
TYPE OF FREQUENCY CONTROL: Crystal frequency control.
NUMBER OF PRESET FREQUENCIES: 1.
RANGE: Line of sight.
OPERATING POWER REQUIREMENTS: 115 v AC, 50 to 60 cps, 390 watt, single ph.
FREQUENCY RANGE: 132 to 156 mc.

MANUFACTURER'S OR CONTRACTOR'S DATA

Western Electric Co., New York, N. Y.

TUBE AND/OR CRYSTAL COMPLEMENT

Electron Tube and Crystal Data not Available.

REFERENCE DATA AND LITERATURE

Technical Manual TM11-487A for Radio Set AN/FRC-7.

TYPE CLASSIFICATION

DESIGN COGNIZANCE BUSHIPS

PROCUREMENT COGNIZANCE

STOCK NO.

EQUIPMENT SUPPLIED DATA

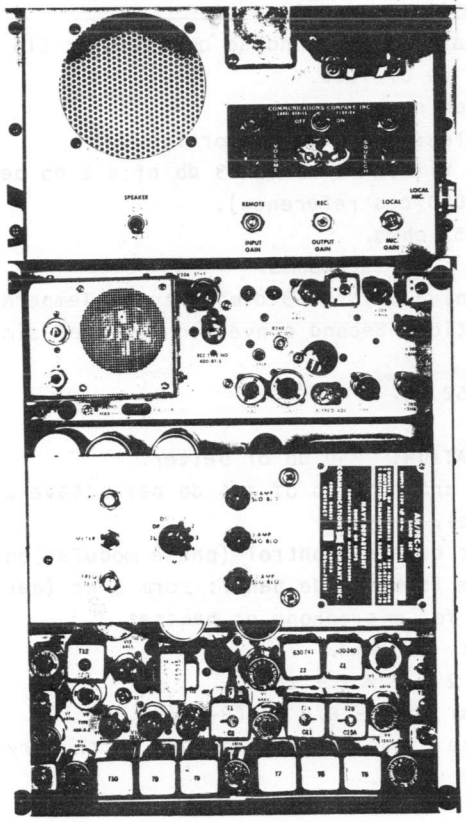
QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radio Set AN/FRC-7 Including:		
1	Radio Receiver WECO Type D-150420		
1	Radio Transmitter WECO Type D-150415		

Cog Service: USN **FSN:** 5820-765-8889 **Functional Class:**

USA	USN	USAF

TYPE CLASS: Used by

MANUFACTURER'S NAME/CODE NUMBER: Communications Co., Inc.



Radio Set AN/FRC-70

FUNCTIONAL DESCRIPTION:

Radio Set AN/FRC-70 is a fixed installation, fixed tuned, crystal controlled unit, of a preset, single channel type. It is designed for the reception and transmission of F3 (FM) emission. It is designed for communication with the AN/VRC-42 and AN/VRC- mobile equipments, but will work with other equipments that are of equal frequency, deviation and stability. It is designed for both local and limited remote operations and is capable of continuous standby operation, with 20 to 30% transmitter duty cycle, over long periods of time. It is housed in a weather-proof cabinet for exterior (outdoors) bulkhead or pole mount. It is normally remotely operated by a C-2099/FRC-52 or C-2099A/FRC-52 Radio Set Control.

No field changes in effect at time of preparation (1 May 1961).

TECHNICAL CHARACTERISTICS:

