Radio-Communication Terminal Equipment

RADIO SET AN/MRC-62

FUNCTIONAL DESCRIPTION

The AN/MRC-62 is designed to provide terminal facility for receiving and transmitting multi-channel voice, telegraph, teletype, and/or facsimile when used with appropriate terminal apparatus. Single channel, push-to-talk facilities are provided also.

No field changes in effect at time of preparation (10 April 1961).

RELATIONS TO OTHER EQUIPMENT

The AN/MRC-62 is similar to Radio Terminal Set AN/GRC-39 except for mounting and components.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

TYPE OF INSTALLATION: Mobile, truck-mounted.
OPERATING FREQUENCY RANGE: 54 to 74.9 mc.
NUMBER OF CHANNELS: Single channel.
TYPE OF FACILITY PROVIDED: Push-to-talk.
INTELLIGENCE BAND WIDTH: 0.3 to 20 kc.
OPERATING POWER RQMT: 120 v ac, 60 cps, single phase.

TUBE AND/OR CRYSTAL COMPLEMENT

Electron Tube, Crystal and/or Semi-Conductor Device data not available.

REFERENCE DATA AND LITERATURE

NAVSHIPS 93400: Preliminary Data Form for Radio Set AN/MRC-62.

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

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radio Set AN/MRC-62 consists of:		
1	Antenna Group OA-249/GRC-1		
2	Case, Accessories CY-1097/GRC-10		
2	Control Radio Set C-632/GRC-10	4-1/8 x 8-3/32 x 14-21/32	
4	Converter, Telegraph-Telephone Signal TA-182	3-1/4 x 13 x 17	
1	Dummy Load, Electrical DA-73/U	7-1/2 x 10-1/2 x 11	
2	Dynamotor-Power Supply DY-94/GRC-10	1-3/8 dia x 3-1/2	
1	Generator Set, Gasoline Engine, Trailer Mounted PU-357/MRC	9 x 11-1/4 x 13	
2	Handset H-33E/PT		
2	Loudspeaker, Permanent Magnet LS-166/U		
4	Mounting MT-791/U	3 x 5 x 7	
1	Multimeter TS-352B/U	3-1/2 x 8-1/2 x 12-3/4	
2	Rack, Electrical Equipment MT-700/GRC	6-1/4 x 8-1/2 x 11-1/2	
4	Receiver, Radio T-235/GRC-10	4-7/8 x 12-1/4 x 33-1/4	
1	Shelter, Electrical Equipment S-110/U	9 x 11-1/4 x 13	
1	Terminal, Telephone AN/RCC-3	55-1/4 x 75-1/2 x 77-1/4	
1	Truck, Cargo M-37		

8 January 1962
Cog Service: FSN: Functional Class:

USA USN USAF

TYPE CLASS:

MANUFACTURER'S NAME/CODE NUMBER:

(No Illustration Available)

FUNCTIONAL DESCRIPTION:

The AN/MRC-63 is designed as a mobile, truck and trailer-mounted installation with continuous multiplexing method of operation that is not rated for over-all gain in db. The set provides a relay facility for receiving and transmitting multi-channel voice, telegraph, teletype and/or facsimile. Single channel push-to-talk facilities also are provided.

No field changes in effect at time of preparation (10 April 1961).

TECHNICAL CHARACTERISTICS:

TYPE OF INSTALLATION: Mobile, truck & trailer mounted.
METHOD OF OPERATION: Continuous multiplexing.
TYPE OF FACILITY PROVIDED: Push-to-talk.
TYPE OF EMISSION: F3 & F9 types.
NUMBER OF BANDS: 1 band.
NUMBER OF CHANNELS: 1 channel.
OPERATING FREQUENCY RANGE: 54 to 70.9 mc.
INTELLIGENCE BANDWIDTH: 0.3 to 20 kc.
OPERATING POWER RQMT: 120 v ac, 60 cps, single ph.

RELATION TO OTHER EQUIPMENT:

The AN/MRC-63 is similar to Radio Repeater AN/GRC-40 except for mounting and components.

EQUIPMENT REQUIRED BUT NOT SUPPLIED: None.

MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (INCHES)	WEIGHT (LBS)
1	Radio Set AN/MRC-63 consists of:			
2	Antenna Group OA-249/GRC-10		4-1/8 x 8-3/32 x 14-21/32	
3	Case, Accessories CY-1097/GRC-10		3-1/4 x 13 x 17	
3	Control, Radio Set C-632/GRC-10		1-3/8 dia x 3-1/2	
1	Dummy Load, Electrical DA-73/U		9 x 11-1/4 x 13	
3	Dynamotor-Power Supply DY-94/GRC-10			
1	Generator Set, Gasoline Engine, Trailer Mounted PU-357/MRC			

AN/MRC-63 RADIO SET

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (INCHES)	WEIGHT (LBS)
3	Handset H-33E/PT			
2	Loudspeaker, Permanent Magnet LS-166/U		3 x 5 x 7	
1	Multimeter TS-352B/U		6-1/4 x 8-1/2 x 11-1/2	
3	Rack, Electrical Equipment MT-700/GRC		4-7/8 x 12-1/4 x 33-1/4	
3	Receiver Radio R-125/GRC-10		9 x 11-1/4 x 13	
1	Shelter, Electrical Equipment S-110/U		55-1/4 x 75-1/2 x 77-1/4	
3	Transmitter Radio T-235/GRC-10		9 x 11-1/4 x 13	
1	Truck, Cargo M-37			

REFERENCE DATA AND LITERATURE:

NAVSHIPS 93400: Preliminary Data Form for Radio Set AN/MRC-63.

TUBE, CRYSTAL AND/OR SEMI-CONDUCTOR DATA:

TUBES: Data not available.

CRYSTALS: Data not available.

SEMI-CONDUCTORS: Data not available.

SHIPPING DATA

PKGS	VOLUME (CU FT)	WEIGHT (LBS)

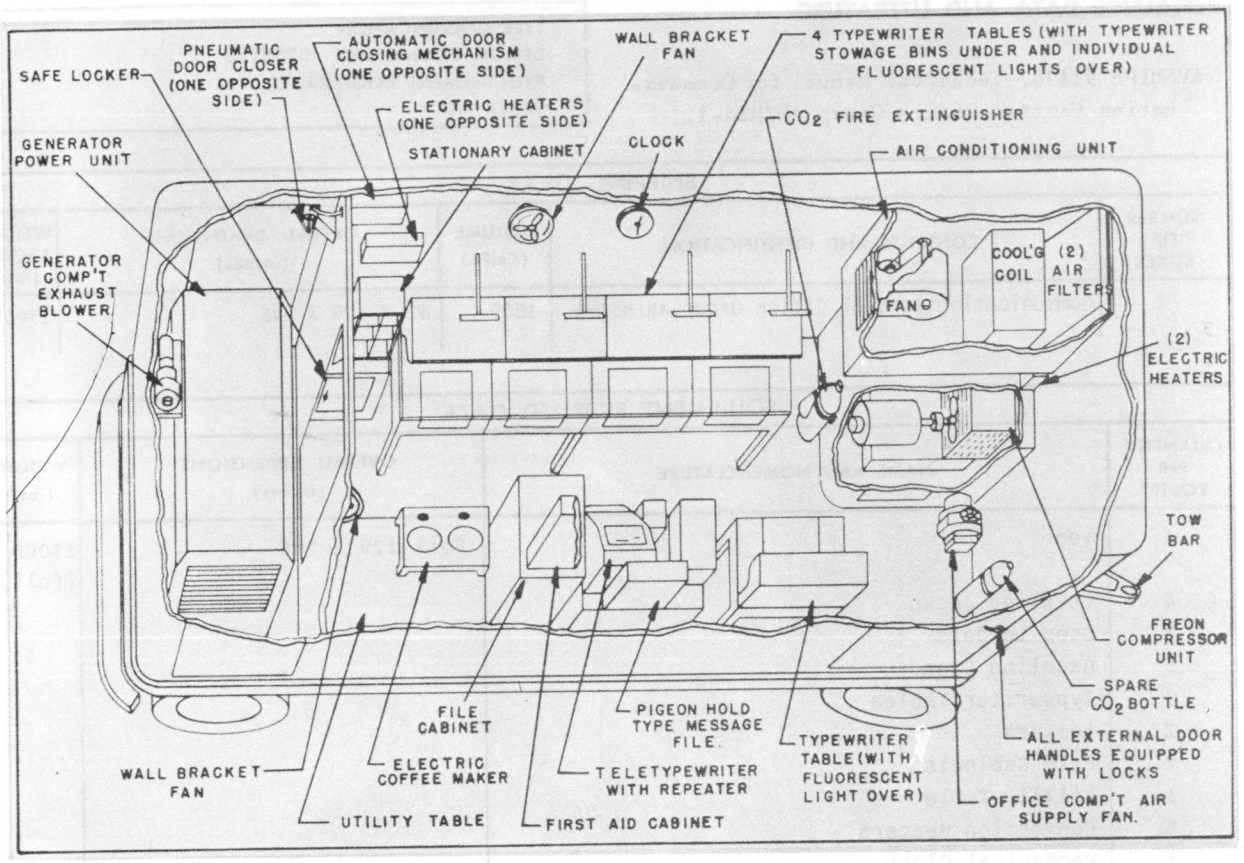
PROCUREMENT DATA

PROCURING SERVICE:
SPEC &/OR DWG:

DESIGN COG: TASSA

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX. UNIT COST

COMMUNICATION CENTRAL OFFICE GROUP



Communication Central Office Group AN/MSA-1

FUNCTIONAL DESCRIPTION

The AN/MSA-1 is a fully equipped van which provides facilities for performing cryptographic functions in a mobile communications center, such as Communications Central AN/MSC-3. It includes built-in furniture, lighting, heating, air conditioning, and power generating equipment. Terminals are installed for two teletype and six telephone circuits and it is equipped with a CO-2 fire protection system.

The power system is designed to furnish an independent source of power for air conditioning, lighting, and miscellaneous office use. Provision is also made for receiving power from an external source or furnishing power to an external load.

No field changes in effect at time of preparation (10 October 1957).

ELECTRICAL AND MECHANICAL CHARACTERISTICS

TELETYPEWRITER: Automatic reception from line circuits of associated units of communications central.

POWER OUTPUT: 120 v, 60 cps, single ph, 10 KW from power unit PE-95-G which is used when external power source is not available. This output can also be used to supply external loads.

EXTERNAL POWER SOURCE REQUIRED: 120 v, 60 cps, 3-ph 10 KW.

MANUFACTURER'S OR CONTRACTOR'S DATA

Boston Naval Shipboard, Boston, Mass.
Project Orders 44704, 45707, 80701.

TUBE AND/OR CRYSTAL COMPLEMENT

No Electron Tubes.

Radio-Communication Terminal Equipment

AN/MSA-1 COMMUNICATION CENTRAL OFFICE GROUP

April 1958

REFERENCE DATA AND LITERATURE

NAVSHIPS 91498, Technical Manual for Communication Central Office Group AN/MSA-1.

TYPE CLASSIFICATION
DESIGN COGNIZANCE BUSHIPS
PROCUREMENT COGNIZANCE
STOCK NO.

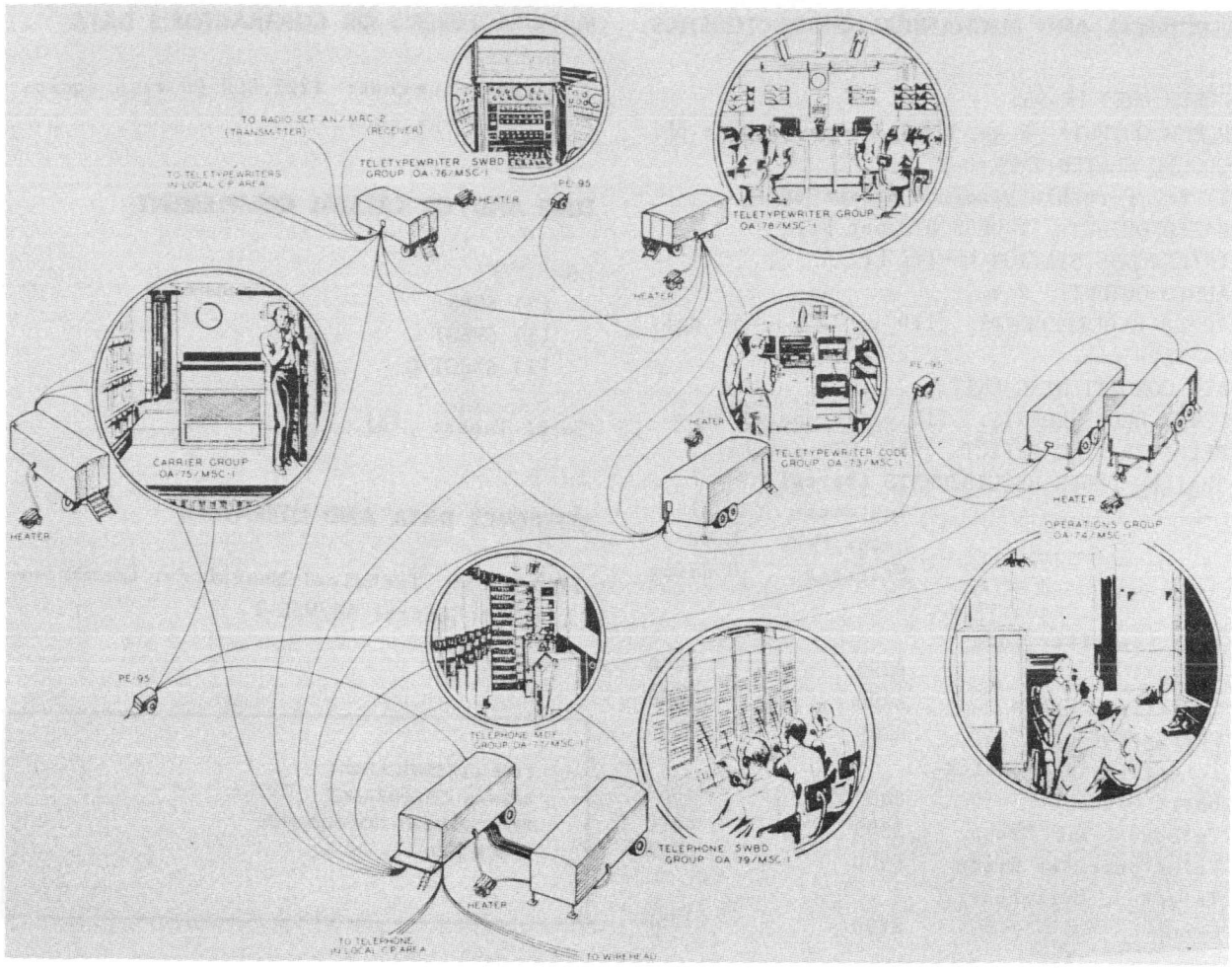
SHIPPING DATA

NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
1	Communication Central Office Group AN/MSA-1	1500	95 X 129 X 245	17000

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Van	95 X 129 X 245	17000 (full)
4	Leveling Jacks		
2	Step Ladders		
6	Gasoline Cans		
3	Typewriter Tables		
2	Lockers		
2	File Cabinets		
1	Utility Table		
4	Convection Heaters		
1	Mechanical Clock		
2	Fans		
1	Coffee Maker		
1	Teletypewriter Model 19	23-1/2 X 34-3/8 X 41-5/8	
1	First Aid Cabinet		
5	Typewriters		
6	Folding Chairs		
2	Handset		
1	Power Unit PE-95-G	28-1/4 X 38-1/2 X 67-1/2	1556

COMMUNICATIONS CENTRAL AN/MSC-1



Communications Central AN/MSC-1

FUNCTIONAL DESCRIPTION

The AN/MSC-1 is an assembly of standard military communication equipments installed in eight principal operating trailers and three shelters, to provide facilities normally required for initial installation at an Army or a similarly sized headquarters. It provides terminating, switching, and testing facilities for approximately 360 common battery telephone lines, 24 universal trunk circuits, 60 direct-current teletypewriter loops, and 6 spiral-four carrier systems. It also includes teletypewriter and cryptographic facilities for message center use, operating space for the signal officer and his staff, and radioteletype facilities which may be operated independently or connected directly into the teletypewriter switching central.

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

RELATION TO OTHER EQUIPMENT

Equipment Required but not Supplied: (6) Cryptographic Device, (2) Radio Set AN/MRC-2, (3) Trailer K-52 with Power Unit PE-95.

Radio-Communication Terminal Equipment

AN/MSC-1 COMMUNICATIONS CENTRAL

ELECTRICAL AND MECHANICAL CHARACTERISTICS

POWER UNIT PE-95.
POWER OUTPUT: 5 kw, 115 v, 60 cps, single ph.
GROUND HEATER TYPE D-1.
TYPE: Portable gasoline driven unit.
RATED OUTPUT: 100000 BTU per hr.
INTERPHONE STATION LS-147/FI.
AUDIO OUTPUT: 2 w.
POWER REQUIREMENTS: 110 to 120 v, 60 cps, 28 w max.
AIR-CONDITIONING UNIT
POWER REQUIREMENTS: 110 v, 60 cps, 1320 w.
REFRIGERATING EFFECT: 9300 BTU per hr.
TRAILER POWER REQUIREMENTS (Watts)

	Instantaneous Peak Starting	Full Load Running
Teletypewriter Code Group	6200	4750
Operations Group	6400	3500
Carrier Group	5150	3700
Teletypewriter Switchboard Group	5800	4350
Telephone MDF Group	5500	4050
Teletypewriter Group	6900	5450
Telephone Switchboard Group	3200	1750

MANUFACTURER'S OR CONTRACTOR'S DATA

Approximate Cost: $225,000.00 with equipment spares.

TUBE AND/OR CRYSTAL COMPLEMENT

LS-147/FI
(2) 6SF5
(1) 6V6GT
(1) 6X5GT/G

Total Tubes: (4)

REFERENCE DATA AND LITERATURE

TM11-5505: Technical Manual for Communications Central AN/MSC-1.

TYPE CLASSIFICATION
DESIGN COGNIZANCE TASSA
PROCUREMENT COGNIZANCE
STOCK NO.

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Teletypewriter code Group OA-73/MSC-1 consisting of: (1) Trailer K-35 Modified (3) Teletypewriter TG-7-B, less Chests CH-50-B and CH-62-B (1) Teletypewriter TT-7/FG, less Transmitter Distributor and Table (5) Reperforator Transmitter TG-26-A, less Carrying Chest and Jack Box (2) Telegraph Repeater-Mixer AN/FGQ-1, less Cabinet (2) Transmitter-Distributor TT-21/FG		

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
	(2) Switchboard SB-6/GG		
	(2) Rectifier KS-5988		
	(1) Rectifier REC-30		
	(1) Typewriter MC-88		
	(2) Time Stamp MC-181-A		
	(2) Clock, 8-Day, Seth Thomas, Mechanical		
	(1) Telephone TP-6		
	(1) Interphone Station LS-147/FI		
	(2) Cable, Tandem, for SIGABA		
	(1) Air-Conditioning Unit, Carrier Type 51B-2 Modified		
	(4) Ground Rod MX-148/G		
	(2) Fire Extinguisher, 4 LB, CO2		
	(4) Decontaminating Apparatus M-2		
	(1) Chair, Typist		
	(5) Stool, Drafting		
	(1) Axe, 4lb, Single Blade		
	(1) Hammer, Sledge, 8 Lb		
	(1) Pioneer Tool Kit with Shovel, Axe, and Mattock		
	(1) Padlock		
2	Operations Group OA-74/MSC-1 consisting of:		
	(1) Trailer K-35 Modified		
	(1) Type writer MC-88		
	(3) Telephone TP-6		
	(1) Interphone Station LS-147/FI		
	(1) Clock-8-Day, Seth Thomas, Mechanical		
	(1) Air-Conditioning Unit, Carrier Type 51B-2 Modified		
	(2) Fire Extinguisher, 4 Lb, CO2		
	(4) Decontaminating Apparatus M-2		
	(4) Chair, Typist		
	(1) Stool, Drafting		
	(2) File Cabinet, 4-Drawer, Legal Size		
	(1) Axe, 4 LB, Single Blade		
	(1) Pioneer Tool Kit with Shovel, Axe, and Mattock		
	(1) Padlock		
	(1) Canvas Cover for Passageway*		
	(1) Platform for Passageway*		
	(3) Telescoping Rod for Passageway*		
1	Carrier Group OA-75/MSC-1 consisting of:		
	(1) Trailer, 4-10 ton, General Cargo Modified		
	(6) Telephone Terminal CF-1-B, less Front Cover		
	(3) Telephone Terminal CF-2-B, less Front Cover		
	(12) Ringing Equipment EE-101-A, less cover		

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
	(1) Telephone EE-8		
	(1) Telephone TP-6		
	(1) Interphone Station LS-147/FI		
	(1) Test Equipment IE-53		
	(1) Tool Equipment TE-123		
	(1) Air-Conditioning Unit, Carrier Type 51B-2 Modified		
	(6) Ground Rod MX-148/G		
	(1) Junction Box JB-110		
	(2) Cable Stub CC-356		
	(1) Clock, 8-Day, Seth Thomas, Mechanical		
	(2) Fire Extinguisher, 4 LB, CO2		
	(4) Decontaminating Apparatus M-2		
	(2) Chair, Folding		
	(1) Axe, 4 LB, Single Blade		
	(1) Hammer, Sledge, 8 LB		
	(1) Broom		
	(1) Pioneer Tool Kit with Shovel, Axe, and Mattock		
	(1) Padlock		
1	Teletypewriter Switchboard Group OA-76/MSC-1 consisting of:		
	(1) Trailer, QM Clothing Repair Modified		
	(6) Switchboard BD-100 Modified, less Table and Front Cover		
	(2) Teletypewriter TG-7-B, less Chests Ch-50-B Ch-50-B and Ch-62-B		
	(3) Rectifier RA-43-B, less Case CS-82-B		
	(2) Telephone EE-8		
	(1) Telephone TP-6		
	(1) Interphone Station LS-147/FI		
	(1) Chest CH-70		
	(3) Chair M-205		
	(2) Board, File, Clip		
	(1) Air-Conditioning Unit, Carrier Type 51B-2 Modified		
	(6) Ground Rod MX-148/G		
	(1) Clock, 8-Day, Seth Thomas, Mechanical		
	(2) Fire Extinguisher, 4 Lb, CO2		
	(4) Decontaminating Apparatus M-2		
	(1) Axe, 4 LB, Single Blade		
	(1) Hammer, Sledge, 8 LB		
	(1) Pioneer Tool Kit with Shovel, Axe, and Mattock		

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
	(1) Padlock		
1	Telephone MDF Group OA-77/MSC-1 consisting of:		
	(1) Trailer, QM Clothing Repair Modified		
	(7) Frame FM-19, less Case CS-59		
	(1) Testboard BD-101		
	(1) Panel BD-90, less Case CS-60		
	(1) Rectifier RA-91		
	(1) Battery BB-46		
	(1) Tool Equipment TE-44		
	(1) Telephone TP-6		
	(2) Telephone EE-8		
	(1) Interphone Station LS-147/FI		
	(1) Air-Conditioning Unit, Carrier Type 51B-2 Modified		
	(1) Cabinet BE-75		
	(1) Rack FM-30		
	(2) Chair M-205		
	(1) Clock, 8-Day, Seth Thomas, Mechanical		
	(2) Fire Extinguisher, 4 LB, CO2		
	(4) Decontaminating Apparatus M-2		
	(1) Axe, 4 LB, Single Blade		
	(1) Pioneer Tool Kit with Shovel, Axe, and Mattock		
	(1) Padlock		
	(4) Ground Rod MX-148/G		
	(1) Hammer, Sledge, 8 LB		
1	Teletypewriter Group OA-78/MSC-1 consisting of:		
	(1) Trailer, QM Clothing Repair Modified		
	(5) Teletypewriter TG-7-B, less Chest CH-50-5		
	(5) Reperforator Transmitter TG-26-A, less Carrying Chest		
	(2) Reperforator Transmitter TG-26-A, less Carrying Chest and Jack Box		
	(6) Rectifier RA-87, less Carrying Chest		
	(1) Typewriter MC-88		
	(1) Time Stamp MC-181-A		
	(1) Telephone TP-6		
	(1) Interphone Station LS-147/FI		
	(1) Air-Conditioning Unit, Carrier Type 51B-2 Modified		
	(1) Tool Equipment TE-50		
	(6) Chair M-205		
	(1) Clock, 8-Day, Seth Thomas, Mechanical		
	(2) Fire Extinguisher, 4 LB, CO2		

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
	(4) Decontaiminating Apparatus M-2		
	(6) Ground Rod MX-148/G		
	(2) Cable Assembly CX-162/G (100 ft lg)		
	(1) Axe, 4 lb, single Blade		
	(1) Pioneer Tool Kit with Shovel, Axe and Mattock		
	(1) Padlock		
1	Telephone Switchboard Group OA-79/MSC-1 consisting of:		
	(1) Trailer, QM Clothing Repair Modified		
	(6) Switchboard BD-110, less Front and Top Covers		
	(2) Cabinet BE-72		
	(12) Chest Set TD-1		
	(12) Headset HS-30		
	(1) Telephone TP-6		
	(1) Interphone Station LS-147/F1		
	(1) Air-Conditioning Unit, Carrier Type 518-2 Modified		
	(7) Chair M-205		
	(1) Clock, 8-Day, Seth Thomas, Mechanical		
	(2) Fire Extinguisher, 4 lb CO2		
	(4) Decontaminating Apparatus M-2		
	(1) Axe, 4 LB, Single Blade		
	(1) Pioneer Tool Kit with Shovel, Axe, and Mattock		
	(1) Padlock		
6	Ground Heater, Type D-1		
2	Truck, 4 X 4, Tractor, 4 to 5 Ton		
12	Cord CP-333		
1	Trailer K-52, with Power Unit PE-95		
4	Maintenance Equipment ME-4		
	*Included in only 1 of 2 trailers.		