RECEIVER

FREQUENCY RANGE: 132 to 152 mc.
SELECTIVITY 2X DOWN (M6DB): Porm 15 kc (broad band); porm 6 kc (narrow band).
SELECTIVITY 100,000X DOWN (M100DB): Porm 26 kc (broad band); porm 14 kc (narrow band).
FREQUENCY STABILITY
NON-TEMPERATURE CONTROLLED: 0.002%.
WITH TEMPERATURE CONTROL (REQUIRED FOR SPLIT CHANNEL): 0.0005%.
AMBIENT TEMPERATURE: M30 deg to P60 deg C.
SENSITIVITY: 0.6 uv or less for 20 db noise quieting or EIA method of measurement.
SQUELCH SENSITIVITY: 0.25 uv or less.
SPURIOUS RESPONSES: P100 db or better.
AUDIO OUTPUT: 1.5 W with less than 10% distortion.
AUDIO FREQUENCY RESPONSE: Within P1 db to M3 db of a 6 db per octave slope over the range of 300 to 3,000 cyc (1,000 cps reference).
ANTENNA INPUT IMPEDANCE: 52 ohms.
AUDIO OUTPUT IMPEDANCE: 4 ohms, 500 ohms.
CRYSTALS: Channel determining crystal-3rd mode type. Temperature controlled type crystals for split channel operation. Second conversion crystal similar to CR-18/U type.

TRANSMITTER
FREQUENCY RANGE: 132 to 152 mc.
POWER OUTPUT: 50 W min.
SPURIOUS AND HARMONIC RADIATION: M60 db or better.
PRE-EMPHASIS: Within a P1 and a M3 db of a 6 db per octave pre-emphasis from 300 to 3,000 cyc (1,000 cps reference).
MODULATION: FM with direct crystal control (phase modulation). Type F3 emission.
MODULATION DEVIATION: Porm 15 kc (wide band); porm 5 kc (narrow band).
INPUT IMPEDANCE: 125 ohms for microphone or handset.
OUTPUT IMPEDANCE (ANTENNA): 52 ohms.
MULTIPLICATION ORDER: 2 x 2 x 2 x 2 = 16.
CRYSTAL: Low drift, similar to CR-18/U or CR-36/U.
CRYSTAL TRIMMER: A variable capacitor is provided in the crystal circuit to permit zero beat with a standard frequency.
FREQUENCY STABILITY
NON-TEMPERATURE CONTROLLED: Porm 0.002%.
WITH TEMPERATURE CONTROL: Porm 0.0005%.
AMBIENT TEMPERATURE: M30 deg to P60 deg C.

POWER SUPPLY
INPUT: 110 to 120 v, 50 to 60 cyc, single ph.
OUTPUT VOLTAGES
B PLUS VOLTAGES: P700 v dc, P260 v dc, P250 v dc.
RELAY VOLTAGE: P10 v dc.
FILAMENT VOLTAGE: 6.3 v ac.

RELATION TO OTHER EQUIPMENT: None.

EQUIPMENT REQUIRED BUT NOT SUPPLIED:

(1) Antenna lead-in cable; (1) A.C. power lead-in cable; (1) A single pair, metallic, telephone line with an earth ground return (when remotely controlled); (1) Mounting mast for Antenna.

MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (INCHES)	WEIGHT (LBS)
1	Radio Set AN/FRC-70 includes:		10-1/2 x 18-3/4 x 25-1/2	
1	Receiver-Transmitter, Radio RT-538/FRC-70			
1	Cabinet, Electrical Equipment		10-1/2 x 18-3/4 x 25-1/2	
1	Control Panel			
1	Set of Mounting Brakets		2 x 2 x 14-1/2	
2	Technical Manual NAVSHIPS 93559(A)		1 x 9 x 11-1/2	1
1	Antenna AT-917/FRC-70		4 x 4-1/2 x 120	11

REFERENCE DATA AND LITERATURE:

NAVSHIPS 93559(A): Technical Manual for Radio Set AN/FRC-70 and AN/FRC-70A.

TUBE, CRYSTAL AND/OR SEMI-CONDUCTOR DATA:

TUBES: (1) 6AK5 (2) 6AK6 (3) 6AL5 (1) 6AQ5 (9) 6BH6 (1) 12AU7 (3) 12AT7
(2) 12AX7 (1) 5763 (1) 829-B

CRYSTALS: (1) 201-605 (1) 208-605B (1) 209-4R-FG

SEMI-CONDUCTORS: None used.

SHIPPING DATA

PKGS	VOLUME (CU FT)	WEIGHT (LBS)
1	6.1	81
1	1.5	13

PROCUREMENT DATA

PROCURING SERVICE: USN
DESIGN COG: USN, BuShips
SPEC &/OR DWG: MIL-R-19118B(SHIPS), Amend 1

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX. UNIT COST
Communications Co., Inc. Model No. Z 14 F 15 A 6	Coral Gables, Fla.	NObsr-75322	$485.00

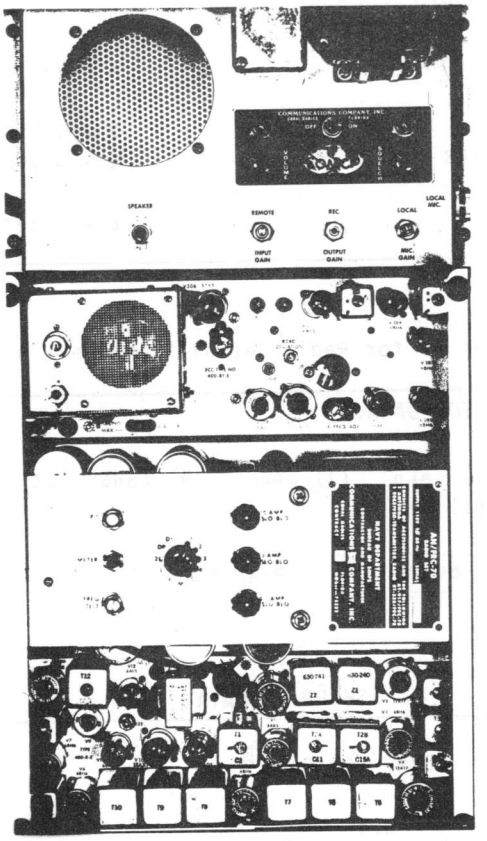
Cog Service: USN FSN: Functional Class:

USA	USN	USAF

Used by

TYPE CLASS:

MANUFACTURER'S NAME/CODE NUMBER: Communications Co. Inc., (13848).



Radio Set AN/FRC-70A

FUNCTIONAL DESCRIPTION:

Radio Set AN/FRC-70A is a fixed installation, fixed tuned, crystal controlled unit, of a preset, single channel type. It is designed for the reception and transmission of F3 (FM) emission. It is designed for communication with the AN/VRC-42 and AN/VRC- mobile equipments, but will work with other equipments that are of equal frequency, deviation and stability. It is designed for both local and limited remote operations and is capable of continuous standby operation, with 20 to 30% transmitter duty cycle, over long periods of time. It is housed in a weather-proof cabinet for exterior (outdoors) bulkhead or pole mount. It is normally remotely operated by a C-2099/FRC-52 or C-2099A/FRC-52 Radio Set Control.

No field changes in effect at time of preparation (1 May 1961).

TECHNICAL CHARACTERISTICS:

RECEIVER

FREQUENCY RANGE: 132 to 152 mc.
SELECTIVITY 2X DOWN (-6DB): Porm 15 kc (broad band); porm 6 kc (narrow band).
SELECTIVITY 100,000X DOWN (-100DB): Porm 26 kc (broad band); porm 14 kc (narrow band).
FREQUENCY STABILITY
NON-TEMPERATURE CONTROLLED: 0.002%.
WITH TEMPERATURE CONTROL (REQUIRED FOR SPLIT CHANNEL): 0.0005%.
AMBIENT TEMPERATURE: M30 deg to P60 deg C.
SENSITIVITY: 0.6 uv or less for 20 db noise quieting or EIA method of measurement.
SQUELCH SENSITIVITY: 0.25 uv or less.
SPURIOUS RESPONSE: P100 db or better.
AUDIO OUTPUT: 1.5 W with less than 10% distortion.
AUDIO FREQUENCY RESPONSE: Within P1 db to M3 db of a 6 db per octave slope over the range of 300 to 3,000 cyc (1,000 cps reference).
ANTENNA INPUT IMPEDANCE: 52 ohms.
AUDIO OUTPUT IMPEDANCE: 4 ohms, 500 ohms.
CRYSTALS: Channel determining crystal - 3rd mode type. Temperature controlled type crystals for split channel operation. Second conversion crystal similar to CR-18/U type.