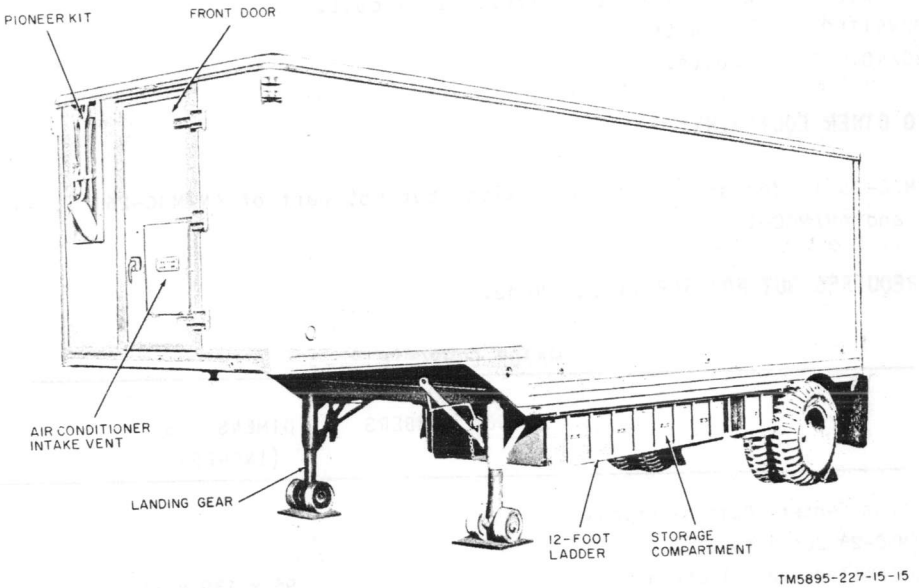
29 August 1962 — OPERATIONS CENTER, COMMUNICATIONS AN/MSC-25

Cog Service: | FSN: | Functional Class:

USA | USN | USAF

TYPE CLASS:

MANUFACTURER'S NAME/CODE NUMBER: U.S. Army Signal Material Support Agency.



Operations Center, Communications AN/MSC-25

FUNCTIONAL DESCRIPTION:

The Operations Center, Communications AN/MSC-25 is a tactical communications operations and message center van; it is air transportable. The AN/MSC-25 contains telephone switchboard, teletypewriter, and local telephone circuits, and display board facilities required by the signal operations officer to plan, engineer, and control area-type communications systems.

No field changes in effect at time of preparation (27 July 1961).

TECHNICAL CHARACTERISTICS:

VOLTAGE RQMT: 115 v ac, 60 cps, single ph.
POWER CONSUMPTION
SEMITRAILER, VAN ELECTRONIC EQUIPMENT V-189/MSC-25: 3 wire.
LIGHTS: 1040 watts.

EXHAUST BLOWER: 150 watts.
ELECTRIC HEATERS: 6000 watts.
AIR CONDITIONER: 3000 watts.
INTERCOMMUNICATION STATION LS-147( )F1: 32 watts.

MAJOR COMPONENTS

TELETYPEWRITER TT-4( )/TG: 160 watts.
TERMINAL, TELEGRAPH TH-5/TG: 120 watts.
REPERFORATOR-TRANSMITTER TELETYPEWRITER: 150 watts.

COMMUNICATION FACILITIES

LOCAL TELEPHONE CIRCUIT TA-312/PT: 7 circuits.
INTERCOMMUNICATION CIRCUIT LS-147( )/F1: 1 circuit.
TELETYPEWRITER: 2 circuits.
SWITCHBOARD: 12 circuits.

RELATION TO OTHER EQUIPMENT:

The AN/MSC-25 is designed to be used with, but not part of AN/MSC-26( ); AN/MTC-5( ), AN/MCC-10, and AN/MCC-11.

EQUIPMENT REQUIRED BUT NOT SUPPLIED: None.

MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (INCHES)	WEIGHT (LBS)
1	Operations Center, Communications AN/MSC-25 consists of:			13,000
1	Semitrailer, Van Electronic Equipment V-189/MSC-2		96 x 139 x 318	
1	Switchboard, Telephone, Manual SB-22( )/PT consists of:		5 x 12 x 16	
1	Accessory Kit MX-230/PT		5 x 6 x 10	
1	Accessory Kit MX-230A/PT or		5 x 6 x 10	
1	Accessory Kit MX-2915/PT		5-1/8 x 6 x 10	
2	Terminal, Telegraph TH-5/TG			
7	Telephone Set TA-312/PT			
1	Teletypewriter TT-4( )/TG		11-1/4 x 18-7/8 x 22-1/2	
1	Reperforator-Transmitter, Teletypewriter TT-76( )/GGC		14 x 18 x 21	

REFERENCE DATA AND LITERATURE:

TM11-5895-227-15: Technical Manual for Operations Center, Communications AN/MSC-25.

TUBE, CRYSTAL AND/OR SEMI-CONDUCTOR DATA:

TUBES: Data not available.

CRYSTALS: Data not available.

SEMI-CONDUCTORS: Data not available.

SHIPPING DATA

PKGS	VOLUME (CU FT)	WEIGHT (LBS)

PROCUREMENT DATA

PROCURING SERVICE:
DESIGN COG: TASSA
SPEC &/OR DWG:

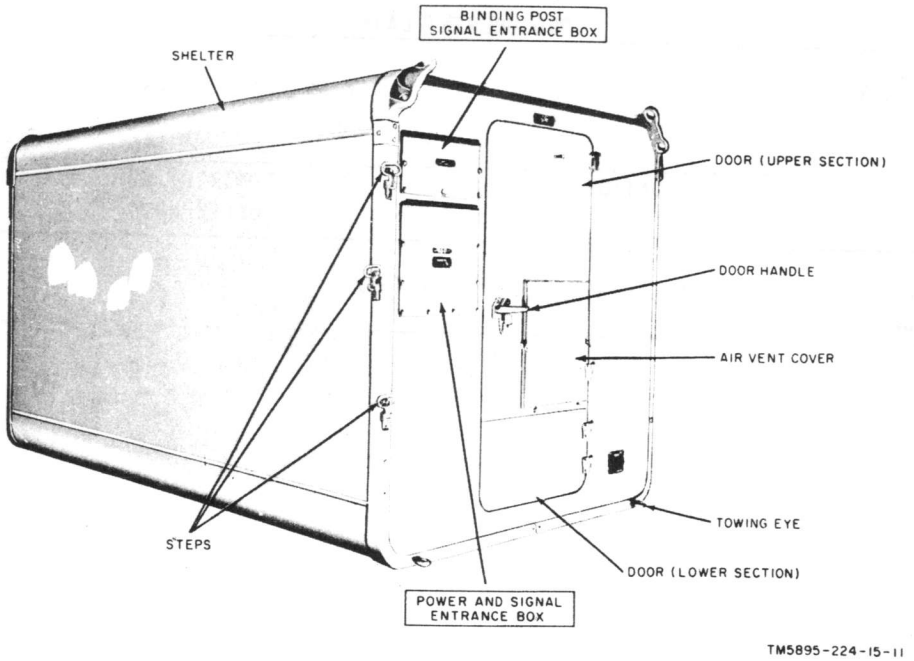
CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX. UNIT COST
U.S. Army Signal Material Support Agency	Fort Monmouth, New Jersey		

30 August 1962

Cog Service:	FSN:	OPERATIONS CENTRAL AN/MSC-32 Functional Class:
USA	USN	USAF

TYPE CLASS:

MANUFACTURER'S NAME/CODE NUMBER: Army Signal Materiel Support Agency.



Operations Central AN/MSC-32

FUNCTIONAL DESCRIPTION:

The Operations Central AN/MSC-32 is an air/or vehicular transportable field communications operation office. It contains telephone switchboard, teletypewriter, and local telephone circuits. Display board facilities required by the signal operations officer to plan, engineer, and control an area-type communication system are provided.

No field changes in effect at time of preparation (28 July 1961).

TECHNICAL CHARACTERISTICS:

OPERATING POWER RQMT: 115 v ac, 60 cps, 1 ph, 3 wire.
POWER CONSUMPTION (MAX)
LIGHTS: 310 W.
EXHAUST BLOWERS: 300 W.
ELECTRIC HEATERS: 3,000 W.

AN/MSC-32 OPERATIONS CENTRAL

EQUIPMENT
- TERMINAL, TELEGRAPH TH-5/TG(3): 180 W.
- TELETYPEWRITER TT-4A/TG(2): 320 W.
- REPERFORATOR-TRANSMITTER, TELETYPEWRITER TT-76/GGC: 150 W.
- INTERCOMMUNICATION STATION LS-147/FI: 32 W.

COMMUNICATION FACILITIES
- TELEPHONE TA-312/PT: 4 circuits.
- SWITCHBOARD SB-22/PT: 12 circuits.
- INTERCOMMUNICATION LS-147/FI: 1 circuit.
- TELETYPEWRITER TT-4A/TG & TT-76/GGC: 3 circuits.

RELATION TO OTHER EQUIPMENT:

The AN/MSC-32 is designed to be used with, but not part of AN/MSC-31. (In combination these are items used with SB-675( )/MSC, SB-611( )/MRC and AN/MTC-1( )).

EQUIPMENT REQUIRED BUT NOT SUPPLIED: None.

MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (INCHES)	WEIGHT (LBS)
1	Operations Central AN/MSC-32 consists of:			
1	Shelter, Electrical Equipment S-141/G		80-9/16 x 81-3/16 x 138-9/16	
2	Teletypewriter TT-4A/TG		11-1/4 x 18-7/8 x 22-1/2	
1	Reperforator-Transmitter, Teletypewriter TT-76/GGC			
1	Switchboard, Telephone, Manual SB-22/PT		5 x 12 x 16	
2	Terminal, Telegraph TH-5/TG			
1	Interphone Station LS-147/FI		7 x 7 x 15	
3	Telephone Set TA-312/PT			
1	Multimeter TS-297/U		3-1/4 x 3-1/4 x 6-1/8	
1	Display Board			
1	Binding Post Panel			
2	Ground Strap			
2	Ground Rod MX-148/G		1-1/4 x 2-3/4 x 72	

REFERENCE DATA AND LITERATURE:

TM11-5895-224-15: Technical Manual for Operations Central AN/MSC-32.

TUBE, CRYSTAL AND/OR SEMI-CONDUCTOR DATA:

TUBES: Data not available.

CRYSTALS: Data not available.

SEMI-CONDUCTORS: Data not available.

SHIPPING DATA

PKGS	VOLUME (CU FT)	WEIGHT (LBS)

PROCUREMENT DATA

PROCURING SERVICE:
SPEC &/OR DWG:

DESIGN COG: TASSA

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX. UNIT COST
Army Signal Materiel Support Agency	Fort Monmouth, N. J.		

June 1961

Radio-Communication Terminal Equipment

RADIO INTERCEPT CONTROL SET AN/MTQ-3

FUNCTIONAL DESCRIPTION

The Radio Intercept Control Set AN/MTQ-3 is designed as a mobile, radio intercept installation that includes facilities for wire recording.

No field changes in effect at time of preparation (12 April 1961).

ELECTRICAL AND MECHANICAL CHARACTERISTICS

TYPE OF INSTALLATION: Mobile.
TYPE OF RECORDING: Wire.
OPERATING POWER RQMT: 110 v ac, 60 cps, single ph.

MANUFACTURER'S OR CONTRACTOR'S DATA

Emerson Radio and Phonograph Corporation, New York, New York.

TUBE AND/OR CRYSTAL COMPLEMENT

Electron Tube, Crystal and/or Semi-Conductor Device data not available.

REFERENCE DATA AND LITERATURE

NAVSHIPS 93400: Preliminary Data Form for Radio Intercept Control Set AN/MTQ-3.

TYPE CLASSIFICATION (NAVY)
PROCUREMENT COGNIZANCE MIL-I-10768 (SIG C)
DESIGN COGNIZANCE TASSA
STOCK NO.

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
	Radio Intercept Control Set AN/MTQ-3 consists of:		
1	Truck, Cargo M-35	2-1/2 ton (6 x 6)	
1	Shelter S-44/G	75 x 80-1/4 x 138-1/2	
1	Control-Power Supply OA-323( )/G		
5	Rack, Electrical Equipment MT-1041( )/GR	20-3/16 x 20-1/4 x 65-3/8	

RADIO INTERCEPT CONTROL SET AN/MTQ-4

FUNCTIONAL DESCRIPTION

The Radio Intercept Control Set AN/MTQ-4 is designed as a standard, mobile, shore installation.

No field changes in effect at time of preparation (12 April 1961).

ELECTRICAL AND MECHANICAL CHARACTERISTICS

TYPE OF INSTALLATION: Ground, mobile.
OPERATING POWER RQMT: 110 v ac, 60 cps, single ph.

MANUFACTURER'S OR CONTRACTOR'S DATA

Emerson Radio & Phonograph Corporation, New York, New York.

TUBE AND/OR CRYSTAL COMPLEMENT

Electron Tube, Crystal and/or Semi-Conductor Device data not available.

REFERENCE DATA AND LITERATURE

NAVSHIPS 93400: Preliminary Data Form for Radio Intercept Control Set AN/MTQ-4.

TYPE CLASSIFICATION (NAVY)
PROCUREMENT COGNIZANCE MIL-I-10768 (SIG C)
DESIGN COGNIZANCE TASSA
STOCK NO.

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
	Radio Intercept Control Set AN/MTQ-4 consists of:		
1	Truck, Cargo M-55	2-1/2 ton (6 x 6)	5000
1	Shelter S-44/G	75 x 80-1/4 x 138-1/2	
1	Control-Power Supply Group OA-323( )/G		
2	Switchboard, Radio Intercept Control SB-213( )/TTQ-3	20-1/4 x 29-3/16 x 65-3/8	
1	Switchboard, Direction Finder Control SB-214( )/TTQ-3	20-3/16 x 20-1/4 x 65-3/8	
2	Amplifier-Power Supply AM-942( )/TTQ-3	8-23/32 x 10 x 19	
1	Amplifier-Power Supply	8-23/32 x 10-3/16 x 19	

PUBLIC ADDRESS SET AN/PIQ-3

FUNCTIONAL DESCRIPTION

The AN/PIQ-3 is a portable equipment designed for the transmission, amplification, and reproduction of voice intelligence.

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

RELATION TO OTHER EQUIPMENT

The AN/PIQ-3 is the USMC Public Address Equipment Type MPA-1.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

POWER OUTPUT: 250 W.
OUTPUT IMPEDANCE: 9 ohms.
ALTERNATOR OUTPUT: 115 v, 60 cps, single ph, 1.67 kva.

MANUFACTURER'S OR CONTRACTOR'S DATA

Western Electric Co, Inc., New York, N.Y.
Contract NObs-12920.
Contract NObs-14643.

TUBE AND/OR CRYSTAL COMPLEMENT

No Electron Tube or Crystal data available.

REFERENCE DATA AND LITERATURE

Nomenclature Card for Public Address Set AN/PIQ-3.

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	Amplifier WECO Part X-66468A1		
1	Microphone WECO Part D-173340E		
1	Reproducer WECO Part X-66468C1		
1	Gas Engine Alternator WECO Part X-66468D		
1	Multimeter TS-380( )/U		
1	Voltmeter WECO Part B-409090-3		
1	Set of Connecting Cables		
1	Set of Equipment Spares		

TERMINAL GROUP, TELEGRAPH AN/SCA-1(XN-1)

FUNCTIONAL DESCRIPTION

The AN/SCA-1(XN-1) connects automatically and manually to control, test, process, encrypt and decrypt, diversify, subdivide, and channel messages translated to electrical form between the subscriber subsets and the radio frequency equipment.

No field changes in effect at time of preparation (26 September 1960).

RELATION TO OTHER EQUIPMENT

The AN/SCA-1(XN-1) is designed to be used with but not part of AN/SSQ-29(), AN/SRC-16(), -18(), 19(), AN/SSA-24(XN-1), AN/SSA-25(XN-1) and AN/SSA-26(XN-1).

The AN/SCA-1(XN-1) is designed as part of the AN/SCA-1().

ELECTRICAL AND MECHANICAL CHARACTERISTICS

TYPE OF INSTALLATION: Surface shipboard equipment.

OPERATING POWER RQMT: 115 v ac, 400 cps, single ph; 115 v ac, 400 cps, 3 ph; 440 v ac, 400 cps, 3 ph.

MANUFACTURER'S OR CONTRACTOR'S DATA

Alpha Corporation/Collins Radio Co., Richardson, Texas.
Contract NObsr-75853, dated 26 February 1960.

TUBE AND/OR CRYSTAL COMPLEMENT

Electron Tube and/or Crystal data not available.

REFERENCE DATA AND LITERATURE

NAVSHIPS 93400: Preliminary Data Form for Terminal Group, Telegraph AN/SCA-1(XN-1).

TYPE CLASSIFICATION (NAVY)
DESIGN COGNIZANCE NAVY BUSHIPS
PROCUREMENT COGNIZANCE SHIPS-H-3333
STOCK NO.
R.D.B. IDENT. NO.

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Terminal Group, Telegraph AN/SCA-1(XN-1) consists of:		
1	Channeling Equipment		
1	Automatic Switching Equipment		

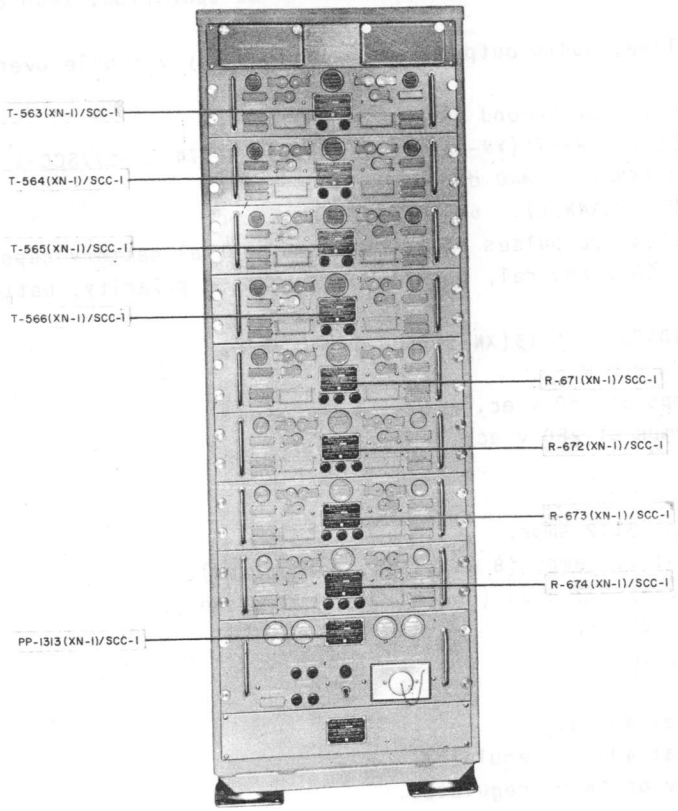
10 July 1962
Cog Service: USN FSN:

TERMINAL, TELEGRAPH CARRIER AN/SCC-1(XN-1)
Functional Class:

USA USN USAF

TYPE CLASS: Used by Used by

MANUFACTURER'S NAME/CODE NUMBER: Northern Radio Company, (88183).



Terminal, Telegraph Carrier AN/SCC-1(XN-1)

FUNCTIONAL DESCRIPTION:

The Terminal, Telegraph Carrier AN/SCC-1(XN-1) consists of both the transmitting and receiving groups of terminals for an eight (8)-channel audio frequency telegraph carrier communication system capable of being used on radio circuits or wire lines. The eight channels cover a band width of approximately 1300 cycles and are spaced 170 cycles apart.

No field changes in effect at time of preparation (16 April 1962).

TECHNICAL CHARACTERISTICS:

TYPE OF MULTIPLEXING: Frequency division type.
NUMBER OF CHANNELS: 8.
CHANNEL SPACING: 170 cps.
BANDWIDTH: 1300 cycles.
NUMBER OF WORDS PER MINUTE: 100 wpm.

AN/SCC-1(XN-1) TERMINAL, TELEGRAPH CARRIER

FREQUENCY RANGE: 340 to 1700 cps.
TELEGRAPH CARRIER TERMINAL CABINET CY-1813(XN-1)/SCC-1
POWER CONSUMPTION: 800 W.
TELEGRAPH CARRIER TRANSMITTER T-563(XN-1)/SCC-1 THROUGH T-566(XN-1)/SCC-1
TYPE OF OPERATION: Single-channel operation.
INPUT LEVEL (PER CHANNEL): 20 or 60 ma neutral telegraph loop, battery supplied by loop.
INPUT IMPEDANCE (PER CHANNEL): 560 ohms for 60 ma operation; 1460 ohms for 20 ma operation.
OUTPUT: 600 ohm line; audio output level continuously variable over range of M24 dbm to P6 dbm.
KEYING RATE: 40 dots per second max.
TELEGRAPH CARRIER RECEIVER R-671(XN-1)/SCC-1 THROUGH R-674(XN-1)/SCC-1
INPUT LEVEL (PER CHANNEL): M40 db to P10 db.
INPUT IMPEDANCE (PER CHANNEL): 600 ohms, unbalanced.
OUTPUT (PER CHANNEL): DC pulses of 20 or 60 ma neutral battery supplied from loop. DC pulses of 0 to 100 v neutral, positive or negative polarity, battery supplied from receiver.
POWER SUPPLY AND STANDARD PP-1313(XN-1)/SCC-1
POWER CONSUMPTION: 800 W.
LINE FUSES: 10 amps at 250 v ac.
OUTLET FUSES: 5 amps at 250 v ac.
OUTPUTS
AC
ONE: 6.3 v at 31.2 amps.
TWO: 6.3 v at 1.2 amps (8 windings, not ground).
THREE: 6.3 v at 0.3 amps (8 windings, not ground).
FOUR: 115 v, 200 W.
FIVE: 115 v, 40 W.
DC
ONE: P275 v at 40 ma.
TWO: P216 v at 400 ma regulated.
THREE: P108 v at 16 ma regulated.
FOUR: M150 v at 50 ma regulated.
CONTROLS (INTERNAL): P216 v adjust; M150 v adjust.
FREQUENCY STANDARD: Supplies 85 cps porm 0.01% test signal.

RELATION TO OTHER EQUIPMENT: None.

EQUIPMENT REQUIRED BUT NOT SUPPLIED: None.

MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (INCHES)	WEIGHT (LBS)
1	Telegraph Carrier Terminal AN/SCC-1(XN-1) consists of:			
1	Telegraph Carrier Terminal cabinet CY-1813(XN-1)/SCC-1		20-3/8 x 24-7/8 x 61	

1.5 AN/SCC-1(XN-1): 2

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (INCHES)	WEIGHT (LBS)
1	Telegraph Carrier Transmitter T-563(XN-1)/SCC-1		5-1/4 x 16-1/4 x 19	
1	Telegraph Carrier Transmitter T-564(XN-1)/SCC-1		5-1/4 x 16-1/4 x 19	
1	Telegraph Carrier Transmitter T-565(XN-1)/SCC-1		5-1/4 x 16-1/4 x 19	
1	Telegraph Carrier Transmitter T-566(XN-1)/SCC-1		5-1/4 x 16-1/4 x 19	
1	Telegraph Carrier Receiver R-671(XN-1)/SCC-1		5-1/4 x 16-1/4 x 19	
1	Telegraph Carrier Receiver R-672(XN-1)/SCC-1		5-1/4 x 16-1/4 x 19	
1	Telegraph Carrier Receiver R-673(XN-1)/SCC-1		5-1/4 x 16-1/4 x 19	
1	Telegraph Carrier Receiver R-674(XN-1)/SCC-1		5-1/4 x 16-1/4 x 19	
1	Power Supply & Standard Telegraph Carrier PP-1313 (XN-1)/SCC-1		7 x 16-1/4 x 19	
4	Extension Cable (3 ft lg)		36 lg	
1	AN Connector (two-pin)			
1	Technical Manual NAVSHIPS 92857		1 x 9 x 11-1/2	

REFERENCE DATA AND LITERATURE:

NAVSHIPS 92857: Technical Manual for Telegraph Carrier Terminal AN/SCC-1(XN-1).

TUBE, CRYSTAL AND/OR SEMI-CONDUCTOR DATA:

TUBES: (9) 0B2WA (10) 5651WA (24) 5726-6AL5W (10) 5751 (42) 5814A (10) 6AU6WB (8) 6C4WA (16) 6J6WA (3) 6080WA (9) 6216

CRYSTALS: None used.

SEMI-CONDUCTORS: None used.

SHIPPING DATA

PKGS	VOLUME (CU FT)	WEIGHT (LBS)

PROCUREMENT DATA

PROCURING SERVICE: USN

DESIGN COG: USN, BuShips

SPEC &/OR DWG: SHIPS-T-1420

AN/SCC-1(XN-1) TERMINAL, TELEGRAPH CARRIER

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX. UNIT COST
Northern Radio Company Type no. 198 Model no. 1	New York, N. Y.	NOBsr-64150, 17 September 1956	

Radio-Communication Terminal Equipment

TELETYPEWRITER GROUP AN/SGA-1

FUNCTIONAL DESCRIPTION

The Teletypewriter Group AN/SGA-1 is designed as a teletypewriter system (off-line), for use with classified communication equipment.

No field changes in effect at time of preparation (13 April 1961).

MANUFACTURER'S OR CONTRACTOR'S DATA

TYPE OF PRINTING: Tape type.
TYPE OF FEED: Sprocket paper feed.
TYPE OF COMMUNICATION: Character arrangement communication.
TYPE OF ARRANGEMENT: Gothic style type pallet arrangement.
TELETYPEWRITER DATA
TYPE OF KEYBOARD: Standard communication keyboard.
NUMBER OF CHARACTERS PER LINE: 72.
TYPE OF FUNCTION: Sending and receiving.
TYPE OF FEED: Friction feed.
TYPE OF MOTOR: Synchronous motor.
UNIT CODE: 7.42.
TRANSMITTER-DISTRIBUTOR DATA
UNIT CODE: 7.42.
NUMBER OF CHANNELS: Single channel.
TYPE OF MOTOR: Synchronous motor.
NUMBER OF REVOLUTIONS PER MINUTE: 1800 rpm.
OPERATING POWER RQMT: 115 v ac, 60 cps, single ph.

TUBE AND/OR CRYSTAL COMPLEMENT

Electron Tube, Crystal and/or Semi-Conductor Device data not available.

REFERENCE DATA AND LITERATURE

NAVSHIPS 93400: Preliminary Data Form for Teletypewriter Group AN/SGA-1.

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

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
	Teletypewriter Group AN/SGA-1 consists of:		
1	Rack MT-1679/SGA-1		
1	Transmitter-Distributer CPS 2699		
1	Switching Unit CPS 3333		
1	Power Supply CPS 3334	25 x 29 x 45	249
1	Teletypewriter TT-69A/UG	12 x 16-1/4 x 16-1/2	
1	Reperforator TT-159/FG		
1	Mixing Repeater Unit SSM-3		
1	Transmitter Distributor TT-57/FG		

April 1958

Radio-Communication Terminal Equipment

TELETYPEWRITER GROUP AN/SGA-2

FUNCTIONAL DESCRIPTION

The AN/SGA-2 is designed for the Teletypewriter system (off-line) for use with classified communication equipment.

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

TUBE AND/OR CRYSTAL COMPLEMENT

No Electron Tube or Crystal data available.

REFERENCE DATA AND LITERATURE

Nomenclature Card AN/SGA-2 for Teletypewriter Group.

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

December 1960

Radio-Communication Terminal Equipment

TELETYPEWRITER CODE GROUP AN/SGA-3A

FUNCTIONAL DESCRIPTION

The AN/SGA-3A is specifically designed to process classified messages automatically on an off-line basis.

No field changes in effect at time of preparation (16 January 1961).

RELATION TO OTHER EQUIPMENT

The AN/SGA-3A is designed to be used with, but is not part of, TSEC/KL-47 or TSEC/KL-29.

MANUFACTURER'S OR CONTRACTOR'S DATA

Teletype Corporation, Chicago, Illinois.

TUBE AND/OR CRYSTAL COMPLEMENT

Electron Tube and/or Crystal data not available.

REFERENCE DATA AND LITERATURE

NAVSHIPS 93400: Preliminary Data Form for Teletypewriter Code Group AN/SGA-3A.

TYPE CLASSIFICATION	(NAVY)
DESIGN COGNIZANCE	NAVY BUSHIPS
PROCUREMENT COGNIZANCE	TELETYPE CORP SPEC. NO.
STOCK NO.	ZCC200
R.D.B. IDENT. NO.	

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Teletypewriter Code Group AN/SGA-3A consists of:		
1	Control Converter TSEC/HL-2		
1	Tape Reader TSEC/HL-1B		
1	Power Supply PP-1767/UG	7-1/2 x 10 x 12-1/4	
1	Teletypewriter TT-234A/SGA-3	18-1/4 x 20-1/2 x 40-1/2	81
1	Reperforator Transmitter, Teletypewriter TT-159/UG	11 x 15 x 18	

April 1958

Radio-Communication Terminal Equipment

RADIO TELETYPE TERMINAL SET AN/SGC-1, 1A

Radio Teletypewriter Set AN/SGC-1

FUNCTIONAL DESCRIPTION

The AN/SGC-1 and AN/SGC-1A are teletypewriter terminals designed to make possible the transmission and reception of teletypewriter messages by radio communication between stations similarly equipped. They convert the current pulses from the teletypewriter equipment into audio tones which modulate the local transmitter in transmission, and convert the intelligence of received tones to make-and-break signals for operating the associated teletypewriter.

They are basically similar in size, weight, operation, installation and external connection, however, the chassis of the AN/SGC-1 is not interchangeable with the chassis of the AN/SGC-1A.

Field Change Number 1 for the AN/SGC-1 permits adjustment of the teletypewriter loop current, when in Mark condition to 20 or 60 milliamperes.

Data on this sheet reflects the following field changes, FC-1 for AN/SGC-1A(11 October 1957).

RELATION TO OTHER EQUIPMENT

Equipment Required but not Supplied: (1) Radio Transmitter, (1) Radio Receiver, (*) Teletypewriter (suitable to operate on 60 ma or 20 to 60 ma neutral loop).
NOTE: *-1 or more as required.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY: 500 and 700 cps.
OUTPUT POWER: +10 dbm max.
EMISSION AND RECEPTION: A3.
INPUT SIGNAL LEVEL: -40 dbm min.
IMPEDANCE DATA
  OUTPUT: 50 and 600 ohms.
  INPUT: 600 ohms.
HEAT DISSIPATION
  AN/SGC-1: 117 W.
  AN/SGC-1A: 86 W.
POWER REQUIREMENTS
  TELETYPEWRITER TERMINAL
    AN/SGC-1: 115 v ±10%, 50 to 60 cps, 1 amp.

Radio-Communication Terminal Equipment

AN/SGC-1, 1A RADIO TELETYPE TERMINAL SET

April 1958

AN/SGC-1A: 115 v ±10%, 50 to 60 cps, 0.74 amps.

TELETYPE LOOP
AN/SGC-1: 110 v DC, 60 ma.
AN/SGC-1A: 110 v DC, 20 or 60 ma.

MANUFACTURER'S OR CONTRACTOR'S DATA

Rembler Company, Ltd., San Francisco, California.
Contract NObsr-39323, dated 26 June 1947(AN/SGC-1).
Contract NObsr-52077, dated 17 November 1950(AN/SGC-1A).
Approximate Cost: $500.00 with equipment spares.

TUBE AND/OR CRYSTAL COMPLEMENT

(1) OC3W
(2) 5Y3WGTB
(2) 6005/6AQ5W
(6) 12AU7
Total Tubes: (11)
(4) 1N69
Total Crystals: (4)

REFERENCE DATA AND LITERATURE

NAVSHIPS 91152: Technical Manual for Radio Teletype Terminal Set AN/SGC-1.
NAVSHIPS 91503: Technical Manual for Radio Teletype Terminal Set AN/SGC-1A.

TYPE CLASSIFICATION
DESIGN COGNIZANCE BUSHIPS
PROCUREMENT COGNIZANCE MIL-R-15610(SHIPS)
STOCK NO.

SHIPPING DATA

NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
1	AN/SGC-1 Teletypewriter Terminal TT-40/SGC-1 including: (1) Set of Equipment Spares (2) Technical Manual NAVSHIPS 91152	6.2	20-1/2 x 21-1/4 x 24-1/4	148
1	AN/SGC-1A Teletypewriter Terminal TT-40A/SGC-1 including: (1) Set of Equipment Spares (2) Technical Manual NAVSHIPS 91503	6.2	20-1/2 x 21-1/4 x 24-1/4	130

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT		NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
AN/SGC-				
1	1A			
1		Teletypewriter Terminal TT-40/SGC-1	9-11/16 x 17-9/16 x 19-1/4	50
	1	Teletypewriter Terminal TT-40A/SGC-1	9-11/16 x 17-9/16 x 19-1/4	50
1		Set of Equipment Spares	6-1/8 x 16 x 19-1/8	49
	1	Set of Equipment Spares	6-1/8 x 10-1/2 x 12-13/16	27
2		Technical Manual NAVSHIPS 91152	3/16 x 8-5/8 x 11-1/4	0.5
	2	Technical Manual NAVSHIPS 91503	3/16 x 8-5/8 x 11-1/4	0.5

Radio-Communication Terminal Equipment

TELETYPEWRITER SET AN/SGC-4

FUNCTIONAL DESCRIPTION

The AN/SGC-4 Teletypewriter Set is a motor driven mechanism designed for interchanging typewritten messages between two or more points connected by telegraph communication channels.

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

RELATION TO OTHER EQUIPMENT

The AN/SGC-4 Teletypewriter Set is the same as the AN/FGC-10 except modified for shipboard use.

Equipment Required but not Supplied: Line Relay RY-30, Line Relay Bracket, Rectifier REC-29/PU-424/U.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

POWER INPUT: 115 v, 60 cps, 1 ph.
OUTPUT SIGNAL CHARACTERISTICS: 5 unit code.
OPERATING FREQUENCY: 369 operations per minute.
TYPE OF FEED: Friction feed.
NUMBER OF CHARACTERS PER LINE: 72.
TYPE OF CHARACTERS: English.

TUBE AND/OR CRYSTAL COMPLEMENT

Electron Tubes and Crystal Data not Available.

REFERENCE DATA AND LITERATURE

Nomenclature Card for Teletypewriter Set AN/SGC-4.
NAVSHIPS Form 4457 for Teletypewriter Set AN/SGC-4.

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	Base BB-44		
1	Keyboard BK-221D		
1	Typing Unit BP-128/247		
1	Cover BPC-200AA (modified)		
1	Set of Gears 80437		
1	Copyholder 115700AA		
1	Plate Cover 115706AA		
1	Table XTR-115 (modified)		

TELETYPEWRITER SET AN/SGC-5

FUNCTIONAL DESCRIPTION

The AN/SGC-5 is designed for shipboard use. It provides for the transmission and reception of type written messages over a telegraph circuit at a speed of 368 operations per minute (approximately 72 characters per minute). Facilities are provided either for direct keyboard or tape transmission.

No field changes in effect at time of preparation (14 March 1960).

RELATION TO OTHER EQUIPMENT

The AN/SGC-5 Teletypewriter Set is the AN/FGC-13 modified for shipboard use.

EQUIPMENT REQUIRED BUT NOT SUPPLIED

(1) Rectifier REC-29/PP424/U.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

TYPE OF INSTALLATION: Fixed station.
TYPE OF KEYBOARD: Standard communication keyboard.
TYPE OF CHARACTERS: English characters.
NUMBER OF OPERATIONS PER MINUTE: 368 operations per minute.
NUMBER OF CHARACTERS PER LINE: 72 characters per line.
TYPE OF FEED: Friction feed.
TYPE OF DRIVE: Synchronous motor.
OPERATING POWER RQMT: 115 v AC, 60 cps, single ph.

MANUFACTURER'S OR CONTRACTOR'S DATA

San Francisco Naval Shipyard, San Francisco, California.

TUBE AND/OR CRYSTAL COMPLEMENT

Electron Tube and/or Crystal Data not available.

REFERENCE DATA AND LITERATURE

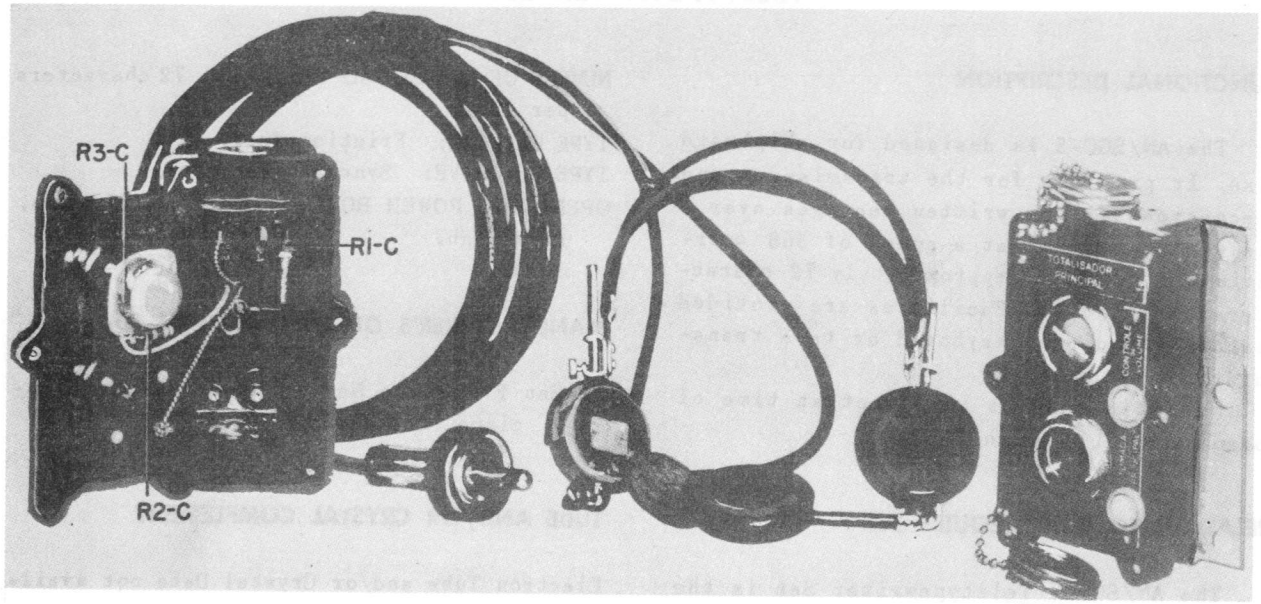
NAVSHIPS 93400: Preliminary Data Form for Teletypewriter Set AN/SGC-5.
Nomenclature Card for Teletypewriter Set AN/SGC-5.

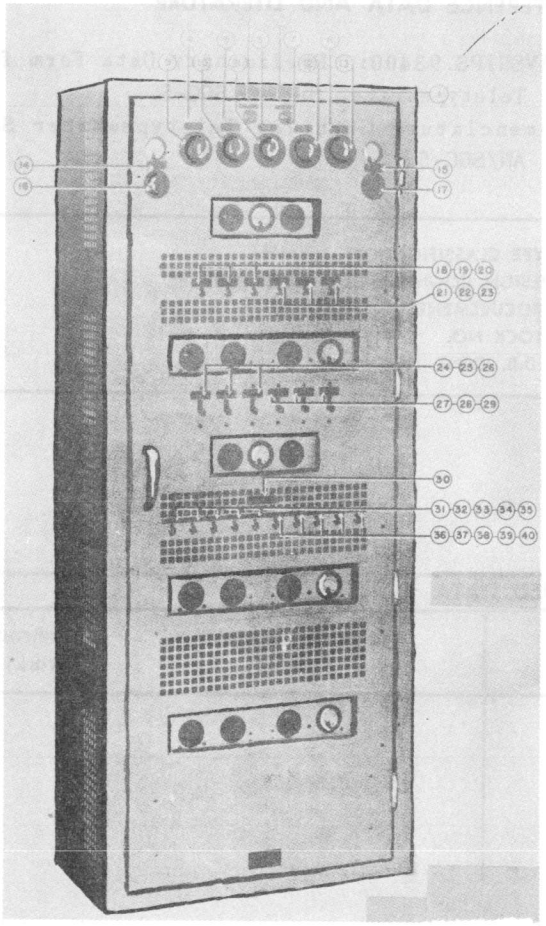
TYPE CLASSIFICATION	(NAVY)
DESIGN COGNIZANCE	NAVY BUSHIPS
PROCUREMENT COGNIZANCE	
STOCK NO.	
R.D.B. IDENT. NO.	