TRANSMITTER

FREQUENCY RANGE: 132 to 152 mc.
POWER OUTPUT: 50 W min.
SPURIOUS AND HARMONIC RADIATION: M60 db or better.
PRE-EMPHASIS: Within P1 and M3 db of a 60 db per octave pre-emphasis from 300 to 3,000 cyc (1,000 cps reference).
MODULATION: FM with direct crystal control (phase modulation). Type F3 emission.
MODULATION DEVIATION: Porm 15 kc (wide band); porm 5 kc (narrow band).
INPUT IMPEDANCE: 125 ohms for microphone or handset.
OUTPUT IMPEDANCE (ANTENNA): 52 ohms.
MULTIPLICATION ORDER: 2 x 2 x 2 x 2 = 16.
CRYSTAL: Low drift, similar to CR-18/U or CR-36/U.
CRYSTAL TRIMMER: A variable capacitor is provided in the crystal circuit to permit zero beat with a standard frequency.
FREQUENCY STABILITY
NON-TEMPERATURE CONTROLLED: Porm 0.002%.
WITH TEMPERATURE CONTROL: Porm 0.0005%.
AMBIENT TEMPERATURE: M30 deg to P60 deg C.

POWER SUPPLY

INPUT: 110 to 120 v, 50 to 60 cyc, single ph.
OUTPUT VOLTAGES
B PLUS VOLTAGES: P700 v dc, P260 v dc, P250 v dc.
RELAY VOLTAGE: P10 v dc.
FILAMENT VOLTAGE: 6.3 v ac.

RELATION TO OTHER EQUIPMENT:

It is similar in performance and physical/electrical design to the AN/FRC-70. The difference being the addition of Channel Determining Crystal heater ovens and the change in value of a few component parts values (resistors and capacitors) and the addition of an AGC circuit in the receiver. These changes were made to allow the units produced under Contract NObsr-81600 to more easily conform to the perimeters of performance set forth in BuShips

Contract Specification, SHIPS-R-3602. The AN/FRC-70 and AN/FRC-70A are interchangeable and may be used in the same system. The cabinets and control panels are the same.

EQUIPMENT REQUIRED BUT NOT SUPPLIED:

(1) Antenna lead-in cable; (1) A.C. power lead-in cable; (1) A single pair, metallic, telephone line with an earth ground return (when remotely controlled); (1) Mounting mast for Antenna.

MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (INCHES)	WEIGHT (LBS)
1	Radio Set AN/FRC-70A includes:		10-1/2 x 18-3/4 x 25-1/2	
1	Receiver Transmitter, Radio RT-538A/FRC-70			
1	Cabinet, Electrical Equipment		10-1/2 x 18-3/4 x 25-1/2	
1	Control Panel			
1	Set of Mounting Brackets		2 x 2 x 14-1/2	
2	Technical Manual NAVSHIPS 93559(A)		1 x 9 x 11-1/2	1
1	Antenna AT-917/FRC-70			11

REFERENCE DATA AND LITERATURE:

NAVSHIPS 93559(A): Technical Manual for Radio Sets AN/FRC-70 and AN/FRC-70A.

TUBE, CRYSTAL AND/OR SEMI-CONDUCTOR DATA:

TUBES: (1) 6AK5 (2) 6AK6 (3) 6AL5 (1) 6AQ5 (9) 6BH6 (1) 12AU7 (3) 12AT7 (2) 12AX7 (1) 5763 (1) 829-B

CRYSTALS: (1) 201-F605A (1) 208-F605E (1) 209-4RE

SEMI-CONDUCTORS: (17) PT540

SHIPPING DATA

PKGS	VOLUME (CU FT)	WEIGHT (LBS)
1	6.1	81
1	1.5	13

PROCUREMENT DATA

PROCURING SERVICE: USN
DESIGN COG: USN, BuShips
SPEC &/OR DWG: MIL-R-19118B(SHIPS), Amend 1

AN/FRC-70A RADIO SET

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX. UNIT COST
Communications Co. Inc. Model no. Z14F15A6 modified	Coral Gables, Fla.	NObsr-81600, 29 June 1960	

RADIO SET AN/FRC-72

FUNCTIONAL DESCRIPTION

The AN/FRC-72 is designed for the transmission and reception of frequency modulated radio-frequency waves through space. This set is a fixed station equipment compatible with Radio Set AN/VRC-50.