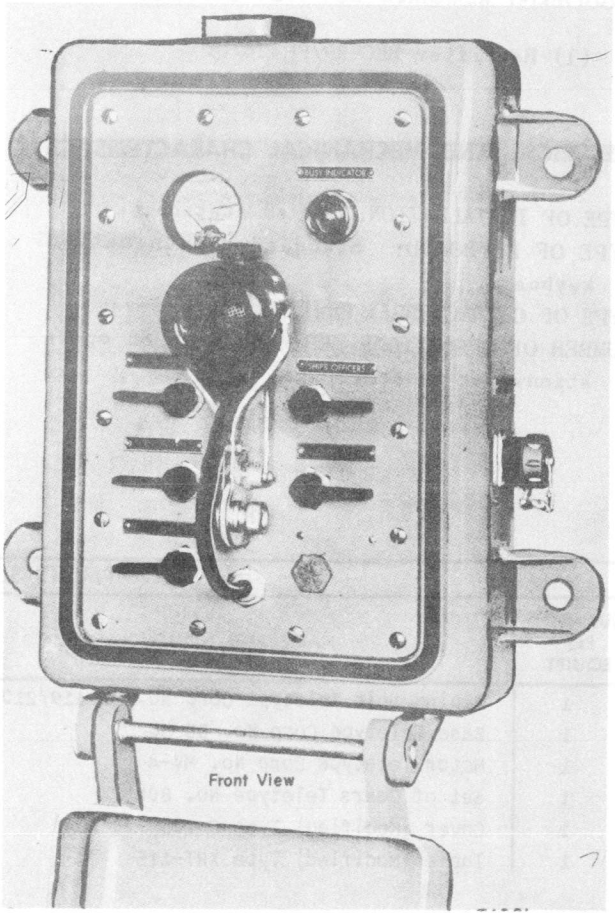
EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Typing Unit Teletype Corp No. BP-119/210		
1	Base Teletype Corp No. BB-50		
1	Motor Teletype Corp No. MV-4		
1	Set of Gears Teletype No. 80437		
1	Cover (Modified) Type C-105		
1	Table (Modified) Type XRT-115		

BATTLE ANNOUNCING EQUIPMENT AN/SIA-66

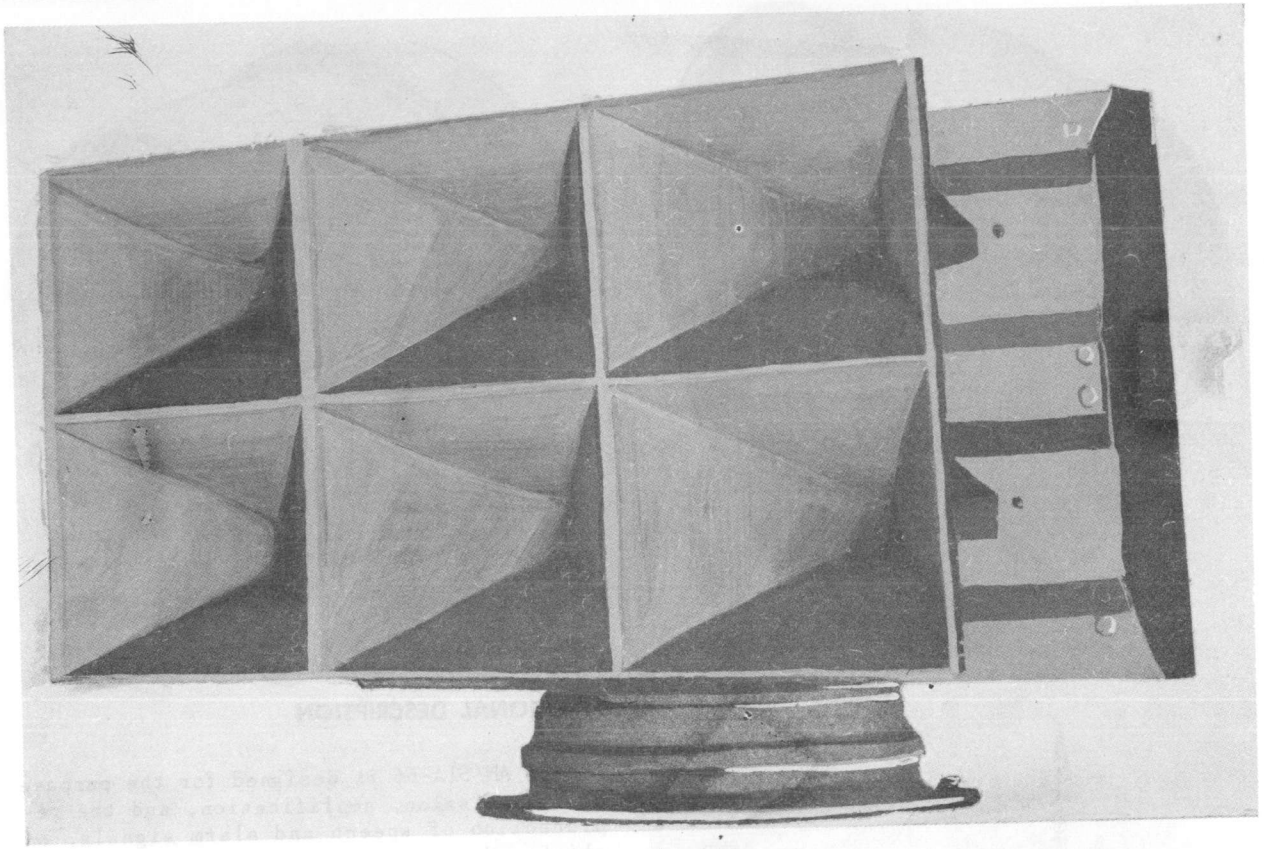


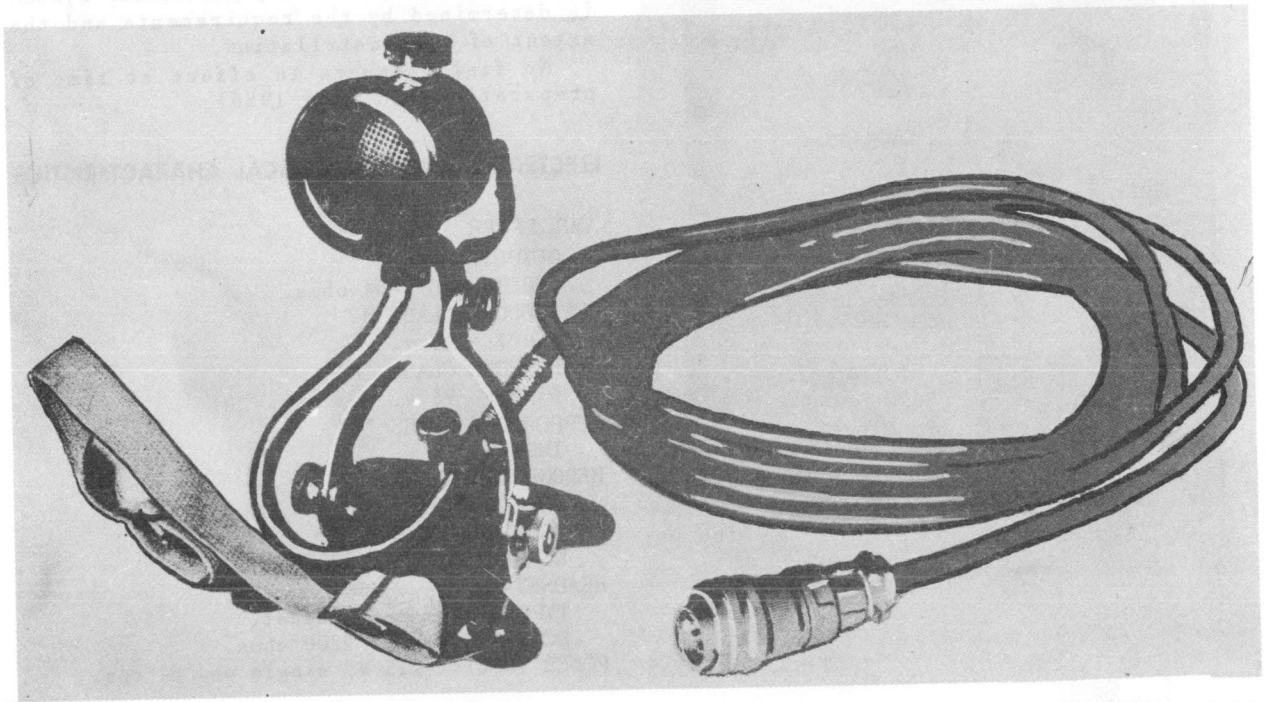




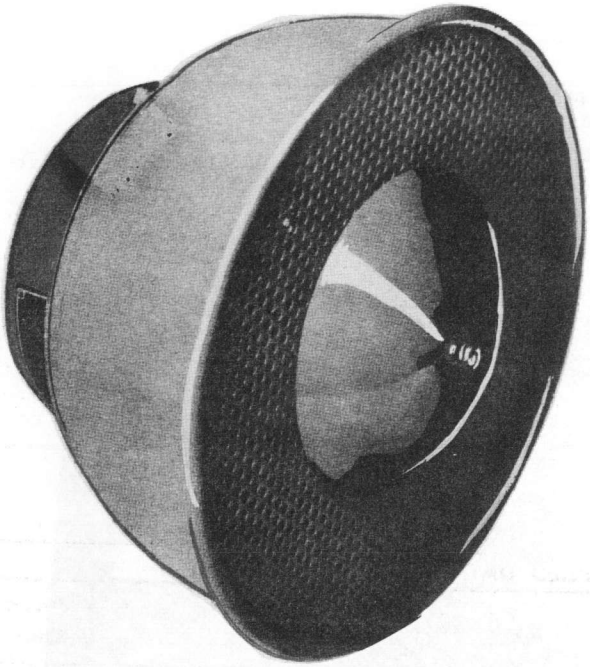
Front View

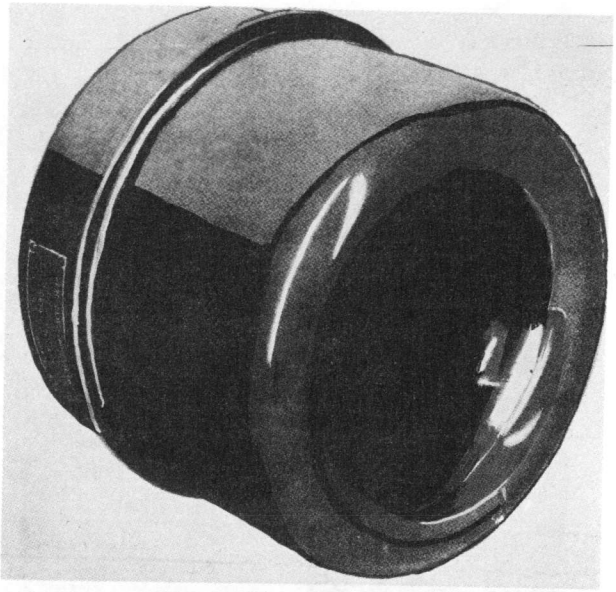
AN/SIA-66 BATTLE ANNOUNCING EQUIPMENT



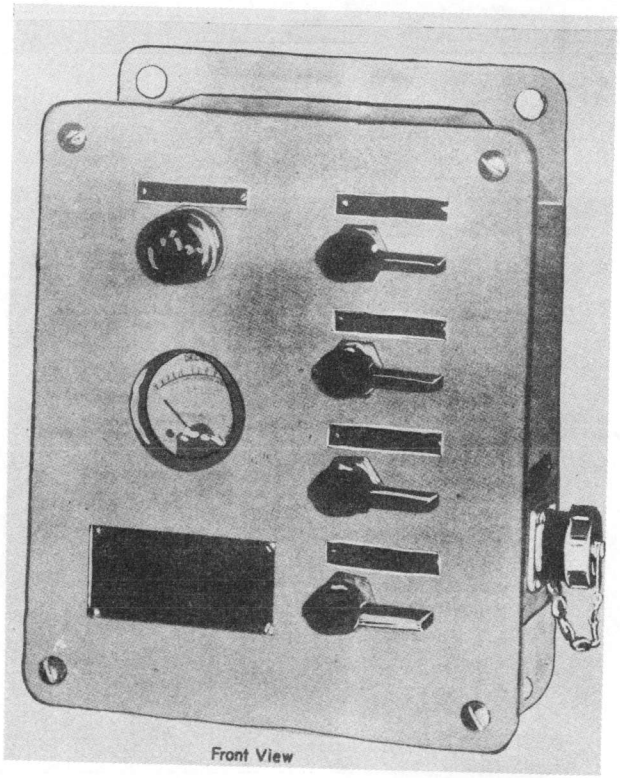


BATTLE ANNOUNCING EQUIPMENT AN/SIA-66





Battle Announcing Equipment AN/SIA-66



Front View

FUNCTIONAL DESCRIPTION

The AN/SIA-66 is designed for the purpose of transmission, amplification, and the reproduction of speech and alarm signals, on shipboard.

The number of Transmitters, Control Boxes, Signal Generators, Amplifier Units, and Reproducers employed on any particular system is determined by the requirements and the extent of the installation.

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

ELECTRICAL AND MECHANICAL CHARACTERISTICS

AMPLIFIER
OUTPUT: 140 W.
INPUT LOAD: 64 ohms.
REPRODUCER CLASS H
INPUT: 95 v.
REPRODUCER CLASS "M"
INPUT: 95 v.
REPRODUCER CLASS "L"
INPUT: 95 v.
REPRODUCER CLASS "S"
INPUT: 95 v.
REPRODUCER CLASS "BM"
DC RESISTANCE: 14.5 ohms.
HEADSET
TYPE: Permanent magnet.
DC RESISTANCE: 2200 ohms.
POWER INPUT: 115 v, single ph, 60 cps.

AN/SIA-66 BATTLE ANNOUNCING EQUIPMENT

December 1956

MANUFACTURER'S OR CONTRACTOR'S DATA

Stromberg-Carlson Co., Rochester, New York
Contract NObs-11477.

REFERENCE DATA AND LITERATURE

NAVSHIPS 365-0063: Technical Manual for Battle Announcing Equipment AN/SIA-66.

TUBE AND/OR CRYSTAL COMPLEMENT

(16) 6SJ7 (4) 6SN7GT (4) 6H6
(4) 6B4G (8) 809 (4) 866A
(16) 6SL7GT (4) 6X5GT
Total Tubes: (60)

TYPE CLASSIFICATION
DESIGN COGNIZANCE
PROCUREMENT COGNIZANCE
STOCK NO.

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Amplifier MCG-MCA	18 X 30 X 72	1000
1	Transmitter, Class "A"	9 X 14-7/8 X 18-1/8	35
1	Control Box, Class "D"	5-1/2 X 8-1/2 X 11-1/8	16
1	Portable Transmitter	4-1/2 X 5-1/2 X 12	4
1	Headset	4 X 6 X 6	3
1	Jack Box	3-1/8 X 4-11/16 X 6-3/16	2
*	Reproducer, Class "H"	8-3/4 X 12-3/4 X 12-3/4	25
*	Reproducer, Class "M"	8-3/4 X 12-3/4 X 12-3/4	25
*	Reproducer, Class "L"	7-1/2 X 9-1/16 X 9-1/16	12
*	Reproducer, Class "S"	7-1/2 X 9-1/26 X 9-1/16	12
1	Reproducer, Class "bm" (Bull Horn)	24 X 26 X 37	283
1	Set Spare Parts, Tools, Test Equipment		

* Quantities as required per vessel.

COMMUNICATIONS CENTRAL AN/SRC-18 ( )

FUNCTIONAL DESCRIPTION

The AN/SRC-18() is capable of providing simultaneous and independent operation of three (3) circuits, each of which shall be of simplex or full duplex operation on any frequency within the range of 2 to 30 mc, except for Type B amplifiers.

No field changes in effect at time of preparation (27 December 1960).

RELATION TO OTHER EQUIPMENT

The AN/SRC-18() is designed to be used with but not part of Terminal Set, Telegraph AN/SSC-1(XN-1) and Data Terminal Set AN/SSQ-29(XN-2).

ELECTRICAL AND MECHANICAL CHARACTERISTICS

TYPE OF INSTALLATION: Shipboard.
TYPE OF COOLING: 70 deg F porm 5 deg water.
OPERATING FREQUENCY RANGE: 2 to 30 mc.
OPERATING POWER RQMT: 115 v ac, 60 cps, single ph; 440 v ac, 60 cps, 3 ph.

MANUFACTURER'S OR CONTRACTOR'S DATA

Collins Radio Co., Richardson, Texas.

TUBE AND/OR CRYSTAL COMPLEMENT

Electron Tube and/or Crystal data not available.

REFERENCE DATA AND LITERATURE

NAVSHIPS 93400: Preliminary Data Form for Communications Central AN/SRC-18().

TYPE CLASSIFICATION (NAVY)
DESIGN COGNIZANCE NAVY BUSHIPS
PROCUREMENT COGNIZANCE SHIPS-I-3076
STOCK NO.
R.D.B. IDENT. NO.

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Communications Central AN/SRC-18() consists of:		
3	Linear Power Amplifier Units		
3	Frequency Generator Units		
3	Radio Frequency Translator Units		
3	Audio Frequency Translator Units		
2	Radiated Power Control & Receiver Attenuator Units		
1	Antenna Multicoupler Unit		
2	Linear Power Amplifier Units Type B		
2	Primary Frequency Standard Units		
1	Operating Console		
1	Programmed Test, Unit		
2	Antenna, Switching & Patching Units		

COMMUNICATIONS CENTRAL AN/SRC-19 ( )

FUNCTIONAL DESCRIPTION

The AN/SRC-19( ) is capable of providing simultaneous and independent operation of two (2) circuits, each of which shall be of simplex or full duplex operation on any frequency within the range of 2 to 30 megacycle (MC), except for the type B amplifiers.

No field changes in effect at time of preparation (27 December 1960).

RELATION TO OTHER EQUIPMENT

The AN/SRC-19( ) is designed to be used with but not part of Terminal Set, Telegraph AN/SSC-1(XN-1) and Data Terminal Set AN/SSQ-29(XN-2).

ELECTRICAL AND MECHANICAL CHARACTERISTICS

TYPE OF INSTALLATION: Shipboard.
TYPE OF COOLING: 70 deg F porm 5 deg water.
OPERATING FREQUENCY RANGE: 2 to 30 mc.
OPERATING POWER RQMT: 115 v ac, 60 cps, single ph; 440 v ac, 60 cps, 3 ph.

MANUFACTURER'S OR CONTRACTOR'S DATA

Collins Radio Co., Richardson, Texas.

TUBE AND/OR CRYSTAL COMPLEMENT

Electron Tube and/or Crystal data not available.

REFERENCE DATA AND LITERATURE

NAVSHIPS 93400: Preliminary Data Form for Communications Central AN/SRC-19( ).

TYPE CLASSIFICATION (NAVY)
DESIGN COGNIZANCE NAVY BUSHIPS
PROCUREMENT COGNIZANCE SHIPS-I-3076
STOCK NO.
R.D.B. IDENT. NO.

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Communications Central AN/SRC-19( ) consists of:		
2	Linear Power Amplifier Units		
2	Frequency Generator Units		
2	Radio Frequency Translator Units		
2	Audio Frequency Translator Units		
1	Radiated Power Control & Receiver Attenuator Unit		
1	Antenna Multicoupler Unit		
1	Linear Power Amplifier Unit Type B		
1	Primary Frequency Standard Unit		
1	Operating Console		
1	Programmed Test Unit		
1	Antenna Switching & Patching Unit		

SUBSCRIBER GROUP TELETYPEWRITER-VOICE AN/SSA-24(XN-1)

FUNCTIONAL DESCRIPTION

The AN/SSA-24(XN-1) is primary terminal equipment and shall be operated by the message originator or receiver and be capable of transmitting and receiving simultaneously. One high quality voice circuit will be available to each subscriber group. The teletypewriter shall be capable of 60 to 100 words per minute (wpm) using the standard 7-element Baudot code and have "key-caps" and one tape printer of weather type arrangement. The loudspeaker shall have a gain control for output and a sufficiently undistorted output to overcome normal ambient.

No field changes in effect at time of preparation (13 October 1960).

RELATION TO OTHER EQUIPMENT

The AN/SSA-24(XN-1) is designed as part of Terminal Set, Telegraph AN/SSC-1(XN-1). It is used with but not part of the Data Terminal Set AN/SSQ-29(XN-2) and Communications Central AN/SRC-16(XN-1), AN/SRC-18(), and AN/SRC-19().

ELECTRICAL AND MECHANICAL CHARACTERISTICS

TYPE OF CODE: Standard 7-element Baudot code.
TYPE OF CAPABILITIES: Teletypewriter.
TYPE OF ARRANGEMENT: "Key-caps" and one type printer of weather type arrangement.
TELETYPEWRITER SPEED: 60 and 100 wpm.
OPERATING POWER RQMT: 115 v ac, 400 cps, single ph.

MANUFACTURER'S OR CONTRACTOR'S DATA

Collins Radio Co., Richardson, Texas.
Contract NObsr-75853, dated 26 February 1960.

TUBE AND/OR CRYSTAL COMPLEMENT

Electron tube and/or crystals not used.

REFERENCE DATA AND LITERATURE

NAVSHIPS 93400: Preliminary Data Form for Subscriber Group, Teletypewriter-Voice AN/SSA-24(XN-1).

TYPE CLASSIFICATION	(NAVY)
DESIGN COGNIZANCE	NAVY BUSHIPS
PROCUREMENT COGNIZANCE	SHIPS-H-3333
STOCK NO.	
R.D.B. IDENT. NO.	

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Subscriber Group, Teletypewriter-Voice AN/SSA-24(XN-1) consists of:		
1	Teletypewriter Set AN/UGC-11(XN-1)		
1	Subscriber Group, Voice OA-2576(XN-1) ISSA		

SUBSCRIBER GROUP, TELETYPEWRITER-VOICE AN-SSA-25(XN-1)

FUNCTIONAL DESCRIPTION

The AN/SSA-25(XN-1) is primary terminal equipment operated by the message originator or receiver. The group is capable of transmitting and receiving simultaneously. One high quality voice circuit is available to each subscriber group. Voice operating power requirements are 28 volts direct current (DC).

No field changes in effect at time of preparation (6 October 1960).

RELATION TO OTHER EQUIPMENT

The AN/SSA-25(XN-1) is part of Terminal Set, Telegraph AN/SSC-1(XN-1). It is used with but not part of Data Terminal Set AN/SSQ-29(XN-2) and Communications Central AN/SRC-16(XN-1), AN/SRC-18() and AN/SRC-19().

ELECTRICAL AND MECHANICAL CHARACTERISTICS

TELETYPEWRITER CAPABILITIES: 60 and 100 wpm, standard 7-element baudot code, "keycaps" and one tape printer of weather type arrangement.

LOUDSPEAKER CHARACTERISTICS: Sufficient undistorted output to overcome normal ambient and a gain control for loudspeaker output.

DYNAMIC HANDSET CHARACTERISTICS: Sufficient output to the line to overcome normal line noises according to standard telephone practice, muting of the speaker while using the handset, push-to-talk switch, and handset quality equal to or better than Handset H-51/U.

OPERATING POWER RQMT: 115 v ac, 60 cps, single ph; 28 v dc.

MANUFACTURER'S OR CONTRACTOR'S DATA

Alpha Corp., Div of Collins Radio Co., Richardson, Texas.
Contract NObsr-75853, dated 26 February 1960.

TUBE AND/OR CRYSTAL COMPLEMENT

Electron Tube and/or Crystal data not available.

REFERENCE DATA AND LITERATURE

NAVSHIPS 93400: Preliminary Data Form for Subscriber Group Teletypewriter-Voice AN/SSA-25(XN-1).

TYPE CLASSIFICATION (NAVY)
DESIGN COGNIZANCE NAVY BUSHIPS
PROCUREMENT COGNIZANCE SHIPS-H-3333
STOCK NO.
R.D.B. IDENT. NO.

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Subscriber Group, Teletypewriter-Voice AN/AN/SSA-25(XN-1) consists of:		
1	Teletypewriter TT-242/UG	8 x 15 x 15 10-1/4 x 12-1/4 x 16-1/4	
1	Reperforator, Teletypewriter TT-192A/UG		
1	Distributer-Transmitter, Teletypewriter TT-187A/UG		
1	Teletypewriter TT-284/UG (Receiver only)		
1	Subscriber Group, Voice OA-2576(XN-1)/SSA		

SUBSCRIBER GROUP, TELETYPEWRITER-VOICE AN/SSA-26(XN-1)

FUNCTIONAL DESCRIPTION

The AN/SSA-26(XN-1) is primary terminal equipment, operated by the message originator or receiver. The subscriber group is capable of transmitting and receiving simultaneously. One high quality voice circuit will be available to each subscriber group. Voice operating power requirements are 28 volts dc. The Teletypewriter has "key-caps" and one tape printer of weather type arrangement.

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

RELATION TO OTHER EQUIPMENT

The AN/SSA-26(XN-1) is designed as part of the AN/SSC-1(XN-1). It is designed to be used with but not part of the AN/SSQ-29(XN-2); and AN/SRC-16(XN-1), AN/SRC-18(), and AN/SRC-19().

ELECTRICAL AND MECHANICAL CHARACTERISTICS

TELETYPE SPEED: 60 and 100 wpm.
OPERATING POWER RQMT: 115 v ac, 60 cps, single ph; 115 v dc; 28 v dc.

MANUFACTURER'S OR CONTRACTOR'S DATA

Collins Radio Co., Richardson, Texas.
Contract NObsr-75853, dated 26 February 1960.

TUBE AND/OR CRYSTAL COMPLEMENT

Electron Tube and/or Crystal data not available.

REFERENCE DATA AND LITERATURE

NAVSHIPS 93400: Preliminary Data Form for Subscriber Group, Teletypewriter-Voice AN/SSA-26(XN-1).

TYPE CLASSIFICATION (NAVY)
DESIGN COGNIZANCE NAVY BUSHIPS
PROCUREMENT COGNIZANCE SHIPS-H-3333
STOCK NO.
R.D.B. IDENT. NO.

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Subscriber Group, Teletypewriter Voice AN/SSA-26(XN-1) consists of:		
1	Teletypewriter Set AN/UGC-6		
1	Subscriber Group Voice OA-2576(XN-1)/SSA consists of:		
1	Loudspeaker		
1	Power Supply (28 v, 1 amp)		
1	Dynamic Handset		
1	Hookswitch		
1	Microphone Amplifier		
1	Teletypewriter TT-261/UG		

Radio-Communication Terminal Equipment

TERMINAL SET, TELEGRAPH AN/SSC-1(XN-1)

FUNCTIONAL DESCRIPTION

The AN/SSC-1(XN-1) subdivides a single voice band of a duplex voice radio network into subcarrier telegraph links. Automatic switching provides random access to such links and selects addressed subscriber groups through the use of baudot coded addresses. The several subscriber groups function as normal teletypewriter keyboards and page printers, plus various paper or magnetic message storage facilities. In addition, the terminal set provides party line voice terminals for a second voice band of the associated radio network.

No field changes in effect at time of preparation (6 October 1960).

RELATION TO OTHER EQUIPMENT

The AN/SSC-1(XN-1) is designed to be used with but not part of the AN/SSQ-29(), AN/SRC-16, AN/SYQ-1(V) thru 4(V).

ELECTRICAL AND MECHANICAL CHARACTERISTICS

OPERATING POWER RQMT: 115 v ac, 400 cps, 3 ph; 440 v ac, 400 cps, 3 ph.

MANUFACTURER'S OR CONTRACTOR'S DATA

Alpha Corp., Div of Collins Radio Co., Richardson, Texas.
Contract NObsr-75853, dated 26 February 1960.

TUBE AND/OR CRYSTAL COMPLEMENT

Electron Tube and/or Crystal data not available.

REFERENCE DATA AND LITERATURE

NAVSHIPS 93400: Preliminary Data Form for Terminal Set, Telegraph AN/SSC-1(XN-1).

TYPE CLASSIFICATION (NAVY)
DESIGN COGNIZANCE NAVY BUSHIPS
PROCUREMENT COGNIZANCE SHIPS-D-3333
STOCK NO.
R.D.B. IDENT. NO.

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Terminal Set, Telegraph AN/SSC-1(XN-1) consists of:		
1	Terminal Group, Telegraph AN/SCA-1(XN-1)		5000
1	Subscriber Group, Teletypewriter AN/SSA-24 (XN-1)		
1	Subscriber Group, Teletypewriter Voice AN/SSA-25(XN-1)		
3	Subscriber Group, Teletypewriter Voice AN/SSA-26(XN-1)		

Radio-Communication Terminal Equipment

DATA TERMINAL SET AN/SSQ-29 (XN-2)

FUNCTIONAL DESCRIPTION

The AN/SSQ-29(XN-2) is a service test model of a communication terminal system, which in functioning as a connecting link between suitable radio frequency equipments and digital computers, will provide a data transmission system which will form an integral part of the Naval Tactical Data System (NTDS). This equipment shall have positive pressure air circulation cooling system and be enclosed to "splashproof" requirements. The system shall not exceed a volume of 72 cubic feet. The operating panel shall be capable of being remotely located up to a distance of 200 feet.

No field changes in effect at time of preparation (5 December 1960).

RELATION TO OTHER EQUIPMENT

The AN/SSQ-29(XN-1) is designed to be used with but not part of the Communications Central AN/SRC-16(XN-1), AN/SRC-18() and AN/SRC-19() and Terminal Set, Telegraph AN/SSC-1(XN-1).

ELECTRICAL AND MECHANICAL CHARACTERISTICS

OPERATING POWER RQMT: 115 v ac, 400 cps, 3 ph, delta connected.

MANUFACTURER'S OR CONTRACTOR'S DATA

Collins Radio Co., Richardson, Texas.
Contract NObsr-75852, dated 28 March 1960.

TUBE AND/OR CRYSTAL COMPLEMENT

Electron Tube and/or Crystal data not available.

REFERENCE DATA AND LITERATURE

NAVSHIPS 93400: Preliminary Data Form for Data Terminal Set AN/SSQ-29(XN-2).

TYPE CLASSIFICATION (NAVY)
DESIGN COGNIZANCE NAVY BUSHIPS
PROCUREMENT COGNIZANCE SHIPS-D-3314
STOCK NO.
R.D.B. IDENT. NO.

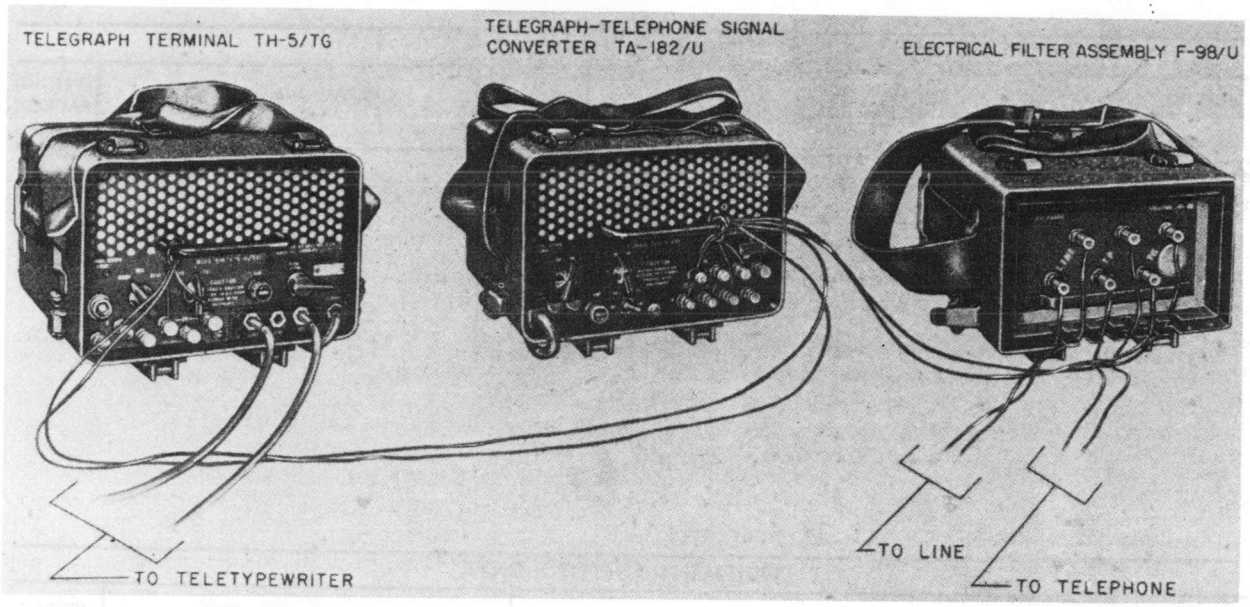
EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Data Terminal Set AN/SSQ-29(XN-2) consists of:		
1	Multiplexing Unit consisting of:		
1	Multiplexer		
1	Demultiplexer		
1	Control Logic consisting of:		
1	Buffer Store		
1	Data Selector		
1	Net Program Generator		
1	Program Control		
1	System Monitoring and Fault Location consisting of:		
1	System Monitor		
1	Fault Locator		

April 1959

Radio-Communication Terminal Equipment

TERMINAL TELEGRAPH TELEPHONE AN/TCC-14



Telegraph-Telephone Terminal AN/TCC-14

FUNCTIONAL DESCRIPTION

The AN/TCC-14 is a combination of three separate components. These components are the Telegraph Terminal TH-5/TG; Electrical Filter Assembly F-98/U; and Telegraph-Telephone Signal Converter TA-182/U. This combination permits simultaneous transmission of telegraph pulses and of speech. The telegraph signals utilize a portion of the frequency band used by the telephone channel while permitting the use of the channel for speech transmission.

The AN/TCC-14 may be used in point-to-point systems, network systems, switched systems, and remote control radio systems.

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

ELECTRICAL AND MECHANICAL CHARACTERISTICS

TYPE OF MODULATION: Frequency shift.
BANDWIDTH: 200 cyc.
TRANSMISSION SPEEDS: 60, 75 and 100 words per minute (based on 7.42 unit code 6 operations per word).
TRANSMITTER OUTPUT LEVEL: 0 dbm ±2 db (fixed).
RECEIVER SENSITIVITY: 0 to 45 dbm.
TERMINAL IMPEDANCE: 600 ohms ±10%, normal at 1,000 cps for 2-wire or 4-wire operation.
RECEIVING DIRECT CURRENT (local source): 20 ma (min).
POWER DRAIN FROM (AC) SOURCE: 60 w.
MARK FREQUENCY: 1,325 cps.
SPACE FREQUENCY: 1,225 cps.
OPERATING POWER RQMT: 115 v, 50 to 60 cps, 1 ph.

TUBE AND/OR CRYSTAL COMPLEMENT

(7) 12AU7	(2) 12AX7
(4) 5726-6AL5W	(2) 6X4WA

Total Tubes: (15)

No Crystals Used.

REFERENCE DATA AND LITERATURE

TM11-2239 Technical Manual AN/TCC-14 for Telegraph-Telephone Terminal.

TYPE CLASSIFICATION	
DESIGN COGNIZANCE	OC SIG O
PROCUREMENT COGNIZANCE	MIL-T-10267
STOCK NO.	
R.D.B. IDENT. NO.	

Radio-Communication Terminal Equipment

AN/TCC-14 TERMINAL TELEGRAPH TELEPHONE

SHIPPING DATA

NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
1	Telegraph-Telephone Terminal AN/TCC-14	3.05	12-1/2 X 16-1/2 X 25-1/2	88.5
	Including:			
	(1) Telegraph Terminal TH-5/TG	0.78	8-1/4 X 11 X 15	22.5
	(1) Telegraph-Telephone Signal Converter TA-182/U	0.78	8-1/4 X 11 X 15	19.0
	(1) Electrical Filter Assembly F-98/U	0.66	7 X 11 X 15	27.0

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Telegraph Terminal TH-5/TG	7-1/2 X 10-1/2 X 11	18.5
1	Telegraph-Telephone Signal Converter TA-182/U	7-1/2 X 10-1/2 X 11	15.0
1	Electrical Filter Assembly F-98/U	6-1/2 X 8-3/4 X 10	25.0

TERMINAL, TELEGRAPH AN/TCC-20A

FUNCTIONAL DESCRIPTION

The AN/TCC-20A comprises the equipment required at one end of a circuit to provide up to 4 two way telegraph channels on any 2-wire or 4-wire voice frequency or carrier telephone circuits.

No field changes in effect at time of preparation (15 May 1957).

RELATION TO OTHER EQUIPMENT

Functionally Interchangeable with AN/TCC-20 except for components.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

MULTIPLEXING TYPE: Frequency division.
NUMBER OF CHANNELS: 4.
FREQUENCY RANGE: 425 to 1615 cps.
CHANNEL SPACING: 170 cycles.
SPEED: 100 words per minute.
LINE TERMINATION: 2 or 4 wire.
LOOP ACTUATION: DC.
OPERATION: Neutral full duplex.
SELECTION: Switch type.
POWER SOURCE REQUIRED: 115 or 230 v, 50 to 60 cps, single ph.

MANUFACTURER'S OR CONTRACTOR'S DATA

Contract 26578-PH-52.

TUBE AND/OR CRYSTAL COMPLEMENT

Tubes and Crystals: Not Available.

REFERENCE DATA AND LITERATURE

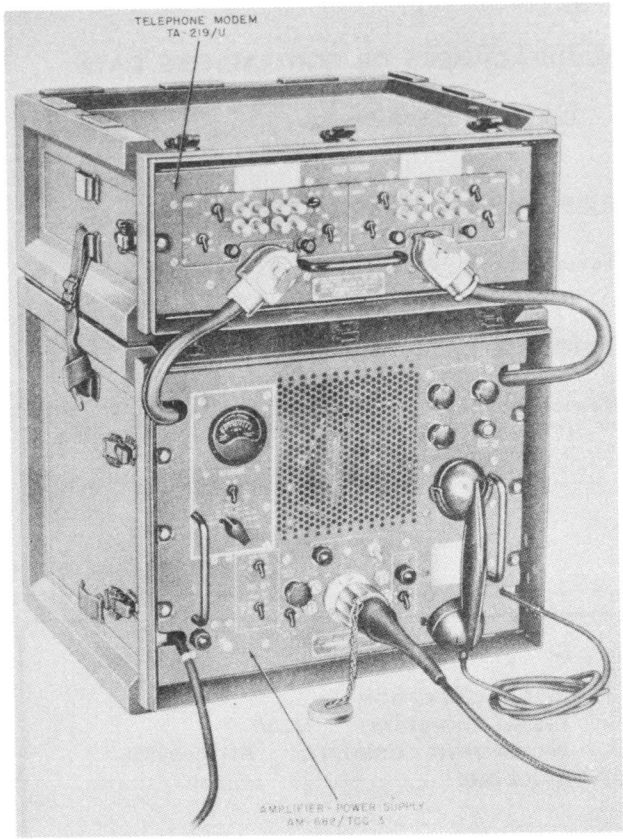
Nomenclature Card for Terminal, Telegraph AN/TCC-20A dated 7 June 1956.

TYPE CLASSIFICATION
DESIGN COGNIZANCE TASSA
PROCUREMENT COGNIZANCE MIL-T-10568
STOCK NO.

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Telegraph Modem Assembly TH-26/T		

TELEPHONE TERMINAL AN/TCC-3



Telephone Terminal AN/TCC-3

FUNCTIONAL DESCRIPTION

The AN/TCC-3 is a four-channel carrier telephone terminal whose primary purpose is to provide either four channels for telephone communication or one channel for the transmission and reception of wide-band signals such as high-speed facsimile or data transmission.

When used as a four-channel carrier telephone terminal an order wire, voice-frequency telephone maintenance, is also provided. Intelligence can be transmitted over loaded spiral-four cable for a distance of 25 miles when used without Telephone Repeater AN/TCC-5, and over a distance of 100 miles when used in conjunction with Telephone Repeater AN/TCC-5.

The AN/TCC-3 transmits over a frequency range of 300 to 19700 cycles per second, and it can be used alone or in conjunction with other equipment to form various communication systems.

Topographical or other considerations may require the use of radio links between two Telephone Terminals AN/TCC-3 to complete a system. These links may consist of any one of various equipments such as Radio Sets AN/TRC-24 and AN/GRC-10. If modified Radio Sets AN/TRC-1 and AN/TRC-8 may be used.

It has self-contained test facilities capable of coordination with other standard test facilities.

No field changes in effect at time of preparation (8 November 1956).

RELATION TO OTHER EQUIPMENT

The AN/TCC-3 is the main components of the AN/TCC-23.

Equipment Required but not Supplied: (1) Clamp TM-106, (1) Ground Rod MX-148/G, (1) Telephone Cable Assembly CX-1512/U, (1) Telephone Signal Converter TA-182/U for each communication channel, (2) 5 DB Pads for each through-channel when two AN/TCC-3 systems are connected in tandem, Test Equipment as Required.

Following Additional Required for Connecting to Open-Wire Lines: (4) Connector, (1) Ring PF-74, (2) Protector AR-6, (1) Ground Rod MX-148/G, (1) Telephone Cable Assembly CX-1512/U, (1) Telephone Cable Assembly CX-1606/G, No. 22 AWG Wire and No. 12B and S gage Single Conductor Wire.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

CARRIER FREQUENCIES
- CHANNEL 1: 8 kc ±0.01%.
- CHANNEL 2: 12 kc ±0.01%.
- CHANNEL 3: 16 kc ±0.01%.
- CHANNEL 4: 20 kc ±0.01%.

FREQUENCY BANDS
- ORDER WIRE: 300 to 3100 cps.
- CHANNEL 1: 4500 to 7700 cps.
- CHANNEL 2: 8500 to 11700 cps.
- CHANNEL 3: 12500 to 15700 cps.
- CHANNEL 4: 16500 to 19700 cps.

ORDER WIRE SIGNALING FREQUENCY: 1600 cps.

SYSTEM ALARM SIGNAL FREQUENCY: 4000 cps.

TYPE MODULATION: Amplitude, single sideband suppressed carrier.

POWER AT 0-DB LEVEL POINTS (1000 CPS TEST SIGNAL)
- 2 W BINDING POSTS
  - VOICE: 0 dbm.
  - 16 CHANNEL TELEGRAPH TERMINAL: −15 dbm.
- SPECIAL SERVICE TR BINDING POSTS
  - FACSIMILE EQUIPMENT: 0 dbm or −3 dbm depending on type of facsimile equipment.
  - OTHER SPECIAL SERVICE EQUIPMENT: 0 dbm.

OPERATING LEVELS
- VF SIDE
  - INPUT (2 WIRE): 0 db.
  - OUTPUT (2 WIRE): −3 db.
  - INPUT (4 WIRE): −4 db.
  - OUTPUT (4 WIRE): +1 db.

Radio-Communication Terminal Equipment

AN/TCC-3 TELEPHONE TERMINAL

TRANSMITTING INTO LINE
NORMAL LINE SECTION: 0 db.
LONG LINE SECTION: +10 db.

SYSTEM PERFORMANCE
NOISE ON CHANNELS (100 MILE SYSTEM): 32 dba at 0 db level except during periods of heavy static or with strong power exposures (decibels adjusted, as measured by Transmission Measuring Set TS-559/FT).
FAR-END CROSSTALK LOSS: Expected to exceed 50 db between output of disturbing channel and output of disturbed channel.
NEAR-END (ECHO) CROSSTALK LOSS: Expected to exceed 25 db.

POWER REQUIREMENTS: 115 or 230 v ±10%, 50 to 65 cps, single ph, 125 W.

MANUFACTURER'S OR CONTRACTOR'S DATA

Contract DA-36-039-SC-893, MIPR800-19408-51.
Contract EN24/75009 (57).

Approximate Cost: $11000.00 with equipment spares.

TUBE AND/OR CRYSTAL COMPLEMENT

(1) 6627/OB2WA (3) 6X4WA (3) 5670
(11) 5654/6AK5W (2) 6005/6AQ5W
Total Tubes: (20)

REFERENCE DATA AND LITERATURE

TM11-2142: Technical Manual for Telephone Terminal AN/TCC-3 and Telephone Terminal AN/TCC-23.

TYPE CLASSIFICATION
DESIGN COGNIZANCE TASSA
PROCUREMENT COGNIZANCE
STOCK NO.

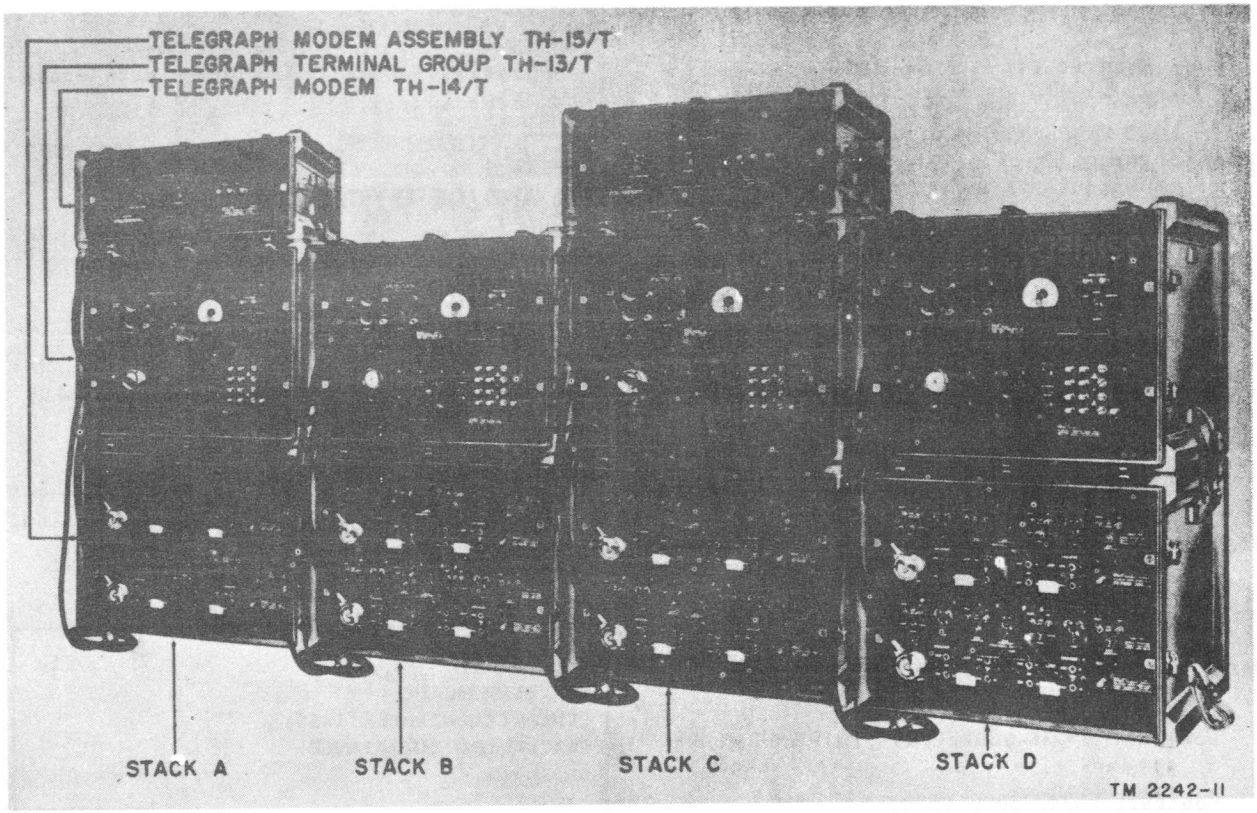
SHIPPING DATA

NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
1	Telephone Modem TA-219/U	5.6	15 X 25 X 26	122
1	Amplifier-Power Supply AM-682/TCC-3	8.2	22 X 25 X 26	174

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Telephone Terminal AN/TCC-3 consisting of:		
	(1) Telephone Modem TA-219/U	9-1/8 X 18-1/16 X 20-5/8	73
	(1) Amplifier-Power Supply AM-682/TCC-3	17-1/16 X 18-1/16 X 20-5/8	103

TELEGRAPH TERMINAL AN/TCC-4



Telegraph Terminal AN/TCC-4

FUNCTIONAL DESCRIPTION

The AN/TCC-4 provides high-speed, frequency-shift, carrier telegraph communication within the voice frequency band of 300 to 3100 cycles-per-second over two-wire or four-wire circuits.