No field changes in effect at time of preparation (31 October 1960).

ELECTRICAL AND MECHANICAL CHARACTERISTICS

TYPE OF EMISSION: F3 type.
NUMBER OF BANDS: 1 band.
NUMBER OF CHANNELS: 1 channel.
OPERATING FREQUENCY RANGE: 132 to 152 mc.
POWER OUTPUT: 50 W.
OPERATING POWER RQMT: 110 v ac, 60 cps, single ph.

MANUFACTURER'S OR CONTRACTOR'S DATA

Industrial Radio Corp., Chicago, Illinois.
Model no. TM50H.
Contract NObsr-75942, dated 24 June 1959.

Approximate unit cost $465.00.

TUBE AND/OR CRYSTAL COMPLEMENT

Electron Tube and/or Crystal data not available.

REFERENCE DATA AND LITERATURE

NAVSHIPS 93400: Preliminary Data Form for Radio Set AN/FRC-72.

TYPE CLASSIFICATION (NAVY)
DESIGN COGNIZANCE NAVY BUSHIPS
PROCUREMENT COGNIZANCE MIL-R-19118B
STOCK NO.

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radio Set AN/FRC-72 consists of:		
1	Radio, Transmitter T-777/FRC-72	4-1/2 x 7 x 13	
1	Radio, Receiver R-986/GR	4-1/2 x 7 x 13	
1	Power Supply PP-2615/FRC-72	4-1/2 x 7 x 13	
1	Control, Radio Set C-3257/FRC-72	2 x 6-3/4 x 16	
1	Antenna AT-964/FRC		
1	Cabinet, Electrical Equipment CY-2875/FRC-72	13 x 19-3/4 x 25	
1	Microphone, Magnetic M-107/U	1-49/64 x 2-5/8 x 3-11/16	

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Radio-Transceivers

DIRECTION FINDER SET AN/FRD-4

FUNCTIONAL DESCRIPTION

The AN/FRD is a fixed radio direction finder suitable for reception and emission of continuous wave, modulated continuous wave and voice signals over a frequency range of 500 kc 32 mc in 32 tuning bands. It provides a cathode-ray-tube type of presentation.

No field changes in effect at time of preparation (1 May 1957).

RELATION TO OTHER EQUIPMENT

All components are interchangeable with equivalent components in Direction Finder Set AN/TRD-4A. It differs in that it consists of fewer components.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

TYPE OF EMISSION AND RECEPTION: A1, A2, A3.
FREQUENCY RANGE: 500 kc to 32 mc.
PRESENTATION: Cathode ray tube.
POWER SOURCE REQUIRED: 115 or 230 v, 50 to 60 cps, single ph. and 135 v, 1.5 DC for transmitter only; facilities provided for internal batteries.

MANUFACTURER'S OR CONTRACTOR'S DATA

Servo-Corp of America, New Hyde Park, N. Y.

TUBE AND/OR CRYSTAL COMPLEMENT

Tubes and Crystals: Not Available.

REFERENCE DATA AND LITERATURE

Nomenclature Card for Direction Finder Set AN/FRD-4 dated 28 August 1956.

TYPE CLASSIFICATION
DESIGN COGNIZANCE BUSHIPS
PROCUREMENT COGNIZANCE
STOCK NO.

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
5	Antenna AS-53( )/GR		
2	Radio Receiver R-725( )/URR		
1	Radio Transmitter T-279( )/UR		
1	Azimuth Indicator IP-137( )/GRD		
2	Electrical Goniometer GO-5( )/GRD		
1	Electrical Goniometer GO-6 ( )/GRD		
1	Goniometer Drive MX-1170( )/GRD		