The AN/TCC-4 consists of three types of component units, the total number of component units used for a specific terminal arrangement depends on the number of channels desired and whether the system is to be operated over a two-wire or four-wire line.

The AN/TCC-4 may be used in point-to-point systems, trunk circuit systems, telegraph-through-carrier-telephone channel systems, and telegraph-through-radio-link systems.

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

RELATION TO OTHER EQUIPMENT

Same as AN/TCC-20 except that the AN/TCC-20 does not include the Telegraph Modem TH-14/T which contains a group-modulator-demodulator circuit and a source of standard test frequencies.

Equipment Required but not Supplied: Teletypewriters as required for monitoring at each terminal, (1) Telegraph Terminal TH-5/TG, (1) Tool Set TE-123, (1) Tube Puller TL-201, Test Equipment as Required.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

NUMBER OF CHANNELS: 4, 8 or 16.
TERMINAL DATA (LINE SIDE)
- TYPE MODULATION: Frequency shift.
- TYPE TERMINATION: 2-wire or 4-wire (by switching).
- TERMINAL IMPEDANCE: 600 ohms.
- OUTPUT LEVEL (MAX): 0 dbm, adjustable in 3 db steps from 0 to −24 dbm per channel.
- RECEIVING SENSITIVITY: −25 dbm nom, adjustable in 3 db steps over 24 db range.
- LINE NOISE: 1 to 1 min signal-plus-noise to noise ration.
- FILTER ATTENUATION: 40 db to adjacent channels.
- TELEGRAPH TRANSMISSION SPEED: 100 wpm max.
- FREQUENCY RANGE DATA
  - MEAN FREQUENCIES: 425 to 2975 cps

spaced at 170 cps intervals (with TH-14/T), 425 to 1615 cps spaced at 170 cps intervals (without TH-14/T).

MARK AND SPACE DEVIATIONS: +42.5 and -42.5 cps respectively for each channel (with and w/o TH-14/T).

MEAN FREQUENCIES

CHANNEL	FREQUENCIES (CPS) OUTPUT OF TH-15/T	FREQUENCIES (CPS) OUTPUT AFTER GROUP MODULATION WITH TH-14/T
1	425	2975
	595	2805
2	765	2635
	935	2465
3	1105	2295
	1275	2125
4	1445	1955
	1615	1785

LOOP CIRCUITS DATA

TYPE TRANSMISSION: Frequency-shift or DC telegraph.

FREQUENCY RANGE (VF LOOPS): 1325 cps mark and 1225 cps space.

TERMINAL IMPEDANCE (VF LOOPS): 600 ohms ±10% for 1000 to 1600 cps range, 1500 to 2500 ohms at 20 cps.

RECEIVING SENSITIVITY TO SIGNALS FROM VF LOOP: 0 dbm to -40 dbm channel is automatically held in mark (standby) condition.

OUTPUT LEVEL: 0 dbm ±2 db to VF loop.

LOOP CIRCUIT ARRANGEMENTS: VF 2-wire, VF-4 -wire, DC 4-wire or DC tandem selected by switching.

TYPE OF LOOP OPERATION

VF TWO-WIRE: One-way reversibel (half duplex).

VF FOUR-WIRE: Full duplex.

DC FOUR-WIRE: Neutral full duplex, +20 ma mark current (0 space current) supplied by terminal.

DC TANDEM: Neutral full space, +50 mark, 0 space voltage (20 ma mark, 0 space current) supplied by receiving terminal.

POWER REQUIREMENTS: 115 or 230 v, 50 to 60 cps, single phase, 240 W (four channel stack).

TEST FACILITIES

METERING: Meter and test switches provided for measurements of loop and line levels, AC and DC signal bias, DC voltage supply.

TEST SIGNAL SOURCE: Crystal controlled 20.4 kc ±2.5 cps and 85 ±0.01 cps frequency standards.

SIGNALING AND RINGING

RINGING (VE LOOP CIRCUITS): 115 v, 20 cps from terminal to loop, 16 v, 20 cps min from loop to terminal.

SIGNALING (LINE CIRCUIT): Channel space frequency operated 1 sec min.

BREAK-IN (ONE-WAY REVERSIBLE CHANNELS): Channel space frequency operated 3 sec min.

TUBE AND/OR CRYSTAL COMPLEMENT

TH-13/T
(1) OA3 (2) 5R4WGY (1) 6AU6
(2) 6X4W (2) 5814 (2) 6080
Total Tubes: (10)

TH-14/T
(1) 12AX7 (2) 5751 (3) 581A
Total Tubes: (6)

TH-15/T
(8) 5751 (52) 5814
Total Tubes: (60)

TH-13/T
(4) 1N69
Total Crystals: (4)

TH-14/T
(4) 1N69 (1) HC-13
Total Crystals: (5)

REFERENCE DATA AND LITERATURE

TM11-2242/TO31W4-2TCC-1: Technical Manual for Telegraph Terminal AN/TCC-4 and Telegraph Terminal AN/TCC-20.

TYPE CLASSIFICATION
DESIGN COGNIZANCE TASSA
PROCUREMENT COGNIZANCE
STOCK NO.

SHIPPING DATA

NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
	QUANTITIES AS REQUIRED PER INSTALLATION Telegraph Modem Assembly TH-15/T including: (1) Telegraph Terminal Group TH-13/T (1) Set of Running Spare Parts (1) Technical Manual TM11-2242	10.2	21-5/8 X 22 X 36-7/8	215

SHIPPING DATA

NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
	(2) Patch Cord (1) Set of Circuit Labels and Operating Instructions			
	Telegraph Modem TH-14/T	2.3	10-1/8 X 21-3/4 X 22-1/8	65

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
	4 CHANNEL (2 AND 4 WIRE)		
1	Telegraph Modem Assembly TH-15/T	16-7/8 X 18-1/8 X 20-5/8	82
1	Telegraph Terminal Group TH-13/T	16-7/8 X 18-1/8 X 20-5/8	104
2	Patch Cord	72 lg	
1	Technical Manual TM11-2242	7/8 X 7-7/8 X 10-1/4	
1	Set of Circuit Labels and Operating Instructions		
1	Set of Running Spare Parts		
	8 CHANNEL (2 AND 4 WIRE)		
2	Telegraph Modem Assembly TH-15/T	16-7/8 X 18-1/8 X 20-5/8	82
2	Telegraph Terminal Group TH-13/T	16-7/8 X 18-1/8 X 20-5/8	104
1 *	Telegraph Modem TH-14/T	9 X 18-1/8 X 20-5/8	49
4	Patch Cord	72 lg	
2	Technical Manual TM11-2242	7/8 X 7-7/8 X 10-1/4	
2	Set of Circuit and Operating Instructions		
2	Set of Running Spare Parts		
	16 CHANNEL (4 WIRE)		
4	Telegraph Modem Assembly TH-15/T	16-7/8 X 18-1/8 X 20-5/8	82
4	Telegraph Terminal Group TH-13/T	16-7/8 X 18-1/8 X 20-5/8	104
2	Telegraph Modem TH-14/T	9 X 18-1/8 X 20-5/8	49
8	Patch Cord	72 lg	
4	Technical Manual TM11-2242	7/8 X 7-7/8 X 10-1/4	
4	Set of Circuit Labels and Operating Instructions		
4	Set of Running Spare Parts		

* Supplied with 2-wire system only.

28 June 1962 — TERMINAL, TELEGRAPH AN/TCC-4A

Cog Service: TASSA FSN: — Functional Class:

USA	USN	USAF

TYPE CLASS: Used by — Used by

MANUFACTURER'S NAME/CODE NUMBER: Federal Telephone & Radio Co., (21964).

(No Illustration Available)

FUNCTIONAL DESCRIPTION:

The Terminal, Telegraph AN/TCC-4A comprises the equipment required at one end of a circuit to provide up to 8 two-way telegraph channels on any 2-wire or 4-wire voice frequency or carrier telephone circuits.

No field changes in effect at time of preparation (11 January 1962).

TECHNICAL CHARACTERISTICS:

TYPE OF MULTIPLEXING: Frequency division type.
NUMBER OF CHANNELS: 8.
FREQUENCY RANGE: 425 to 2975 cycles.
CHANNEL SPACING: 170 cycles.
SPEED: 100 words per minute (WPM).
TERMINATIONS: 2 or 4-wire line.
LOOP DATA: DC actuated, neutral full duplex operation, switch selection; AC actuated, half duplex (in 2-wire), full duplex (in 4-wire) operation, switch selection.
OPERATING POWER RQMT: 115 or 230 v ac, 50 to 60 cps, single ph.

RELATION TO OTHER EQUIPMENT:

The AN/TCC-4A is functionally interchangeable with AN/TCC-4 except for components supplied.

EQUIPMENT REQUIRED BUT NOT SUPPLIED: None.

MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (INCHES)	WEIGHT (LBS)
1	Terminal, Telegraph AN/TCC-4A consists of:			
1	Modern, Telegraph TH-25/T		9 x 18-1/8 x 20-5/8	
2	Modern, Telegraph TH-26/T		16-7/8 x 18-1/8 x 20-5/8	

REFERENCE DATA AND LITERATURE:

TM11-5805-250-35, TO 31W1-2TCC-182: Technical Manual for Terminal, Telegraph AN/TCC-4, AN/TCC-4A and AN/TCC-20.

AN/TCC-4A TERMINAL, TELEGRAPH

TUBE, CRYSTAL AND/OR SEMI-CONDUCTOR DATA:

TUBES: (1) 6A6WA (1) 6X4W (4) 12AU7 (3) 12AX7 (1) 5751 (1) 6080

CRYSTALS: None used.

SEMI-CONDUCTORS: None used.

SHIPPING DATA

PKGS	VOLUME (CU FT)	WEIGHT (LBS)

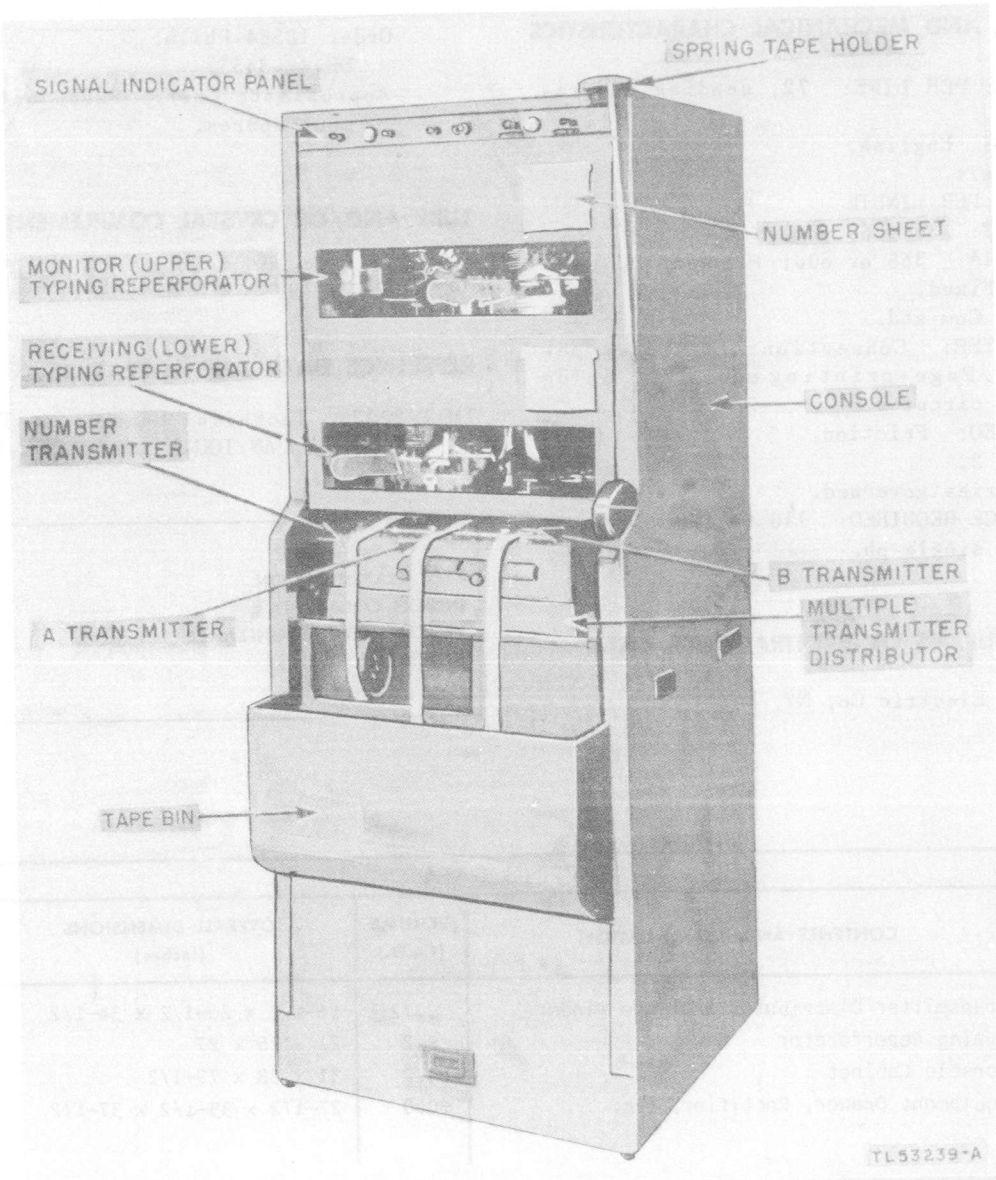
PROCUREMENT DATA

PROCURING SERVICE: TASSA
SPEC &/OR DWG: MIL-F-10568

DESIGN COG: TASSA

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX. UNIT COST
Federal Telephone & Radio Co. Dwg no. A-1006830-1 (Mod)	Clifton, N. J.	26578-PH-52	

TELETYPEWRITER SET AN/TGC-1, AN/TGC-1A



Teletypewriter Set AN/TGC-1, AN/TGC-1A

FUNCTIONAL DESCRIPTION

The AN/TGC-1 and AN/TGC-1A are a complete teletypewriter set designed for use in communications center and tape-relay stations. The equipment includes facilities for sending, receiving, and for monitoring teletype messages on perforated tape on which the message is also typed. A multiple transmitter-distributor is used for sending and two typing reperforators are used for receiving and monitoring. The multiple transmitter-distributor consists of a number transmitter-distributor unit and two message transmitter-distributor units. The AN/TGC-1 is normally used with Model TC-16 Reperforator teletypewriter sets at relay stations. The following test equipment may be used with the AN/TGC-1: Test Sets I-176, I-193, TS-2/FG, and Distortion Test Set TS-383/GG. Tool Equipment TE-50 is required for maintenance and repair of the AN/TGC-1.

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

AN/TGC-1, AN/TGC-1A TELETYPEWRITER SET

ELECTRICAL AND MECHANICAL CHARACTERISTICS

CHARACTERS PER LINE: 72, sending and receiving.
CHARACTERS: English.
CODE: 5 unit.
OPERATIONS PER MINUTE
AN/TGC-1: 368; 60 wpm.
AN/TGC-1A: 368 or 600; 100 wpm.
STATION: Fixed.
KEYBOARD: Com std.
PAGE PRINTER: Connections for teletypewriter. Page-printing equipment using station circuits.
TYPE OF FEED: Friction.
CHANNELS: 2.
MOTOR: Series governed.
POWER SOURCE REQUIRED: 110 to 120 v, 50 to 60 cps, single ph.

MANUFACTURER'S OR CONTRACTOR'S DATA

Western Electric Co, NY, NY.

Order 18584-Phila.
DR-44-3455.
Approximate Cost: $2580 with equipment spares.

TUBE AND/OR CRYSTAL COMPLEMENT

No Electron Tubes or Crystals used.

REFERENCE DATA AND LITERATURE

TM11-2203: Technical Manual for Teletypewriter Sets AN/TGC-1 and AN/TGC-1A.

TYPE CLASSIFICATION
DESIGN COGNIZANCE
PROCUREMENT COGNIZANCE
STOCK NO.

SHIPPING DATA

NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
1	Transmitter Distributor and Tape Winder	8.72	16-1/2 x 26-1/2 x 34-1/2	192
2	Typing Reperforator	8.2	21 x 25 x 27	135
1	Console Cabinet	54.2	31 x 38 x 79-1/2	602
1	Equipment Drawer, Rectifier, etc.	20.0	27-1/2 x 33-1/2 x 37-1/2	240

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Cabinet, Console Type (Western Union dwg No 108375-9)	24 x 24 x 65	250
2	Typing Reperforator w/motor	8-1/2 x 12 x 13	34.25
1	Multiple Transmitter Distributor w/base and motor	5-3/4 x 15-1/4 x 16-3/4	90
1	Tape Winder w/motor	6 x 11 x 12	10
1	Rectifier (Western Union No 54A)	6 x 7 x 15-3/8	35
1	Signal Indicator Panel	1-3/4 x 5 x 21	20
1	Relay Control Unit (Western Union dwg No 108229-9)	14-1/2 x 23-1/8 x 23-3/4	
1	Set Equipment Spares		

Radio-Communication Terminal Equipment

TELETYPEWRITER SET AN/TGC-3

FUNCTIONAL DESCRIPTION

The AN/TGC-3 is a complete teletypewriter set designed for use in communication center and tape-relay stations. The unit includes facilities for sending, receiving, and monitoring teletype messages on perforated tape on which the message also is typed. Sending, receiving, and monitoring facilities are furnished by a multiple transmitter distributor (for sending) and two typing reperforators (for receiving and monitoring).

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

ELECTRICAL AND MECHANICAL CHARACTERISTICS

UNIT CODE ARRANGEMENT: 5-unit.
TYPE OF STYLE: Gothic style type pallets.
PAPER SIZE: 11/16 in. W X 8.0 in. dia roll.
MOTOR SPEED: 368 operations per minute.
POWER DISSIPATION: 300 W.
OPERATING POWER ROMT: 95 to 125 v or 190 to 250 v AC, 25 to 60 cps.

TUBE AND/OR CRYSTAL COMPLEMENT

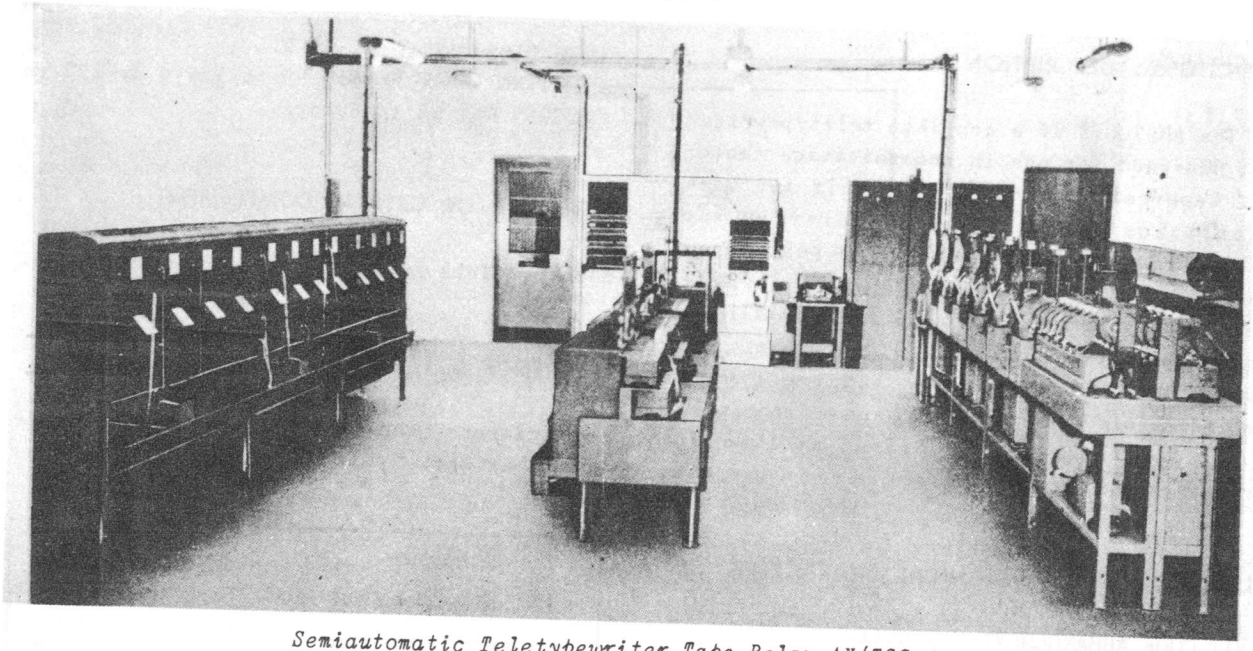
Electron Tube and Crystal data not available.

REFERENCE DATA AND LITERATURE

Nomenclature Card AN/TGC-3 for the Teletypewriter Set.

TYPE CLASSIFICATION
DESIGN COGNIZANCE OC SIG O
PROCUREMENT COGNIZANCE
STOCK NO.

SEMIAUTOMATIC TELETYPEWRITER TAPE RELAY AN/TGC-4



Semiautomatic Teletypewriter Tape Relay AN/TGC-4

FUNCTIONAL DESCRIPTION

The AN/TGC-4 consists of groups of equipment units installed at signal centers and wired together to form an operating system for the purpose of relaying teletypewriter messages. This type of message relaying system is particularly suitable for the accurate and efficient handling of large amounts of teletypewriter traffic.

Messages received from other signal centers or tributary stations are handled at this equipment in the form of perforated tapes. Reception and transmission are entirely automatic, but operators are needed for routing the messages. Therefore the system is called semiautomatic. Messages received in message blank form are routed to room sending positions, where operators convert them into perforated-tape form for transmission. Some messages are received as perforated tapes and must be converted to page copy for local delivery. These tapes are fed into an automatic transmitter, which operates a page printing teletypewriter at a room receiving position.

The equipment provides facilities for 36 duplex circuits, 12 single line circuits, 24 line finder circuits, or a total of 72 line circuits and 43 miscellaneous circuits.

No field changes in effect at time of preparation (20 February 1957).

ELECTRICAL AND MECHANICAL CHARACTERISTICS

TYPE OF LINE CIRCUITS ACCOMMODATED: 36 duplex circuits; 12 single circuits, 24 line finder lines; total line circuits 72.

SWITCHBOARD JACKS AVAILABLE: 8 line finder reperforators; 6 spare reperforators; 6 spare bank transmitters; 8 single transmitter distributors; 6 miscellaneous sending circuits; 6 miscellaneous receiving circuits.

POWER SOURCE REQUIRED: 115 v, 60 cps regulated and 115 v positive and negative DC.

MANUFACTURER'S OR CONTRACTOR'S DATA

Approximate Cost: $4000.00 with equipment spares.

TUBE AND/OR CRYSTAL COMPLEMENT

No Electron Tubes.

AN/TGC-4 SEMIAUTOMATIC TELETYPEWRITER TAPE RELAY

REFERENCE DATA AND LITERATURE

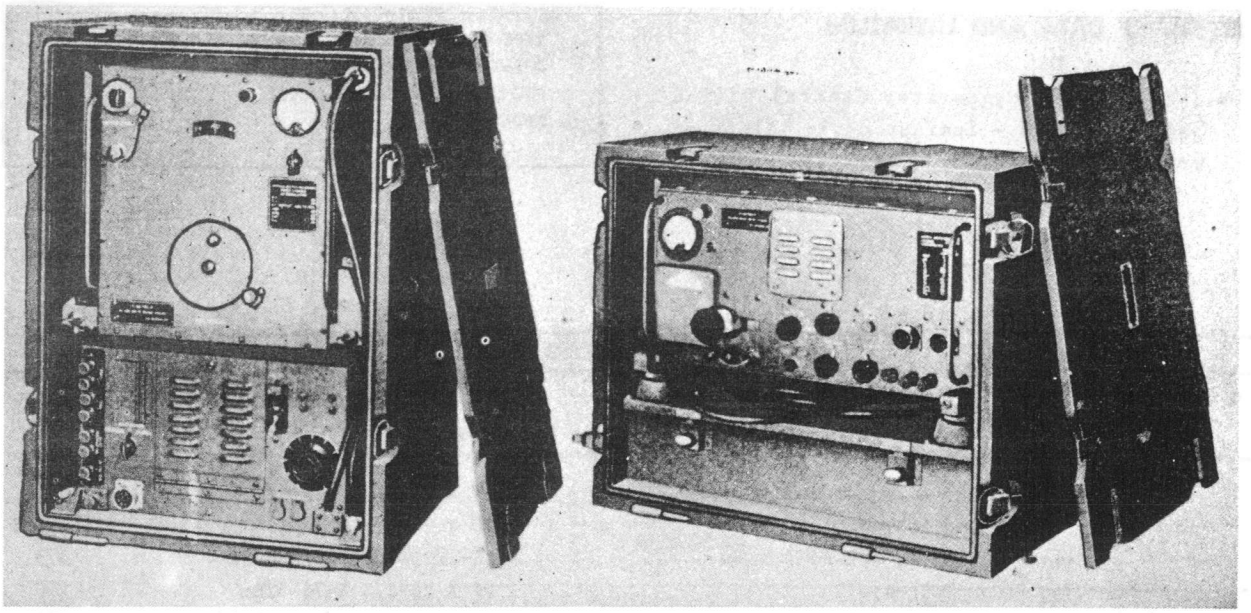
TM11-2212: Teletypewriter Central Office Set - AN/TGC-4 - Semiautomatic Teletypewriter Tape Relay Systems.

TYPE CLASSIFICATION
DESIGN COGNIZANCE TASSA
PROCUREMENT COGNIZANCE
STOCK NO.

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Line Finder 930-A	17 X 24-1/4 X 83-5/8	291
1	Receiving Frame 1057-A	20 X 20-1/4 X 76-1/8	247-1/2
8	Receiving Table 940-A, and Trough	28-1/2 X 59-7/8 X 66-1/4	673
1	Sending Frame 1056-A	20 X 20-1/4 X 76-1/8	190
8	Sending Table, 910A, with 915-A Tape Basket	38-3/8 X 38-3/4 X 53-1/4	223
36	Stand-921-A, with Two 920-A chassis	13-1/16 X 54 X 60	147-3/4
36	Stand - 939-A, with 938-A Chassis	13-1/16 X 51-1/8 X 54	203
2	Supervisor's Table, 909-A	24 X 27-3/8 X 40	130-1/4
1	Switchboard 1036-A	20 X 20-1/4 X 76-1/8	230
1	Switchboard - 1063-A	20 X 20-1/4 X 76-1/8	188
24	Table, 980-A with Exhauster	24 X 27-3/8 X 60	311
3	Table, 985-A	20 X 26-5/8 X 30	74
	Transmitter, Distributor, Multiple	5-5/8 X 7-1/2 X 40-7/8	63
	Transmitter Distributor, Single	6-1/8 X 7-1/16 X 14-9/32	25-1/2
	Transmitter Distributor, 1045-A	8 X 9 X 15-1/2	40
	Typing Reperforator	7-7/8 X 9 X 11-1/4	33-1/2

RADIO TERMINAL SET AN/TRC-11



Radio Terminal Set AN/TRC-11

FUNCTIONAL DESCRIPTION

The AN/TRC-11 is designed to provide four-channel carrier telephone and telegraph service or single-channel point-to-point radio relay service in both directions, simultaneously when continuous operation is required. It is used to extend wire lines where speed of movement prohibits line construction and to bridge water gaps. It is transported by truck or trailer and installed and operated as a fixed field station. Components not in use are running spares supplied to insure uninterrupted service in the case of failure of a basic component.

The Amplifier-Power Supply Group AN/TRA-19 is auxiliary equipment for specific use with Radio Transmitter T-30/TRC-8 used to amplify the nominal power output of the transmitter from 5 to 75 watts, thereby increasing the signal communication reliability of the system. This additional output provides improved transmission over long distances, grazing paths, shadow areas, and other adverse conditions likely to be encountered in the field.

No field changes in effect at time of preparation (25 February 1957).

RELATION TO OTHER EQUIPMENT

The AN/TRC-11 components are identical to the components used in the AN/TRC-8, but the AN/TRC-8 does not provide continuous uninterrupted operation.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 230 to 250 mc.
TYPE MODULATION: FM, ± 100 kc deviation (100% modulation).
TRANSMITTER DATA
- POWER OUTPUT: 5 W.
- OUTPUT IMPEDANCE: 50 ohms.
- AUDIO BAND WIDTH: 200 to 20000 cps.
- TYPE TRANSMISSION: Voice or multichannel telephone, telegraph, or facsimile.
- OPERATING RANGE: 25 to 100 mi.
- FREQUENCY CONTROL: Continuously tunable resonant line.

RECEIVER DATA
- TYPE: Single conversion superheterodyne.
- INTERMEDIATE FREQUENCY: 28.5 mc.
- AUDIO BAND WIDTH: 200 to 20000 cps.
- FREQUENCY CONTROL: Tunable resonant line
- OUTPUT IMPEDANCE
  - HIGH FIDELITY: 500 ohms at 200 to 20000 cps.
  - LOW FIDELITY: 4 ohms at 200 to 2500 cps.
- POWER OUTPUT(LOW FIDELITY): 0.5 W.

ANTENNA DATA
- TYPE: Half-wave dipole with 90 deg corner reflection.
- BEAMWIDTH: 40 deg.
- IMPEDANCE: 50 ohms at center of half-wave dipole.

Radio-Communication Terminal Equipment

AN/TRC-11 RADIO TERMINAL SET

POLARIZATION: Horizontal or vertical.
AMPLIFIER-POWER SUPPLY GROUP AN/TRA-19
POWER INPUT: 400 W max.
RF DRIVING POWER: 5 W nom, 4 to 10 W variation satisfactory for operation.
POWER OUTPUT: 75 W nom.
BAND WIDTH: Approx 2 mc at 1/2 power level.
TYPE TUNING: Coaxial cavity with non-shorting plunger.
POWER REQUIREMENTS: 115 or 230 v, 50 to 60 cps, approx 400 W for transmitter, 120 W for receiver.

TUBE AND/OR CRYSTAL COMPLEMENT

(4) 5R4GY
(2) 9002
(2) 6N7
(2) 5U4G
(16) 6AG5
(6) 6SN7GT
(2) 6V6GT
(2) OD3/VR150
(6) 829B
(2) 6H6

Total Tubes: (44)

REFERENCE DATA AND LITERATURE

TM11-618A: Technical Manual for Radio Sets AN/TRC-8, 8A, and 8B, Radio Terminal Sets AN/TRC-11, 11A, and 11B, Radio Relay Sets AN/TRC-12, 12A, and 12B, and Amplifier-Power Supply Group AN/TRA-19.

TYPE CLASSIFICATION	
DESIGN COGNIZANCE	TASSA
PROCUREMENT COGNIZANCE	
STOCK NO.	

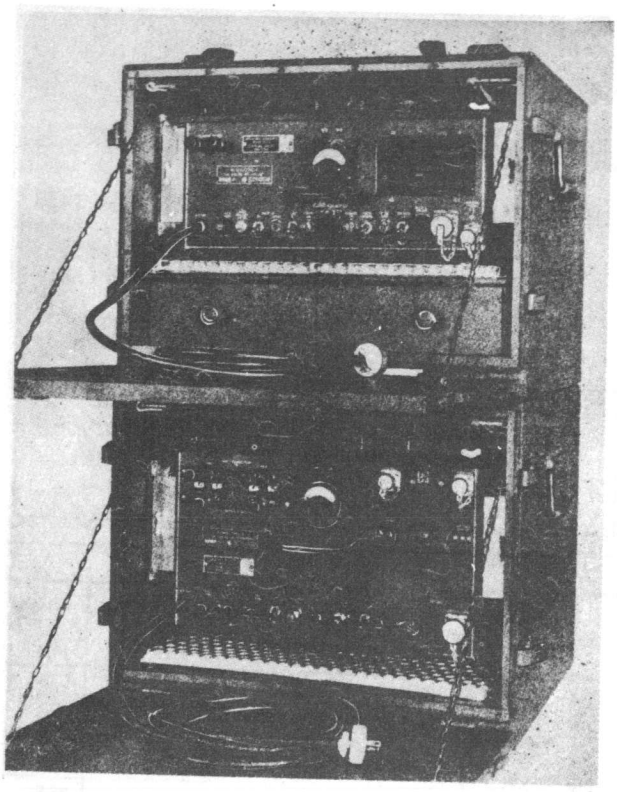
SHIPPING DATA

NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
2	Radio Receiver R-48/TRC-8	7.2	20 X 23 X 27	178
2	Radio Transmitter T-30/TRC-8	7.1	20 X 21-1/2 X 28-1/2	158
2	Rectifier Power Unit PP-115/TRC-8	2.32	12 X 18 X 18-1/2	102
2	Antenna Support AB-33B/TRC-1	17.6	19 X 22 X 73	139
1	Chest BC-5 including:	9.1	20 X 23 X 34	255
	(2) Technical Manual			
	(1) Set of Cords, Tools, and Hardware			
	(1) Junction Box J-85/G			
	(1) Junction Box JB-110			
	(1) Control Box C-21/TRC-1			
	(1) Test Oscillator TS-237/TRC-8			
	(1) Dummy Load DA-29/U			
	(2) Handset H-23/U			
	(2) Telephone EE-8-B			
1	(a) Antenna Assemblies AS-52/TRC-8	10.9	18 X 28 X 37-1/2	225

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
2	Radio Receiver R-48/TRC-8	16 X 19 X 23	126
2	Radio Transmitter T-30/TRC-8 including: Power Pack PP-115/TRC-8	16 X 17-1/2 X 24-1/2	135
2	Antenna Assembly AS-52/TRC-8	14 X 24 X 33-1/2	110
3	Power Unit PE-75	19 X 27 X 36	325
2	Antenna Support AB-33B/TRC-8	12 X 13 X 70	205
1	Set of Equipment Spares		
1	Group of Accessories		

RADIO TERMINAL SET AN/TRC-3



Radio Terminal Set AN/TRC-3

FUNCTIONAL DESCRIPTION

The AN/TRC-3 is a ground transportable equipment designed to provide a single or multichannel radio-relay system when continuous operation is required. It provides components as running spares which are supplied to insure uninterrupted service in case of failure of a major component.

No field changes in effect at time of preparation (15 February 1957).

ELECTRICAL AND MECHANICAL CHARACTERISTICS

TRANSMITTER

FREQUENCY RANGE: 70.0 to 99.9 mc.
POWER OUTPUT: 50 W max, 10 W on low power.
FREQUENCY-DEVIATION: ±30 kc max.
TYPE MODULATION: FM, as derived from phase modulator.
TYPE TRANSMISSION: Voice or multichannel telephone, telegraph, or facsimile.
OPERATING RANGE: 25 to 150 mi.
OUTPUT IMPEDANCE: 50 to 100 ohms into concentric line.
AUDIO RESPONSE
HIGH FIDELITY CHANNEL: ±1 db at 500 to 12000 cps, −3 db at 200 cps.
MICROPHONE CHANNEL: ± 3 db at 250 to 2500 cps, −30 db at 3000 cps and above.
AUDIO INPUT LEVEL: 0 to −12 dbm for 9 kc deviation.
AUDIO INPUT IMPEDANCE
HIGH FIDELITY: 500 ohms.
MICROPHONE: 30 to 50 ohms.
POWER REQUIREMENTS: 115 v, 50 to 60 cps, 250 W.
ANTENNA: Half-wave dipole with director and reflector elements.

RECEIVER DATA

FREQUENCY RANGE: 70.0 to 99.9 mc.
FREQUENCY CONTROL: Crystal.
TYPE RECEIVER: Double superheterodyne.
TYPE MODULATION RECEIVED: FM ± 30 kc deviation.
INTERMEDIATE FREQUENCY
FIRST IF: 32.5 to 47.5 mc, variable.
SECOND IF: 5.0 mc, fixed.
OUTPUT IMPEDANCE (HIGH FIDELITY): 500 ohms.
OUTPUT LEVEL(500 ohm line): 0 dbm normal, +20 dbm max.
AUDIO RESPONSE
HIGH FIDELITY OUTPUT: ±1 db at 200 to 12000 cps.
SPEAKER OUTPUT: ±1 db at 200 to 2500.
POWER REQUIREMENTS: 115 v, 50 to 60 cps, 100 W.
ANTENNA: Half-wave dipole with director and reflector elements.

AMPLIFIER DATA

FREQUENCY RANGE: 70 to 100 mc.
POWER OUTPUT: 250 W max.
OUTPUT IMPEDANCE: 50 to 100 ohms into concentric line.
RF POWER INPUT: Approx 25 W.
RF INPUT IMPEDANCE: Approx 70 ohms.

AN/TRC-3 RADIO TERMINAL SET

POWER INPUT
AC: 115 v, 50 to 60 cps, 175 W.
BIAS: −100 v DC.
DC: +450 v, 40 ma, +1900 v, 250 ma.

POWER SUPPLY DATA
POWER OUTPUT
AC: 115 v, 50 to 60 cps, 175 W.
BIAS: −100 v DC.
DC: +450 v, 40 ma, +1900 v, 250 ma.
POWER REQUIREMENTS: −115 v, 50 to 60 cps, 800 W.

MANUFACTURER'S OR CONTRACTOR'S DATA

Link Radio Corp., New York, New York.
Approximate Cost: $3300.00 with equipment spares.

TUBE AND/OR CRYSTAL COMPLEMENT

(2) 6N7GT (2) 829B
(4) 816 (14) 6SH7
(10) 6V6GTY (4) 6SL7WGT
(2) 6X5WGT (4) 6H6
(2) 6SN7WGTA (4) 6AC7WA
Total Tubes: (48)

(32) CR-6/U (32) CR-4/U
Total Crystals: (64)

REFERENCE DATA AND LITERATURE

TM11-2601: Technical Manual for Radio Terminal Set AN/TRC-3.

TYPE CLASSIFICATION
DESIGN COGNIZANCE TASSA
PROCUREMENT COGNIZANCE
STOCK NO.

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
2	Radio Receiver R-19( )/TRC-18	8 X 12-3/4 X 19-1/8	43
2	Radio Transmitter T-14( )/TRC-1	10-3/4 X 17-3/4 X 19-1/8	66
3	Antenna System AS-19( )/TRC-1 including:		
	(3) Case CY-29( )/TRC-1	13-1/4 X 17-1/2 X 72	380
	(3) Case CY-30( )/TRC-1	13-1/8 X 16 X 33-1/2	90
4	Power Unit PE-75-( )	19-1/2 X 26-1/2 X 36	330
1	Test Oscillator TS-32( )/TRC-1	4 X 4-3/4 X 7	3
2	Handset H-23/U		1.8
2	Headset HS-30/U		0.6
2	Microphone T-45		0.2
3	Telephone EE-8-( ) with TM11-333	3-1/2 X 7-11/16 X 9-9/16	9.75
2	Junction Box J-85/G	4-1/8 X 4-3/8 X 5-1/2	8
2	Junction Box JB-110	3 X 5 X 12-1/2	7
2	Crystal Kit, Receiver		

RADIO SET AN/TRC-8

FUNCTIONAL DESCRIPTION

The AN/TRC-8 consists of one or two FM Radio Receivers R-48/TRC-8 (one in use), one or two FM Radio Transmitters T-30/TRC-8 (one in use), one or two Rectifier Power Units PP-115/TRC-8 (one in use), two Antenna Assemblies AS-52/TRC-8, two 50-ft Antenna Supports AB-33B/TRC-1, and an accessory Kit. One or two Power Units PE-75-( ) are furnished where there is no suitable source of AC power. This equipment is intended for point-to-point or radio-relay application to provide either single or multichannel communication in both directions simultaneously. In general the equipment is used as a connecting link in wire communication networks where the terrain features are such that the laying of wire facilities is not feasible but it may also be used to supplement wire facilities.

No field changes in effect at time of preparation (29 January 1957).

RELATION TO OTHER EQUIPMENT

Basically the same as Radio Terminal Set Series AN/TRC-11 and Radio Relay Set Series AN/TRC-12 except for fewer major components and accessories.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE: 230 to 250 mc.

RADIO TRANSMITTER T-30/TRC-8.
- TYPE: Resonant-line reactance-modulated oscillator, power amplifier tripler.
- MODULATION: FM, ± 100 kc deviation (100% modulation).
- POWER OUTPUT: 5W.
- OUTPUT IMPEDANCE: 50 ohms.
- AUDIO BANDWIDTH: 200 to 20,000 cps.
- TYPE OF TRANSMISSION: Voice or multichannel telephone, telegraph or facsimile.
- OPERATING RANGE: 25 to 100 mi (line of sight).
- FREQUENCY CONTROL: Continuously tunable resonant line.
- POWER INPUT: 450 v DC at 350 ma; 6.9 v AC at 8.5 amp.

RECTIFIER POWER UNIT PP-115/TRC-8.
- TYPE: Twin full-wave vacuum tube.
- POWER OUTPUT (to transmitter): 450 v DC at 350 ma; 6.9 v AC at 8.5 amp.
- POWER INPUT: 115 or 230 v, 50 to 60 cps, 400 W (approx).
- SPECIAL FEATURES: Cable and connector for connecting to transmitter; motor driven blower; Audio-input circuits of the transmitter including controls and connectors; Carrier control relay.

RADIO RECEIVER R-48/TRC-8
- TYPE: Single-conversion superheterodyne.
- MODULATION RECEIVED: FM, ± 100 kc deviation.
- INTERMEDIATE FREQUENCY: 28.5 mc.
- AUDIO BAND WIDTH: 200 to 20,000 cps.
- FREQUENCY CONTROL: Tunable resonant line.
- POWER OUTPUT: 0.5 W.

ANTENNA AS-52/TRC-8
- TYPE: Half-wave dipole w/90° corner reflector.
- BEAMWIDTH: 40°.
- IMPEDANCE: 50 ohms.
- POLARIZATION: Horizontal or vertical.

ANTENNA SUPPORT AB-33B/TRC-1
- MAST TYPE: Sectional, steel.
- MAX HEIGHT: 50 ft.
- NUMBER OF SECTION: 14.
- GUYS: 3 sets for full height.

TUBE AND/OR CRYSTAL COMPLEMENT

(8) 6AG5	(1) 6AL5
(1) 9002	(1) 6N7
(3) 6N7GT	(1) 6V6GT
(1) OD3	(1) 5U4G
(1) 6H6	(3) 829B
(2) 5R4GY	

Total Tubes: (23)

REFERENCE DATA AND LITERATURE

TM11-618A, TO16-30TRC8-6, Technical Manual for Radio Sets AN/TRC-8, -8A, and -8B Radio Terminal Sets AN/TRC-11, -11A, and -11B Radio Relay Sets AN/TRC-12, -12A, and -12B and Amplifier Power Supply Group AN/TRA-19.

TYPE CLASSIFICATION
DESIGN COGNIZANCE TASSA
PROCUREMENT COGNIZANCE
STOCK NO.

AN/TRC-8 RADIO SET

SHIPPING DATA

NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
1	Radio Receiver R-48/TRC-8 and Spare Parts	7.2	20 X 27 X 23	178
1	Radio Transmitter T-30/TRC-8 and Spare Parts	7.1	20 X 21-1/2 X 28-1/2	158
1	Rectifier Power Unit PP-115/TRC-8	2.32	12 X 18 X 18-1/2	102
1	Antenna Support AB-33B/TRC-1 1 Bag BG-102-A 1 Mast Base AB-102/TRC-1 1 Axe LC-1 4 Cases CY-443/TRC-1 1 Hammer Handle	17.6	19 X 22 X 73	139
1	Chest BC-5	9.1	20 X 23 X 34	255
1	2 Antenna Assemblies AS-52/TRC-8	10.9	18 X 28 X 37-1/2	225

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radio Receiver R-48/TRC-8	17 X 18-1/2 X 22-1/2	69
1	Radio Transmitter T-30/TRC-8	12-1/4 X 14-1/2 X 14-1/2	47
1	Rectifier Power Unit PP-115/TRC-8	8 X 14 X 14-1/2	57
2	Antenna Assembly AS-52/TRC-8	1/2 X 20	
2	Antenna Support AB-33B/RRC-1		
1	Accessory Kit Tool Equipment	16 X 19 X 30	53

RADIO TELETYPEWRITER SET AN/TSC-15

FUNCTIONAL DESCRIPTION

The AN/TSC-15 is for general purpose use; it provides communications for aviation and ground units.

No field changes in effect at time of preparation (3 October 1960).

RELATION TO OTHER EQUIPMENT

The AN/TSC-15 is similar to the AN/ARC-58 except it includes one extra Receiver R-761/ARC and teletypewriter equipment mounted in 3/4 ton helicopter hut.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

TYPE OF EMISSION: AM, SSB, DSB, CW.
TRANSMITTER DATA
TYPE OF EMISSION
UPPER: AM, SSB.
LOWER: SSB, DSB.
FREQUENCY RANGE: 2 to 30 mc.
NUMBER OF BANDS: 1 band.
NUMBER OF CHANNELS: 28,000.
RECEIVER DATA
TYPE OF EMISSION
UPPER: AM, SSB.
LOWER: SSB, DSB and CW.
FREQUENCY RANGE: 2 to 30 mc.
NUMBER OF BANDS: 1 band.
NUMBER OF CHANNELS: 28,000.
OPERATING POWER RQMT: 115 v ac, 380 to 420 cps, 3 ph (line to neutral).

MANUFACTURER'S OR CONTRACTOR'S DATA

Collins Radio Co., Cedar Rapids, Iowa.
Contract NOm-70500, dated 3 November 1958.

TUBE AND/OR CRYSTAL COMPLEMENT

Electron Tube and/or Crystal data not available.

REFERENCE DATA AND LITERATURE

NAVSHIPS 93400: Preliminary Data Form for Radio Teletypewriter Set AN/TSC-15.

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

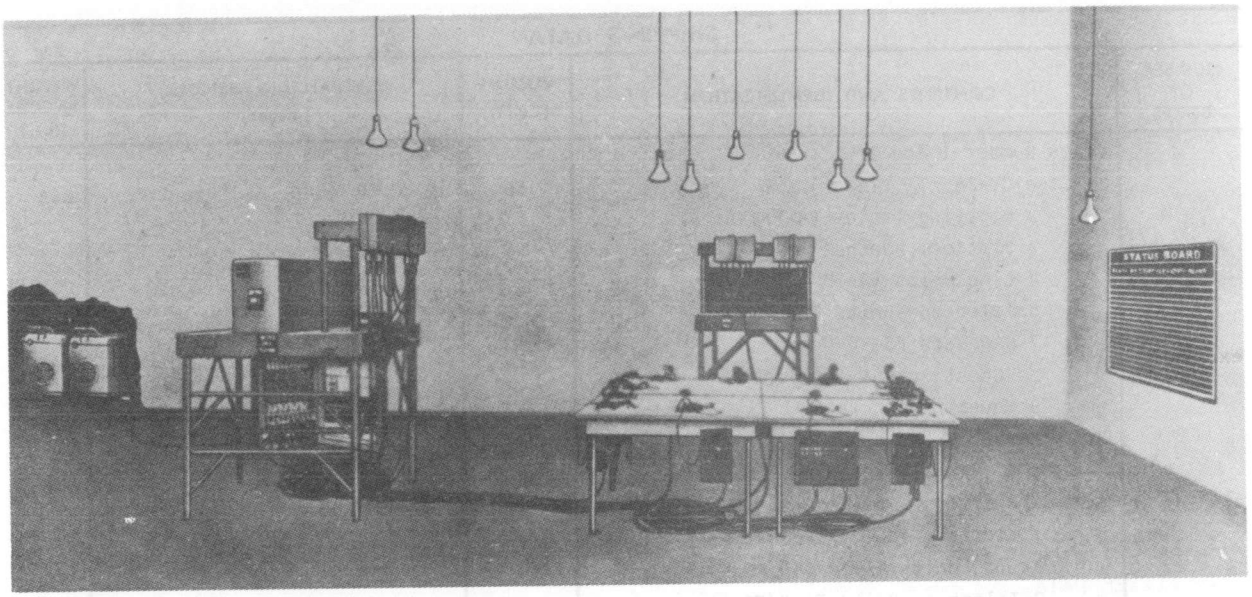
EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radio Teletypewriter Set AN/TSC-15 consists of:		
2	Radio Receiver R-761/ARC-58	7-25/32 x 10-1/4 x 25-3/8	50
1	Radio Transmitter T-605/ARC-58	4-7/8 x 5-3/4 x 6-9/16	5
1	Radio Control Set C-1939/ARC-58	4-7/8 x 7-13/16 x 20-9/16	
1	Antenna Coupler C-1940/ARC-58		
1	Antenna Coupler CU-523/ARC-58	4-13/16 x 5-19/32 x 10-1/16	
1	Vaneaxial Fan HD-277/U	6-1/8 x 10-1/4 x 21-1/4	
1	Mounting MT-1698/U	5 x 10-1/4 x 21-1/4	
1	Mounting MT-1699/U	2-5/8 x 4-1/8 x 22-1/4	
1	Mounting MT-1700/U	2-1/4 x 7-5/8 x 12-9/16	
1	Converter-Oscillator CV-519/ARC-58		
1	Teletypewriter Set AN/GGC-3		
1	Teletypewriter Control	3 x 10-1/4 dia	
1	Clock TD-15		
1	Fire Extinguisher		
1	Shelter 3/4 ton, Craig Model 104 Helicopter Hut	19-1/2 x 27-5/8 x 38	
1	Diesel Generator PU-345/U	1 x 8 x 13	21
1	Mounting MT-1728/U		

Radio-Communication Terminal Equipment

OPERATION CENTER

AN/TTQ-2



Operations Center AN/TTQ-2

FUNCTIONAL DESCRIPTION

The AN/TTQ-2 is a transportable operations room unit assembly which consists of equipment which is used for receiving intelligence concerning activities in an area, for displaying it for quick analysis, and for operational communications. Telephone, power and lighting equipment, furniture and plotting material make up this assembly. The equipment collapses into small, light weight units for ease in transportation, and uses multiconductor cable assemblies with plugs and sockets for easy installation. Connections may be made to land lines and various kinds of standard radio sets. The radio sets are not furnished as a part of the equipment.

The Operations Center can be used as an anti-aircraft operations room which serves as the tactical or battle headquarters of an anti-aircraft defense.

The principal functions performed with the AN/TTQ-2 equipment are:

(1) Early warning of aircraft flights, reported by information center via telephone or radio, can be received and plotted on a vertical map board (Known as a situation board). This board has a small scale and covers more area than the operations board. It is not provided with the center but should be made locally.

(2) Aircraft flights, reported by observation posts or radars via telephone or radio can be received and plotted on a large horizontal map board (Known as operations board which consists of four Plotting Tables FN-3/TTQ).

(3) Information involved in the identification of the plotted aircraft flights on the operations board can be received or transmitted via telephone or radio.

(4) The operating status of all fire units and observation posts can be reported by telephone or radio and such information can be placed on blackboards (status boards).

(5) Operational and administrative functions within the center can be performed over intercommunication lines.

(6) Communication can be maintained by telephone and radio between the center and other military points as may be necessary.

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

RELATION TO OTHER EQUIPMENT

Equipment Required but not Supplied: Standard Sig Corp Radio Sets.

TUBE AND/OR CRYSTAL COMPLEMENT

(8) 6V6GT/G (1) 3Y3GT/G (2) 5Y3GT/G

Total Tubes: (11)

REFERENCE DATA AND LITERATURE

TM11-448: Technical Manual for Operations Center AN/TTQ-2.

TYPE CLASSIFICATION	
DESIGN COGNIZANCE	TASSA
PROCUREMENT COGNIZANCE	
STOCK NO.	

SHIPPING DATA

NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
2	Cases Number 1 and 2 Case CY-285/TTQ (each) c/o 2 Plotting Tables FN-3/TTQ 2 Platform benches 4 Line Units TA-10/TTQ 5 Telephone Units TA-9/TTQ 7 Headsets HS-30-U and Chest Sets &-18( )/GT 8 Mounting Brackets	16	12 X 48 X 48	266
2	Cases Number 3 and 4 Case CY-283/TTQ (each) c/o 1 Platform 1 Platform Table FN-2/TTQ 3 Line Units TA-10/TTQ 3 Telephone Units TA-9/TTQ 3 Hand Telephone Sets 8 Cords CX-471/TTQ (35 ft)	8	12 X 24 X 48	246
1	Case Number 5 Relay Unit RE-24/TTQ (relay cabinet) C/O 30 Line relay circuits 8 Radio-Channel control circuits 2 audio amplifier circuits 20 24-conductor male contact connectors	8	12 X 24 X 48	220
1	Case Number 6 Telephone Power Unit SB-26/TTQ (power cabinet) c/o 1 3 amp, 24 v rectifier 1 vacuum tube heater transformer and plate-voltage rectifier 1 Ringer TA-13/TT 1 Timing lamp indicator control circuit 1 12 cell, 24 v, 40 amp hr storage battery (non-spillable type)	8	12 X 24 X 48	298
1	Case number 7 (power cord) Case CY-286/TTQ c/o Power connecting and service cables Timing Indicator ID-110/TTQ cord Engine coupling box Ground rods and leads	8	12 X 24 X 48	187
1	Case Number 8 (lighting equipment) Case CY-287/TTQ c/o Lighting equipment Cords CX-471/TTQ (6 ft 4 in.)	8	12 X 24 X 48	197

OPERATION CENTER

SHIPPING DATA

NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
	Radio Adaptors			
	1 Timing Indicator ID-110/TTQ			
	1 Status board			
	1 Telephone Unit TA-9/TTQ			
1	Case Number 9			
	Case CY-288/TTQ (miscellaneous equipment and supplies) c/o	8	12 X 24 X 48	188
	Paint material			
	Brushes			
	Ink and Ink Bottles			
	Chalk			
	Erasers			
	Cheesecloth			
	Plastic Overlays			
	Scotch tape			
	Washers			
	Wood Screws			
	8 Unit mounting details (brackets)			
1	Case Number 10			
	Case CY-291/TTQ (plotting equipment) c/o	8	12 X 24 X 48	222
	1 Plotting Kit PT-11/TTQ			
	3 Intercept officers' Kits			
	1 Supplies box (drafting materials)			
	16 Plotters Aprons			
	Drafting Tools (T-square, straight edge, beam compass)			
1	Case Number 11			
	Case CY-289/TTQ (tools and maintenance materials	8	12 X 24 X 48	200
	Electricians' and Mechanics' Tool Sets			
	Test Box			
	Multimeter TS-380/U and leads			
	Nails			
	Bolts			
	Wire			
	Expendable spare parts (fuses, etc)			
	Case Number 12			
	Case CY-292/TTQ (spare parts case) c/o	8	12 X 24 X 48	208
	Non-expendable spare parts (relays, resistors, etc.)			
	3 Telephone Units TA-9/TTQ			
1	Case Number 13			
	Case CY-307/TTQ clock and miscellaneous			

SHIPPING DATA

NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
	equipment) c/o			
	2 clocks			
	6 patching cable connectors			
	5 Telephone Unit Extension Cords CX-484/TTQ			
	1 Amplifier auxiliary Control Relay Unit RE-8/TTQ-1 and spare parts			
	23 Radio Adapter details			
	3 Control Units C-199/TTQ			
	2 copies of TM11-448			
	2 copies of TM11-2042			
1	Case Number 14 (electrolyte case) c/o 1 Imperial gallon jug of electrolyte	2	13 X 14-1/2 X 18	25
2	Power Units PE-197	19	22 X 31 X 44	790
2	Cases electrolyte for Power Unit PE-197	1-1/2	13 X 13 X 16	25

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
4	Plotting Tables FN-3/TTQ	28 X 47-3/4 X 47-3/4	
4	Platform Benches	12 X 18 X 48	
14	Line Units TA-10/TTQ	4-1/2 X 7-5/8 X 9	
17	Telephone Units TA-9/TTQ	4-1/2 X 7-5/8 X 9	
14	Chest Sets H-18( )/GT		
14	Head Sets HS-30-U		
16	Mounting Brackets		
2	Platform	48 X 48 X 48	
2	Platform Tables FN-2/TTQ	12 X 28 X 46	
6	Handsets TS-9-AQ modified to incl plug PL-58		
16	Cords CX-471/TTQ	35 ft lg	
1	Relay Unit RE-24/TTQ	12 X 24 X 48	220
1	Telephone Power Unit SB-26/TTQ	12 X 24 X 48	298
1	Cord CX-472/TTQ		
1	Cord CX-473/TTQ		
2	Cord CX-474/TTQ		
1	Cord CX-475/TTQ		
2	Cord CX-476/TTQ		
2	Cord CX-584/TTQ		
1	Cord CX-487/TTQ	10 ft lg	
1	Cord CX-487/TTQ	20 ft lg	
2	Cord CX-663/TTQ		
	Cable WC-604, black, No. 8 AWG stranded	100 ft lg	
1	Engine Coupling Box		
2	Ground Clamps, Sherman 18L		

EQUIPMENT SUPPLIED DATA

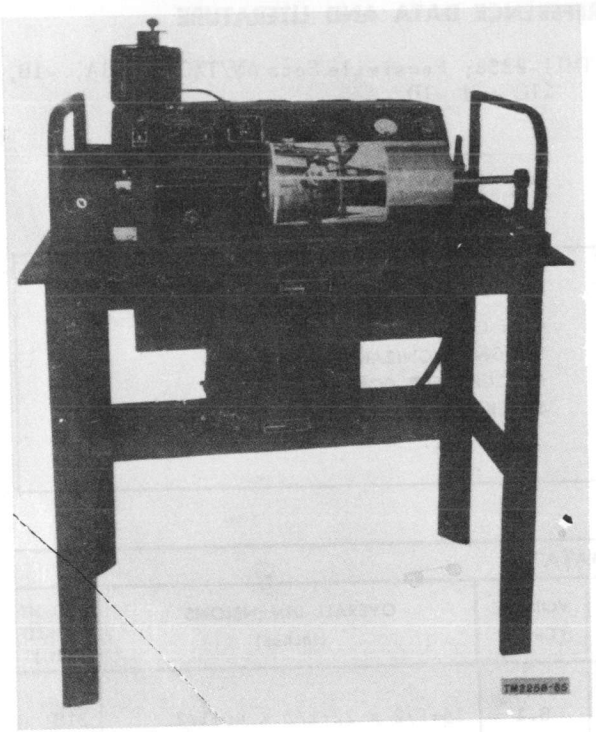
QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
2	Ground Stake Assemblies		
6	Cord CX-471/TTQ	6-1/2 ft lg	
10	Cord CX-477/TTQ		
2	Cord CX-478/TTQ		
14	Cord CX-479/TTQ		
14	120W, 120V lamps Wabash Appliance Corp RE-40		
1	Status Board Assembly		
1	Timing Indicator ID-110/TTQ		
2	One in. wide varnish brushes		
2	Four in. wide varnish brushes		
36	Chalk, white		
1	Chalk, assorted colors		
1 piece	Cheesecloth	30 in. w X 6 yd lg	
1 pt	Enamel, lusterless, olive drab		
1 pt	Enamel, semigloss, olive drab		
1 pt	Enamel, grey		
2	Eraser, blackboard felt	2 X 5	
1/2 pt	Ink, waterproof, orange		
1/2 pt	Ink, waterproof, yellow		
1/2 pt	Ink, waterproof, blue		
1/2 pt	Ink, waterproof, red		
1/2 pt	Ink, waterproof, green		
1/2 pt	Ink, waterproof, white		
1/2 pt	Ink, waterproof, black		
14	Ink Bottles, 3/4 oz complete w/dipper filler		
4	Overlay, plastic, no grid	31 X 31 X 0.010	
4	Overlay, plastic, grid scale 1: 125,000	0.10 X 31 X 31	
4	Overlay, plastic grid scale 1: 250,000	0.10 X 31 X 31	
4	Overlay, plastic, grid scale 1: 500,000	0.10 X 31 X 31	
3 gal	Paste, casein, white		
1 qt	Paste, casein, deep blue		
1 qt	Paste, casein, deep green		
144	Screw, wood, round head	No. 4-1/4 in.	
6 rolls	Tape, scotch	50 yd lg	
8	Unit Supports		
2	Varnish, clear quick drying (1/2 gal can)		
144	Washers, flat, ungalvanized	No. 4	
1	Beam, Compass		
16	Carpenter's aprons (3 pockets)		
8	Cloth, blackboard	45 X 48	
3	Kit, intercept		
1	Plotting Kit PT-11/TTQ		
1	Square, T		
1	Straight Edge	42 in. lg	

Radio-Communication Terminal Equipment
AN/TTQ-2 OPERATION CENTER

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
2	Brush, flat lettering 1/4 in.		
1	Compass beam		
5	Compass, rose	6 in. dia	
1	Drafting Instruments		
6	Erasers, Art Gum		
30	Pens, Speed Ball Lettering		
60	Pencil, China		
6	Pencil, H drawing		
3	Pen Staffs		
1	Protractor, 10 in. circular		
1	Rule, folding	6 ft.	
1	Ruler	18 in.	
1	Scale, architect's		
1	Scale, engineer's		
3	Watches, U.S. Army Spec No. 94-27834-B Class 05-A-62-479900		
1	Electrician's tool Kit		
1	Mechanic's tool Kit		
1	Multimeter TS-380/U		
2	Clocks		
3	Control Units C-199/TTQ		
6	Cord CX-481/TTQ		
5	Cord CX-483/TTQ		
5	Cord CX-484/TTQ		
1	Jack		
5	Junction Box J-103/TTQ		
7	Junction Box J-104/TTQ		
6	Patching Cable Connector		
1	Relay Unit RE-8/TTQ-1		
3	Relays		
2	Technical Manuals TM-11-448		
2	Technical Manuals TM11-2042		
1	Retard Coil		
1	Varistor		
1	Set of Equipment Spares		

FACSIMILE SET AN/TXC-1,-1B



Facsimile Set AN/TXC-1,-1b

FUNCTIONAL DESCRIPTION

The AN/TXC-1 and AN/TXC-1B are electro-mechanical-optical facsimile sets of the revolving drum type for the transmission and reception of page copy. They are used for the transmission of maps, photographs, sketches, and printed or handwritten text over regular voice communication channels, either wire or radio, between fixed stations. Although colored copy may be transmitted, the reproduction is always in black and white and intermediate shades of grey. Received copy is recorded either directly on chemically coated paper or photographically in either negative or positive form. The equipment will transmit or receive a page of copy 12 by 18 inches in 20 minutes.

The AN/TXC-1 differs from the AN/TXC-1B in the number of operating controls and certain circuit features.

No field changes in effect at time of preparation (31 March 1958).

RELATION TO OTHER EQUIPMENT

Similar to the AN/TXC-1D, AN/TXC-1E and AN/TXC-1F except that the AN/TXC-1D, -1E and -1F have facilities for half-speed operation and contains one more tube.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

TYPE OF EQUIPMENT: Rotating drum type.
FUNCTIONS: Transmitting or receiving signals.
TYPE OF COPY: Page.
MAX SIZE OF COPY: 12 x 18-11/16 inches.
SIZE OF SCANNING STOP: 1/96 inch.
TYPE OF RECORDING: Direct or photographic, positive of negative.
DRUM DATA
- DIAMETER: 6 in.
- ROTATION: 1 rpm.
- LATERAL MOVEMENT: 12 in. in 20 minutes.
- SCANNING LINES PER INCH: 96.
- INDEX OF COOPERATION: 576.
- AUDIO FREQUENCY (CARRIER): 1800 cps.

TYPE OF MODULATION: AM.
FREQUENCY BANDWIDTH: 1800 cps max.
FREQUENCY BAND LIMITS: 900 to 2700 cps.
DRUM SPEED CONTROL: Synchronous motor controlled by 1800 cps fork oscillator, or 900 cps multivibrator (or external audio source).
SIGNAL LEVERS
- INPUT (FOR RECEPTION): -45 to 0 dbm.
- OUTPUT (FOR TRANSMISSION): 0 to +26 dbm.

RECTIFIER POWER UNIT PP-86/TXC-1
- INPUT REQUIREMENTS
  - POWER SOURCE: 100 to 130 v, 50 to 65 cps, 250 W at 115 v.
  - SIGNAL SOURCE: 1800 cps from fork oscillator.
- OUTPUT
  - UNREGULATED PLATE SUPPLY: 450 v at 270 ma.
  - FILAMENT SUPPLY: 6.5 v, AC at 6.25 amperes.
  - START MOTOR SUPPLY: 115 v AC at 0.5 amp.
  - EXCITOR LAMP SUPPLY: Regulated 6 v, 1800 cps at 2.74 amperes ±0.1 v.
  - DUST REMOVAL BLOWER: 115 v, 60 cps, 3 amps.

MANUFACTURER'S OR CONTRACTOR'S DATA

Times Telephoto; Sig Corps Order No. 4221-Phila-47-77 dated 26 Sep 1946 (AN/TXC-1B).
Approximate Cost: $3000.00 with equipment spares (AN/TXC-1B).

TUBE AND/OR CRYSTAL COMPLEMENT

AN/TXC-1

(1) 1B46	(3) 7N7
(1) 1645	(1) 5Z3
(3) 6AC5GT	(1) 1B47

AN/TXC-1,-1B FACSIMILE SET

(6) 7C5
(1) 7S7
(1) 1B59R1130B
(2) 5651WA
(1) 7C7
(1) 884
(1) 1635
(1) 5879
(5) 7L7

Total Tubes: (29)

AN/TXC-1B

(1) 1B59R1130B
(2) 5651WA
(3) 7N7
(3) 1635
(6) 7C5
(1) 7C7
(1) 884
(1) 5Z3
(5) 7L7
(1) 7S7
(1) 1645

Total Tubes: (25)

Crystal data not available.

REFERENCE DATA AND LITERATURE

TM11-2258; Facsimile Sets AN/TXC-1, -1A, -1B, -1C and -1D.

TYPE CLASSIFICATION
DESIGN COGNIZANCE TASSA
PROCUREMENT COGNIZANCE
STOCK NO.

SHIPPING DATA

NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
1	Facsimile Transceiver TT-1/TXC-1* or TT-1B/TXC-1**	8.1	15-1/2 x 22-1/2 x 40-1/2	218
1	Rectifier Power Unit PP-86/TXC-1 and spare parts	2.3	15 x 15-1/4 x 17-1/2	89
1	Photographic Equipment PH-549/TXC-1	15.6	26 x 26 x 40	339
1	Table MT-252/TXC-1	11.5	26 x 40 x 41	137

NOTES: *Supplied w/AN/TXC-1 only.
**Supplied w/AN/TXC-1B only.

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Facsimile Transceiver TT-1/TXC-1*	10-3/4 x 17-5/8 x 34-5/8	85
1	Facsimile Transceiver TT-1B/TXC-1**	10-3/4 x 17-5/8 x 34-5/8	85
1	Rectifier Power Unit PP-86/TXC-1	9 x 10 x 12	48
1	Loudspeaker LS-11**	2 x 4 x 4	
1	Table MT-252/TXC-1	22 x 32 x 37	86
1	Photographic Equipment and Accessories		

NOTES *Supplied w/AN/TXC-1 only.
**Supplied w/AN/TXC-1B only.